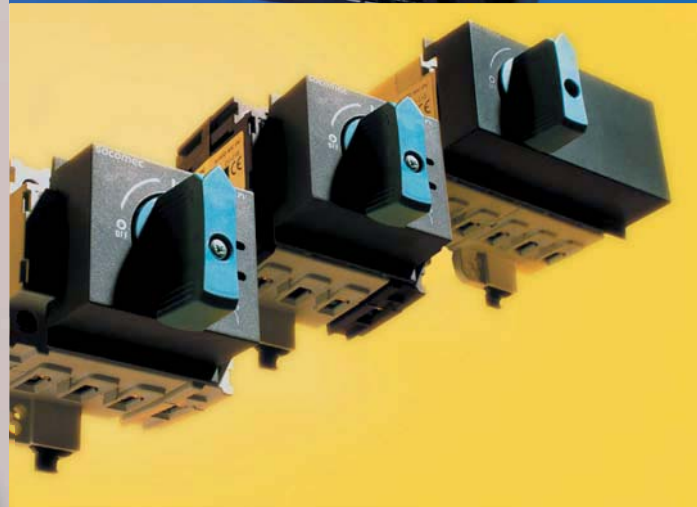
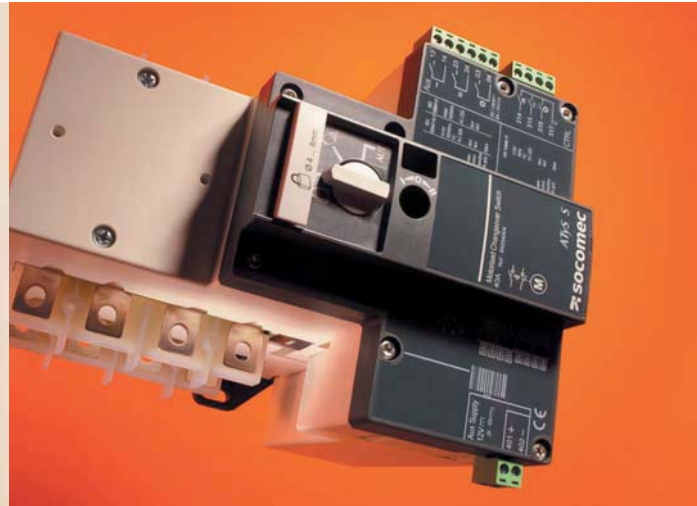


Solutions for Power, Control, Safety & Energy Efficiency

2013
2014



Contents

Introduction pages

An independent manufacturer	p. 4
Four key applications: the benefit of a specialist	p. 5
Adapted solutions	p. 6
Services & Technical Assistance	p. 8
A cutting-edge laboratory	p. 10
For a high quality power supply	p. 11
A worldwide presence	p. 12
A new website	p. 13
Application Guide	p. 14



Load break switches

Load break switches for machine control, power distribution and photovoltaic applications p. 18



SIRCO M and MV
p. 26



IDE
p. 44



Fuse protection

Fuses, fuse bases and fuse combination switches p. 182



FUSERBLOC
p. 188



SIDERMAT combination
p. 230

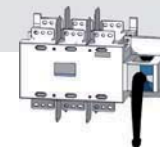


Changeover switches

Changeover switches, control relays and configuration software p. 308



COMO C
p. 316



SIRCOVER and SIRCOVER BY-PASS
p. 328



Metering, monitoring & power quality

Energy meters, multifunction meters and supervision software p. 406



COUNTIS E
p. 420



DIRIS A
p. 436



Electronic protection

Differential protection, voltage surge protection, current protection p. 508



Earth leakage relays
RESYS M40 R
p. 518



Core balance transformer ΔIC
p. 522



Enclosures & accessories

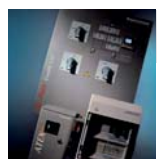
All the components to facilitate the use of your electrical equipment p. 546



COMBIESTER
p. 550



CADRYS enclosures
p. 551



Integrated products & solutions

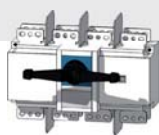
Enclosed protection and switching devices p. 596



Enclosed switches
p. 600



Safety enclosures
p. 608



**SIRCO and
SIRCO AC**
p. 52



SIDER
p. 74



SIDERMAT
p. 88



SIRCO PV
p. 116



FUSOMAT
p. 238



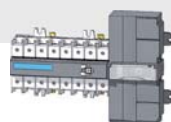
RM - RMS
p. 262



Fuse bases
p. 266



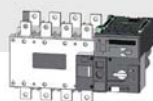
Industrial fuses
p. 278



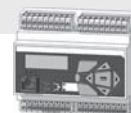
ATyS M
p. 366



ATyS S
p. 374



ATyS p
p. 388



Control relays
p. 404



RETROFIT Line
p. 468



Supervision
and interfaces
p. 482



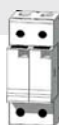
Current transformers
p. 488



Indicators and
transducers
p. 506



Surge arrester
**SURGYS
G50-FE**
p. 532



Surge arrester
**SURGYS
D40**
p. 538



Surge arrester
**SURGYS
Low currents**
p. 542



**CADRYS DELTA
modular**
p. 552



Busbar supports
p. 562



Mounting rails and
profiles
p. 592



Enclosed changeover
switches
p. 622



PV enclosures
p. 646

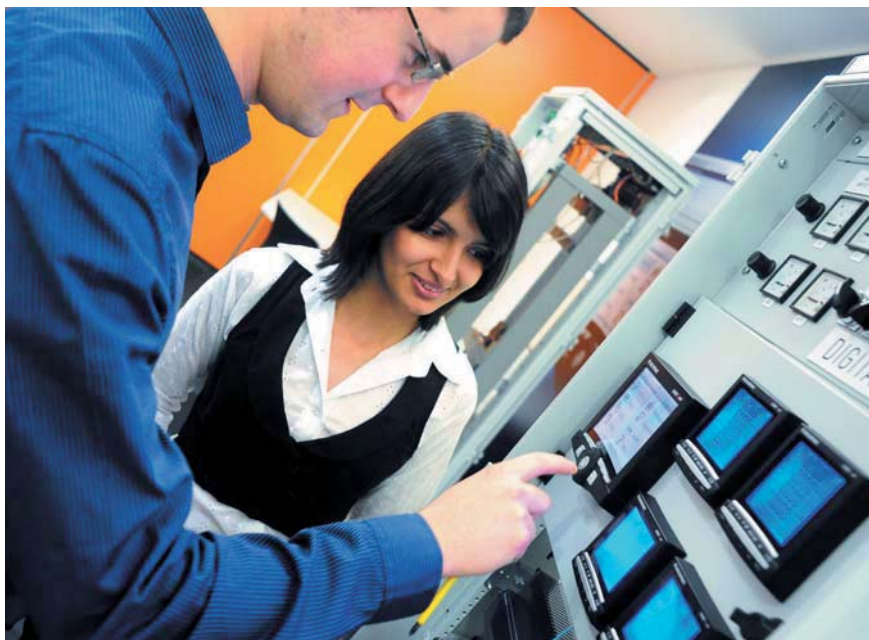


Customised design
and solutions
p. 648

An independent manufacturer

the benefit of a specialist

Founded in 1922, SOCOMEC is an industrial group with a workforce of 3200 people. Our core business: the availability, control and safety of low voltage electrical networks with increased focus on our customers' energy performance.



CORPO 308 A

The culture of independence

The independence of the SOCOMEC Group ensures it retains control of the decision-making process, respecting the values advocated by its own family shareholders and shared by its employees.

With around 30 subsidiaries located on all five continents, SOCOMEC has developed internationally by targeting industrial and service applications where the quality of its expertise makes all the difference.

The spirit of innovation

As undisputed specialists in UPS systems, source supply changeover, power conversion and measurement, SOCOMEC dedicates nearly 10% of its turnover to R&D. This means the group devotes the resources required to achieve its ambition: to always be at the cutting-edge of technology.

The vision of a specialist

As a manufacturer with complete control over its technological processes, SOCOMEC is quite unlike the more general providers. The Group is constantly building on its fields of expertise in order to offer its customers increasingly customised, better adapted solutions.

A flexible manufacturing structure

Backed by two European centres of excellence (France and Italy), the Group also benefits from competitive production sites, such as in Tunisia, and locations in the major emerging markets (India and China).

All sites have implemented a policy of continuing development based on 'Lean management' principles; this ensures they are in a position to offer the quality, lead times and cost expected by our customers.

The focus on service

Our manufacturing expertise naturally extends to a complete range of services designed to facilitate the research, implementation and operation of our solutions. Our teams of engineers have built their reputation on reassuring closeness, specialist expertise and a focus on customer needs.

Responsible growth

As a Group which is open to all cultures and firmly committed to human values, SOCOMEC promotes employee initiative and commitment. Working relationships are based on the idea of partnerships and respect for shared ethics. Through the company's commitment to achieving harmonious, lasting development, SOCOMEC fully embraces its responsibilities not only towards its shareholders, employees, customers and partners, but also towards society as a whole and its environment.

SOCOMECHAS BEEN A SIGNATORY TO THE GLOBAL COMPACT SINCE 2003.



Four key applications: the know-how of a specialist

Critical Power

Ensuring the availability of high-quality power for critical applications.



Thanks to the company's wide range of continuously evolving products, solutions and services, SOCOMEC are experts in the three essential technologies that ensure the high availability of supply to critical facilities and buildings:

- uninterruptible power supplies (UPS) that provide high-quality power and reduce distortion and interruptions to the mains supply,

- changeover of high availability sources to transfer supply to an operational backup source,
- continuous monitoring of installation facilities to prevent failures and reduce operating losses.

Power Control & Safety

Managing power and protecting individuals and property.



A specialist manufacturer of electrical equipment since 1922, SOCOMEC is the undisputed leader in power switching and changeover solutions.

The company has always promoted the benefits of fuses for the safety of both individuals and equipment.

In addition, it has become a major player in cutting-edge technology such as the monitoring and detection of insulation defects.

SOCOME C guarantees solutions and services which are both relevant and efficient.

Solar Power

Guaranteeing the safety and durability of photovoltaic (PV) facilities.



As experts in the solar energy equipment field, SOCOMEC has all the specialist know-how for implementing key strategic functions in PV facilities, including:

- safety, through specially designed load break switches that cut the DC current generated by solar panels regardless of the configuration of the installation and the operating conditions,

- ensuring the reliability of DC facilities thanks to solutions that prevent the degradation of insulation and electric arc failure in the DC current,
- control of very high-efficiency energy conversion, via PV inverters that transform all energy generated by the solar panels into power to be consumed locally or re-injected into the national grid.

Energy Efficiency

Improving building and facility energy efficiency.



SOCOME C solutions, ranging from sensors to the wide choice of innovative, modular software packages, are driven by experts in energy efficiency. They meet the essential requirements of managers or operators of tertiary, industrial or local authority buildings, and make it possible to:

- measure power consumption, identify sources of excess consumption, and raise occupant awareness,

- limit reactive energy and prevent associated tariff penalties,
- use the best tariffs, check supplier invoicing and accurately distribute energy bills amongst consumer entities.

Adapted solutions

energy objectives met

In the face of increasingly important and complex energy challenges, it is vital to choose a specialist partner that understands fully the requirements and constraints of your own area of business.

SOCOMECC's support approach rests on three principles:

- the availability of an experienced consultant,
- the ability to offer a solution to a global problem,
- the creation of a true commercial partnership - a source of confidence.

When you choose SOCOMECC, you're choosing multidisciplinary expertise in managing the availability, monitoring, safety and energy performance of low voltage electrical installations. You also benefit from the responsiveness of an independent, family business operating on a human scale.

Data Centres: The Socomec "Power & Energy Performance" offering

Continuity of service is a major challenge for data centres. To achieve this, the **reliability, quality** and **maintainability** of the power supply must be a strategic consideration.

SOCOMECC offers a range of products, solutions and services which guarantee excellent **all-round performance** for data centres.

We respond to your needs

- High energy-availability: High-quality, reliable energy, maintainable equipment.
- Reducing the total cost of ownership (TCO): Optimisation of operating costs, energy bills, technical area costs, investment costs, etc.
- Flexible electrical infrastructure: Adaptation of the supply power and configuration to constantly changing requirements.
- Management of electrical power supply capacity: Monitoring, optimisation and allocation of energy resources.
- Reducing the environmental impact: reducing GHG emissions.



Green Power 2.0
very high efficiency UPS



Smart PowerPort
container solution



STATYS
static transfer systems



ATyS
automatic transfer switch



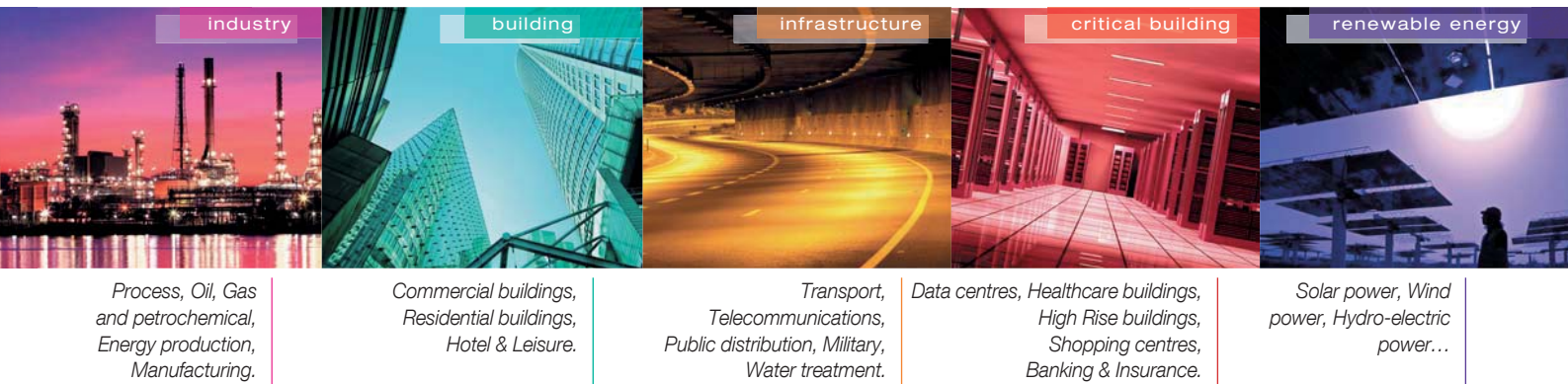
SIRCO
load break switches



ATS Bypass solution:
Enclosed automatic transfer
switch with bypass



COUNTIS E energy meters
DIRIS A multifunction measurement units
DIRIS N network analysers
VERTELIS Energy & Power Monitoring System software



Healthcare buildings: The Socomec "Power & Energy Performance" offering

As a key factor in ensuring quality care, **patient safety** is your number 1 concern. That's why the power supply to vital medical equipment must never fail.

SOCOMECC recommends complete architecture and offers a state-of-the-art range to guarantee reliability and productivity in healthcare buildings, in accordance with normative requirements governing critical premises.



We respond to your needs

- High energy-availability: Supply of high-quality, reliable energy for hospital equipment and premises: Medical imaging, laboratories, pharmacies, group 2-type operating theatre areas, etc.
- Safety of property and personnel: Guaranteed operation of safety systems such as emergency lighting, fire protection, controlled access, etc.
- Energy efficiency: Monitoring, analysis and optimisation of multi-utility consumption.
- Protection and continuity of the power supply for computer systems and communication networks: Guaranteed energy availability and a flexible electrical infrastructure - an essential solution to meet constantly changing needs.



Services & Technical Assistance

the manufacturer's guarantee

Over several decades, SOCOMEC Systems have acquired a distinguished reputation in the control, safety and performance of low voltage electrical distribution equipment. Our manufacturer's expertise naturally extends to a complete offer of services designed to help you select, implement and get the most out of our solutions.



APPLI 566 A

Specially adapted skills

Our service team consists of field personnel specialising in our specific domains and experienced in the maintenance of industrial electrical systems. This means you benefit from a dual skills base:

- technical expertise relating to the products that have been installed,
- practical knowledge of your usage needs.

Reassuringly close at hand

Our geographical coverage means that we are close to each user and can respond quickly to all requests. We can provide a complete service from the technical diagnostics before repair right up to implementation of the most suitable solutions for your installation.

Customer-oriented service

True to our own principles, we encourage direct and friendly contact. Our interventions offer solutions targeted to a single problem: Yours. Our engineers are always very attentive to your needs, to ensure that we provide the most relevant technical support and advice. So you can plan your investments with confidence.

Customised support...

Assessment and sizing

Depending on your requirements, our experts collect and analyse all the relevant data in order to recommend the system best adapted to your installation.

Commissioning

Installation of your equipment is carried out by a specialist, and is totally compatible with and adapted to your use.

Maintenance

A wide range of preventive or corrective maintenance options designed to suit your installation and its environment, and to ensure continuity of service of your electrical networks.

Training

You will receive training, specially adapted to your needs, in order to familiarise yourself with our equipment and enable you to use it to your best advantage.



... to ensure you a successful project

■ Source inversion in complete safety

Changeover switches are strategic components that ensure continuity of service of supplies. In order to guarantee **complete operational safety**, we will implement our range of innovative source transfer solutions.

■ Your energy consumption efficiently and comprehensively managed

Monitoring of energy consumption within a production unit is one of your primary operational considerations. From the preliminary assessment of your installation to the adaptation of the software, dedicated SOCOMEC experts are on hand to assist you throughout the entire energy performance process.

■ Effective insulation monitoring for your electrical installation

To ensure that your fault monitoring and location system operates to its optimum capacity, our team of specialists perform all operations on site.

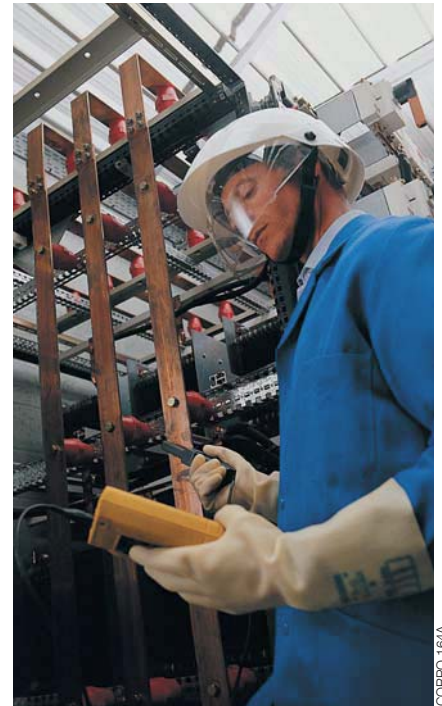
This means that you benefit from renowned expertise, as well as solutions tailored to the specific monitoring requirements of your electrical installation.

■ The control of reactive energy on your electricity bill

In terms of power factor correction, **the support of a specialist is essential to appropriately size your system** and meet the desired efficiency.

SOCOMECC will help you to make the right choices and therefore to benefit from a long-term solution. A real return on investment.

For more information, please see pages "Reactive energy power factory correction".



CORPO 164A



APPLI 540 A

A cutting-edge laboratory

the backing of an expert

Since 1965, the Pierre Siat test laboratory has used its expertise to guarantee the reliability and compliance of SOCOMEC products and solutions. Our customers are also welcome...



CORPO 342 A

A decisive link

Located at the Company's headquarters in Benfeld, France, the Pierre Siat test laboratory is one of SOCOMEC's main quality pillars: its contribution to the development, qualification and certification phases plays a decisive role in the process leading to the creation of a product or solution.

Global scale

This totally independent laboratory is recognised by the major certification bodies worldwide: A member of ASEFA⁽¹⁾ and LOVAG⁽²⁾, it is accredited by COFRAC⁽³⁾, UL (CTDP⁽⁴⁾), CSA (shared certification) and KEMA (SMT/WMT⁽⁵⁾). It also works in partnership with numerous international certification organisations⁽⁶⁾. The quality and safety requirements specific to each country are therefore fully taken into account.

Specialist facilities

With its 100 MVA (Idc 100 kA rms 1 s) short-circuit platform, three 10 kA overload platforms and numerous other test instruments, in facilities covering 1500 m², the Pierre Siat laboratory is currently the 2nd largest French power laboratory. It combines expertise in electricity and mechanics, pneumatics and computing.

Ongoing commitment

To adapt to the increasingly demanding standards and ever more innovative and high-performance products, the Pierre Siat laboratory is constantly extending the scope of its tests, investing whenever necessary in new equipment.

A vast range of tests

The laboratory submits all SOCOMEC products and solutions (including those in enclosures) to numerous tests in the following fields:

- functional: component resistance and operating tests,
- dielectric: immunity to interference, dielectric insulation, overvoltage, overcurrent,
- mechanical: endurance and mechanical shocks, etc.
- Environment: functional or electrical tests under extreme conditions (temperatures, salt spray), vibrations, etc.),
- AC/DC endurance: in operation and under controlled temperatures (arcs, LV/HV outages, etc.),
- temperature rise,
- electromagnetic compatibility (EMC),
- metrology,
- safety: flammability, etc.

Conducted during the design and production phases, these tests guarantee the long-term reliability of the equipment sold.

Customised services

These test facilities and expertise are also available to our partners who require assistance with the qualification and certification of their products or equipment.



We issue certificates of conformity and performance declarations upon request.

For more information, visit our web site: www.socomec.fr/laboratoire-essais_fr.html

- (1) Association des Stations d'Essais Françaises d'Appareils électriques basse tension (French association of low voltage electrical equipment test stations)
- (2) Low Voltage Agreement Group
- (3) Comité Français d'Accréditation (French accreditation body)
- (4) Client test data programme
- (5) Supervised Manufacturer's testing/Witnessed manufacturer's testing
- (6) KEMA, CEPEC, UL, CSA, ASTA, Lloyd's Register of Shipping, Bureau Veritas, BBJ-SEP, EZU, GOST-R, etc.



For a high quality power supply

innovative power solutions

Critical equipment requires high quality energy and faultless continuity of the power supply. Our uninterruptible power systems (UPS), static transfer systems (STS), and DC/AC and AC/DC converters (inverters and rectifiers, respectively) comprise the most complete ranges in the world and cover a very wide range of applications for every sector of activity.



GAMME 008 W

- > Uninterruptible power systems (UPS)
- > Static transfer systems (STS)
- > Rectifier chargers
- > DC/AC converters (inverters)
- > Energy storage systems
- > Harmonic compensators
- > Communication interfaces and software
- > Commissioning Inspection and Maintenance



High availability

The availability of electrical energy is a strategic factor in a range of industries as varied as telecommunications, data processing centres or some industrial processes. It is sometimes vital for certain medical applications. In all these sectors, SOCOMEC can put over 40 years of experience at your disposal.

Product solutions that meet requirements

Underspinned by significant R&D resources, our product offer continually evolves as a consequence of our contact with customers. Our products have gained approval from the most demanding of users: telecoms operators, the nuclear industry, naval industry etc.

Recognised expertise

Our users' needs are at the forefront of everything we do, as demonstrated by the prestigious distinctions that SOCOMEC and its UPS solutions have received:

- customer service excellence award (2004),
- product innovation award (2006),
- award for the best product offer (UPS) in Europe (2009),
- award for innovation in new UPS (2011).

Continuing innovation

The constant search for innovation is hardwired into SOCOMEC's approach to technology:

- first French manufacturer to offer static power systems (1968),
- first UPS to use PWM technology (1980),
- first range of high power UPS with IGBT technology (1996),
- first modular, upgradeable and redundant UPS (2000),
- first manufacturer to integrate hybrid components (2001),
- first 200 kVA UPS with IGBT rectifier (2003),

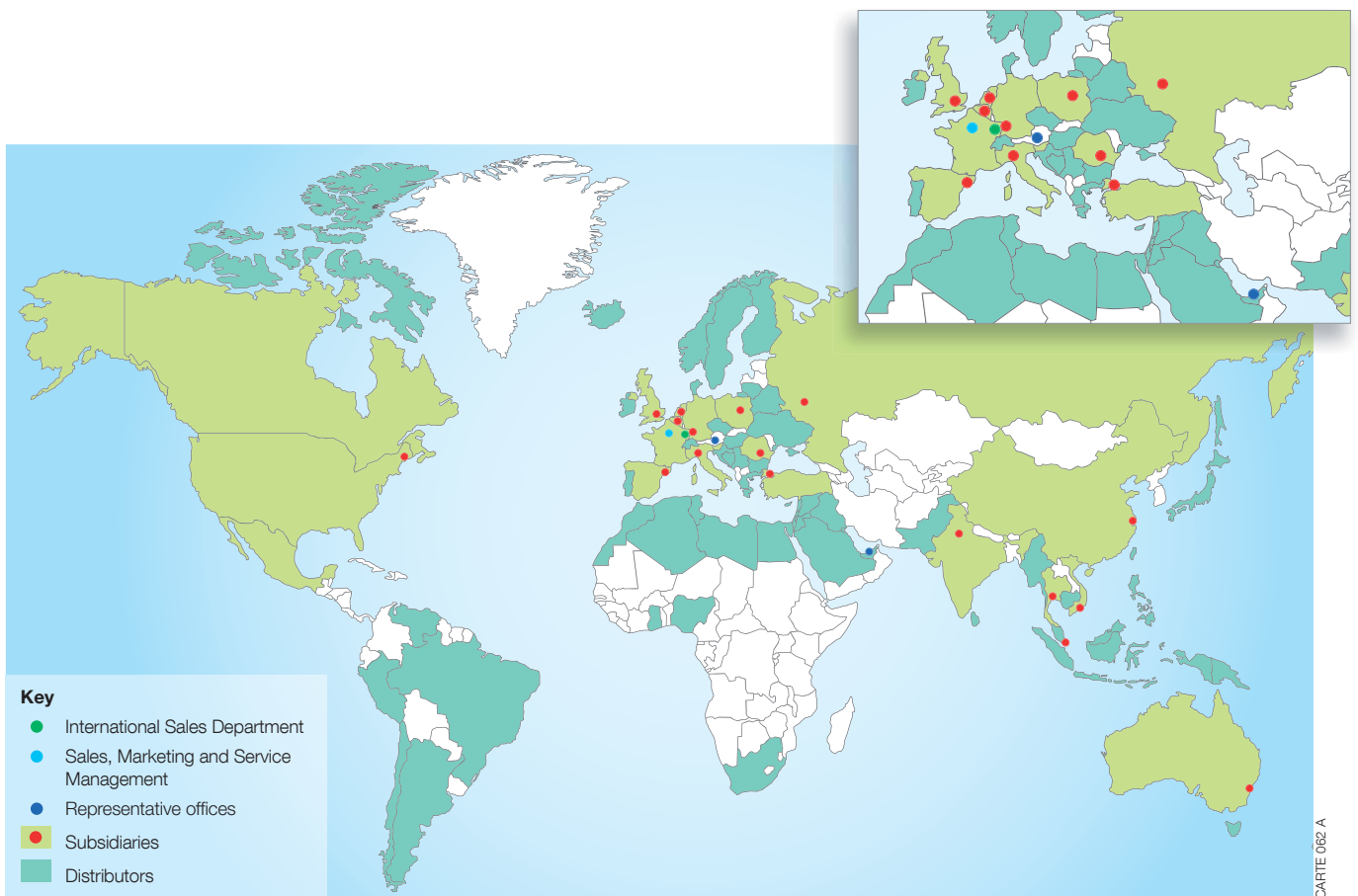
- new battery charging concept (2004),
- dynamic energy storage system / Flywheel (2006),
- first UPS with 96% efficiency in true online double conversion mode (2007),
- the most compact STS, in a 19" hot-swappable rack version (2009),
- most compact 900 kVA UPS (2010),
- first complete UPS range (10-2400 kW/kVA) with 3-level technology, 96% efficiency and power factor 1 (2012).

Customer-oriented service

Our sales and after-sales network means we are always there for you. Our partner-customers recognise the quality of our products, availability and flexibility in meeting requirements and commitment.



A worldwide presence



For your needs in Power Control & Safety and Energy Efficiency

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SOCOMECC

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F - 67235 Benfeld Cedex - France
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The United Kingdom -
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For your needs in Critical Power and Solar Power

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- 1 Find out about products, services and systems meeting the requirements of applications for which we have a real expertise
- 2 Download documentations, pictures, logos and CAD files
- 3 Find and contact the nearest Socomec contact
- 4 Find answers to technical questions (FAQ)
- 5 Find out about our job offers
- 6 Get informed about our news: products, events and advice



Find out more on



100% mobility

Access multimedia contents from your smartphone by scanning the codes available in our catalogues or documentations.

How?

1. Download

a QR code application from your mobile phone (QR Code Scanner Pro, Mobiletag, ScanLife flashcode, etc.).

2. Scan



3. Browse!

A few examples:



Flash banner for ATyS transfer switch

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Download section on the Socomec website

FLCD_URL_004_A_GB

Banners Software
Selection guides **Photos**
Brochures Videos
User guides **Tutorials**

Application Guide

Monitor your electrical installation

The basic information for controlling and protecting an electrical installation in just a few mouse clicks!

The Socomec Application Guide is regularly updated and incorporates all the experience and know-how of our specialist engineers.



CORPO 286A

Download the Application Guide

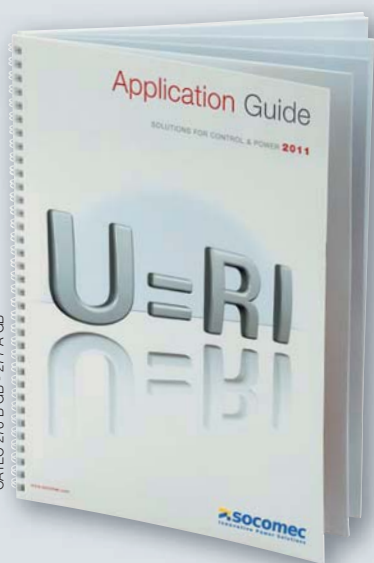


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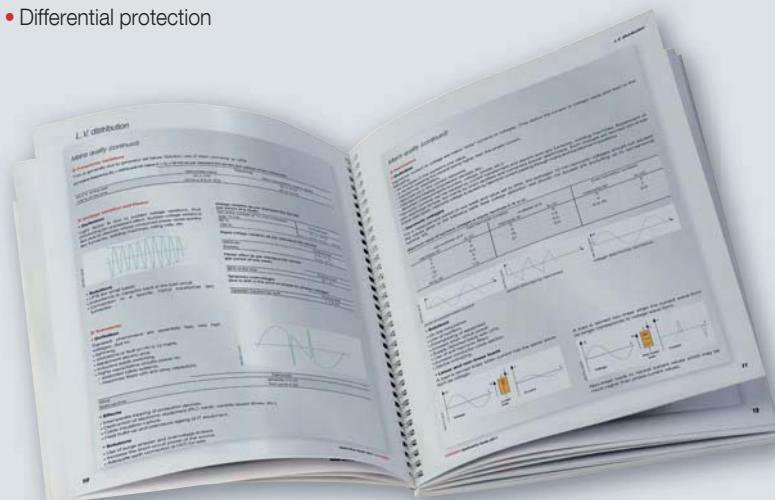
www.socomec.com/application-guide-scp_en

Contents

- L.V. distribution
- Overload currents
- Short circuit currents
- Direct and indirect contact
- Voltage drops
- Switching and isolating devices
- Fuse protection
- Control and energy management
- Industrial communication networks
- Electrical measurement
- Digital protection of networks
- Differential protection
- Insulation Monitoring
- Overvoltage limiter
- Surge arresters
- Reactive energy power factor correction
- Enclosures
- Busbars
- Uninterruptible Power Systems (UPS)



CATEC 276 B GB - 277 A GB



Alphabetical index

A

Active energy meter and concentrator COUNTIS E	406
Analogue meters	506
ATEX enclosures	618
ATS Bypass	346
ATS Bypass solution	642
ATyS (d, t, g, p)	382
ATyS S	374
ATyS 3s steel enclosure	630
ATyS 6e steel enclosure	630
ATyS M	366
ATyS M steel enclosure	630
ATyS_C30_C40 controller	404
Automatic Transfer Switch Equipment	308

B

Bar or cable-through saturation current transformer	504
BS88 fuses	182
BS88 industrial fuselinks	272
BS88, NFC and DIN fuses	182
Busbar	546
Busbar supports	562

C

Cable clamps and cage terminals	584
CADRYs DELTA modular	552
CADRYs enclosures	551
Changeover SIRCO VM1 steel enclosure	626
Changeover switches	308
Changeover switches SIRCO M	320
Changeover switches standards UL and CSA	350
COMBIESTER	550
Communication accessories	486
COMO C	316

Core balance transformers (type A)	522
COUNTIS ECix	434
COUNTIS E0x	420
COUNTIS E1x	422
COUNTIS E2x	424
COUNTIS E3x	426
COUNTIS E4x	428
COUNTIS E5x	430
COUNTIS E63	432
Current transformers	488

D

Differential protection	508
Digital meters	506
DIRIS A10	436
DIRIS A17	440
DIRIS A20	444
DIRIS A40 / A41	448
DIRIS A60	454
DIRIS A80	460
DIRIS multifunction meters	406
DIRIS N300 / N600	474
Distribution	546
Distribution blocks	586

E

Effective protection for your electrical installation	508
Energy management	406
Electronic protection	508
Enclosed changeover switches	622
Enclosed fuse switches	604
Enclosures & accessories	546
Enclosures and cabinets equipped for your applications	598
Energy efficiency	408

Alphabetical index

F	
Fuse bases _____	266
Fuse protection _____	182
FUSERBLOC _____	188
FUSERBLOC and high speed fuses (UR) _____	224
FUSERBLOC in polyester enclosure _____	605
FUSERBLOC in steel enclosure _____	607
FUSERBLOC UL _____	248
FUSOMAT _____	238
H	
High speed fuses (UR) _____	288
Hour counters _____	506
I	
IDE _____	44
Indicators and transducers _____	418
Insulated flat copper braids _____	560
Insulated flexible copper bars _____	558
Integrated products and solutions _____	596
Customised design and solutions _____	648
L	
Load break switches _____	18
Load break switches for all your applications _____	20
Load break switches for specific applications _____	18
Load break switches for photovoltaic applications _____	18
Load break switches standards UL and CSA _____	18
M	
Management software for COUNTIS and DIRIS _____	464
Manual changeover switches _____	312
Manual motorised and automatic changeover switches _____	312
Manual Transfer Switch Equipment (MTSE) _____	626
Measurement devices _____	406
Measurement shunts _____	502
Modular transducers _____	506
Monitoring software and communication interfaces _____	406
Motorised Changeover _____	308
Mounting rails and profiles _____	592
Multi-utility meters _____	412
N	
NFC and DIN fuses _____	182
NFC and DIN industrial fuselinks _____	278
O	
Other electrical measurement devices _____	506
P	
Plug-in ranges _____	182
Power terminals _____	582
Primary wound saturation current transformer _____	504
Protection against overvoltages _____	514
PTI: CT automatic short-circuiter _____	504
PV fuses _____	298
PV fuse bases _____	306
PV surge protection devices _____	526

R

RESYS M40R	518
RESYS M40	516
RESYS P40	520
Rigid copper bars	556
RM - RMS	262
RM PV	304
Remote Transfer Switch Equipment	630
RETROFIT line	468

S

Safety enclosures	608
Sensor PT100 - screw type	505
SIDER	74
SIDER polyester enclosure	610
SIDER steel enclosure	610
SIDERMAT	88
SIDERMAT combination	230
SIRCO & SIRCO AC	52
SIRCO DC UL98B	158
SIRCO MOT PV	128
SIRCO M and MV	26
SIRCO M UL508	134
SIRCO M UL98	144
SIRCO MV PV	110
SIRCO polyester enclosure	600
SIRCO PV	116
SIRCO steel enclosure	600
SIRCO UL98	150
SIRCO VM1	324
SIRCOVER and SIRCOVER Bypass	328
SIRCOVER Bypass steel enclosure	629
SIRCOVER polyester enclosure	625
SIRCOVER steel enclosure	625
SIRCOVER UL	350
SURGYS® D40	538

SURGYS® E10	540
SURGYS® G140-F	530
SURGYS® G100-F	528
SURGYS® G40-FE	534
SURGYS® G50-FE	532
SURGYS® G51-PV	526
SURGYS® G70	536
SURGYS® Low current	542

T

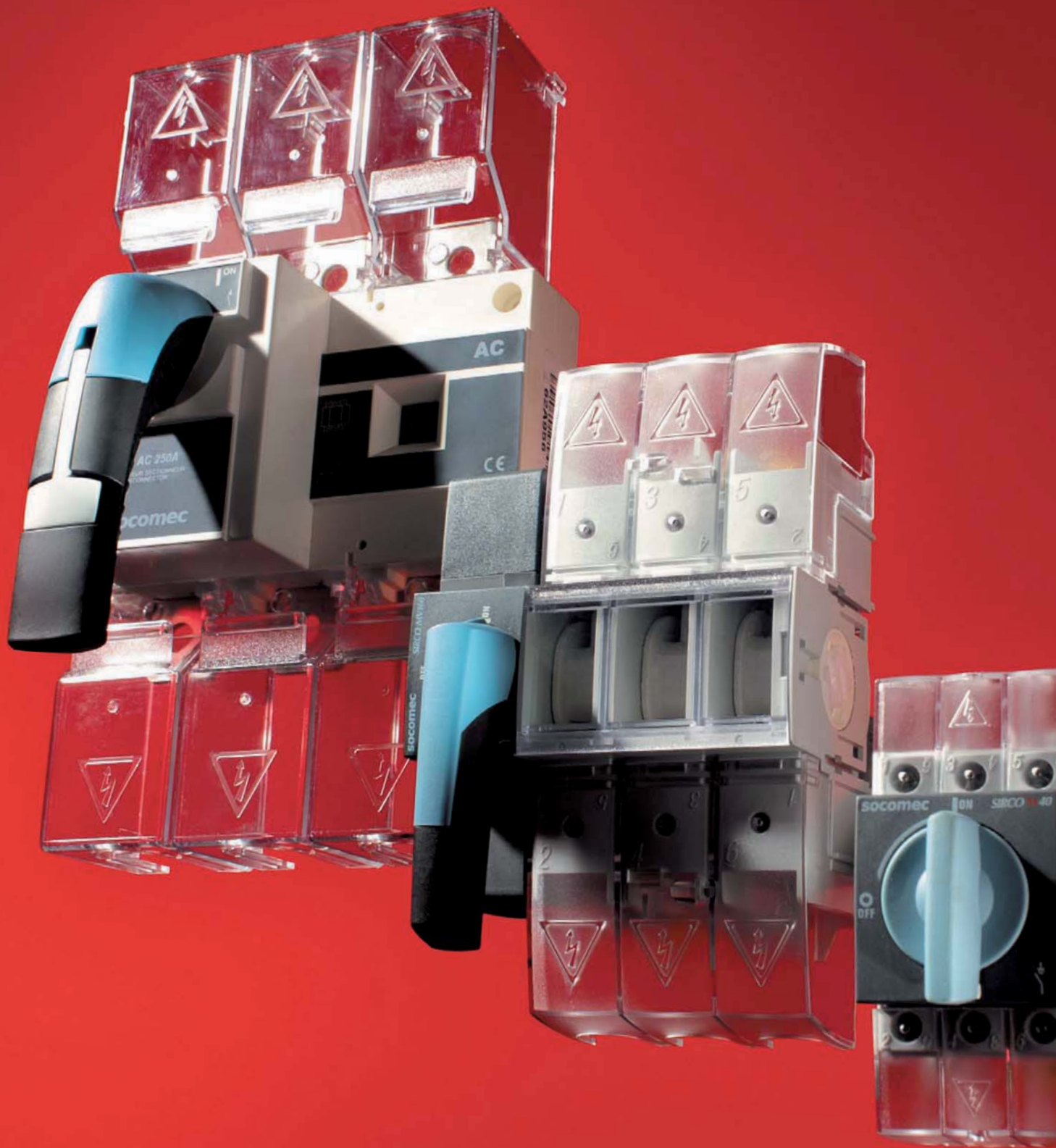
Transducers	418
Transformer with integrated transducer	504
TVSS UL98	178

U

UL/CSA range (Load break switches)	24
UL/CSA range (Fuse protection)	182
UL/CSA range (Changeover switches)	308

V

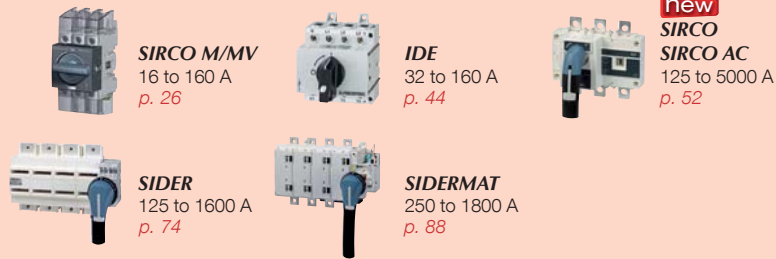
Voltage transformer BTV 25	504
VERTELIS VISION software	482



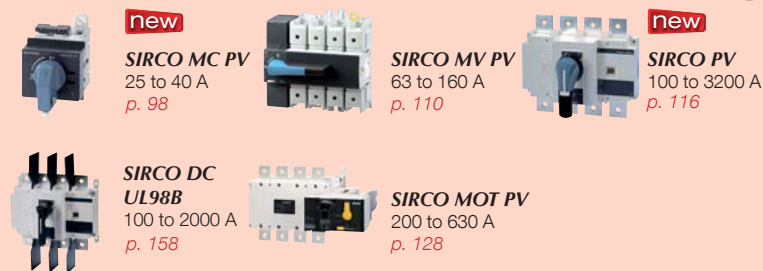
Load break switches

Load break switches for all your applications p. 20
 Why choose a load break switch designed for photovoltaic applications? p. 21
 Selection guide..... p. 22

Load break switches



Load break switches for photovoltaic applications



Specific applications

- Load break switches
- with overrated neutral
 - short-circuit performance
 - multipolar switches
 - for earthing
 - for 1000 V network
 - special motorised switches.



Load break switches standards UL and CSA



More about our products

Other product enclosures
 SOCOMEC offers you a range of pre-equipped enclosures in steel or in polyester.



Special requests
 SOCOMEC also makes specific or customised products.
 We will help you find the right solution for your application.
Please feel free to consult us.



Load break switches for all your applications

Load break switches

Machine control, power distribution and photovoltaic installations

Operating in the electrical breaking technology market since 1922, SOCOMEC is both a global leader and unrivalled benchmark.

Our range of load break switches is currently one of the widest on the market. Although the SIRCO M and SIRCO products alone meet the majority of requirements, SOCOMEC has set out to cover the entire range of applications.

Discover all our products in the selection guides in the following pages.

A specific need?

We have developed numerous special products: switches with overrated neutral, high short circuit capability switches, multipolar switches, earthing switches, switches for 1000 V networks, special motorised switches, etc.

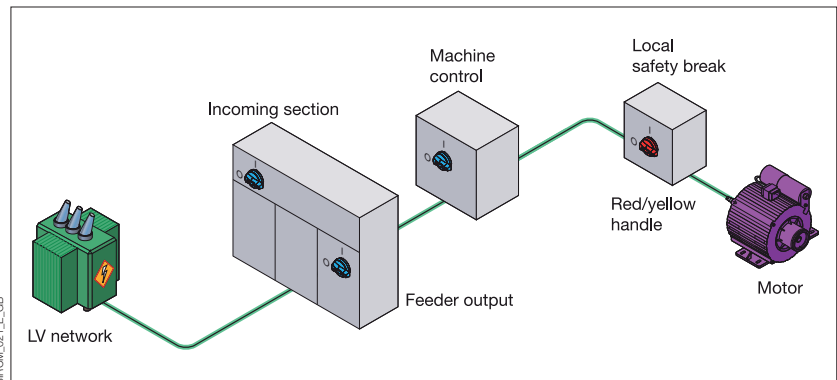
Whatever your requirements, you will find the right solution in the next few pages!



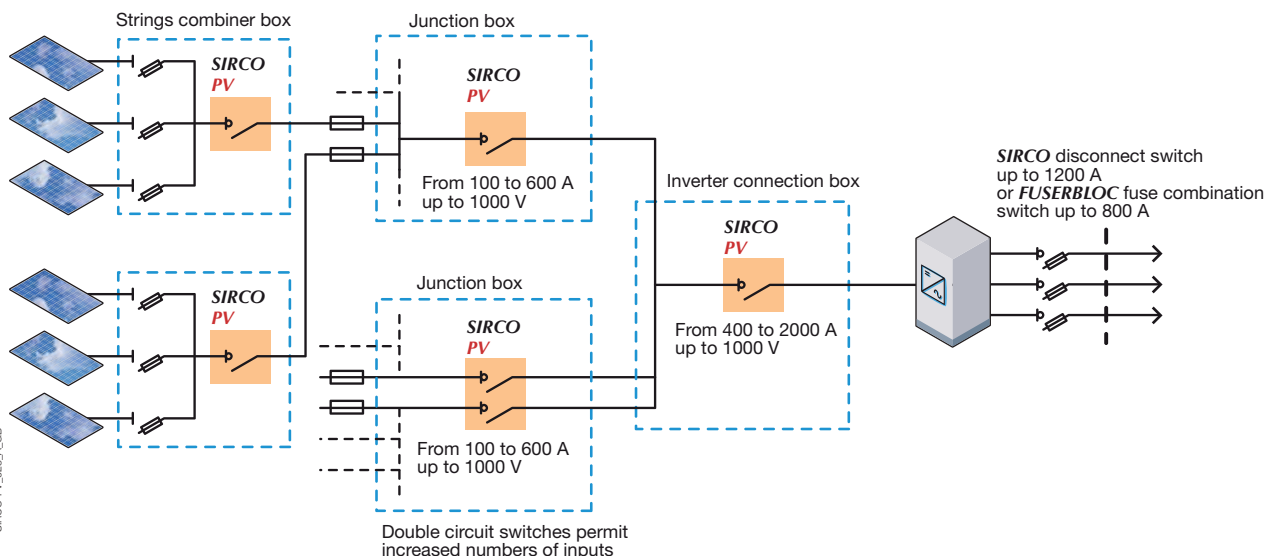
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SIRCO_021_E_GB

SOCOMEC load break switches in energy distribution and machine control applications

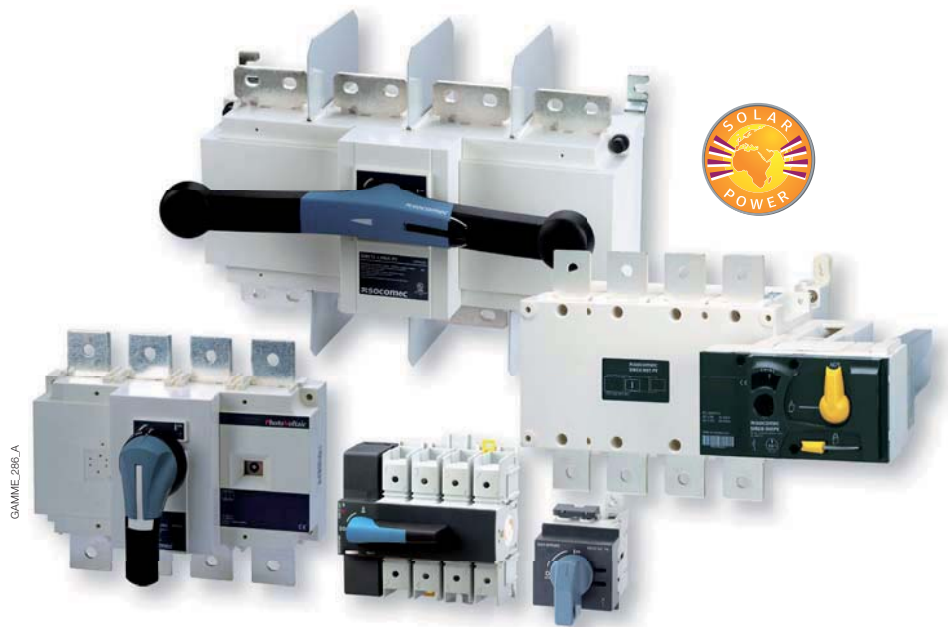


Load break switches for photovoltaic applications



SIRCO-PV_028_A_GB

Why choose a load break switch designed for photovoltaic applications?



SIRCO MC PV and SIRCO PV devices available in IEC and UL versions.

Safe operations

To ensure electrical separation during maintenance operations, or for emergency breaking to prevent a risk of fire or electrical shock, it is essential that dedicated photovoltaic switches are used.

These devices must be installed at each functional level of the installation based on its architecture.

In order to disconnect a direct current photovoltaic string, generator or UPS, only SIRCO PV or SIRCO MC PV devices can:

- Isolate the associated high DC voltages ,
- Guarantee safe on-load disconnection several thousand times across the full range of DC currents linked to daily fluctuations in sunlight, up to 1500 VDC.

Devices designed for extreme conditions

SIRCOs have been designed for industrial use. They are extremely robust, with casings made from glass fibre-reinforced thermoset materials, bringing numerous benefits:

- Stable temperatures, unlike some thermoplastics,
- Excellent resistance to high temperatures,
- Good electrical characteristics: Arc and insulation resistance,
- Good mechanical characteristics: Dimensional stability and rigidity over time.

These benefits are particularly important in photovoltaic installations, where the temperature may be below 0°C or above 50°C.

Back-to-back design, an innovative solution

The SOCOMEC range of photovoltaic load break switches enables simultaneous on-load disconnection of two circuits using a single handle.

Advantages

- **Space saving:** The overall width is the same as that of 3 or 4 pole devices. This enables significant savings, as compared to the use of two separate devices.
- **Simple connection** and integration.
- **Increasing the voltage:** Connecting the two devices in series allows on-load disconnection of voltages above 1000 VDC.
- **Doubling the rating:** By connecting the two devices in parallel.

What are the standards that apply to photovoltaic installations?

For installations

Photovoltaic installations are governed by international standards such as IEC and UL. These standards provide the guidelines for commissioning a photovoltaic installation.

- IEC 60364-7-712: Electrical installations of buildings — Requirements for special installations or locations — Solar photovoltaic (PV) power supply systems.
- IEC 62548: Installation and safety requirements for photovoltaic (PV) generators.

For breaking devices

To date there is no specific IEC standard.

Manufacturers must therefore refer to standard IEC 60947-3. **In the USA, the reference standard is UL98B.** This standard, which is more stringent than IEC 60947-3, requires strict testing, in particular concerning temperatures and resistance to electrical arcing.

SIRCO PVs have been developed in compliance with both IEC 60947-3 and UL98B.





Selection guide






Load break switches

Load break switches

Which application?



Which function?

Machine control			Power distribution	
				
SIRCO M 16 to 125 A <i>p. 26</i>	SIRCO MV 100 to 160 A <i>p. 26</i>	IDE 32 to 160 A <i>p. 44</i>	SIRCO 125 to 5000 A <i>p. 52</i>	SIRCO AC 200 to 4000 A <i>p. 52</i>

Applications

Main switchboard	•	•	•	•	•
Distribution panel	•	•	•	•	•
Emergency load break	•	•	•	•	•
Genset output	•	•	•		
Network coupling	•	•		•	•
Local safety load break	•	•	•	•	•
Machine control	•	•	•		
Photovoltaic load break					
Enclosed switches	•	•		•	

Functions

3/4 pole load break switch	•	•	•	•	•
6/8 pole load break switch	•			•	• ⁽¹⁾
3/4 pole changeover switch (I-0-II)	•			<i>p. 328</i>	<i>p. 328</i>
3/4 pole changeover switch (I-I+II-II)	•			<i>p. 328</i>	<i>p. 328</i>

Characteristics

Operation

Manual (rotating)	•	•	•	•	•
Manual toggle	•				
Trippable			•		
Motorised				<i>p. 181</i>	<i>p. 181</i>

Direct operation handle

Front	•	•	•	•	•
Side					

External operation handle

Front	•	•	•	•	•
Right side	•	•		•	
Left side	•	•			

Indication of breaking

Positive break indication	•	•	•	•	•
Visible contacts		•			

Switch body








Modular	•	•	•		
---------	---	---	---	--	--

(1) Please consult us.

Which operation handle?

Which type of breaking?

Which switch body?

	Power distribution		Photovoltaic				
							
	SIDER 125 to 1600 A <i>p. 74</i>	SIDERMAT 250 to 1800 A <i>p. 88</i>	SIRCO MC PV 25 to 40 A <i>p. 98</i>	SIRCO MV PV 63 to 160 A <i>p. 110</i>	SIRCO PV 100 to 3200 A <i>p. 116</i>	SIRCO DC PV UL 100 to 2000 A <i>p. 158</i>	SIRCO MOT PV 200 to 630 A <i>p. 128</i>
	•	•					
	•	•					
	•	•			•	•	
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			•	•	•	•	•
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	• ⁽¹⁾		•		•	•	•
					<i>p. 328</i>	<i>p. 328</i>	
	•	•	•	•	•	•	•
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	•	•	•	•	•	•	
	•	•					
	•	•	•	•	•	•	•
	•	•				• ⁽¹⁾	•
			•				



Selection guide

Load break switches - UL products

UL/CSA standards for Disconnect Switches

UL98 - Enclosed and dead front switches (equivalent to CSA-C22.2 no 4)

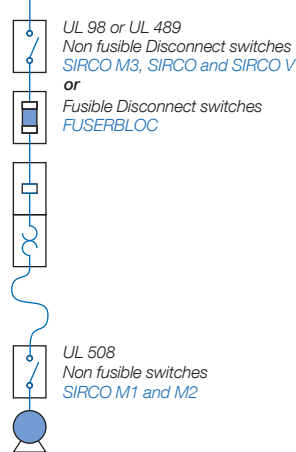
These requirements cover enclosed or dead front Switches, with or without provision for fuses, at 600 V or less.

These products are used as disconnecting means without restrictions; they are heavy duty products requiring 2 inches (50 mm) minimum of creepage distance, which gives a maximum safety for users and installation. The short circuit withstand of those products goes up to 200 kA.

UL489 - Molded case switches (equivalent to CSA-C22.2 no 5)

This requirements cover Molded-case Circuit Breaker, Molded case switches and fused Molded-case switches, rated at 600 volts or less and 6000 amperes or less.

Typical control panel



sirco-ul_c22_b_1_sar



sirco_m174_a

UL standards for Electrical Machinery

UL508 - Industrial Control Equipment (equivalent to CSA-C22.2 no 14)

These requirements cover Manual, magnetic and solidstate Starters and Controllers, Overload relays, pushbuttons, selector switches, control lights...

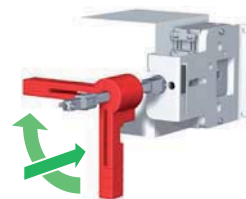
These products are IEC type products, smaller requiring only a creepage distance between phases of 1/2 inch. UL508 standard requested only 5 kA or 10 kA as short circuit withstand with fuse protection. Their use as a disconnecting mean is therefore limited to local disconnection of motors. These products can only be used as a disconnect mean when they have been additionally tested "suitable as motor disconnect". This additional testing ensures that the switch as a proper closing capacity on short circuit. UL508 (switches or Circuit breakers) can not be used as main disconnect of a electrical panel. (i.e. in entrance of control panels).

A manual motor controller marked "Suitable as motor disconnect" shall be installed only on the load side of the branch circuit protective device (UL508A 30.3.3 and NEC 430.109(6)).






NFPA 79 Electrical Standard for industrial machinery

The following types of machines are identified as industrial machinery:

- metalworking machine tools, including machines that cut or form metal,
- plastics machinery,
- wood machinery, including woodworking, laminating, and sawmill machines,
- assembly machines,
- material handling machines, including industrial robots and transfer machines,
- inspection and testing machines, including coordinate measuring and in-process gauging machines.





Machine control			Power distribution	
				
SIRCO M UL 508 16 to 80 A <i>p. 134</i>	SIRCO M UL 98 30 to 100 A <i>p. 144</i>	SIRCO UL 98 100 to 1200 A <i>p. 150</i>	SIRCO DC UL 98B 100 to 2000 A <i>p. 158</i>	TVSS UL 98 <i>p. 178</i>

Applications

Main switchboard	•	•	•		
Distribution panel	•	•	•		
Emergency load break	•	•	•	•	
Genset output		•	•		
Network coupling		•	•		
Local safety load break	•	•	•		
Machine control	•	•			
Photovoltaic load break				•	
Enclosed switches	•	•	•		
Surge protection					•

Functions

3/4 pole load break switch	•	•	•	•	•
6/8 pole load break switch	•			•	
3/4 pole changeover switch (I-0-II)	•				
3/4 pole changeover switch (I-I+II-II)	•				

Characteristics

Operation					
Manual (rotating)	•	•	•	•	•
Manual toggle	•				
Motorised			•	•	
Direct operation handle					
Front	•	•	•	•	•
External operation handle					
Front	•	•	•	•	•
Right side	•				
Indication of breaking					
Positive break indication	•	•	•	•	•
Switch body					
Modular	•	•			



SIRCO M and MV

Universal load break switches
from 16 to 160 A

Load break
switches



4 pole SIRCO M
direct operation



4 pole SIRCO MV
direct operation

Function

SIRCO M and MV are manually operated and modular multipolar load break switches.

They make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine control circuits.

Through the use of accessories, SIRCO M can be transformed into multipolar load break or 3/4 pole changeover switches. SIRCO M changeover switches provide on load changeover switching between two sources or two low voltage power circuits, as well as their safety isolation.

Advantages

Total integration

The SIRCO M and MV fully integrate isolation, breaking and switching functions.

Within a single product, SIRCO M offers front, right side or left side operation. Their highly functional design enables SIRCO M to be easily transformed from a load break switch to a changeover switch, offering a highly innovative modular solution for numerous applications.

Wide range of accessories

A single standard 3 pole load break switch module, which can be complemented with a choice of accessories, offers a range of advantages:

- Simplicity when choosing the device.
- Flexibility to adapt to the most varied applications.
- Reduction in the cost of management and storage.

Upgradeability

Its wide range of accessories means that the SIRCO M can be upgraded, even after it has been commissioned, enabling future requirements to be met.

Compliance with major certifications and approvals

The SIRCO M and MV range of load break switches have been designed, qualified and tested according to the criteria defined by standards IEC 60947-3, UL508 and UL98.

This process guarantees a high quality level for the product which is fully adapted to arduous operating environments.

General characteristics

- Double break per pole.
- Mounting options: DIN-rail, panel or modular panel with 45 mm front cut-out.
- IP20 accessories.
- Severe utilisation categories (AC-22 and AC-23).

Specific characteristics

SIRCO M:

- Positive break indication.
- Contact point technology.
- Product can be mounted directly on the door or panel side; see "Door mounting kit" in the accessory section.

SIRCO MV:

- Visible double breaking based.
- Positive break indication.

The solution for

- > Main incoming load break.
- > Distribution load break.
- > Machine control.
- > Local safety load break.



Strong points

- > Total integration.
- > Wide range of accessories.
- > Upgradeability.
- > Compliance to major certifications and approvals.
- > Specific characteristics.

Conformity to standards

- > IEC 60947-3



- > Other standards available:



*See pages SIRCO UL and CSA range

Approvals and certifications⁽¹⁾



⁽¹⁾ Product reference on request.

Local safety enclosures

- > Fitted within a polycarbonate enclosure, the SIRCO M can be used, for example, for on-load breaking of a motor (AC23).



What you need to know

SIRCO M

- SIRCO M can be operated in 3 different ways:



Complete switch body for toggle operation



Direct front operation with handle



External operation
 front, left side or right side

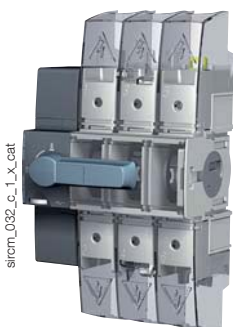
- The SIRCO M is a **3 pole** load break switch which is available from **16 to 125 A**. It can be combined with a switched 4th pole, an unswitched neutral or PE pole and pre-break and signalling auxiliary contacts.
- The basic 3 pole device is available enclosed in a polycarbonate enclosure from 16 to 100 A (see page 600).
- From **16 to 125 A**, through the wide range of available accessories, it is possible to convert a **3 pole SIRCO M into a 4, 6 or 8 pole load break switch or a 3/4 pole changeover switch**.
- Through use of its door mounting kit, SIRCO M load break switches can be mounted on the panel door.



Changeover switches I - 0 - II

SIRCO MV

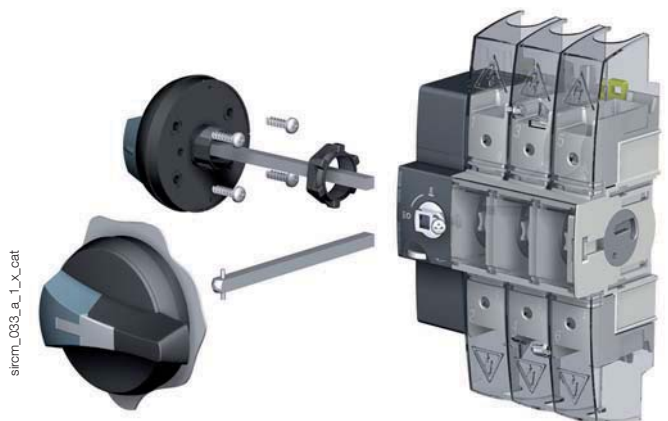
- 3 operations are available:



Direct front operation



External **right side** operation



External **front and left side** operation

- SIRCO MV can be ordered in **3 or 4 pole** from **100 to 160 A**.
- Two types of auxiliary contacts are available:
 - U-type pre-break,
 - M-type for signalisation.

SIRCO M and MV

Universal load break switches

from 16 to 160 A

References

SIRCO M

Rating (A)	No. of poles	Complete switch body with toggle operation	Switch body	Direct handle	Door interlocked external front and right side handle ⁽⁵⁾	External left side handle ⁽⁵⁾	External front handle for changeover switch ⁽⁵⁾	Shaft for external front and side handle ⁽⁵⁾	4 th pole
16 A	3 P	2205 3000	2200 3000 ⁽¹⁾⁽²⁾⁽³⁾						2200 1000
20 A	3 P	2205 3001	2200 3001 ⁽¹⁾⁽²⁾⁽³⁾		S00 type I-0				2200 1001
25 A	3 P	2205 3002	2200 3002 ⁽¹⁾⁽²⁾⁽³⁾	M00 type	Black IP55 1471 1111 ⁽⁴⁾	S00 type I-0			2200 1002
32 A	3 P	2205 3003	2200 3003 ⁽¹⁾⁽²⁾⁽³⁾	Blue 2299 5012	Black IP65 1473 1111 ⁽⁴⁾	Black IP65 147A 5111			2200 1003
40 A	3 P	2205 3004	2200 3004 ⁽¹⁾⁽²⁾⁽³⁾	Red 2299 5013	Red/Yellow IP65 1474 1111 ⁽⁴⁾	Red/Yellow IP65 147B 5111	S00 type	S0, S00 type	2200 1004
63 A	3 P	2205 3006	2200 3006 ⁽¹⁾⁽²⁾⁽³⁾				I-0 - II Black IP65 1473 1113 ⁽⁴⁾	150 mm 1407 0515	2200 1006
80 A	3 P	2205 3008	2200 3008 ⁽¹⁾⁽²⁾⁽³⁾				I - I+II - II Black IP65 1473 1114 ⁽⁴⁾	200 mm 1407 0520	2200 1008
100 A	3 P		2200 3010 ⁽¹⁾⁽²⁾⁽³⁾	M01 type	S0 type I-0 Black IP55 1481 1111 ⁽⁴⁾	S0 type I-0 Black IP65 148A 5111		320 mm 1407 0532	2200 1010
125 A	3 P		2200 3011 ⁽¹⁾⁽²⁾⁽³⁾	Blue 2299 5032	Black IP65 1483 1111 ⁽⁴⁾ Red/Yellow IP65 1484 1111 ⁽⁴⁾	Red/Yellow IP65 148B 5111			2200 1011

(1) Front and side operation.

(2) For a 6-pole device in direct operation, order 2 x 3 pole device + conversion kit (for external operation, add the shaft + the handle).

(3) For an 8-pole device in direct operation, order 2 x 3 pole device + 2 x 4th poles + conversion kit (for external operation, add the shaft + the handle).

(4) Defeatable handle.

(5) Other handles are available. Please see accessory pages.

SIRCO M

Rating (A)	No. of poles	Complete switch body toggle operation	Switch body	Unswitched neutral pole	Unswitched protective earth module	Auxiliary contact	Terminal shrouds	Door mounting kit
16 A	3 P	2205 3000	2200 3000 ⁽¹⁾⁽²⁾⁽³⁾				1 P 2294 1005 ⁽⁴⁾ 3 P 2294 3005 ⁽⁴⁾	3/4 P Complete protection IP2X 2299 3309 ⁽⁵⁾ Compact design 2209 3409 ⁽⁵⁾
20 A	3 P	2205 3001	2200 3001 ⁽¹⁾⁽²⁾⁽³⁾					
25 A	3 P	2205 3002	2200 3002 ⁽¹⁾⁽²⁾⁽³⁾					
32 A	3 P	2205 3003	2200 3003 ⁽¹⁾⁽²⁾⁽³⁾					
40 A	3 P	2205 3004	2200 3004 ⁽¹⁾⁽²⁾⁽³⁾					
63 A	3 P	2205 3006	2200 3006 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5005	1 P 2200 9005	M-type contact	1 P 2294 1009 ⁽⁴⁾ 3 P 2294 3009 ⁽⁴⁾	6/8 P Steel support 2299 3609 ⁽⁵⁾
80 A	3 P	2205 3008	2200 3008 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5009	1 P 2200 9009	NO + NC 2299 0001		
100 A	3 P		2200 3010 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5011	1 P 2200 9011	2 NO 2299 0011		
125 A	3 P		2200 3011 ⁽¹⁾⁽²⁾⁽³⁾				1 P 2294 1011 ⁽⁴⁾ 3 P 2294 3016 ⁽⁴⁾	3/4 P Steel support 2299 3609 ⁽⁵⁾

(1) Front and side operation.

(2) For a 6-pole device in direct operation, order 2 x 3 pole device + conversion kit (for external operation, add the shaft + the handle).

(3) For an 8-pole device in direct operation, order 2 x 3 pole device + 2 x 4th poles + conversion kit (for external operation, add the shaft + the handle).

(4) Top and bottom.

(5) Delivered with a shaft.

SIRCO M and MV

Universal load break switches

from 16 to 160 A

References (continued)

SIRCO MV

Rating (A)	No. of poles	Switch body	Direct handle	External front and right side handle ⁽⁴⁾	External left side handle ⁽⁴⁾	Shaft for external front and side handle ⁽⁴⁾	Auxiliary signal contact	Pre-break auxiliary contact	Terminal shrouds
100 A	3 P	2200 3110							
	4 P	2200 4110							
125 A	3 P	2200 3012	M0b type Blue 2299 5042 ⁽¹⁾	S0 type I-0 Black IP65 1491 0111 ⁽²⁾	S0 type I-0 Black IP65 149A 9111	S0 type 150 mm 1409 0615	M-type contact NO + NC 2299 0001	U type 1 contact NC 3999 0701	3 P 2294 3016 ⁽³⁾
	4 P	2200 4012							
160 A	3 P	2200 3016		Red/Yellow IP65 1494 0111 ⁽²⁾		320 mm 1409 0632			
	4 P	2200 4016							

(1) Standard.

(2) Defeatable handle.

(3) Top and bottom.

(4) Other handles are available. Please see accessory pages.

Accessories

Direct operation handle

SIRCO M			
Rating (A)	Handle colour	Handle	Reference
16 ... 80	Blue	M00 type	2299 5012 ⁽¹⁾
16 ... 80	Red	M00 type	2200 5013
100 ... 125	Blue	M01 type	2200 5032 ⁽¹⁾

(1) Standard.

SIRCO MV			
Rating (A)	Handle colour	Handle	Reference
100 ... 160	Blue	M0b type	2299 5042 ⁽¹⁾
100 ... 160	Blue	M0 type	2299 5022

(1) Standard.



SIRCO M - External operation handle

S000 type handle							
Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
16 ... 80	Switch	3/4 P	Front and side operation	Black	IP65	no	1463 5111
16 ... 80	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	no	1464 5111
16 ... 80	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	no	1463 5113
16 ... 80	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	no	1463 5114



S00 type handle							
Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
16 ... 80	Switch	3/4 P ⁽¹⁾	Front and side operation	Black	IP55	yes	1471 1111
16 ... 80	Switch	3/4 P ⁽¹⁾	Front and side operation	Black	IP65	yes	1473 1111
16 ... 80	Switch	3/4 P ⁽¹⁾	Front and side operation	Red/Yellow	IP65	yes	1474 1111
16 ... 80	Switch	3/4 P	Left side	Black	IP65	no	147A 5111
16 ... 80	Switch	3/4 P	Left side	Red/Yellow	IP65	no	147B 5111
100 ... 125	Switch	6/8 P	Front	Black	IP55	yes	1471 0111
100 ... 125	Switch	6/8 P	Front	Black	IP65	yes	1473 0111
100 ... 125	Switch	6/8 P	Front	Red/Yellow	IP65	yes	1474 0111
16 ... 80	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1473 1113
16 ... 80	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1473 1114
100 ... 125	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1473 0113
100 ... 125	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1473 0114

(1) Can also be used with 6 and 8 poles with front operation.



S0 type handle							
Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
100 ... 125	Switch	3/4 P	Front and side operation	Black	IP55	yes	1481 1111
100 ... 125	Switch	3/4 P	Front and side operation	Black	IP65	yes	1483 1111
100 ... 125	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	yes	1484 1111
100 ... 125	Switch	3/4 P	Left side	Black	IP65	no	148A 5111
100 ... 125	Switch	3/4 P	Left side	Red/Yellow	IP65	no	148B 5111



S01 type handle							
Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
16 ... 125	Switch	3/4 P ⁽²⁾	Front and side operation	Black	IP65	yes	1403 2111
16 ... 125	Switch	3/4 P ⁽²⁾	Front and side operation	Red/Yellow	IP65	yes	1404 2111
16 ... 125	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1403 2113
16 ... 125	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1403 2813 ⁽¹⁾
16 ... 125	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1403 2114
16 ... 125	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1403 2814 ⁽¹⁾

(1) Padlockable in 3 positions

(2) Can also be used with 6 and 8 pole devices from 16 to 40 A.



SIRCO M and MV

Universal load break switches

from 16 to 160 A

Accessories (continued)

SIRCO MV - External operation handle

S0 type handle							
Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
100 ... 160	Switch	3/4 P	Front and side operation	Black	IP55	yes	1491 0111
100 ... 160	Switch	3/4 P	Front and side operation	Black	IP65	yes	1493 0111
100 ... 160	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	yes	1494 0111
100 ... 160	Switch	3/4 P	Left side	Black	IP65	no	149A 9111
100 ... 160	Switch	3/4 P	Left side	Red/Yellow	IP65	no	149B 9111



S0 handle

access_343_a

S1 type handle							
Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
100 ... 160	Switch	3/4 P	Front	Black	IP55	yes	1411 2111
100 ... 160	Switch	3/4 P	Front	Black	IP65	yes	1413 2111
100 ... 160	Switch	3/4 P	Front	Red/Yellow	IP65	yes	1414 2111
100 ... 160	Switch	3/4 P	Right side	Black	IP55	no	1415 2111
100 ... 160	Switch	3/4 P	Right side	Black	IP65	no	1517 2111
100 ... 160	Switch	3/4 P	Right side	Red/Yellow	IP65	no	1418 2111
100 ... 160	Switch	3/4 P	Left side	Black	IP65	no	141A 2111
100 ... 160	Switch	3/4 P	Left side	Red/Yellow	IP65	no	141B 2111



S1 Handle

access_284_a_2_cat

Shaft for external handle

SIRCO M 3/4 P				
Rating (A)	Handle	Type	Length (mm)	Reference
16 ... 125	S000/S00/S0 type	Switch	150 mm	1407 0515
16 ... 125	S000/S00/S0 type	Switch	200 mm	1407 0520
16 ... 125	S000/S00/S0 type	Switch	320 mm	1407 0532
16 ... 125	S01 type	Switch	200 mm	1404 0520
16 ... 125	S01 type	Switch	320 mm	1404 0532
16 ... 125	S01 type	Switch	400 mm	1404 0540



access_346_a_1_cat

SIRCO M 6/8 P load break switch and 3/4 P changeover switch				
Rating (A)	Handle	Type	Length (mm)	Reference
16 ... 80	S00, S000 type	6/8 P and changeover switch	150 mm	1407 0515
16 ... 80	S00, S000 type	6/8 P and changeover switch	200 mm	1407 0520
16 ... 80	S00, S000 type	6/8 P and changeover switch	320 mm	1407 0532
100 ... 125	S00 type	6/8 P and changeover switch	150 mm	1409 0615
100 ... 125	S00 type	6/8 P and changeover switch	200 mm	1409 0620
100 ... 125	S00 type	6/8 P and changeover switch	320 mm	1409 0632
16 ... 40	S01 type	6/8 P	200 mm	1404 0520
16 ... 40	S01 type	6/8 P	320 mm	1404 0532
16 ... 40	S01 type	6/8 P	400 mm	1404 0540
16 ... 80	S01 type	Changeover switch	200 mm	1404 0520
16 ... 80	S01 type	Changeover switch	320 mm	1404 0532
16 ... 80	S01 type	Changeover switch	400 mm	1404 0540
100 ... 125	S01 type	Changeover switch	150 mm	1409 0615
100 ... 125	S01 type	Changeover switch	200 mm	1409 0620
100 ... 125	S01 type	Changeover switch	320 mm	1409 0632

Use

Standard lengths:

- 150 mm,
- 200 mm,
- 320 mm,
- 400 mm.

Other lengths: Please consult us.

For 3/4 pole switches, shaft extensions are for external front and side operation.

For 6/8 pole switches and changeover switches, shaft extensions are for front operation only.

For SIRCO MV				
Rating (A)	Handle	Type	Length (mm)	Reference
100 ... 160	S0 type	Switch	150 mm	1409 0615
100 ... 160	S0 type	Switch	200 mm	1409 0620
100 ... 160	S0 type	Switch	320 mm	1409 0632
100 ... 160	S1 type	Switch	200 mm	1401 0620
100 ... 160	S1 type	Switch	320 mm	1401 0632
100 ... 160	S1 type	Switch	400 mm	1401 0640

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

This accessory enables handle to engage extension shaft with a misalignment of up to 15 mm.
Required for a shaft lengths over 320 mm.



access_260_a_2_cat

Description	Handle type	To be ordered in multiples of	Reference
Shaft guide	S00 and S0 / S000	10 pieces	1419 0000
Shaft guide	S01 and S1	1 piece	1429 0000

4th pole- Additional pole for SIRCO M

Use

Installation of this switched pole converts:

- a 3 pole SIRCO M into a 4 pole load break switch,
- a 6 pole SIRCO M into an 8 pole load break switch,
- a 3 pole SIRCO M changeover switch into a 4 pole changeover switch..

Rating (A)	No. of poles	Type	Reference
16	1 P	switched	2200 1000
20	1 P	switched	2200 1001
25	1 P	switched	2200 1002
32	1 P	switched	2200 1003
40	1 P	switched	2200 1004
63	1 P	switched	2200 1006
80	1 P	switched	2200 1008
100	1 P	switched	2200 1010
125	1 P	switched	2200 1011



4th pole



Protective earth module



Neutral pole

access_322_a

access_323_a

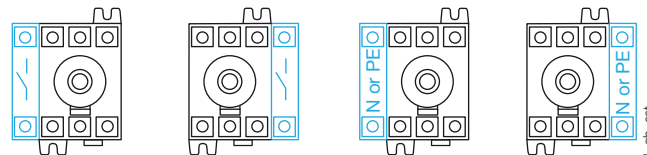
access_324_a

Neutral pole

Use

Provides a solid neutral pole for a 3 pole SIRCO M.

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 5005
63 ... 80	1 P	unswitched	2200 5009
100 ... 125	1 P	unswitched	2200 5011



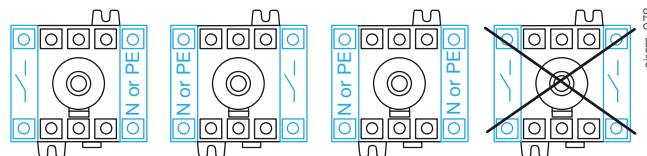
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Protective earth module

Use

Provides a protective earth pole for a 3/4 pole SIRCO M.

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 9005
63 ... 80	1 P	unswitched	2200 9009
100 ... 125	1 P	unswitched	2200 9011



Additional pole configuration

Terminal shrouds

Use

Top and bottom protection against direct contact with the terminals or connection parts.

Available in 1 or 3 pole versions for SIRCO M and in 3 or 4 pole versions for SIRCO MV.

An opening on each terminal cover makes it possible to insert a temperature measurement probe.

For SIRCO M			
Rating (A)	No. of poles	Position	Reference
16 ... 40	1 P	top and bottom	2294 1005
16 ... 40	3 P	top and bottom	2294 3005
63 ... 80	1 P	top and bottom	2294 1009
63 ... 80	3 P	top and bottom	2294 3009
100 ... 125	1 P	top and bottom	2294 1011
100 ... 125	3 P	top and bottom	2294 3016

For SIRCO MV			
Rating (A)	No. of poles	Position	Reference
100 ... 160	3 P	top and bottom	2294 3016
100 ... 160	4 P	top and bottom	2294 4016



SIRCO M 3P



SIRCO M 1P

access_328_a

access_329_a



SIRCO MV 3P



SIRCO MV 4P

access_327_a

access_326_a

SIRCO M and MV

Universal load break switches

from 16 to 160 A

Accessories (continued)

M type auxiliary contacts

Use

Pre-break and signalisation of positions 0 and I by NO+NC or 2 NO auxiliary contacts. They allow to anticipate the switching of the main poles. They can be mounted on the left or on the right side of the device.

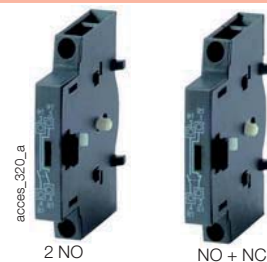
Max 4 auxiliary contacts (2 modules).

Pre-break is not guaranteed on the SIRCO MV.

Characteristics

NO+NC auxiliary contacts: IP2 with front operation.

M type

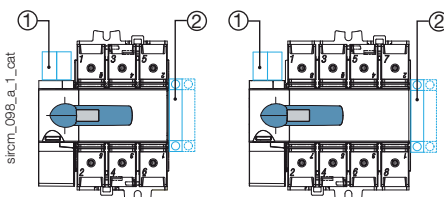


SIRCO M			
Rating (A)	Number of AC	Type of AC	Reference
16 ... 125	1 AC	NO + NC	2299 0001
16 ... 125	1 AC	2 NO	2299 0011
SIRCO MV			
Rating (A)	Number of AC	Type of AC	Reference
100 ... 160	1 AC	NO + NC	2299 0001
100 ... 160	1 AC	2 NO	2299 0011

Characteristics

Contact type	Nominal current (A)	Operating current I _o (A)	
		230 VAC	
		AC-13	AC-15
NO + NC	10	10	6

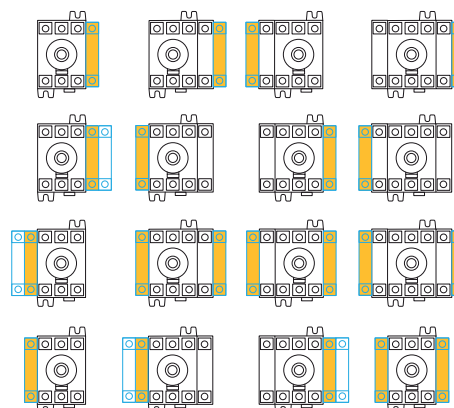
Auxiliary contact configurations for SIRCO MV



1. Maximum 2 "U" type auxiliary contacts.
2. Maximum 2 "M" type auxiliary contact modules.

Auxiliary contact configurations for SIRCO M

Max: 2 blocks / Max: 2 AC



sircm_188_a_1_gb_cat

sircm_048_a_1_x_cat

For SIRCO MV

Rating (A)	Number of AC	Type of AC	Reference
100 ... 160	1 AC	NC	3999 0701
100 ... 160	1 AC	NO	3999 0702

Characteristics

Contact type	Nominal current (A)	Operating current I _o (A)			
		250 VAC	400 VAC	24 VDC	48 VDC
		AC-15	AC-15	DC-13	DC-13
NC	10	3	1.8	2.8	1.4
NO	10	3	1.8	2.8	1.4

U type



Use

Pre-break and signalisation by NO or NC auxiliary contact.

Maximum 2 auxiliary contacts. Only available for SIRCO MV switches.

Conversion kit

Use

This accessory enables the assembly of two 3 pole switches (+ additional pole) in order to create a:

- 6 or 8 pole SIRCO M load break switch,
- a 3 or 4 pole SIRCO M changeover switch.

SIRCO M changeover switches provide on load changeover switching between two sources or two low voltage power circuits, as well as their safety isolation (I - 0 - II); transfer without interruption of the supply is also possible (I - I+II - II).

Conversion kits are supplied with a direct front operation handle. For external operation the appropriate handle needs to be ordered.

Conversion kit for 6 or 8 pole load break switches



access_348_a

Conversion kit for changeover switches I - 0 - II



access_49_a



access_350_a

Conversion kit for changeover switches I - I+II - II

Load break switches 6/8 P		
Rating (A)	Type	Reference
16 ... 80	6/8P switch	2269 6009
100 ... 125	6/8P switch	2269 6011

Changeover switches I - 0 - II		
Rating (A)	Type	Reference
16 ... 80	Changeover switches I - 0 - II	2209 6009
100 ... 125	Changeover switches I - 0 - II	2209 6011

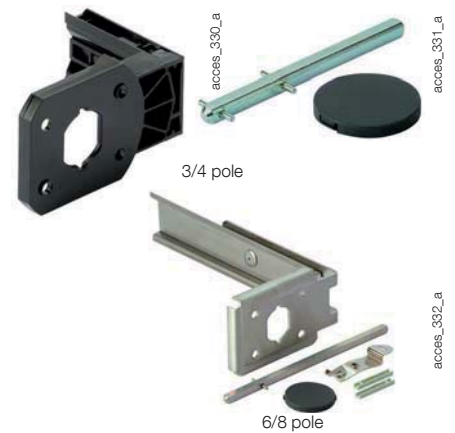
Changeover switches I - I+II - II		
Rating (A)	Type	Reference
16 ... 80	Changeover switches I - I+II - II	2299 6009
100 ... 125	Changeover switches I - I+II - II	2299 6011

Door mounting kit

Use

This kit enables the direct mounting of the switch on the panel door, or on the left or right side of the panel.
 The connection clamps of the switch are always accessible.

The external handle is quick and easy to install with the supplied locking nut mounted on the inside of the enclosure.
 3 kits are available:
 - one for complete IP2X protection
 - one with compact design
 - one in steel for 6/8 P and 3/4 P 100/125 A.



For SIRCO M

Rating (A)	No. of poles	Description	Reference
16 ... 80	3/4 P	Complete IP2X protection	2299 3309
16 ... 80	3/4 P	Compact version	2299 3409
16 ... 80	6/8 P	Steel support	2299 3609
100 ... 125	3/4 P	Steel support	2299 3609

Cap for side operation mounting

Use

This accessory enables the front face of the SIRCO M to be capped when the switch is side operated. 20 pieces supplied per pack.

This piece snaps into place directly on the front face of the switch.



For SIRCO M

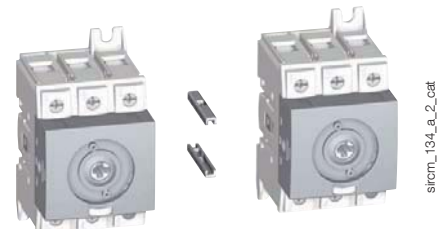
Rating (A)	Pack	Reference
16 ... 125	20 pieces	2299 9409

6/8 pole joining accessory

Use

This accessory enables two 3/4 pole switches to be coupled in order to provide a 6 or 8 pole switch for external side operation. 40 pieces supplied per pack.

For multi-pole switches, please consult us.



For SIRCO M

Rating (A)	Pack	Reference
16 ... 80	40 pieces	2299 9909

DIN rail locking clip

Use

This locking clip prevents the SIRCO MV from sliding when DIN rail mounted.

For SIRCO MV

Rating (A)	Type	Reference
100 ... 160	Locking clip M4	5000 0041
100 ... 160	Locking clip M5	5000 0051



Voltage sensing and power supply tap

Use

This single-pole voltage sensing tap allows the connection of 2 x ≤1,5 mm² voltage sensing or power cables to any SIRCO MV power terminal without reducing its connection capacity.

For SIRCO MV

Rating (A)	Pack	Reference
100 ... 160	2 pieces	1399 4006



Characteristics according to IEC 60947-3

SIRCO M - 16 to 125 A

Thermal current I_{th} (40 °C)	16 A	20 A	25 A	32 A	40 A	63 A	80 A	100 A	125 A
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	63/63	63/63	80/80	100/100
690 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
690 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
690 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	32/40	40/63	63/80	80/100	100/125
690 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	40/40	40/40	63/63	63/63

110 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
110 VDC	DC-21 A / DC-21 B	16/16 ⁽²⁾	20/20 ⁽²⁾	25/25 ⁽²⁾	32/32 ⁽²⁾	40/40 ⁽²⁾	63/63 ⁽²⁾	80/80 ⁽²⁾	100/100 ⁽²⁾	125/125 ⁽²⁾
250 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
250 VDC	DC-21 A / DC-21 B	16/16 ⁽³⁾	20/20 ⁽³⁾	25/25 ⁽³⁾	32/32 ⁽³⁾	40/40 ⁽³⁾	63/63 ⁽³⁾	80/80 ⁽³⁾	100/100 ⁽³⁾	125/125 ⁽³⁾
400 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
400 VDC	DC-21 A / DC-21 B	16/16 ⁽⁴⁾	20/20 ⁽⁴⁾	25/25 ⁽⁴⁾	25/25 ⁽⁴⁾	25/25 ⁽⁴⁾	40/40 ⁽⁴⁾	40/40 ⁽⁴⁾	63/63 ⁽⁴⁾	63/63 ⁽⁴⁾

Operational power in AC-23 (kW)

400 VAC without pre-break AC(kW) ⁽⁵⁾	7.5	9	11	15	18.5	30	37	45	55
500 VAC without pre-break AC(kW) ⁽⁵⁾	7.5	9	11	15	18.5	30	37	45	55
690 VAC without pre-break AC(kW) ⁽⁵⁾	7.5	11	15	15	15	30	37	45	55

Fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	50	50	50	50	50	50	50	25	25
Associated fuse rating (A)	16	20	25	32	40	63	80	100	125

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	2.5	2.5	2.5	2.5	2.5	3	3	5	5
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	1.26	1.26	1.26	1.26	1.26	1.5	1.5	2.75	2.75
Rated short-circuit making capacity without fuses I_{cm} (kA peak)	1.8	1.8	1.8	1.8	1.8	2.1	2.1	3.9	3.9

Connection

Maximum Cu cable cross-section (mm ²)	1.5	1.5	1.5	1.5	1.5	2.5	2.5	10	10
Maximum Cu cable cross-section (mm ²)	16	16	16	16	16	35	35	70	70
Tightening torque min/max (Nm)	2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	3.5 / 3.85	3.5 / 3.85	4/4.4	4/4.4

Mechanical characteristics

Durability (number of operating cycles)	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000
Operating effort - 3 pole device (Nm)	1	1	1	1	1	1.4	1.4	1.6	1.6
Operating effort - 4 pole device (Nm)	1.2	1.2	1.2	1.2	1.2	1.6	1.6	2	2
Weight of a 3 pole device (kg)	0.18	0.18	0.18	0.18	0.18	0.27	0.27	0.55	0.55
Weight of a 4 pole device (kg)	0.23	0.23	0.23	0.23	0.23	0.33	0.33	0.72	0.72
Weight of a 6 pole device (kg)	0.40	0.40	0.40	0.40	0.40	0.59	0.59	1.30	1.30
Weight of a 8 pole device (kg)	0.50	0.50	0.50	0.50	0.50	0.69	0.69	1.65	1.65
Weight of a 3 pole device (kg)	0.40	0.40	0.40	0.40	0.40	0.59	0.59	1.30	1.30
Weight of a 4 pole device (kg)	0.50	0.50	0.50	0.50	0.50	0.69	0.69	1.65	1.65

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) one pole per polarity.

(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 415$ VAC

Characteristics according to IEC 60947-3

SIRCO MV - 100 to 160 A

Thermal current I_{th} (40 °C)	100 A	125 A	160 A
Rated insulation voltage U_i (V)	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
415 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	100/100	125/125	125/160
500 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
500 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
500 VAC	AC-22 A / AC-22 B	100/100	125/125	125/160
500 VAC	AC-23 A / AC-23 B	80/80	100/100	100/100
690 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
690 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
690 VAC	AC-22 A / AC-22 B	63/80	80/100	100/125
690 VAC	AC-23 A / AC-23 B	63/63	80/80	80/80

110 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
110 VDC	DC-21 A / DC-21 B	100/100 ⁽²⁾	125/125 ⁽²⁾	160/160 ⁽²⁾
250 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
250 VDC	DC-21 A / DC-21 B	100/100 ⁽³⁾	125/125 ⁽³⁾	160/160 ⁽³⁾
400 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
400 VDC	DC-21 A / DC-21 B	100/100 ⁽⁴⁾	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾

Operational power in AC-23 (kW)

400 VAC without pre-break AC(kW) ⁽⁵⁾	45	55	75
500 VAC without pre-break AC(kW) ⁽⁵⁾	45	55	75
690 VAC without pre-break AC(kW) ⁽⁵⁾	45	75	75

Fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	100	65	50
Associated fuse rating (A)	100	125	160

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	7	7	7
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	4	4	4
Rated short-circuit making capacity without fuses I_{cm} (kA peak)	7	7	7

Connection

Maximum Cu cable cross-section (mm ²)	10	10	10
Maximum Cu cable cross-section (mm ²)	70	70	70
Tightening torque min/max (Nm)	4 / 4.4	4 / 4.4	4 / 4.4

Mechanical characteristics

Durability (number of operating cycles)	50 000	50 000	50 000
Operating effort - 3 pole device (Nm)	4	4	4
Operating effort - 4 pole device (Nm)	4.2	4.2	4.2
Weight of a 3 pole device (kg)	0.68	0.68	0.68
Weight of a 4 pole device (kg)	0.85	0.85	0.85

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) One pole per polarity.

(3) 2 poles in series for the "+" and 1 pole for the "-".

(4) 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_s = 415$ VAC.

SIRCO M and MV

Universal load break switches

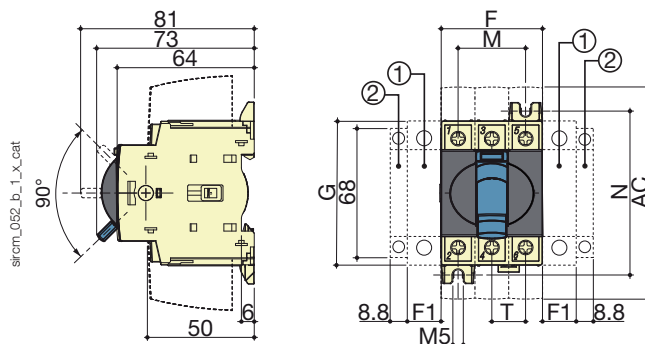
from 16 to 160 A

Dimensions

SIRCO M

SIRCO M 16 to 80 A

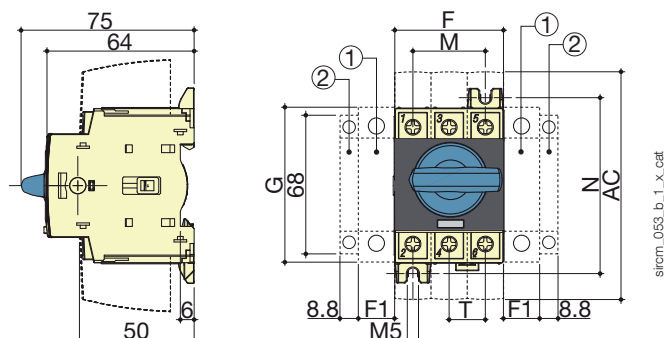
Toggle operation



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

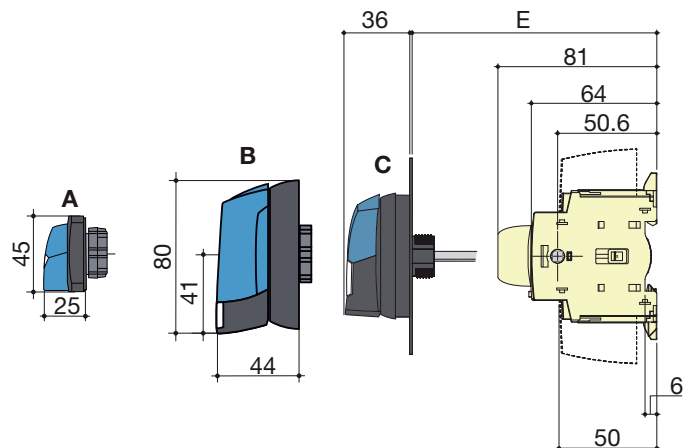
Direct operation with handle



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

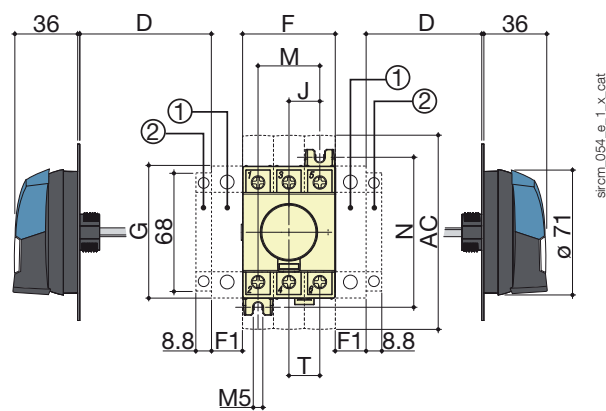
External front operation



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

External side operation



- A. S000 Handle
- B. S01 Handle.
- C. S00 Handle.

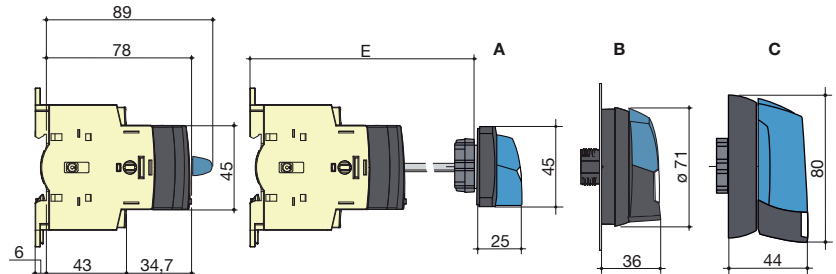
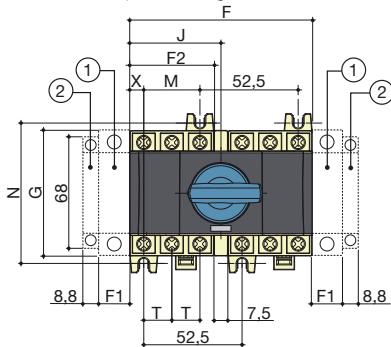
Rating (A)	Overall dimensions				Terminal shrouds		Switch body				Switch mounting		Connection
	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T	
16...40	30	235	100	372	110	45	15	68	15	30	75	15	
63...80	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5	

SIRCO M

SIRCO M 16 to 80 A (continued)

Direct front operation for 6/8 pole load break switches or 3/4 pole changeover switches.

External front operation for 6/8 pole load break switches or 3/4 pole changeover switches.



- 1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.

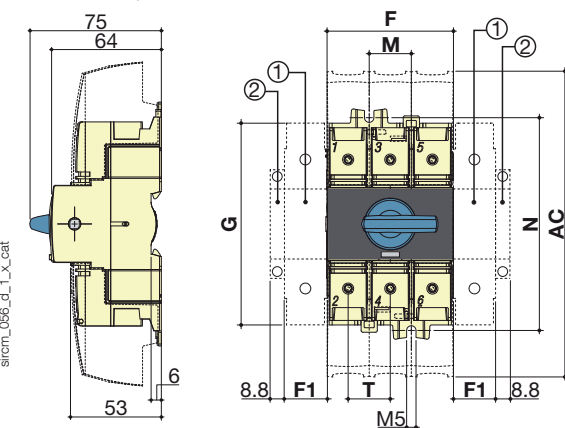
- 2. Position for 1 auxiliary contact module only.
- Note: max 2 additional blocks.**

- A. S000 Handle.
- B. S00 Handle.
- C. S01 Handle.

Rating (A)	Overall dimensions		Switch body					Switch mounting		Connection	
	E min	E max	F	F1	F2	G	J	M	N	T	X
16...40	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63...80	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

SIRCO M 100 to 125 A

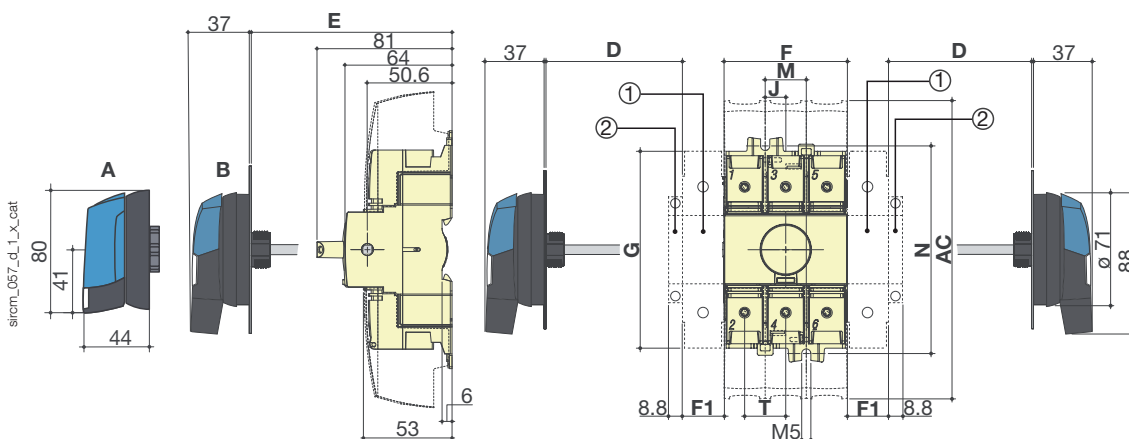
Direct operation with handle



- 1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
 - 2. Position for 1 auxiliary contact module only.
- Note: max 2 additional blocks.**

External front operation

External side operation



- 1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.

- 2. Position for 1 auxiliary contact module only.
- Note: max 2 additional blocks.**

- A. S01 Handle.
- B. S0 Handle.

Rating (A)	Overall dimensions				Terminal shrouds	Switch body				Switch mounting		Connection
	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
100 ... 125	30	201	100	372	189	78	26	124.6	13	26	131.4	26

SIRCO M and MV

Universal load break switches

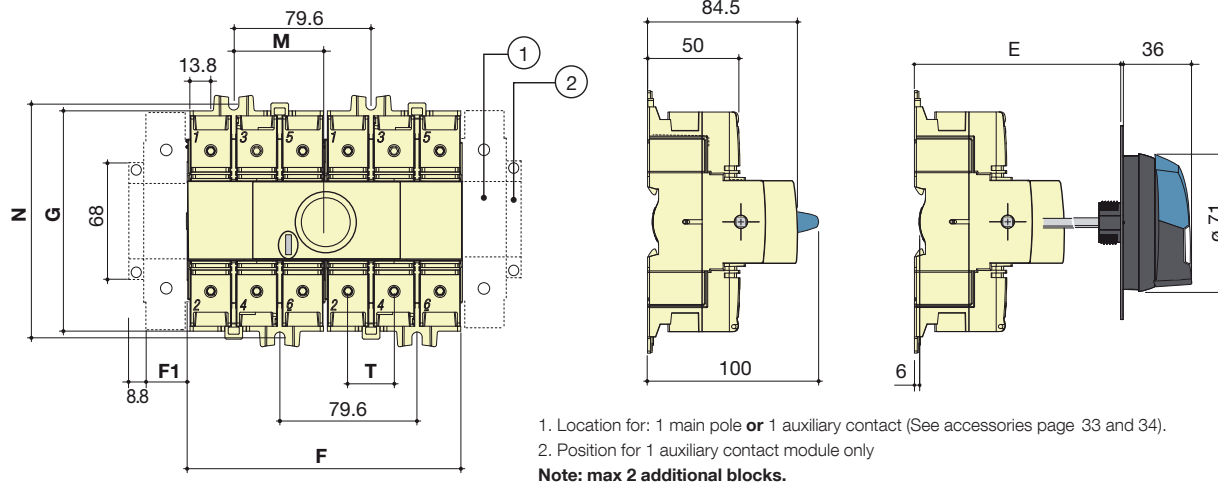
from 16 to 160 A

Dimensions (continued)

SIRCO M 100 to 125 A 6/8 P and 3/4 P changeover switch

Direct front operation for 3/4 pole changeover switches

External front operation for 3 and 4 pole changeover switches



sirco_m_183_e_1_x_cat

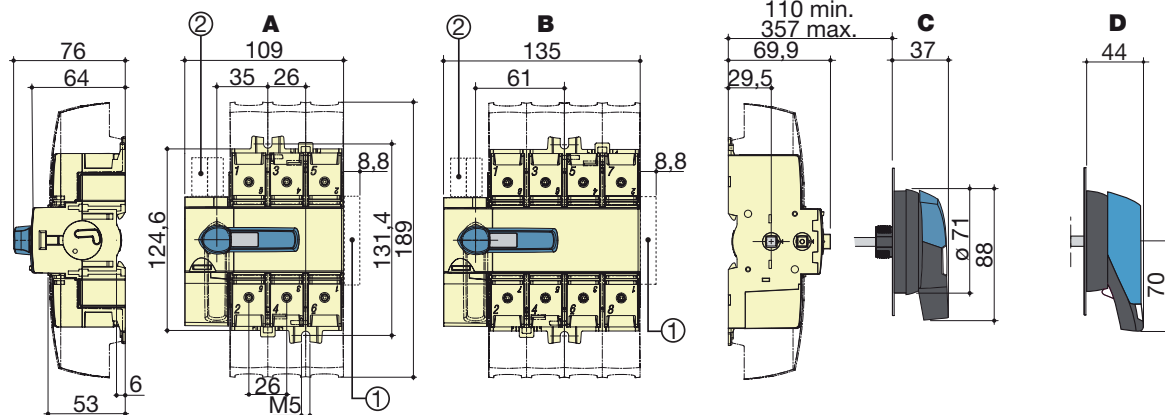
Rating (A)	Overall dimensions		Switch body			Switch mounting		Connection
	E min	E max	F	F1	G	M	N	
100 ... 125	105	372	159	26	124.5	52.8	131.5	26

SIRCO MV

SIRCO MV - 100 to 160 A

Direct front operation

External front operation



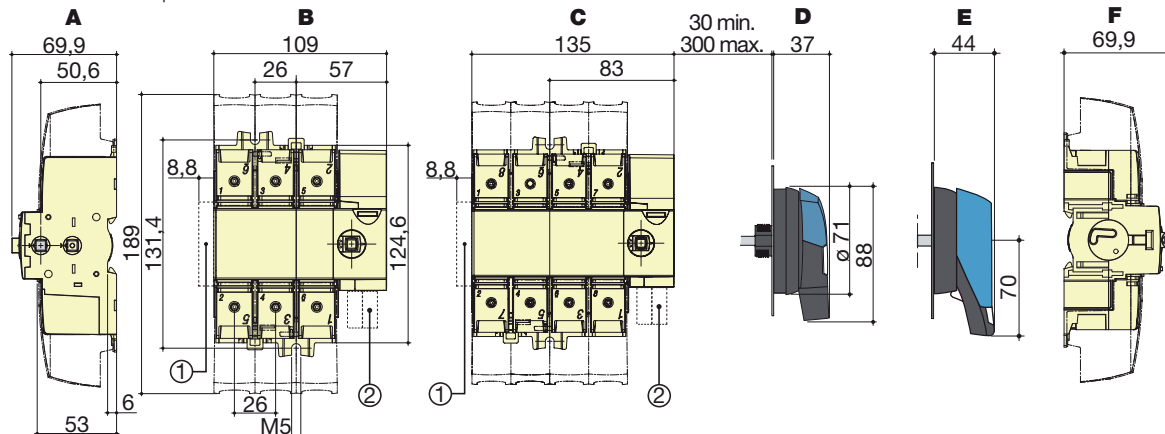
A. 3 poles
B. 4 poles

C. S0 type handle
D. S1 type handle

1. Maximum 4 "M" type auxiliary contacts
2. Maximum 2 "U" type auxiliary contacts

sirco_mv_058_c_1_x_cat

External side operation



A. Right side operation.
B. 3 poles
C. 4 poles

D. S0 type handle
E. S1 type handle
F. Left side operation

1. Maximum 4 "M" type auxiliary contacts
2. Maximum 2 "U" type auxiliary contacts

sirco_mv_058_d_1_x_cat

Dimensions for external handles

SIRCO M

16 to 80 A					
Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling		
S000 type Load break switches		Right side operation 	With 4 fixing screws 	With fixing nut 	
Handle type	Front operation Direction of operation		Door drilling		
S000 type Changeover switches I-0-II and I - I+II - II	0 or I+II 		With 4 fixing screws 	With fixing nut 	
Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling		
S00 type Load break switches		Right side operation 	IP55 with 2 fixing clips 	IP65 with 4 fixing screws 	
		Left side operation 	With fixing nut 		
Handle type	Front operation Direction of operation		Door drilling		
S00 type Changeover switches I-0-II and I - I+II - II	0 or I+II 	IP55 with 2 fixing clips 	IP65 with 4 fixing screws 	With fixing nut 	

poign_016_a_1_gb_cat

poign_017_b_1_gb_cat

poign_024_a_1_gb_cat

poign_025_b_1_gb_cat

SIRCO M and MV

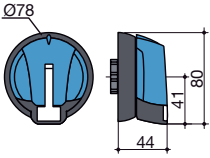
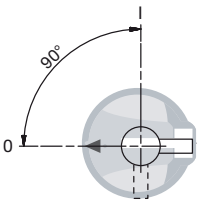
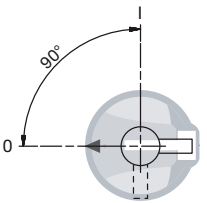
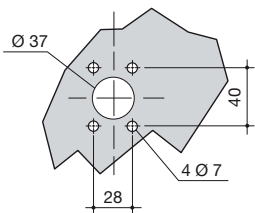
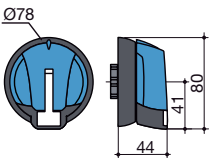
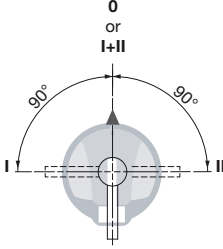
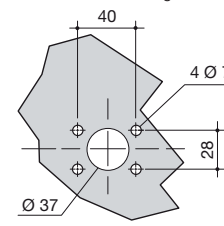
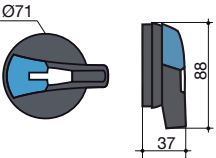
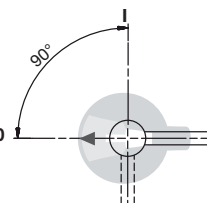
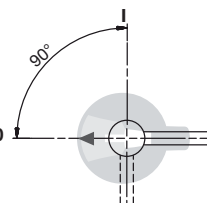
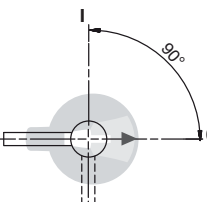
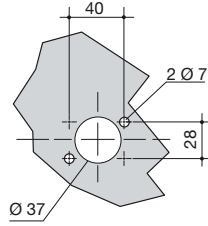
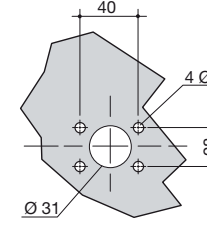
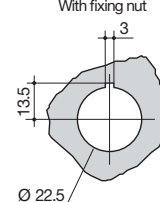
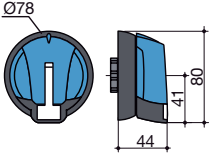
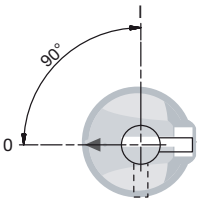
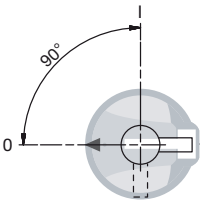
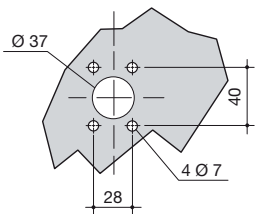
Universal load break switches

from 16 to 160 A

Dimensions for external handles

SIRCO M (continued)

16 to 80 A 3/4 P and 16 to 40 A 6/8 P

<p>Handle type</p> <p>S01 type Load break switches</p> 	<p>Front operation Direction of operation</p> 	<p>Side operation Direction of operation</p> <p>Right side operation</p> 	<p>Door drilling</p> <p>IP65 with 4 fixing screws</p> 
<p>Handle type</p> <p>S01 type Changeover switches I-0-II and I - I+II - II</p> 	<p>Front operation Direction of operation</p> <p>0 or I+II</p> 		<p>Door drilling</p> <p>IP65 with 4 fixing screws</p> 
<p>100 to 125 A</p>			
<p>Handle type</p> <p>S0 type Load break switches</p> 	<p>Front operation Direction of operation</p> 	<p>Side operation Direction of operation</p> <p>Right side operation</p>  <p>Left side operation</p> 	<p>Door drilling</p> <p>IP55 with 2 fixing clips</p>  <p>IP65 with 4 fixing screws</p>  <p>With fixing nut</p> 
<p>Handle type</p> <p>S01 type Load break switches</p> 	<p>Front operation Direction of operation</p> 	<p>Side operation Direction of operation</p> <p>Right side operation</p> 	<p>Door drilling</p> <p>IP65 with 4 fixing screws</p> 

poign_018_a_1_gb_cat

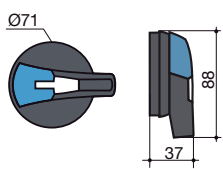
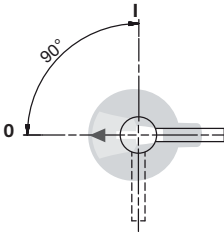
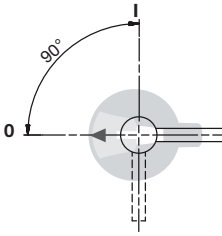
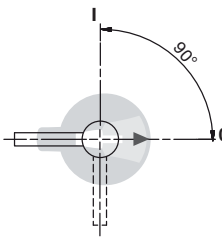
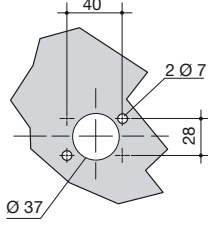
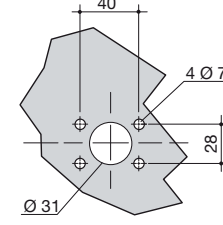
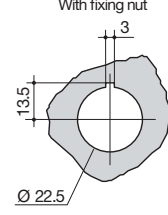
poign_019_b_1_gb_cat

poign_026_a_1_gb_cat

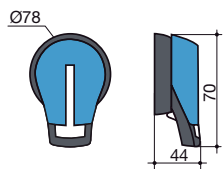
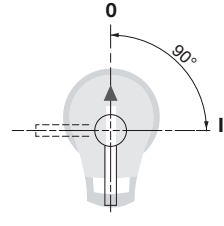
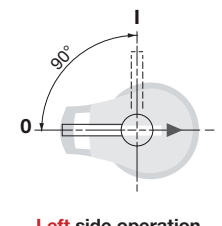
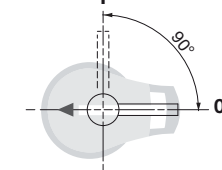
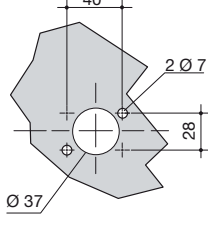
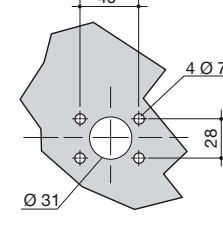
poign_018_a_1_gb_cat

SIRCO MV

100 to 160 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S0 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips  IP65 with 4 fixing screws  With fixing nut 	

poign_026_a_1_gb_cat

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S1 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips  IP65 with 4 fixing screws 	

poign_027_a_1_gb_cat



IDE

Load break switches for machine control Remotely trippable switch from 32 to 160 A

Load break
switches



IDE 4x40 A
External operation



IDE 4x40 A
Direct operation

The solution for

- > Industry.
- > Non critical buildings.
- > Public Access Sites.
- > High Rise Buildings.



Strong points

- > Safety.
- > Easy to install.
- > Low consumption.

Empty enclosure for IDE

- > This drilled pre-equipped IP65 enclosure enables immediate installation of a direct control rear mounted IDE without auxiliary contact.



Function

IDE are manually operated multipolar load break switches with a remote tripping function.

They make and break under load conditions and provide safety isolation for any low voltage electric circuit, particularly for compliance with the machine directive.

General characteristics

- Positive break indication.
- IP2X protection with terminal shrouds (accessory).
- Shunt trip or undervoltage trip coil.

Advantages

Safety

Remote tripping is especially adapted for protection against automatic machine restart after isolation and restoration of the mains voltage (EN 60204.1 § 7.5).

Low consumption

The device coils (including undervoltage) have a low consumption, providing increased reliability.

Easy to install

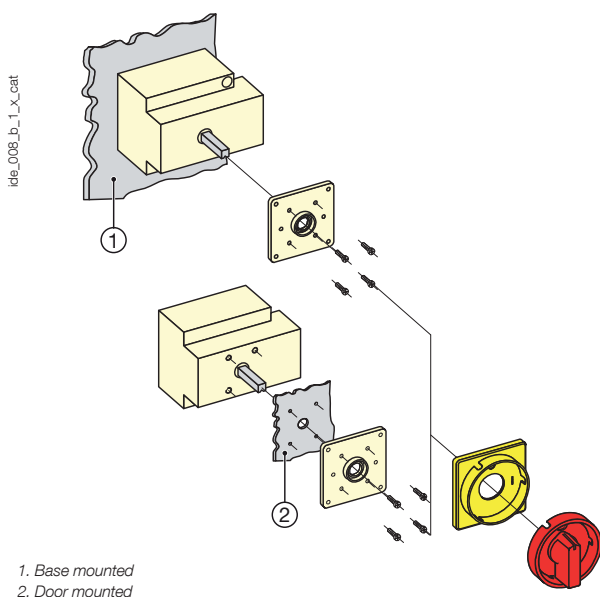
As standard the IDE is supplied with its tripping coil factory fitted and with its connections made internally.

For IDE 125 and 160A a factory fitted auxiliary contact is supplied as standard, simplifying product installation. The various fixing systems (front or rear mount with direct or external operation) enable easy device implementation.

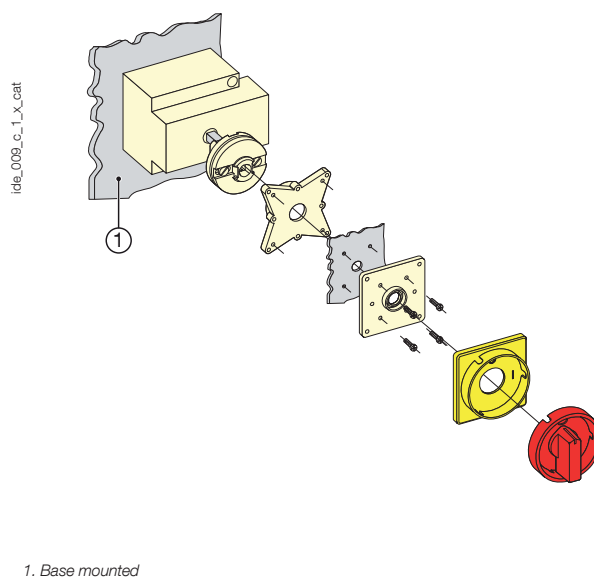
What you need to know

- **Direct** and **external operation** handles are available for the IDE.
- IDEs are supplied in 3 or 4 pole versions, with two mounting types available:
 - rear mounting on a **back-plate** or **DIN-rail**, direct or external operation.
 - **door** or **panel** mounting, direct operation.

Direct operation

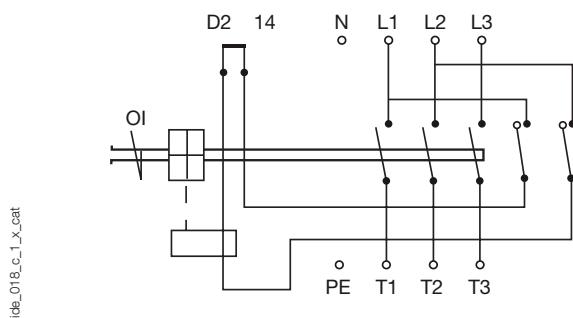


External operation

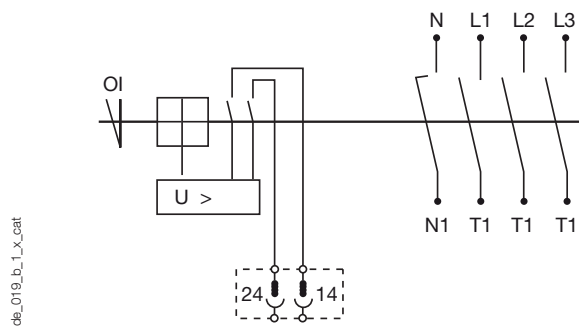


- Available in 230 or 400 VAC versions, the IDEs can be tripped remotely via a **shunt trip** or **undervoltage** coil. They are used to protect against automatic restarting and to prevent damage caused by the network malfunctions and is then re-established.
- Factory fitted, the IDE's tripping coil is connected internally. The coil is supplied between:
 - L1 and N for 230 VAC devices.
 - L1 and L2 for 400 VAC devices.
 For an IDE 32 A, an actuator relay can be incorporated between D2 and D14 (other wiring on request).

IDE 32 A



Internal cabling IDE 40 to 160 A



References

Base mounted

Rating (A)	No. of poles	Switch body Undervoltage coil	Switch body Shunt trip coil	Direct handle	External operation 200 mm	Position auxiliary contact	Terminal covers top/ bottom (2 sets)	Empty enclosure
32 A	3 P	1260 3003 ⁽¹⁾ 1270 3003 ⁽²⁾		Black IP65 1299 5012 Red / Yellow IP65 1299 5013	Black IP65 1299 6022 Red / Yellow IP65 1299 6023	1 contact NO+NC 1299 5001	3/4 P 1299 8003	1295 9001 ⁽⁵⁾
	4 P							
40 A	3 P	1260 3004 ⁽¹⁾⁽³⁾ 1270 3004 ⁽²⁾⁽³⁾	1280 3004 ⁽¹⁾⁽³⁾ 1290 3004 ⁽²⁾⁽³⁾	Black IP65 1299 6142 ⁽⁴⁾ Red / Yellow IP65 1299 6143 ⁽⁴⁾	Black IP65 1299 6032 Red / Yellow IP65 1299 6033	1 contact NO+NC 1299 0031	3/4 P 1299 8007	Please consult us
	4 P	1260 4004 ⁽¹⁾⁽³⁾ 1270 4004 ⁽²⁾⁽³⁾	1280 4004 ⁽¹⁾⁽³⁾ 1290 4004 ⁽²⁾⁽³⁾					
63 A	3 P	1260 3007 ⁽¹⁾⁽³⁾ 1270 3007 ⁽²⁾⁽³⁾	1280 3007 ⁽¹⁾⁽³⁾ 1290 3007 ⁽²⁾⁽³⁾					
	4 P	1260 4007 ⁽¹⁾⁽³⁾ 1270 4007 ⁽²⁾⁽³⁾	1280 4007 ⁽¹⁾⁽³⁾ 1290 4007 ⁽²⁾⁽³⁾					
125 A	3 P	1260 3013 ⁽¹⁾ 1270 3013 ⁽²⁾	1280 3013 ⁽¹⁾ 1290 3013 ⁽²⁾	Black IP65 1299 5032 Red / Yellow IP65 1299 5033	Black IP65 1299 6042 Red / Yellow IP65 1299 6043	1 contact NO+NC 1299 0021	3/4 P 1299 8013	
	4 P	1260 4013 ⁽¹⁾ 1270 4013 ⁽²⁾	1280 4013 ⁽¹⁾ 1290 4013 ⁽²⁾					
160 A	3 P	1260 3016 ⁽¹⁾ 1270 3016 ⁽²⁾	1280 3016 ⁽¹⁾ 1290 3016 ⁽²⁾					
	4 P	1260 4016 ⁽¹⁾ 1270 4016 ⁽²⁾	1280 4016 ⁽¹⁾ 1290 4016 ⁽²⁾					

(1) 230 VAC.

(2) 400 VAC.

(3) Modular device.

(4) Modular handle.

(5) This drilled pre-equipped enclosure enables immediate installation of a direct control rear mounted IDE without auxiliary contact, with protection rating of IP65.

Door mounted

Rating (A)	No. of poles	Switch body Undervoltage coil	Switch body Shunt trip coil	Direct handle	Auxiliary contact position	Terminal covers top/ bottom (2 sets)
32 A	3 P	1210 3003 ⁽¹⁾ 1220 3003 ⁽²⁾		Black IP65 1299 5012 Red / Yellow IP65 1299 5013	1 contact NO+NC 1299 5001	3/4 P 1299 8003
	4 P					
40 A	3 P	1210 3004 ⁽¹⁾ 1220 3004 ⁽²⁾	1230 3004 ⁽¹⁾ 1240 3004 ⁽²⁾	Black IP65 1299 5022 Red / Yellow IP65 1299 5023	1 contact NO+NC 1299 0031	3/4 P 1299 8007
		4 P	1210 4004 ⁽¹⁾ 1220 4004 ⁽²⁾			
	3 P		1210 3007 ⁽¹⁾ 1220 3007 ⁽²⁾			
63 A	4 P	1210 4007 ⁽¹⁾ 1220 4007 ⁽²⁾	1230 4007 ⁽¹⁾ 1240 4007 ⁽²⁾			
		3 P	1210 3013 ⁽¹⁾ 1220 3013 ⁽²⁾	1230 3013 ⁽¹⁾ 1240 3013 ⁽²⁾		
	4 P	1210 4013 ⁽¹⁾ 1220 4013 ⁽²⁾	1230 4013 ⁽¹⁾ 1240 4013 ⁽²⁾	Black IP65 1299 5032 Red / Yellow IP65 1299 5033	1 contact NO+NC 1299 0021	3/4 P 1299 8013
3 P	1210 3016 ⁽¹⁾ 1220 3016 ⁽²⁾	1230 3016 ⁽¹⁾ 1240 3016 ⁽²⁾				
	4 P	1210 4016 ⁽¹⁾ 1220 4016 ⁽²⁾	1230 4016 ⁽¹⁾ 1240 4016 ⁽²⁾			

(1) 230 VAC.

(2) 400 VAC.

Accessories

Direct operation handle for base mounting

Rating (A)	Handle colour	External IP	Reference
32	Black	IP65	1299 5012
32	Red/Yellow	IP65	1299 5013
40 ... 63	Black	IP65	1299 6142 ⁽¹⁾
40 ... 63	Red/Yellow	IP65	1299 6143 ⁽¹⁾
125 ... 160	Black	IP65	1299 5032
125 ... 160	Red/Yellow	IP65	1299 5033

⁽¹⁾ Modular handle.

Direct operation handle for door mounting

Rating (A)	Handle colour	External IP	Reference
32	Black	IP65	1299 5012
32	Red/Yellow	IP65	1299 5013
40 ... 63	Black	IP65	1299 5022
40 ... 63	Red/Yellow	IP65	1299 5023
125 ... 160	Black	IP65	1299 5032
125 ... 160	Red/Yellow	IP65	1299 5033

External operation for rear mounting device

Use

Standard shaft length: 200 mm.

Other lengths: Please consult us.

Shaft extension and black handle

Rating (A)	Shaft length (mm)	External IP	Reference
32	200	IP65	1299 6022
40 ... 63	200	IP65	1299 6032
125 ... 160	200	IP65	1299 6042

Shaft extension and red handle

Rating (A)	Shaft length (mm)	External IP	Reference
32	200	IP65	1299 6023
40 ... 63	200	IP65	1299 6033
125 ... 160	200	IP65	1299 6043

Position auxiliary contact
Use

1 NO+NC auxiliary contact for position 0 and I signalling.

Connection to the control circuit

By terminal.

Characteristics

Rating (A)	Contact type	Nominal current (A)
32 ... 63	NO + NC	12
125 ... 160	NO + NC	5



ide_023_b_1_cat

Rating (A)	Mounting	Contact(s)	Reference
32	by customer	1 NO+NC	1299 5001
40 ... 63	by customer	1 NO+NC	1299 0031
125 ... 160	by customer	1 NO+NC	1299 0021
125 ... 160	factory fitted	1 NO+NC	1299 0121

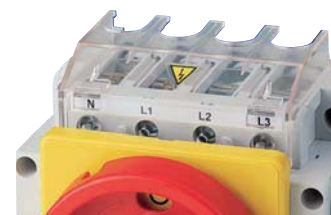
Terminal shrouds
Use

Top or bottom protection against direct contact with terminals or connection parts.

Top and bottom pair.

Rating (A)	Position	Reference
32	top / bottom	1299 8003 ⁽¹⁾
40 ... 63	top / bottom	1299 8007 ⁽¹⁾
125 ... 160	top / bottom	1299 8013 ⁽¹⁾

⁽¹⁾ Reference composed of 2 pieces.



ide_035_a_1_cat

IP65 enclosure for direct operation IDE
Use

This drilled pre-equipped IP65 enclosure enables immediate installation of a direct operation, rear mounted IDE without auxiliary contact.

Rating (A)	Reference
32	1295 9001
40 ... 160	Please consult us

Characteristics

Characteristics according to IEC 60947-3

	IDE - 32 to 160 A				
Thermal current I_{th} (40 °C)	32 A	40 A	63 A	125 A	160 A
Rated insulation voltage U_i (V)	690	690	690	690	690
U_{imp} (kV)	6	6	6	6	6
Rated operational currents I_e (A)					
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	32/32	40/40	63/63	125/125
415 VAC	AC-21 A / AC-21 B	32/32	40/40	63/63	125/125
415 VAC	AC-22 A / AC-22 B	32/32	40/40	63/63	125/125
415 VAC	AC-23 A / AC-23 B	14/14	40/40	63/63	125/125
415 VAC	AC-3	14	30	44	100
690 VAC	AC-20 A / AC-20 B	32/32	40/40	63/63	125/125
690 VAC	AC-21 A / AC-21 B	32/32	40/40	63/63	125/125
690 VAC	AC-22 A / AC-22 B	13/13	32/32	40/40	125/125
690 VAC	AC-23 A / AC-23 B	4.9/4.9	17.5/17.5	21/21	42/42
Operational power in AC-23 A (kW) ⁽²⁾					
415 VAC without pre-break AC	7.5	22	30	63	80
Operational power in AC-3 A (kW) ⁽²⁾					
415 VAC without pre-break AC	7.5	15	22	55	55
Fuse protected short-circuit withstand (kA rms prospective) ⁽³⁾					
Prospective short-circuit current (kA rms)	10	3	3	10	-
Associated fuse rating (A)	32	40	63	125	-
Short-circuit capacity (without protection)					
Rated short-time withstand current 1s. I_{cw} (kA rms)	1	1.5	1.5	2.5	2.5
I_{cm} (prospective kA peak)	3	5.2	5.2	6.6	6.6
Connection					
Minimum Cu cable cross-section (mm ²)	1	2.5	2.5	6	6
Maximum Cu cable cross-section (mm ²)	4	10	10	70	70
Tightening torque min/max (Nm)	1.2/1.5	2/2.5	2/2.5	6/12	6/12
Mechanical characteristics					
Durability (number of operating cycles)	100 000	50 000	50 000	30 000	30 000
Operating effort - 3 pole device (Nm)	0.35	0.38	0.45	1.6	2
Weight of a 3 pole device (kg)	0.26	0.35	0.39	1.35	1.45

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

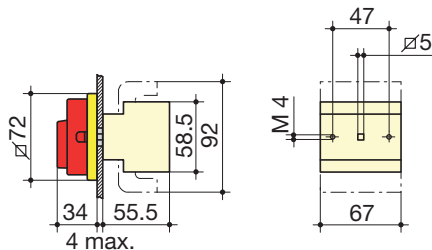
(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operational voltage $U_e = 415$ VAC.

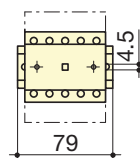
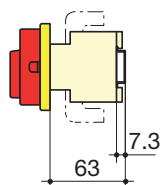
Dimensions

IDE 32 A

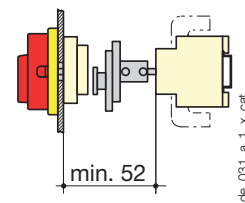
Direct operation with door or panel mounting



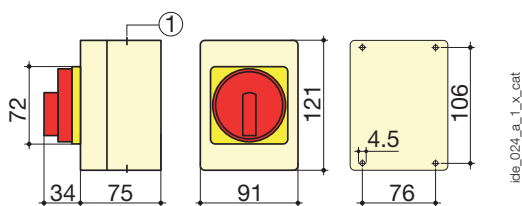
Direct operation with DIN-rail mounting



Door interlocked external front operation with DIN-rail mounting



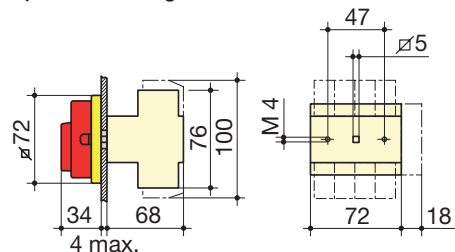
Enclosure for IDE 32 A



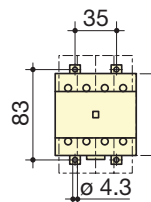
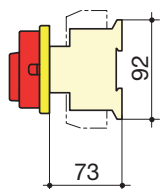
1. For PE 16 mm

IDE 40 to 63 A

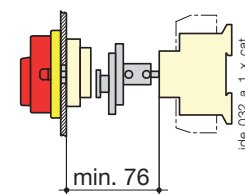
Direct operation with door or panel mounting



Direct operation with DIN-rail or back plate mounting

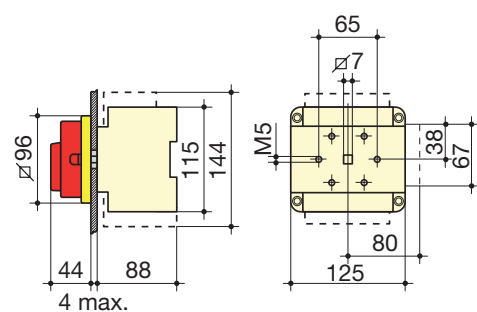


Door interlocked external front operation with DIN-rail or back plate mounting

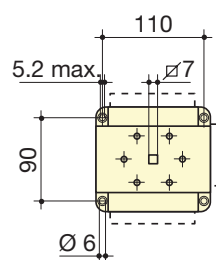
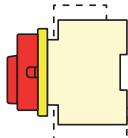


IDE 125 to 160 A

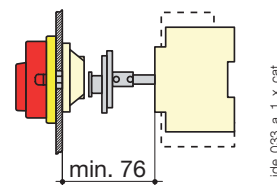
Direct operation with door or panel mounting



Direct operation with DIN-rail or back plate mounting



Door interlocked external front operation with DIN-rail or back plate mounting





SIRCO

Load break switches for power distribution
from 125 to 5000 A

Load break
switches

new



SIRCO AC 3 x 250 A
direct handle



SIRCO 3 x 250 A
direct handle

The solution for

- > Main switchboard.
- > Distribution panel.
- > Emergency breaking.
- > Network coupling.
- > Local safety breaking.

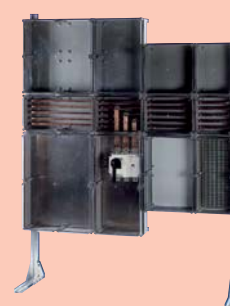


Strong points

- > Reliability and performance.
- > Safety of property and personnel.
- > Simplicity.
- > Easy to install.

Enclosures

- > The SIRCO and SIRCO AC range can be easily fitted in our enclosures and cabinets designed for electrical distribution.



Function

SIRCO and SIRCO AC are manually operated multipolar load break switches. They make and break under load conditions and provide safety isolation. SIRCO are designed for 415 VAC and DC low voltage electrical circuits. SIRCO AC are designed for heavy duty applications up to 690 VAC - AC 23.

General characteristics

- Double positive break indication given through a position indication window, located directly on the product, and by the operating handle.
- Severe utilisation categories (AC-22 and AC-23).
- High resistance to damp heat (supplied "tropicalised").

Advantages

Reliability and performance

The SIRCO's double breaking per pole, achieved through its sliding bar contact system, is a proven design that offers very high durability and short-circuit withstand. The quick opening and rapid closure of the SIRCO's contacts, combined with specifically designed arcing chambers, provides the SIRCO AC with improved breaking performance.

Safety of property and personnel

The position indicator is located directly on the sliding bar contact mechanism, ensuring it can be seen in all circumstances.

The use of glass fibre reinforced polyester gives the SIRCO and SIRCO AC both high mechanical and thermal resistance.

Simplicity

The standardisation of the SIRCO and SIRCO AC range enables a cost reduction in stock management and storage thanks to their shared accessories.

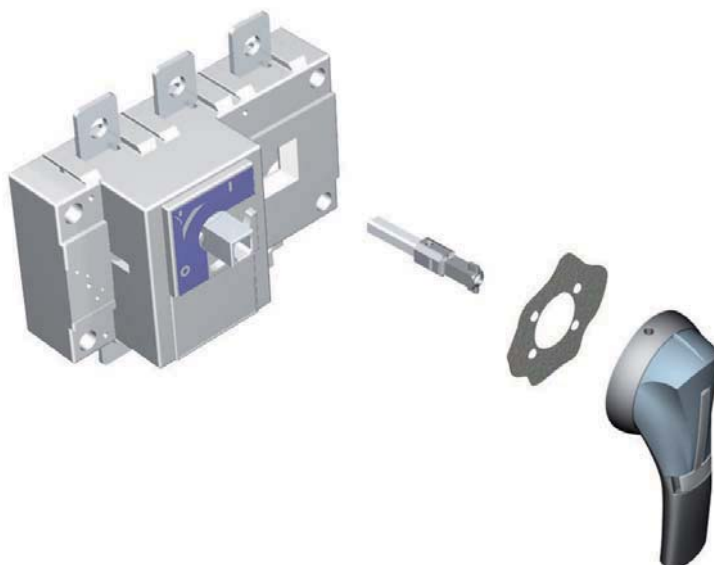
Easy to install

Easy installation is facilitated thanks to:

- A good centre-to-centre distance (up to 120 mm).
- Connection up to 6x185 mm².
- Connection accessories which facilitate connection, both flat and edgewise connections.

What you need to know

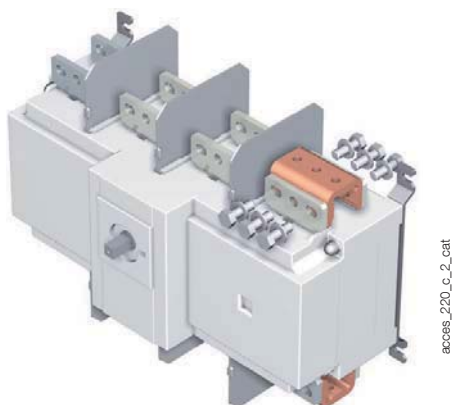
- In front **direct** or **external** operation, SIRCO is available in 3 and 4 pole versions from 125 to 5000 A.
- It can be ordered in 6 or 8 pole versions from 125 to 1600 A.
- The switch is available in a polyester or sheet metal enclosure from 125 to 1250 A.



sirco_3172_b_1_cat

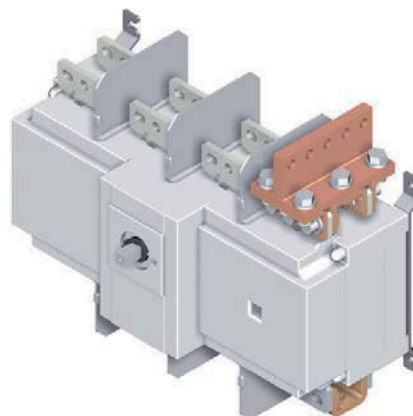
For ratings 2000, 2500 and 3200A, a **copper bar connection kit** enables the connection between the two power terminals of one pole.

Flat connection
Top or bottom



access_220_c_2_cat

Edgewise connection
Top or bottom



access_223_b_2_cat

SIRCO

Load break switches for power distribution
from 125 to 5000 A

SIRCO - References

Front operation - 3 & 4 pole

Rating (A)	No. of poles	Switch body only ⁽¹⁾	Direct handle	External handle	Shaft for external handle	Auxiliary contact	Terminal shrouds	Terminal screens
125 A	3 P	2600 3014	B1 type Black 2699 5042 ⁽²⁾ Red 2699 5043				3 P 2694 3014 ⁽³⁾ 4 P 2694 4014 ⁽³⁾	3 P 2698 3012 ⁽³⁾ 4 P 2698 4012 ⁽³⁾
	4 P	2600 4014						
160 A	3 P	2600 3017					3 P 2694 3021 ⁽³⁾ 4 P 2694 4021 ⁽³⁾	3 P 2698 3020 ⁽³⁾ 4 P 2698 4020 ⁽³⁾
	4 P	2600 4017						
200 A	3 P	2600 3021					3 P 2694 3021 ⁽³⁾ 4 P 2694 4021 ⁽³⁾	3 P 2698 3020 ⁽³⁾ 4 P 2698 4020 ⁽³⁾
	4 P	2600 4021						
250 A	3 P	2600 3026		S2 type Black IP55 1421 2111 ⁽²⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽²⁾ 500 mm 1400 1050		3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4026						
315 A	3 P	2600 3032	B2 type Black 2699 5052 ⁽²⁾ Red 2699 5053				3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4032						
400 A	3 P	2600 3041					3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4041						
500 A	3 P	2600 3051					3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4051						
630 A	3 P	2600 3064					3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4064						
800 A	3 P	2600 3081				1 st contact NO/NC 2699 0031 2 nd contact NO/NC 2699 0032	3 P 2698 3080 ⁽³⁾ 4 P 2698 4080 ⁽³⁾	
	4 P	2600 4081						
1000 A	3 P	2600 3099					3 P 2698 3080 ⁽³⁾ 4 P 2698 4080 ⁽³⁾	
	4 P	2600 4099						
CD 1250 A	3 P	2600 3119		S4 type Black IP65 1443 3111 ⁽²⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾ 400 mm 1401 1540		3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4119						
1250 A	3 P	2600 3121					3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4121						
1600 A	3 P	2600 3161	C2 type Black 2799 7012 ⁽²⁾ Red 2799 7013				3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4161						
1800 A	3 P	2600 3181					3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4181						
2000 A	3 P	2600 3200					3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4200						
2500 A	3 P	2600 3250		V2 type Black IP65 2799 7136 ⁽²⁾ Red IP65 2799 7134	200 mm 2799 3015 320 mm 2799 3018 ⁽²⁾ 450 mm 2799 3019		3 P 2698 3200 ⁽³⁾ 4 P 2698 4200 ⁽³⁾	
	4 P	2600 4250						
3200 A	3 P	2600 3320					3 P 2698 3200 ⁽³⁾ 4 P 2698 4200 ⁽³⁾	
	4 P	2600 4320						
4000 A	3 P	2600 3401	V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾		1 st /2 nd contact NO/NC included		
	4 P	2600 4401						
5000 A	3 P	2600 3500						
	4 P	2600 4500						

(1) Device available enclosed (see "Enclosed load break switches" page 600).

(2) Standard.

(3) Top or bottom.

SIRCO AC - References

Heavy duty applications - Front operation 3 & 4 pole

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact	Terminal shrouds	Terminal screens
200 A	3 P	26AC 3020	J1 type Black 1112 1111 ⁽¹⁾ J1 type Red 1113 1111	S2 type Black IP65 1421 2111 ⁽¹⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾ 500 mm 1400 1050		3P 2694 3021 ⁽²⁾⁽³⁾ 4 P 2694 4021 ⁽²⁾⁽³⁾	3P 2698 3020 ⁽³⁾ 4 P 2698 4020 ⁽³⁾
	4 P	26AC 4020						
250 A	3 P	26AC 3025						
	4 P	26AC 4025						
315 A	3 P	26AC 3031						
	4 P	26AC 4031						
400 A	3 P	26AC 3040						
	4 P	26AC 4040						
500 A	3 P	26AC 3050						
	4 P	26AC 4050						
CD 630 A	3 P	26AC 3063						
	4 P	26AC 4063						
630 A	3 P	26AC 3064	J4 type Black 1142 1111 ⁽¹⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	1 st contact NO/NC 2699 0031 2 nd contact NO/NC 2699 0032	3P 2694 3051 ⁽²⁾⁽³⁾ 4 P 2694 4051 ⁽²⁾⁽³⁾	3P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	26AC 4064						
800 A	3 P	26AC 3080						
	4 P	26AC 4080						
1000 A	3 P	26AC 3100						
	4 P	26AC 4100						
CD 1250 A	3 P	26AC 3120						
	4 P	26AC 4120						
1250 A	3 P	26AC 3121						
	4 P	26AC 4121						
1600 A	3 P	26AC 3160						
	4 P	26AC 4160						
2000 A	3 P	26AC 3200	S5 type Black 2799 7042 ⁽¹⁾ Red 2799 7043	S5 type Black IP65 1453 8111 ⁽¹⁾ Red IP65 1454 8111	200 mm 2799 3015 320 mm 2799 3018 ⁽¹⁾ 450 mm 2799 3019		3P 2698 3200 ⁽²⁾⁽³⁾ 4 P 2698 4200 ⁽²⁾⁽³⁾	
	4 P	26AC 4200						
4000 A	3 P	26AC 3400	V0 type Black 2799 7072 ⁽¹⁾	V0 type Black 2799 7155 ⁽¹⁾		1 st / 2 nd included	3/4P 1509 4200 ⁽⁴⁾	
	4 P	26AC 4400						

(1) Standard.

(2) Mandatory for voltage greater than 415 VAC.

(3) Top or bottom.

(4) Top and bottom.

SIRCO

Load break switches for power distribution
from 125 to 5000 A

SIRCO - References

Standard applications - Front operation - 6 & 8 pole

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact	Terminal shrouds	Terminal screens
125 A	6 P	2601 6013	B3 type Black 4199 5012 ⁽¹⁾	S2 Type Black IP65 1421 2111 ⁽¹⁾ Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾		6 P 2694 3014 ⁽²⁾⁽³⁾ 8 P 2694 4014 ⁽²⁾⁽³⁾	6 P 1509 3012 ⁽⁴⁾ 8 P 1509 4012 ⁽⁴⁾
	8 P	2601 8013						
160 A	6 P	2601 6016						
	8 P	2601 8016						
250 A	6 P	2601 6025	C1 type Black 2799 7052 ⁽¹⁾ Red 2799 7053	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	1 st contact NO/NC 2699 0061 2 nd contact NO/NC 2699 0062	6 P 2694 3021 ⁽²⁾⁽³⁾ 8 P 2694 4021 ⁽²⁾⁽³⁾	6 P 1509 3025 ⁽⁴⁾ 8 P 1509 4025 ⁽⁴⁾
	8 P	2601 8025						
400 A	6 P	2601 6040						
	8 P	2601 8040						
630 A	6 P	2601 6063	C1 type Black 2799 7012 ⁽¹⁾ Red 2799 7013	V1 type Black IP65 2799 7145 ⁽¹⁾	320 mm 2799 3018 ⁽¹⁾	1 st contact NO/NC 2699 0061 2 nd contact NO/NC 2699 0062	6 P 2694 3051 ⁽²⁾⁽³⁾ 8 P 2694 4051 ⁽²⁾⁽³⁾	6 P 1509 3063 ⁽⁴⁾ 8 P 1509 4063 ⁽⁴⁾
	8 P	2601 8063						
800 A	6 P	2601 6080						
	8 P	2601 8080						
1000 A	6 P	2601 6100	C1 type Black 2799 7012 ⁽¹⁾ Red 2799 7013	V1 type Black IP65 2799 7145 ⁽¹⁾	320 mm 2799 3018 ⁽¹⁾	1 st contact NO/NC 2699 0061 2 nd contact NO/NC 2699 0062	6 P 2694 3051 ⁽²⁾⁽³⁾ 8 P 2694 4051 ⁽²⁾⁽³⁾	6 P 1509 3080 ⁽⁴⁾ 8 P 1509 4080 ⁽⁴⁾
	8 P	2601 8100						
1250 A	6 P	2601 6120						
	8 P	2601 8120						
1600 A	6 P	2601 6160	C1 type Black 2799 7012 ⁽¹⁾ Red 2799 7013	V1 type Black IP65 2799 7145 ⁽¹⁾	320 mm 2799 3018 ⁽¹⁾	1 st contact NO/NC 2699 0061 2 nd contact NO/NC 2699 0062	6 P 2694 3051 ⁽²⁾⁽³⁾ 8 P 2694 4051 ⁽²⁾⁽³⁾	6 P 1509 3160 ⁽⁴⁾ 8 P 1509 4160 ⁽⁴⁾
	8 P	2601 8160						

(1) Standard.

(2) Upstream or downstream at the front or rear of the device.

(3) Select 2 sets for front or rear.

(4) Upstream or downstream at the front of the device.

Accessories

Direct operation handle

SIRCO direct operation handle				
Rating (A)	No. of poles	Handle	Handle colour	Reference
125 ... 160	3/4 P	B1 type	Black	2699 5042 ⁽¹⁾
125 ... 160	3/4 P	B1 type	Red	2699 5043
125 ... 160	6/8 P	B3 type	Black	4199 5012 ⁽¹⁾
200 ... 630	3/4 P	B2 type	Black	2699 5052 ⁽¹⁾
200 ... 630	3/4 P	B2 type	Red	2699 5053
250 ... 630	6/8 P	C1 type	Black	2799 7052 ⁽¹⁾
250 ... 630	6/8 P	C1 type	Red	2799 7053
800 ... 3200	3/4 P	C2 type	Black	2799 7012 ⁽¹⁾
800 ... 3200	3/4 P	C2 type	Red	2799 7013
800 ... 1600	6/8 P	C2 type	Black	2799 7012 ⁽¹⁾
800 ... 1600	6/8 P	C2 type	Red	2799 7013
4000 ... 5000	3/4 P	V0 type	Black	2799 7072 ⁽¹⁾

(1) Standard.



SIRCO AC direct operation handle				
Rating (A)	No. of poles	Handle	Handle colour	Reference
200 ... CD 630	3/4 P	J1 type	Black	1112 1111 ⁽¹⁾
200 ... CD 630	3/4 P	J1 type	Red	1113 1111
630 ... 1600	3/4 P	J4 type	Black	1142 1111 ⁽¹⁾
630 ... 1600	3/4 P	J4 type	Red	1143 1111
2000	3/4 P	S5 type	Black	2799 7042 ⁽¹⁾
2000	3/4 P	S5 type	Red	2799 7043
4000	3/4 P	V0 type	Black	2799 7072 ⁽¹⁾

(1) Standard.

Door interlocked external operation handle

SIRCO and SIRCO AC external front operation handle						
Rating (A) SIRCO	Rating (A) SIRCO AC	No. of poles	Handle	Handle colour	External IP ⁽¹⁾	Reference
125 ... 630	200 ... CD 630	3/4 P	S2 type	Black	IP55	1421 2111 ⁽²⁾⁽³⁾
				Black	IP65	1423 2111
				Red	IP65	1424 2111
125 ... 160		6/8 P	S2 type	Black	IP55	1421 2111 ⁽²⁾
				Black	IP65	1423 2111
250 ... 630		6/8 P	S4 type	Black	IP65	1443 3111
				Red	IP65	1444 3111
800 ... 1600	630 ... 1600	6/8 P	V1 type	Black	IP65	2799 7145 ⁽²⁾
800 ... 1800		3/4 P	S4 type	Black	IP65	1443 3111 ⁽²⁾⁽³⁾
2000 ... 3200	2000	3/4 P	V2 type	Black	IP65	1444 3111
				Black	IP65	2799 7136 ⁽²⁾
				Red	IP65	2799 7134
4000 ... 5000	4000	3/4 P	S5 type	Black	IP65	1453 8111 ⁽³⁾
				Red	IP65	1454 8111
		3/4 P	V0 type	Black	IP65	2799 7155 ⁽²⁾⁽³⁾

(1) IP: protection degree according to IEC 60529 standard.

(2) Standard.

Use

Door interlocked external operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.



SIRCO

Load break switches for power distribution
from 125 to 5000 A

Shaft for external handle

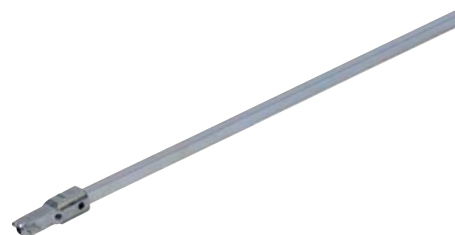
For 3/4 pole SIRCO and SIRCO AC				
Rating (A) SIRCO	Rating (A) SIRCO AC	Dimension X (mm)	Length (mm)	Reference
125 ... 160		125 ... 250	200	1400 1020
		125 ... 300	250	1400 1025
		125 ... 370	320	1400 1032
		125 ... 550	500	1400 1050
		125 ... 850	750	1400 1075
200 ... 250	200 ... 315	135 ... 265	200	1400 1020
		135 ... 315	250	1400 1025
		135 ... 385	320	1400 1032
		135 ... 565	500	1400 1050
		135 ... 880	750	1400 1075
315 ... 630	400 ... CD 630	165 ... 295	200	1400 1020
		165 ... 345	250	1400 1025
		165 ... 415	320	1400 1032
		165 ... 595	500	1400 1050
		165 ... 940	750	1400 1075
800 ... 1800	630 ... 1600	221 ... 343	200	1401 1520
		221 ... 463	320	1401 1532
		221 ... 543	400	1401 1540
2000 ... 3200	2000	415 ... 570	200	2799 3015
		415 ... 690	320	2799 3018
		415 ... 820	450	2799 3019
4000 ... 5000	4000	550 ... 680	200	2799 3015
		651 ... 921	320	2799 3018

Use

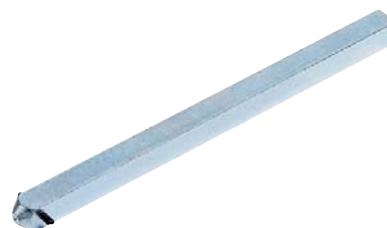
Standard lengths:

- 200 mm
- 250 mm
- 300 mm
- 400 mm
- 500 mm
- 750 mm

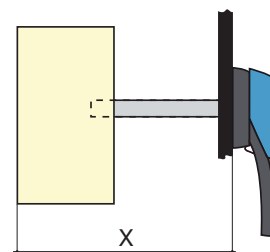
Other lengths: Please consult us.



access_368_a_1_X_cat



access_144_b_1_cat



access_202_a_1_X_cat

For 6/8 pole SIRCO			
Rating (A)	Dimension X (mm)	Length (mm)	Reference
125 ... 160	270 ... 436	200	1400 1020
125 ... 160	270 ... 556	320	1400 1032
250 ... 630	221 ... 308	200	1400 1520
250 ... 630	221 ... 428	320	1400 1532
250 ... 630	221 ... 508	400	1400 1540

Accessories (continued)

Alternative S-type handle cover colours

Use

For single lever handles S1, S2, S3 type and for double lever handle S4 type.
Other colours: Please consult us.

Handle colour	To be ordered in multiples of	Handle	Reference
Light grey	50	S2, S3 type	1401 0001
Dark grey	50	S2, S3 type	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041



S-type cover

access_198_a_2_cat

S-type handle adapter

Use

Enables S-type handles to be fitted in place of older style Socomec handles. Adapter can be utilised as a spacer to increase the distance between the panel door and the handle lever.
Adds 12 mm to the depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



access_167_a_1_cat

Shaft guide for external operation

Use

For utilisation with S-type handles, to guide the shaft extension into the external handle. This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.
Required for shaft lengths over 320 mm.

Description	Reference
Shaft guide	1429 0000



access_260_a_2_cat

SIRCO

Load break switches for power distribution
from 125 to 5000 A

Auxiliary contact

Use

- Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts.
 - 1 to 4 NO+NC auxiliary contacts.
 - 1 to 2 low level NO/NC auxiliary contacts.

Characteristics

NO/NC A/C: IP2 with front operation.

Connection to the control circuit

6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

NO/NC contact for 3/4 pole SIRCO and SIRCO AC

Rating (A)	Position A/C	Reference
125 ... 3200	1 st	2699 0031
125 ... 3200	2 nd	2699 0032
4000 ... 5000	1 st /2 nd	included

NO/NC contact for 6/8 pole SIRCO

Rating (A)	Position A/C	Reference
125 ... 1600	1 st	2699 0061
125 ... 1600	2 nd	2699 0062

NO+NC contact for 3/4 pole SIRCO and SIRCO AC

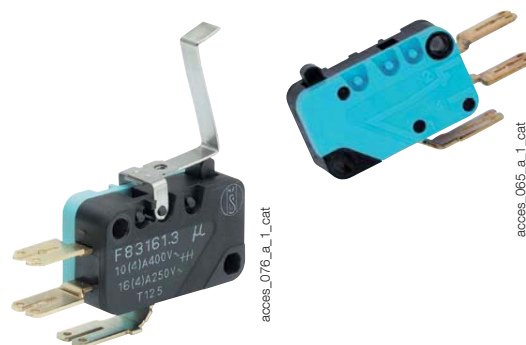
Rating (A)	Position A/C	Reference
125 ... 3200	1 st	2699 0141
125 ... 3200	2 nd /3 rd /4 th	2699 0142

NO/NC low level contact for 3/4 pole SIRCO and SIRCO AC

Rating (A)	Position A/C	Reference
125 ... 3200	1 st	2699 0301
125 ... 3200	2 nd	2699 0302

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I _o (A)									
			230 VAC		400 VAC		24 VDC			48 VDC		
			AC-12	AC-13/15	AC-12	AC-13/15	DC-12	DC-13	DC-14	DC-12	DC-13	DC-14
125 ... 3200	NO/NC	16	16	4	12	3	2.5	2.5	1	2.5	1.2	0.2
125 ... 3200	NO + NC	16	16	4	16	3	16	5	1	2.5	1.2	0.2



Inter-phase barrier

Use

Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

For 3/4 poles

Rating (A) SIRCO	Rating (A) SIRCO AC	No. of poles	Reference
125 ... 160		3 P	2998 0033
125 ... 160		4 P	2998 0034
200 ... 250	200 ... 315	3 P	2998 0023
200 ... 250	200 ... 315	4 P	2998 0024
315 ... 630	315 ... CD 360	3 P	2998 0013
315 ... 630	315 ... CD 360	4 P	2998 0014
800 ... 5000	630 ... 4000	3 P	included
800 ... 5000	630 ... 4000	4 P	included



Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds. The terminal shrouds also provide phase separation for SIRCO and SIRCO AC 125 to 630 A.



access_077_a_1_cat

For 3/4 poles				
Rating (A) SIRCO	Rating (A) SIRCO AC	No. of poles	Position	Reference
125 ... 160		3 P	top or bottom	2694 3014 ⁽¹⁾
125 ... 160		4 P	top or bottom	2694 4014 ⁽²⁾
200 ... 250	200 ... 315	3 P	top or bottom	2694 3021 ⁽¹⁾
200 ... 250	200 ... 315	4 P	top or bottom	2694 4021 ⁽²⁾
315 ... 630	400 ... CD 630	3 P	top or bottom	2694 3051 ⁽¹⁾
315 ... 630	400 ... CD 630	4 P	top or bottom	2694 4051 ⁽²⁾

(1) Reference includes 3 parts for top or bottom protection.

(2) Reference includes 4 parts for top or bottom protection.

For 6/8 pole SIRCO			
Rating (A)	No. of poles	Position	Reference
125 ... 160	6 P	top or bottom	2694 3014 ⁽¹⁾⁽³⁾
125 ... 160	8 P	top or bottom	2694 4014 ⁽²⁾⁽³⁾
250	6 P	top or bottom	2694 3021 ⁽¹⁾⁽³⁾
250	8 P	top or bottom	2694 4021 ⁽²⁾⁽³⁾
400 ... 630	6 P	top or bottom	2694 3051 ⁽¹⁾⁽³⁾
400 ... 630	8 P	top or bottom	2694 4051 ⁽²⁾⁽³⁾

(1) Reference includes 3 parts for top or bottom protection on the front or rear of the device.

(2) Reference includes 4 parts for top or bottom protection on the front or rear of the device.

(3) Select 2 sets for front or rear.

Distribution block

Use

Easy connection of several cables, downstream of the SIRCO.

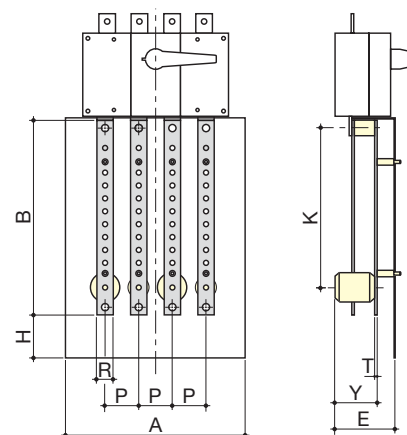
For 3/4 pole SIRCO				
Rating (A)	No. of poles	No of feeders per section (mm ²)	I _{cc} (kA rms) ⁽¹⁾	Reference
160	3 P	1x95 + 8x25	10	5411 3016
160	4 P	1x95 + 8x25	10	5411 6016
250	3 P	1x150 + 8x50	15	5411 3025
250	4 P	1x150 + 8x50	15	5411 4025
400	3 P	1x240 + 8x95	21	5411 3040
400	4 P	1x240 + 8x95	21	5411 4040
630	3 P	1x300 + 8x150	21	5411 3063
630	4 P	1x300 + 8x150	21	5411 4063

Dimensions

Rating (A)	No. of poles	A	W	E	H	K	D	R	T	Y
160	3 P	154	286	73	46.5	261.5	36	20	4	54
160	4 P	190	286	73	46.5	261.5	36	20	4	54
250	3 P	210	307	83	57.5	279	50	25	4	56
250	4 P	260	307	83	57.5	279	50	25	4	56
400	3 P	281	375	116	82.5	340	65	32	5	82
400	4 P	346	375	116	82.5	340	65	32	5	82
630	3 P	271	438	117	90.5	410.5	65	40	6	83
630	4 P	346	438	117	90.5	410.5	65	40	6	83



repar_000_c_2_cat



repar_000_c_1_x_cat

SIRCO

Load break switches for power distribution
from 125 to 5000 A

Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.



access_079_a_1_cat

For 3/4 poles

Rating (A) SIRCO	Rating (A) SIRCO AC	No. of poles	Position	Reference
125 ... 160		3 P	top or bottom	2698 3012
125 ... 160		4 P	top or bottom	2698 4012
200 ... 250	200 ... 315	3 P	top or bottom	2698 3020
200 ... 250	200 ... 315	4 P	top or bottom	2698 4020
315 ... 630	400 ... CD 630	3 P	top or bottom	2698 3050
315 ... 630	400 ... CD 630	4 P	top or bottom	2698 4050
800 ... CD 1250	630 ... CD 1250	3 P	top or bottom	2698 3080
800 ... CD 1250	630 ... CD 1250	4 P	top or bottom	2698 4080
1250 ... 1800	1250 ... 1600	3 P	top or bottom	2698 3120
1250 ... 1800	1250 ... 1600	4 P	top or bottom	2698 4120
2000 ... 3200	2000	3 P	top or bottom	2698 3200
2000 ... 3200	2000	4 P	top or bottom	2698 4200
4000 ... 5000	4000	3/4 P	top or bottom	1509 4200

For 6/8 pole SIRCO

Rating (A)	No. of poles	Position	Reference
125 ... 160	6 P	top or bottom	1509 3012
125 ... 160	8 P	top or bottom	1509 4012
250	6 P	top or bottom	1509 3025
250	8 P	top or bottom	1509 4025
400 ... 630	6 P	top and bottom	1509 3063
400 ... 630	8 P	top and bottom	1509 4063
800 ... 1250	6 P	top and bottom	1509 3080
800 ... 1250	8 P	top and bottom	1509 4080
1600	6 P	top and bottom	1509 3160
1600	8 P	top and bottom	1509 4160

Cage terminals

Use

They enable a direct terminal-free connection to rigid copper and aluminium conductors with integration under the IP2X protective cover.

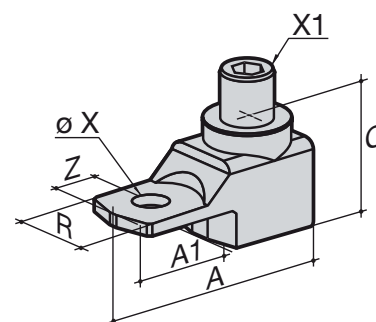
Material: tin-plated aluminium.

Dimensions

Rating (A)	A	A1	C	E	R	T	ØX	X1	Z
125 ... 160	47.5	22.5	25	12	20	3.5	8.5	M12	10
200 ... 250	62	31.5	31.5	16.5	25	2.5	10.5	M16	14
315 ... 400	71.5	32	38	9	32	5	10.5	M20	15
500 ... 630	76.5	37	38	9	40	5	12.5	M20	15

References

Rating (A)	Tightening capacity (mm ²)	No. of poles	Tightening torque (Nm)	Width of flexible bar (mm)	Reference
125 ... 160	16 ... 95	3 P	14	13	5400 3016
125 ... 160	16 ... 95	4 P	14	13	5400 4016
200 ... 250	16 ... 185	3 P	25	18	5400 3025
200 ... 250	16 ... 185	4 P	25	18	5400 4025
315 ... 400	50 ... 240	3 P	45	20	5400 3040
315 ... 400	50 ... 240	4 P	45	20	5400 4040
500 ... 630	70 ... 300	3 P	45	24	5400 3063
500 ... 630	70 ... 300	4 P	45	24	5400 4063



born_019_a_1_x_cat

Accessories (continued)

Copper bar connection kits

Use

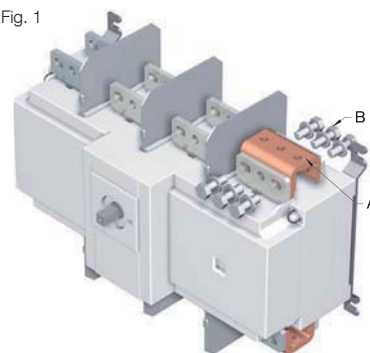
To allow connection between the two power terminals of the same pole for 2000 to 3200 A ratings (Fig. 1 and Fig 2).

For 3200 A rating, the connection pieces (part A) are delivered bridged from factory.1

Bolt sets must be ordered separately.

Further details for these specific accessories are available in the user guide downloadable from www.socomec.com.

Fig. 1

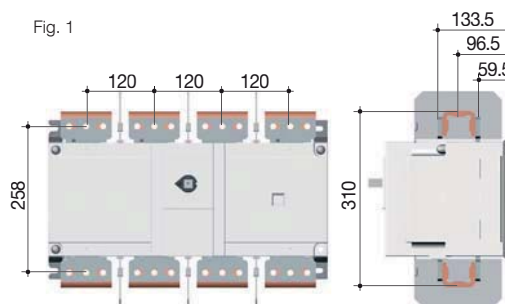


access_220_c_1_x_cat

Top or bottom flat connection - Fig. 1			
Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	1	2619 1200
2000 ... 2500	Bolt set - part B	1	2699 1200
3200	Connection - part A		included
3200	Bolt set - part B	1	2699 1200

⁽¹⁾ Example for a 3 pole device equipped upstream only: Order 3 times the indicated quantities.

Fig. 1



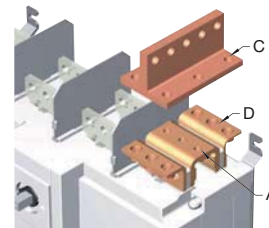
access_224_a_1_cat

Top or bottom edgewise connection - Fig. 2			
Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	1	2619 1200
2000 ... 2500	T piece - part C	1	2629 1200 ⁽²⁾
2000 ... 2500	Bracket- part D	1	2639 1200 ⁽²⁾
3200	Connection - part A		included
3200	T piece - part C	1	2629 1200
3200	Bracket- part D	1	2639 1200

⁽¹⁾ Example for a 3 pole device equipped upstream only: Order 3 times the indicated quantities.

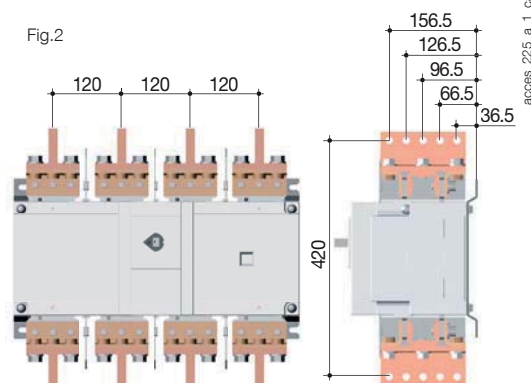
⁽²⁾ Bolt set is provided with the accessories.

Fig.2



access_222_b_1_x_cat

Fig.2



access_225_a_1_cat

SIRCO

Load break switches for power distribution
from 125 to 5000 A

Key handle interlocking system

Use

Locking in position 0 of the front operation handle:

- using a padlock (not supplied) - function is available as standard on the handle.
- From 125 to 1800 A, the padlock on the external front operation handle also locks

the door,

- using lock (not supplied): see diagrams opposite,
- using undervoltage coil: the SIRCO can only be closed if the coil is live.

For 6/8 pole: Please consult us

For SIRCO

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	No. of poles	Operation	Figure	Reference
125 ... 630	3/4 P	front direct	1	2699 6008 ⁽¹⁾
125 ... 1800	3/4 P	external front	3	1499 7701
800 ... 3200	3/4 P	front direct	2	2699 6027
1250 ... 5000	3/4 P	external front	4	2799 7002

(1) Front handle operation included.

For SIRCO AC

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	No. of poles	Operation	Figure	Reference
200 ... CD 630	3/4 P	front direct	1	2699 6011 ⁽¹⁾
630 ... 1600	3/4 P	front direct	2	2699 6028

For SIRCO

Locking using 230 VAC undervoltage coil (other voltages: please consult us)

Rating (A)	No. of poles	Operation	Reference
125 ... 630	3/4 P	external front	2699 9063 ⁽¹⁾
800 ... 3200	3/4 P	front direct	2699 9315 ⁽¹⁾

(1) The locking system is directly mounted on the device.

Locking using CASTELL lock (not supplied)

Rating (A)	No. of poles	Handle	Lock type	Operation	Figure	Reference
125 ... 160	6/8 P	S2 type	K	External front	2	4109 8507
125 ... 1 800	3/4 P	S2, S4 type	FS	External front	3	1499 7703
125 ... 1 800	3/4 P	S2, S4 type	K	External front	3	1499 7702
250 ... 630	6/8 P	S4 type	K	External front	2	2999 8707
800 ... 1 600	6/8 P	S5 type	K	External front	2	2799 7003
1 250 ... 4 000	3/4 P	S5, S0 type	K	External front	2	2799 7003

Fig. 1

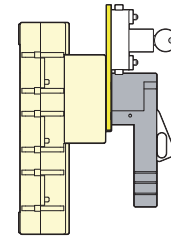


Fig. 3

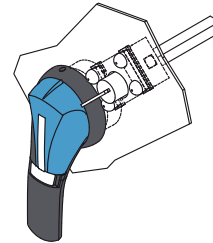


Fig.2

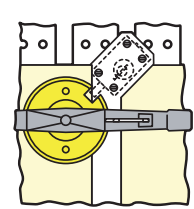
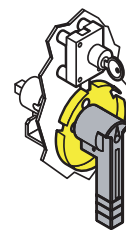


Fig.4



access_001_a_1_x_cat

access_005_a_1_x_cat

access_158_a_1_x_cat

access_004_c_1_x_cat

Other specific accessories



bd_03_01_01

- Mechanical coupling device for making switches with "n" poles of the same or different ratings.
- Mechanical interlocking device.

SIRCO characteristics according to IEC 60947-3

125 to 800 A

Thermal current I_{th} at 40°C	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A	800 A
Rated insulation voltage U_i (V)	800	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
415 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
415 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	500/500	800/800
220 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
220 VDC	DC-21 A / DC-21 B	125/125	160/160	160/200	250/250	315/315	400/400	500/500	630/630	800/800
220 VDC	DC-22 A / DC-22 B	125/125	160/160	160/200	250/250	315/315	400/400	400/500	500/500	800/800
220 VDC	DC-23 A / DC-23 B	125/125	125/125	160/160	200/200	315/315	400/400	400/400	500/500	800/800
440 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
440 VDC	DC-21 A / DC-21 B	125 ⁽³⁾ /125 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	160 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	315 ⁽³⁾ /315 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	315 ⁽³⁾ /315 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	125 ⁽⁴⁾ /125 ⁽⁴⁾	125 ⁽⁴⁾ /125 ⁽⁴⁾	160 ⁽⁴⁾ /160 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	315 ⁽⁴⁾ /315 ⁽⁴⁾	400 ⁽⁴⁾ /400 ⁽⁴⁾	400 ⁽⁴⁾ /400 ⁽⁴⁾	500/500	800 ⁽⁴⁾ /800 ⁽⁴⁾
500 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
500 VDC	DC-21 A / DC-21 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	160 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	315 ⁽³⁾ /315 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	400 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾
500 VDC	DC-22 A / DC-22 B	125 ⁽⁴⁾ /125 ⁽⁴⁾	125 ⁽⁴⁾ /125 ⁽⁴⁾	160 ⁽⁴⁾ /160 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	315 ⁽⁴⁾ /315 ⁽⁴⁾	315 ⁽⁴⁾ /400 ⁽⁴⁾	315 ⁽⁴⁾ /400 ⁽⁴⁾	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	125 ⁽⁴⁾ /125 ⁽⁴⁾	125 ⁽⁴⁾ /125 ⁽⁴⁾	160 ⁽⁴⁾ /160 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	315 ⁽⁴⁾ /315 ⁽⁴⁾	315 ⁽⁴⁾ /400 ⁽⁴⁾	315 ⁽⁴⁾ /400 ⁽⁴⁾	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾

Operational power in AC-23 A (kW) ⁽¹⁾⁽⁵⁾

At 415 VAC without pre-break in AC ⁽¹⁾	63/63	80/80	100/100	132/132	160/160	220/220	280/280	280/280	450/450
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Reactive power (kvar)

At 400 VAC (kvar) ⁽⁵⁾	55	75	90	115	145	185	230	290	365
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Fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	100	100	80	50	100	100	100	70	50
Associated fuse rating (A)	125	160	200	250	315	400	500	630	800

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s at 690 VAC

Rated short-time withstand current 0.3s. I_{ow} (kA rms)	15	15	17	17	25	25	25	25	50
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{ow} (kA rms)	7	7	9	9	13	13	13	13	35
Rated short-circuit making capacity without fuses I_{cm} (kA peak)	11.9	11.9	15.3	15.3	26	26	26	26	73.5

Connection

Maximum Cu cable cross-section (mm ²)	35	50	70	95	150	185	240	2 x 150	2 x 185
Minimum Cu busbar cross-section (mm ²)								2 x 30 x 5	2 x 40 x 5
Maximum Cu cable cross-section (mm ²)	50	95	95	150	240	240	240	2 x 300	2 x 300
Maximum Cu busbar width (mm)	25	25	32	32	40	40	40	50	63
Tightening torque min/max (Nm)	9/-	9/-	20/-	20/-	20/-	20/-	20/-	20/-	40/45

Mechanical characteristics

Durability (number of operating cycles)	10000	10000	10000	10000	10000	10000	10000	10000	3000
Operating effort (Nm)	6.5	6.5	10	10	10	14.5	14.5	14.5	37
Weight of a 3 pole device (kg)	1	1.5	2	2	3.5	3.5	3.5	3.5	8
Weight of a 4 pole device (kg)	1.5	1.5	2	2	4	4	4.5	4.5	10

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 415$ VAC.

SIRCO characteristics according to IEC 60947-3

1000 to 5000 A

Thermal current I_{th} at 40°C	1000 A	CD 1250 A	1250 A	1600 A	1800 A	2000 A	2500 A	3200 A	4000 A	5000 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	1000/1000	1250/1250	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200	4000/4000	5000/5000
415 VAC	AC-21 A / AC-21 B	1000/1000	1250/1250	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200	4000/4000	5000/5000
415 VAC	AC-22 A / AC-22 B	1000/1000	1250/1250	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	2500/3200	2500/3200	2500/3200
415 VAC	AC-23 A / AC-23 B	1000/1000	1250/1250	1250/1250	1250/1250	1250/1250	1600/1600	1600/1600	1600/1600	1800/2000	1800/2000
220 VDC	DC-20 A / DC-20 B	1000/1000	1250/1250	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200	4000/4000	5000/5000
220 VDC	DC-21 A / DC-21 B	1000/1000	1250/1250	1250/1250	1250/1600	1250/1600	2000/2000	2000/2500	2000/2500	2500/3200	2500/3200
220 VDC	DC-22 A / DC-22 B	1000/1000	1250/1250	1250/1250	1250/1250	1250/1250	1250/1600	1250/1600	1250/1600	1800/2000	1800/2000
220 VDC	DC-23 A / DC-23 B	1000/1000	1250/1250	1250/1250	1250/1250	1250/1250	1250/1250	1250/1250	1250/1250	1600/1600	1250/1600
440 VDC	DC-20 A / DC-20 B	1000/1000	1250/1250	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200	4000/4000	5000/5000
440 VDC	DC-21 A / DC-21 B	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾	2000 ⁽⁴⁾ /2000 ⁽⁴⁾	2000 ⁽⁴⁾ /2500 ⁽⁴⁾	2500 ⁽⁴⁾ /3200 ⁽⁴⁾	3200 ⁽⁴⁾ /4000 ⁽⁴⁾	3200 ⁽⁴⁾ /5000 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1600 ⁽⁴⁾ /1800 ⁽⁴⁾	1600 ⁽⁴⁾ /1800 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
500 VDC	DC-20 A / DC-20 B	1000/1000	1250/1250	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3250/3250	4000/4000	5000/5000
500 VDC	DC-21 A / DC-21 B	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1600 ⁽⁴⁾ /1800 ⁽⁴⁾	1600 ⁽⁴⁾ /1800 ⁽⁴⁾
500 VDC	DC-22 A / DC-22 B	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾	1250 ⁽⁴⁾ /1600 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾

Operational power in AC-23 A (kW) ⁽¹⁾⁽⁵⁾

At 415 VAC without pre-break in AC ⁽¹⁾	560/560	710/710	710/710	710/710	710/710	710/710	710/710	710/710	710/710	710/710	710/710
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Reactive power (kvar)

At 400 VAC (kvar) ⁽⁵⁾	460										
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Fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	100	100	100	100	100	100	100				
Associated fuse rating (A)	1000	1250	1250	2 x 800	2 x 800	2 x 1000	2 x 1250				

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s at 690 VAC

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	65	65	100	100	100	100	100	100	100		
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	35	35	50	50	50	50	50	50	50	75	75
Rated short-circuit making capacity without fuses I_{cm} (kA peak)	73.5	73.5	75	75	75	80	80	80	80	165	165

Connection

Maximum Cu cable cross-section (mm ²)	2 x 240										
Minimum Cu busbar cross-section (mm ²)	2 x 50 x 5	2 x 60 x 5	2 x 60 x 5	2 x 80 x 5	3 x 100 x 5	3 x 100 x 5	4 x 100 x 5	4 x 100 x 5	1 x 100 x 5	1 x 100 x 5	
Maximum Cu cable cross-section (mm ²)	4 x 185	4 x 185	4 x 185	6 x 185	6 x 185						
Maximum Cu busbar width (mm)	63	63	100	100	100	100	100	100			
Tightening torque min/max (Nm)	40/45	40/45	40/45	40/45	40/45	40/45	40/45	40/-	40/-	40/-	40/-

Mechanical characteristics

Durability (number of operating cycles)	3000	3000	4000	4000	4000	3000	3000	3000	2000	2000	
Operating effort (Nm)	37	37	56	56	56	75	75	75	105	105	
Weight of a 3 pole device (kg)	8	8	12	12	12	22	22	22	45	45	
Weight of a 4 pole device (kg)	10	10	15	15	15	25	25	25	50	50	

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 415$ VAC.

SIRCO AC characteristics according to IEC 60947-3

200 to 630 A

Thermal current I_{th} at 40°C	200 A	250 A	315 A	400 A	500 A	CD 630 A	630 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12
Rated operational currents I_e (A)							
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
500 VAC	AC-20 A / AC-20 B	200/200	250/250	315/315	400/400	500/500	630/630
500 VAC	AC-21 A / AC-21 B	200/200	250/250	315/315	400/400	500/500	630/630
500 VAC	AC-22 A / AC-22 B	200/200	250/250	315/315	400/400	500/500	630/630
500 VAC	AC-23 A / AC-23 B	200/200	250/250	315/315	400/400	500/500	630/630
690 VAC	AC-20 A / AC-20 B	200/200	250/250	315/315	400/400	500/500	630/630
690 VAC	AC-21 A / AC-21 B	200/200	250/250	315/315	400 ⁽²⁾ /400 ⁽²⁾	500 ⁽²⁾ /500 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾
690 VAC	AC-22 A / AC-22 B	200/200	250/250	315/315	400 ⁽²⁾ /400 ⁽²⁾	500 ⁽²⁾ /500 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾
690 VAC	AC-23 A / AC-23 B	200/200	250/250	315/315	400 ⁽²⁾ /400 ⁽²⁾	500 ⁽²⁾ /500 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾
Operational power in AC-23 A (kW) ⁽⁵⁾							
At 690 VAC without pre-break AC	160	220	250	400	500	500	630
Reactive power (kvar)							
At 690 VAC (kvar)	160	190	250	325	400	400	450
Fuse protected short-circuit withstand (kA rms prospective) at 690 VAC ⁽⁶⁾							
Prospective short-circuit current (kA rms)	50	50	50	50	50	50	50
Associated fuse rating (A)	200	250	315	400	500	630	630
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s at 690 VAC							
Rated short-time withstand current 0.3s. I_{cw} (kA rms)	15	15	15	15	15	15	28
Short-circuit capacity (without protection)							
Rated short-time withstand current 1s. I_{cw} (kA rms)	8	8	8	11	11	11	20
Rated short-circuit making capacity without fuses I_{cm} (kA peak)	22	22	22	22	22	22	40
Connection							
Maximum Cu cable cross-section (mm ²)	70	70	70	185	240	2 x 150	2 x 185
Minimum Cu busbar cross-section (mm ²)						2 x 30 x 5	2 x 40 x 5
Maximum Cu cable cross-section (mm ²)	95	95	95	240	240	2 x 300	2 x 300
Maximum Cu busbar width (mm)	32	32	32	40	40	63	63
Tightening torque min/max (Nm)	20/-	20/-	20/-	20/-	20/-	20/-	40/45
Mechanical characteristics							
Durability (number of operating cycles)	10000	10000	10000	5000	5000	5000	4000
Operating effort (Nm)	10	10	10	14.5	14.5	14.5	48
Weight of a 3 pole device (kg)	2	2	2	3.5	3.5	3.5	8
Weight of a 4 pole device (kg)	2	2	2	4	4	4	10

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 690$ VAC.

SIRCO AC characteristics according to IEC 60947-3

800 to 4000 A

Thermal current I_{th} at 40°C	800 A	1000A	CD 1250 A	1250 A	1600 A	2000 A	4000 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12
Rated operational currents I_e (A)							
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
500 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	4000/4000
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	-/3200
500 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	-
500 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	-
690 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	4000/4000
690 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	-/3200
690 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	-/-
690 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	-/-
Operational power in AC-23 A (kW) ⁽⁵⁾							
At 690 VAC without pre-break AC	900	900	-	-	-	-	-
Reactive power (kvar)							
At 690 VAC (kvar)	550	750	950	950	-	-	-
Fuse protected short-circuit withstand (kA rms prospective) at 690 VAC ⁽⁶⁾							
Prospective short-circuit current (kA rms)	50	50	50	50	50	-	-
Associated fuse rating (A)	800	800	2 x 500	1250	2 x 800	-	-
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s at 690 VAC							
Rated short-time withstand current 0.3s. I_{cw} (kA rms)	28	55	55	53	53	53	53
Short-circuit capacity (without protection) at 690 VDC							
Rated short-time withstand current 1s. I_{sw} (kA rms)	20	30	30	35	35	35	35
Rated short-circuit making capacity without fuses I_{cm} (prospective kA peak)	40	80	80	75	75	75	75
Connection							
Maximum Cu cable cross-section (mm ²)	2 x 185	2 x 240					
Minimum Cu busbar cross-section (mm ²)	2 x 40 x 5	2 x 50 x 5	2 x 60 x 5	2 x 60 x 5	2 x 80 x 5	3 x 100 x 5	1 x 100 x 5
Maximum Cu cable cross-section (mm ²)	2 x 300	4 x 185	4 x 185	4 x 185	6 x 185		
Maximum Cu busbar width (mm)	63	63	63	100	100	100	
Tightening torque min/max (Nm)	40/45	40/45	40/45	40	40	40	40
Mechanical characteristics							
Durability (number of operating cycles)	4000	4000	3000	4000	4000	3000	2000
Operating effort (Nm)	48	48	48	55	55	75	100
Weight of a 3 pole device (kg)	8	8	8	12	12	22	45
Weight of a 4 pole device (kg)	10	10	10	15	15	25	50

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

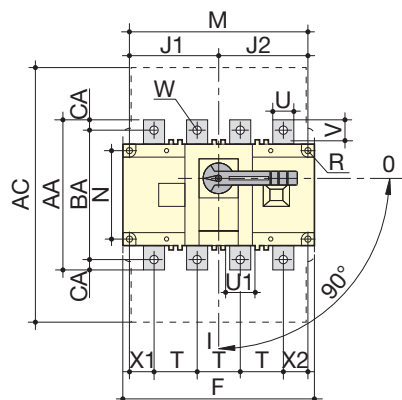
(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 690$ VAC.

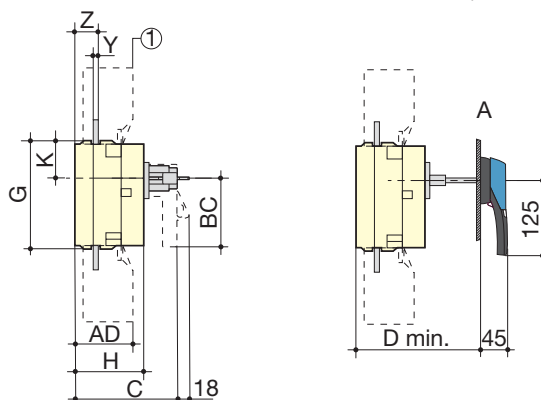
Dimensions - Front operation

SIRCO 125 to 630 A and SIRCO AC 200 to CD 630 A

Direct front operation



External front operation



1. Terminal shrouds

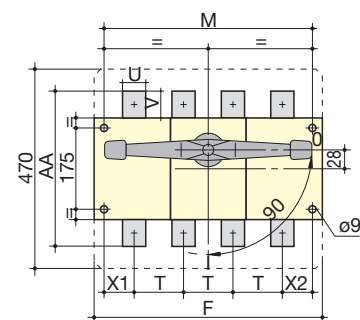
A. S2 type handle

sirco_198_L1_X_cat

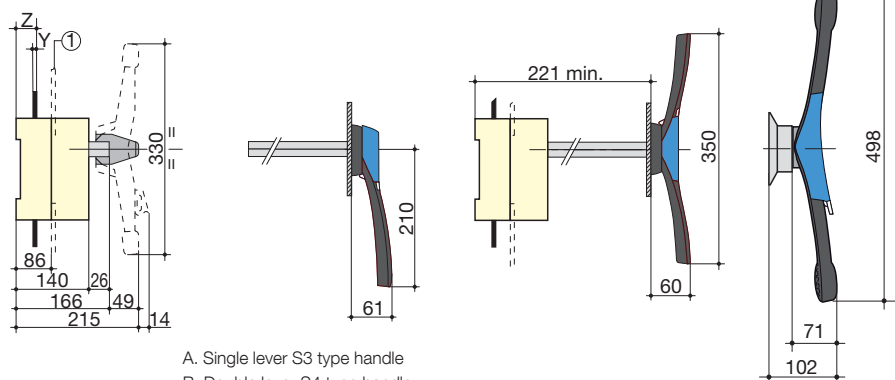
Rating (A) SIRCO	Rating (A) SIRCO AC	Overall dimensions		Terminal shrouds		Switch body										Switch mounting				Connection											
		C	D min	AC	AD	F 3p.	F 4p.	G	H	J1 3p.	J1 4p.	J2	K	BC	M 3p.	M 4p.	N	R	T	U	U1	V	W	X1 3p.	X1 4p.	X2	Y	Z	AA	BA	CA
125...160		115	125	235	50	140	170	93	65	45	75	75	31.5	80	120	150	65	5.5	36	20	20.5	25	9	28	22	20	3.5	20.5	135	115	10
200...250	200...250			280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	20	25.5	21.5	11	33	33	27	3.5	22.5	160	130	15
315...400	400...500	160	165	401	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	32	45.5	29	11	42.5	37.5	37.5	5	36	235	205	15
500	-			20	35	35	13	37.5	37.5	260	220	20																			
630	CD 630			45	41.5	260	220	20																							

SIRCO 800 to 1800 A and SIRCO AC 630 to 1600 A

Direct front operation



External front operation



1. Terminal screens

A. Single lever S3 type handle

B. Double lever S4 type handle

C. Double lever S5 type handle

sirco_325_d_1_X_cat

Rating (A) SIRCO	Rating (A) SIRCO AC	Switch body		Switch mounting		Connection									
		F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	Y	X1	X2	Z	AA		
800 ... 1000	630 ... 1000	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321		
CD 1250	CD 1250						60	65						330	
1250 ... 1800	1250 ... 1600	372	492	492	467	120	90	44	8	53.5	53.5	47.5	288		

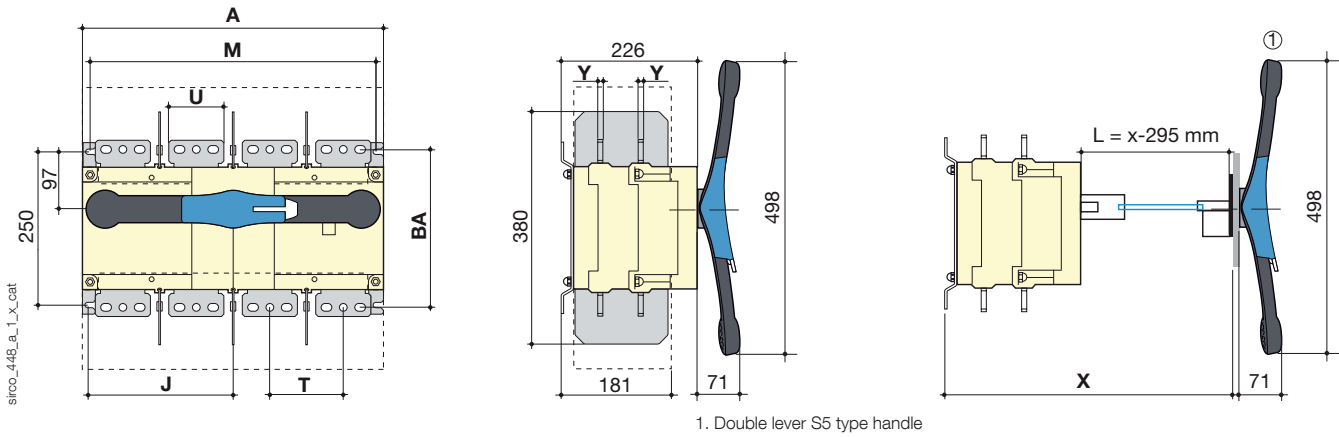
SIRCO

Load break switches for power distribution
from 125 to 5000 A

SIRCO 2000 to 3200 A and SIRCO AC 2000 A

Direct front operation

External front operation

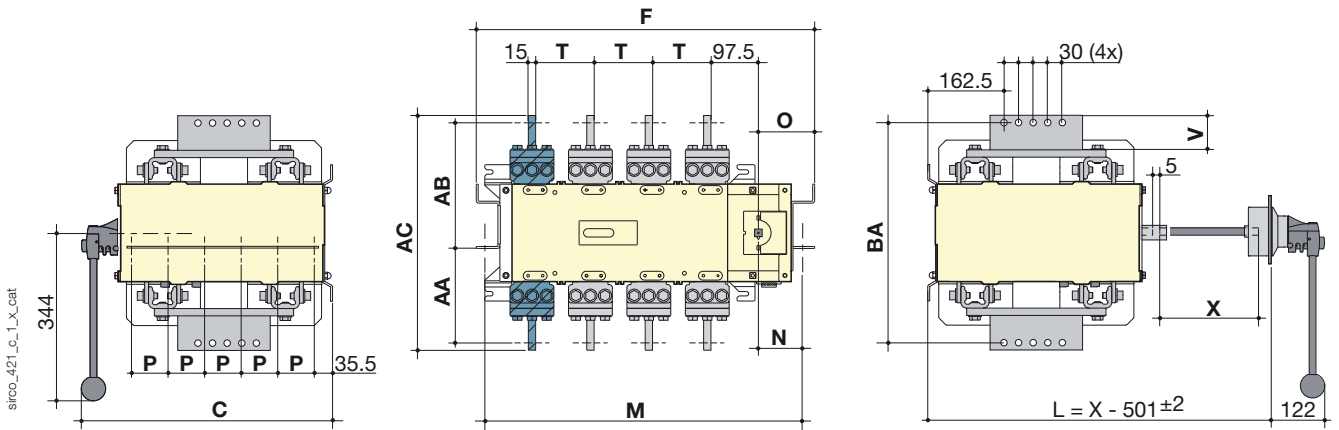


Rating (A) SIRCO	SIRCO AC rating (A)	Overall dimensions		Switch body		Switch mounting		Connection			
		A 3p.	A 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	Y	BA
2000 ... 3200	2000	372	492	173.5	233.5	347	367	120	90	8	258

SIRCO 4000 to 5000 A and SIRCO AC 4000 A

Direct front operation

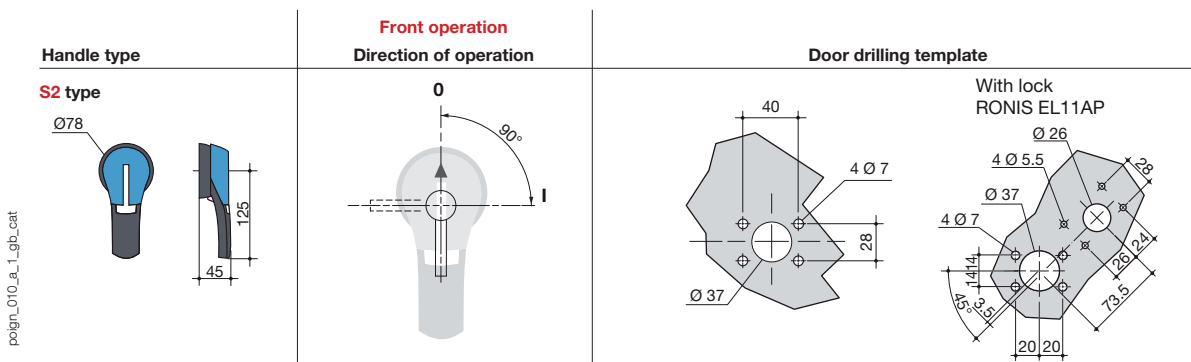
External front operation



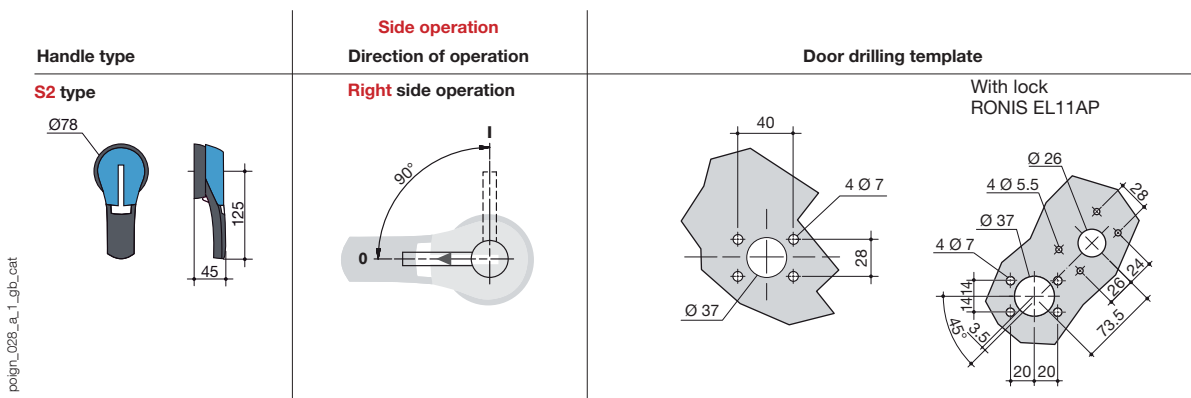
Rating (A) SIRCO	Rating (A) SIRCO AC	Overall dimensions C	Switch body		Switch mounting					Connection					
			F 3p.	F 4p.	M 3p.	M 4p.	N	O	D	T	V	AA	AB	AC	BA
4000 ... 5000	4000	514	695	695	660	660	98	115.5	75	120	86	160	292	482	452

Dimensions for external handles

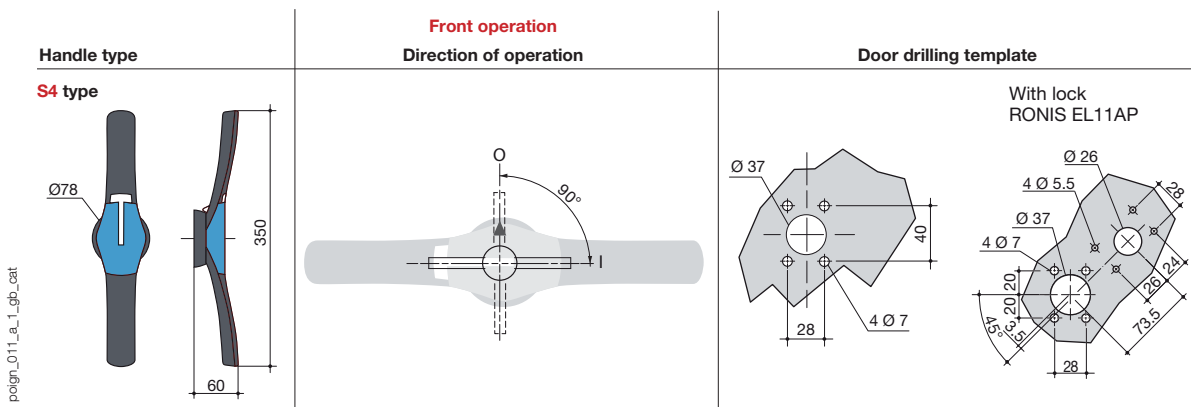
SIRCO 125 to 630 A and SIRCO AC 200 to CD 630 A



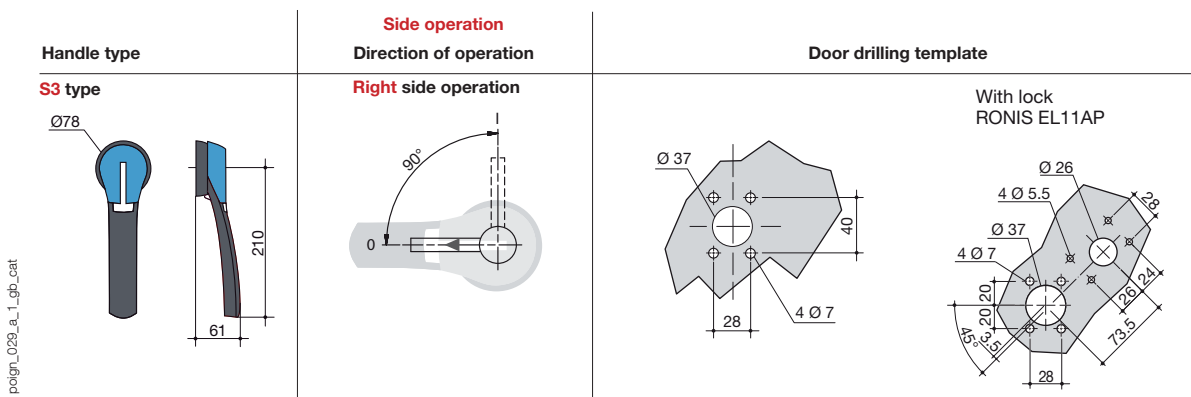
SIRCO 125 to 630 A



SIRCO 800 to 1800 A and SIRCO AC 630 to 1600 A



SIRCO 800 to 1800 A

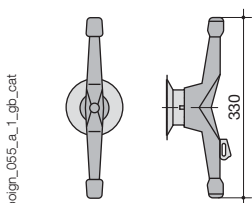
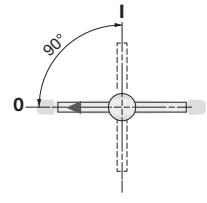
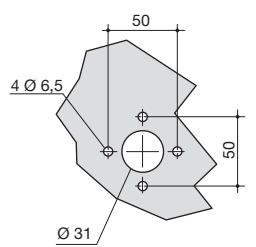


SIRCO

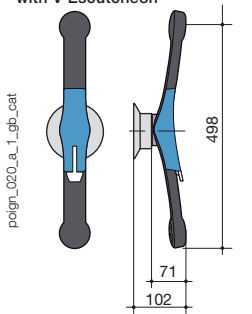
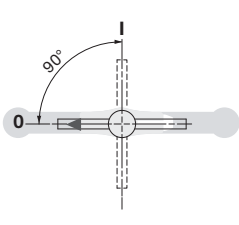
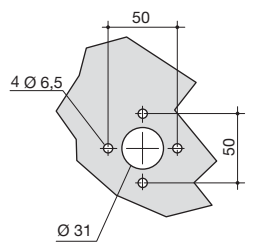
Load break switches for power distribution
from 125 to 5000 A

Dimensions for external handles (continued)

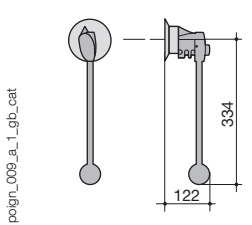
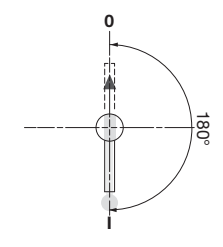
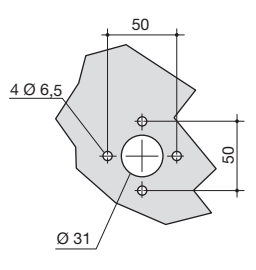
SIRCO 2000 to 3200 A

Handle type	Front operation Direction of operation	Door drilling template
V2 Type 		

SIRCO AC 2000 A

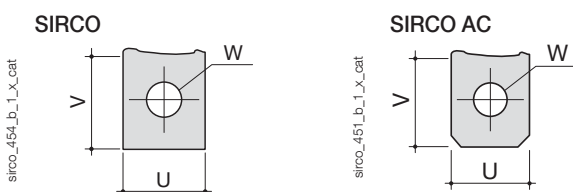
Handle type	Front operation Direction of operation	Door drilling
S5 type with V Escutcheon 		

SIRCO 4000 to 5000 A and SIRCO AC 4000 A

Handle type	Front operation Direction of operation	Door drilling
V0 type 		

Connection terminal

SIRCO 125 to 630 A and SIRCO AC 200 to CD 630 A



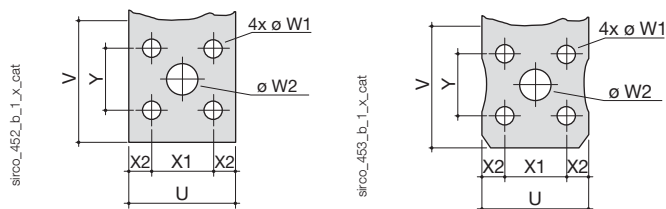
Rating (A)		U	V	W
SIRCO	SIRCO AC			
125 ... 160		20	25	9
200 ... 250	200 ... 250	25	21.5	11
	315	35		
315 ... 400	400 ... 500	32	29	13
500		45	41.5	
630	CD 630			

Connection terminal (continued)

SIRCO 800 to 1000 A and SIRCO AC 630 to 1000 A

SIRCO

SIRCO AC

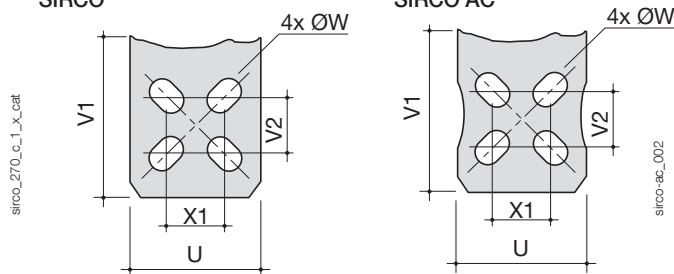


Rating (A)		U	V	W1	W1	X1	X2	Y
SIRCO	SIRCO AC							
800 ... 1000	630 ... 1000	50	60.5	28.5	16	28.5	11	33

SIRCO and SIRCO AC CD 1250 A

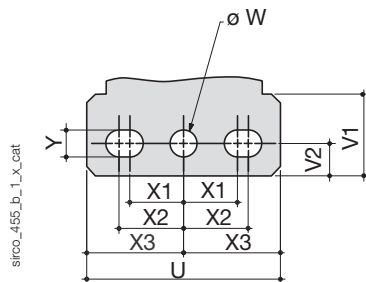
SIRCO

SIRCO AC



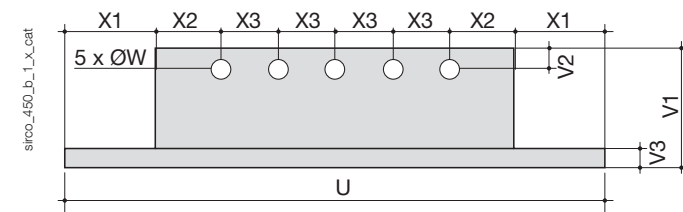
Rating (A)		U	V1	V2	W	X1	Y
SIRCO	SIRCO AC						
CD 1250 A	CD 1250 A	60	65	28.5	16	28.5	11

SIRCO 1250 to 3200 A and SIRCO AC 1250 to 1600 A



Rating (A)		U	V1	V2	W	X1	X2	X3	Y
SIRCO	SIRCO AC								
1250 ... 3200	1250 ... 1600	90	35.8	15	12.5	25	30	45	12.5

SIRCO 4000 to 5000 A and SIRCO AC 4000 A



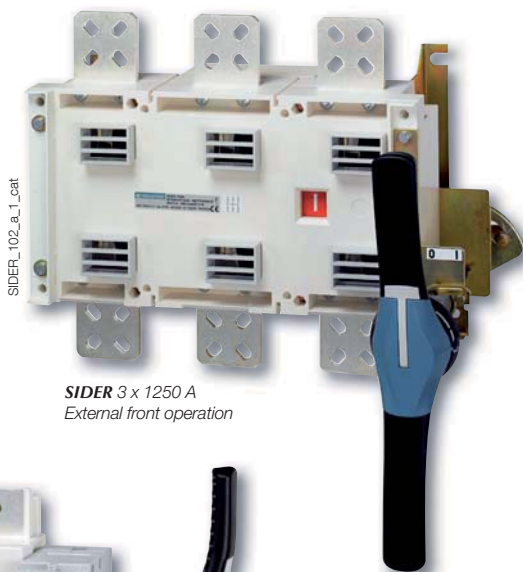
Rating (A)		U	W	X1	X2	X3	V1	V2	V3
SIRCO	SIRCO AC								
4000 ... 5000	4000	286	13	48	35	30	86	15	15



SIDER

Load break switches for power distribution
with visible breaking from 125 to 1600 A

Load break
switches



SIDER_102_a_1_cat
SIDER 3 x 1250 A
External front operation



SIDER_089_b_1_cat
SIDER ND 4 x 500 A
External right side operation

The solution for

- > Main switchboards.
- > Distribution panels.
- > Safety enclosures for emergency load break.
- > Normal atmosphere.
- > Explosive atmosphere.



Strong points

- > Safety thanks to visible breaking.
- > Modular product.

Function

SIDER and SIDER ND are manually operated 3 or 4 pole load break switches with visible breaking. They make and break under load conditions and provide safety isolation for any low voltage circuit.

Advantages

Safety thanks to visible breaking

Visible breaking and positive break indication ensure safe switching. The user can assess the condition of the device either during a preventive check or before an operation. The SIDER and SIDER ND load break switches are particularly suited for use in safety enclosures for explosive atmospheres (zone 21 and 22). The addition of a mechanical flag indicator, directly connected to the device's breaking system (SIDER only), provides reliable position information on the front of the enclosure.

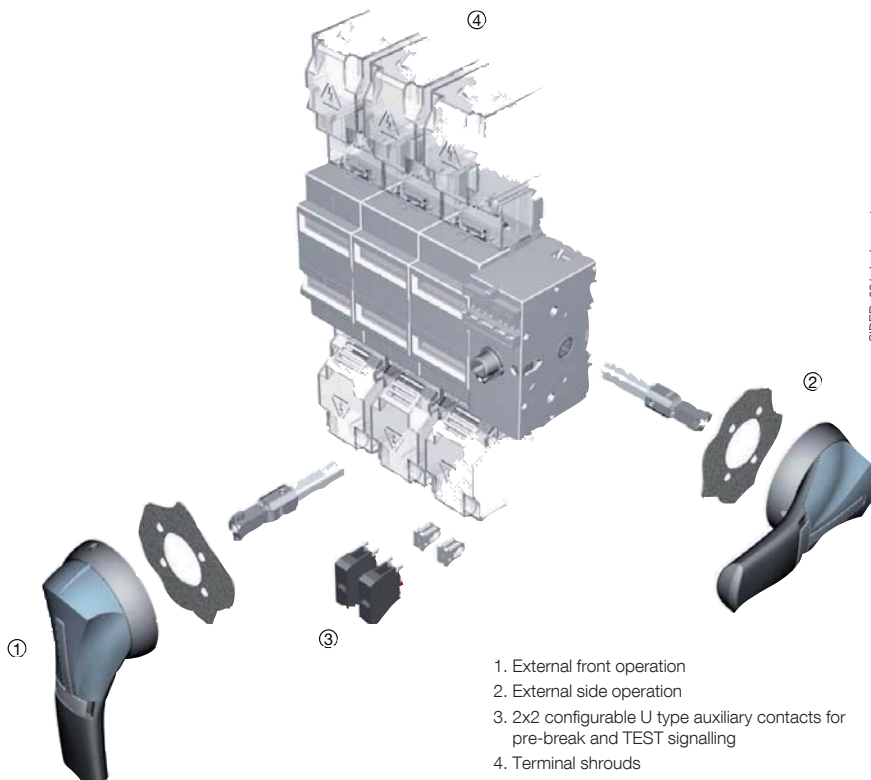
Modular product

The modular design of the SIDER ND allows the product to be easily adapted to suit your needs:

- mixed ratings,
- defining the number of poles,
- centring or offsetting the operating mechanism.

Functional diagram

For further details see the installation instructions supplied with the product.



1. External front operation
2. External side operation
3. 2x2 configurable U type auxiliary contacts for pre-break and TEST signalling
4. Terminal shrouds

References

Front operation

Rating (A)	No. of poles	Switch body Direct operation	Switch body External operation	Direct handle	External handle	Shaft for external handle	Auxiliary contact				
ND 125 A	3 P	2915 3012	2921 3012	Black 3629 7901 ⁽¹⁾	S2 type Black IP55 1421 2111 ⁽¹⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾ 500 mm 1400 1050	1 st contact NO/NC 3999 0021 ⁽²⁾⁽³⁾ 2 contacts NO/NC 3999 0022 ⁽²⁾⁽³⁾ 1 contact NC 3999 0701 ⁽⁴⁾⁽⁵⁾ 1 contact NO 3999 0702 ⁽⁴⁾⁽⁵⁾				
	4 P	2915 4012	2921 4012								
ND 200 A	3 P	2915 3021	2921 3020								
	4 P	2915 4021	2921 4020								
ND 250 A	3 P	2915 3025	2921 3025								
	4 P	2915 4025	2921 4025								
ND 315 A	3 P	2915 3031	2921 3031								
	4 P	2915 4031	2921 4031								
ND 400 A	3 P	2915 3041	2921 3041								
	4 P	2915 4041	2921 4041								
ND 500 A	3 P	2915 3051	2921 3051								
	4 P	2915 4051	2921 4051								
630 A	3 P	2900 3063	2900 3063					Black 2799 7012 ⁽¹⁾ Red 2799 7013	S4 type Black IP65 1443 3111 ⁽¹⁾ Red / Yellow IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	1 st contact NO/NC 2799 0001 2 nd contact NO/NC 2799 0002
	4 P	2900 4063	2900 4063								
800 A	3 P	2900 3080	2900 3080								
	4 P	2900 4080	2900 4080								
1250 A	3 P	2900 3120	2900 3120								
	4 P	2900 4120	2900 4120								
1600 A	3 P	2900 3160	2900 3160								
	4 P	2900 4160	2900 4160								

(1) Standard.

(2) Auxiliary signal contact - Type S.

(3) For direct operation.

(4) For external operation.

(5) Auxiliary signal contact - Type U.

SIDER

Load break switches for power distribution
with visible breaking from 125 to 1600 A

References (continued)

Side operation

Rating (A)	No. of poles	Switch body Direct operation	Switch body External right side operation	Direct handle	External handle	Shaft for external handle	Auxiliary contact
ND 125 A	3 P	2915 3012	2921 3012	Black 3629 7901 ⁽¹⁾	S2 type Black IP55 1425 2111 ⁽¹⁾ Black IP65 1427 2111 Red / Yellow IP65 1428 2111	200 mm 1400 1020 ⁽¹⁾	1 st contact NO/NC 3999 0021 ⁽²⁾⁽³⁾ 2 contacts NO/NC 3999 0022 ⁽²⁾⁽³⁾ 1 contact NC 3999 0701 ⁽⁴⁾⁽⁶⁾ 1 contact NO 3999 0702 ⁽⁴⁾⁽⁶⁾
	4 P	2915 4012	2921 4012				
ND 200 A	3 P	2915 3021	2921 3020				
	4 P	2915 4021	2921 4020				
ND 250 A	3 P	2915 3025	2921 3025				
	4 P	2915 4025	2921 4025				
ND 315 A	3 P	2915 3031	2921 3031				
	4 P	2915 4031	2921 4031				
ND 400 A	3 P	2915 3041	2921 3041				
	4 P	2915 4041	2921 4041				
ND 500 A	3 P	2915 3051	2921 3051				
	4 P	2915 4051	2921 4051				
630 A	3 P	2905 3063	2905 3063	Black 2799 7052 ⁽¹⁾ Conversion kit 2799 7070 ⁽⁵⁾ Red 2799 7053 Conversion kit 2799 7070 ⁽⁵⁾	S3 type Black IP65 1437 3111 ⁽¹⁾ Red / Yellow IP65 1438 3111	200 mm 1404 1520 ⁽¹⁾	1 st contact NO/NC 2799 0011 2 nd contact NO/NC 2799 0012
	4 P	2905 4063	2905 4063				
800 A	3 P	2905 3080	2905 3080				
	4 P	2905 4080	2905 4080				
1250 A	3 P	2905 3120	2905 3120				
	4 P	2905 4120	2905 4120				
1600 A	3 P	2905 3160	2905 3160				
	4 P	2905 4160	2905 4160				

(1) Standard.

(2) Auxiliary signal contact - Type S.

(3) For direct operation.

(4) For external operation.

(5) Conversion kit necessary for any direct operation.

(6) Auxiliary signal contact - Type U.

Accessories

Direct operation handle

For front operation		
Rating (A)	Handle colour	Reference
ND 125 ... ND 500	Black	3629 7901
630 ... 1600	Black	2799 7012⁽¹⁾
630 ... 1600	Red	2799 7013

(1) Standard.

For side operation		
Rating (A)	Handle colour	Reference
ND 125 ... ND 500	Black	3629 7901
630 ... 1600	Black	2799 7052
630 ... 1600	Red	2799 7053

Direct side operation escutcheon		
Rating (A)	External IP	Reference
630 ... 1600	IP54	2799 7070⁽¹⁾

(1) To be ordered together with the direct side operation handles.



Door interlocked external operation

For front operation				
Rating (A)	Handle colour	Handle	External IP ⁽¹⁾	Reference
ND 125 ... ND 500	Black	S2 type	IP55	1421 2111⁽²⁾
ND 125 ... ND 500	Black	S2 type	IP65	1423 2111
ND 125 ... ND 500	Red	S2 type	IP65	1424 2111
630 ... 1600	Black	S4 type	IP65	1443 3111⁽²⁾
630 ... 1600	Red	S4 type	IP65	1444 3111

(1) IP: protection degree according to IEC 60529 standard.

(2) Standard.

For right side operation				
Rating (A)	Handle colour	Handle	External IP ⁽¹⁾	Reference
ND 125 ... ND 500	Black	S2 type	IP55	1425 2111
ND 125 ... ND 500	Red	S2 type	IP65	1428 2111
630 ... 1600	Black	S3 type	IP65	1437 3111
630 ... 1600	Red	S3 type	IP65	1438 3111

(1) IP: protection degree according to IEC 60529 standard.



Shaft guide for external operation

Use

To guide the shaft extension into the external handle. This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.

Required for shaft lengths over 320 mm.

Description	Reference
Shaft guide	1429 0000



S type handle adapter

Use

Enables S type handles to be fitted in place of existing older style Socomec handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



SIDER

Load break switches for power distribution
with visible breaking from 125 to 1600 A

Accessories (continued)

Alternative S type handle cover colours

Use

For single lever handles S1, S2 and S3 types and double lever handle, S4 type.

Other colours: Please consult us.



Handle colour	To be ordered in multiples of	Handle	Reference
Light grey	50	Type S1, S2	14010001
Dark grey	50	Type S1, S2	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041

Shaft for external handle

Use

Standard lengths:

- 80 mm,
- 200 mm,
- 320 mm,

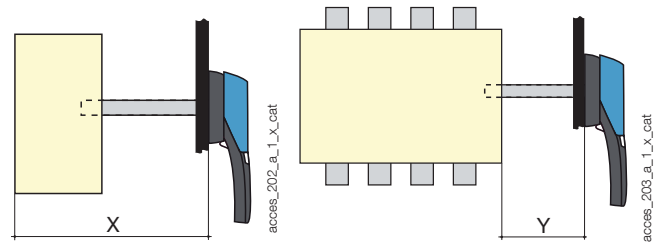
- 400 mm,
- 500 mm.

Other lengths: Please consult us.



For front operation				
Rating (A)	Dimension X (mm)	Shaft length (mm)	Type	Reference
ND 125 ... ND 500	95 ... 230	200 mm	10 x 10	1400 1020
ND 125 ... ND 500	95 ... 350	320 mm	10 x 10	1400 1032
ND 125 ... ND 500	95 ... 530	500 mm	10 x 10	1400 1050
630 ... 1600	295 ... 555	200 mm	15 x 12	1401 1520
630 ... 1600	295 ... 675	320 mm	15 x 12	1401 1532
630 ... 1600	295 ... 755	400 mm	15 x 12	1401 1540

For side operation				
Rating (A)	Dimension Y (mm)	Shaft length (mm)	Type	Reference
ND 125 ... ND 500	20 ... 110	80 mm	10 x 10	included
ND 125 ... ND 500	20 ... 230	200 mm	10 x 10	1400 1020
630 ... 1600	98 ... 258	200 mm	15 x 12	1404 1520



Auxiliary contacts for pre-break and signalling - Front operation

Use

Pre-break and signalling of positions 0 and I:

- 1 to 2 NO/NC auxiliary contacts,
- 1 to 4 NO or NC auxiliary contacts,
- 1 to 4 NO+NC auxiliary contacts.

Connection to the control circuit

6.35 mm fast-on terminal.

Characteristics

NO/NC A/C: IP2X.

Electrical characteristics

30 000 operations.



NO/NC contact		
Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 st	3999 0021 ⁽¹⁾
ND 125 ... ND 500	2 nd	3999 0022 ⁽¹⁾
630 ... 1600	1 st	2799 0001
630 ... 1600	2 nd	2799 0002

(1) For direct operation.

NC contact		
Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0701 ⁽¹⁾

(1) For external operation.

NO contact		
Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0702 ⁽¹⁾

(1) For external operation.

NO + NC contact		
Rating (A)	Position AC	Reference
630 ... 1600	1	2799 0005

Low level NO/NC auxiliary contacts		
Rating (A)	Position AC	Reference
630 ... 1600	1	2699 0101

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
ND 125 ... ND 500	changeover NO/NC	16		3	12	2
ND 125 ... ND 500	NC	10	6	4	5	3
ND 125 ... ND 500	NO	10	6	4	5	3
630 ... 1600	changeover NO/NC	16	12	8	14	6
630 ... 1600	NO + NC	15	10	6	15	12

Auxiliary contacts for pre-break and signalling - Right side operation

Use

Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts,
- 1 to 4 NO or NC auxiliary contacts.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Characteristics

NO/NC A/C: IP2X.

Electrical characteristics

30 000 operations.



NO/NC contact		
Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 st	3999 0021
ND 125 ... ND 500	2	3999 0022
630 ... 1600	1 st	2799 0011
630 ... 1600	2 nd	2799 0012

NC contact		
Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0701

NO contact		
Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0702

Low level NO/NC auxiliary contacts		
Rating (A)	Position AC	Reference
630 ... 1600	1	2799 0111

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
ND 125 ... ND 500	changeover NO/NC	16		3	12	2
ND 125 ... ND 500	NC	10	6	4	5	3
ND 125 ... ND 500	NO	10	6	4	5	3
630 ... 1600	changeover NO/NC	16	12	8	14	6

S type auxiliary contacts for signalisation - Front and right side operation

Use

Signalling of positions 0 and I,
1 to 4 NO+NC auxiliary contacts.

Connection to the control circuit

By terminals with a max. cross-section of 10 mm².

Electrical principle

The NO+NC S-type auxiliary contacts can be configured as 2 NO or 2 NC.

Electrical characteristics

30 000 operations.



NO+NC contact		
Rating (A)	Position AC	Reference
ND 125 ... ND 500	1	3999 0041
ND 125 ... ND 500	2	3999 0042
ND 125 ... ND 500	3	3999 0043
ND 125 ... ND 500	4	3999 0044

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (A)	
			250 VAC AC-13	400 VAC AC-13
ND 125 ... ND 500	NO + NC	20	10	8

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Advantage

Rating (A)	No. of poles	Position	Reference
ND 125 ... ND 200	3 P	top or bottom	3998 3016 ⁽¹⁾
ND 125 ... ND 200	4 P	top or bottom	3998 4016 ⁽²⁾
ND 250 ... ND 500	3 P	top or bottom	3998 3025 ⁽¹⁾
ND 250 ... ND 500	4 P	top or bottom	3998 4025 ⁽²⁾

(1) Reference composed of 3 pieces.

(2) Reference composed of 4 pieces.



SIDER

Load break switches for power distribution
with visible breaking from 125 to 1600 A

Accessories (continued)

Terminal screens

Use

Top or bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
630 ... 800	3 P	top or bottom	2998 3080
630 ... 800	4 P	top or bottom	2998 4080
1250 ... 1600	3 P	top or bottom	2998 3120
1250 ... 1600	4 P	top or bottom	2998 4120



access_065_a_1_cat

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

Connections

Rating (A)	Flexible cable cross-section (mm ²)	Rigid cable cross-section (mm ²)	Flexible bar width (mm)	Stripped over (mm)
ND 125	16 ... 95	16 ... 95	13	22
ND 200 ... ND 250	16 ... 185	16 ... 185	18	27
ND 315 ... ND 400	50 ... 240	50 ... 300	20	34
ND 500 ... 630	70 ... 300	70 ... 300	24	34

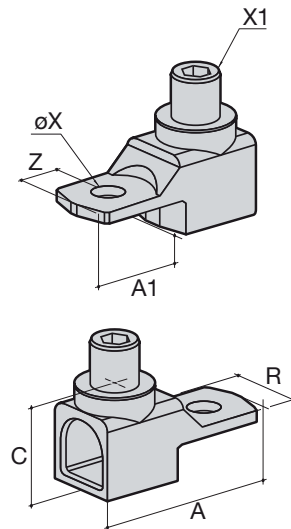
Dimensions

Rating (A)	A	A1	C	R	ØX	X1	Z
ND 125	47.5	22.5	25	20	8.5	M12	10
ND 200 ... ND 250	62	31.5	31.5	25	10.5	M16	14
ND 315 ... ND 400	71.5	32	38	32	10.5	M20	15
ND 500 ... 630	76.5	37	38	40	12.5	M20	15

Rating (A)	No. of poles	Reference
ND 125	3 P	5400 3016
ND 125	4 P	5400 4016
ND 200 ... ND 250	3 P	5400 3025
ND 200 ... ND 250	4 P	5400 4025
ND 315 ... ND 400	3 P	5400 3040
ND 315 ... ND 400	4 P	5400 4040
ND 500 ... 630	3 P	5400 3063
ND 500 ... 630	4 P	5400 4063



access_063_a_1_cat



access_091_a_1_x_cat

access_092_a_1_x_cat

Inter-phase barrier

Use

Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

Rating (A)	No. of poles	Reference
630 ... 1600	3 P	2998 0003
630 ... 1600	4 P	2998 0004



access_006_a_1_cat

Handle key interlocking accessories

Use

Locking in position 0 of the front or side operation handle:

- using RONIS EL11AP lock in direct right-side operation (Fig. 1),
- using RONIS EL11AP lock in direct front operation (Fig. 2),

- using RONIS EL11AP or CASTELL type K-type lock in external front operation (Fig. 3),
- using RONIS EL11AP lock in external right-side operation,
- using CASTELL FS-type in external front operation (Fig. 4).

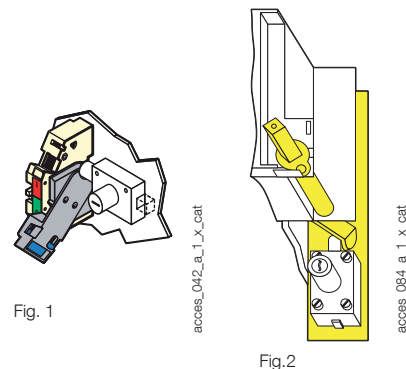


Fig. 1

Fig.2

Locking using RONIS EL11AP lock (not supplied)			
Rating (A)	Operation	Figure	Reference
ND 125 ... ND 500	front direct	1	3629 7913 ⁽¹⁾
630 ... 1600	front direct	2	2799 7007 ⁽²⁾
ND 125 ... 1600	external front	3	1499 7701
ND 125 ... ND 500	Direct side operation	1	3629 7913 ⁽¹⁾
ND 125 ... 1600	External right side	3	1499 7701

(1) Handle included.

(2) Factory mounting only.

Locking using type K CASTELL lock (not supplied)			
Rating (A)	Operation	Figure	Reference
ND 125 ... ND 500	external front	3	1499 7702

Locking using type FS CASTELL lock (not supplied)			
Rating (A)	Operation	Figure	Reference
ND 125 ND 500	external front	4	1499 7703

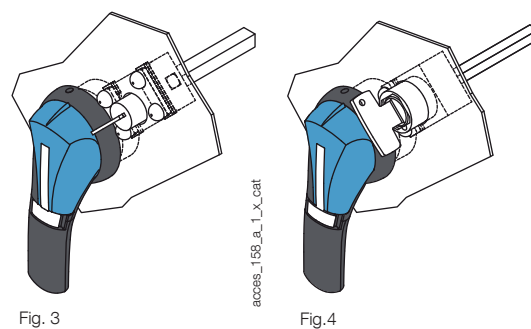


Fig. 3

Fig.4

Other specific accessories

- Mechanical coupling device for combining switches of the same or different ratings.
- Mechanical interlocking device.
- Mechanical plates and escutcheon for standard systems.

Characteristics according to IEC 60947-3

ND 125 to ND 500 A

Thermal current I_{th} at 40°C	ND 125 A	ND 200 A	ND 250 A	ND 315 A	ND 400 A	ND 500 A
Rated insulation voltage U_i (V)	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-21 A / AC-21 B	125/125	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-22 A / AC-22 B	125/125	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-23 A / AC-23 B	125/125	200/200	250/250	315/315	400/400	500/500
500 VAC	AC-20 A / AC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
500 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	250/250	400/400	500/500
500 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	250/250	400/400	500/500
500 VAC	AC-23 A / AC-23 B	125/125	160/160	250/250	250/250	315/315	315/315
690 VAC ⁽²⁾	AC-20 A / AC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	250/250	315/315	400/400	500/500
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	160/160	250/250	315/315	400/400	500/500
690 VAC ⁽²⁾	AC-23 A / AC-23 B	125/125	160/160	250/250	250/250	315/315	315/315
220 VDC	DC-20 A / DC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	315/315 ⁽³⁾	315/315 ⁽³⁾
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	315/315 ⁽³⁾	315/315 ⁽³⁾
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	200/315 ⁽³⁾	200/315 ⁽³⁾
440 VDC	DC-20 A / DC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
440 VDC	DC-21 A / DC-21 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	125/125 ⁽⁴⁾	125/125 ⁽⁴⁾	200/200 ⁽⁴⁾	200/200 ⁽⁴⁾	200/315 ⁽⁴⁾	200/315 ⁽⁴⁾
500 VDC	DC-20 A / DC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
500 VDC	DC-21 A / DC-21 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
500 VDC	DC-22 A / DC-22 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	125/125 ⁽⁴⁾	125/125 ⁽⁴⁾	200/200 ⁽⁴⁾	200/200 ⁽⁴⁾	200/315 ⁽⁴⁾	200/315 ⁽⁴⁾

Operational power in AC-23 A (kW) ⁽¹⁾⁽⁵⁾

At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾	63/63	110/110	140/140	160/160	220/220	295/295
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾	85/85	110/110	160/160	160/160	220/220	220/220
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾	110/110	150/150	220/220	220/220	295/295	295/295

Reactive power (kvar)

At 400 VAC (kvar)	55	90	115	145	185	230
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Fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	100	60	100	60	50	30
Associated fuse rating (A)	125	200	150	315	400	500

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Prospective short-circuit 0.3s (kA rms)	15	15	17	17	17	17
---	----	----	----	----	----	----

Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	7	7	9	9	9	9
Short-circuit making capacity without fuses I_{cm} (kA assumed peak)	11.9	11.9	15.3	15.3	15.3	15.3

Connection

Minimum Cu cable cross-section (mm ²)						
Minimum Cu busbar cross-section (mm ²)						
Maximum Cu cable cross-section (mm ²)	120	120	240	240	2 x 150	2 x 150
Maximum Cu busbar width (mm)	20	20	32	32	45	45
Tightening torque min (Nm)	9	9	20	20	20	20

Mechanical characteristics

Durability (number of operating cycles) ⁽⁶⁾	10 000	10 000	10 000	10 000	10 000	10 000
Operating effort (Nm)	10	10	12	12	15	15
Weight of a 3 pole device (kg)	1.8	1.8	3.2	3.2	4.8	4.8
Weight of a 4 pole device (kg)	2.3	2.3	4.5	4.5	6.1	6.1

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 415$ VAC.

630 to 1600 A

Thermal current I_{th} at 40°C	630 A	800 A	1250 A	1600 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	630/630	800/800	1250/1250	1600/1600
415 VAC	AC-21 A / AC-21 B	630/630	800/800	1250/1250	1600/1600
415 VAC	AC-22 A / AC-22 B	630/630	800/800	1250/1250	1250/1250
415 VAC	AC-23 A / AC-23 B	630/630	630/800	1000/1000	1000/1000
500 VAC	AC-20 A / AC-20 B	630/630	800/800	1250/1250	1600/1600
500 VAC	AC-21 A / AC-21 B	630/630	800/800	1250/1250	1600/1600
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000
500 VAC	AC-23 A / AC-23 B	500/500	500/500	800/800	800/800
690 VAC ⁽²⁾	AC-20 A / AC-20 B	630/630	800/800	1250/1250	1600/1600
690 VAC ⁽²⁾	AC-21 A / AC-21 B	630/630	800/800	1000/1000	1250/1250
690 VAC ⁽²⁾	AC-22 A / AC-22 B	315/315	315/315	400/400	400/400
690 VAC ⁽²⁾	AC-23 A / AC-23 B	100/100	125/125	200/200	200/200
220 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600
220 VDC	DC-21 A / DC-21 B	630/630	800/800	1000/1000	1250/1250
220 VDC	DC-22 A / DC-22 B	630/630	800/800	800/800	800/800
220 VDC	DC-23 A / DC-23 B	630/630	800/800	800/800	800/800
440 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600
440 VDC	DC-21 A / DC-21 B	500/500	630/630	800/800	1000/1000
440 VDC	DC-22 A / DC-22 B	630/630 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	630/630 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾
500 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600
500 VDC	DC-21 A / DC-21 B	500/500	630/630	800/800 ⁽⁴⁾	1000/1000
500 VDC	DC-22 A / DC-22 B	630/630 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	630/630 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾	800/800 ⁽⁴⁾

Operational power in AC-23 A (kW) ⁽¹⁾⁽⁵⁾

At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾	355/355	355/355	560/560	560/560
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾	355/355	355/355	560/560	560/560
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾	90/90	110/110	185/185	185/185

Reactive power (kvar)

At 400 VAC (kvar)	290	365	575	
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁵⁾	100	70	100	120
Associated fuse rating (A) ⁽⁶⁾	630	800	1250	2 x 800

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Prospective short-circuit 0.3s (kA rms)	50	50	100	100
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{CW} (kA rms)	26	26	50	50
Short-circuit making capacity without fuses I_{cm} (kA assumed peak)	50	50	70	70

Connection

Minimum Cu cable cross-section (mm ²)	2 x 150	2 x 185		
Minimum Cu busbar cross-section (mm ²)	2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5
Maximum Cu cable cross-section (mm ²)	2 x 300	2 x 300	4 x 185	6 x 240
Maximum Cu busbar width (mm)	63	63	100	100
Tightening torque min/max (Nm)	20	20	20	40

Mechanical characteristics

Durability (number of operating cycles) ⁽⁶⁾	5 000	4 000	4 000	3 000
Operating effort (Nm)	45	45	45	65
Weight of a 3 pole device (kg)	8	8.5	11	16.5
Weight of a 4 pole device (kg)	9.5	10	14	20.5

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 415$ VAC

SIDER

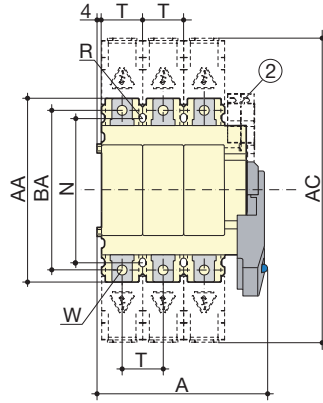
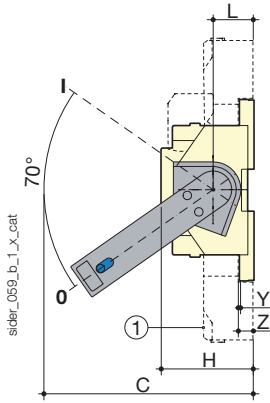
Load break switches for power distribution
with visible breaking from 125 to 1600 A

Dimensions

Front operation

SIDER ND 125 to ND 500 A

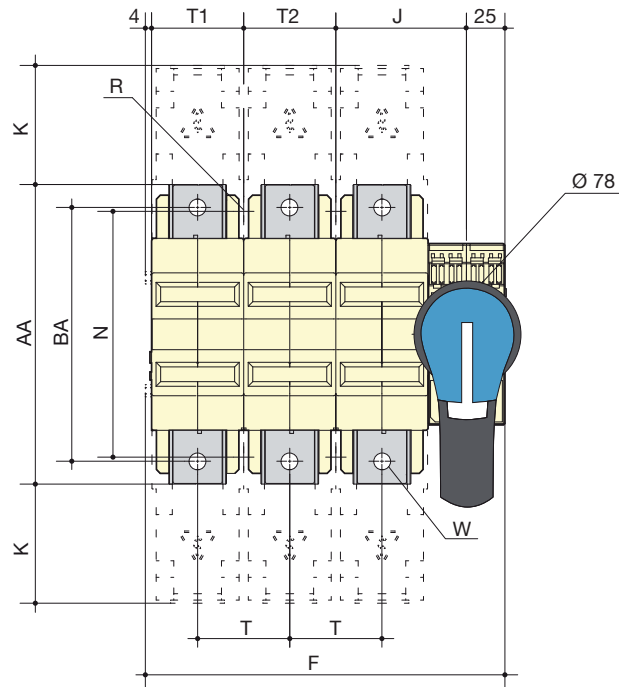
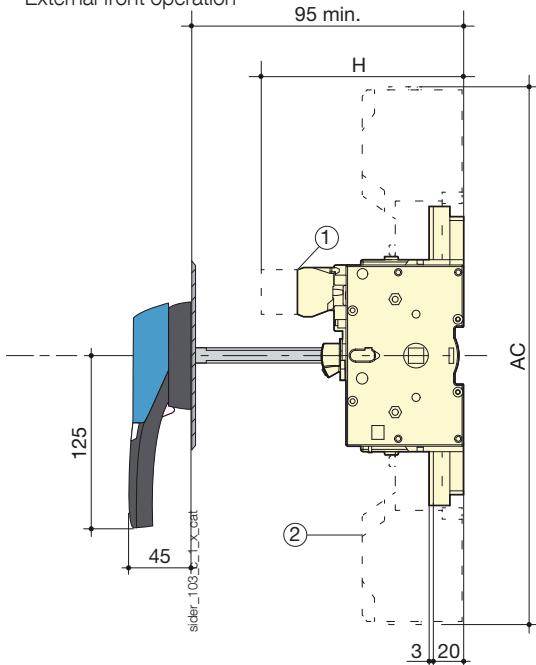
Direct front operation



- 1. Terminal shrouds
- 2. 1 or 2 NO / NC ACs for pre-break and signalling.

Rating (A)	Overall dimensions			Terminal shrouds	Switch body		Switch mounting			Connection					
	A 3p.	A 4p.	C	AC	H	L	N	R	T	W	Y	Z	AA	BA	
ND 125	160	196	178	268	82	36	130	5	36	8	3	20	162	141	
ND 200	160	196	178	268	82	36	130	5	36	8	3	20	162	141	
ND 250	232	322	173	350	77	31	162	6	60	10	3	20	195	165	
ND 315	232	322	173	350	77	31	162	6	60	10	3	20	195	165	
ND 400	280	346	173	360	77	31	172	6	66	10	3	20	214	175	
ND 500	280	346	173	360	77	31	172	6	66	10	3	20	214	175	

External front operation



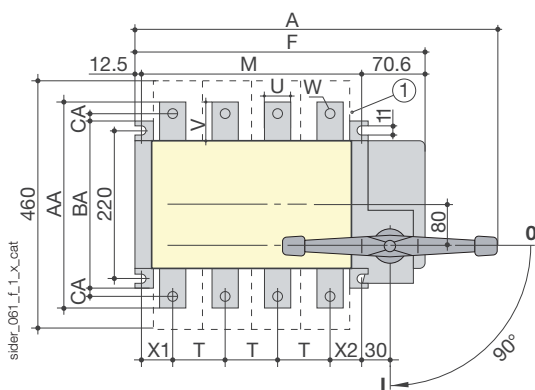
- 1. 1 or 2 NO / NC ACs for pre-break and signalling.
- 2. Terminal shrouds

Rating (A)	Terminal shrouds		Switch body				Switch mounting			Connection				
	AC	F 3p.	F 4p.	H	J	K	N	R	T	W	AA	BA	T1	T2
ND 125	268	148	184	137	54	53	130	5	36	8	162	141	36	36
ND 200	268	148	184	137	54	53	130	5	36	8	162	141	36	36
ND 250	350	234	294	132	85	77.5	162	6	60	10	195	165	60	60
ND 315	350	234	294	132	85	77.5	162	6	60	10	195	165	60	60
ND 400	360	252	318	132	91	73	172	6	66	10	214	175	66	66
ND 500	360	252	318	132	91	73	172	6	66	10	214	175	66	66

Front operation

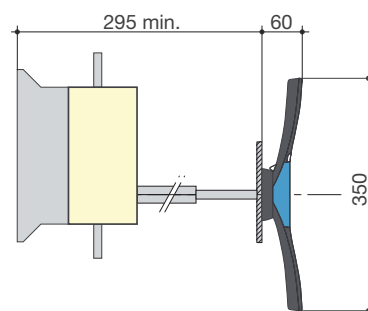
SIDER 630 to 1600 A

Direct front operation



1. Terminal screens

External front operation



Rating (A)	Overall dimensions		Switch body		Switch mounting		Connection										
	A 3p.	A 4p.	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	W	X1	X2	Y	Z	AA	BA	AC
630	463	543	358	438	255	335	80	40	50	13	42.5	52.5	6	106	300	260	20
800	463	543	358	438	255	335	80	50	60		47.5	47.5	6	106	320		
1250	555	675	430	550	347	467	120	63	65		46.5	60.5	7	107	330		
1600	555	675	430	550	347	467	120	80	80		46.5	60.5	15	111	360		

SIDER

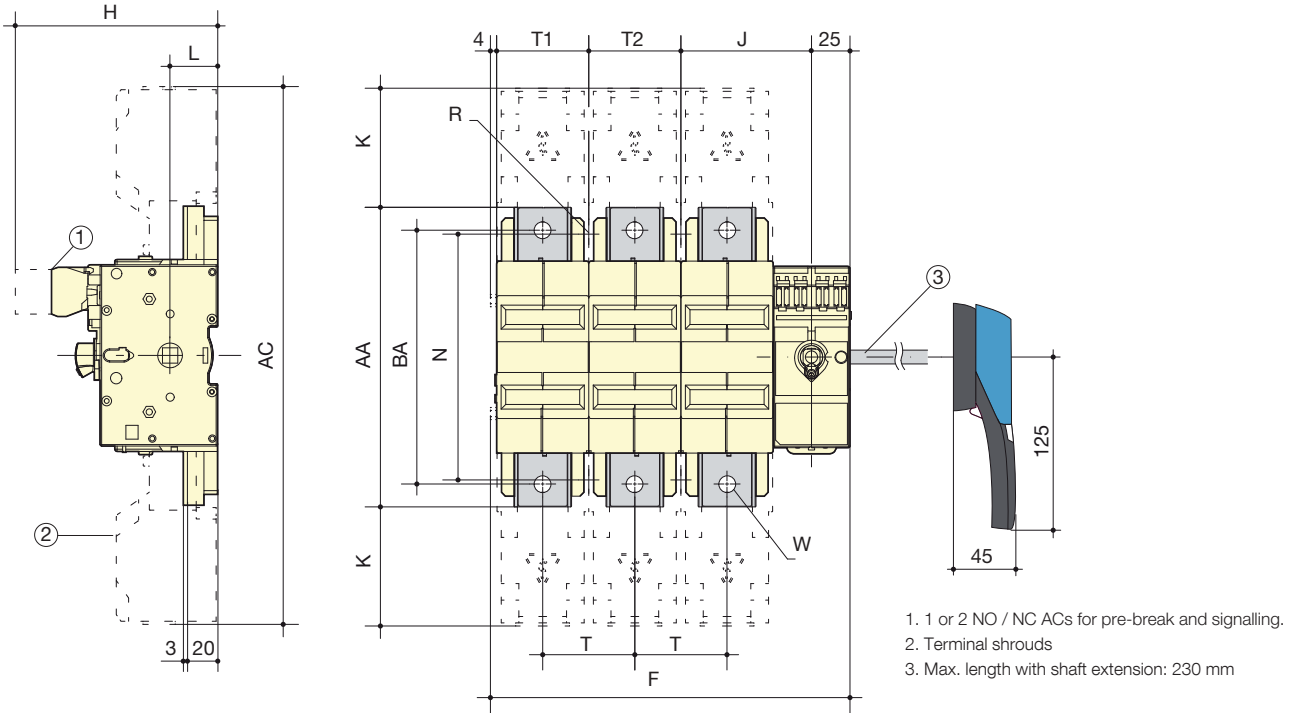
Load break switches for power distribution
with visible breaking from 125 to 1600 A

Dimensions (continued)

Side operation

SIDER ND 125 to ND 500 A

External side operation

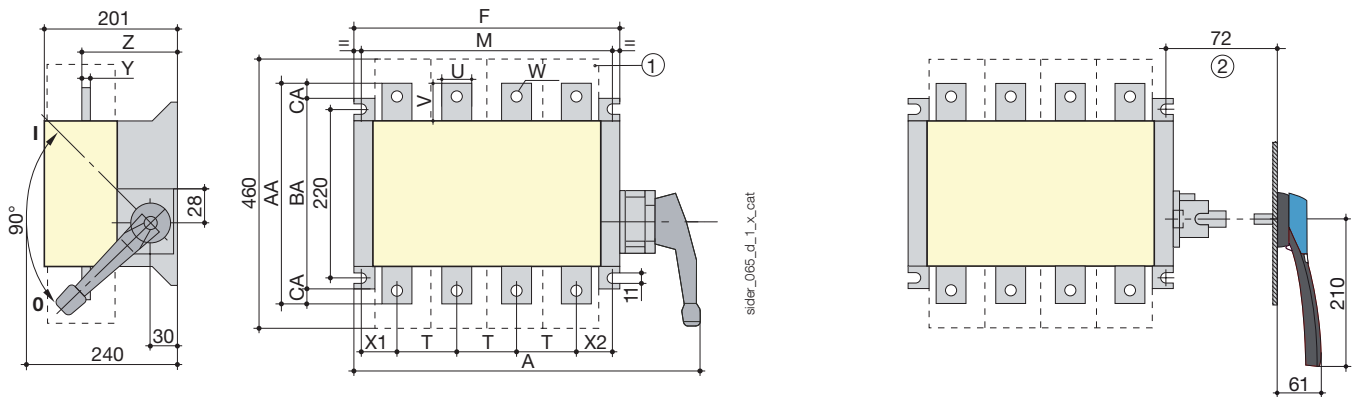


Rating (A)	Terminal shrouds	Overall dimensions		Switch body				Switch mounting		Connection					
	AC	F 3p.	F 4p.	H	J	K	L	N	R	T	W	AA	BA	T1	T2
ND 125	268	148	184	137	54	53	36	130	5	36	8	162	141	36	36
ND 200	268	148	184	137	54	53	36	130	5	36	8	162	141	36	36
ND 250	350	234	294	132	85	77.5	31	162	6	60	10	195	165	60	60
ND 315	350	234	294	132	85	77.5	31	162	6	60	10	195	165	60	60
ND 400	360	252	318	132	91	73	31	172	6	66	10	214	175	66	66
ND 500	360	252	318	132	91	73	31	172	6	66	10	214	175	66	66

SIDER 630 to 1600 A

Direct side operation

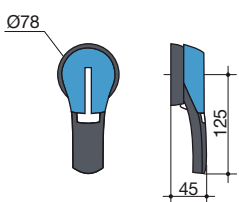
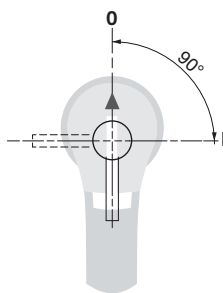
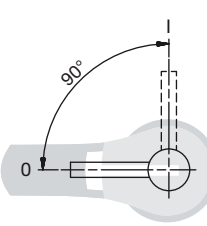
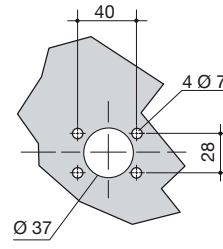
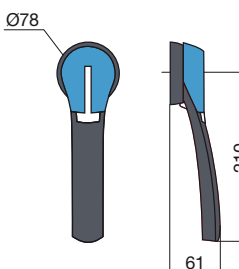
External side operation



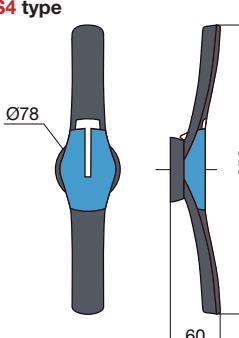
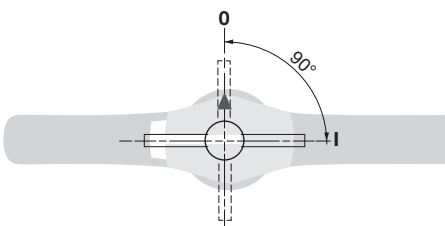
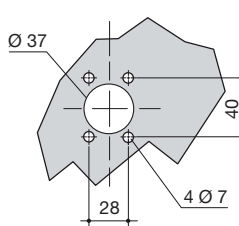
Rating (A)	Overall dimensions		Switch body		Switch mounting		Connection										
	A 3p.	A 4p.	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	W	X1	X2	Y	Z	AA	BA	AC
630	395	475	280	360	255	335	80	40	50	13	42.5	52.5	6	147	300	260	20
800	395	475	280	360	255	335	80	50	60	15	47.5	47.5	6	147	320		
1250	480	600	372	492	347	467	120	63	65	16x11	46.5	60.5	7	148	330		
1600	480	600	372	492	347	467	120	80	80	13	46.5	60.5	15	152	360		

Dimensions for external handles

SIDER ND 125 to ND 500 A

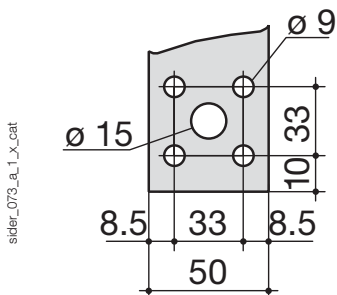
Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S2 type 		Right side operation 	
S3 type 			

SIDER 630 to 1600 A

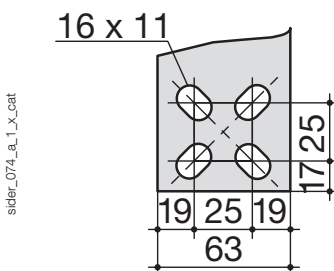
Handle type	Front operation Direction of operation	Door drilling
S4 type 		

Connection terminal

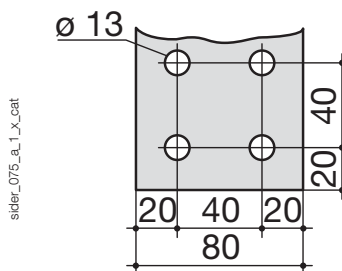
SIDER 800 A



SIDER 1250 A



SIDER 1600 A



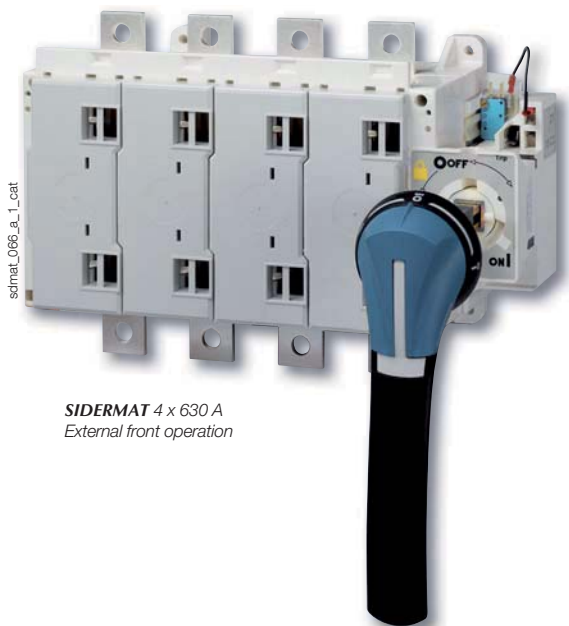


SIDERMAT

Load break switches for power distribution

Remotely trippable switch from 250 to 1800 A

Load break switches



SIDERMAT 4 x 630 A
External front operation

The solution for

- > Main switchboards.
- > Distribution panels.
- > Motor load break.



Strong points

- > Remote tripping.
- > Safety thanks to visible double breaking.
- > Utilisation in harsh operating conditions.

Check it out!

- > SIDERMAT combination and IDE are manually operated multipolar load break switches which can be tripped remotely.

Function

SIDERMAT are manually operated 3 or 4 pole load break switches with visible breaking and a remote tripping function.

They make and break under load conditions and provide safety isolation for any low voltage circuit.

The tripping function is used to provide the following functions:

- personal protection against insulation faults when utilised in combination with toroids and differential relays,
- protection against overloads when utilised in combination with CTs and thermal relays,

Available with integrated fuse protection, the SIDERMAT combination provides protection against short-circuits (see "SIDERMAT combination" on page 230).

Advantages

Remote tripping

Disconnection by a shunt trip device enables the power to the installation to be switched off with a remote pushbutton.

Safety thanks to visible double breaking

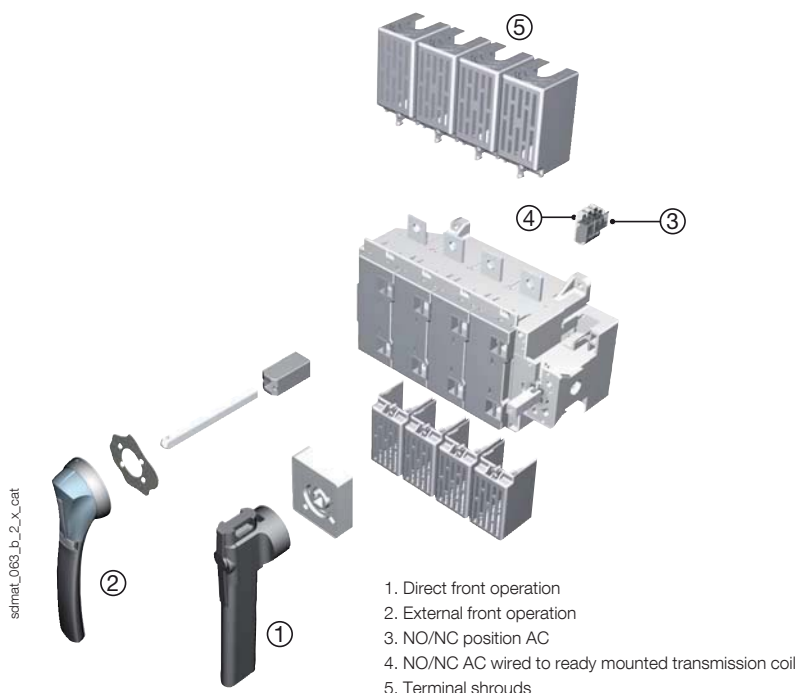
SIDERMATs are double breaking devices with visible contacts which provide a clear and secure display of the contact positions.

Utilisation in harsh operating conditions

By lowering the current via a limiting resistor, a SIDERMAT fitted with an undervoltage coil may be used in continuous processes or exposed to high ambient temperatures.

Functional diagram

For further details see the installation instructions supplied with the product.



1. Direct front operation
2. External front operation
3. NO/NC position AC
4. NO/NC AC wired to ready mounted transmission coil
5. Terminal shrouds

References

Front operation - Switch body with a shunt trip coil 230 VAC

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	Terminal shrouds	Terminal screens	Inter phase barrier							
250 A	3 P	3500 3026	Black 3999 6203	S3 type Black IP55 1431 3511 ⁽¹⁾	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3998 3040 ⁽²⁾ 4 P 3998 4040 ⁽²⁾									
	4 P	3500 4026															
400 A	3 P	3500 3041															
	4 P	3500 4041															
630 A	3 P	3500 3064															
	4 P	3500 4064															
800 A	3 P	3500 3081		S3 type Red/Yellow IP55 1432 3511					3 P 3998 3063 ⁽²⁾ 4 P 3998 4063 ⁽²⁾								
	4 P	3500 4081															
1250 A	3 P	3500 3121								3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004						
	4 P	3500 4121															
1600 A	3 P	3500 3161															
	4 P	3500 4161															
1800 A	3 P	3500 3180															included
	4 P	3500 4180															

(1) Standard.

(2) Top/bottom.

Side operation - Switch body with a shunt trip coil 230 VAC

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	Terminal shrouds	Terminal screens	Inter phase barrier								
250 A	3 P	3505 3026	Black 3999 6012 ⁽¹⁾ Red 3999 6013	S3 type Black IP55 1435 3511 ⁽¹⁾	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3998 3040 ⁽²⁾ 4 P 3998 4040 ⁽²⁾										
	4 P	3505 4026																
400 A	3 P	3505 3041																
	4 P	3505 4041																
630 A	3 P	3505 3064									S3 type Red IP55 1436 3511					3 P 3998 3063 ⁽²⁾ 4 P 3998 4063 ⁽²⁾		
	4 P	3505 4064																
800 A	3 P	3505 3081								3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004							
	4 P	3505 4081																
1250 A	3 P	3505 3121																
	4 P	3505 4121																
1600 A	3 P	3505 3161																included
	4 P	3505 4161																
1800 A	3 P	3505 3180															included	
	4 P	3505 4180																

(1) Standard.

(2) Top/bottom.

SIDERMAT

Load break switches for power distribution

Remotely trippable switch from 250 to 1800 A

Accessories

Door interlocked external operation

For front operation				
Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
250 ... 1800	S3 type	Black	IP55	1431 3511 ⁽²⁾
250 ... 1800	S3 type	Red/Yellow	IP55	1432 3511

(1) IP: protection degree according to IEC 60529 standard.

(2) Standard.

For external side operation				
Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
250 ... 1800	S3 type	Black	IP55	1435 3511 ⁽²⁾
250 ... 1800	S3 type	Red	IP55	1436 3511

(1) IP: protection degree according to IEC 60529 standard.

(2) Standard.



S3 type handles

Direct operation handle

For front operation		
Rating (A)	Handle colour	Reference
250 ... 1800	Black	3999 6203
250 ... 1800	Red	Please consult us

For external side operation		
Rating (A)	Handle colour	Reference
250 ... 1800	Black	3999 6012
250 ... 1800	Red	3999 6013



Alternative S-type handle cover colours

Use

For single lever S3 type handles.

Other colours: Please consult us.

Colour	To be ordered in multiples of	Handle	Reference
Light grey	50	S3	1401 0001
Dark grey	50	S3	1401 0011



S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles. Adapter can be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



Shaft for external handle

Use

Standard lengths:

- 200 mm,

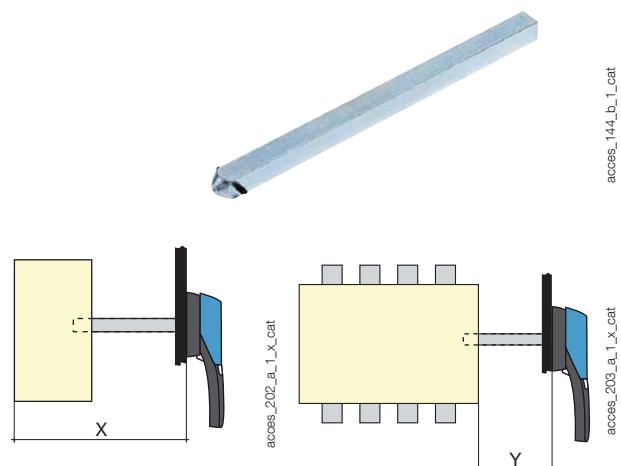
- 320 mm.

Other lengths: Please consult us.

For front operation			
Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
250 ... 630	275 ... 439	200 mm	1401 1520
250 ... 630	275 ... 559	320 mm	1401 1532 ⁽¹⁾
800	296 ... 460	200 mm	1401 1520
800	296 ... 580	320 mm	1401 1532 ⁽¹⁾
1250 ... 1800	291 ... 455	200 mm	1401 1520
1250 ... 1800	291 ... 575	320 mm	1401 1532 ⁽¹⁾

(1) Standard.

For external side operation			
Rating (A)	Dimension Y (mm)	Shaft length (mm)	Reference
250 ... 1800	110 ... 279	200 mm	1403 1520



Alternative tripping coil

Use

Omnipolar breaking remotely controlled by shunt trip or undervoltage voltage release coil.
Note: the shunt trip coil must not be supplied for more than 5 s.

A 230 VAC shunt trip coil is fitted as standard to the switch body. To have an alternative coil, one of the references opposite must be added to the switch reference.

Examples for ordering

- SIDERMAT with shunt trip coil 230 VAC
1 reference: SIDERMAT 250 A, 3 pole, front operation: 3500 3026.
- SIDERMAT fitted with a non-standard coil
2 references: SIDERMAT 250 A, 3 pole, front operation, fitted with a 110 VAC undervoltage trip coil: 3500 3026 + 3991 3110.



Shunt trip coil



Undervoltage trip coil

access_049_a_1_cat

access_050_a_1_cat

Characteristics

Shunt trip coil

Alternating voltage (V) (+5% to -20%) ⁽¹⁾	24	48	110	230	400
Consumption on inrush (VA)	80	100	100	120	120
Direct voltage (V) (+5% to -20%)	12	24	48	110	220
Consumption on inrush (W)	80	100	100	120	120

⁽¹⁾ Note: The shunt trip coil VAC must not be supplied for more than 5 s. A shunt trip coil is suited for the standard device.

Undervoltage AC trip coil

Alternating voltage (V) (+5% to -10%)	24	48	110	230	400
Permanent consumption (VA)	13	13	13	13	20
Consumption on inrush (VA)	13	13	13	13	20
Minimum maintaining voltage (V)	15	25	60	140	200

Undervoltage DC trip coil

Direct voltage (V) (+5% to -10%)	12	24	48	110	220
Permanent consumption (W)	13	13	13	13	13
Consumption on inrush (W)	13	13	13	13	13
Minimum maintaining voltage (V)	6	15	25	60	140

Delayed undervoltage trip coil

Voltage	Time (ms)	Reference
230 VAC	430	3993 3230 ⁽¹⁾
400 VAC	410	3993 3400 ⁽¹⁾

⁽¹⁾ To be ordered at the same time as the switch.

References

Shunt trip coil Voltage	Replacement tripping coil Reference	Alternative factory fitted coil Reference
24 VAC	3990 1024	3991 1024 ⁽¹⁾
48 VAC	3990 1048	3991 1048 ⁽¹⁾
110 VAC	3990 1110	3991 1110 ⁽¹⁾
230 VAC	3990 1220	included
400 VAC	3990 1380	3991 1380 ⁽¹⁾
12 VDC		3991 2012 ⁽¹⁾
24 VDC	3990 2024	3991 2024 ⁽¹⁾
48 VDC	3990 2048	3991 2048 ⁽¹⁾
110 VDC	3990 2220	3991 2220 ⁽¹⁾
220 VDC		3991 2220 ⁽¹⁾

Undervoltage trip coil

Voltage	Replacement tripping coil Reference	Alternative factory fitted coil Reference
24 VAC	3990 3024	3991 3024 ⁽¹⁾
48 VAC	3990 3048	3991 3048 ⁽¹⁾
110 VAC	3990 3110	3991 3110 ⁽¹⁾
230 VAC	3990 3220	3991 3220 ⁽¹⁾
400 VAC	3990 3380	3991 3380 ⁽¹⁾
12 VDC	3990 4012	3991 4012 ⁽¹⁾
24 VDC	3990 4024	3991 4024 ⁽¹⁾
48 VDC	3990 4048	3991 4048 ⁽¹⁾
110 VDC	3990 4110	3991 4110 ⁽¹⁾
220 VDC	3990 4220	3991 4220 ⁽¹⁾

⁽¹⁾ To be ordered at the same time as the switch.

Current-reducing resistor for undervoltage trip coil

Use

By limiting the current, the resistor reduces the effects on the undervoltage coil used in continuous processes, or processes exposed to high ambient temperatures.

Voltage	Reference
110 VAC	3999 3112
230 VAC	3999 3230
400 VAC	3999 3400
110 VDC	3999 4110

SIDERMAT

Load break switches for power distribution

Remotely trippable switch from 250 to 1800 A

Accessories (continued)

Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:
1 to 2 NO/NC auxiliary contacts.

Coil tripping

1 to 2 NO/NC auxiliary contacts.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Characteristics

NO/NC auxiliary contact: IP2X.

Electrical characteristics:

30 000 operations.



access_048_a_1_cat

Characteristics

NO/NC position contact		Operating current I _e (A)			
Rating (A)	Current nominal (A)	250 VAC	400 VAC	24 VDC	48 VDC
		AC-13	AC-13	DC-13	DC-13
250 ... 1800	16	12	8	14	6

References

NO/NC position contact	Position AC	Reference
Rating (A)		
250 ... 1800	1 st	3999 0051
250 ... 1800	2 nd	3999 0052

NO/NC changeover contact, signalling coil tripping		Operating current I _e (A)			
Rating (A)	Current nominal (A)	250 VAC	400 VAC	24 VDC	48 VDC
		AC-13	AC-13	DC-13	DC-13
250 ... 1800	16	12	8	12	2

NO/NC low level position contact	Position AC	Reference
Rating (A)		
250 ... 1800	1 st	3999 0111
250 ... 1800	2 nd	3999 0112

NO/NC contact signalling coil tripping	Position AC	Reference
Rating (A)		
250 ... 1800	1	3999 0031

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Advantage

Rating (A)	No. of poles	Position	Reference
250 ... 630	3 P	top or bottom	3998 3040
250 ... 630	4 P	top or bottom	3998 4040
800	3 P	top or bottom	3998 3063
800	4 P	top or bottom	3998 4063



access_012_a_2_cat

Terminal screens

Use

Top or bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
1250 ... 1800	3 P	top or bottom	2998 3120
1250 ... 1800	4 P	top or bottom	2998 4120

Inter-phase barrier

Use

Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

Rating (A)	No. of poles	Reference
1250 ... 1600	3 P	2998 0003
1250 ... 1600	4 P	2998 0004
1800	3/4 P	included



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Handle key interlocking accessories

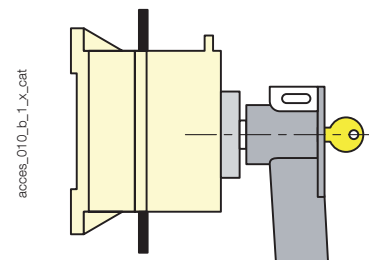
Use

Locking in position 0 of the front or side operation handle:

- using a padlock (not supplied) and factory integrated into the handle. Padlocking, in external front operation, locks the door.

- using RONIS 1104 A lock (key BC 3318) to be mounted directly on the padlockable handle,

- locking using RONIS EL11AP lock (not supplied).



Lock RONIS 1104A

Locking using RONIS EL11AP lock 1104 (supplied)

Rating (A)	Operation	Reference
250 ... 1800	direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
250 ... 630	direct	3999 6107
800 ... 1800	direct	3999 7007

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
250 ... 1800	external	1499 7701

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

Connections

Rating (A)	Flexible cable cross-section (mm ²)	Rigid cable cross-section (mm ²)	Flexible bar width (mm)	Stripped over (mm)
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34
630	70 ... 300	70 ... 300	24	34

Dimensions

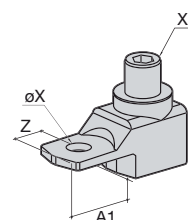
Rating (A)	A	A1	C	R	ØX	X1	Z
250	62	31.5	31.5	25	10.5	M16	14
400	71.5	32	38	32	10.5	M20	15
630	76.5	37	38	40	12.5	M20	15

References

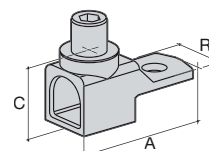
Rating (A)	No. of poles	Reference
250	3 P	5400 3025
250	4 P	5400 4025
400	3 P	5400 3040
400	4 P	5400 4040
630	3 P	5400 3063
630	4 P	5400 4063



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access_091_a_1_x_cat



access_092_a_1_x_cat

Other specific accessories

- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

SIDERMAT

Load break switches for power distribution

Remotely trippable switch from 250 to 1800 A

Characteristics according to IEC 60947-3

250 to 1800 A

Thermal current I_{th} at 40°C	250 A	400 A	630 A	800 A	1250 A	1600 A	1800 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1800
400 VAC	AC-23 A / AC-23 B	250/250	400/400	630/630	630/630	1250/1250	1600/1600	1600/1600
500 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1600
500 VAC	AC-23 A / AC-23 B	200/250	315/400	500/630	630/630	1000/1000	1250/1250	1250/1250
690 VAC ⁽²⁾	AC-21 A / AC-21 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1600
690 VAC ⁽²⁾	AC-22 A / AC-22 B	250/250	400/400	500/630	630/800	1000/1000	1250/1250	1250/1250
690 VAC ⁽²⁾	AC-23 A / AC-23 B	200/250	315/400	400/500	500/500	800/800	1000/1000	1000/1000
400 VDC	DC-20 A / DC-20 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1800/1800
400 VDC	DC-21 A / DC-21 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1600
400 VDC	DC-22 A / DC-22 B	250/250	400/400 ⁽³⁾	630/630 ⁽³⁾	800/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1600/1600 ⁽⁴⁾	1600/1600 ⁽⁴⁾
400 VDC	DC-23 A / DC-23 B	200/250	315/400 ⁽³⁾	500/630 ⁽³⁾	630/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1250/1250 ⁽⁴⁾	1250/1250 ⁽⁴⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	132/132	220/220	355/355	355/355	710/710	900/900	900/900
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	185/220	295/400	400/475	475/475	750/750	900/900	900/900

Reactive power (kvar)

At 400 VAC (kvar) ⁽⁵⁾	115	185	290	365	575		
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	100	100	100	100	100	120	120
Associated fuse rating (A) ⁽⁶⁾	250	400	630	800	1250	2 x 800	2 x 900

Short-circuit capacity (without protection)

Rated short-time withstand current 0.3 s. I_{cw} (kA rms)	17	25	50	65	65	80	80
Rated peak withstand current (kA peak) ⁽⁶⁾	30	45	55	80	100	120	120

Connection

Minimum Cu cable cross-section (mm ²)	95	185	2 x 150	2 x 185			4 x 240
Minimum Cu busbar cross-section (mm ²)			2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5	
Maximum Cu cable cross-section (mm ²)	240	240	2 x 300	2 x 300	4 x 185	6 x 240	8 x 240
Maximum Cu busbar width (mm)	40	40	50	63	100	100	100
Tightening torque min (Nm)	20	40	40		20	40	40

Mechanical characteristics

Durability (number of operating cycles)	8000	8000	5000	5000	5000	3000	3000
Weight of a 3 pole device (kg)	6.5	7	8	11	14	19	21
Weight of a 4 pole device (kg)	7.5	8	9.5	13	16	21.5	23.5

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 poles in series per polarity.

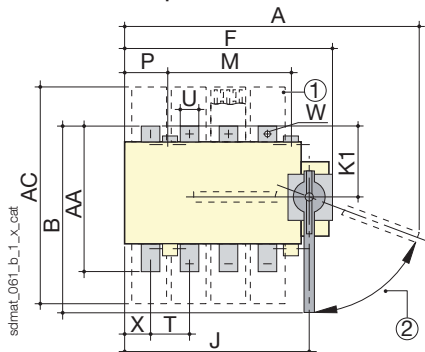
(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 400$ VAC.

Dimensions - Front operation

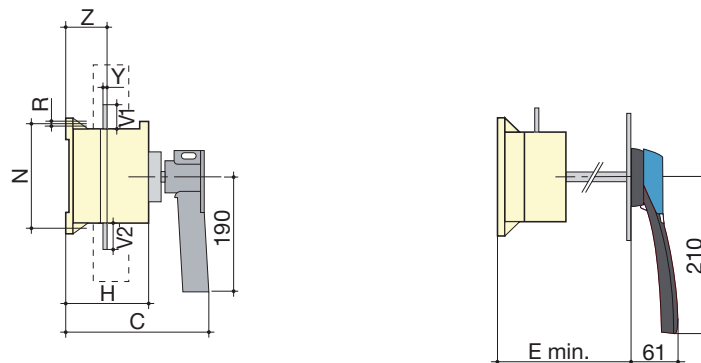
SIDERMAT 250 to 800 A

Direct front operation



1. Terminal shrouds 2. Reset fuse 70°

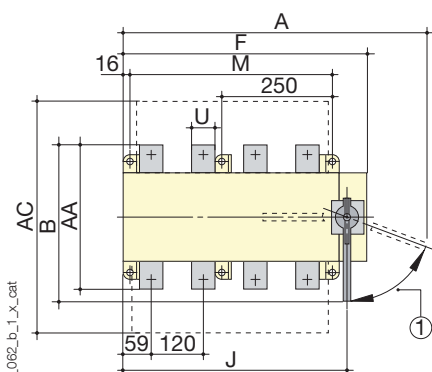
External front operation



Rating (A)	Overall dimensions					Terminal shrouds	Switch body					Switch mounting					Connection										
	A 3p.	A 4p.	W	C	E min	AC	F 3p.	F 4p.	H	J 3p.	J 4p.	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA
250	435	495	309	248	275	388	285	345	148	253	313	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238
400	435	495	309	248	275	388	285	345	148	253	313	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238
630	435	495	318.5	248	275	388	285	345	148	253	313	115	210	180	10	70	7	65	32	35	43	13	31	46	8	72	257
800	491	570	350	262	296	470	346	426	178	308	388	160	250	250	20	100	9	80	50	60	60	15	36	65	7	72	320

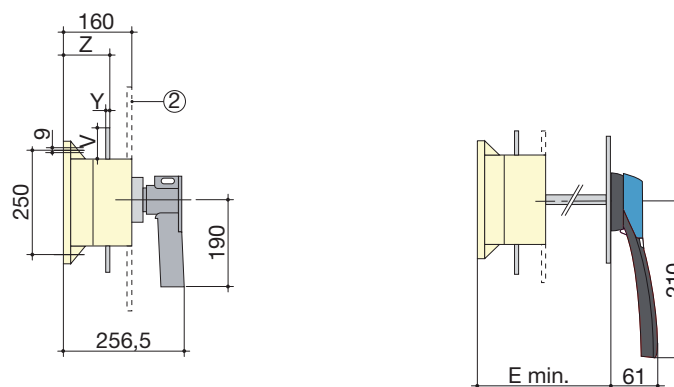
SIDERMAT 1250 to 1800 A

Direct front operation



1. Reset fuse 70°
2. Terminal screens

External front operation



Rating (A)	Overall dimensions				Terminal shrouds	Switch body				Switch mounting		Connection				
	A 3p.	A 4p.	W	E min	AC	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.	U	V	Y	Z	AA
1250	582	702	355	291	480	437	557	400	520	345	465	63	65	7	106	330
1600	582	702	370	291	479	437	557	400	520	345	465	80	80	15	110	360
1800	582	702	370	291	479	437	557	400	520	345	465	100	80	15	110	360

SIDERMAT

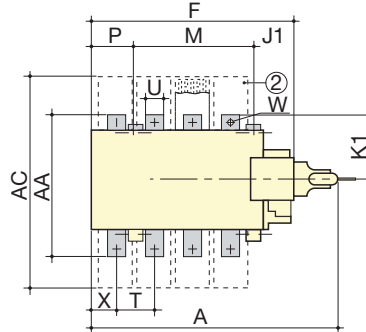
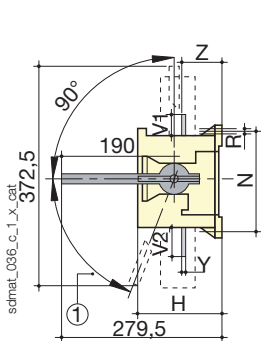
Load break switches for power distribution

Remotely trippable switch from 250 to 1800 A

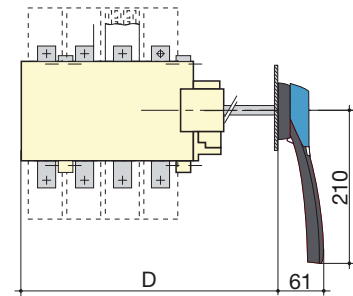
Dimensions - Side operation

SIDERMAT 250 to 800 A

Direct side operation



External side operation

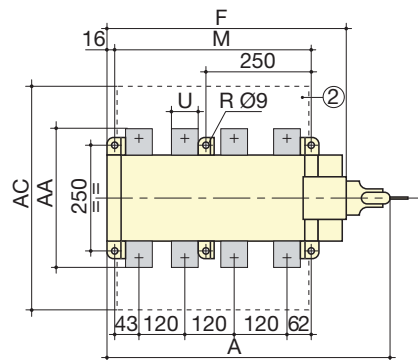
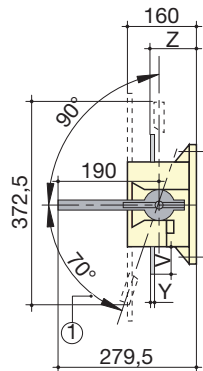


1. Reset fuse 70°
2. Terminal shrouds

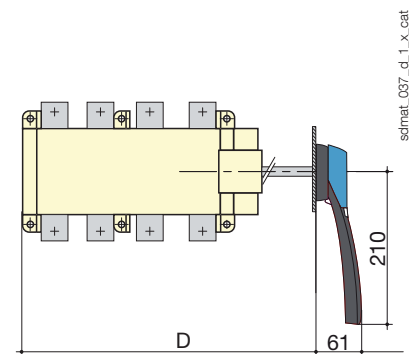
Rating (A)	Overall dimensions				Terminal shrouds	Switch body				Switch mounting				Connection										
	A 3p.	A 4p.	D 3p.	D 4p.	AC	F 3p.	F 4p.	H	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA
250	365	425	357	417	388	285	345	148	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238
400	365	425	357	417	388	285	345	148	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238
630	365	425	357	417	388	285	345	148	129	210	180	10	70	7	65	45	49	49	13	31	46	8	72	257
800	421	501	413	493	470	346	426	178	160	250	250	20	100	9	80	50	60	60	15	36	65	7	72	320

SIDERMAT 1250 to 1800 A

Direct side operation



External side operation

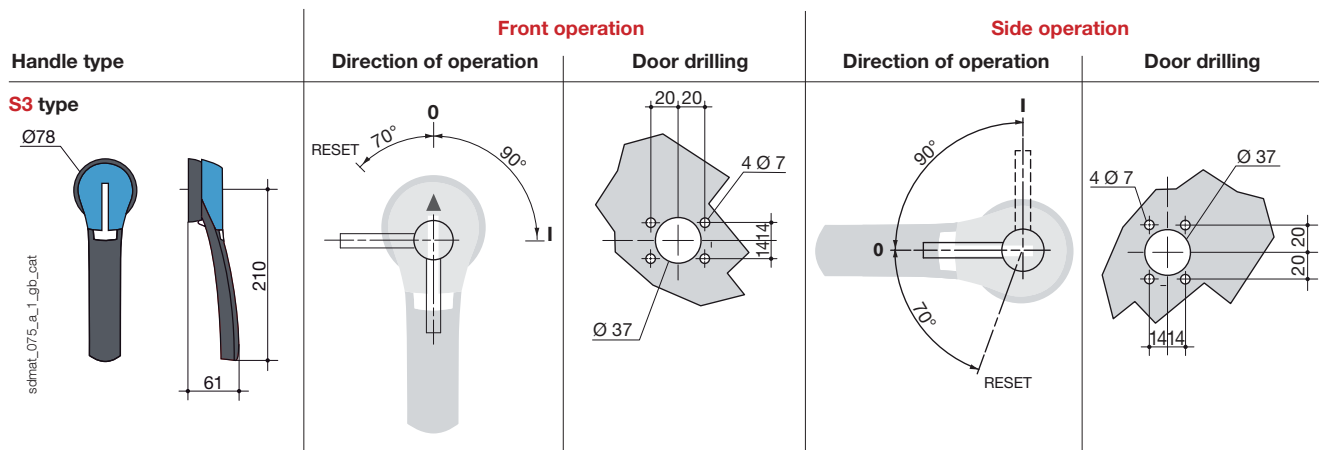


1. Reset fuse 70°
2. Terminal screens

Rating (A)	Overall dimensions				Terminal shrouds	Switch body		Switch mounting		Connection				
	A 3p.	A 4p.	D 3p.	D 4p.	AC	F 3p.	F 4p.	M 3p.	M 4p.	U	V	Y	Z	AA
1250	522	641	504	624	480	437	557	345	465	63	65	7	106	330
1600	522	641	504	624	479	437	557	345	465	80	80	15	110	360
1800	522	641	504	624	479	437	557	345	465	100	80	15	110	360

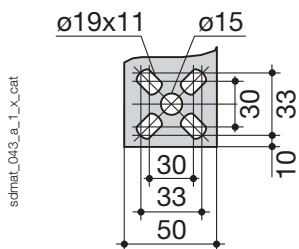
Dimensions for external handles

SIDERMAT 250 to 1800 A

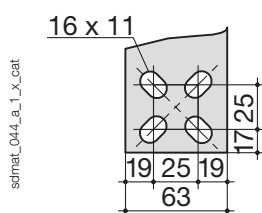


Connection terminal

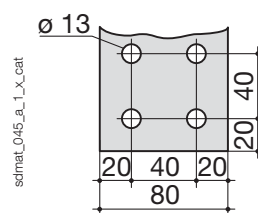
SIDERMAT 800 A



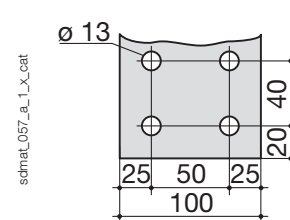
SIDERMAT 1250 A



SIDERMAT 1600 A



SIDERMAT 1800 A





SIRCO MC PV

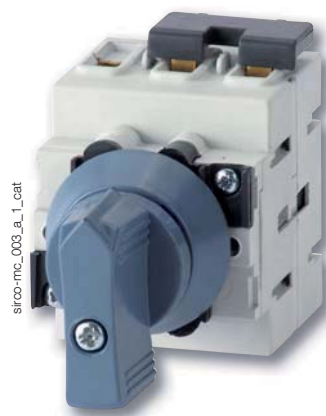
Load break switches for photovoltaic applications
up to 1000 VDC and 40 A

Load break
switches

new



SIRCO MC PV 25 A - 1000 VDC
DIN rail mounting



SIRCO MC PV 25 A - 1000 VDC
Door mounting

The solution for

- > Residential buildings.
- > Buildings.
- > Solar parks.

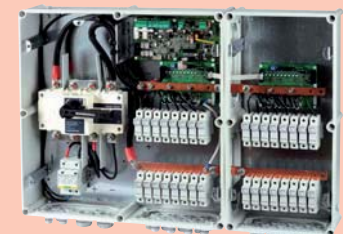


Strong points

- > Compact.
- > High breaking capacity up to 1000 VDC.
- > Safety.
- > Easy assembling.

Check it out!

- > Need an enclosed switch? No problem with our specific product department. We have solutions for any requirement.



Function

SIRCO MC PV are DC load break switches. They make and break under load conditions and provide optimum safety isolation for any PV circuit.

Advantages

Compact

Thanks to its compact design, the limitation of space within the combiner box or the solar inverter is greatly reduced.

High breaking capacity up to 1000 VDC.

- Making and breaking capacity under load conditions up to 1000 VDC.
- Specific photovoltaic test beyond requirements by standard IEC 60947-3.

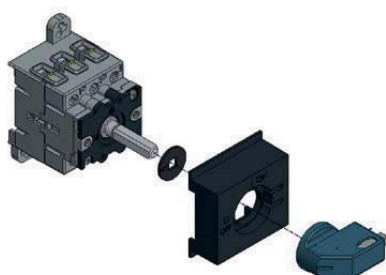
Safety

- Pre-bridging is factory-achieved for easier, quicker and safer connection.
- Direct access to connection terminals for adequate tightening.

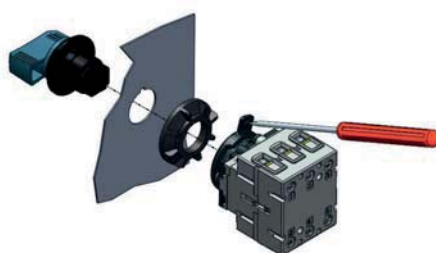
Easy mounting

Three mounting possibilities are available for optimum integration and time saving:

- DIN rail or back plate mounting.
- Door mounting.
- "Quick Fix" mounting to save time when integrating into solar inverters.



SIRCO MC PV
DIN-rail mounting



SIRCO MC PV
Door mounting

Conformity to standards

- > IEC 60947-3
- > UL508i⁽¹⁾



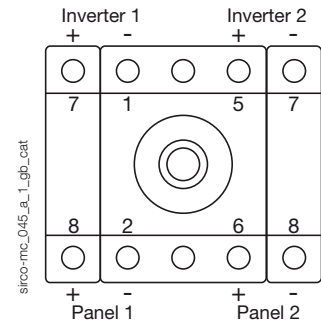
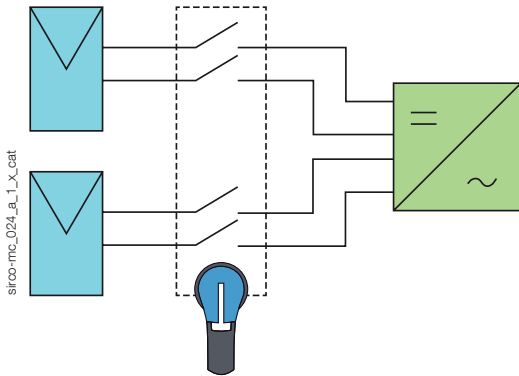
(1) Please consult us.

Approvals and certifications



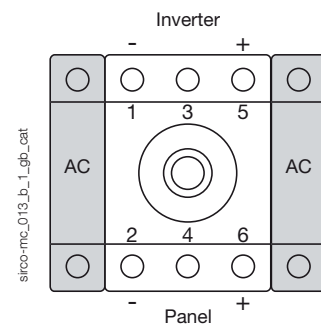
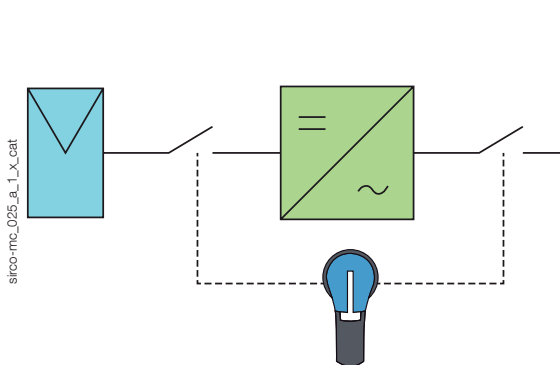
Multi-circuit breaking

- The SIRCO MC PV for double circuits (2 MPPT: Maximum Power Point Tracking) enables connection of two independent photovoltaic panel strings to a single switch in order to reduce the costs of the global solution.



Complete inverter isolation with a single operation

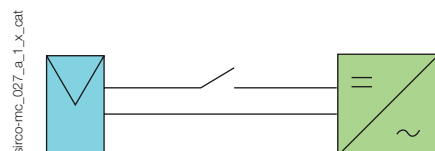
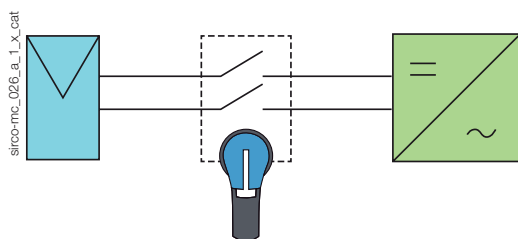
- The SIRCO MC PV with two additional AC poles can be integrated into the inverter to provide complete and simultaneous isolation of the PV and AC circuits. This improves safety and reduces the overall product size.



What you need to know

For grounded or ungrounded networks:

It is possible to use the SIRCO MC PV in both network systems, either switching one or both polarities.



SIRCO MC PV

Load break switches for photovoltaic applications
up to 1000 VDC and 40 A

References

SIRCO MC PV 600 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽³⁾	No of poles AC current	Switch body	Direct handle ⁽¹⁾	External handle	Shaft for external handle	Auxiliary contact
30 A	Single PV circuit	1 P+, 1 P-	-	21PV 2102	MCO type Blue 2119 0012 ⁽²⁾ Blue MC01 type 2119 1012	MC1 type Black IP65 2119 3312 ⁽²⁾ Red / Yellow IP65 2119 3313	165 ... 200 mm 2107 0516	1 contact NC+NO 2119 0001
	PV + AC circuit	1 P+, 1P-	2 P	21PV 2162				
	Double PV circuit	2 x (1P+, 1P-)	-	21PV 5102				
40 A	Single PV circuit	2 P+, 1 P-	-	21PV 3124	Blue MC01 type 2119 1412	Red / Yellow IP65 2119 3313	165 ... 200 mm 2107 0516	1 contact NC+NO 2119 0001
	PV + AC circuit	2 P+, 1 P-	2 P	21PV 3184				
	Double PV circuit	2 x (1P+, 1P-)	-	21PV 6124				

(1) 45 mm modular DIN front plate included.

(2) Standard handle.

(3) Default connected device (see "Connection of poles" page 108).

SIRCO MC PV 1000 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽³⁾	No of poles AC current	Switch body	Direct handle ⁽¹⁾	External handle	Shaft for external handle	Auxiliary contact
25 A	Single PV circuit	2 P+, 1 P-	Please consult us	21PV 3722	Blue MCO type 2119 0012 ⁽²⁾ Blue MC01 type 2119 1012	Black MC1 type IP65 2119 3312 ⁽²⁾ Red / Yellow IP65 2119 3313	165 ... 200 mm 2107 0516	1 contact NO + NC 2119 0001
	Double PV circuit	2 x (1P+, 1P-)		21PV 6722	Blue MC01 type 2119 1412			
40 A	Single PV circuit	2P+, 2P		21PV 4754	Blue MCO type 2119 0012 ⁽²⁾ Blue MC01 type 2119 1012			

(1) 45 mm modular DIN front plate included.

(2) Standard handle.

(3) Default connected device (see "Connection of poles" page 108).

SIRCO MC PV 600 VDC - Door mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽¹⁾	No of poles AC current	Switch body	External handle "switch body"	Switch body "Quick Fix"	External handle "Quick Fix"	Auxiliary contact
30 A	Single PV circuit	1 P+, 1 P-	-	21PV 2202	Blue MC2 type IP55 2129 0112 ⁽²⁾	21PV 2302	Blue MC3 type IP65 2139 1212 ⁽²⁾	1 contact NC+NO 2129 0001
	PV + AC circuit	1 P+, 1 P-	2 P	21PV 2262		21PV 2362		
	Double PV circuit	2 x (1P+, 1P-)	-	21PV 5202		21PV 5302		
40 A	Single PV circuit	2 P+, 1 P-	-	21PV 3224	Blue MC2 type IP55 2129 0112 ⁽²⁾	21PV 3324	Black MC4 type IP65 2139 3312	1 contact NC+NO 2129 0001
	PV + AC circuit	2 P+, 1 P-	2 P	21PV 3284		21PV 3384		

(1) Default connected device (see "Connection of poles" page 108).

(2) Standard handle.

SIRCO MC PV 1000 VDC - Door mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽¹⁾	No of poles AC current	Switch body	External handle "switch body"	Switch body "Quick Fix"	External handle "Quick Fix"	Auxiliary contact
25 A	Single PV circuit	2 P+, 1 P-	Please consult us	21PV 3822	Blue MC2 type IP55 2129 0112	21PV 3922	MC3 type Blue IP65 2139 1212 ⁽²⁾	1 contact NC+NO 2129 0001
40 A	Single PV circuit	2 P+, 1 P-		21PV 4854		21PV 4954	Black MC4 type IP65 2139 3312	

(1) Default connected device (see "Connection of poles" page 108).

(2) Standard handle.

SIRCO MC PV

Load break switches for photovoltaic applications
up to 1000 VDC and 40 A

Accessories

Direct operation handle

Use

The direct operation conversion kit requires an additional 4 mm distance on each side of the 2 and 3 pole device.

Rating (A)	Handle colour	Type of locking	Handle	45 mm modular DIN front plate	Reference
25 ... 40	Blue	-	MC0 type	yes	2119 0012 ⁽¹⁾
25 ... 40	Blue	1 padlock Ø 5 mm	MC01 type	yes	2119 1012

(1) Standard handle.

2 MPPT 600 V					
Rating (A)	Handle colour	Type of locking	Handle	45 mm modular DIN front plate	Reference
30	Blue	-	MC0 type	yes	2119 0012
30	Blue	1 padlock Ø 5 mm	MC01 type	yes	2119 1012
40	Blue	1 padlock Ø 5 mm	MC01 type	yes	2119 1412

2 MPPT 1000 V					
Rating (A)	Handle colour	Type of locking	Handle	45 mm modular DIN front plate	Reference
25	Blue	1 padlock Ø 5 mm	MC01 type	yes	2119 1412



MC0 handle



MC01 handle

access_305_a_1_cat

access_293_a_1_cat

Door interlocked external operation

Use

The external control will force the operator to safely disconnect and isolate the solar cell strings prior to any intervention. External controls are

user-friendly and adapted to meet requirements of residential installations, large roofs and ground-based generators.

DIN rail or back plate mounting					
Rating (A)	Handle	Handle colour	Type of locking	External IP ⁽¹⁾	Reference
25 ... 40	MC1 type	Black	3 padlocks Ø9 mm	IP65	2119 3312 ⁽²⁾⁽³⁾
25 ... 40	MC1 type	Red/Yellow	3 padlocks Ø9 mm	IP65	2119 3313 ⁽³⁾
25 ... 40	S000 type	Black	3 padlocks Ø6 mm	IP55	1461 5111
25 ... 40	S000 type	Black	3 padlocks Ø6 mm	IP65	1463 5111
25 ... 40	S000 type	Red/Yellow	3 padlocks Ø6 mm	IP65	1464 5111

(1) IP : protection degree according to IEC 60529 standard.

(2) Standard handle.
(3) No padlocking.

Door mounting					
Rating (A)	Handle	Handle colour	Type of locking	External IP ⁽¹⁾	Reference
25 ... 40	MC2 type	Blue	-	IP55	2129 0112 ⁽²⁾

(1) IP : protection degree according to IEC 60529 standard.
(2) Standard handle.

"Quick Fix" door mounting					
Rating (A)	Handle	Handle colour	Type of locking	External IP ⁽¹⁾	Reference
25 ... 40	MC3 type	Blue	1 padlock Ø5 mm	IP65	2139 1212 ⁽²⁾
25 ... 40	MC4 type	Black	3 padlocks Ø9 mm	IP65	2139 3312
25 ... 40	MC4 type	Red/Yellow	3 padlocks Ø9 mm	IP65	2139 3313



S000 handle



MC4 handle



MC2 handle

access_307_a_1_cat

access_302_a_1_cat

access_306_a_1_cat

Shaft for external handle

Use

MC1 and S000 shafts can be adjusted and cut depending on the need.

Shaft length

MC1 type:

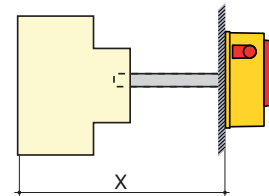
- 165 mm (adjustable up to 177 mm)

S000 type:

- 150 mm
- 200 mm
- 320 mm



S000 type shaft



access_297_a_1_cat

access_308_a_1_x_cat

DIN rail or back plate mounting				
Rating (A)	Handle	Dimension X (mm)	Length (mm)	Reference
25 ... 40	MC1 type	249 ... 259	165	2107 0516
25 ... 40	S000 type	234 ... 246	150	2107 0515
25 ... 40	S000 type	284 ... 496	200	2107 0520
25 ... 40	S000 type	404 ... 416	320	2107 0532

Terminal shrouds

Use

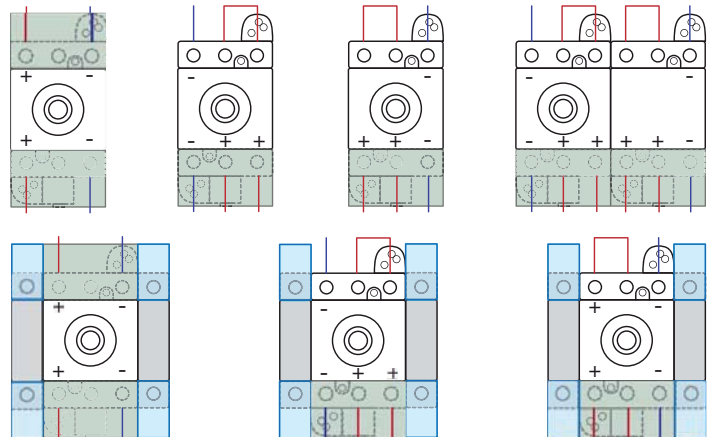
Top or bottom protection against direct contact with the terminals or connection parts. 1 and 3 poles are available.

The SIRCO MC PV load break switch is pre-bridged. Terminal covers are mounted on the top or bottom free space of the device.

Possibility to assemble a terminal shroud on the bridge side by removing the insulating material of the series connection bar (irreversible step).

For SIRCO MC PV

Rating (A)	Type of mounting	No. of poles	Position	Reference
25 ... 40	rail / door mounting	1 P	top or bottom	2194 1004
25 ... 40	rail / door mounting	3 P	top or bottom	2194 3004



sirco-mc_011_d1_1_cat

access_299_a_1_cat



Terminal shrouds 1 pole

access_300_a_1_cat



Terminal shrouds 3 pole

SIRCO MC PV

Load break switches for photovoltaic applications

up to 1000 VDC and 40 A

Accessories (continued)

Auxiliary contact

Use

These auxiliary contacts signalling position 0 and 1 can be normally open or normally closed contacts. They can be fixed on the left or right side of the switch body and/or on the power additional pole.

Rating (A)	Type of mounting	Contact(s)	Contact type	Reference
25 ... 40	DIN-rail / back plate mounted	1 contact	NO + NC	2119 0001
25 ... 40	Door mounted	1 contact	NO + NC	2129 0001

Connections

Min./max cross-sections: 1 mm²/4 mm²

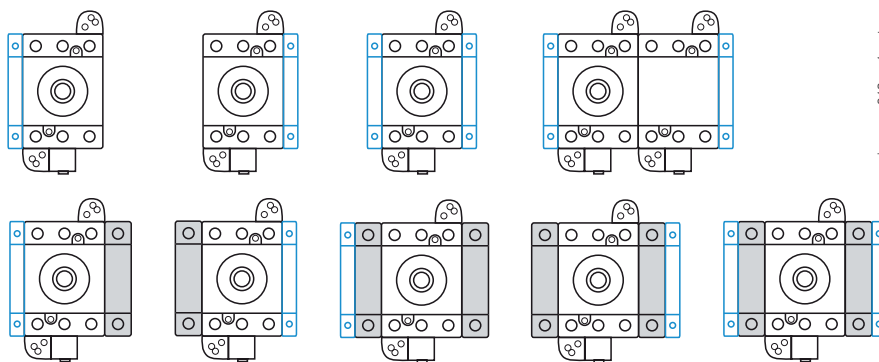
Tightening torque: 0.6 Nm

Characteristics according to IEC 60947-5-1

Rating (A)	Contact type	Thermal current I _{th} (A)	Operating current I _e (A)		
			230 VAC	400 VAC	690 VAC
25 ... 40	NO + NC	16	AC-15	AC-15	AC-15
			6	4	2



Auxiliary contacts configurations



Characteristics according to IEC 60947-3

25 to 40 A

Thermal current I _{th} at 40°C ⁽¹⁾	25 A	30 A	40 A
Rated insulation voltage U _i (V)	1000	1000	1000
Rated impulse withstand voltage U _{imp} (kV)	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilization category	Circuit type	Number of poles of the device	Number of pole(s) in series per polarity	(A)	(A)	(A)
600 VDC	DC-21 B	Single PV circuit	2 P	1 P+ and 1 P-	-	30	-
600 VDC	DC-21 B	Single PV circuit	3 P	2 P+ and 1 P-	-	-	40
600 VDC	DC-21 B	Double PV circuit	4 P	2 x (1 P+ and 1 P-)	-	30	-
600 VDC	DC-21 B	Double PV circuit	6 P	2 x (2 P+ and 1 P-)	-	-	40
1000 VDC	DC-21 B	Single PV circuit	3 P	2 P+ and 1 P-	25	-	-
1000 VDC	DC-21 B	Single PV circuit	4 P	2 P+ and 2 P-	-	-	40
1000 VDC	DC-21 B	Double PV circuit	6 P	2 x (2 P+ and 1 P-)	25	-	-

Connection

Minimum Cu cable cross-section	1.5	1.5	1.5
Maximum Cu cable cross-section (mm ²)	10	10	10
Tightening torque mini / maxi (Nm)	1.2	1.2	1.2

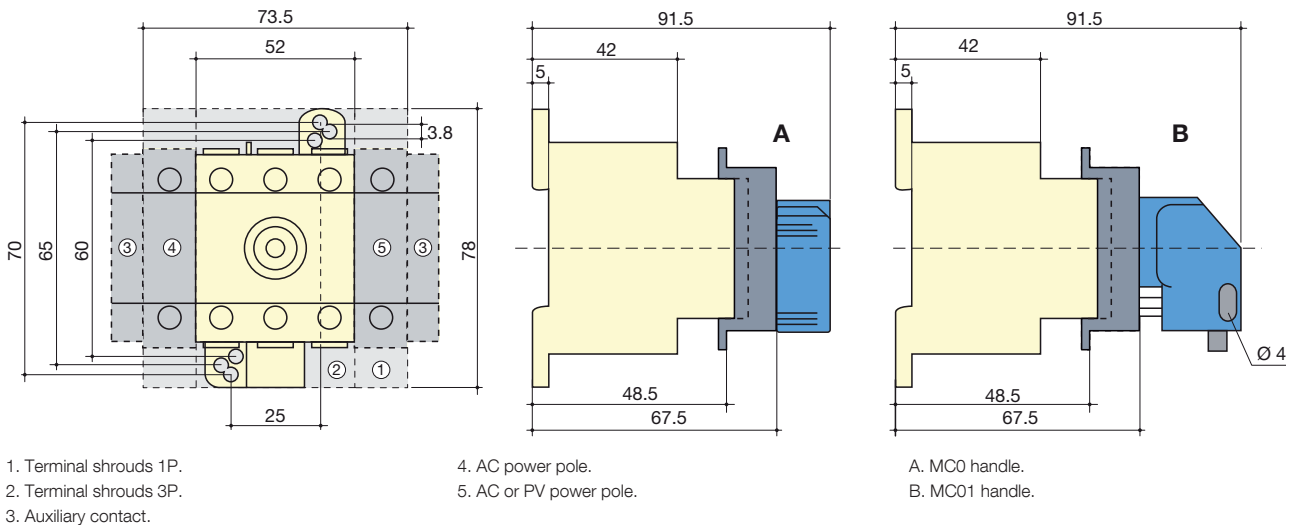
Mechanical characteristics

Durability (number of operating cycles)	30000	30000	30000
Operating effort (Nm)	0.8	0.8	0.8
Weight of 2 pole PV device (kg)	0.110	0.110	-
Weight of a 3 pole PV device (kg)	0.125	0.125	0.125
Weight of 2 a pole PV and 2 pole AC device (kg)	0.180	0.180	-
Weight of a 3 pole PV and 2 pole AC device (kg)	-	-	0.195
Weight of a 4 pole PV device (kg)	-	-	0.160
Weight of a 4 pole PV device, 2 double PV circuit (kg)	0.145	0.145	-
Weight of a 6 pole PV device, 2 double PV circuit (kg)	-	-	0.250

(1) For other temperatures: Please consult us.

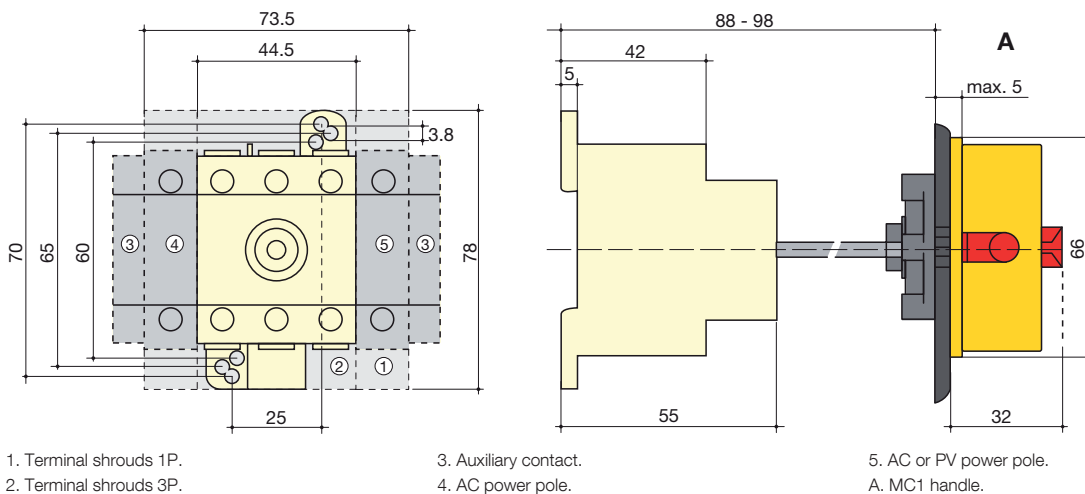
Dimensions

DIN rail mounting - Direct operation



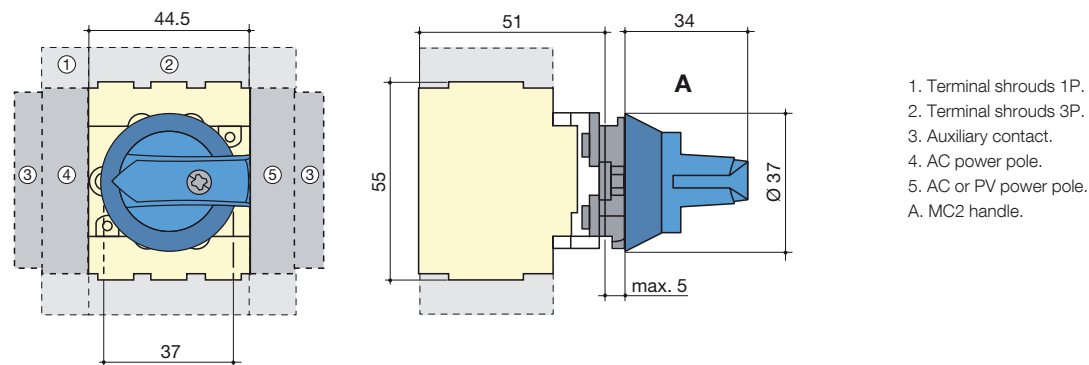
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DIN rail mounting - External operation



sirco-mc_005_b_1_x_cat

Door mounting



sirco-mc_007_b_1_x_cat

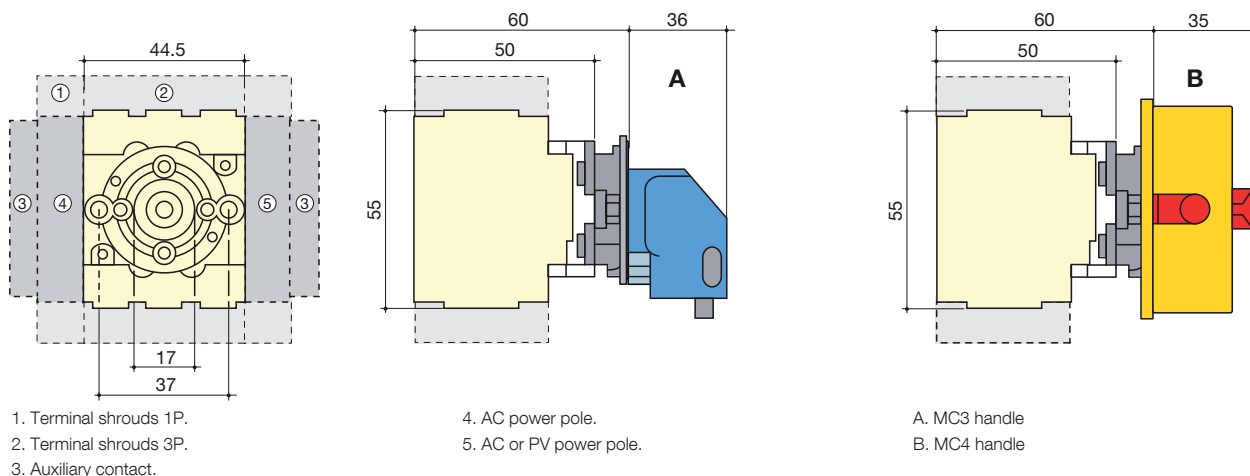
SIRCO MC PV

Load break switches for photovoltaic applications

up to 1000 VDC and 40 A

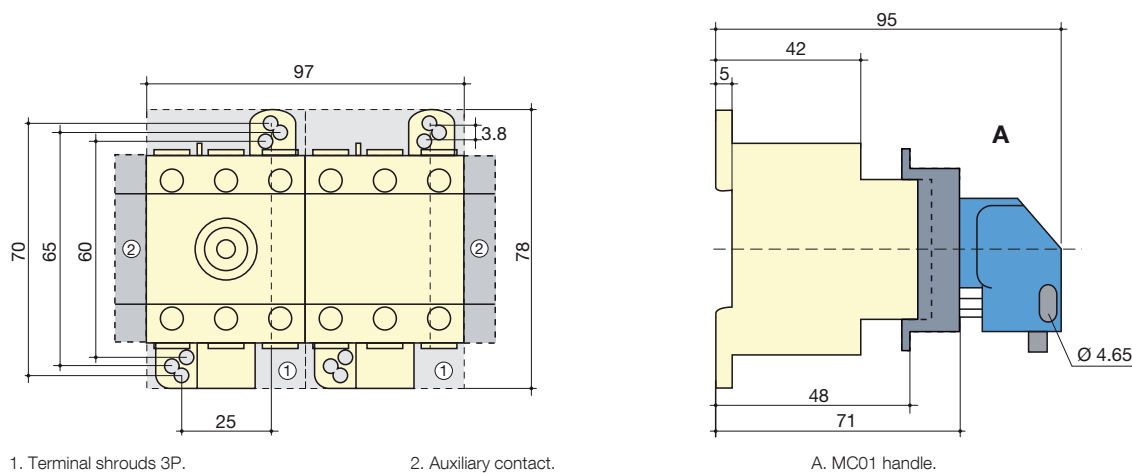
Dimensions

"Quick Fix" door mounting



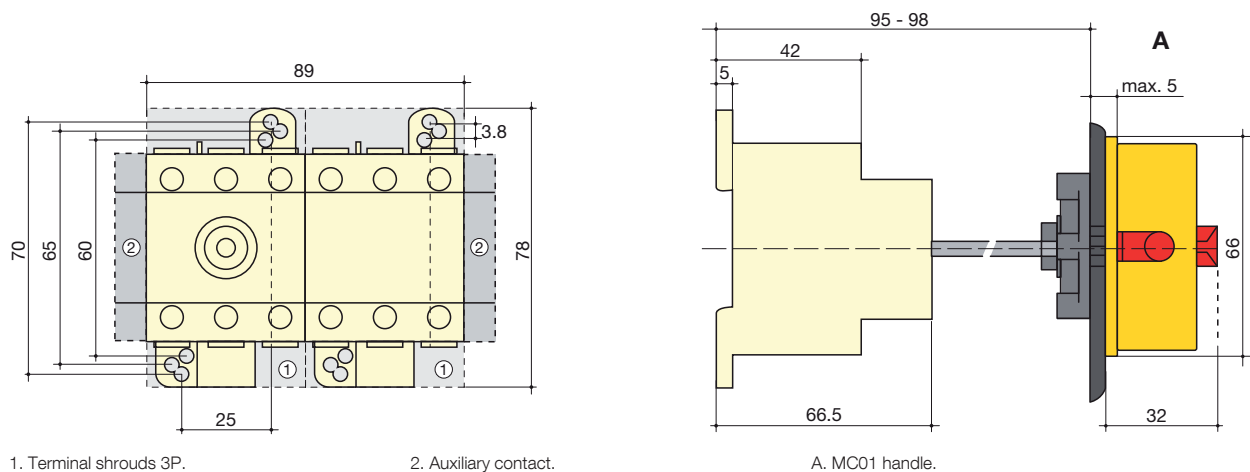
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2 MPPT - 40 A - 600 VDC and 25 A - 1000 VDC - DIN-rail mounting - Direct operation



sirco-mc_039_a_1_x_cat

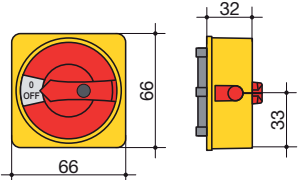
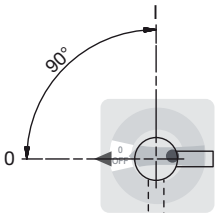
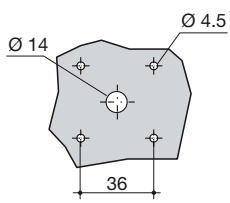
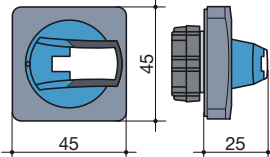
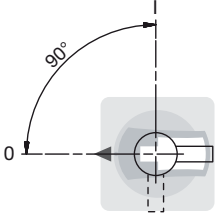
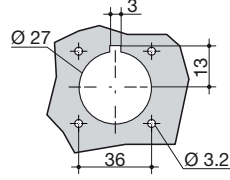
DIN-rail mounting - External operation



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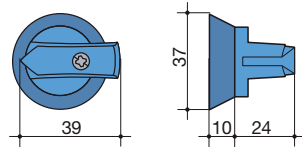
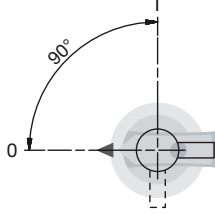
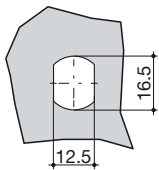
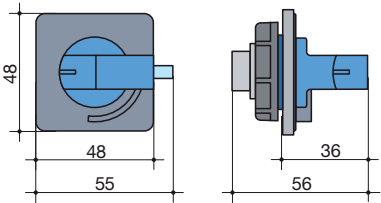
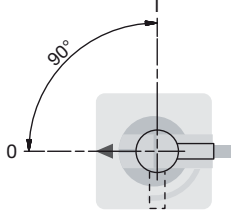
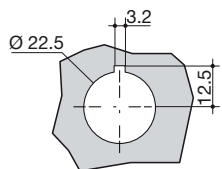
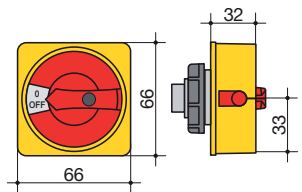
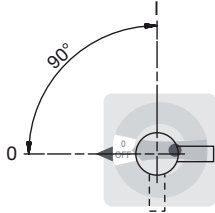
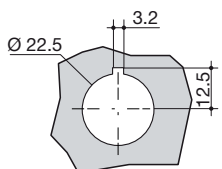
Dimensions for external handles

DIN rail or back plate mounting

Handle type	Front operation Direction of operation	Door drilling
<p>MC1 type</p> 		
<p>S000 type</p> 		

polign_006_a_1_gb_cat

Door mounting

Handle type	Front operation Direction of operation	Door drilling
<p>MC2 type</p> 		
<p>MC3 type Quick Fix</p> 		
<p>MC4 type Quick Fix</p> 		

polign_007_a_1_gb_cat

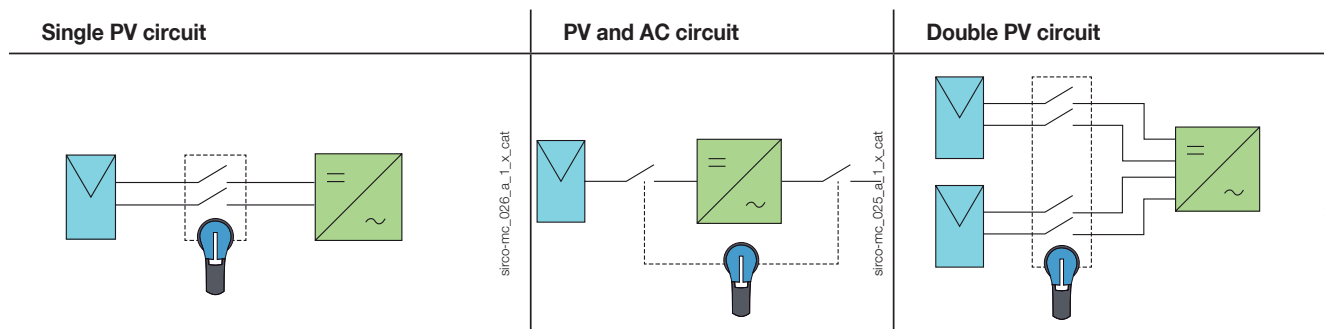
SIRCO MC PV

Load break switches for photovoltaic applications

up to 1000 VDC and 40 A

Poles connections

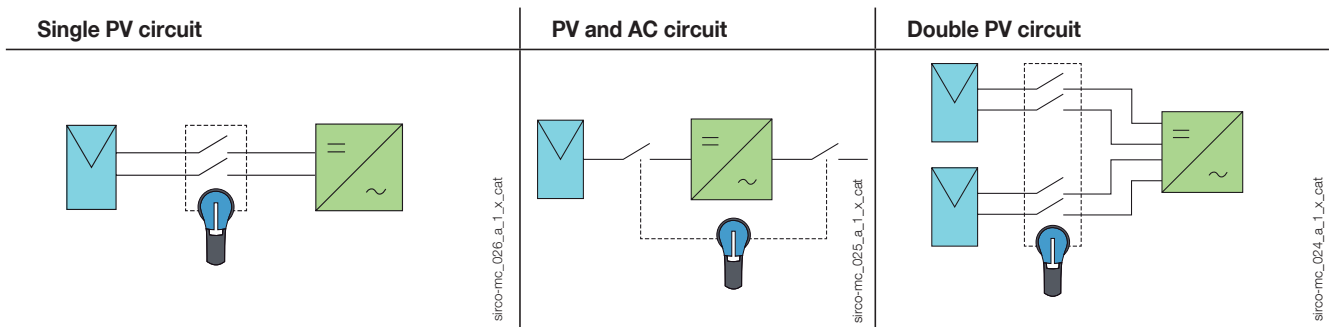
Switching of polarities + and -



Direct operation

Rating	Single PV circuit	PV and AC circuit	Double PV circuit
25 A - 600 VDC	<p>21PV 2102</p>	<p>21PV 2162</p>	<p>21PV 5102</p>
40 A - 600 VDC 25 A - 1000 VDC	<p>21PV 3421 21PV 3722</p>	<p>21PV 3184</p>	<p>21PV 6124 21PV 6722</p>
40 A - 1000 VDC	<p>21PV 4754</p>		

Switching of polarities + and -



Door mounting

Rating	Single PV circuit	PV and AC circuit	Double PV circuit
25 A - 600 VDC	<p>21PV 2202 21PV 2302</p>	<p>21PV 2262 21PV 2362</p>	<p>21PV 5202 21PV 5302</p>
40 A - 600 VDC 25 A - 1000 VDC	<p>21PV 3224 21PV 3324</p>	<p>21PV 3284 21PV 3384</p>	
40 A - 1000 VDC	<p>21PV 4854 21PV 4954</p>		
	sirco-mc_049_a_1_gb_cat	sirco-mc_009_a_1_gb_cat	sirco-mc_050_a_1_gb_cat
	sirco-mc_051_a_1_gb_cat	sirco-mc_010_a_1_gb_cat	
	sirco-mc_052_a_1_gb_cat		



SIRCO MV PV

Load break switches for photovoltaic applications
for use up to 1000 VDC from 63 to 160 A

Load break
switches



SIRCO MV PV 1000 V - 80 A
direct operation

Function

SIRCO MV PV are manually operated multipolar load break switches. They make and break under load conditions and provide optimum safety isolation for any PV circuit.

Advantages

Modular device

SIRCO MV PV are devices which are DIN-rail or backplate mountable and can be integrated into a modular panel with a 45 mm front cut-out.

Patented switching technology

SIRCO MV PV benefit from proven breaking technology based on a system of double break contacts with arc extinguishing chambers.

What you need to know

A photovoltaic electrical installation is an application that requires switching devices which fully meet the needs of operational reliability and operational safety intervention for this type of installation.

According to IEC 60364 (Part 7-7-12), the characteristics must withstand overcurrents up to 1.25 times the rated short-circuit current (I_{sc} , S_{ic}).

To date, as there is no specific standard regarding 'switchgear for PV installation', the manufacturer can only refer to IEC 60947 and related utilisation categories depending on the type of loads and normal overload conditions.

The utilisation category DC21 defines a device withstand capacity up to 1.5 times the rated current of the installation, with a time constant L/R 1ms, which is significantly above the requirements by the standard IEC 60364-7-712 and PV needs on the basis of these criteria.

However, the manufacturer has the responsibility to propose, according to his expertise, devices meeting the specific requirements of these applications, even if they are not necessarily defined in standards.

The solution for

- > Residential buildings.
- > Buildings.
- > Solar parks.



Strong points

- > Modular device.
- > Patented switching technology.
- > Performance - 1000 VDC.

Conformity to standards

- > IEC 60947-3
- > IEC 60364-4-410
- > IEC 60364-7-712



Approvals and certifications⁽¹⁾



(1) Product reference on request.

A complete solution

- > SUNSYS IFB (Intelligent Field Box). Smart connection box to link solar panels to the inverter.



References

SIRCO MV PV 800 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External front handle	Shaft for external front handle	Auxiliary contact	Bridging bar
63 A	Single PV circuit	3 P	22PV 3106	Blue M0b 2299 5042 ⁽¹⁾ Blue M0 type 2299 5022	S0 Type Black IP55 1491 0111 ⁽¹⁾⁽²⁾ Black IP65 1493 0111 ⁽²⁾ Red / Yellow IP65 1494 0111 ⁽²⁾ S1 type Black IP55 1411 2111 ⁽²⁾ Black IP65 1413 2111 ⁽²⁾ Red / Yellow IP65 1414 2111 ⁽²⁾	S0 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632 S1 type 200 mm 1401 0620 320 mm 1401 0632 400 mm 1401 0640	1 contact NC+NO 2299 0001 ⁽³⁾ 1 contact 2 NC 2299 0011 ⁽³⁾ 1 contact NO 3999 0701 1 contact NC 3999 0702	1 piece 2209 0016
80 A		3 P	22PV 3108					
100 A		3 P	22PV 3110					
125 A		3 P	22PV 3012					
160 A		3 P	22PV 3016					

(1) Standard.

(2) Defeatable handle.

(3) Signalling contact only.

SIRCO MV PV 1000 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External front handle	Shaft for external front handle	Auxiliary contact	Bridging bar
63 A	Single PV circuit	4 P	22PV 4106	Blue M0b 2299 5042 ⁽¹⁾ Blue M0 type 2299 5022	S0 Type Black IP55 1491 0111 ⁽¹⁾⁽²⁾ Black IP65 1493 0111 ⁽²⁾ Red / Yellow IP65 1494 0111 ⁽²⁾ S1 Type Black IP55 1411 2111 ⁽²⁾ Black IP65 1413 2111 ⁽²⁾ Red / Yellow IP65 1414 2111 ⁽²⁾	S0 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632 S1 type 200 mm 1401 0620 320 mm 1401 0632 400 mm 1401 0640	1 contact NC+NO 2299 0001 ⁽³⁾ 1 contact 2 NC 2299 0011 ⁽³⁾ 1 contact NO 3999 0701 1 contact NC 3999 0702	2 pieces 2209 2016
80 A		4 P	22PV 4108					
100 A		4 P	22PV 4110					
125 A		4 P	22PV 4012					
160 A		4 P	22PV 4016					

(1) Standard.

(2) Defeatable handle.

(3) Signalling contact only.

SIRCO MV PV

Load break switches for photovoltaic applications

for use up to 1000 VDC from 63 to 160 A

Accessories

Direct operation handle

M0b type direct handle		
Rating (A)	Handle colour	Reference
63 ... 160	Blue	2299 5042 ⁽¹⁾

(1) Standard.

M0 tpe compact direct operation handle		
Rating (A)	Handle colour	Reference
63 ... 160	Blue	2299 5022



M0b handle



M0 handle

access_288_a_2_cat

access_285_a_2_cat

External operation handle

Use

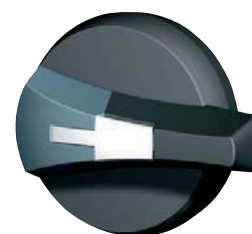
Door interlocked external operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.

In a combiner box, located close to the solar cell strings, or located close to the inverter, we recommend the use of a door interlocked external handle for safety.

Example

The locking function of the enclosure in the "ON" position will force the operator to safely disconnect and isolate the solar cell strings prior to any intervention.

Opening the door when the switch is on "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only). The interlocking function is restored when the door is re-closed.



S0 type handle



S1 type handle

access_279_a_2_cat

access_284_a_2_cat

S0 type handle - Front operation I - 0				
Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
63 ... 160	S0 type	Black	IP55	1491 0111 ⁽²⁾
63 ... 160	S0 type	Black	IP65	1493 0111 ⁽²⁾
63 ... 160	S0 type	Red/Yellow	IP65	1494 0111 ⁽²⁾

S1 type handle - Front operation I - 0				
Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
63 ... 160	S1 type	Black	IP55	1411 2111 ⁽²⁾
63 ... 160	S1 type	Black	IP65	1413 2111 ⁽²⁾
63 ... 160	S1 type	Red/Yellow	IP65	1414 2111 ⁽²⁾

(1) IP: protection degree according to IEC 60529 standard.

(2) Defeatable handle.

Shaft for external handle

Use

Standard lengths:

- 150 mm

- 200 mm

- 320 mm

- 400 mm

Other lengths: Please consult us.

For SIRCO MV PV			
Rating (A)	Handle type	Length (mm)	Reference
63 ... 160	S0 type	150 mm	1409 0615
63 ... 160	S0 type	200 mm	1409 0620
63 ... 160	S0 type	320 mm	1409 0632
63 ... 160	S1 type	200 mm	1401 0620
63 ... 160	S1 type	320 mm	1401 0632
63 ... 160	S1 type	400 mm	1401 0640



Shaft for S0 type handle for SIRCO MV PV 63 ... 160 A



Shaft for S1 type handle for SIRCO MV PV 63 ... 160 A

access_280_a_2_cat

access_289_a_1_cat

Auxiliary contact

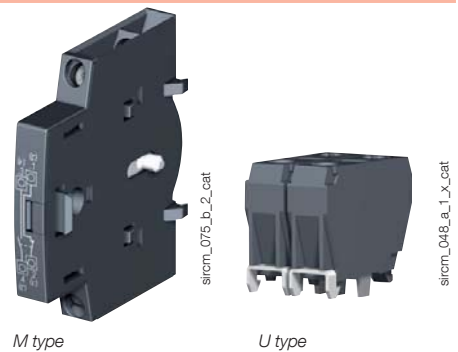
Use

M-type

Signalisation of positions 0 and I by NO+NC or 2 NO auxiliary contacts. They can be mounted on the right side on the SIRCO MV PV. Up to 2 auxiliary contact modules can be installed.

U-type

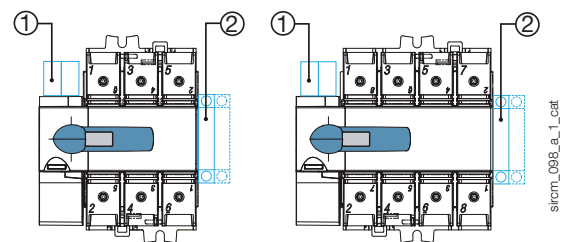
Pre-break and signalisation by NO or NC auxiliary contact.
Max 2 auxiliary contacts.



M type			
Rating (A)	Contact(s)	Contact type	Reference
63 ... 160	1 contact	NO + NC	2299 0001 ⁽¹⁾
63 ... 160	1 contact	2 NC	2299 0011 ⁽¹⁾

(1) Signalling contact only.

U type			
Rating (A)	Contact(s)	Contact type	Reference
63 ... 160	1 AC	NO	3999 0701
63 ... 160	1 AC	NC	3999 0702



M type

Auxiliary contact configurations for SIRCO MV PV

- Maximum 2 "U" type auxiliary contacts.
- Maximum 2 "M" type auxiliary contacts modules (4 A/C).

Terminal shrouds

Use

Top and bottom protection against direct contact with the connection parts (set of 2 units).

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds. The terminal shrouds also provide phase separation.

For SIRCO MV PV			
Rating (A)	No. of poles	Position	Reference
63 ... 160	3 P	top and bottom	2294 3016
63 ... 160	4 P	top and bottom	2294 4016

Bridging bars for connecting poles in series

Use

The bridging bars facilitate the connection of poles in series, allowing the below configurations:

- Bottom/Bottom
- Top/Top
- Top/Bottom
- Top/Bottom

Connection diagrams, See "Poles connections in serie", page 115.

For SIRCO MV PV		
Rating (A)	Pack	Reference
63 ... 160	1 piece	2209 0016
63 ... 160	2 pieces	2209 2016

Enclosed switches

Our SIRCO MV PV can be delivered enclosed, please consult us. Close to the installation, they guarantee:

Disconnection under DC load between the inverters and PV generators (necessary according to the IEC 60364-712 standard).

For local safety disconnection, SOCOMEC - a leader on the market - offers the widest range of enclosed switches. Whatever the level of safety is, we are able to meet all your requirements (disconnection, switching for mechanical maintenance, emergency breaking).

- Enclosed solar load break switches
- Enclosed fuse combination switches
- Enclosed changeover switches
- Complete integrated equipment

Available on request:

- Enclosures made of steel or stainless steel sheet metal (painted for sea environments or brushed), or insulating materials
- Specific colours (enclosure paint, handle)
- Specific dimensions
- Specific connections: class II quick connectors

For any request of customised products, please consult us.

SIRCO MV PV

Load break switches for photovoltaic applications

for use up to 1000 VDC from 63 to 160 A

Characteristics according to IEC 60947-3

63 to 160 A

Thermal current I_{th} at 40°C		63 A	80 A	100 A	125 A	160 A
Rated insulation voltage U_i (V)		1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	8

Rated operational currents I_e (A)									
Rated voltage	Utilisation category	Circuit type	No. of poles	Number of pole(s) in series per polarity	(A)	(A)	(A)	(A)	(A)
800 VDC	DC-21 B	Single PV circuit	3 P	2 P + and 1 P -	63	80	100	125	160
1000 VDC	DC-21 B	Single PV circuit	4 P	2 P + and 2 P -	63	80	100	125	160

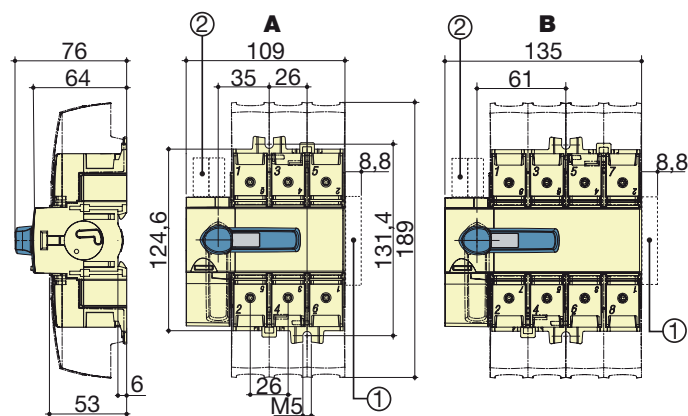
Connection									
Maximum Cu rigid cable cross-section (mm ²)		70	70	70	70	70	70	70	70
Tightening torque min (Nm)		4	4	4	4	4	4	4	4
Tightening torque max (Nm)		5	5	5	5	5	5	5	5

Mechanical characteristics									
Operating effort (Nm)		4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
Weight of a 3 pole device (kg)		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Weight of a 4 pole device (kg)		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9

Dimensions

SIRCO MV PV 63 to 160 A

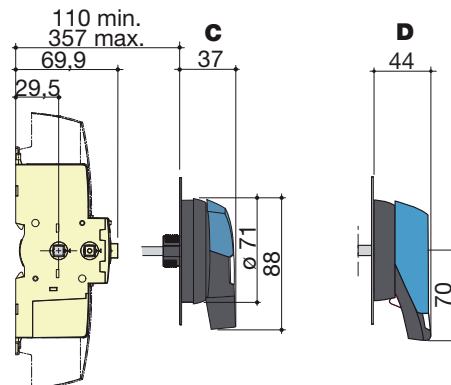
Direct front operation



A. 3 poles
B. 4 poles

C. S0 type handle
D. S1 type handle

External front operation

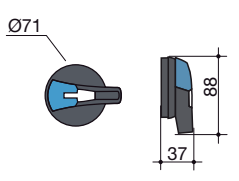
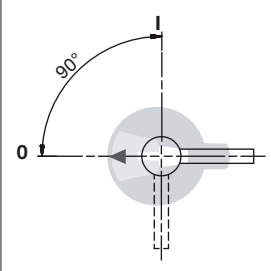
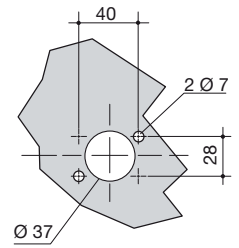
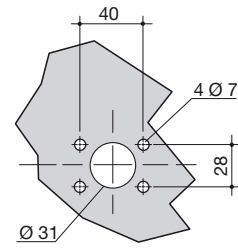
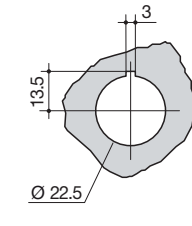
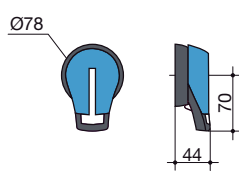
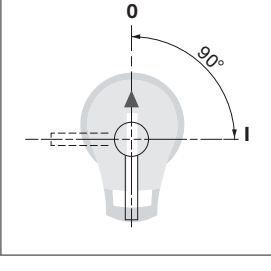
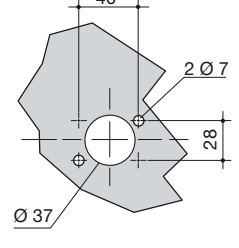
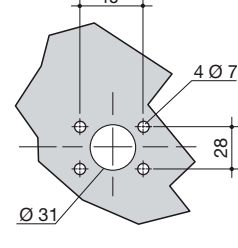


1. Maximum 2 "M" type auxiliary contacts.
2. Maximum 2 "U" type auxiliary contacts

sircm_058_c_1_x_cat

Dimensions for external handles

SIRCO MV PV 63 to 160 A

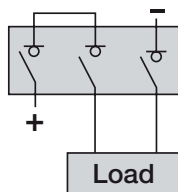
Handle type	Front operation Direction of operation	Door drilling		
S0 type 		IP55 with 2 fixing clips 	IP65 with 4 fixing screws 	With fixing nut 
S1 type 		IP55 with 2 fixing clips 	IP65 with 4 fixing screws 	

sircm_008_a_1_gb_cat

poign_009_a_1_gb_cat

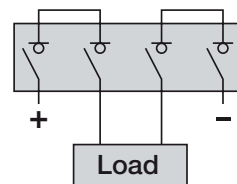
Pole series connection⁽¹⁾

3 poles - bottom / top



SIRCO_305_b_1_gb_cat

4 poles - bottom / bottom



SIRCO_307_b_1_gb_cat

(1) Other connections: refer to mounting instructions.



SIRCO PV

Load break switches for photovoltaic applications for use up to 1500 VDC from 100 to 3200 A

Load break
switches

new



SIRCO-pv_023_a_1_cat

SIRCO PV 1000 V - 400 A
direct operation

Function

SIRCO PV are manually operated multipolar load break switches. They make and break under load conditions and provide safety isolation for any low voltage circuit dedicated to photovoltaic applications.

Advantages

Performance

A glass fibre reinforced polyester break chamber with an arc extinguishing system provides a patented safety disconnection system offering rapid extinguishing of the electric arc up to 1500 VDC and current interruption up to 3200 A.

Back-to-back double load break switch

The system of back-to-back double switches enables:

- on load operation of two switches with a single handle,
- compact solution when connecting two separate photovoltaic circuits compared with the use of two separate switches,
- easy connection,
- voltages above 1000 VDC are broken by the use of two poles in series.

The solution for

- > Residential buildings.
- > Buildings.
- > Solar parks.



Strong points

- > Patented safety disconnection.
- > Performance - 1500 VDC.
- > Back-to-back double load break switch.

Conformity to standards

- > IEC 60947-3
- > IEC 60364-4-410
- > IEC 60364-7-712
- > UL 98B⁽¹⁾



⁽¹⁾ See page 158.

Approvals and certifications⁽¹⁾



⁽¹⁾ Product reference on request.

What you need to know

Load break switch for photovoltaic applications

As the IEC standard "breaking devices for PV installations" does not currently exist, the manufacturer refers to IEC standard 60947-3 and to its utilisation categories. This standard (in category DC21 or DC22) only takes the tests at nominal current into account, not at reduced current.

Across the Atlantic, UL 98B is the reference standard for PV load break switches. This standard is incredibly stringent in terms of temperature, with devices having to operate without de-rating from -20 °C to +50 °C and with special tests conducted to check the arc fault.

SIRCO PV are constructed to meet not only IEC 60947-3 (Normative test at 1.5 I_n + additional tests at 10%, 25% and 50% of the I_n) but also standard UL 98B.

References

Single PV circuit 750 VDC - Back plate mounting

Rating (A)	Circuit type	Number of poles of the device	Number of pole(s) in series per polarity	Switch body	Direct handle ⁽²⁾	External handle	Shaft for external handle	Bridging bars			
100 A	Single PV circuit	3 P	2P+, 1P-	26PV 3010	J1 type Black 1112 1111 ⁽¹⁾ Red 1113 1111	S2 type Black IP55 1421 2111 ⁽¹⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾ 500 mm 1400 1050	2609 0025			
125 A				26PV 3012							
160 A				26PV 3016							
200 A				26PV 3020							
250 A				26PV 3025							
315 A				26PV 3031							
400 A				26PV 3040							
500 A				26PV 3050							
630 A				26PV 3063							
800 A				26PV 3080							
1000 A				26PV 3100	J4 type Black 1142 1111 ⁽¹⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	2609 1100			
1250 A				26PV 3120							
1600 A				26PV 3160							
2000 A				26PV 3200							
2500 A							Please consult us	-	-	-	
3200 A											

(1) Standard.

(2) Other types of operation handle available. see "Accessories" pages.

Dual PV circuit 750 VDC - Back plate mounting

Rating (A)	Circuit type	Number of poles of the device	Number of pole(s) in series per polarity	Switch body	Direct handle ⁽²⁾	External handle	Shaft for external handle	Bridging bars
100 A	Dual PV circuit	6 P	2x (2P+, 1P-)	26PV 6010	J3 type Black 1132 1111 ⁽¹⁾ Red 1133 1111	S3 type Black IP55 1431 3111 ⁽¹⁾ Black IP65 1433 3111 Red IP65 1434 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	2 x 2609 0025
125 A				26PV 6012				
160 A				26PV 6016				
200 A				26PV 6020				
250 A				26PV 6025				
315 A				26PV 6031				
400 A				26PV 6041				
500 A				26PV 6051				
630 A				26PV 6063				
800 A				Please consult us				
1000 A				26PV 6100	J4 type Black 1142 1111 ⁽¹⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 2799 3015 320 mm 2799 3018 ⁽¹⁾ 450 mm 2799 3019	2 x 2609 1100
1250 A				26PV 6120				
1600 A				26PV 6160				
2000 A				26PV 6200				

(1) Standard.

(2) Other types of operation handle available. see "Accessories" pages.

References (continued)

Single PV circuit 1000 VDC - Back plate mounting

Rating (A)	Circuit type	Number of poles of the device	Number of pole(s) in series per polarity	Switch body	Direct handle ⁽²⁾	External handle	Shaft for external handle	Bridging bars			
100 A	Single PV circuit	4 P	2 P+, 2 P-	26PV 4010	J1 type Black 1112 1111 ⁽¹⁾ Red 1113 1111	S2 type Black IP55 1421 2111 ⁽¹⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾ 500 mm 1400 1050	2609 2025			
125 A				26PV 4012							
160 A				26PV 4016							
200 A				26PV 4020							
250 A				26PV 4025							
315 A				26PV 4031							
400 A				26PV 4040							
500 A				26PV 4050							
630 A				26PV 4063							
800 A				26PV 4080							
1000 A				26PV 4100	J4 type Black 1142 1111 ⁽¹⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	2 x 2609 1100			
1250 A				26PV 4120				2 x 2609 1160			
1600 A				26PV 4160				2 x 2609 1200			
2000 A				26PV 4200							
2500 A							Please consult us	-	-	-	-
3200 A											

(1) Standard.

(2) Other types of operation handle available. see "Accessories" pages.

Dual PV circuit 1000 VDC - Back plate mounting

Rating (A)	Circuit type	Number of poles of the device	Number of pole(s) in series per polarity	Switch body	Direct handle ⁽²⁾	External handle	Shaft for external handle	Bridging bars		
100 A	Dual PV circuit	8 P	2x (2P+, 2P-)	26PV 8010	J3 type Black 1132 1111 ⁽¹⁾ Red 1133 1111	S3 type Black IP55 1431 3111 ⁽¹⁾ Black IP65 1433 3111 Red IP65 1434 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	2 x 2609 2025		
125 A				26PV 8012						
160 A				26PV 8016						
200 A				26PV 8020						
250 A				26PV 8025						
315 A				26PV 8031						
400 A				26PV 8041						
500 A				26PV 8051						
630 A				26PV 8063						
800 A				Please consult us						
1000 A				26PV 8100	J4 type Black 1142 1111 ⁽¹⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 2799 3015 320 mm 2799 3018 ⁽¹⁾ 450 mm 2799 3019	4 x 2609 1100		
1250 A				26PV 8120				4 x 2609 1200		
1600 A				26PV 8160				V1 type Black 2799 7074	S5 type Black IP65 1453 8111 Red IP65 1454 8111	
2000 A				26PV 8200						

(1) Standard.

(2) Other types of operation handle available. see "Accessories" pages.

Single PV circuit 1200 VDC⁽¹⁾ - Back plate mounting

Rating (A)	Circuit type	Number of poles of the device ⁽¹⁾	Number of pole(s) in series per polarity	Switch body	Direct handle ⁽²⁾	External handle	Shaft for external handle	Bridging bars			
100 A	Single PV circuit	6 P	3P+, 3P- ⁽¹⁾	26PV 6010	J3 type Black 1132 1111 ⁽³⁾ Red 1133 1111	S3 type Black IP65 1431 3111 ⁽³⁾ Black IP65 1433 3111 Red IP65 1434 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽³⁾ 400 mm 1401 1540	2 x 2609 2025			
125 A				26PV 6012							
160 A				26PV 6016							
200 A				26PV 6020							
250 A				26PV 6025							
315 A				26PV 6031							
400 A				26PV 6041							
500 A				26PV 6051							
630 A				26PV 6063							
800 A				Please consult us							
1000 A				26PV 6100				J4 type Black 1142 1111 ⁽³⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽³⁾ Red IP65 1444 3111	200 mm 2799 3015 320 mm 2799 3018 ⁽¹⁾ 450 mm 2799 3019	4 x 2609 1100
1250 A				26PV 6120							
1600 A				26PV 6160				V1 type Black 2799 7074	S5 type Black IP65 1453 8111 Red IP65 1454 8111		2 x 2609 1200
2000 A				26PV 6200							

(1) For an operating voltage of 1200 VDC, the 3 poles at the front of the device must be connected in series for one polarity, and the 3 poles at the rear must be connected in series for the other.

(2) Other types of operation handle available. See "Accessories" pages.

(3) Standard.

Single PV circuit 1500 VDC⁽¹⁾ - Back plate mounting

Rating (A)	Circuit type	Number of poles of the device ⁽¹⁾	Number of pole(s) in series per polarity	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars			
100 A	Single PV circuit	8 P	4P+, 4P- ⁽¹⁾	26PV 8010	J3 type Black 1132 1111 ⁽¹⁾ Red 1133 1111	S3 type Black IP65 1431 3111 ⁽¹⁾ Black IP65 1433 3111 Red IP65 1434 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	3 x 2609 2025			
125 A				26PV 8012							
160 A				26PV 8016							
200 A				26PV 8020							
250 A				26PV 8025							
315 A				26PV 8031							
400 A				26PV 8041							
500 A				26PV 8051							
630 A				26PV 8063							
800 A				Please consult us							
1000 A				26PV 8100				J4 type Black 1142 1111 ⁽²⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 2799 3015 320 mm 2799 3018 ⁽¹⁾ 450 mm 2799 3019	6 x 2609 1100
1250 A				26PV 8120							
1600 A				26PV 8160				V1 type Black 2799 7074	S5 type Black IP65 1453 8111 Red IP65 1454 8111		6 x 2609 1200
2000 A				26PV 8200							

(1) For an operating voltage of 1500 VDC, the 4 poles at the front of the device must be connected in series for one polarity, and the 4 poles at the rear must be connected in series for the other.

Accessories

Direct operation handle

Rating (A)	No. of poles	Handle	Handle colour	Reference	
100 ... 800	3/4 P	B2 type	Black	2699 5052	
			Red	2699 5053	
	6/8 P	J1 type	Black	1112 1111 ⁽¹⁾	
			Red	1113 1111	
		C1 type	Black	2799 7052	
			Red	2799 7053	
1000 ... 1250	3/4/6/8 P	C2 type	Black	2799 7012	
			Red	2799 7013	
		J4 type	Black	1142 1111 ⁽¹⁾	
			Red	1143 1111	
	1600 ... 2000	3/4 P	C2 type	Black	2799 7012
				Red	2799 7013
6/8 P		J4 type	Black	1142 1111 ⁽¹⁾	
			Red	1143 1111	
		V1 type	Black	2799 7074 ⁽¹⁾	

(1) Standard.



Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft. In a combiner box, located close to the solar cell strings, or located close to the inverter, we recommend to use a door interlocked external handle for safety.

Example

The locking function of the enclosure in the "ON" position will force the operator to safely disconnect and isolate the solar cell strings prior to any intervention. Opening the door when the switch is on "ON" position is possible by defeating the locking function using a tool (authorised persons only). The interlocking function is restored when the door is re-closed.



Front operation

Rating (A)	No. of poles	Handle	Handle colour	External IP ⁽¹⁾	Reference
100 ... 800	3/4/6/8 P	S2 type	Black	IP55	1421 2111 ⁽¹⁾
			Black	IP65	1423 2111
			Red	IP65	1424 2111
	6/8 P	S3 type	Black	IP55	1431 3111 ⁽¹⁾
			Black	IP65	1433 3111
			Red	IP65	1434 3111
1000 ... 2000	3/4 P	S4 type	Black	IP65	1443 3111 ⁽¹⁾
			Red	IP65	1444 3111
	6/8 P	S5 type	Black	IP65	1453 8111 ⁽¹⁾
			Red	IP65	1454 8111

(1) Standard.

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.

Required for shaft lengths over 320 mm.



access_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

S-type handle adapter

Use

Enables S type handles to be fitted in place of existing older style SOCOMEC handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.



access_187_a_1_cat

Handle colour	External IP ⁽¹⁾	To be ordered in multiples of	Reference
Black	IP65	1	1493 0000

(1) IP: protection degree according to IEC 60529 standard.

Alternative S-type handle cover colours

Use

For single lever handles type S1, S2, S3.

Other colours: Please consult us.



access_198_a_1_cat

Handle colour	To be ordered in multiples of	Handle	Reference
Light grey	50	S1, S2, S3 type	1401 0001
Dark grey	50	S1, S2, S3 type	1401 0011

Shaft for external handle

Use

Standard lengths:

- 200 mm
- 320 mm
- 400 mm
- 450 mm

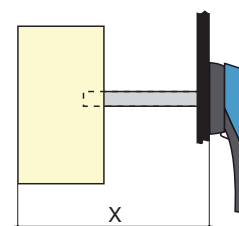
Other lengths: Please consult us.



access_369_a_1_cat

Shaft for SIRCO PV 100 ... 800 A

Rating (A)	Number of poles of the device	Dimension X (mm)	Length (mm)	Reference
100 ... 800	3/4P	125 ... 250	200 mm	1400 1020
		125 ... 370	320 mm	1400 1032
		125 ... 550	500 mm	1400 1050
	6/8 P	221 ... 343	200 mm	1401 1520
		221 ... 463	320 mm	1401 1532
		221 ... 543	400 mm	1401 1540
1000 ... 2000	3/4P	221 ... 343	200 mm	1401 1520
		221 ... 463	320 mm	1401 1532
		221 ... 543	400 mm	1401 1540
	6/8 P	415 ... 570	200 mm	2799 3015
		415 ... 690	320 mm	2799 3018
		415 ... 820	450 mm	2799 3019



access_202_a_1_x_cat

SIRCO PV

Load break switches for photovoltaic applications

for use up to 1500 VDC from 100 to 3200 A

Accessories (continued)

Auxiliary contact

Use

- Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts,
 - 1 to 4 NO + NC auxiliary contacts,
 - 1 to 2 low level NO/NC auxiliary contacts.

Characteristics

NO/NC A/C: IP2 with front operation.

Connection to the control circuit

6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.



access_076_a_1_cat

NO/NC contact for 3/4 poles

Rating (A)	Position A/C	Reference
100 ... 3200	1 st	2699 0031
	2 nd	2699 0032

Low level NO/NC contact for 3/4 poles

Rating (A)	Position A/C	Reference
100 ... 3200	1 st	2699 0301
	2 nd	2699 0302

NO+NC contact for 3/4 poles

Rating (A)	Position A/C	Reference
100 ... 3200	1 st	2699 0141
	2 nd	2699 0143

NO/NC contact for 6/8 poles

Rating (A)	Position A/C	Reference
100 ... 2500	1 st	2699 0061
	2 nd	2699 0062

Characteristics

Contact type	Operating current I _o (A)							
	230 VAC		400 VAC		24 VDC		48 VDC	
	AC-12	AC-15	AC-12	AC-15	DC-12	DC-14	DC-12	DC-14
NO/NC	16	4	12	3	16	1	2.5	0.2
N/C Low level	16	4	12	3	16	1	4	0.3
NO + NC	16	4	12	3	16	1	4	0.3

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds.

The terminal shrouds also provide phase separation for SIRCO PV from 100 to 800 A.



access_077_a_1_cat

Rating (A)	Single PV circuit 750 VDC		Single PV circuit 1000 VDC		Dual PV circuit 750 VDC or single PV circuit 1200 VDC		Dual PV circuit 1000 VDC or single PV circuit 1500 VDC	
	Quantity to be ordered	Reference	Quantity to be ordered	Reference	Quantity to be ordered	Reference	Quantity to be ordered	Reference
100 ... 500	1	2694 3021	1	2694 4021	2	2694 3021	2	2694 4021
630 ... 800	1	2694 3051	1	2694 4051	2	2694 3051	2	2694 4051

Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.

Rating (A)	Single PV circuit 750 VDC		Single PV circuit 1000 VDC		Dual PV circuit 750 VDC or single PV circuit 1200 VDC		Dual PV circuit 1000 VDC or single PV circuit 1500 VDC	
	Position	Reference	Position	Reference	Position	Reference	Position	Reference
100 ... 500	Top or bottom	2698 3020	Top or bottom	2698 4020	Top or bottom	1509 3025	Top or bottom	1509 4025
630 ... 800	Top or bottom	2698 3050	Top or bottom	2698 4050	Top or bottom	1509 3063	Top or bottom	1509 4063
1000 ... 1250	Top or bottom	2698 3080	Top or bottom	2698 4080	Top and bottom	1509 3080	Top and bottom	1509 4080
1600	Top or bottom	2698 3120	Top or bottom	2698 4120	Top or bottom	2698 3199	Top or bottom	2698 4199
2000	Top and bottom	2698 3199	Top and bottom	2698 4199				



access_079_a_1_cat

Inter-phase barrier

Use

Safety isolation between the terminals.

For 100 to 800 A SIRCO PV, the inter-phase barriers allow insulation between poles connected in series.

Rating (A)	No. of poles	Pack	Reference
100 ... 500	3 P	2 pieces	2998 0023
100 ... 500	4 P	3 pieces	2998 0024
630 ... 800	3 P	2 pieces	2998 0013
630 ... 800	4 P	3 pieces	2998 0014
1000 ... 3200	3 P / 4 P	-	included



access_036_a_1_cat

Bridging bars for connecting poles in series

Use

The bridging bars facilitate the connection of poles in series, allowing the following configurations:

- Bottom / Bottom
- Top / Top
- Top / Bottom
- Bottom / Top

Rating (A)	Single PV circuit 750 VDC		Single PV circuit 1000 VDC		Dual PV circuit 750 VDC or single PV circuit 1200 VDC		Dual PV circuit 1000 VDC or single PV circuit 1500 VDC	
	Quantity to be ordered	Reference	Quantity to be ordered	Reference	Quantity to be ordered	Reference	Quantity to be ordered	Reference
100 ... 315	1	2609 0025	1	2609 0025	2	2609 0025	2	2609 0025
400 ... 500	1	2609 2050	1	2609 4050	2	2609 2050	2	2609 4050
630 ... 800	1	2609 0080	1	2609 2080	2	2609 0080	2	2609 2080
1000 ... 1250	1	2609 1100	2	2609 1100	2	2609 1100	4	2609 1100
1600	1	2609 1160	2	2609 1160	2 ⁽¹⁾	2609 1200	4 ⁽¹⁾	2609 1200
2000	1	2609 1200	2	2609 1200				

(1) For 1200 VDC products, order 4 times reference 2609 1200. For 1500 VDC products, order 6 times reference 2609 12000.



access_334_a_1_cat

Key handle interlocking system

Use

Locking in position 0 of the front or side operation handle:

- using a padlock (not supplied) - function is incorporated into the handle. From 125 to 1800 A, the padlock on the external front operation handle also locks the door,

- using lock (not supplied): see diagrams opposite,
 - using undervoltage coil: the SIRCO PV can only be closed when the coil is live.
- For 6/8 pole: please consult us.

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	No. of poles	Operation	Figure	Reference
100 ... 800	3/4 P	front direct	1	2699 6008
100 ... 800	3/4 P	external front	3	1499 7701

Locking using 230 VAC undervoltage coil (other voltages: please consult us)

Rating (A)	No. of poles	Operation	Reference
125 ... 630	3/4 P	external front	2699 9063
800 ... 2000	3/4 P	front direct	2699 9315

Fig. 1

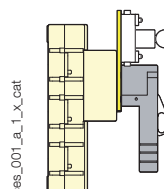


Fig. 3

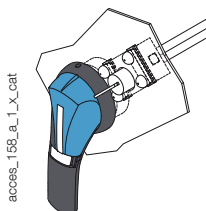


Fig.2

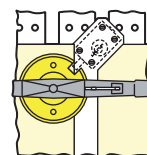
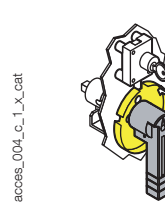


Fig.4



SIRCO PV

Load break switches for photovoltaic applications

for use up to 1500 VDC from 100 to 3200 A

Characteristics

Characteristics according to IEC 60947-3

Rated current I (A)	SIRCO PV - 100 to 400 A						
	100 A	125 A	160 A	200 A	250 A	315 A	400 A
Rated insulation voltage Ui (V) - 3/4 P device	1200	1200	1200	1200	1200	1200	1200
Rated insulation voltage Ui (V) - 6/8 P device	1500	1500	1500	1500	1500	1500	1500
Rated impulse withstand voltage Uimp (kV)	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾

Rated operational currents I_e (A)

Rated voltage	Utilisation category	Circuit type	No. of poles	(A)	(A)	(A)	(A)	(A)	(A)	(A)
750 VDC	DC-22 B	Single PV circuit	3 P	100	125	160	200	250	315	400
750 VDC	DC-22 B	Double PV circuit	6 P	100	125	160	200	250	315	400
1000 VDC	DC-22 B	Single PV circuit	4 P	100	125	160	200	250	315	400
1000 VDC	DC-22 B	Double PV circuit	8 P	100	125	160	200	250	315	400
1200 VDC	DC-21 B	Single PV circuit	6 P	100	125	160	200	250	315	400
1500 VDC	DC-21 B	Single PV circuit	8 P	100	125	160	200	250	315	400

Connection

Maximum Cu rigid cable cross-section (mm ²)	35	50	70	95	120	185	240
Maximum Cu busbar width (mm)	32	32	32	32	32	32	32
Tightening torque min (Nm)	20	20	20	20	20	20	20
Tightening torque max (Nm)	26	26	26	26	26	26	26

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	5 000
Operating effort (Nm)	10	10	10	10	10	10	10
Weight of a 3 pole device (kg)	2	2	2	2	2	3.5	3.5
Weight of a 4 pole device (kg)	2.5	2.5	2.5	2.5	2.5	4	4

(1) The delivered spacers have to be installed.

Rated current I (A)	SIRCO PV - 500 to 2000 A						
	500 A	630 A	800 A	1000 A	1250 A	1600 A	2000 A
Rated insulation voltage Ui (V) - 3/4 P device	1200	1200	1200	1200	1200	1200	1200
Rated insulation voltage Ui (V) - 6/8 P device	1500	1500	1500	1500	1500	1500	1500
Rated impulse withstand voltage Uimp (kV)	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	Circuit type	No. of poles	(A)	(A)	(A)	(A)	(A)	(A)	(A)
750 VDC	DC-22 B	Single PV circuit	3 P	500	630	800	1000	1250	1600	2000
750 VDC	DC-22 B	Double PV circuit	6 P	500	630	-	1000	1250	1600	2000
1000 VDC	DC-22 B	Single PV circuit	4 P	500	630	800	1000	1250	1600	2000
1000 VDC	DC-22 B	Double PV circuit	8 P	500	630	-	1000	1250	1600	2000
1200 VDC	DC-21 B	Single PV circuit	6 P	500	630	-	1000	1250	1600	2000
1500 VDC	DC-21 B	Single PV circuit	8 P	500	630	-	1000	1250	1600	2000

Connection

Maximum Cu rigid cable cross-section (mm ²)	2x150	2x185	2x240	2x240	2x240	-	-
Maximum Cu busbar width (mm)	32	40	50	63	63	100	100
Tightening torque min (Nm)	20	40	40	40	40	40	40
Tightening torque max (Nm)	26	45	45	45	45	45	45

Mechanical characteristics

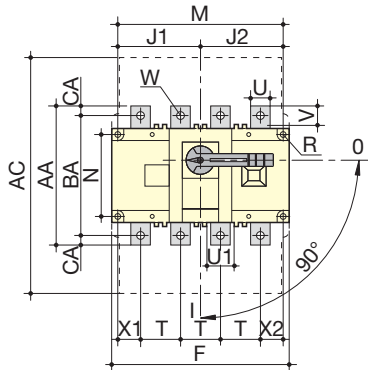
Durability (number of operating cycles)	5 000	5 000	5 000	4 000	4 000	4 000	4 000
Operating effort (Nm)	10	14.5	14.5	37	37	56	56
Weight of a 3 pole device (kg)	3.5	3.5	3.5	8	8	12	12
Weight of a 4 pole device (kg)	4	4	4	10	10	15	15

(1) The delivered spacers have to be installed.

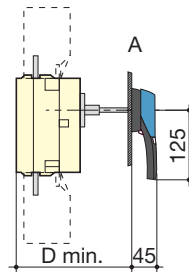
Dimensions

100 to 2000 A - Single PV circuit

Direct front operation



External front operation



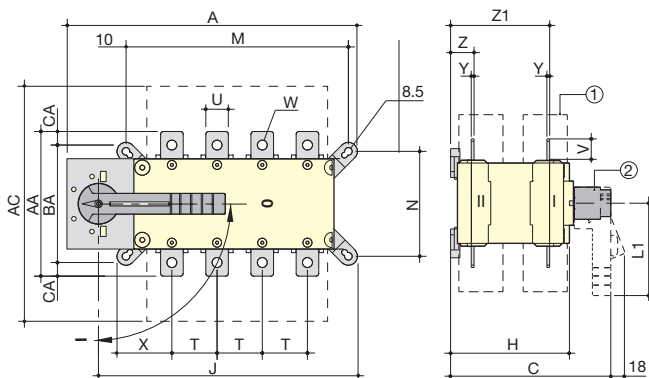
1. Terminal shrouds
A. S2 type handle

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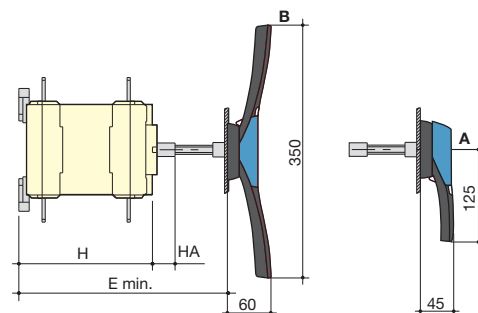
Rating (A)	Overall dimensions		Terminal shrouds		Switch body							Switch mounting					Connection												
	C	D min	AC	AD	F 3p.	F 4p.	G	H	J1 3p.	J1 4p.	K	BC	M 3p.	M 4p.	N	R	T	U	U1	V	W	X1 3p.	X1 4p.	X2	Y	Z	AA	BA	CA
100 ... 250	125	135	290	60	180	230	116	79	80	105	34	115	160	210	80	5.5	50	25	25	21.5	11	33	33	27	3.5	22.5	160	130	15
315 ... 500																		35	35	26.5									
630 ... 800	215	221	470	103	280	360	-	140	75	135	55	165	210	270	140	7	65	45	45	41.5	13	42.5	37.5	37.5	5	37.5	260	220	20
1000									127.5	167.5	-		175	9	-	50	61	15	-	47.5	47.5	7	46.5	321	-	-			
1250									173.5	233.05	-		175	9	-	60	65	16x11	-	53.5	53.5	8	47.5	330	-	-			
1600 ... 2000									118	372	492		-	-	-	90	44	12.5x5	-	53.5	53.5	8	47.5	288	-	-			

100 to 2000 A - Dual PV circuit and single PV circuit from 1200 to 1500 VDC

Direct front operation



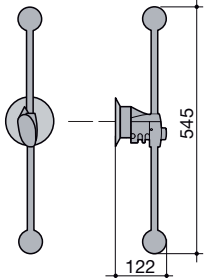
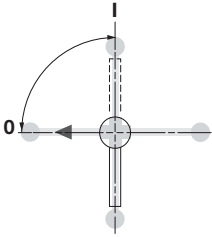
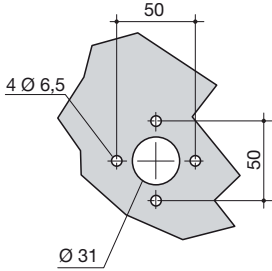
External front operation



sirco-pv_029_b_1_x_cat

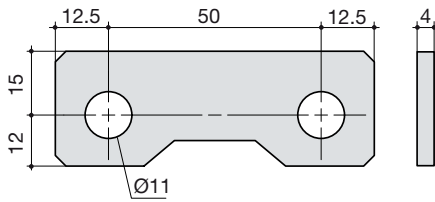
Rating (A)	Overall dimensions				Terminal shrouds	Switch body				Switch mounting			Connection											
	A 3p.	A 4p.	C	E min		AC	H	HA	J 3p.	J 4p.	M 3p.	M 4p.	N	T	U	V	W	X 3p.	X 4p.	Y	Z	Z1	AA	BA
100 ... 250	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	25	21.5	11	61	61	3.5	30	124	160	130	15
315 ... 500														35	26.5									
630 ... 800	386	466	375	425 ... 577	401	225	29	272	332	246	306	176	65	45	41.5	13	70.5	65.5	5	43	180	260	220	20
1000								306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321	-	-
1250								388.5	518.5	357	467	250	120	90	44	12.5	54	54	8	255.5	288	-	-	
1600 ... 2000								478	598	461	-	-	-	90	44	12.5	54	54	8	255.5	288	-	-	

V1 type

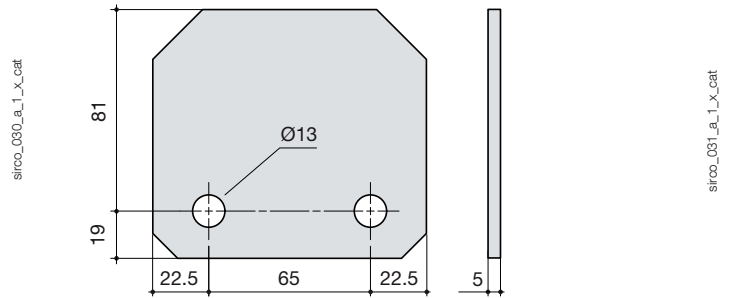
Handle type	Front operation Direction of operation	Door drilling
<p>V1 type</p> 		

Bridging bars (in / mm)

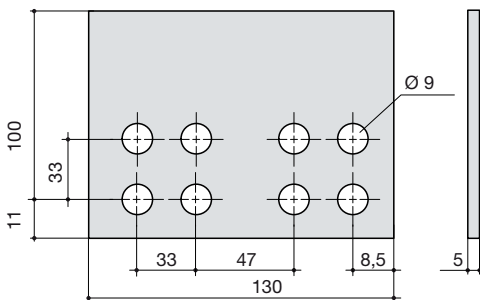
100 - 500 A



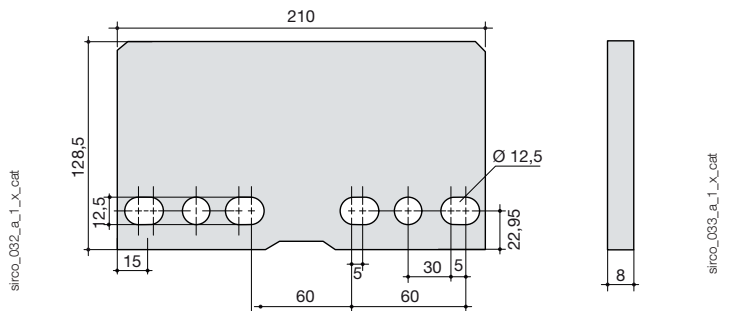
400 A (6/8 poles) - 630 - 800 A



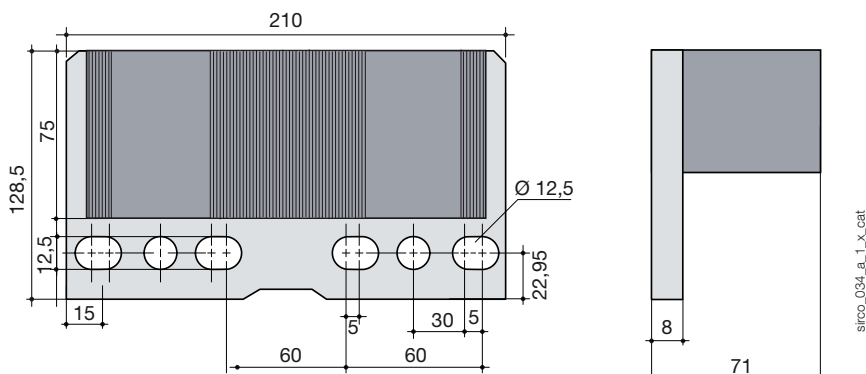
1000 - 1250 A



1600 A



1600 A (6/8 poles) - 2000 A





SIRCO MOT PV

Motorised load break switches for photovoltaic applications
for use up to 1000 VDC from 200 to 630 A

Load break
switches



SIRCO MOT PV 4x400 A

Function

SIRCO MOT PV are three or four pole motorised load break switches. They make and break under load conditions and provide safety isolation for any low voltage circuit dedicated to photovoltaic applications.

Advantages

Patented safety disconnection system for firefighters

With its remote electrical control, the SIRCO MOT PV can be utilised to provide safety disconnection for firefighters, meeting the remote disconnection requirements of the installation, closing to facilitate periodic tests and short-circuit control for maintenance and cleaning work.

Manual emergency operation

In addition to its motorised operation, the SIRCO MOT PV also includes a manual operation facility, enabling the switch position to be changed directly on the device if required.

General characteristics

- 2 stable positions (I, 0).
- Positive break indication.
- AUTO / MANU selector.
- Padlocking in 0 position (position I with option).
- Up to 1000 VDC.
- IP20 devices and accessories.

The solution for

- > Buildings.
- > Solar parks.



Strong points

- > Patented safety disconnection system for firefighters.
- > Manual emergency operation.

Conformity to standards

- > IEC 60947-3
- > IEC 60364-4-410
- > IEC 60364-7-712



A complete solution

- > SUNSYS IFB (Intelligent Field Box). Smart connection box to link solar panels to the inverter.



References

SIRCO MOT PV 750 VDC

Rating (A)	Circuit type	No. of poles	Switch body	Bridging bars for connecting poles in series	Auxiliary contact	Terminal screens	Terminal shrouds
200 A	Single PV circuit	3 P	19PV 3020	2 P 2609 0025 ⁽¹⁾	1 st contact NO/NC included 2 nd contact NO/NC 4109 0021	3 P 1509 3025 ⁽²⁾	3 P 2694 3021 ⁽³⁾
250 A			19PV 3025	4 P 2609 2025 ⁽¹⁾		4 P 1509 4025 ⁽²⁾	4 P 2694 4021 ⁽³⁾
400 A			19PV 3040	2 P 2609 0063 ⁽¹⁾		3 P 1509 3063	3 P 2694 3051 ⁽³⁾
500 A			19PV 3050	4 P 2609 2063 ⁽¹⁾		4 P 1509 4063	4 P 2694 4051 ⁽³⁾
630 A			19PV 3063				

SIRCO MOT PV 1000 VDC

Rating (A)	Circuit type	No. of poles	Switch body	Bridging bars for connecting poles in series	Auxiliary contact	Terminal screens	Terminal shrouds
200 A	Single PV circuit	4 P	19PV 4020	2 P 2609 0025 ⁽¹⁾	1 st contact NO/NC included 2 nd contact NO/NC 4109 0021	3 P 1509 3025 ⁽²⁾	3 P 2694 3021 ⁽³⁾
250 A			19PV 4025	4 P 2609 2025 ⁽¹⁾		4 P 1509 4025 ⁽²⁾	4 P 2694 4021 ⁽³⁾
400 A			19PV 4040	2 P 2609 0063 ⁽¹⁾		3 P 1509 3063	3 P 2694 3051 ⁽³⁾
500 A			19PV 4050	4 P 2609 2063 ⁽¹⁾		4 P 1509 4063	4 P 2694 4051 ⁽³⁾
630 A			19PV 4063				

(1) Connection in series of 2 or 4 poles of the device

(2) 2 pieces: one for top side and another for bottom side

(3) Terminal shrouds cannot be mounted when bridging bars for connecting poles in series are present.

SIRCO MOT PV

Motorised load break switches for photovoltaic applications
for use up to 1000 VDC from 200 to 630 A

Accessories

Bridging bars for connecting poles in series

Use

The bridging bars facilitate the connection of poles in series, allowing the below configurations:

- Bottom/Bottom
- Top/Top
- Top/Bottom
- Top/Bottom

Connection diagrams: See "Poles connections in serie", page 133.

Rating (A)	Number of poles of the device in series	Pack	Reference
200 ... 250	2	1 piece	2609 0025
200 ... 250	4	2 pieces	2609 2025
400 ... 630	2	1 piece	2609 0063
400 ... 630	4	2 pieces	2609 2063

Auxiliary contact

Use

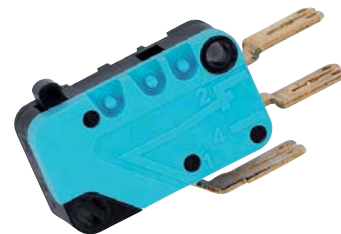
Pre-break and signalisation of position I:
1 to 2 NO/NC auxiliary contacts (1 as standard).
Low level auxiliary contacts:
Please consult us.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.



access_065_a_1_cat



svr_058_a_1_cat

Characteristics

Rating (A)	Nominal current (A)	Operating current Ie (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC AC-13	48 VDC AC-13
200 ... 630	16	12	8	14	6

References

NO/NC changeover contact		
Rating (A)	Contact(s)	Reference
200 ... 630	2 nd	4109 0021

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.
Not compatible for terminals with bridging bars connected.

Advantage of terminal shrouds

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Rating (A)	No. of poles	Position	Reference
200 ... 250	3 P	top and bottom	2694 3021
200 ... 250	4 P	top and bottom	2694 4021
400 ... 630	3 P	top and bottom	2694 3051
400 ... 630	4 P	top and bottom	2694 4051



access_206_a_2_cat

Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
200 ... 250	3 P	top and bottom	1509 3025
200 ... 250	4 P	top and bottom	1509 4025
400 ... 630	3 P	top and bottom	1509 3063
400 ... 630	4 P	top and bottom	1509 4063



access_207_a_2_cat

2 position padlocking (I-0)

Use

Enables padlocking in position I (product can be padlocked in position 0 as standard).

Rating (A)	Reference
200 ... 630	1599 0003



atys_125_a_1_cat

SIRCO MOT PV

Motorised load break switches for photovoltaic applications
for use up to 1000 VDC from 200 to 630 A

Accessories (continued)

Key handle interlocking system

Use

With the product in manual mode, it enables locking in position 0 using a RONIS EL11AP lock. Factory fitted.

Locking in both positions (I-0) requires, in addition, the "2 position padlocking" accessory.



alys_101_a_1_cat

Rating (A)	Reference
200 ... 630	1509 1006

Other specific accessories

- Low level auxiliary contacts.

Characteristics according to IEC 60947-3

200 to 630 A

Thermal current I_{th} at 40°C		200 A	250 A	400 A	500 A	630 A			
Rated insulation voltage U_i (V)		1200	1200	1200	1200	1200			
Rated impulse withstand voltage U_{imp} (kV)		8	8	12	12	12			
Rated operational currents I_e (A)									
Rated voltage	Utilisation category	Circuit type	Number of poles of the device	Number of pole(s) in series per polarity	(A)	(A)	(A)	(A)	(A)
750 VDC	DC-21 B	Single PV circuit	3 P	2 P + and 1 P -	200	250	400	500	630
1000 VDC	DC-21 B	Single PV circuit	4 P	2 P + and 2 P -	200	250	400	500	630
Switching time (Standard setting)									
I - 0		0.85	0.85	0.85	0.85	0.85			
Power supply									
230 VAC min./max. (VAC)		176/288	176/288	176/288	176/288	176/288			
Control supply power demand									
Supply 230 VAC inrush / nominal (VA)		420/100	420/100	420/100	420/110	450/120			
Connection									
Rigid Cu cable cross-section (mm ²)		95	120	240	2 x 150	2 x 185			
Maximum Cu busbar width (mm)		32	32	40	40	40			
Tightening torque min (Nm)		20	20	40	40	40			
Mechanical characteristics									
Durability (number of operating cycles) ⁽¹⁾		8000	8000	5000	5000	5000			
Weight of a 3 pole device (kg)		5	5	7	7	7			
Weight of a 4 pole device (kg)		6	6	8	8	8			

(1) Improved endurance: Please consult us.



SIRCO M UL508

Load break switches standards UL and CSA
16 to 80 A

Load break
switches

new



Rotary switch
SIRCO M 3 x 80 A



Toggle switch
SIRCO M 3 x 80 A + 2 auxiliary contacts



Rotary switch
SIRCO M 3 x 80 A



The solution for

- > Industrial control systems



Strong points

- > Total integration.
- > Wide range of accessories.
- > Upgradeability.
- > Compliance to major certifications and approvals.
- > Specific characteristics.

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL 508 listed, Guide NLRV, File E173959
- > CSA C22.2§14, class 3211-05, File 112964



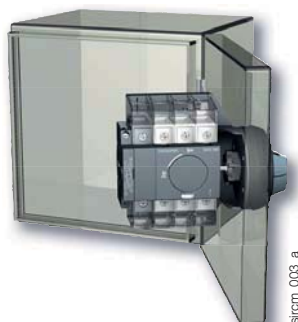
⁽¹⁾ Product reference on request.

Function

SIRCO M UL/CSA non fusable disconnect switches are compact modifiable and modular switches. They make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine and control circuits.

General characteristics

- Positive break indication.
- Direct or external operation.
- Compact footprint.
- DIN-rail or base mount.
- Wide range of accessories.
- Up to 8 pole or 4 pole MTS.



UL508 non-metallic polycarbonate 4.4x enclosed SIRCO M

- > Enclosed SIRCO M switches allow safe control and disconnection of any motor application.



UL508 manual motor controller "Suitable as motor disconnect"

References

Rating (A)	No. of poles	Toggle switch (direct handle included)	Rotary switch	Direct handle	External front and right side handles ⁽⁴⁾	Shaft for external handles	Switched fourth pole module	Auxiliary contacts	Terminal shrouds	Door mounting kit
16 A	3 P	2205 3000	2200 3000	Blue 2299 5012	S00 type I - 0 Black 3R, 12 ⁽¹⁾ 1473 1111	S00 and S0 type 150 mm 5.9 in 1407 0515 200 mm 7.9 in 1407 0520 320 mm 12.6 in 1407 0532 ⁽²⁾	1 P 2200 1000	M type 1 AC NO + NC 2299 0001 1 AC 2 NC 2299 0011	1 P 2294 1005 ⁽³⁾ 3 P 2294 3005 ⁽³⁾	2299 3409
20 A	3 P	2205 3001	2200 3001		Red/Yellow 3R, 12 ⁽¹⁾ 1474 1111		1 P 2200 1001			
25 A	3 P	2205 3002	2200 3002		Black 4, 4X ⁽¹⁾ 1470 1111		1 P 2200 1002			
32 A	3 P	2205 3003	2200 3003		Red/Yellow 4, 4X ⁽¹⁾ 147E 1111		1 P 2200 1003			
40 A	3 P	2205 3004	2200 3004		S0 type I - 0 Black 1, 3R, 12 ⁽¹⁾ 1483 1111		1 P 2200 1004			
63 A	3 P	2205 3006	2200 3006		Red/Yellow 1, 3R, 12 ⁽¹⁾ 1484 1111		1 P 2200 1006			
80 A	3 P	2205 3008	2200 3008		Black 4, 4X ⁽¹⁾ 148D 1111		1P 2200 1008			
					Red/Yellow 4, 4X ⁽¹⁾ 148E 1111					

(1) Nema type.

(2) Please order the shaft guide: 1419 0000 with the shaft.

(3) Top and bottom.

(4) There is no door interlocking when the switch is fitted on the side of the enclosure.

SIRCO M UL508

Load break switches standards UL and CSA

16 to 80 A

UL508 non-metallic polycarbonate 4, 4X enclosed SIRCO M

References



Function

Enclosed **SIRCO M** switches allow safe control and disconnection of any motor application.

General characteristics

- Grey enclosure with red handle.
- Equipped with a 3 pole SIRCO M.
- 1 removable earth terminal.
- Possibility of adding 1 power pole and 1 auxiliary contact.
- Nema type 1, 3R, 12, 4, 4X.

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL508, Guide NLRV, file E173959
- > CSA C22.2#14, Class 3211-05, file 702154



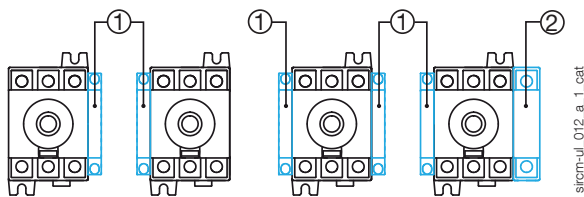
(1) Product reference on request.

Rating (A)	No. of poles	Enclosed switches	Enclosure size	Switched fourth pole module	Unswitched neutral pole	Unswitched protective earth module	Auxiliary contacts	Terminal shrouds
32 A	3 P	2214 3503	Size 1	1 P 2200 1003	1 P 2200 5005⁽¹⁾	1 P 2200 9005⁽¹⁾	M type 1 AC NO + NC 2299 0001	1 P 2294 1005⁽²⁾
	3 P	2224 3503	Size 2					3 P 2294 3005⁽²⁾
63 A	3 P	2224 3506	Size 2	1 P 2200 1006⁽¹⁾	1 P 2200 5009⁽¹⁾	1 P 2200 9009⁽¹⁾	1 AC 2 NC 2299 0011	1 P 2294 1009⁽²⁾
								3 P 2294 3009⁽²⁾

(1) Not UL.

(2) Top and bottom.

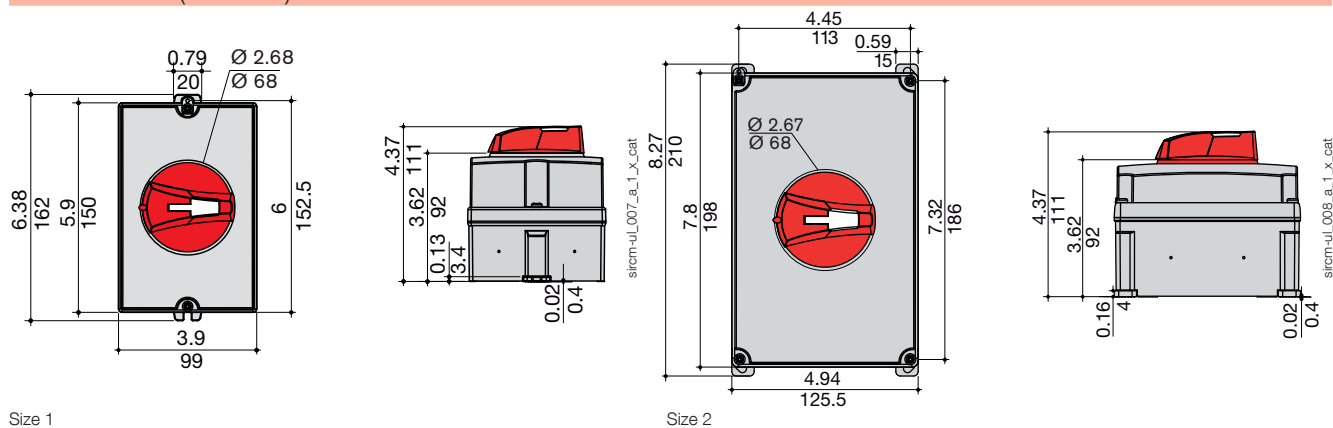
Configuration



Configuration of the auxiliary contacts for enclosed SIRCO M.

1. M type auxiliary contacts.
2. Additional pole.

Dimensions (in / mm)



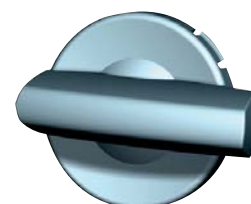
Size 1

Size 2

Accessories

Direct operation handle

Rating (A)	Handle colour	Handle	Reference
16 ... 80	Blue	M00 type	2299 5012



M00 handle

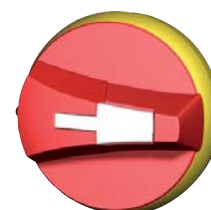
access_277_a_2_cat

External operation handle

Use

The handle locking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position (only if the handle is fitted on the door).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only). The interlocking function is restored when the door is closed. The handle is padlockable with 3 padlocks.



S00 handle

access_264_a_2_cat



S0 handle

access_279_a_2_cat

Front and right side handles I - 0

Rating (A)	Handle colour	Handle	Nema type	Reference
16 ... 80	Black	S00 type	3R, 12	1473 1111
16 ... 80	Red/Yellow	S00 type	3R, 12	1474 1111
16 ... 80	Black	S00 type	4, 4X	147D 1111
16 ... 80	Red/Yellow	S00 type	4, 4X	147E 1111
16 ... 80	Black	S0 type	1, 3R, 12	1483 1111
16 ... 80	Red/Yellow	S0 type	1, 3R, 12	1484 1111
16 ... 80	Black	S0 type	4, 4X	148D 1111
16 ... 80	Red/Yellow	S0 type	4, 4X	148E 1111

Front handle for changeover switches I - 0 - II

Rating (A)	Handle colour	Handle	Nema type	Reference
16 ... 80	Black	S00 type	4, 4X	1473 1113

Front handle for changeover switches I - I+II - II

Rating (A)	Handle colour	Handle	Nema type	Reference
16 ... 80	Black	S00 type	4, 4X	1473 1114

Shafts for external handle

Use

Standard lengths:

- 150 mm,
- 200 mm,
- 320 mm.

Other lengths: please consult us.

For 3/4 pole switches, shaft extensions for external front and side handle.

For 6/8 pole switches and SIRCOVER M changeover switches.



access_280_a_2_cat

For 3/4 pole

Rating (A)	Handle	Length (inches)	Length (mm)	Reference
16 ... 80	S00 type	5.9 in	150 mm	1407 0515
16 ... 80	S00 type	7.9 in	200 mm	1407 0520
16 ... 80	S00 type	12.6 in	320 mm	1407 0532

For 4/8 pole

Rating (A)	Handle	Length (inches)	Length (mm)	Reference
16 ... 80	S00 type	5.9 in	150 mm	1407 0515
16 ... 80	S00 type	7.9 in	200 mm	1407 0520
16 ... 80	S00 type	12.6 in	320 mm	1407 0532

SIRCO M UL508

Load break switches standards UL and CSA
16 to 80 A

Accessories (continued)

Shaft guide for external handle

Use

This accessory enables handle to engage extension shaft with a misalignment of up to 15 mm.
Required for a shaft length from 320 mm.

Handle type	Reference
S00 and S0	1419 0000



access_260_a_2_cat

Additional pole for SIRCO M

4th pole

Rating (A)	No. of poles	Type	Reference
16	1 P	switched	2200 1000
20	1 P	switched	2200 1001
25	1 P	switched	2200 1002
32	1 P	switched	2200 1003
40	1 P	switched	2200 1004
63	1 P	switched	2200 1006 ⁽¹⁾
80	1 P	switched	2200 1008 ⁽¹⁾

(1) Not UL.

Use

Transforms:
- 3 pole SIRCO M load break switches into a 4 pole,
- 3 pole SIRCOVER M changeover switches into a 4 pole.



sircm_072_b_1_cat

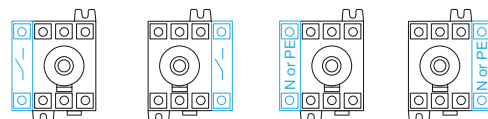
Solid neutral pole

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 5005 ⁽¹⁾
63 ... 80	1 P	unswitched	2200 5009 ⁽¹⁾

(1) Not UL.

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.



sircm_078_a_1_glb_cat

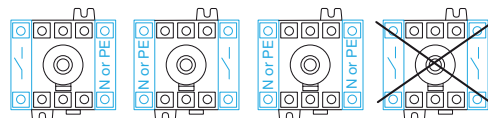
Earth module

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 9005 ⁽¹⁾
63 ... 80	1 P	unswitched	2200 9009 ⁽¹⁾

(1) Not UL.

Use

Adds 1 protective earth module pole to the switch-disconnector.



Terminal shrouds

Use

Top and bottom additional protection against direct contact with the terminals or connection parts. 1 or 3 pole are available.

Perforation on each terminal cover enables remote thermographic inspection without dismantling.

Rating (A)	No. of poles	Position	Reference
16 ... 40	1 P	top and bottom	2294 1005
16 ... 40	3 P	top and bottom	2294 3005
63 ... 80	1 P	top and bottom	2294 1009
63 ... 80	3 P	top and bottom	2294 3009



sircm_049_a_1_cat

M type Auxiliary Contacts

Use

Pre-break and signalisation of positions 0 and I by NO+NC or 2 NO Auxiliary Contacts.

They can be mounted on the left or on the right side of the device.

Max 4 Auxiliary Contacts per product (2 modules).

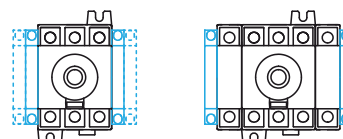
Characteristics

A300.

Rating (A)	Nb de CA	AC type	Reference
16 ... 80	1 AC	NO + NC	2299 0001
16 ... 80	1 AC	2 NC	2299 0011



sircm_075_b_2_cat



sircm_081_a_1_x_cat

Auxiliary contacts configurations for SIRCO M

Conversion kit

Use

These accessories enable the assembly of 2 switches in order to achieve:

- 6 or 8 pole switches
- 3 or 4 pole open or close transition changeover switches.

Rating (A)	Type	Reference
16 ... 80	Load break switches 6/8 P	2269 6009
16 ... 80	Changeover switch 3/4 pole (I - 0 - II)	2209 6009
16 ... 80	Changeover switch 3/4 pole (I - I+II - II)	2299 6009



sircm_090_c_2_cat



sircm_097_b_2_x_cat

Conversion kit for 6 or 8 pole load break switches

Conversion kit for 3 and 4-pole changeover switches (I - 0 - II) or (I - I+II - II)



sircm_086_b_1_cat

Door mounting kit

Use

This kit enables direct mounting of the switch on the panel door or on the right or left side of the panel.

The external handle is quick and easy to install due to an internal locking nut mounted on the inside of the enclosure.

Rating (A)	No. of poles	Reference
16 ... 80	3/4 P	2299 3409



sircm_051_b_2_cat

SIRCO M UL508

Load break switches standards UL and CSA

16 to 80 A

Characteristics

Characteristics according to UL508/CSA22.2#14 suitable as motor disconnect

SIRCO M UL508 - 16 to 80 A							
General use rating	16 A	20 A	25 A	32 A	40 A	63 A	80 A
Short circuit rating at 600 VAC (kA)	65	65	65	65	10/65	50/65	50/65
Type of fuse	J	J	J	J	J	J	J
Max fuse rating (A)	30	30	30	30	60/30	100/60	100/60
Max. motor hp / FLA 3 ph motor max.							
208 VAC	3 / 10.6	5 / 16.7	7.5 / 24.2	7.5 / 24.2	7.5 / 24.2	15 / 46.2	15 / 46.2
220-240 VAC	5 / 15.2	5 / 15.2	7.5 / 22	7.5 / 22	7.5 / 22	20 / 54	20 / 54
440-480 VAC	10 / 14	10 / 14	15 / 21	20 / 27	20 / 27	40 / 52	40 / 52
600 VAC	10 / 11	15 / 17	20 / 22	25 / 27	25 / 27	40 / 41	40 / 41
Connection terminals							
Solid - 1 wire	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10
Solid - 2 wires	2x #12	2x #12	2x #12	2x #12	2x #12	2x #12	2x #12
Stranded - 1 wire	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #1	#14 - #1
Stranded - 2 wires	2x (#14 - #12)	2x (#14 - #12)	2x (#14 - #12)	2x (#14 - #12)	2x (#14 - #12)	2x (#10 - #6)	2x (#10 - #6)
Auxiliary contacts							
Electrical characteristics	A300	A300	A300	A300	A300	A300	A300
Mechanical characteristics							
Endurance (number of operating cycles)	100 000	100 000	100 000	100 000	100 000	100 000	100 000
Operating torque (lbs.in/Nm)	7/0.8	7/0.8	7/0.8	7/0.8	7/0.8	8.9/1	8.9/1

Characteristics according to IEC 60947-3

		SIRCO M UL508 - 16 to 80 A						
General use rating		16 A	20 A	25 A	32 A	40 A	63 A	80 A
Thermal current I_{th} (40°C)		16	20	25	32	40	63	80
Rated insulation voltage U_i (V)		800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	8	8	8
Rated operational currents I_e (A)								
Rated voltage	Utilisation	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80
500 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80
500 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	63/63	63/63
690 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80
690 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	32/40	40/63	63/80
690 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	40/40	40/40
Operational power in AC-23 (kW)								
At 400 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾		7.5	9	11	15	18.5	30	37
At 500 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾		7.5	9	11	15	15	30	37
At 690 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾		7.5	11	15	18.5	18.5	30	37
Fuse protected short-circuit withstand (kA rms prospective)								
Prospective short-circuit current (kA rms) ⁽³⁾		50	50	50	50	50	50	50
Associated fuse rating (A) ⁽³⁾		16	20	25	32	40	63	80
Overload capacity (U_e 415 VAC)								
Rated short-time withstand current 0.3 s. I_{cw} (kA rms) ⁽³⁾		2.5	2.5	2.5	2.5	2.5	3	3
Rated short-circuit making capacity I_{cm} (kA peak) ⁽³⁾		6	6	6	6	6	9	9
Connection								
Minimum Cu cable cross section (mm ²)		1.5	1.5	1.5	1.5	1.5	2.5	2.5
Maximum Cu cable section (mm ²)		16	16	16	16	16	35	35
Tightening torque min / max (Nm)		2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	3.5 / 3.85	3.5 / 3.85

(1) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.

(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operating voltage $U_e = 400$ VAC.

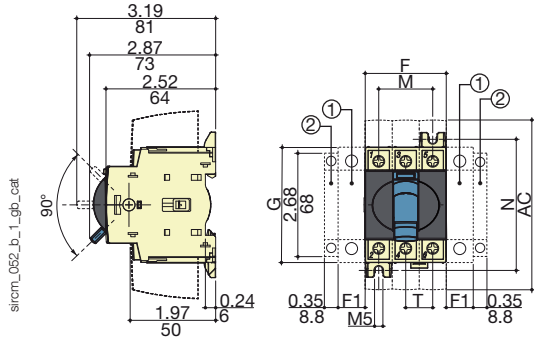
SIRCO M UL508

Load break switches standards UL and CSA
16 to 80 A

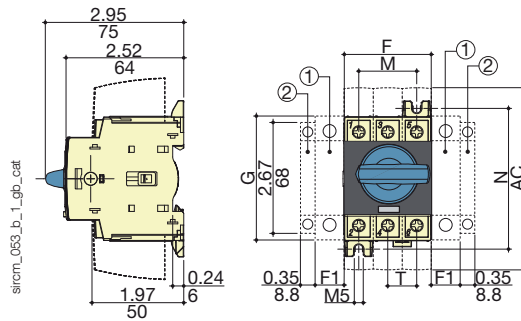
Dimensions (in / mm)

16 to 80 A

Toggle operation



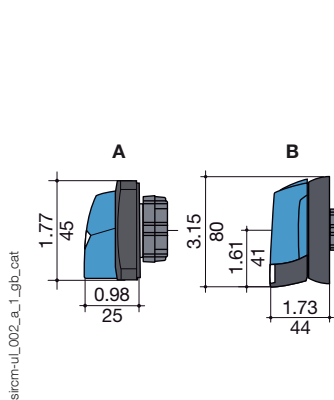
Direct operation with handle



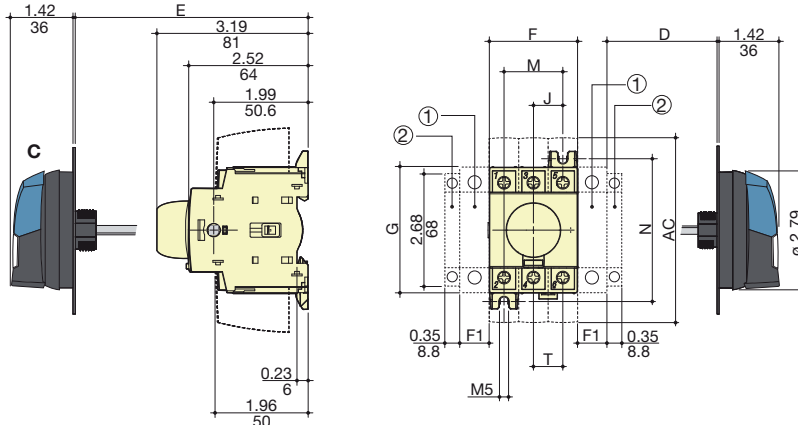
1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

External front handle



External side handle

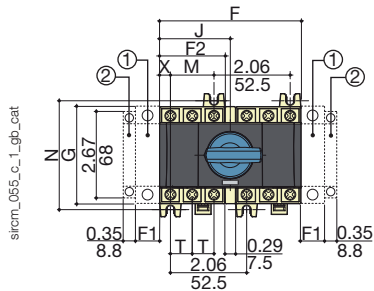


1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

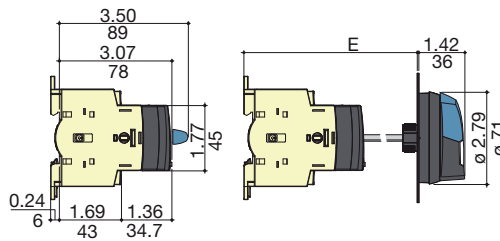
Note: Maximum of 4 additional blocks.

Rating (A)	Units	Overall dimensions				Terminal shrouds		Switch body				Switch mounting		Connection
		D min	D max	E min	E max	AC	F	F1	G	J	M	N	T	
16 to 40	in	1.18	9.25	3.94	14.64	4.33	1.77	0.59	2.67	0.59	1.18	2.95	0.59	
	mm	30	235	100	372	110	45	15	68	15	30	75	15	
63 to 80	in	1.18	9.25	3.93	14.64	4.33	2.06	0.69	2.99	0.69	1.38	3.35	0.69	
	mm	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5	

Direct front handle for 6/8-pole load break switches or 3/4-pole changeover switches



External front handle for 6/8-pole load break switches or 3/4-pole changeover switches

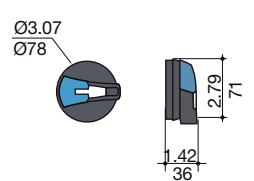
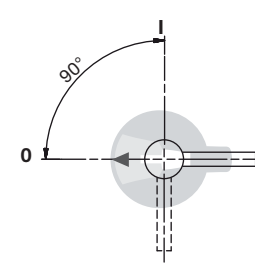
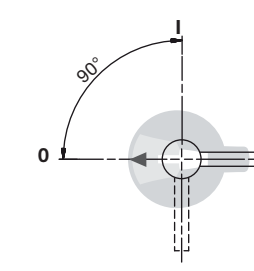
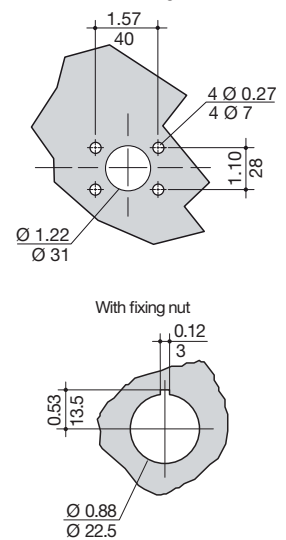
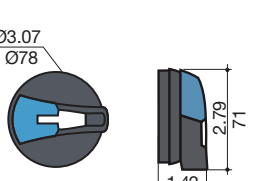
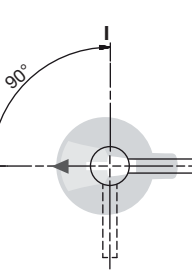
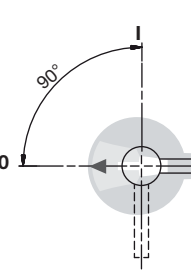
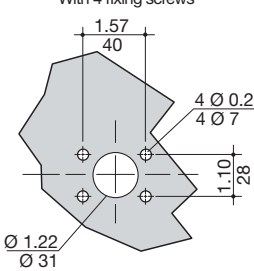
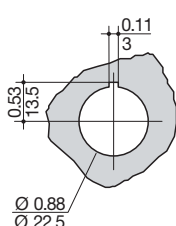
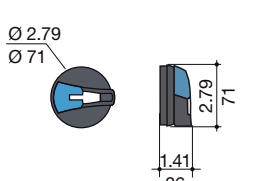
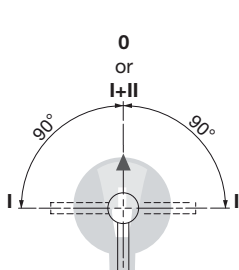
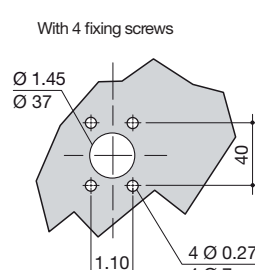
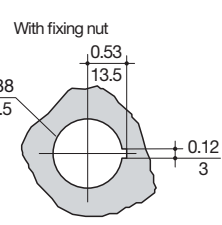


1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

Rating (A)	Units	Overall dimensions		Switch body					Switch mounting		Connection	
		E min	E max	F	F1	F2	G	J	M	N	T	X
16 to 40	in	4.13	14.64	3.83	0.59	1.77	2.67	1.92	1.18	2.95	0.59	0.29
	mm	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 to 80	in	4.13	14.65	4.13	0.69	2.06	2.99	1.38	3.35	0.69	0.34	
	mm	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

External handles dimensions (in / mm)

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
<p>S00 type Load break switches</p> 			<p>IP65 with 4 fixing screws</p> 	
<p>S00 type</p> 			<p>With 4 fixing screws</p> 	<p>With fixing nut</p> 
<p>Typ S00 Changeover switches</p> 		<p>Door drilling</p> <p>With 4 fixing screws</p>  <p>With fixing nut</p> 		



SIRCO M UL98

Load break switches standards UL and CSA
30 to 100 A

Load break
switches



sirco_m_100_a_1_cat

Rotary switch
SIRCO M 3 x 100 A

Function

SIRCO M non fusible disconnect switches are compact switches that break and make power circuits on and off load and provide safety isolation.

These switches are extremely durable and are tested and approved for use in the most demanding applications.

General characteristics

- Positive break indication.
- Touch safe.
- DIN rail or back plate-mounted.
- Direct or external operation handle.

Specific characteristics

- Contact point technology.

The solution for

- > Power distribution.



Strong points

- > Total integration.
- > Wide range of accessories.
- > Upgradeability.
- > Compliance to major certifications and approvals.
- > Specific characteristics.

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL98,
Guide WHTY,
file E201138
- > CSA 22.2#4,
Class 4651-02,
file 112964



⁽¹⁾ Product reference on request.

References

UL98 Non Fusible Disconnect switches

Rating (A)	No. of poles	Switch body	Direct handle	External front and right side handles	Shafts for external front and side handles	Switched fourth pole module	Unswitched neutral pole	Earth module	Auxiliary contacts	Terminal shrouds				
30 A	3 P	2201 3003	Blue 2299 5032	S00 type I - 0 Black 4, 4X 147D 1111	150 mm 5.9 in 1407 0515 200 mm 7.9 in 1407 0520 320 mm 12.6 in 1407 0532 ⁽¹⁾	1 P 2201 1003			M type 1 AC NO + NC 2299 0001	1 P 2294 1011 ⁽³⁾				
60 A	3 P	2201 3006		Red/Yellow 4, 4X 147E 1111		1 P 2201 1006					1 P 2200 5011 ⁽²⁾	1 P 2200 9011 ⁽²⁾	M type 1 AC 2 NC 2299 0011	3 P 2294 3016 ⁽³⁾
100 A	3 P	2200 3010		S0 type I - 0 Black 4, 4X 148D 1111 Red/Yellow 4, 4X 148E 1111		1 P 2200 1010								

(1) Shaft guide reference 14190000, is required for shaft length over 15.7 inches (400 mm).

(2) Not UL.

(3) Top and bottom.

SIRCO M UL98

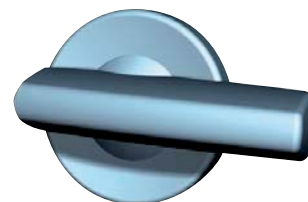
Load break switches standards UL and CSA

30 to 100 A

Accessories

Direct operation handle

Rating (A)	Colour	Handle	Reference
30 ... 100	Blue	M01 type	2299 5032



M01 handle

access_263_a_2_cat

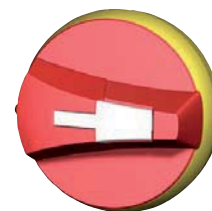
External operation handle

Use

The handle interlocking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position (only if the handle is fitted on the door).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only).

The interlocking function is restored when the door is closed. The handle is padlockable with 3 padlocks.



S00 handle

access_264_a_2_cat

Front and right side handles I - 0

Rating (A)	Handle colour	Handle	Nema type	Reference
16 ... 80	Black	S00 type	3R, 12	1473 1111
16 ... 80	Red/Yellow	S00 type	3R, 12	1474 1111
16 ... 80	Black	S00 type	4, 4X	147D 1111
16 ... 80	Red/Yellow	S00 type	4, 4X	147E 1111
16 ... 80	Black	S0 type	1, 3R, 12	1483 1111
16 ... 80	Red/Yellow	S0 type	1, 3R, 12	1484 1111
16 ... 80	Black	S0 type	4, 4X	148D 1111
16 ... 80	Red/Yellow	S0 type	4, 4X	148E 1111



S0 handle

access_279_a_2_cat

Shafts for external handle

Use

Standard lengths:

- 150 mm,
- 200 mm,
- 320 mm.

Other lengths: please consult us.

Rating (A)	Length (inches)	Length (mm)	Reference
30 ... 100	5.9 in	150 mm	1407 0515
30 ... 100	7.9 in	200 mm	1407 0520
30 ... 100	12.6 in	320 mm	1407 0532



access_280_a_2_cat

Shaft guide for external handle

Use

This accessory makes shaft introduction easier with up to 15 mm misalignment.

Required for a shaft length from 320 mm.

Handle type	Reference
S0	1419 0000



access_260_a_2_cat

Additional pole for SIRCO M

4th pole

Rating (A)	No. of poles	Type	Reference
30	1 P	switched	2201 1003
60	1 P	switched	2201 1006
100	1 P	switched	2200 1010

Use

Adding one or two additional poles transforms a load break switch from 3 poles to 4 poles.



sircm_072_b_1_cat

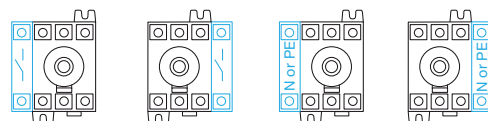
Solid neutral pole

Rating (A)	No. of poles	Type	Reference
30 ... 100	1 P	unswitched	2200 5011 ⁽¹⁾

(1) Not UL.

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.



sircm_078_a_1_gb_cat

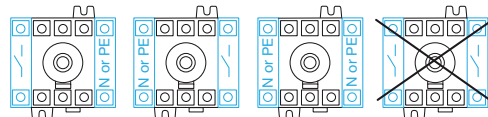
Earth module

Rating (A)	No. of poles	Type	Reference
30 ... 100	1 P	unswitched	2200 9011 ⁽¹⁾

(1) Not UL.

Use

Adds 1 earth module pole to the switch-disconnector.



Terminal shrouds

Use

Top and bottom additional protection against direct contact with the terminals or connection parts. 1 or 3 pole are available.

Perforation on each terminal cover enables remote thermographic inspection without dismantling.

Rating (A)	No. of poles	Position	Reference
30 ... 100	1 P	top and bottom	2294 1011
30 ... 100	3 P	top and bottom	2294 3016



sircm_049_a_1_cat

M type auxiliary contacts

Use

Pre-break and signalisation of positions 0 and I by NO+NC or 2 NO auxiliary contacts.

They can be mounted on the left or on the right side of the switch.

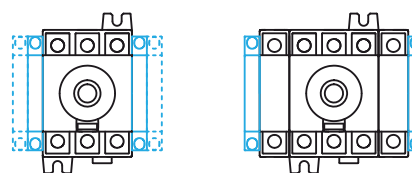
Max 4 auxiliary contacts (2 modules).

Characteristics
A300.

Rating (A)	Nb de CA	AC type	Reference
30 ... 100	1 AC	NO + NC	2299 0001
30 ... 100	1 AC	2 NC	2299 0011



sircm_075_b_2_cat



sircm_081_a_1_x_cat

Auxiliary contacts configurations for SIRCO M

SIRCO M UL98

Load break switches standards UL and CSA

30 to 100 A

Characteristics

Characteristics according to UL98/CSA22.2#4

General use rating	SIRCO M UL98 - 30 to 100 A		
	30 A	60 A	100 A
Short-circuit rating at 480 VAC (kA)	100	100	100
Short circuit rating at 600 VAC (kA)	100	100	25
Type of fuse	J	J	J
Max fuse rating (A)	30	60	100
Max. motor hp / FLA 3 ph motor max.			
220-240 VAC	10 / 28	20 / 54	20 / 54
440-480 VAC	20 / 27	40 / 52	50 / 65
600 VAC	25 / 27	50 / 52	50 / 52
Max. motor hp / FLA 1 ph motor max.			
120 VAC	2 / 24	3 / 34	5 / 56
240 VAC	5 / 28	10 / 50	10 / 50
Connection terminals			
Solid - 1 wire	#12 - #10	#12 - #10	#12 - #10
Stranded - 1 wire	#12 - 2/0	#12 - 2/0	#12 - 2/0
Mechanical characteristics			
Endurance (number of operating cycles)	10000	10000	10000
Operating torque (lbs.in/Nm)	12.4/1.4	12.4/1.4	12.4/1.4
Auxiliary contacts			
Electrical characteristics	A300	A300	A300

Characteristics according to IEC 60647-3

Thermal current I _{th} at 40°C (A)	SIRCO M UL98 - 30 to 100 A			
	30 A	60 A	100 A	
Rated insulation voltage U _i (V)	800	800	800	
Rated impulse withstand voltage U _{imp} (kV)	8	8	8	
Rated operational currents I _e (A)				
Rated voltage	Utilisation category	A ⁽¹⁾	A ⁽¹⁾	A ⁽¹⁾
400 VAC	AC-22 A	32	63	100
400 VAC	AC-23 A	32	63	100
690 VAC	AC-22 A	32	63	80
690 VAC	AC-23 A	32	63	63
Operational power in AC-23 (kW)				
At 400 VAC without prebreak AC in AC23 (kW) ⁽²⁾⁽³⁾		15	30	45
At 500VAC without prebreak AC in AC23 (kW) ⁽²⁾⁽³⁾		15	30	45
At 690VAC without prebreak AC in AC23 (kW) ⁽²⁾⁽³⁾		18.5	30	45
Overload capacity (U _e 415 VAC)				
Rated short-circuit making capacity I _{cm} (kA peak) ⁽⁴⁾		12	12	12
Connection				
Min. connection section/ (mm ²)		2.5	2.5	10
Max. connection section/ (mm ²)		70	70	70

(1) Category with index A = frequent operation.

(2) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.

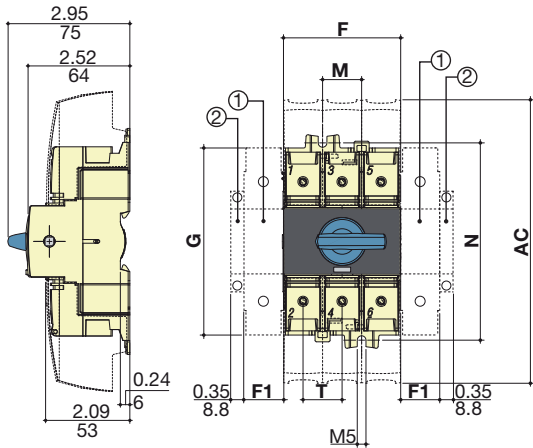
(3) The power value is given for information only, the current values vary from one manufacturer to another.

(4) For a rated operating voltage U_e = 400 VAC.

Dimensions (in / mm)

30 to 100 A

Direct handle

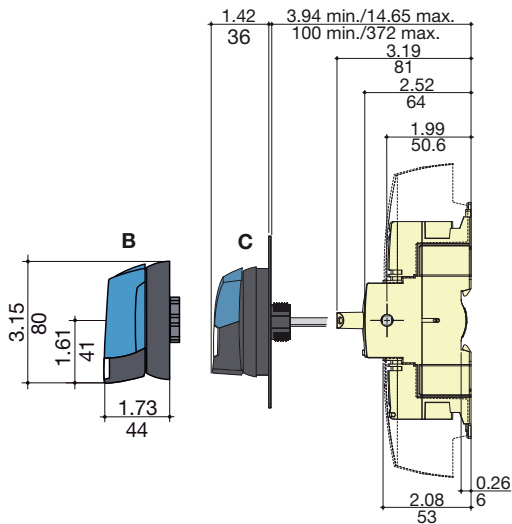


sirco_056_c_1_gb_cat

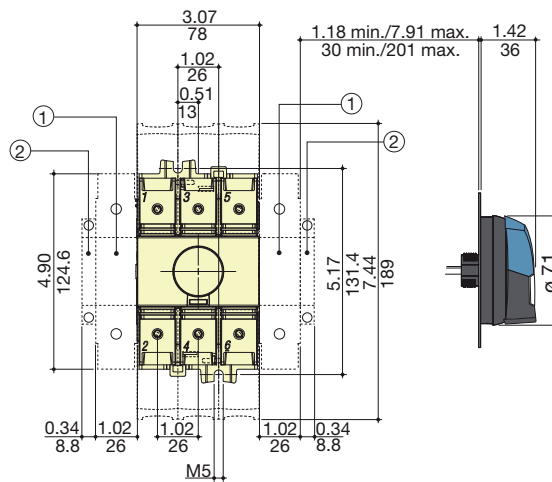
1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

External front handle



External side handle



sirco-ul_003_a_1_gb_cat

1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

External handles dimensions (in / mm)

30 to 100 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S00 type			With 4 fixing screws	With fixing nut

poign_048_b_1_gb_cat



SIRCO UL98

Load break switches standards UL and CSA
100 to 1200 A

Load break
switches



sirco_093_b_1_cat

SIRCO 3 x 600 A



sirco-ul_022_b_1_cat

SIRCO 3 x 200 A

Function

SIRCO non fusible disconnect switches are heavy duty switches that break and make power circuits on and off load and provide safety isolation.

These switches are extremely durable and are tested and approved for use in the most demanding applications.

General characteristics

- Positive break indication.
- Fully visualised disconnection.
- High thermal and dynamic withstand.
- Severe utilisation categories.
- High electrical and mechanical endurance.

The solution for

- > Power distribution.



Strong points

- > Reliability.
- > Safety of property and personnel.
- > Simplicity.
- > Easy assembling.

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL98, Guide WHTY, file E201138
- > CSA Pending 22.2#4, Class 4652-04, file 703166



(1) Product reference on request.

Customised solutions

- > Please consult us.

References

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contacts	Terminal protection screens	Terminal Lugs kits												
100 A	3 P	2700 3011	Black 2699 5052	S2 type Black 1, 3R, 12 142F 2111 ⁽¹⁾	200 mm 7.9 inches 1400 1020	1 st contact NO/NC 2799 0021 2 nd contact NO/NC 2799 0022	3 P 2798 3021 ⁽²⁾	3 P 3954 3020 ⁽⁴⁾												
	4 P	2700 4011		3 P 2798 8021 ⁽³⁾			4 P 3954 4020 ⁽⁴⁾													
200 A	3 P	2700 3021		Black 2699 5052	Red/Yellow 1, 3R, 12 142G 2111 ⁽¹⁾		320 mm 12.6 inches 1400 1032	1 st contact NO/NC 2799 0021 2 nd contact NO/NC 2799 0022	3 P 2798 3041 ⁽²⁾	3 P 3954 3040 ⁽⁴⁾										
	4 P	2700 4021			3 P 2798 8041 ⁽³⁾				4 P 3954 4040 ⁽⁴⁾											
400 A	3 P	2700 3041		Black 2699 5052	Black 4, 4X 142D 2111 ⁽¹⁾		400 mm 15.7 inches 1400 1040		1 st contact NO/NC 2799 0021 2 nd contact NO/NC 2799 0022	3 P 2798 3041 ⁽²⁾	3 P 3954 3040 ⁽⁴⁾									
	4 P	2700 4041			3 P 2798 8041 ⁽³⁾					4 P 3954 4040 ⁽⁴⁾										
600 A	3 P	2700 3060			Black 3799 6012		S3 type Black 4, 4X 143D 3111 ⁽¹⁾			200 mm 7.9 inches 1401 1520	Contact holder 3999 0720 ⁽⁵⁾ Contact NO 3999 0701 Contact NC 3999 0702	3 P 2798 3060 ⁽⁴⁾	3 P 3954 3060							
	4 P	2700 4060										4 P 2798 4060 ⁽⁴⁾		4 P 3954 4060						
800 A	3 P	2700 3080								Black 3799 6012		S3 type Black 4, 4X 143D 3111 ⁽¹⁾	320 mm 12.6 inches 1401 1532	Contact holder 3999 0720 ⁽⁵⁾ Contact NO 3999 0701 Contact NC 3999 0702	3 P 2798 3120 ⁽⁴⁾	3 P 3954 3120				
	4 P	2700 4080													4 P 2798 4120 ⁽⁴⁾		4 P 3954 4120			
1000 A	3 P	2700 3100											Black 3799 6012		Red/Yellow 4, 4X 143E 3111 ⁽¹⁾	400 mm 15.7 inches 1401 1540	Contact holder 3999 0720 ⁽⁵⁾ Contact NO 3999 0701 Contact NC 3999 0702	3 P 2798 3120 ⁽⁴⁾	3 P 3954 3120	
	4 P	2700 4100																4 P 2798 4120 ⁽⁴⁾		4 P 3954 4120
1200 A	3 P	2700 3120	Black 3799 6012			Red/Yellow 4, 4X 143E 3111 ⁽¹⁾										400 mm 15.7 inches 1401 1540		Contact holder 3999 0720 ⁽⁵⁾ Contact NO 3999 0701 Contact NC 3999 0702	3 P 2798 3120 ⁽⁴⁾	3 P 3954 3120
	4 P	2700 4120																	4 P 2798 4120 ⁽⁴⁾	

(1) Defeatable handle.

(2) Top.

(3) Bottom.

(4) Top or bottom.

(5) Max. 4 ACs.

Accessories

Direct operation handle

Rating (A)	Colour	Handle	Reference
100 ... 400	Black	B type	2699 5052
600 ... 1200	Black	H type	3799 6012



SIRCO UL98

Load break switches standards UL and CSA
100 to 1200 A

Accessories (continued)

External operation handle

Use

The interlocking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position or when the switch is padlocked in the "OFF" position (S1, S2, S3 and S4 type handles only).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only). The interlocking function is restored when the door is closed.

Front handle I - 0

Rating (A)	Handle	Colour	Nema type	Reference
100 ... 400	S2 type	Black	1, 3R, 12	142F 2111
100 ... 400	S2 type	Red/Yellow	1, 3R, 12	142G 2111
100 ... 400	S2 type	Black	4, 4X	142D 2111
100 ... 400	S2 type	Red/Yellow	4, 4X	142E 2111
600 ... 1200	S3 type	Black	4, 4X	143D 3111
600 ... 1200	S3 type	Red/Yellow	4, 4X	143E 3111
600 ... 1200	S4 type	Black	4, 4X	144D 3111
600 ... 1200	S4 type	Red/Yellow	4, 4X	144E 3111

Front handle heavy duty I - 0 with metallic lever

Rating (A)	Handle	Colour	Nema type	Reference
100 ... 400	S2 type	Black	4, 4X	142D 2911
100 ... 400	S2 type	Red/Yellow	4, 4X	142E 2911
600 ... 1200	S3 type	Black	4, 4X	143D 3911
600 ... 1200	S3 type	Red/Yellow	4, 4X	143E 3911
600 ... 1200	S4 type	Black	4, 4X	144D 3911
600 ... 1200	S4 type	Red/Yellow	4, 4X	144E 3911



S2 type handle

access_150_a_1_cat



S3 type handle

access_166_a_2_cat



S4 type handle

access_152_a_2_cat



Heavy duty S2 type handle

access_236_a_2_cat

Shaft for external handle

Use

Standard lengths:

- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

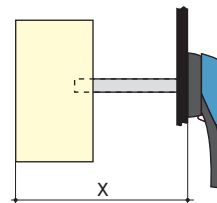
Other lengths: please consult us.

Rating (A)	Dimension X (in)	Dimension X (mm)	Handle	Length (inches)	Length (mm)	Reference
100 ... 400	5.31 ... 10.43	135 ... 265	S2 type	7.9	200	1400 1020
100 ... 400	5.31 ... 15.16	135 ... 385	S2 type	12.6	320	1400 1032
100 ... 400	5.31 ... 18.31	135 ... 465	S2 type	15.7	400	1400 1040
600 ... 1200	8.70 ... 13.50	221 ... 343	S3, S4 type	7.9	200	1401 1520
600 ... 1200	8.70 ... 18.23	221 ... 463	S3, S4 type	12.6	320	1401 1532
600 ... 1200	8.70 ... 21.38	221 ... 543	S3, S4 type	15.7	400	1401 1540

access_369_a_1_cat



access_144_b_1_cat



access_202_a

Alternative colour S-type handle cover

Use

For single lever handles type S1, S2, S3 and double lever handle, type S4.

Other colours: please consult us.

Handle colour	Pack qty	Handle	Reference
Light grey	50	S2, S3 type	1401 0001
Dark grey	50	S2, S3 type	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041



access_198_a_1_cat

S-type handle raiser

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.

Handle colour	Pack qty	Nema type	Reference
Black	10	1, 3R, 12	1493 0000



access_187_a_1_cat

Shaft guide for external handle

Use

This accessory makes shaft introduction easier with up to 15 mm misalignment.

Required for a shaft length over 400 mm.

Description	Reference
Shaft guide	1429 0000



access_260_a_2_cat

Auxiliary Contacts

Use

Pre-break and signalling of positions 0 and I.

Electrical characteristics

A300 for 100 to 400 A.

A600 for 600 to 1200 A.

NO/NC contact for 100 ... 400 A

Rating (A)	No. of AC	Reference
100 ... 400	1 st	2799 0021
100 ... 400	2 nd	2799 0022

NO/NC contact for 100 ... 400 A

Rating (A)	No. of AC	Reference
100 ... 400	1 st	2799 0121
100 ... 400	2 nd	2699 0122

Auxiliary contact holder for 600 ... 1200 A

Rating (A)	Type	Reference
600 ... 1200	Holder	3999 0720 ⁽¹⁾
600 ... 1200	NO	3999 0701
600 ... 1200	NC	3999 0702

(1) Please order the holder.



access_076_a_1_cat



access_045_a_1_cat

Terminal screens

Use

Top or bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
100 ... 200	3 P	top	2798 3021
100 ... 200	3 P	bottom	2798 8021
100 ... 200	4 P	top / bottom	2798 4021
400	3 P	top	2798 3041
400	3 P	bottom	2798 8041
400	4 P	top / bottom	2798 4041
600	3 P	bottom	2798 3060 ⁽¹⁾
600	4 P	bottom	2798 4060 ⁽¹⁾
800 ... 1200	3 P	bottom	2798 3120 ⁽¹⁾
800 ... 1200	4 P	bottom	2798 4120 ⁽¹⁾

(1) Load side screen, the line side is included with the switch.



access_079_a_1_cat

Terminal lugs

Use

Connection of bare copper cables onto the lugs (without lugs).

Rating max (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
100 ... 200	6 - 300MCM	1	2	Cu / Al	3954 2020
100 ... 200	6 - 300MCM	1	3	Cu / Al	3954 3020
100 ... 200	6 - 300MCM	1	4	Cu / Al	3954 4020
400	2 - 600MCM	1	2	Cu / Al	3954 2040
400	2 - 600MCM	1	3	Cu / Al	3954 3040
400	2 - 600MCM	1	4	Cu / Al	3954 4040
400	2x (#6 - 350MCM)	2	2	Cu / Al	3954 2041
400	2x (#6 - 350MCM)	2	3	Cu / Al	3954 3041
400	2x (#6 - 350MCM)	2	4	Cu / Al	3954 4041
600	2x (#2 - 600MCM)	1	2	Cu / Al	3954 2060
600	2x (#2 - 600MCM)	2	3	Cu / Al	3954 3060
600	2x (#2 - 600MCM)	2	4	Cu / Al	3954 4060
800 ... 1200	4x (#2 - 600MCM)	2	6	Cu / Al	3954 3120
800 ... 1200	4x (#2 - 600MCM)	2	8	Cu / Al	3954 4120



ul_032_a

SIRCO UL98

Load break switches standards UL and CSA
100 to 1200 A

Characteristics

Characteristics according to UL98/CSA22.2#4

SIRCO UL98 - 100 to 1200 A							
General use rating (A)	100 A	200 A	400 A	600 A	800 A	1000 A	1200 A
Short circuit rating at 600 VAC (kA)	200	200	200	200	100	100	100
Type of fuse	J	J	J	J	L	L	L
Max. fuse rating (A)	100	200	400	600	800	1000	1200
Max. motor hp / FLA 3 ph motor max.							
220-240 VAC	30 / 80	75 / 196	125 / 312	200 / 480	200 / 480	200 / 480	200 / 480
440-480 VAC	75 / 96	150 / 180	250 / 302	400 / 477	500 / 590	500 / 590	500 / 590
600 VAC	100 / 99	200 / 192	350 / 336	350 / 336	500 / 472	500 / 472	500 / 472
Max. motor hp / DC FLA motor max.							
125 VDC ⁽¹⁾	10 / 76	15 / 112	20 / 148	20 / 148			
250 VDC ⁽²⁾	15 / 55	15 / 55	50 / 173	50 / 173			
Connection terminals							
Min. connection section / AWG	#6	#6	2x #6 / #2	2x #2	4x #2	4x #2	4x #2
Max. connection section / AWG	300MCM	300MCM	2x 350 / 600MCM	2x 600MCM	4x 600MCM	4x 600MCM	4x 600MCM
Mechanical characteristics							
Endurance (number of operating cycles)	10000	8000	6000	6000	3500	3500	3500
Operating torque (lbs.in/Nm)	88.5/10	88.5/10	128.3/14.5	327.5/37	442.5/50	442.5/50	442.5/50
Auxiliary contacts							
Electrical characteristics	A300	A300	A300	A600	A600	A600	A600

(1) 2 pole in series.

(2) 3 pole in series.

Characteristics according to IEC 60947-3

SIRCO UL98 - 100 to 1200 A							
Thermal current I _{th} (40°C)	100 A	200 A	400 A	600 A	800 A	1000 A	1200 A
Rated insulation voltage U _i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U _{imp} (kV)	12	12	12	12	12	12	12
Rated operational currents I_e (A)							
Rated voltage	Utilisation category	A⁽¹⁾	A⁽¹⁾	A⁽¹⁾	A⁽¹⁾	A⁽¹⁾	A⁽¹⁾
400 VAC	AC-22 A	100	200	400	630	800	1000
400 VAC	AC-23 A	100	200	400	630	800	1000
690 VAC	AC-22 A	100	200	400	500	630	630
690 VAC	AC-23 A	100	200	315	200	400	400
Connection							
Min. Cu cable cross section (mm ²)	35	70	185	2 x 150	2 x 185	2 x 240	
Min. Cu busbar section (mm ²)				2 x 30 x 5	2 x 40 x 5	2 x 50 x 5	2 x 60 x 5
Operational power in AC-23 (kW)							
At 400 VAC without prebreaking AC in AC23 (kW) ⁽²⁾⁽³⁾	51	100	220	355	450	560	560
At 500 VAC without prebreaking AC in AC23 (kW) ⁽²⁾⁽³⁾	63	140	280	450	560	560	560
At 690 VAC without prebreaking AC in AC23 (kW) ⁽²⁾⁽³⁾	90	185	185	185	400	400	400
Overload capacity (U_e 415 VAC)							
Rated short-circuit making capacity I _{cm} (kA peak) ⁽⁴⁾	17,6	32	48	48	75	48	75

(1) Category with index A = frequent operation.

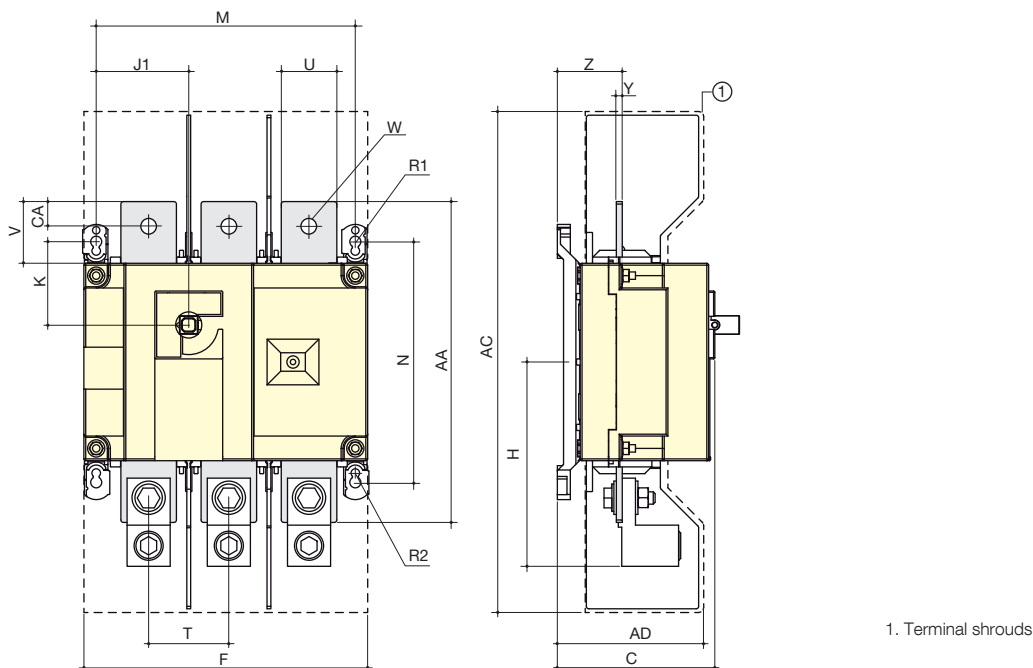
(2) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.

(3) The power value is given for information only, the current values vary from one manufacturer to another.

(4) For a rated operating voltage U_e = 400 VAC.

Dimensions (in / mm)

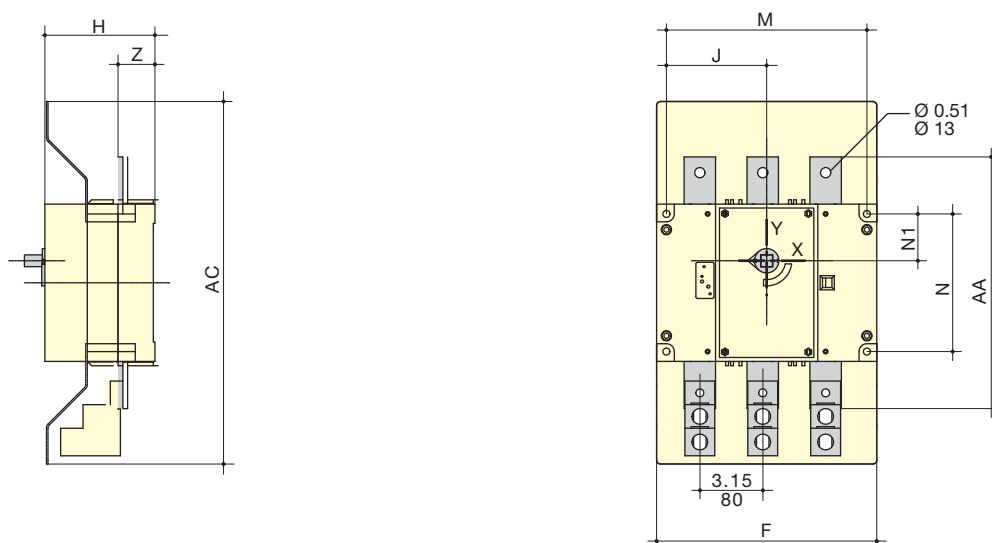
100 to 400 A



sirco-ul_011_a_2_x_cat

Rating (A)	Unit	Overall dimensions		Terminal shrouds		Switch body					Switch mounting					Connection							
		C	AC	AD	F 3p.	F 4p.	H	J1 3p.	J1 4p.	K	M 3p.	M 4p.	N	R1	R2	T	U	V	W	Y	Z	AA	CA
100	in	3.72	10.1	3.05	7.09	9.06	4.22	2.17	4.13	1.8	6.3	8.7	5.31	0.35	0.27	1.97	0.98	1.18	0.43	0.14	1.35	6.3	0.6
	mm	94.6	256	77.5	180	230	107	55	105	45.6	160	210	135	9	7	50	25	30	11	3.5	34.4	160	15
200	in	3.72	10.1	3.05	7.09	9.06	4.22	2.17	4.13	1.8	6.3	8.27	5.31	0.35	0.27	1.97	0.98	1.18	0.43	0.14	1.35	6.3	0.6
	mm	94.6	256	77.5	180	230	107	55	105	45.6	160	210	135	9	7	50	25	30	11	3.5	34.4	160	15
400	in	4.92	16	4.15	9.05	11.4	6.53	2.95	5.31	2.65	8.26	10.6	7.67	0.35	0.27	2.56	1.77	1.97	0.43	0.2	2.08	10.2	0.8
	mm	128	406	115	230	290	166	75	135	67.5	210	270	195	9	7	65	45	50	13	5	53	260	20

600 A



sirco_107_d1_1_x_cat

Rating (A)	Unit	Terminal shrouds	Switch body					Switch mounting				Connection	
		AC	F 3p.	F 4p.	H	J 3p.	J 4p.	M 3p.	M 4p.	N	N1	AA	Z
600	in	18.12	11	14.17	5.5	5	6.59	10.03	13.19	6.88	2.34	12.6	1.85
	mm	460	280	360	140	127.5	167.5	255	335	175	59.5	320	47

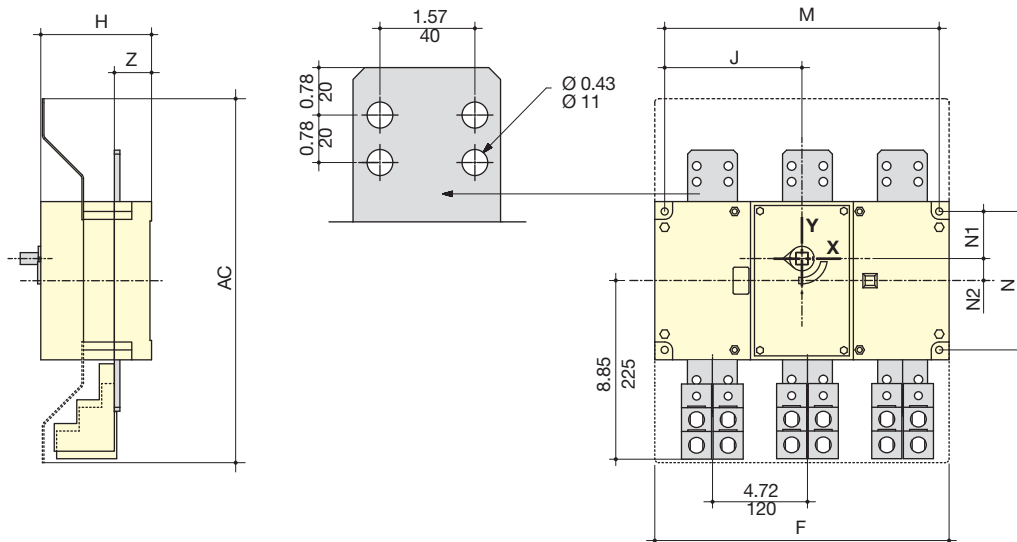
SIRCO UL98

Load break switches standards UL and CSA

100 to 1200 A

Dimensions (in/mm) (continued)

800 to 1200 A

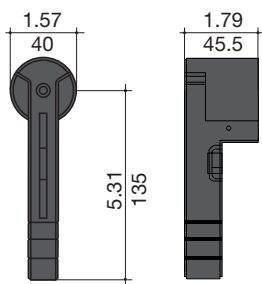


sirco_228_d_1_x_cat

Rating (A)	Unit	Terminal shrouds		Switch body				Switch mounting				Connection	
		AC	F 3p.	F 4p.	H	J 3p.	J 4p.	M 3p.	M 4p.	N	N1	AA	Z
800	in	18.12	14.64	19.37	5.5	6.83	9.19	13.66	18.38	6.88	2.34	1.10	1.85
	mm	460	372	492	140	173.5	233.5	347	467	175	59.5	28	47
1 000	in	18.12	14.64	19.37	5.5	6.83	9.19	13.66	18.38	6.88	2.34	1.10	1.85
	mm	460	372	492	140	173.5	233.5	347	467	175	59.5	28	47
1 200	in	18.12	14.64	19.37	5.5	6.83	9.19	13.66	18.38	6.88	2.34	13	1.85
	mm	460	372	492	140	173.5	233.5	347	467	175	59.5	330	47

100 to 400 A

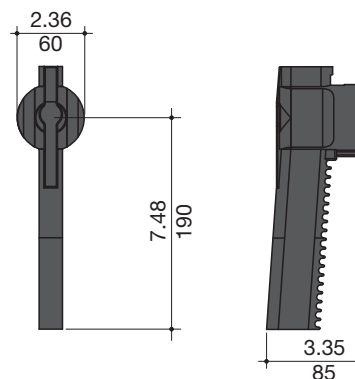
Front direct handle



sirco-ul_027_a_1_x_cat

600 to 1200 A

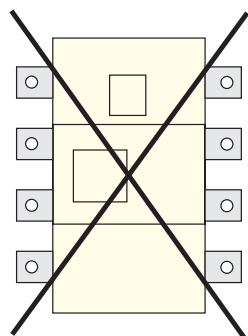
Front direct handle



sirco_267_b_1_x_cat

Mounting orientation

3/4 pole



sirco-ul_028_a_1_x_cat

External handles dimensions (in/mm)

100 to 400 A

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

sirco-px_006_b_1_gb_cat

600 to 1200 A

Handle type	Front operation Direction of operation	Door drilling template
S1 type Load break switches 		

sirco-ul_007_b_1_gb_cat

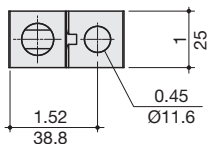
600 to 1200 A

Handle type	Front operation Direction of operation	Door drilling
S4 type 		

sirco-ul_006_a_1_gb_cat

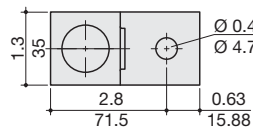
Terminal lugs (in/mm)

100 to 200 A



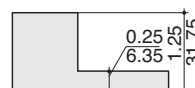
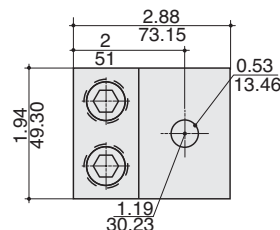
300 kcmil

400 A



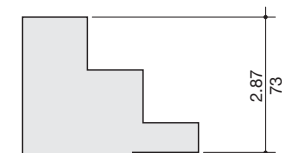
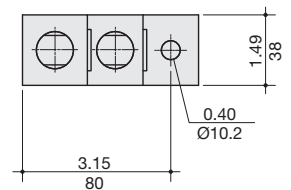
600 kcmil

400 A



2 x 350 kcmil

600 to 1200 A



2 x 600 kcmil



SIRCO DC UL98B

Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1000 VDC

Load break switches

sirco-ul_022_b_cat



sirco-ul_004_b_cat



Strong points

- > Patented switching technology.
- > Positive break indication.
- > Up to 1000 VDC as per characteristics by UL98B.
- > Suitable for use in accordance with NEC Art. 690. 2011 issue.

Conformity to standards

- > UL98B Guide WHVA, file E346418
- > CSA C22.2#4, Class 4651-02, file 112964
- > NEC Art 690 Issue 2011
- > IEC 60947-3



Approvals and certifications⁽¹⁾



(1) Product reference on request.

Function

SIRCO DC UL98B are manual multipolar load switches. They break and close photovoltaic circuits under load conditions up to 1000 VDC. They comply with NEC Atr. 690 (US National Electrical Code) concerning photovoltaic installations. They are compliant for use within solar UPS and enclosures meeting standard UL1741.

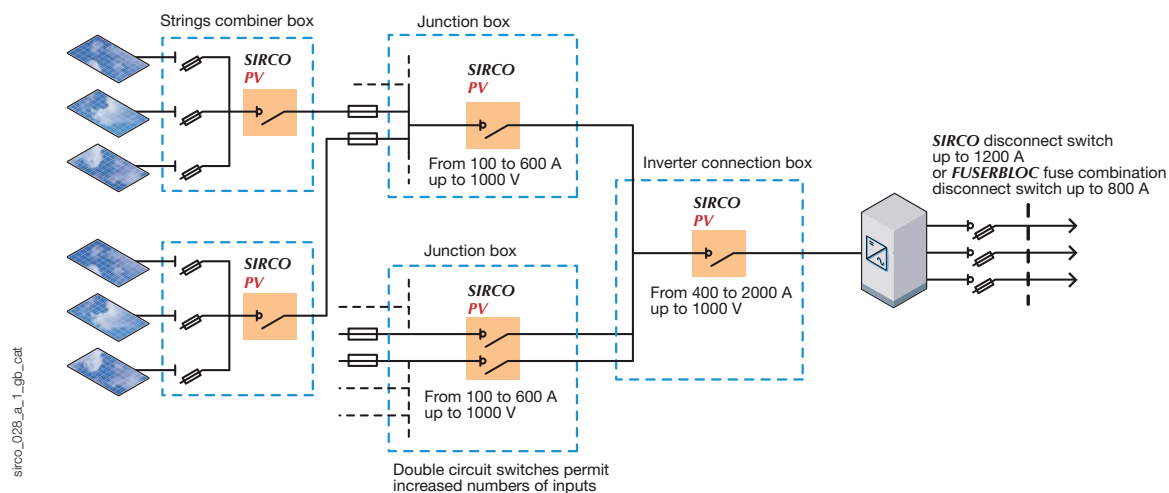
These extremely durable switches have been tested and approved for use in the most demanding applications.

They have been designed and tested for all types of applications: earthing, floating or bipolar.

General characteristics

- Patented switching technology.
- Positive break indication.
- Up to 1000 VDC as per characteristics by UL98B
- Suitable for use in compliance with NEC Art. 690, 2011 edition, and use in UL1741 equipment.

Simplified large photovoltaic system layout



sirco_028_en_1_gb_cat

References

3/4-pole load break switches

Rating (A)	Rated voltage (VDC)	No. of poles	Switch body	Direct operation handle	External operation	Shaft for external handle	Bridging bars for connecting poles in series			
100 A	600	3 P	27DC 3011	Black 2699 5052	S2 type Black 1, 3R, 12 142F 2111 ⁽¹⁾ Red/Yellow	200 mm 7.9 inches 1400 1020	1 piece 2709 0021 (100 to 200A)			
	1000	4 P	27DC 4011							
250 A	600	3 P	27DC 3021			Black 2699 5052	S2 type Black 1, 3R, 12 142G 2111 ⁽¹⁾ Red/Yellow	320 mm 12.6 inches 1400 1032	2 pieces 2x 2709 0025 (250A)	
	1000	4 P	27DC 4021							
400 A	600	3 P	27DC 3041		Black 2699 5052			S2 type Black 4, 4X 142D 2111 ⁽¹⁾ Red/Yellow	400 mm 15.7 inches 1400 1040 ⁽²⁾	1 piece 2709 0041
	1000	4 P	27DC 4041							
600 A	600	3 P	27PV 3060			Black 2799 7012	S3 type Black 4, 4X 143D 3111 ⁽¹⁾ Red/Yellow 4, 4X 143E 3111 ⁽¹⁾		200 mm 7.9 inches 1401 1520	1 piece 2709 0061
	1000	4 P	27PV 4060							
800 A	750	3 P	27DC 3081		Black 2799 7012			S4 type Black 4, 4X 144D 3111 ⁽¹⁾ Red/Yellow	320 mm 12.6 inches 1401 1532	1 piece 2709 0081
	1000	4 P	27DC 4081							
1200 A	750	3 P	27DC 3121	Black 2799 7012			S4 type Black 4, 4X 144D 3111 ⁽¹⁾ Red/Yellow		400 mm 15.7 inches 1401 1540 ⁽²⁾	1 piece 2709 0121
	1000	4 P	27DC 4121							
1600 A	750	3 P	27DC 3162		2799 7062			V1 type Black 3R, 12 2799 7145	320 mm 12.6 inches 4199 3018	2 pieces 2x 2709 0121
	1000	4 P	27DC 4162							
2000 A	750	3 P	27DC 3201	2799 7062			V1 type Black 3R, 12 2799 7145		320 mm 12.6 inches 4199 3018	2 pieces 2x 2709 0121
	1000	4 P	27DC 4201							

⁽¹⁾ Defeatable handle.

⁽²⁾ Shaft guide reference 1429 0000 is required for shaft length over 15.7 inches (400mm).

Accessories

External operation

Use

The door interlocked external operation handle includes a padlockable handle, a conversion kit and must be combined with a shaft extension. In a combiner box, located close to the solar cell strings, or located close to the inverter, we recommend to use a door interlocked external handle for its safety features.

Example

The locking function of the enclosure in the "ON" position will force the operator to safely disconnect and isolate the solar cell strings prior to any intervention. Opening the door when the switch is on "ON" position is possible by defeating the locking function using a tool (authorized persons only). The interlocking function is restored when the door is closed back.



Front operation I - 0, 3/4 poles

Rating (A)	Handle	Handle colour	Nema degree of protection	Reference
100 ... 400	S2 type	Black	1, 3R, 12	142F 2111 ⁽¹⁾
100 ... 400	S2 type	Red/Yellow	1, 3R, 12	142G 2111 ⁽¹⁾
100 ... 400	S2 type	Black	4, 4X	142D 2111 ⁽¹⁾
100 ... 400	S2 type	Red/Yellow	4, 4X	142E 2111 ⁽¹⁾
600	S3 type	Black	4.4X	143D 3111 ⁽¹⁾
600	S3 type	Red/Yellow	4.4X	143E 3111
800 ... 1200	S4 type	Black	4, 4X	144D 3111 ⁽¹⁾
800 ... 1200	S4 type	Red/Yellow	4, 4X	144E 3111 ⁽¹⁾
1600 ... 2000	V1 type	Black	1, 3R, 12	2799 7145

⁽¹⁾ Defeatable handle.

Front operation - 0 heavy duty, 3/4 poles

Rating (A)	Handle	Handle colour	Nema degree of protection	Reference
100 ... 400	S2 type	Black	4, 4X	142D 2911 ⁽¹⁾⁽²⁾
100 ... 400	S2 type	Red/Yellow	4, 4X	142E 2911 ⁽¹⁾⁽²⁾
600	S3 type	Black	4.4X	143D 3911 ⁽¹⁾⁽²⁾
600	S3 type	Red/Yellow	4.4X	143E 3911 ⁽¹⁾⁽²⁾
800 ... 1200	S4 type	Black	4.4X	144D 3911 ⁽¹⁾⁽²⁾
800 ... 1200	S4 type	Red/Yellow	4.4X	144E 3911 ⁽¹⁾⁽²⁾
1600 ... 2000	V1 type	Black	1, 3R, 12	2799 7145

⁽¹⁾ Locking bracket in metal.

⁽²⁾ Defeatable handle.



SIRCO DC UL98B

Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1000 VDC

Accessories (continued)

Shaft for external handle

Use

Standard lengths:

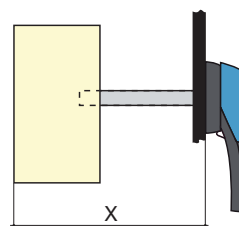
- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: Please consult us.



access_369_a_1_cat

access_144_b_1_cat



access_202_a_1_x_cat

For 3/4 poles

Rating (A)	Dimension X (inches)	Dimension Y (mm)	Handle	Length (inches)	Length (mm)	Reference
100 ... 200	6 ... 11.6	295	S2 type	7.9	200	1400 1020
100 ... 200	6 ... 16.3	415	S2 type	12.6	320	1400 1032
100 ... 200	6 ... 19.4	495	S2 type	15.7	400	1400 1040
400	8 ... 12.9	203 ... 328	S2 type	7.9	200	1400 1020
400	8 ... 17.6	203 ... 448	S2 type	12.6	320	1400 1032
400	8 ... 20.7	203 ... 528	S2 type	15.7	400	1400 1040
600	8.70 ... 13.50	221 ... 343	S3 type	7.9	200	1401 1520
600	8.70 ... 18.23	221 ... 463	S3 type	12.6	320	1401 1532
600	8.70 ... 21.38	221 ... 543	S3 type	15.7	400	1401 1540
800 ... 1200	12 ... 14.4	221 ... 366	S4 type	7.9	200	1401 1520
800 ... 1200	12 ... 19.1	221 ... 486	S4 type	12.6	320	1401 1532
800 ... 1200	12 ... 22.2	221 ... 566	S4 type	15.7	400	1401 1540
2000	20 ... 28.1	508 ... 714	S5, V1 type	12.6	320	4199 3018
2000	20 ... 39.4	508 ... 794	S5, V1 type	15.7	400	4199 3019

S-type handle adapter

Use

For handles S2, S3 and S4.

Dimensions

Increases the distance between the handle grip and the door by 12 mm, for better handling.

Colour	Nema degree of protection	To be ordered in multiples of	Reference
Black	1, 3R, 12	10	1493 0000



access_187_a_3_cat

Alternative S-type handle cover colours

Use

For handles S2, S3 and S4.

Other colours: Please consult us.

Handle colour	Handle	To be ordered in multiples of	Reference
Light grey	S2, S3 type	50	1401 0001
Dark grey	S2, S3 type	50	1401 0011
Light grey	S4 type	50	1401 0031
Dark grey	S4 type	50	1401 0041



access_198_a_3_cat

Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts,
- 1 to 2 low level NO/NC auxiliary contacts.

Electrical characteristics

A300.

NO/NC contact for 3/4 poles			
Rating (A)	Position AC	Type	Reference
100 ... 1200	1 contact	NO/NC	2799 0021
100 ... 1200	2 contacts	NO/NC	2799 0022
1600 ... 2000	1 contact	NO/NC	4159 0021

Low level NO/NC contact for 3/4 poles			
Rating (A)	Position AC	Type	Reference
100 ... 1200	1 contact	NO/NC	2799 0121
100 ... 1200	2 contacts	NO/NC	2799 0122
1600 ... 2000	1 contact	NO/NC	4159 0022



access_076_a_1_cat

Terminal screen

Use

Top or bottom protection against direct contact with terminals or connection parts.

For 3/4 poles			
Rating (A)	No. of poles	Operating principle	Reference
100 ... 250	3 P	top	2798 3021
100 ... 250	3 P	bottom	2798 8021
100 ... 250	4 P	top or bottom	2798 4021
400	3 P	top	2798 3041
400	3 P	bottom	2798 8041
400	4 P	top or bottom	2798 4041
600	3 P	top or bottom	2798 3060
600	4 P	top or bottom	2798 4060
800 ... 1200	3 P	top or bottom	2798 3120
800 ... 1200	4 P	top or bottom	2798 4120
1600 ... 2000	3 P	top or bottom	2798 6122
1600 ... 2000	4 P	top or bottom	2798 8122



access_079_a_1_cat

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).
Optional fan out kit for ratings of 800 to 1200 A for connecting several cables to the switch.

Rating max (A)	Number and size of cables	Max. number of connections per terminal	Type of cable	Quantity	Reference
100 ... 250	1 conductor (#6-300MCM)	1	Cu / Al	2 lugs	3954 2020
100 ... 250	2 conductors (#4-2/0)	1	Cu / Al	2 lugs	3954 2025
400	1 conductor (#6-300MCM)	1	Cu / Al	2 lugs	3954 2040
400	2 conductors (#6-350MCM)	1	Cu / Al	2 lugs	3954 2041
600	2 conductors (#2-600MCM)	1	Cu / Al	2 lugs	3954 2060
800 ... 1200	2 conductors (#2-600MCM)	2	Cu / Al	2 lugs	3954 2060
800 ... 1200	2 conductors (#2-600MCM)	3 ⁽¹⁾	Cu / Al	3 lugs	3954 3060
1600 ... 2000	2 conductors (#2-600MCM)	2 ⁽²⁾	Cu / Al	2 lugs	3954 2060
1600 ... 2000	2 conductors (#2-600MCM)	3 ⁽³⁾	Cu / Al	3 lugs	3954 3060



ul_032_a

(1) Order a fan out kit reference 2709 1203 for connecting 3 connectors per terminal (6 in total for the switch).

(2) 2 connectors per terminal with the connection kit 2729 1200.

(3) 3 connectors per terminal with the connection kits 2729 1201 and 2709 1202.

Bridging bars for connecting poles in series

Use

The bridging bars will make easy the connection of the poles in series, allowing the following configurations⁽¹⁾.

Rating (A)	Reference
100	2709 0021 ⁽¹⁾
250	2709 0025
400	2709 0040 ⁽²⁾
400	2709 0041
600	2709 0062
800	2709 0081
1200 ... 2000	2709 0121 ⁽³⁾

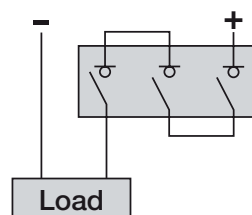
(1) from 100 to 200 A: 1 piece per pole in series. For 250 A: 2 pieces per pole in series.

(2) Compact version with radiator (availability to be confirmed).

(3) For 2000 A: 2 units per pole en series.

Connection diagrams:

⁽¹⁾ Other connections: refer to mounting instructions.



sirco-ul_012_a_1_gb_cat

SIRCO DC UL98B

Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1000 VDC

Accessories (continued)

Copper bars connection kits

Use

To allow connection between the two power terminals from a same pole for 2000 A ratings. (Fig. 1, Fig. 2 and Fig. 3)

Top or bottom flat connection				
Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
1600 ... 2000	1	1	2	2729 1200
1600 ... 2000	2	1	3	2729 1202

Top or bottom edgewise connection				
Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
1600 ... 2000	3	1	3	2729 1201

Fig. 1

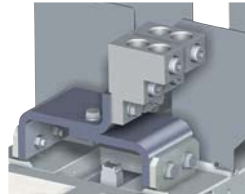
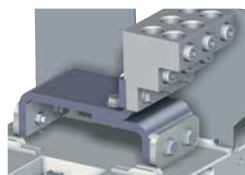


Fig. 3



Fig.2



Characteristics

as per standards UL98/CSA22.4#4 and UL98B⁽⁶⁾

Rating (A)		100 A	250 A	400 A	600 A	800 A	1200 A	1600 A	2000 A
General use rating with 200% overload extra test									
Rated voltage	Number of pole in series of the device	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
600 VDC	3 P	100	250	400	600	800 ⁽⁴⁾	1200 ⁽⁴⁾	1600 ⁽⁴⁾	2000 ⁽⁴⁾
1000 VDC	4 P	100	250	400	600	800	1200	1600	2000
Short-circuit capacity at 600 VDC									
Prospective short-circuit current (kA rms)		20	20	20	20	-	-	-	-
Type of fuse		A70P100	A70P100	LDC	A6D600R	-	-	-	-
Associated fuse rating (A)		200	200	400	600	-	-	-	-
Short-circuit capacity at 1000 VDC (any breaker)									
Prospective short-circuit current (kA rms)		10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾
Connection terminals									
Min. connection wire range/ AWG ⁽²⁾		#6	#6	2x#6	2x#2	4x#2	4x#2	4x#2	4x#2
Max. connection wire range/ AWG ⁽²⁾		300MCM	300MCM	600MCM	2x 600MCM	6x 600MCM ⁽⁵⁾	6x 600MCM ⁽⁵⁾	6x 600MCM ⁽⁵⁾	6x 600MCM ⁽⁵⁾
Mechanical characteristics									
Durability (number of operating cycles)		10 000	10 000	6 000	6 000	3 500	3 500	3 500	3 500
Operating effort (lbs.in/Nm)		88.5/10	88.5/10	128.3/14.5	327.5/37	495.7/56	663.9/75	663.9/75	663.9/75
Auxiliary contact									
Electrical characteristics		A300	A300	A300	A300	A300	A300	A300	A300

as per standard IEC 60947-3

Thermal current I _{th} at 40°C		160 A	250 A	630 A	800 A	1000 A	1400 A	1400 A	2200 A
Rated insulation voltage U _i (V)		1 200	1 200	1 200	1 200	1 200	1 200	1 200	1 200
Rated impulse withstand voltage U _{imp} (kV)		12	12	12	12	12	12	12	12
Rated operational currents I _e (A), DC-22 B									
Rated voltage	Number of pole in series of the device	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
750 VDC	3 P	160	250	630	800	1 000	1 400	1 600	2 200
1000 VDC	4 P	160	250	630	800	1 000	1 400	1 600	2 200

(1) without fuse during 50 ms.

(2) AWG: dimensions of the American cable.

(3) Improved endurance: Please consult us

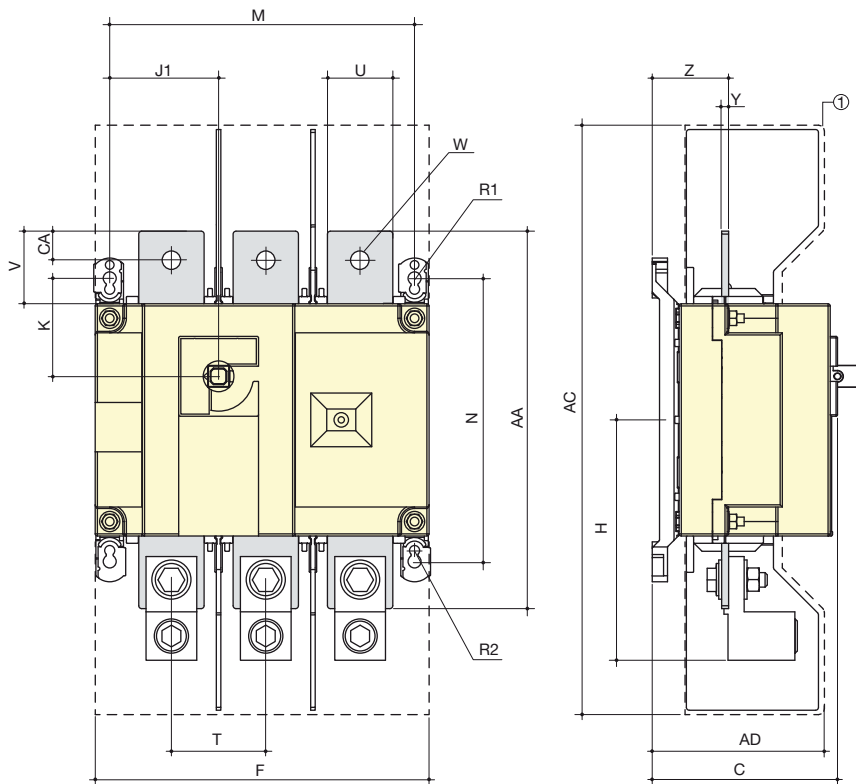
(4) 750 VDC.

(5) Maximum 6 x 600MCM with fan out kit 2729 1203.

(6) UL98 and CSA22.4# are the standards for switches apart from for use with PV, these standards are limited to 600 V (DC). UL98B is the standard for PV switches up to 1000 VDC.

Dimensions (in/mm)

100 to 400 A

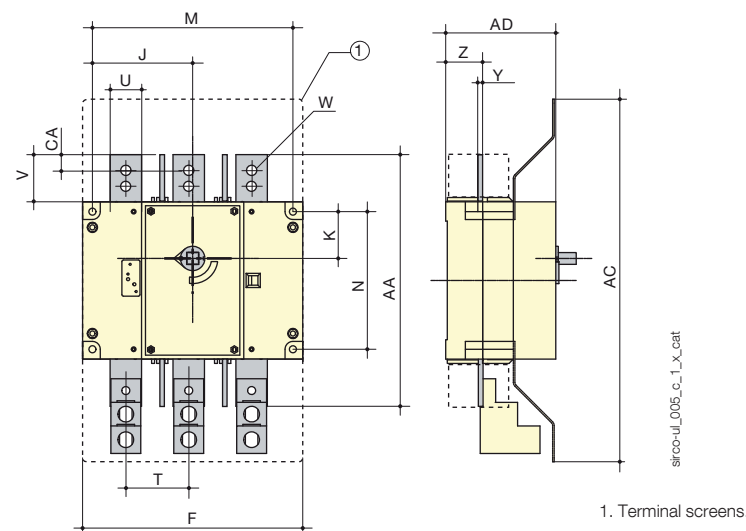


sirco-ul_011_a_1_x_cat

1. Terminal shrouds

Rating (A)	Measurement	Overall dimensions	Terminal shrouds		Switch body						Switch mounting				Connection								
		F	AC	AD	F 3p.	F 4p.	H	J1 3p.	J1 4p.	K	M 3p.	M 4p.	N	R1	R1	T	U	V	W	Y	Z	AA	AC
100 ... 250	in	3.72	10.1	3.05	7.09	9.06	4.22	2.17	4.13	1.8	6.3	8.27	5.31	0.35	0.27	1.97	0.98	1.18	0.43	0.14	1.35	6.3	0.6
100 ... 250	mm	94.6	256	77.5	180	230	107	55	105	45.6	160	210	135	9	7	50	25	30	11	3.5	34.4	160	15
400	in	4.92	16	4.51	9.05	11.4	6.53	2.95	5.31	2.65	8.26	10.6	7.6	0.35	0.27	2.56	1.77	1.97	0.43	0.2	2.08	10.2	0.8
400	mm	128	406	115	230	290	166	75	135	67.5	210	270	195	9	7	65	45	50	13	5	53	260	20

600 A



sirco-ul_005_e_1_x_cat

1. Terminal screens.

Rating (A)	Measurement	Terminal shrouds		Switch body				Switch mounting			Connection								
		AC	AD	F 3p.	F 4p.	J 3p.	J 4p.	K	M 3p.	M 4p.	N	T	U	V	W	Y	Z	AA	AC
600	in	18.12	5.5	11.02	14.17	5	6.59	2.34	10.04	13.19	6.88	3.15	1.97	2.38	0.41	0.28	1.83	12.64	0.82
600	mm	460	140	280	360	127.5	167.5	59.5	255	335	175	80	50	60.5	10.5	7	46.5	321	20.9

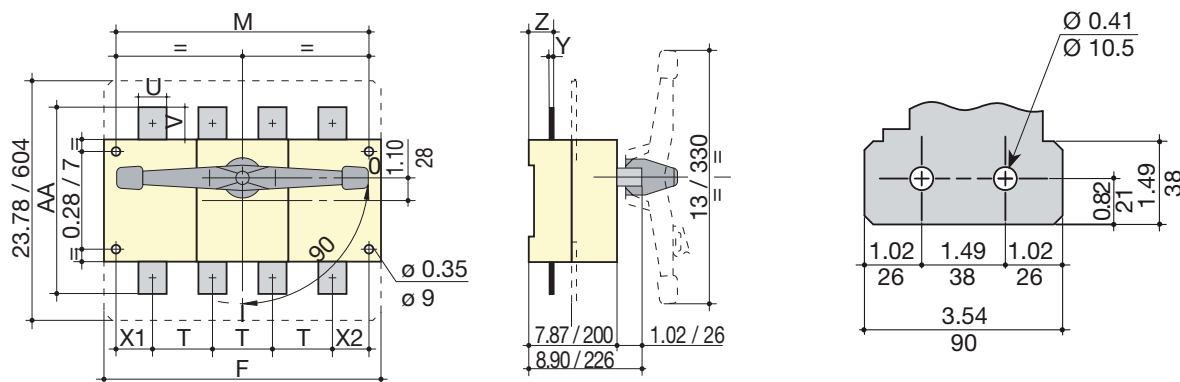
SIRCO DC UL98B

Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1000 VDC

Dimensions (in/mm) (continued)

800 to 1200 A

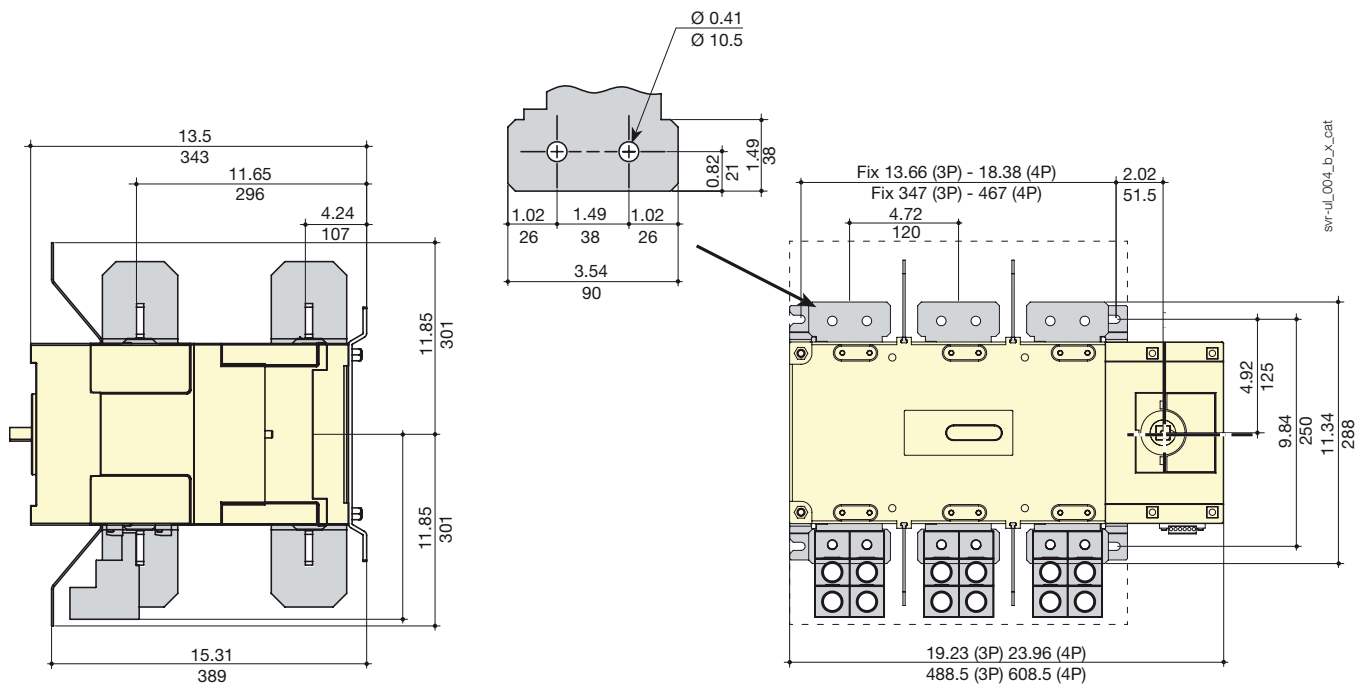
Direct front operation



sirco-ul_040_b_1_x_cat

Rating (A)	Switch body		Switch mounting		Connection							
	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	Y	X1	X1	Z	AA
800 ... 1200	393	513	347	467	120	90	44	8	53.5	53.5	107.5	288
800 ... 1200	15.47	20.20	13.66	18.39	4.72	3.54	1.73	0.31	2.11	2.11	4.23	11.34

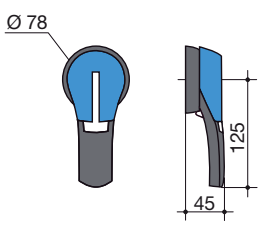
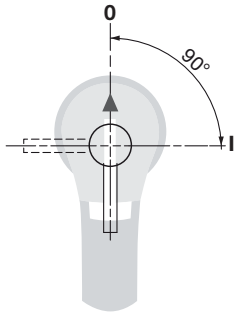
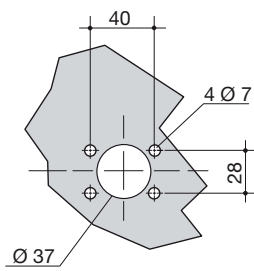
1600 to 2000 A



sir-ul_004_b_x_cat

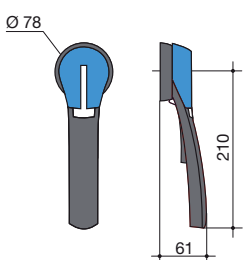
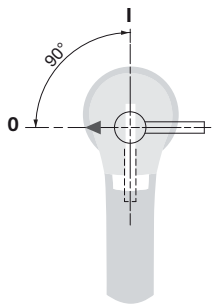
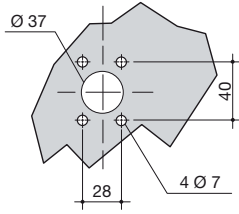
Dimensions for external handles (in/mm)

100 to 400 A

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

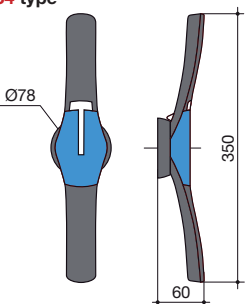
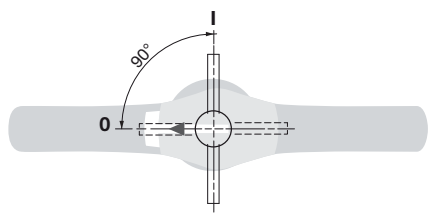
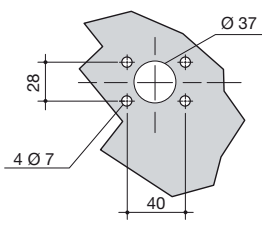
poign_013_a_1_gb_cat

600 A

Handle type	Front operation Direction of operation	Door drilling
S3 type 		

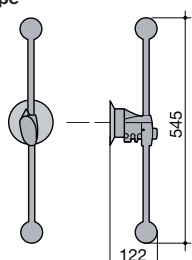
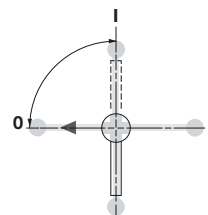
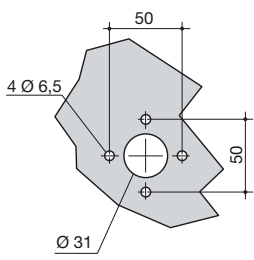
poign_035_a_1_gb_cat

800 and 1000 A

Handle type	Front operation Direction of operation	Door drilling
S4 type 		

poign_036_a_1_gb_cat

1200 to 2000 A

Handle type	Front operation Direction of operation	Door drilling
V1 type 		

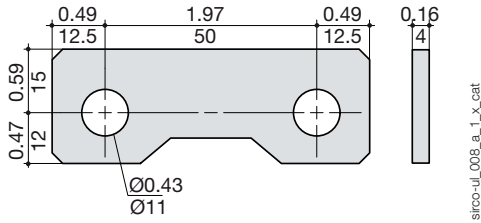
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SIRCO DC UL98B

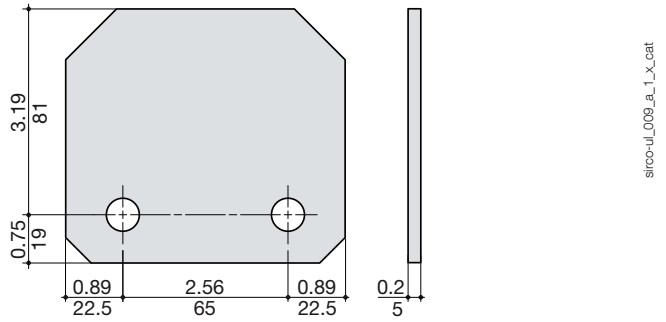
Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1000 VDC

Jumpers (in/mm)

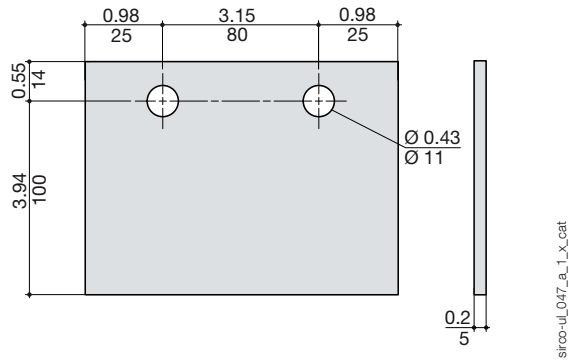
100 to 250 A



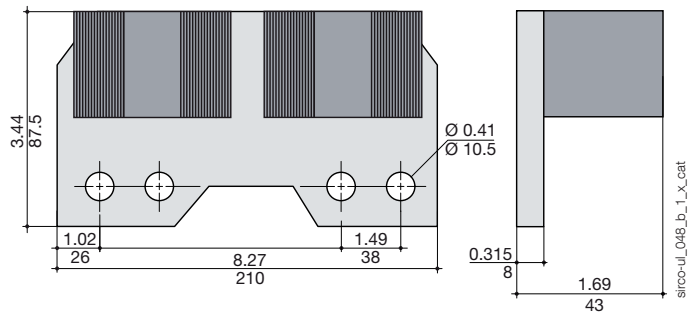
400 A



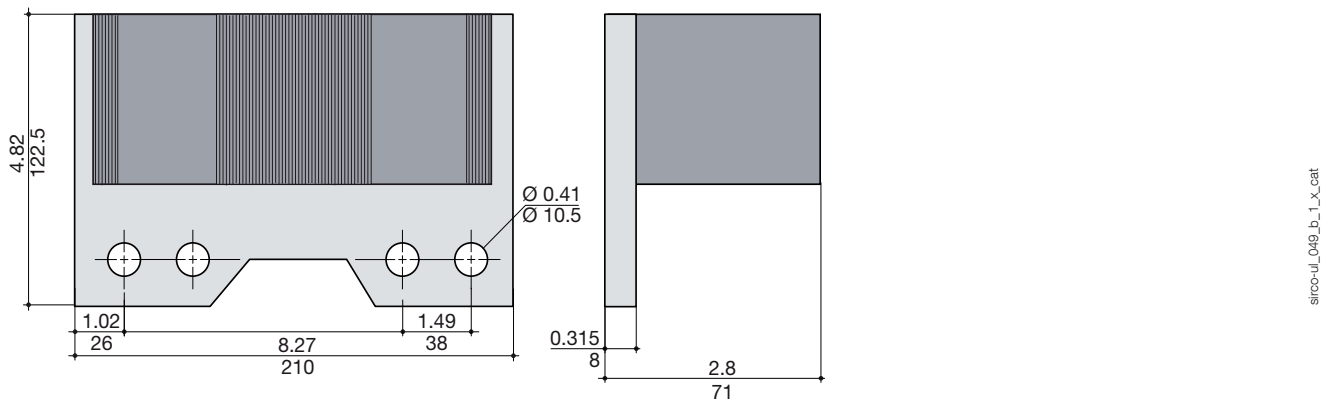
600 A



800 A

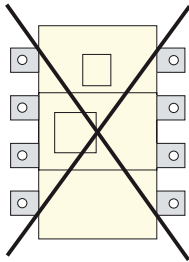


1200 to 2000 A



Mounting orientation

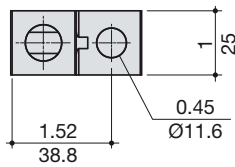
3/4 poles



sirco-ul_028_a_1_x_cat

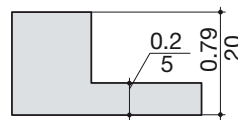
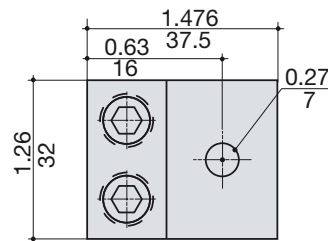
Terminal lugs (in/mm)

100 to 250 A



300MCM

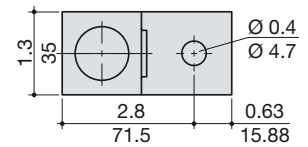
100 to 250 A



2/0

sirco_115_b_1_x_cat

400 A

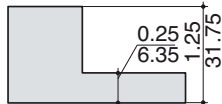
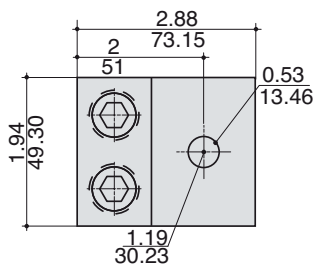


600MCM

sirco-ul_038_b_1_x_cat

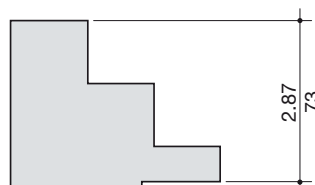
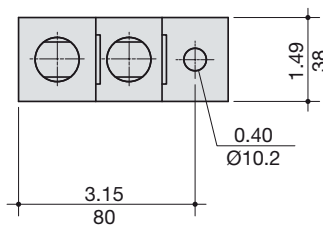
sirco-ul_010_a_1_x_cat

400 A



2 x 350MCM

600 to 2000 A



2 x 600MCM

sirco-ul_028_b_1_cat

sirco_116_b_1_x_cat

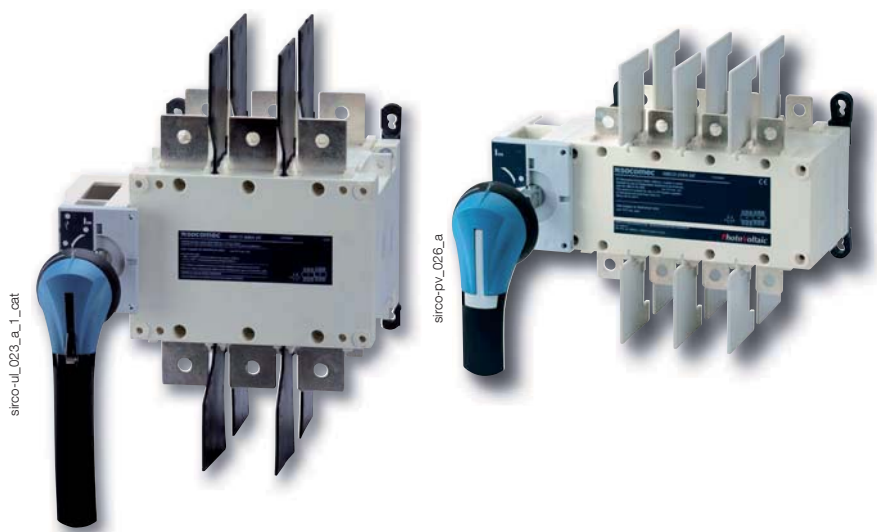


SIRCO DC

Double Stacker UL98B

Load break switches for solar applications

Load break switches



Strong points

- > Patented switching technology.
- > Positive break indication.
- > Up to 1500 VDC
- > Suitable for use in accordance with NEC Art 690 edition 2011.

Conformity to standards

- > UL98B Guide WHVA, file E346418
- > CSA C22.2#4, Class 4651-02, file 112964
- > NEC Art 690 Edition 2011
- > IEC 60947-3



Function

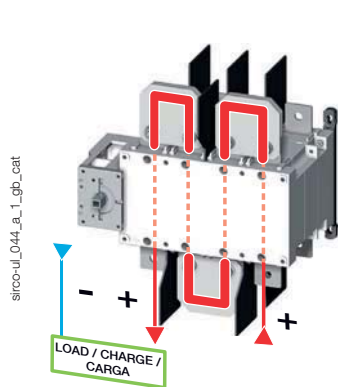
It is possible to operate on load two switches with one handle.
 Space saving: the overall footprint is similar to the footprint of a standard 3 or 4 pole device. Thus providing significant space saving opportunities within the overall assembly and specifically compared to using separate switches.

Easier connection and integration.
 Higher voltage: by connecting the two switches in series it is possible to switch on load higher voltage than 1000 VDC.
 Double the rating: by connecting the two switches in parallel on the outgoing side.

General characteristics

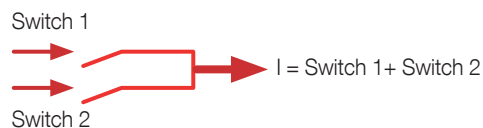
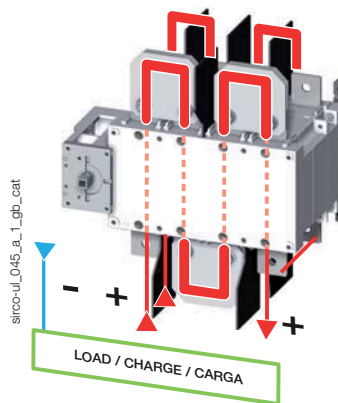
- Patented switching technology.
- Positive break indication.
- Up to 1000 VDC according to UL98B/CSA C22.2#4.
- Suitable for use in accordance with NEC Art 690 edition 2011.
- Up to 1500VDC according to IEC 60947-3.

1 handle to disconnect 2 networks



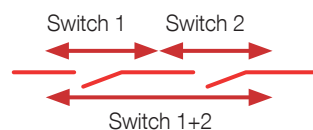
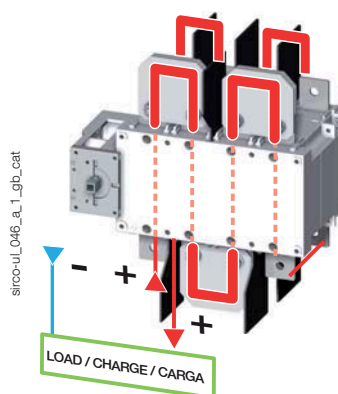
- The double stack disconnect from SOCOMEC interlocks mechanically 2 disconnects 3 or 4 poles. With one handle the user can operate on load both disconnects synchronously.
- Each disconnect are fully rated.
- Disconnect two 600VDC networks on load with a 6 poles double stacked disconnect or two 1000VDC networks with a 8 poles.
- Perfect product for BIPOLAR SYSTEMS. The user can disconnect on the same device two legs with opposite polarities.
+/- 600VDC on a 6 poles disconnect to get a 1200VDC bipolar network.
+/- 1000VDC on a 8 poles disconnect to get a 2000VDC bipolar network.

Paralleling the outputs on the disconnect to double the current rating



- As both disconnects are operating synchronously the user can link the output of each device.
- Following the Kirchhoff's law "At any node (junction) in an electrical circuit, the sum of currents flowing into that node is equal to the sum of currents flowing out of that node" or in our case $I_{switch1} + I_{switch2} = I_{output}$.
- As an example a user could disconnect 800 A with a double 400 A.
- This solution really reduces the footprint of the disconnect.

Wire more poles in series to increase the voltage



- Following the second Kirchhoff's law "The principle of conservation of energy implies that the directed sum of the electrical potential differences (voltage) around any closed network is zero".
- On the schematic above this would mean that $V_{switch1} + V_{switch2} = V_{total}$.
- And this implies that more poles are in series, higher is the achievable voltage.
- Following this principle SOCOMEC created a disconnect with 8 poles in series which allows the user to disconnect ON LOAD 1500 VDC.
- As voltages higher than 1000 VDC are not recognized by UL, SOCOMEC self certified this configuration in its laboratory in France.

References

6 & 8 poles switches

Rating (A)	Max Number of circuits	Max Breaking Voltage (VDC)	No. of poles	Switch body	External handle	Shaft for external handle	Jumpers for connecting poles in series
100 A Frame 2x4	2	2 x 600 VDC	6 P	27DC 6011	S2 type Black 1, 3R, 12 142F 2111 ⁽¹⁾ Red/Yellow 1, 3R, 12 142G 2111 ⁽¹⁾ Black 4, 4X 142D 2111 ⁽¹⁾ Red/Yellow 4, 4X 142E 2111 ⁽¹⁾	200 mm 7.9 inches 1400 1020	1 piece 2709 0021 (100 to 200 A)
	2	2 x 1000 VDC or 1x 1500 VDC	8 P	27DC 8011			
250 A Frame 2x4	2	2 x 600 VDC	6 P	27DC 6021	S3 type Black 4, 4X 143D 3111 ⁽¹⁾ Red/Yellow 4, 4X 143E 3111 ⁽¹⁾	320 mm 12.6 inches 1400 1032	2 pieces 2 x 2709 0021 (250 A)
	2	2 x 1000 VDC or 1x 1500 VDC	8 P	27DC 8021			
400 A Frame 2x5	2	2 x 600 VDC	6 P	27DC 6041	S3 type Black 4, 4X 143D 3111 ⁽¹⁾ Red/Yellow 4, 4X 143E 3111 ⁽¹⁾	200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532	1 piece 2709 0041
	2	2 x 1000 VDC or 1x 1500 VDC	8 P	27DC 8041			
600 A Frame 2x6	2	2 x 600 VDC	6 P	27PV 6060	V1 type Black 1,3R,12 2799 7145	320 mm 12.6 inches 4199 3018	1 piece 2709 0061
	2	2 x 1000 VDC or 1x 1500 VDC	8 P	27PV 6060			
800 A Frame 2x7	2	2 x 750 VDC	6 P	27DC 6080	V1 type Black 1,3R,12 2799 7145	320 mm 12.6 inches 4199 3018	1 piece 2709 0081
	2	2 x 1000 VDC or 1x 1500 VDC	8 P	27DC 8080			
1000 A Frame 2x7	2	2 x 750 VDC	6 P	27DC 6100	V1 type Black 1,3R,12 2799 7145	320 mm 12.6 inches 4199 3018	1 piece 2709 0121
	2	2 x 1000 VDC or 1x 1500 VDC	8 P	27DC 8100			

(1) Defeatable handle.

(2) Shaft guide reference 1429 0000, is required for shaft length over 15.7 inches (400mm).

Accessories

S type handle Raiser

Use

S type handle raiser.
Handle raiser for S1 to S4 handles.

Dimensions

Adds 12 mm to the depth.

Colour	Nema degree of protection	To be ordered in multiples of	Reference
Black	1, 3R, 12	10	1493 0000



access_187_a_3_cat

Accessories

External handle

Use

The interlocking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position (if the handle is door mounted S-type handles only).

Opening the door when the switch is on "ON" position is possible by defeating the locking function with the use of a tool (authorized persons only). The interlocking function is restored when the door is closed back.

Front operation I - 0, 6/8 poles

Rating (A)	Handle	Handle colour	Nema degree of protection	Reference
100 ... 250	S2 type	Black	1, 3R, 12	142F 2111 ⁽¹⁾
100 ... 250	S2 type	Red/Yellow	1, 3R, 12	142G 2111 ⁽¹⁾
100 ... 250	S2 type	Black	4, 4X	142D 2111 ⁽¹⁾
100 ... 250	S2 type	Red/Yellow	4, 4X	142E 2111 ⁽¹⁾
400	S3 type	Black	4, 4X	143D 3111 ⁽¹⁾
400	S3 type	Red/Yellow	4, 4X	143E 3111 ⁽¹⁾
600 ... 1000	S5 type	Black	1, 3R, 12	145F 8113 ⁽¹⁾
600 ... 1000	V1 type	Black	1, 3R, 12	2799 7145 ⁽¹⁾

(1) Defeatable handle.

Front operation I - 0 heavy duty, 6/8 poles

Rating (A)	Handle	Handle colour	Nema degree of protection	Reference
100 ... 250	S2 type	Black	4, 4X	142D 2911 ⁽¹⁾⁽²⁾
100 ... 250	S2 type	Red/Yellow	4, 4X	142E 2911 ⁽¹⁾⁽²⁾
400	S3 type	Black	4, 4X	143D 3911 ⁽¹⁾⁽²⁾
400	S3 type	Red/Yellow	4, 4X	143E 3911 ⁽¹⁾⁽²⁾
600 ... 1000	V1 type	Black	1, 3R, 12	2799 7145 ⁽¹⁾

(1) Locking bracket in metal.

(2) Defeatable handle.



Alternative colour S-type handle cover

Use

For handles S1 to S4.

Other colours: Please, consult us.

Handle colour	Handle	To be ordered by multiples of	Reference
Light grey	S1 to S3 type	50	1401 0001
Dark grey	S1 to S3 type	50	1401 0011
Light grey	S4 type	50	1401 0031
Dark grey	S4 type	50	1401 0041



Shaft for external handle

Use

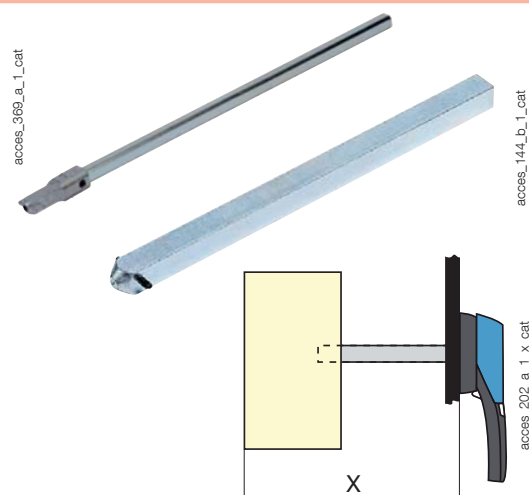
Standard lengths:

- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: Please, consult us.

For 6/8 poles

Rating (A)	Dimension X (inches)	Dimension X (mm)	Handle	Length (inches)	Length (mm)	Reference
100 ... 200	12 ... 14.3	305 ... 362	S2 type	7.9	200	1400 1020
100 ... 200	12 ... 19	305 ... 482	S2 type	12.6	320	1400 1032
100 ... 200	12 ... 22.1	305 ... 562	S2 type	15.7	400	1400 1040
400	16 ... 18.4	406 ... 467	S3 type	7.9	200	1401 1520
400	16 ... 23.1	406 ... 587	S3 type	12.6	320	1401 1532
400	16 ... 26.3	406 ... 667	S3 type	15.7	400	1401 1540
600 ... 1000	20 ... 28.1	508 ... 714	V1/S5 type	12.6	320	4199 3018
600 ... 1000	20 ... 31.3	508 ... 794	V1/S5 type	15.7	400	4199 3019



Accessories (continued)

Shaft guide for external handle

Use

To guide the detachable external control shaft in the handle.
This accessory enables handle to engage shaft with a misalignment of up to 15 mm.
Required for a shaft length over 320 mm.



Description	Reference
Shaft guide for S1 to S4 type handles	1429 0000

Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts,
- 1 to 2 low level NO/NC auxiliary contacts.

Electrical characteristics

A300.



NO/NC contact for 6/8 poles			
Rating (A)	Position AC	Type	Reference
100 ... 1000		NO/NC	4159 0021

Low level NO/NC contact for 6/8 poles			
Rating (A)	Position AC	Type	Reference
100 ... 1000	1 st contact	NO/NC	4159 0022

Terminal screen

Use

Top or bottom protection against direct contact with terminals or connection parts.



For 6/8 poles			
Rating (A)	No. of poles	Position	Reference
100 ... 200	6 P	top and bottom	4158 3021
100 ... 200	8 P	top and bottom	4158 4021
400	6 P	top or bottom	4158 3041 ⁽¹⁾
400	8 P	top or bottom	4158 4041 ⁽¹⁾
600	6 P	top or bottom	1609 3063 ⁽¹⁾
600	8 P	top or bottom	1609 4063 ⁽¹⁾
800 ... 1000	6 P	top or bottom	2798 6120
800 ... 1000	8 P	top or bottom	2798 8120

⁽¹⁾ Please order 2 reference sfor line and load protection.

Terminal lugs

Use

Connection of bare copper cables onto the terminals (without lugs).

Rating max (A)	Type of luge	Number of lugs per terminal	Type of cable	Package	Reference
100 ... 250	1 conductor (#6-300MCM)	1	Cu / Al	2 lugs	3954 2020
100 ... 250	2 conductors (#4-2/0)	1	Cu / Al	2 lugs	3954 2025
400	1 conductor (#2-600MCM)	1	Cu / Al	2 lugs	3954 2040
400	2 conductors (#6-350MCM)	1	Cu / Al	2 lugs	3954 2041
600	2 conductors (#2-600MCM)	1	Cu / Al	2 lugs	3954 2060
800 ... 1200	2 conductors (#2-600MCM)	2 ⁽¹⁾	Cu / Al	2 lugs	3954 2060
800 ... 1200	2 conductors (#2-600MCM)	3 ⁽²⁾	Cu / Al	3 lugs	3954 3060

⁽¹⁾ 2 lugs per terminal with connection kit 2729 1200.

⁽²⁾ 3 lugs per terminal with connection kits 2729 1201 and 2709 1202.



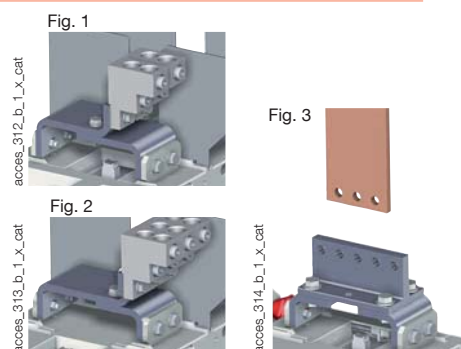
Copper bars connection kits

Use

To allow connection between the two power terminals from a same pole for 800 to 1000 A ratings (Fig. 1, Fig. 2 and Fig. 3).

Top or bottom flat connection			
Rating (A)	Quantity to order per switch	Nb lug capacity	Reference
800...1000 Fig. 1	1	2	2729 1200
800...1000 Fig. 2	1	3	2729 1202

Top or bottom edgewise connection			
Rating (A)	Quantity to order per switch	Nb lug capacity	Reference
800...1000 Fig. 3	1	3	2729 1201



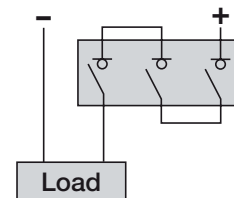
Jumpers for poles in series

Use

The jumpers will make easy the connection of the pole in series, allowing the following configurations⁽¹⁾.

Connection diagrams:

⁽¹⁾ Other connections: refer to mounting instructions.



sirco-ul012_a_1_gbr_cat

Rating (A)	Reference
100 ... 250	2709 0021 ⁽¹⁾
400 reduced design (availability to be confirmed)	2709 0040
400	2709 0041
600	2709 0062
800 ... 1000	2709 0081

⁽¹⁾ For 100 to 200 A: 1 piece per pole in series. For 250 A: 2 pieces per pole in series.

Characteristics

Characteristics according UL98/CSA22.4#4 and UL98B

Rating (A)		100 A	250 A	400 A	600 A	800 A	1000 A
General use rating with 200% overload extra test - UL98B							
Rated voltage	Number of pole in series of the device	(A)	(A)	(A)	(A)	(A)	(A)
600 VDC	3 P	100	250	400	600	800	1000
1000 VDC	4 P	100	250	400	600	800	1000
Short circuit rating at 600 VDC							
Prospective short-circuit current (kA rms)		20	20	20	-	-	-
Type of fuse		A70P100	A70P100	LDC	-	-	-
Associated fuse rating (A)		200	200	400	-	-	-
Short circuit rating at 1000 VDC any breaker							
Prospective short-circuit current (kA rms)		10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾	10 ⁽¹⁾
Connection terminals							
Min. connection section / AWG ⁽²⁾		#6	#6	2x #6	2x #2	4x #2	4x #2
Max. connection section / AWG ⁽²⁾		300MCM	300MCM	600MCM	2x 600	6x 600MCM ⁽⁴⁾	6x 600MCM ⁽⁴⁾
Mechanical characteristics							
Durability (number of operating cycles)		10 000	10 000	6 000	6 000	3 500	3 500
Operating torque (lbs.in/Nm)		88.5/10	88.5/10	128.3/14.5	327.5/37	495.7/56	495.7/56
Auxiliary contacts							
Electrical characteristics		A300	A300	A300	A300	A300	A300

⁽¹⁾ 50 ms without fuse.

⁽²⁾ AWG : dimensions of the American cable.

⁽³⁾ Increased endurances: Please consult us.

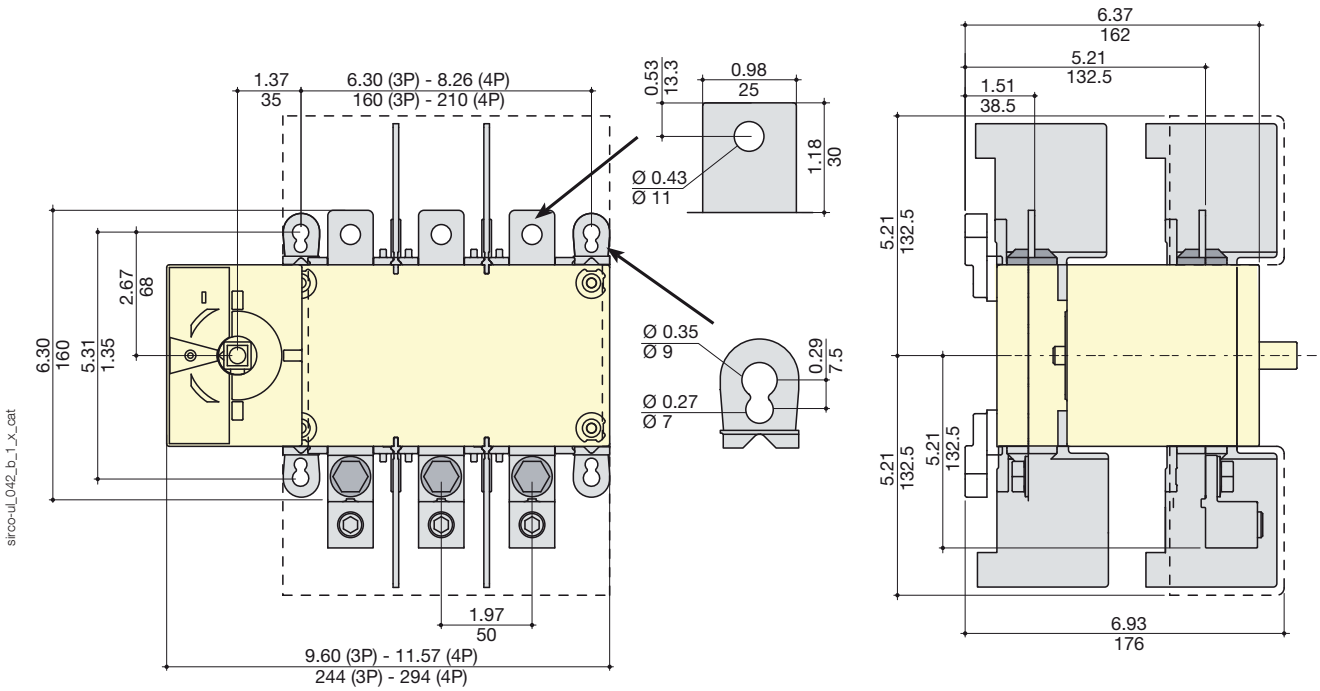
⁽⁴⁾ max 6x 600MCM with spreader 2729 1203.

Characteristics according to IEC 60947-3

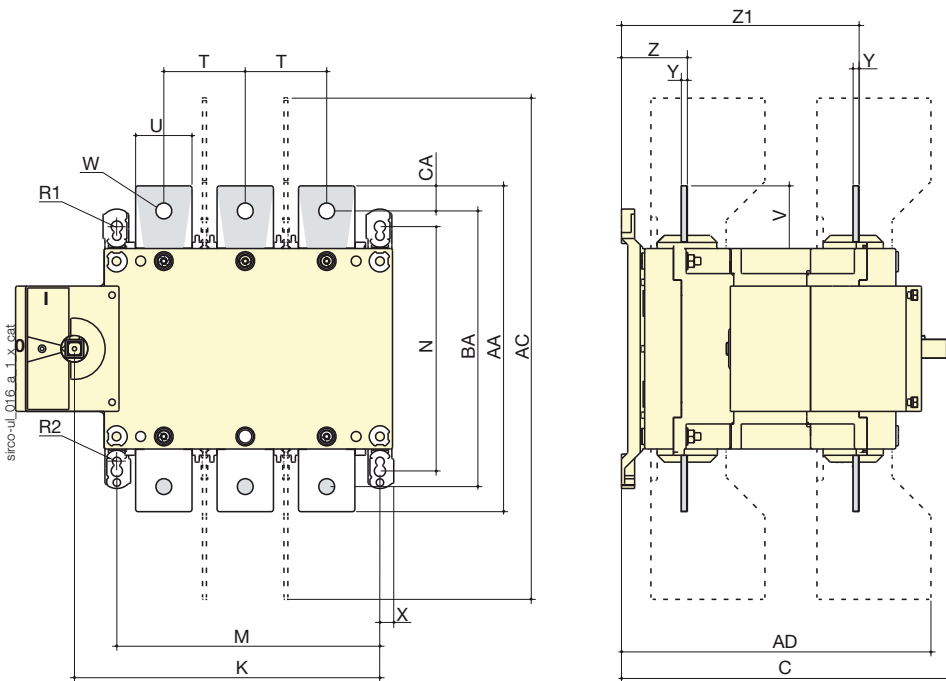
Thermal current I _{th} (40°C)		160 A	250 A	630 A	800 A	1000 A	1200 A
Rated insulation voltage U _i (V)		1 200	1 200	1 200	1 200	1 200	1 200
Rated impulse withstand voltage U _{imp} (kV)		12	12	12	12	12	12
Rated operational currents I _e (A), DC-22 B							
Rated voltage	Number of pole in series of the device	(A)	(A)	(A)	(A)	(A)	(A)
750 VDC	3 P	160	250	630	800	1 000	1 200
1 000 VDC	4 P	160	250	630	800	1 000	1 200
1 500 VDC	8 P	100	250	400	600	800	1000

Dimensions (in / mm)

100 to 250 A



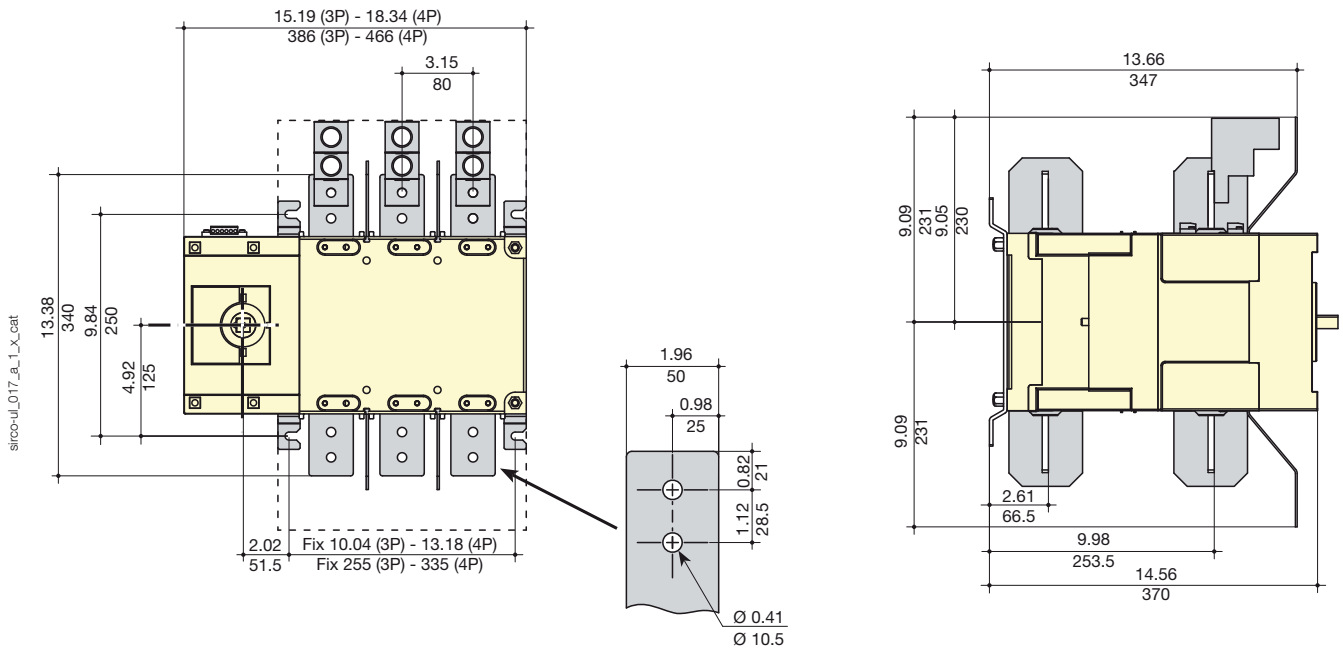
400 A



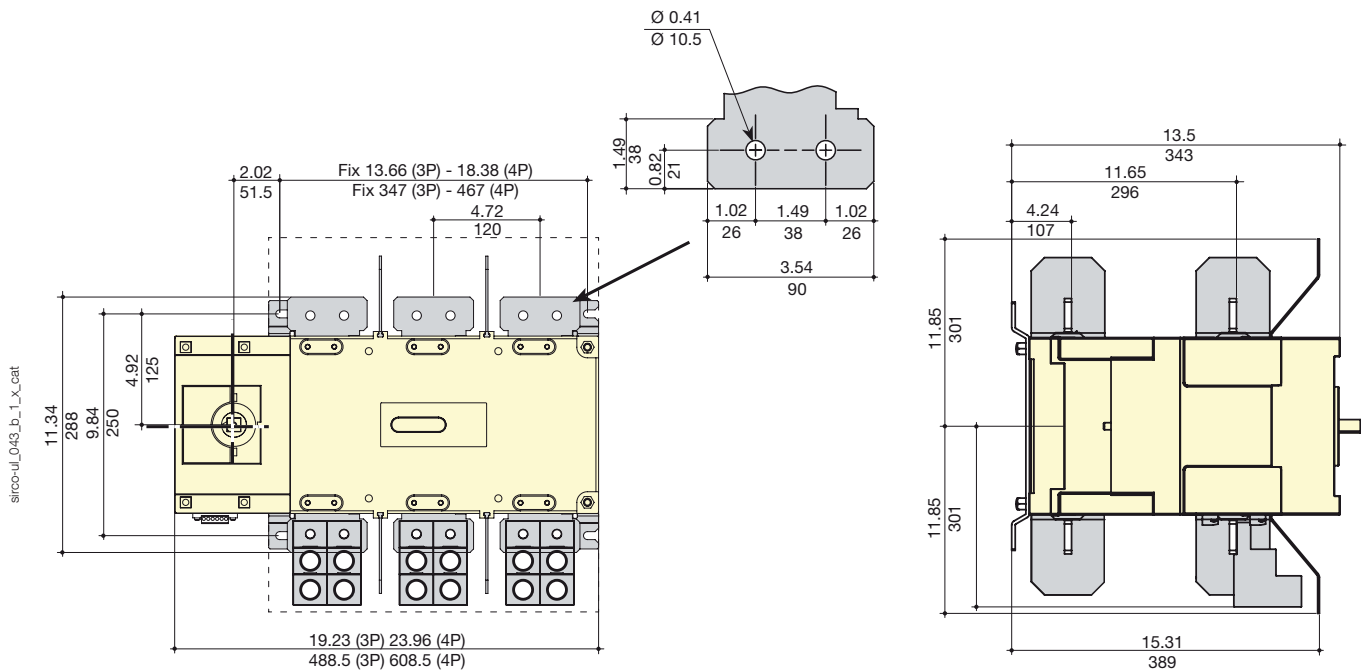
- 1. Terminal shrouds.
- A. S2 type handle.

Rating (A)	Mesurement	Overall dimensions C	Terminal shrouds		Case		Switch mounting					Connection										
			AC	AD	K 3p.	K 4p.	M 3p.	M 4p.	N	R1	R2	T	U	V	W	X	Y	Z	Z1	AA	BA	AC
400	in	10.39	15.75	9.72	9.61	11.97	8.27	10.63	7.68	0.35	0.27	2.56	1.77	1.97	0.50	0.43	0.20	2.07	7.48	10.24	8.66	0.79
400	mm	264	400	247	244	304	210	270	195	9	7	65	45	50	12.7	11	5	52.6	190	260	220	20

600 A

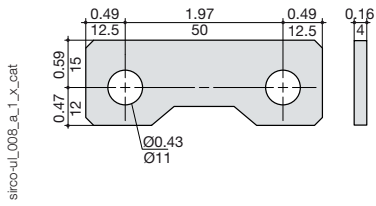


800 to 1000 A

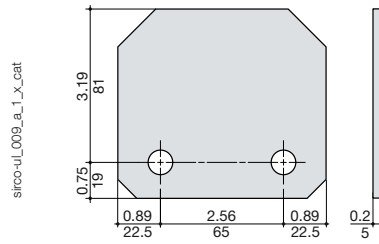


Jumpers (in / mm)

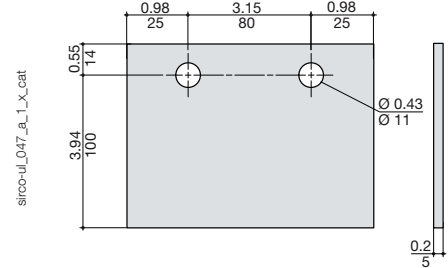
100 to 250 A



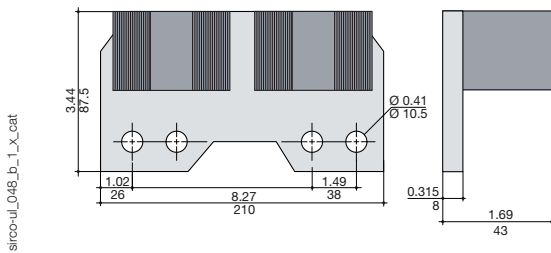
400 A



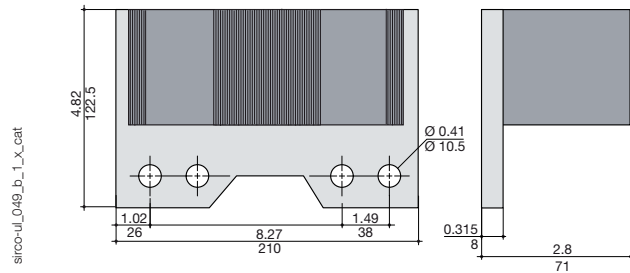
600 A



800 A

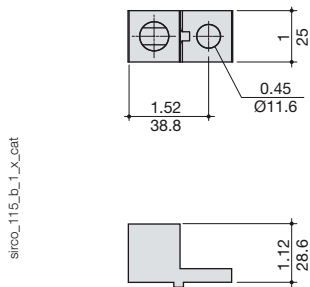


1000 A

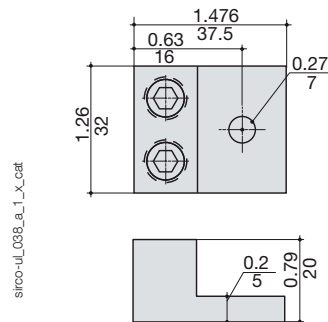


Cage terminals (in / mm)

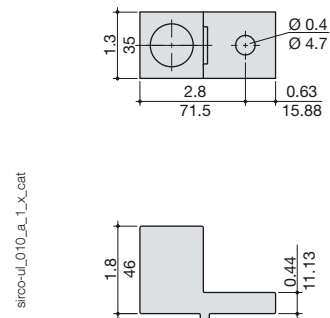
100 to 250 A



100 to 250 A

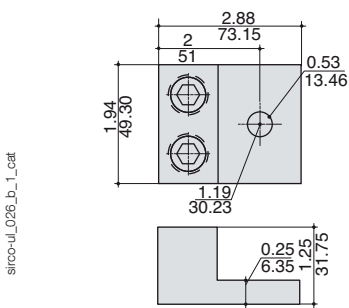


400 A



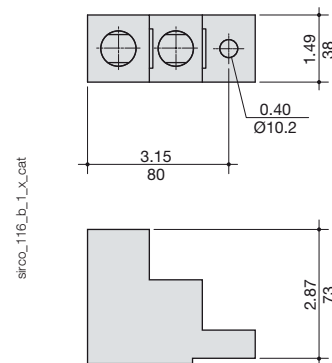
300MCM

400 A



2 x 350MCM

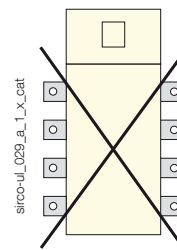
600 to 1000 A



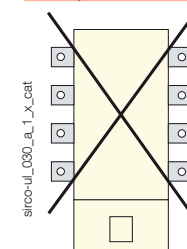
2x 600MCM

Mounting orientation

6/8 pole - 100 to 400 A

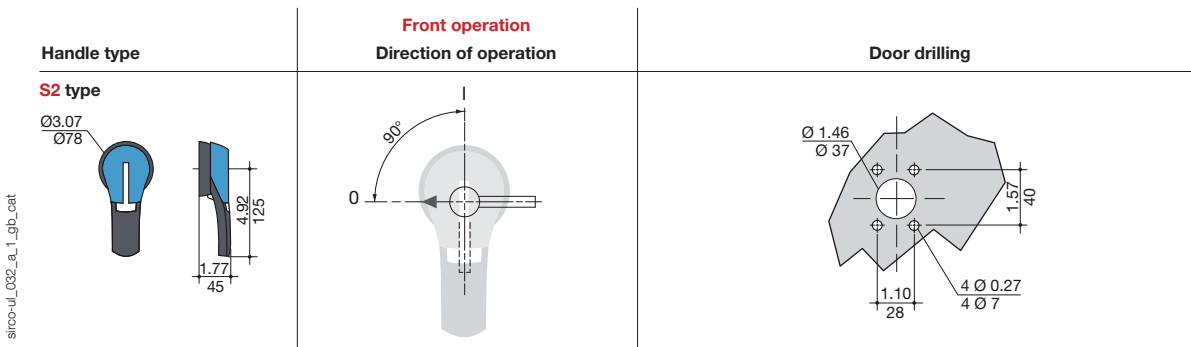


6/8 pole - 600 A

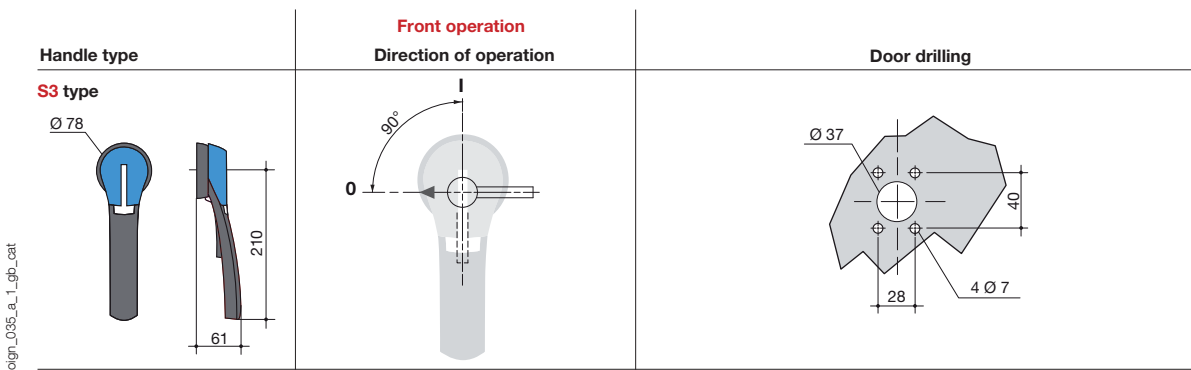


Dimensions for external handles (in / mm)

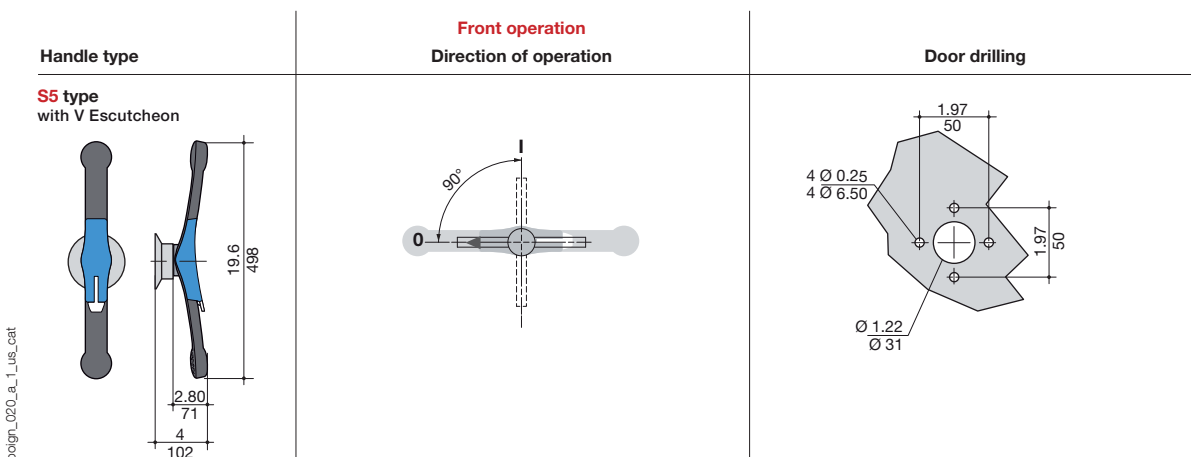
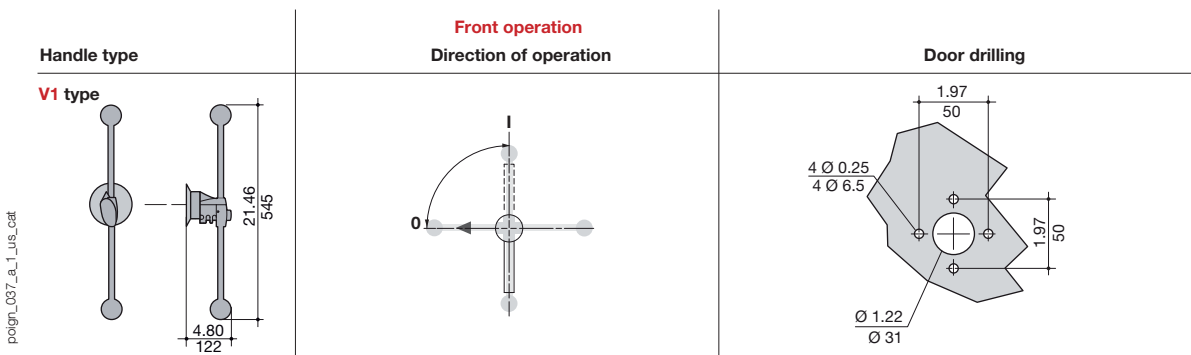
100 to 200 A



400 A



600 to 1000 A





TVSS SURGE SWITCH

Special designs

TVSS (Transient Voltage Surge Suppressor) Surge Switch

Load break
switches



Strong points

- > Compact product.
- > High performance.

Conformity to standards⁽¹⁾

- > UL508, Guide NRNT, File E224992
- > IEC 60947-3



⁽¹⁾ Product reference on request.

Customised solutions

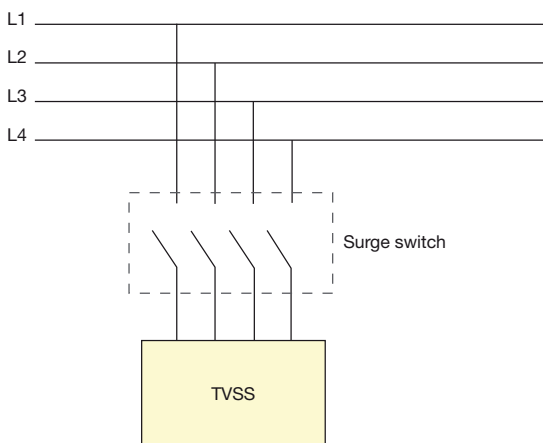
- > Please consult us.

Function

The **TVSS Surge Switch** is an extremely compact, high performance, manually operated, non-fused switch. It is specifically designed to withstand the high surge current of 200 kA with an 8 x 20 μ s waveform seen in today's transient voltage Surge Protective Device (SPD) applications. Socomec Surge Switch uses a unique contact design that actually clamp contacts tighter during a surge.

General characteristics

- 200 kA 8/20 μ s shockwave withstand.
- Rated 100 A 600 VAC UL508 general use.
- High electrical and mechanical endurance.



sirco-ul_021_a_1_x_cat

TVSS SURGE SWITCH

Special designs

TVSS (Transient Voltage Surge Suppressor) Surge Switch

References

TVSS SURGE SWITCH - Front operation - 3/4 pole						
Rating (A)	No. of poles	Switch body	Direct handle	Door interlocked external	Shaft for external handle	Terminal shrouds
8/20 μ s 200 KA 600 VAC	3 P	2700 3017	Black 2699 5042	S1 type Black 141F 2111	200 mm 1400 1020	3 P 2694 3014⁽¹⁾
	4 P	2700 4017	Red 2699 5043	S1 type Black 141D 2111	320 mm 1400 1032	4 P 2694 4014⁽¹⁾
				S1 type Black 141E 2111	400 mm 1400 1040	

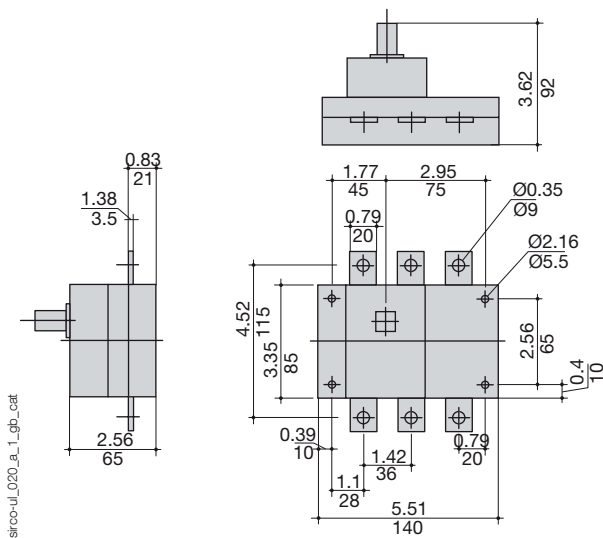
(1) Top or bottom.

UL characteristics

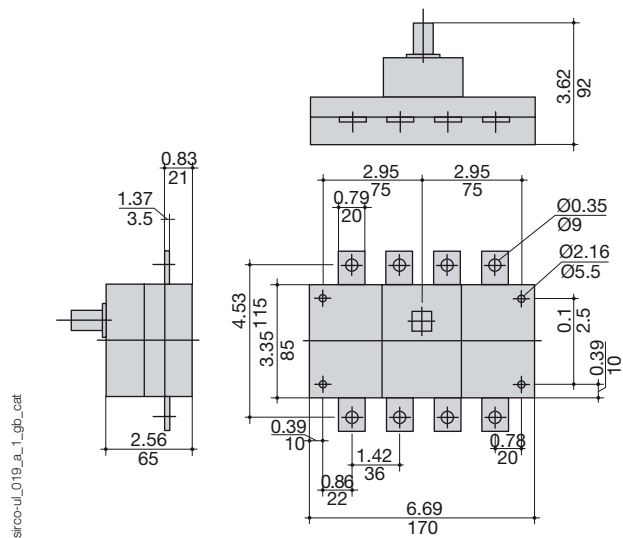
UL 508 100 A 600 VAC General use

Dimensions (in / mm)

3 pole



4 pole





Load break switches

for specific applications

Load break switches

Despite already offering a wide range of load break switches, SOCOMEC also manufactures specific products suitable for all your requirements. Some of these products can be seen on these two pages, however this list does not include them all. Please, feel free to consult us.

SIRCO range with overrated neutral



SIRCO 3 x 250 A with neutral at 400 A.

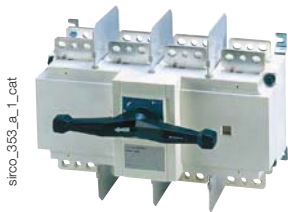
The use of power electronics is becoming more frequent. Choppers, rectifiers and current inverters distort the signal by reinjecting the 3rd order harmonics which are combined in the neutral. Available from 125 to 1800 A.

Conformity to standards

- > IEC 60947-3
- > BS EN 60947-3
- > EN 60947-3
- > NBN EN 60947-3
- > VDE 0660-107 (1992)



SIRCO HW short-circuit performance



- 80 kA rms 1 s.
- 110 kA rms 0.1 s.
- 240 kA peak.

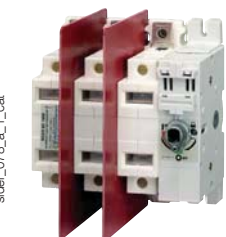
Multipolar SIRCO



12 pole SIRCO.

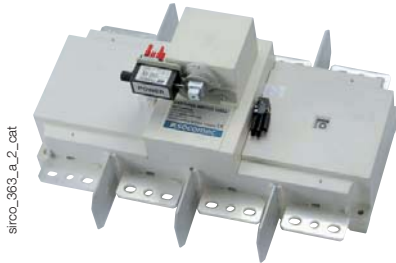
SOCOMECC can provide switches up to 16 poles.

Specific range for 1000 V network

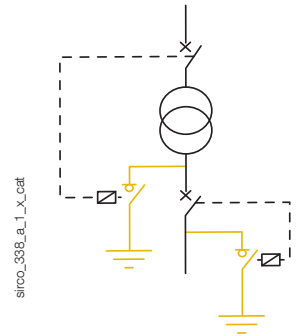


AC-22 / AC-23 characteristics.

SIRCO for earthing



- From 800 to 1800 A.
- 50 kA eff. 1 s.
- Special S4 type handle.
- Undervoltage coil interlocking.



Motorised load break switches

SIRCO MOT AT M: based on the ATyS M



Function

SIRCO MOT AT M are 40 to 160 A motorised load break switches that can be remotely operated via a volt-free contact. They make and break under load and provide safety isolation.

References

Rating (A)		40	63	80	100	125	160
No. of poles	Power supply voltage	Reference	Reference	Reference	Reference	Reference	Reference
4 P	230 VAC	1923 4004	1923 4006	1923 4008	1923 4010	1923 4012	1923 4016

SIRCO MOT AT: based on the ATyS



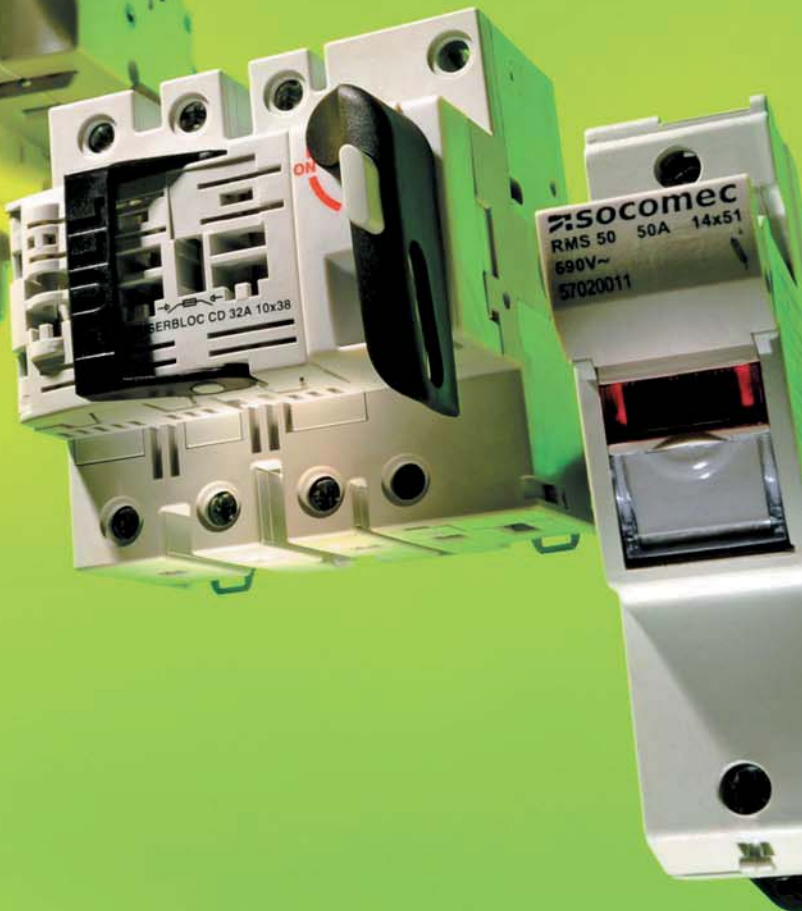
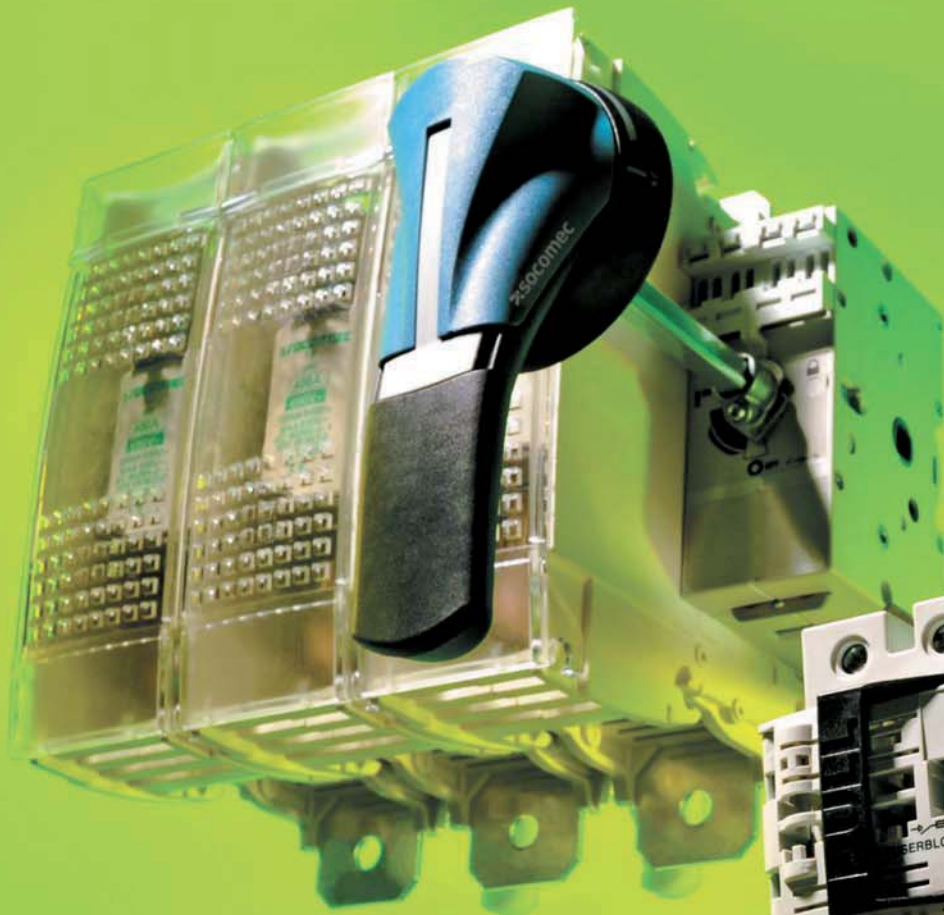
Function

SIRCO MOT AT are 125 to 3200 A motorised load break switches that can be remotely operated via a volt-free contact. They make and break under load and provide safety isolation.

References

Rating (A)		125	160	250	400	630	800
No. of poles	Power supply voltage	Reference	Reference	Reference	Reference	Reference	Reference
3 P	230 VAC	1915 3012	1915 3016	1915 3025	1915 3040	1915 3063	1915 3080
4 P	230 VAC	1915 4012	1915 4016	1915 4025	1915 4040	1915 4063	1915 4080

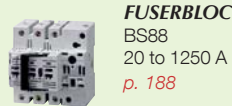
Rating (A)		1000	1250	1600	2000	2500	3200
No. of poles	Power supply voltage	Reference	Reference	Reference	Reference	Reference	Reference
3 P	230 VAC	1915 3100	1915 3120	1915 3160	1915 3200	1915 3250	1915 3320
4 P	230 VAC	1915 4100	1915 4120	1915 4160	1915 4200	1915 4250	1915 4320



Fuse protection

Fuse solutions: Definite advantages over circuit breakers p. 184
 Why choose Socomec? p. 185
 Selection guide p. 186

FUSERBLOC



FUSERBLOC
BS88
20 to 1250 A
p. 188



FUSERBLOC
NFC/DIN
25 to 1250 A
p. 188



FUSERBLOC
UR fuses
50 to 1250 A
p. 224



FUSERBLOC
UL
30 to 800 A
p. 248

FUSOMAT



FUSOMAT
250 to 1250 A
p. 238



SIDERMAT
combination
1600 to 1800 A
p. 230

Fuses

Distribution protection



BS88
gG fuses
2 to 1250 A
p. 272



NFC/DIN
gG fuses
0.16 to 1250 A
p. 278



UR fuses
10 to 2000 A
p. 224

Motor protection



BS88
gM fuses
2 to 1250 A
p. 272



NFC/DIN
aM fuses
0.16 to 1250 A
p. 278

Semiconductor protection

Fuse bases



Fuse base
160 to 2500 A
p. 266

Fuse disconnect switches



new
RM - RMS
p. 262

Photovoltaic applications



new
gPV Fuses
p. 298



new
RM PV
p. 304



new
PV Fuse bases
p. 306



Plug-in range

Connected directly to the busbar by contact clamps, the Plug-in FUSERBLOCS offer significant time and money savings during maintenance and extension operations.

These devices are available with side or bottom outputs for fuses rated 160 to 400 A (DIN and BS fuses).



160 to 400 A
[Contact us](#)

More about our products

Other product enclosures
SOCOMEc offers you a range of pre-equipped enclosures in steel or in polyester.



p. 604

Specific products

We will help you find the right solution for your application.

Please feel free to consult us.



Fuse solutions: definite advantages over circuit breakers

SOCOMEC has always promoted the benefits of fuses for both personal and equipment safety. Fuse protection offers lots of benefits compared to circuit breakers in a large number of applications.

Fuse switches provide a guarantee of reliable breaking and protection from power distribution to motor protection. Summary of the main benefits:

- **Significant limitation of short circuits**

The thermal and mechanical effects generated during a short circuit can be considerable. The speed at which a fuse can cut out means it offers a much greater limitation of the short circuit current than provided by circuit breaker technology (see fig. 1).

- **High breaking capacity**

Fuses have a breaking capacity of 100 kA (or more); it is therefore not necessary to worry too much about the short circuit current when choosing the product which has the right characteristics.

- **Simplified discrimination**

Fuses allow total discrimination, regardless of the short circuit level. This is ensured as soon as the ratio of ratings between the upstream and downstream fuse is at least 1:6. This characteristic guarantees perfect continuity of the energy supplied (see an example in fig. 2).

- **Visible breaking**

When eliminating a short circuit, the energy generated is absorbed by the silica and remains confined in the body of the fuse, stopping the propagation of the arc or even the projection of white-hot materials.

- **Visible double breaking**

Breaker switches ensure breaking upstream and downstream of the fuses which allows them to be replaced in complete safety.

Useful information

- Controlled by the HV/LV transformer sensor, the fuse breaker switches with tripping function are the best way of ensuring its general breaking and protection functions.
- Protection with high speed (UR) fuses is the only way to effectively protect the semiconductors used in electronic equipment (variable speed drives, etc.) against short circuits.

Photovoltaic applications

SOCOMEC provides solutions based on fuse disconnects or fuse breaker switches. Please consult us.

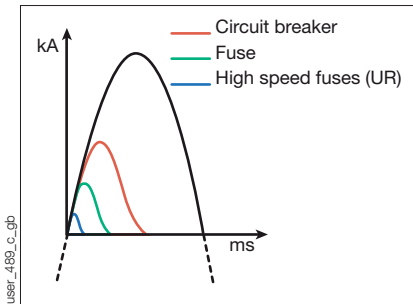


Fig. 1: Limitation of the current

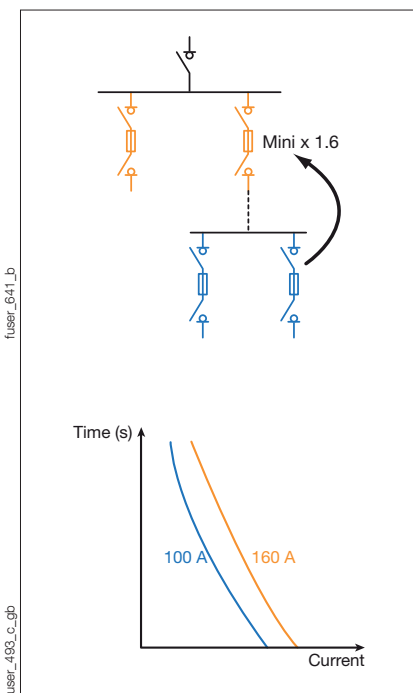


Fig. 2: Example of total discrimination



appl_563_a

Why choose Socomec?

With over 90 years' experience, SOCOMEC offers a range of switches and components for building a complete fuse protection solution. Our partnership also brings you additional benefits:



A responsive commercial network

Our teams of engineers have built their reputation on a reassuring closeness, specialist expertise and a commitment to listening.



High-quality products

SOCOMEK is renowned among its customers for the reliability of its fuse solutions.



A wide range

Whatever your area of activity (industry, data centre, photovoltaics, etc.), you'll find the solution to your electrical protection requirements in this product family.



Customised solutions

Are your requirements outside of the standard offering? As a specialist manufacturer, we can adapt our devices to suit your specific requirements. Get in touch with us or your usual contact to discuss your options.

Additional products

We also offer you a large range of devices for electronically guaranteeing personal and equipment safety (differential protection, protection against voltage surges).

See our section on "Electronic protection", page 508.



Still not sure?

We're certain you'll find the answers to your questions about electrical protection on the **Profuse International** website: www.profuseinternational.com

The site includes a detailed presentation of the **customer benefits of fuse technology**:

- User safety.
- Reliable installations.
- Cost savings.
- Environmentally-friendly solution.



profuse
INTERNATIONAL

make a smart choice for your electrical protection



Selection guide

Fuse protection

Fuse protection

Which application?

Which type of operation?

Industry						
FUSERBLOC BS88 NFC/DIN 20 to 1250 A p. 188	FUSERBLOC UL 30 to 800 A p. 248	SIDERMAT combination & FUSOMAT 250 to 1800 A p. 230 - 238	RM - RMS 32 to 100 A p. 262	Fuse bases 160 to 2500 A p. 266	Industrial fuses BS88 0,16 to 1250 A p. 272	Industrial fuses NFC/DIN 2 to 1250 A p. 278

Applications

Transformer output			•			•	•
Distribution panels				•	•	•	•
Main switchboards	•	•	•			•	•
Cable ducting						•	•
Motor circuits	•	•	•			•	•
Semiconductor protection				•	•		
Photovoltaic installations							

Operation

Manual	•	•	•				
Trippable			•				

Position of direct operation handle

Front	•	•	•				
Side	•	•	up to 1250 A				
Panel mounting	up to 32 A	up to 32 A					

Position of external operation handle

Front	•	•	•				
Right side	•	•	up to 1250 A				
Left side	•	•					
Centred operation	Please consult us	Please consult us					

Indication of breaking

Positive break indication	•	•	•				
Visible contacts			•				






Fuse

NFC/DIN	• / •	• / •	- / •	• / -	- / •		•
BS	•	•					•
UL							•
Other							

Which handle location?

Positive break indication or visible breaking?

Which type of fuse?

Power electronics (variable speed drives, inverters)		Photovoltaic		
		 <small>new</small>	 <small>new</small>	 <small>new</small>
FUSERBLOC UR 50 to 1250 A <i>p. 224</i>	UR fuses <i>p. 288</i>	gPV Fuses <i>p. 298</i>	RM PV 32 to 50 A <i>p. 304</i>	PV Fuse bases 32 to 600 A <i>p. 306</i>
•	•	•	•	•
•				
•				
•				
•				
•				
•				
• / •	•			
	•			
		gPV	gPV	gPV



FUSERBLOC

Fuse combination switches
for industrial fuses up to 1250 A

Fuse protection



FUSERBLOC
630 to 1250 A



FUSERBLOC
32 to 400 A



FUSERBLOC
20 to 32 A

The solution for

- > Motor load break.
- > Protection of industrial cabinet.



Strong points

- > Improved safety.
- > High breaking capacity.
- > Specific functionalities for simplified use.

A complete range.

- > Centred or left side operation, rear connections, plug-in connections. Please consult us.

Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > BS EN 60947-3
- > NBN EN 60947-3
- > IEC 60269-1
- > DIN EN 60269-1
- > NF EN 60269-1
- > IEC 60269-2
- > VDE 0636-1
- > VDE 0660-107
- > Standards UL: see FUSERBLOC UL



Function

FUSERBLOC are manually operated multipolar fuse combination switches. They make and break on load and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

Advantages

Improved safety

- Complete isolation of the fuse with double breaking per pole (top and bottom of fuse).
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

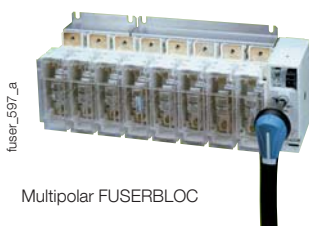
Specific functionalities for simplified use

- TEST position for testing control circuits without power using U-type auxiliary contacts. In TEST position, the enclosure door can be opened.
- Mechanical or electronic fuse melting detection system (see DDMM or FMD).

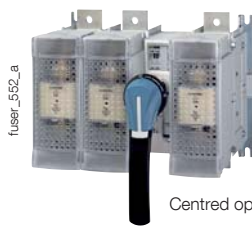
High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

Customised solutions



Multipolar FUSERBLOC



Centred operation

Approvals and certifications⁽¹⁾



(1) Product reference on request.

What you need to know

- In addition to the FUSERBLOC rating, product selection also depends on the fuse characteristics and functional specifications, which need to be in accordance with the application. SOCOMEC FUSERBLOC are available for utilisation with **NFC, DIN or BS88 fuses**.

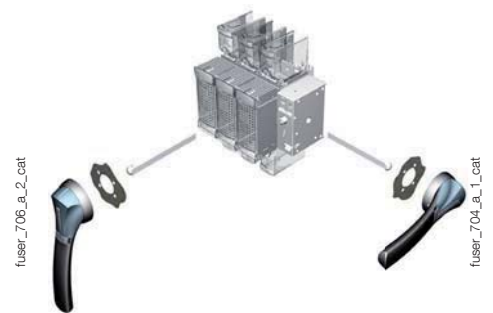
- Whether it is 3 pole + switched neutral or 3 pole + solid neutral, the **FUSERBLOC 20 to 32 A** with **direct front operation** and **external operation** is the best suited solution in compact design.



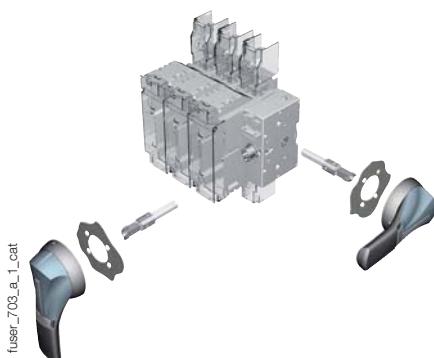
- From 32 to 400 A, the FUSERBLOC is available in 2, 3 or 4 poles with **direct right side operation**.



- From 630 to 1250 A, the FUSERBLOC allows **direct** and **external front left or right side operation** in 2, 3 or 4 poles.



- With external operation, it is possible to operate the device in 3 ways:
 - **Front** operation
 - **Right side** operation
 - **Left side** operation.



- For ratings 20 to 400 A, the **flat mounting kit** provides a compact solution ideally suited to withdrawable applications.



- Maintenance of outputs from the DC common bus. The **FUSERBLOC LMDC** is the most compact solution and the most economical for your maintenance requirements (please consult us).



FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

References

BS 88 - External front and side operation - 20 to 160 A

Rating (A) Fuse size Frame size	Number of poles	Reference Switch I-0	Reference Changeover I - 0 - II	External front handle I-0	TEST External front handle I-0 TEST	External right side handle I - 0	Changeover external front handle I - 0 - II	Shaft extensions for handle	Terminal shrouds ⁽³⁾	U type A/C ⁽²⁾	Integrated solid neutral link
20 A A1 0	3 P	3641 3000	3680 3000					320 mm 1401 0532			
	3 P + switched neutral	3641 4000	3680 4000								
	3 P+solid neutral	3641 5000									
CD 32 A A1 0	3 P	3641 3001	3680 3001	Black S1 type IP55 1411 2111 ⁽¹⁾	Black S1 type IP65 1413 2115 ⁽¹⁾	Black S1 type IP55 1415 2111 ⁽¹⁾	Black S1 type IP55 1411 2113 ⁽¹⁾				
	3 P + switched neutral	3641 4001	3680 4001								
	3 P + solid neutral	3641 5001									
32 A A1 11	2 P	3841 2003		Red/Yellow S1 type 1414 2111	Red/Yellow S1 type IP65 1414 2115	Red/Yellow S1 type IP65 1418 2111	Red/Yellow S1 type IP65 1414 2113		Standard		
	3 P	3841 3003	3880 3003								
	4 P	3841 6003	3880 6003								
63 A A2-A3 12	2 P	3841 2006								1 contact NO 3999 0701	
	3 P	3841 3006	3880 3006								
	4 P	3841 6006	3880 6006								
100 A A4 ⁽⁴⁾ 13	2 P	3841 2010						320 mm 1400 1032		1 contact NC 3999 0702	3829 9310
	3 P	3841 3010	3880 3010								
	4 P	3841 6010	3880 6010								
CD 160 A A3-A4 ⁽⁴⁾ 13 A	2 P	3841 2014		Black S2 type IP55 1421 2111 ⁽¹⁾	Black S2 type IP65 1423 2115 ⁽¹⁾	Black S2 type IP55 1425 2111 ⁽¹⁾	Black S2 type IP55 1421 2113 ⁽¹⁾				
	3 P	3841 3014	3880 3014								
	4 P	3841 6014	3880 6014								
160 A A4 14	2 P	3841 2015		Red/Yellow S2 type IP65 1424 2111	Red/Yellow S2 type IP65 1424 2115	Red/Yellow S2 type IP65 1428 2111	Red/Yellow S2 type IP65 1424 2113				3829 9320
	3 P	3841 3015	3880 3015								
	4 P	3841 6015	3880 6015								
160 A B1-B2 14	2 P	3841 2016									
	3 P	3841 3016	3880 3016								
	4 P	3841 6016	3880 6016								

(1) Standard.

(2) 4 auxiliary contacts as standard without additional contact holder.

(3) Top/bottom.

(4) For fuse size A4: max diameter 31 mm.

BS 88 - External front and side operation - 200 to 1250 A

Rating (A) Fuse size Frame size	Number of poles	Reference Switch I-0	Reference Changeover I - 0 - II	External front handle I-0	TEST External front handle I-0 TEST	External right side handle I - 0	Changeover external front handle I - 0 - II	Shaft extensions for handle	Terminal shrouds ⁽³⁾	U type A/C ⁽²⁾	Integrated solid neutral link																		
CD 200 A A3-A4 (5) 13 A	2 P	3841 2019		Black S2 type IP55 1421 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2111	Black S2 type IP65 1423 2115 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2115	Black S2 type IP55 1425 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1428 2111	Black S2 type IP55 1421 2113 ⁽¹⁾	320 mm 1400 1032	2 P 3998 2016	1 contact NO 3999 0701 1 contact NC 3999 0702	3829 9320																		
	3 P	3841 3019	3880 3019						3 P 3998 3016																				
	4 P	3841 6019	3880 6019						4 P 3998 4016																				
200 A B1-B2 15	2 P	3841 2021							Black S2 type IP55 1421 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2111		Black S2 type IP65 1423 2115 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2115	Black S2 type IP55 1425 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1428 2111	Black S2 type IP55 1421 2113 ⁽¹⁾	320 mm 1400 1032	2 P 3998 2025	1 contact NO 3999 0701 1 contact NC 3999 0702	3829 9325												
	3 P	3841 3021	3880 3021												3 P 3998 3025														
	4 P	3841 6021	3880 6021												4 P 3998 4025														
250 A B1-B2-B3 15	2 P	3841 2024													Black S2 type IP55 1421 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2111		Black S2 type IP65 1423 2115 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2115	Black S2 type IP55 1425 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1428 2111	Black S2 type IP55 1421 2113 ⁽¹⁾	320 mm 1400 1032	2 P 3998 2025	1 contact NO 3999 0701 1 contact NC 3999 0702	3829 9339						
	3 P	3841 3024	3880 3024																		3 P 3998 3025								
	4 P	3841 6024	3880 6024																		4 P 3998 4025								
315 A B1-B2-B3 16	2 P	3841 2032																			Black S2 type IP55 1421 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2111		Black S2 type IP65 1423 2115 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2115	Black S2 type IP55 1425 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1428 2111	Black S2 type IP55 1421 2113 ⁽¹⁾	320 mm 1400 1032	2 P 3998 2025	1 contact NO 3999 0701 1 contact NC 3999 0702	3829 9339
	3 P	3841 3032	3880 3032																								3 P 3998 3025		
	4 P	3841 6032	3880 6032																								4 P 3998 4025		
400 A B1-B2- B3-B4 16	2 P	3841 2038		Black S2 type IP55 1421 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2111	Black S2 type IP65 1423 2115 ⁽¹⁾ Red/Yellow S2 type IP65 1424 2115	Black S2 type IP55 1425 2111 ⁽¹⁾ Red/Yellow S2 type IP65 1428 2111	Black S2 type IP55 1421 2113 ⁽¹⁾	320 mm 1400 1032		2 P 3998 2025																	1 contact NO 3999 0701 1 contact NC 3999 0702		3829 9339
	3 P	3841 3038								3 P 3998 3025																			
	4 P	3841 6038								4 P 3998 4025																			
630 A C1-C2 17	2 P	3821 2063							Black S3 type IP65 1433 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1434 3111	Black S3 type IP65 1437 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1438 3111	Black S3 type IP65 1437 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1438 3111	Black S3 type IP65 1437 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1438 3111	320 mm 1400 1232	2 P 3898 2080		1 contact NO 3999 0701 1 contact NC 3999 0702													3829 9308
	3 P	3821 3063												3 P 3898 3080															
	4 P	3821 6063												4 P 3898 4080															
800 A C1-C2-C3 17	2 P	3821 2080												Black S3 type IP65 1433 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1434 3111	Black S3 type IP65 1437 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1438 3111		Black S3 type IP65 1437 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1438 3111	Black S3 type IP65 1437 3111 ⁽¹⁾ Red/Yellow S3 type IP65 1438 3111	320 mm 1400 1232	2 P 3898 2120		1 contact NO 3999 0701 1 contact NC 3999 0702							3829 9312
	3 P	3821 3080																		3 P 3898 3120									
	4 P	3821 6080																		4 P 3898 4120									
1250 A D1 18	2 P	3821 2120																		Black S4 type IP65 1443 3111 ⁽¹⁾	Black S4 type IP65 1443 3111 ⁽¹⁾		Black S4 type IP65 1443 3111 ⁽¹⁾	Black S4 type IP65 1443 3111 ⁽¹⁾	320 mm 1400 1232	2 P 3898 2120		1 contact NO 3999 0701 1 contact NC 3999 0702	3829 9312
	3 P	3821 3120																								3 P 3898 3120			
	4 P	3821 6120																								4 P 3898 4120			

(1) Standard.

(2) 4 auxiliary contacts as standard without additional contact holder.

(3) Top/bottom.

(4) 8 AC as standard without support (the support is for 8 additional auxiliary contacts).

(5) For fuse size A4: max diameter 31mm

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

References (continued)

BS 88 - Direct operation - 20 to 160 A

Rating (A) Fuse size Frame size	Number of poles	Reference Side direct operation	Reference Direct front operation	Side direct handle operation switch	Direct front handle	Auxiliary contacts	Terminal shrouds ⁽³⁾	Cage terminals	Handle key interlocking accessories ⁽²⁾
20 A A1 0	3 P		3641 3000	Black 3629 4012	Black 3629 4012	1 contact NO/NC A-type 3999 0001⁽¹⁾	Standard	Standard	
	3 P + switched neutral		3641 4000						
	3 P + solid neutral		3641 5000						
CD 32 A A1 0	3 P		3641 3001						
	3 P + switched neutral		3641 4001						
	3 P + solid neutral		3641 5001						
32 A A1 1	2 P	3625 2003	consult us	Black 3629 7900			Standard	Standard	3629 7903
	3 P	3625 3003	consult us						
	4 P	3625 6003	consult us						
63 A A2-A3 2	2 P	3625 2006	consult us						
	3 P	3625 3006	consult us						
	4 P	3625 6006	consult us						
100 A A4 ⁽⁴⁾ 3	2 P	3625 2010	consult us	Black 3629 7901		1 contact NO/NC A-type 3999 0021⁽¹⁾			
	3 P	3625 3010	consult us						
	4 P	3625 6010	consult us						
CD 160 A A3-A4 ⁽⁴⁾ 3 A	2 P	3625 2014	consult us						
	3 P	3625 3014	consult us						
	4 P	3625 6014	consult us						
160 A A4 4	2 P	3625 2015	consult us						
	3 P	3625 3015	consult us						
	4 P	3625 6015	consult us						
160 A B1-B2 4	2 P	3625 2016	consult us						
	3 P	3625 3016	consult us						
	4 P	3625 6016	consult us						

(1) Max. 2 contacts.

(2) Lock not included.

(3) Top/bottom.

(4) For fuse size A4: max diameter 31 mm.

BS 88 - Direct operation - 200 to 400 A

Rating (A) Fuse size Frame size	Number of poles	Reference Side direct operation	Reference Direct front operation	Side direct handle operation switch	Direct front handle	Auxiliary contacts	Terminal shrouds ⁽³⁾	Cage terminals	Handle key interlocking accessories ⁽²⁾
CD 200 A A3-A4 ⁽⁴⁾ 13 A	2 P	3625 2019	consult us	Black 3629 7901	consult us	1 contact NO/NC A-type 3999 0021 ⁽¹⁾ 2 contacts NO/NC A-type 3999 0022 ⁽¹⁾	2 P 3998 2016 3 P 5400 3016	3 P 5400 3016 4 P 5400 4016	3629 7913
	3 P	3625 3019	consult us						
	4 P	3625 6019	consult us						
200 A B1-B2 5	2 P	3625 2021	consult us						
	3 P	3625 3021	consult us						
	4 P	3625 6021	consult us						
250 A B1-B2-B3 5	2 P	3625 2024	consult us						
	3 P	3625 3024	consult us						
	4 P	3625 6024	consult us						
315 A B1-B2-B3 6	2 P	3625 2032	consult us						
	3 P	3625 3032	consult us						
	4 P	3625 6032	consult us						
400 A B1-B2-B3-B4 6	2 P	3625 2039	consult us						
	3 P	3625 3039	consult us						
	4 P	3625 6039	consult us						

(1) Max. 2 contacts.

(2) Lock not included.

(3) Top/bottom.

(4) For fuse size A4: max diameter 31 mm.

BS 88 - Direct operation - 630 to 1250 A

Rating (A) Fuse size Frame size	Number of poles	Reference Side direct operation	Reference Direct front operation	Side direct handle operation switch	Direct front handle	Auxiliary contacts	Terminal shrouds ⁽³⁾	Cage terminals	Handle key interlocking accessories ⁽²⁾	
630 A C1-C2 17	2 P	3821 2063	3821 2063	Black 3899 7911	Black 3899 6011	1 contact NO U-type 3999 0701 ⁽¹⁾	2 P 3898 2080 3 P 3898 3080 4 P 3898 4080			
	3 P	3821 3063	3821 3063							
	4 P	3821 6063	3821 6063							
800 A C1-C2-C3 17	2 P	3821 2080	3821 2080		Black 3899 7011	Black 3899 7011	1 contact NC U-type 3999 0702 ⁽¹⁾	3898 2120 3898 3120 3898 4120		
	3 P	3821 3080	3821 3080							
	4 P	3821 6080	3821 6080							
1250 A D1 18	2 P	3821 2120	3821 2120							
	3 P	3821 3120	3821 3120							
	4 P	3821 6120	3821 6120							

(1) Max. number of U-type auxiliary contacts is 8.

(2) Lock not included.

(3) Top/bottom.

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

References

NFC and DIN - External front and right side operation - 25 to 125 A

Rating (A) / Fuse / Frame size	No. of poles	Switch I-0-TEST	Changeover switch I-0-II	External front handle	TEST external front handle	External right side handle	Changeover external front handle	Shaft for external handle	Auxiliary contacts ⁽²⁾	Terminal shrouds ⁽¹⁾	Integrated solid neutral link
25 A 10 x 38 0	3 P	3631 3002 ⁽¹⁾	3670 3002	S1 type	S1 type						
	3 P + switched neutral	3631 4002 ⁽¹⁾	3670 4002								
	3 P + solid neutral	3631 5002 ⁽¹⁾									
CD 32 A 10 x 38 0	3 P	3631 3003	3670 3003	Black IP55	Black IP65	S1 type	S1 type	320 mm 1401 0532	U-type 1 contact 3999 0710		
	3 P + switched neutral	3631 4003	3670 4003	Red/Yellow IP65	Red/Yellow IP65						
	3 P + solid neutral	3631 5003		Red/Yellow IP65	Red/Yellow IP65						
32 A 14 x 51 0	3 P	3631 3004 ⁽¹⁾	3670 3004	S1 type	S1 type						
	3 P + switched neutral	3631 4004 ⁽¹⁾	3670 4004								
	3 P + solid neutral	3631 5004 ⁽¹⁾									
50 A 14 x 51 11	2 P	3831 2005		Black IP65	Black IP65	S2 type	S2 type			Standard	
	3 P	3831 3005 ⁽¹⁾	3870 3005	Red/Yellow IP65	Red/Yellow IP65						
	4 P	3831 6005 ⁽¹⁾	3870 6005	Red/Yellow IP65	Red/Yellow IP65						
63 A 00C 12	2 P	3831 2006		Black IP65	Black IP65	S2 type	S2 type				
	3 P	3831 3006 ⁽¹⁾	3870 3006	Red/Yellow IP65	Red/Yellow IP65						
	4 P	3831 6006 ⁽¹⁾	3870 6006	Red/Yellow IP65	Red/Yellow IP65						
100 A 22 x 58 13	2 P	3831 2010		Black IP65	Black IP65	S2 type	S2 type	320 mm 1400 1032 ⁽³⁾	U-type 1 contact 3999 0600		
	3 P	3831 3010 ⁽¹⁾	3870 3010	Red/Yellow IP65	Red/Yellow IP65						
	4 P	3831 6010 ⁽¹⁾	3870 6010	Red/Yellow IP65	Red/Yellow IP65						
125 A 22 x 58 13	2 P	3831 2011		Black IP65	Black IP55	S2 type	S2 type			2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3829 9310
	3 P	3831 3011	3870 3010	Red/Yellow IP65	Red/Yellow IP65						
	4 P	3831 6011	3870 6010	Red/Yellow IP65	Red/Yellow IP65						
125 A 00 13	2 P	3831 2012		Black IP65	Black IP55	S2 type	S2 type				
	3 P	3831 3012	3870 3011	Red/Yellow IP65	Red/Yellow IP65						
	4 P	3831 6012	3870 6011	Red/Yellow IP65	Red/Yellow IP65						

(1) Available enclosed (see page "Enclosed fuse switches" page XXX).

(2) Top/bottom.

(3) Maximum 4 contacts.

NFC and DIN - External front and right side operation - 160 to 1250 A

Rating (A) / Fuse / Frame size	No. of poles	Switch I-0	Changeover switch I-0-II	External front handle	TEST external front handle	External right side handle	Changeover external front handle	Shaft for external handle	Auxiliary contacts	Terminal shrouds ⁽²⁾	Integrated solid neutral link	
160 A 00 13	2 P	3831 2015							U-type	2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3829 9320	
	3 P	3831 3015	3870 3015									
	4 P	3831 6015	3870 6015									
160 A 0 14	2 P	3831 2016		S2 type	S2 type	S2 type	S2 type	320 mm 1400 1032	1 contact 3999 0600⁽³⁾	2 P 3998 3016 3 P 3998 3016 4 P 3998 4016	3829 9320	
	3 P	3831 3016⁽¹⁾	3870 3016	Black IP55 1421 2111	Black IP65 1423 2115	Black IP55 1425 2111	Black IP55 1421 2113					
	4 P	3831 6016⁽¹⁾	3870 6016									
250 A 1 15	2 P	3831 2024		Red/Yellow IP65 1424 2111	Red/Yellow IP65 1424 2115	Red/Yellow IP65 1428 2111	Red/Yellow IP65 1424 2113		U-type	2 P 3998 2025 3 P 3998 3025 4 P 3998 4025	3829 9325	
	3 P	3831 3024⁽¹⁾	3870 3024									
	4 P	3831 6024⁽¹⁾	3870 6024									
400 A 2 16	2 P	3831 2039							1 contact 3999 0600⁽⁴⁾	2 P 3998 3025 3 P 3998 3025 4 P 3998 4025	3829 9339	
	3 P	3831 3039⁽¹⁾	3870 3039									
	4 P	3831 6039⁽¹⁾	3870 6039									
630 A 3 17	2 P	3811 2063		S3 type						2 P 3898 2080 3 P 3898 3080 4 P 3898 4080	3829 9308	
	3 P	3811 3063⁽¹⁾		Black IP65 1433 3111								
	4 P	3811 6063⁽¹⁾										
800 A 3 17	2 P	3811 2080		Red/Yellow IP65 1434 3111		S3 type		320 mm 1400 1232		2 P 3898 2120 3 P 3898 3120 4 P 3898 4120	3829 9312	
	3 P	3811 3080										Black IP65 1437 3111
	4 P	3811 6080										
800 A 4 18	2 P	3811 2081		S4 type			Red/Yellow IP65 1438 3111			2 P 3898 2120 3 P 3898 3120 4 P 3898 4120	3829 9312	
	3 P	3811 3081		Black IP65 1443 3111								
	4 P	3811 6081										
1250 A 4 18	2 P	3811 2120		Red/Yellow IP65 1444 3111						2 P 3898 2120 3 P 3898 3120 4 P 3898 4120	3829 9312	
	3 P	3811 3120										
	4 P	3811 6120										

(1) Available enclosed (see "Enclosed fuse switches" page XXX).

(2) Top/bottom.

(3) Maximum 4 contacts.

(4) Maximum 8 contacts.

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

References (continued)

NFC and DIN - Direct operation - 25 to 125 A

Rating (A) Fuse size Frame size	No. of poles	Direct side operation	Direct front operation	Direct handle	Auxiliary contacts	Terminal shrouds	Cage terminals	Lock for fuse protection cover	Handle key interlocking accessories ⁽⁶⁾						
25 A 10 x 38 0	3 P		3631 3002	Black 3629 4012 ⁽¹⁾⁽²⁾	A-type 1 contact NO/NC 3999 0001 ⁽³⁾ A-type 2 contacts NO/NC 3999 0002 ⁽³⁾	Standard	Standard	Standard							
	3 P + switched neutral		3631 4002												
	3 P + solid neutral		3631 5002												
CD 32 A 10 x 38 0	3 P		3631 3003												
	3 P + switched neutral		3631 4003												
	3 P + solid neutral		3631 5003												
32 A 14 x 51 0	3 P		3631 3004												
	3 P + switched neutral		3631 4004												
	3 P + solid neutral		3631 5004												
50 A 14 x 51 1	2 P	3615 2005	consult us							Black 3629 7900 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	Standard	Standard	Standard	3629 7903
	3 P	3615 3005	consult us												
	4 P	3615 6005	consult us												
63 A 00C 2	2 P	3615 2006	consult us												
	3 P	3615 3006	consult us												
	4 P	3615 6006	consult us												
100 A 22 x 58 3	2 P	3615 2010	consult us	Black 3629 7901 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	Standard	Standard	Standard	3629 7913						
	3 P	3615 3010	consult us												
	4 P	3615 6010	consult us												
125 A 22 x 58 3	2 P	3615 2011	consult us												
	3 P	3615 3011	consult us												
	4 P	3615 6011	consult us												
125 A 00 3	2 P	3615 2012	consult us												
	3 P	3615 3012	consult us												
	4 P	3615 6012	consult us												

(1) Direct front operation.

(2) Standard.

(3) Maximum 2 contacts.

(4) Top or bottom.

(5) Direct right side operation.

(6) Locking using RONIS EL11AP lock (lock not included).

NFC and DIN - Direct operation - 160 to 400 A

Rating (A) Fuse size Frame size	No. of poles	Direct side operation	Direct front operation	Direct handle	Auxiliary contacts	Terminal shrouds	Cage terminals	Lock for fuse protection cover	Handle key interlocking accessories ⁽⁵⁾
160 A 00 3	2 P	3615 2015	consult us	Black 3629 7901 ⁽⁴⁾⁽¹⁾		2 P 3998 2016 ⁽³⁾	3 P 5400 3016	3999 8912	3629 7913
	3 P	3615 3015	consult us			3 P 3998 3016 ⁽³⁾			
	4 P	3615 6015	consult us			4 P 3998 4016 ⁽³⁾			
160 A 0 4	2 P	3615 2016	consult us	A-type 1 contact NO/NC 3999 0021 ⁽²⁾	3 P 5400 3016	4 P 5400 4016	3999 8216		
	3 P	3615 3016	consult us			4 P 3998 4016 ⁽³⁾	3999 8316		
	4 P	3615 6016	consult us				3999 8416		
250 A 1 5	2 P	3615 2024	consult us	Black 3629 7901 ⁽⁴⁾⁽¹⁾	A-type 2 contacts NO/NC 3999 0022 ⁽²⁾	2 P 3998 2025 ⁽³⁾	3 P 5400 3025	3999 8225	
	3 P	3615 3024	consult us			4 P 5400 4025	3999 8325		
	4 P	3615 6024	consult us			3 P 3998 3025 ⁽³⁾	3999 8425		
400 A 2 6	2 P	3615 2039	consult us			4 P 3998 4025 ⁽³⁾	3 P 5400 3040	3999 8240	
	3 P	3615 3039	consult us			4 P 5400 4040	3999 8340		
	4 P	3615 6039	consult us				3999 8440		

(1) Standard.

(2) Maximum 2 contacts.

(3) Top/bottom.

(4) Direct right side operation.

(5) Locking using RONIS EL11AP lock (lock not included).

NFC and DIN - Direct operation - 630 to 1250 A

Rating (A) Fuse size Frame size	No. of poles	Direct side and front operation	Direct front handle	Direct side handle	Auxiliary contacts	Terminal shrouds
630 A 3 17	2 P	3811 2063	Black 3899 6011 ⁽¹⁾⁽²⁾			2 P 3898 2080 ⁽³⁾
	3 P	3811 3063				3 P 3898 3080 ⁽³⁾
	4 P	3811 6063				4 P 3898 4080 ⁽³⁾
800 A 3 17	2 P	3811 2080		Black 3899 7911	U-type 1 contact NO 3999 0701 ⁽⁴⁾	4 P 3898 4080 ⁽³⁾
	3 P	3811 3080				
	4 P	3811 6080				
800 A 4 18	2 P	3811 2081	Black 3899 7011 ⁽¹⁾⁽²⁾		1 contact NC 3999 0702 ⁽⁴⁾	2 P 3898 2120 ⁽³⁾
	3 P	3811 3081				3 P 3898 3120 ⁽³⁾
	4 P	3811 6081				4 P 3898 4120 ⁽³⁾
1250 A 4 18	2 P	3811 2120				2 P 3898 2120 ⁽³⁾
	3 P	3811 3120				3 P 3898 3120 ⁽³⁾
	4 P	3811 6120				4 P 3898 4120 ⁽³⁾

(1) Direct front operation.

(2) Standard.

(3) Top/bottom.

(4) Maximum 8 contacts.

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

Accessories

Direct operation handle

For front operation				
Rating (A)	Frame size	Figure no.	Handle colour	Reference
20 ... 32	0	1	Black	3629 4012
20 ... 32	0	1	Red	3629 4013
32 ... 400	11 ... 16	2	Black	3629 7910
630 ... 800	17	2	Black	3899 6011
800 ... 1250	18	3	Black	3899 7011

For right side operation				
Rating (A)	Frame size	Figure no.	Handle colour	Reference
32 ... 63	1/2	4	Black	3629 7900
100 ... 400	3 ... 6	4	Black	3629 7901
630 ... 1250	17 ... 18	5	Black	1437 7911



External front operation handle

Padlockable handle in position 0							
Rating (A)	Frame size	Handle type	Handle colour	Operation	External IP ⁽¹⁾	Defeatable handle	Reference
CD 25 ... 63	0/11/12	S1	Black	I - 0	IP55	Yes	1411 2111
CD 25 ... 63	0/11/12	S1	Black	I - 0	IP65	Yes	1413 2111
CD 25 ... 63	0/11/12	S1	Red/Yellow	I - 0	IP65	Yes	1414 2111
CD 25 ... 63	0/11/12	S1	Black	I - 0 - Test	IP65	Yes	1413 2115
CD 25 ... 63	0/11/12	S1	Red/Yellow	I - 0 - Test	IP65	Yes	1414 2115
100 ... 400	13 ... 16	S2	Black	I - 0	IP55	Yes	1421 2111
100 ... 400	13 ... 16	S2	Black	I - 0	IP65	Yes	1423 2111
100 ... 400	13 ... 16	S2	Red/Yellow	I - 0	IP65	Yes	1424 2111
100 ... 400	13 ... 16	S2	Black	I - 0 - Test	IP55	Yes	1423 2115
100 ... 400	13 ... 16	S2	Red/Yellow	I - 0 - Test	IP65	Yes	1424 2115
630 ... 800	17	S3	Black	I - 0	IP65	Yes	1433 3111
630 ... 800	17	S3	Red/Yellow	I - 0	IP65	Yes	1434 3111
800 ... 1250	18	S4	Black	I - 0	IP65	Yes	1443 3111
800 ... 1250	18	S4	Red/Yellow	I - 0	IP65	Yes	1444 3111

(1) IP: protection degree according to IEC 60529 standard.

Padlockable handle in position 0 and I						
Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Reference	
CD 25 ... 63	0/11/12	S1	Black	IP65	1413 2311	
100 ... 400	13 ... 16	S2	Black	IP65	1423 2311	

(1) IP: protection degree according to IEC 60529 standard.



External right side operation handle

Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Reference
CD 25 ... 63	0/11/12	S1	Black	IP55	1415 2111
CD 25 ... 63	0/11/12	S1	Black	IP65	1417 2111
CD 25 ... 63	0/11/12	S1	Red/Yellow	IP65	1418 2111
100 ... 400	13 ... 16	S2	Black	IP55	1425 2111
100 ... 400	13 ... 16	S2	Black	IP65	1427 2111
100 ... 400	13 ... 16	S2	Red/Yellow	IP65	1428 2111
630 ... 1250	17/18	S3	Black	IP65	1437 3111
630 ... 1250	17/18	S3	Red/Yellow	IP65	1438 3111

(1) IP: protection degree according to IEC 60529 standard.



External front operation handle with metal padlocking lever

Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Defeatable handle	Reference
CD 25 ... 63	0/11/12	S1	Black	IP65	Yes	141D 2911
CD 25 ... 63	0/11/12	S1	Red/Yellow	IP65	Yes	141E 2911
100 ... 400	13 ... 16	S2	Black	IP65	Yes	142D 2911
100 ... 400	13 ... 16	S2	Red/Yellow	IP65	Yes	142E 2911
600 ... 800	17	S3	Black	IP65	Yes	143D 3911
600 ... 800	17	S3	Red/Yellow	IP65	Yes	143E 3911
800 ... 1250	18	S4	Black	IP65	Yes	144D 3911
800 ... 1250	18	S4	Red/Yellow	IP65	Yes	144E 3911

(1) IP: protection degree according to IEC 60529 standard.



S2 type handle

S3 type handle

S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles.

Adapter can be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



access_187_a_1_cat

Alternative S-type handle cover colours

Use

For single lever handles S1, S2, S3 types and double lever handle, S4 type.
Other colours: please consult us.

Handle colour	To be ordered in multiples of	Handle	Reference
Light grey	50	Type S1, S2	1401 0001
Dark grey	50	Type S1, S2	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041



access_198_a_1_cat

Flat mounting kit

Use

The flat mounting providing compact solution ideally suited to withdrawable applications.

Kit to be used with a handle for flat mounting.

Rating (A)	Frame size	Type	Reference
CD 25 ... CD 32	0	Kit + Shaft 200 mm	1429 7709
50 ... 400	11 ... 16	Kit + Shaft 200 mm	1429 7710



fuser_535_a_1_cat

Handle for flat mounting kit

Padlockable handle in position 0						
Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Reference	
CD 25 ... 63	0/11/12	S1	Black	IP55	1411 2111 ⁽²⁾	
CD 25 ... 63	0/11/12	S1	Red/Yellow	IP65	1414 2111 ⁽²⁾	
100 ... 400	13 ... 16	S2	Black	IP55	1421 2111 ⁽²⁾	
100 ... 400	13 ... 16	S2	Red/Yellow	IP65	1424 2111 ⁽²⁾	

(1) IP: protection degree according to IEC 60529 standard.

(2) Defeatable handle in position I.



S2 type handle.

fuser_536_a_1_cat

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

Accessories (continued)

Front operation shaft support accessory

Use

This support maintains shaft position for extension shafts greater than 320 mm in length.



fuser_698_a_2_cat

Rating (A)	Frame size	Reference
50 ... 400	11 ... 16	3899 0400

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.

Required for a shaft lengths over 320 mm.



access_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

Shaft for external front operation handle

Use

Standard lengths:

- 200 mm
- 320 mm
- 400 mm
- 500 mm.

Other lengths: consult us.

Rating (A)	Frame size	Shaft length (mm)	Reference
CD 20 ... CD 32	0	200	1401 0520
CD 20 ... CD 32	0	320	1401 0532
CD 20 ... CD 32	0	400	1401 0540 ⁽¹⁾
32 ... 400	11 ... 16	200	1400 1020
32 ... 400	11 ... 16	320	1400 1032
32 ... 400	11 ... 16	500	1400 1050 ⁽²⁾
630 ... 800	17	200	1400 1220
630 ... 1250	17/18	320	1400 1232
630 ... 1250	17/18	500	1400 1250 ⁽¹⁾

⁽¹⁾ Use the shaft guide accessory for external operation.

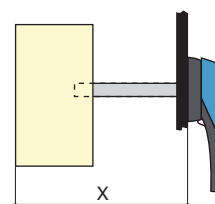
⁽²⁾ Use the front operation shaft support accessory.

access_145_b_1_cat



access_369_a_1_cat

access_202_a_1_x_cat



Dimension X (mm) for FUSERBLOC BS88

Shaft length (mm)	CD 20 ... CD 32	32	63 ... 160	CD160 ... CD200	160 ... 200	250 ... 315	630 ... 800	1250
	A1 0	A1 11	A2-A3/A4 12/13/14	A3-A4 13 A	B1-B2 14/15	B1-B2-B3 15/16	C1-C2-C3 17	D1 18
200	102 ... 245	100 ... 230	125 ... 230	150 ... 230	135 ... 230	160 ... 230	270 ... 304	
320	102 ... 365	100 ... 350	125 ... 350	150 ... 350	135 ... 350	160 ... 350	270 ... 424	304 ... 424
400	102 ... 445							
500		100 ... 530	125 ... 530	150 ... 530	135 ... 530	160 ... 530	270 ... 600	304 ... 600

Dimension X (mm) for FUSERBLOC NFC and DIN

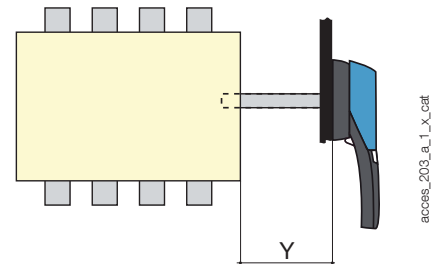
Shaft length (mm)	CD 25 ... CD 32	50	63	100 ... 160	160	250 ... 400	630 ... 800	800 ... 1250
	10x38/14x51 0	14x51 11	00C 12	22x58/00 13	0 14	1/2 15/16	3 17	4 18
200	102 ... 245	100 ... 230	125 ... 230	135 ... 230	145 ... 230	160 ... 230	270 ... 304	
320	102 ... 365	100 ... 350	125 ... 350	135 ... 350	145 ... 350	160 ... 350	270 ... 424	304 ... 424
400	102 ... 445	100 ... 430	125 ... 430	135 ... 430	145 ... 430	160 ... 430	270 ... 504	304 ... 504
500		100 ... 530	125 ... 530	135 ... 530	145 ... 530	160 ... 530	270 ... 604	304 ... 604

Shaft extensions for external side operation

Use

Standard lengths, 200 mm.

Rating (A)	Frame size	Handle type	Dimension Y (mm)	Shaft length (mm)	Reference
CD 25 ... CD 32	0	S	36 ... 159	200	1401 0520
50 ... 400	11 ... 16	S	36 ... 172	200	1400 1020
630 ... 1250	17/18	S	15 ... 150	200	1400 1220



access_203_a_1_X_cat

Integrated solid neutral link

Use

Fixing the solid neutral onto the mechanism produces a device with a solid neutral of the same size as a standard three-pole device (+ 6 mm).

BS88 for external front operation			
Rating (A)	Switch body size	Bar rating (A)	Reference
100	13	125	3829 9310
CD 160 ... CD 200	13a	200	3829 9320
160	14	200	3829 9320
200 ... 250	15	250	3829 9325
315 ... 400	16	400	3829 9339
630 ... 800	17	800	3829 9308
1250	18	1250	3829 9312

NFC and DIN For external front operation			
Rating (A)	Frame size	Bar rating (A)	Reference
100 ... 125	13	125	3829 9310
160	13	160	3829 9320
160	14	200	3829 9320
250	15	250	3829 9325
400	16	400	3829 9339
630 ... 800	17	800	3829 9308
800 ... 1250	18	1250	3829 9312



access_130_a_1_cat

access_131_a_1_cat

Solid neutral module

BS88 for external front operation				
Rating (A)	Switch body size	I _{max} (A)	Distance (mm)	Reference
32	11	32	27	3629 9227
63	12	63	32	3629 9232
100	13	100	36	3629 9236
CD 160 ... CD 200	13 a	200	36	3629 9237
160	14	160	50	3629 9250
200 ... 250	15	250	60	3629 9260
315 ... 400	16	400	66	3629 9266
630 ... 800	17	800	94	3629 9294
1250	18	1250	120	3629 9212

NFC and DIN For external front operation				
Rating (A)	Frame size	I _{max} (A)	Distance (mm)	Reference
50	1/11	50	27	3629 9227
63	2/12	63	32	3629 9232
100 ... 160	3/13	160	36	3629 9236
160	4/14	160	50	3629 9250
250	5/15	250	60	3629 9260
400	6/16	400	60	3629 9266
630 ... 800	17	800	94	3629 9294
800 ... 1250	18	1250	120	3629 9212

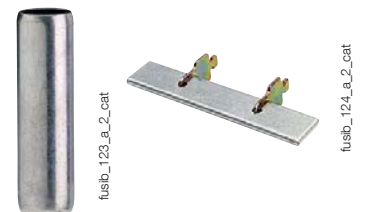


access_199_a_2_cat

Solid links

BS88 switches				
Rating (A)	Frame size	Fuse size	I _{max} (A)	Reference
32	11	A1	32	3629 9003
63	12	A2-A3	63	3629 9006
100	13	A4	160	3629 9010
CD 160	13a	A3-A4	160	3629 9010
160	14	A4	160	3629 9010
160	14	B1-B2	200	3629 9016
CD 200	13a	A3-A4	160	3629 9010
200	15	B1-B2	200	3629 9016
250	15	B1-B2-B3	315	3629 9025
315	16	B1-B2-B3	315	3629 9025
400	16	B1-B2-B3-B4	400	3629 9040
630 ... 800	17	C1-C3	800	3629 9063
1250	18	D1	1250	3629 9120

NFC and DIN switches				
Rating (A)	Frame size	Fuse size	I _{max} (A)	Reference
50	1/11	14 x 51	50	6029 0000
63	2/12	00C	160	6420 0000
100 ... 125	3/13	22 x 58	125	6039 0000
125 ... 160	3/13	00	160	6420 0000
160	4/14	0	160	6421 0000
250	5/15	1	250	6421 0001
400	6/16	2	400	6421 0002
630 ... 800	17	3	630	6421 0003
800 ... 1250	18	4	1250	6441 0005



fusb_123_a_2_cat

fusb_124_a_2_cat

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

Accessories (continued)

A-type auxiliary contacts

Use

Pre-break and position 0 and I signalling by 1 or 2 NO /NC auxiliary contacts.

For low level use, specific auxiliary contacts: please consult us.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

References

NO / NC auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ...CD 32	0	1	3999 0001
CD 20 ...CD 32	0	2	3999 0002
32 ... 400 ⁽¹⁾	1 ... 6	1	3999 0021 ⁽²⁾
32 ... 400 ⁽¹⁾	1 ... 6	2	3999 0022 ⁽²⁾

(1) Side direct operation switch only.

(2) A type auxiliary contacts cannot be mounted in conjunction with integrated solid neutral.

Characteristics

Rating (A)	Current nominal (A)	Operating current I _e (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
CD 20 ... 400	16	4	2	12	2



access_046_a_1_cat

access_047_a_2_cat

U-type auxiliary contacts⁽¹⁾

Use

Compact universal type auxiliary contacts which can be configured for operation in either, or both, ON and TEST positions for CD 20 to 1250 A FUSERBLOC. Each slot can accommodate up to two interlocked A/Cs.

Connection to the control circuit

By terminals with max. section 2 x 2.5 mm².

For FUSERBLOC CD 20 to 400 A: Pre-break and signalling of positions 0, I and TEST.

For FUSERBLOC ≥ 630 A: Pre-break and position 0 and I signalling.

References

NC auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ... 1250	0 ... 18	1	3999 0702

NO auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ... 1250	0 ... 18	1	3999 0701

Contact holder for auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference ⁽¹⁾
CD 20 ... 160	0 ... 14	4 (2 x 2 max)	included
250 ... 400	15/16	8 (4 x 2 max)	included
630 ... 1250	17/18	8 (4 x 2 max)	included

(1) Cannot be mounted in direct operation.

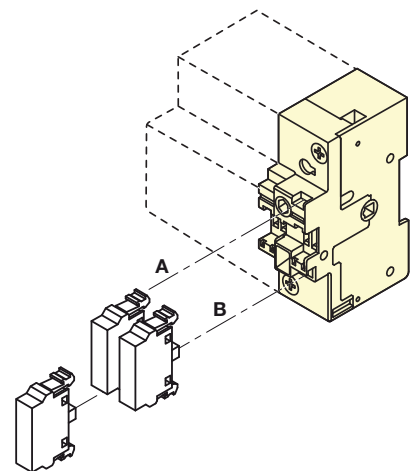
Contact holder for additional auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ...CD 32	0	4 (2 x 2 max)	3999 0710
32 ... 400	11 ... 16	4 (2 x 2 max)	3999 0600

Characteristics

Rating (A)	Operating current I _e (A)			
	250 VAC AC-15	400 VAC AC-15	24 VDC DC-13	48 VDC DC-13
CD 20 ... 1250	3	1.8	2.8	1.4



access_066_a_1_cat



access_043_a_1_LX_cat

(1) U-type auxiliary contacts cannot be mounted with an integrated solid neutral.

S and ST-type auxiliary contacts

Use

For FUSERBLOCs 32 to 1250 A, position 0 and I signalling by 1 to 4 NO + NC auxiliary contacts.

Electrical principle

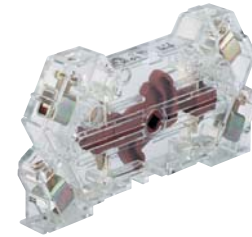
The NO + NC S-type auxiliary contacts can be configured as 2 NC or 2 NO.

Connection

By terminals with max. cross-section 10 mm².

Mechanical characteristics

30 000 operations.



access_051_a_2_cat



access_063_a_1_cat

References

S-type auxiliary contacts 0-I for external front and right-side operation (Standard operation)

Rating (A)	Frame size	Contact type	Reference
32 ... 1250	11 ... 18	NC+NO	3999 0041

ST-type auxiliary contacts I-0-TEST for external front and right-side operation (TEST operation)

Rating (A)	Frame size	Contact type	Description	Reference
32 ... 400	11 ... 16	NC+NO	TEST + ON	3999 0141
32 ... 400	11 ... 16	2 O	TEST + ON	3999 0241

Characteristics

Switch body for signalling auxiliary contact

Contact type	Operation type	Reference
S-type	Standard	3999 0003
ST-type	TEST	3999 0103

Rating (A)	Current nominal (A)	Operating current I _o (A)	
		250 VAC AC-13	400 VAC AC-13
32 ... 1250	20	10	8

Important:

- For the 400 A rating, an adaptation kit reference 3999 0000 must be ordered in addition to the auxiliary contact kit.

Fuse cover interlocking

Use

On NFC and DIN, side direct operation, locking of the opening of the fuse protection cover when FUSERBLOC is engaged (position I).

Rating (A)	Frame size	Fuse size	No. of poles	Reference
CD 20 ... 50	0 ... 11	10 x 38 / 14 x 51	2 / 3 / 4	included
63	12	00C	2 / 3 / 4	3999 8906
100 ... 125	13	22 x 58	2 / 3 / 4	3999 8912
125 ... 160	13	00	2 / 3 / 4	3999 8912
160	14	0	2 P	3999 8216
160	14	0	3 P	3999 8316
160	14	0	4 P	3999 8416
250	15	1	2 P	3999 8225
250	15	1	3 P	3999 8325
250	15	1	4 P	3999 8425
400	16	2	2 P	3999 8240
400	16	2	3 P	3999 8340
400	16	2	4 P	3999 8440

Terminal shrouds

Use

Top or bottom IP20 protection (on the front) against direct contact with terminals or connection parts.

Two sets required to fully shroud both incoming and outgoing terminals.

Rating (A)	Frame size	Position	No. of poles	Reference
CD 20 ... 63	0 ... 12	top / bottom	2 / 3 / 4 P	integrated
100 ... CD 200	13/14	top / bottom	2 P	3998 2016
100 ... CD 200	13/14	top / bottom	3 P	3998 3016
100 ... CD 200	13/14	top / bottom	4 P	3998 4016
200 ... 400	15/16	top / bottom	2 P	3998 2025
200 ... 400	15/16	top / bottom	3 P	3998 3025
200 ... 400	15/16	top / bottom	4 P	3998 4025
630 ... 800	17	top / bottom	2 P	3898 2080
630 ... 800	17	top / bottom	3 P	3898 3080
630 ... 800	17	top / bottom	4 P	3898 4080
800 ... 1250	18	top / bottom	2 P	3898 2120
800 ... 1250	18	top / bottom	3 P	3898 3120
800 ... 1250	18	top / bottom	4 P	3898 4120



fuser_314_a_1_cat

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

Accessories (continued)

NFC and DIN fuse blown indication

Use

For fuse cartridge with striker
(size 14 x 51 22 x 58; 0; 1; 2; 3 and 4).

Electrical principle

A NO/NC auxiliary contact detects that the fuse has blown.

Connection to the control circuit

6.35 mm fast-on terminal.

Mechanical characteristics

30 000 operations.

References

NO/NC type auxiliary contacts for 2 pole

Rating (A)	Frame size	Fuses	Contact(s)	Reference
50	11	14 x 51	1 st	3994 0405
100 ... 125	13	22 x 58	1 st	3994 0210
160	14	0	1 st	3994 0216
250	15/16	1-2	1 st	3994 0225
400	16	2	1 st	3894 0440
630	17	3	1 st	3894 1206
800 ... 1250	18	4	1 st	3894 1212

NO/NC type auxiliary contacts for 3 pole

Rating (A)	Frame size	Fuses	Contact(s)	Reference
CD 32	0	14 x 51	1 st	3994 0303
50	11	14 x 51	1 st	3994 0405
100 ... 125	13	22 x 58	1 st	3994 0310
160	14	0	1 st	3994 0316
250	15/16	1-2	1 st	3994 0325
400	16	2	1 st	3894 0440
630	17	3	1 st	3894 1306
800 ... 1250	18	4	1 st	3894 1312
50 ... 250	11	-	2 nd	3994 1901
400	16	2	2 nd	3994 1902
630 ... 1250	16	-	2	3994 1901

NO/NC type auxiliary contacts for 4 pole or 3 pole + neutral

Rating (A)	Frame size	Fuses	Contact(s)	Reference
50	11	14 x 51	1 st	3994 0405
100 ... 125	13	22 x 58	1 st	3994 0410
160	14	0	1 st	3994 0416
250	15/16	1-2	1 st	3994 0425
400	16	2	1 st	3894 0440
630	17	3	1 st	3894 1406
800 ... 1250	18	4	1 st	3894 1412
50 ... 250	11	-	2 nd	3994 1901
400	16	2	2 nd	3994 1902
630 ... 1250	16	-	2	3994 1901

Characteristics

Rating (A)	Current nominal (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
CD 32 ... 1250	16	4	3	12	2



DDMM for cylindrical fuses



DDMM for NH fuses

Electronic fuse blown indication (FMD)

Use

Provides fuse blown indication with fuse links without fuse blown indication strikers. Suitable for use with BS88, DIN and UL type fuses.

Principle

The Fuse Melting Device (FMD) detects the operation of a fuse and provides a signal via: a relay and 1 LED (FMD10) or a bi-stable relay and 3 LEDs (FMD30).

The FMD can be DIN rail or back plate mounted close to the Fuserbloc, directly mounted on the FUSERBLOC, or it can be door mounted to provide information directly on the front of a panel.

References

For FUSERBLOC 63 to 1250A - size 000 to 4

Nb of LEDs	Operating voltage	Reference
1 (FMD10)	120 - 260 VDC	3899 1120
1 (FMD10)	380 - 690 VDC	3899 1380
3 (FMD30)	120 - 260 VDC	3899 3120
3 (FMD30)	380 - 690 VDC	3899 3380

Accessories

Accessories	Reference
Kit for connection accessories	Standard 3819 9120
Kit for connection accessories	Door mounted 3829 9120

Relay characteristics

Rating (A)	Relay operating current I _c (A)	
	AC-15	DC-13
63 ... 1250	2.5 A	0.2



1 LED version (FMD10)

3 LED version (FMD30)

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

References

Rating max (A)	Frame size	No. of poles	Reference
CD 20 ... 63	0 ... 12	2 / 3 / 4 P	integrated
100 ... 160	13/14	3 P	5400 3016
100 ... 160	13/14	4 P	5400 4016
250	15	3 P	5400 3025
250	15	4 P	5400 4025
400	16	3 P	5400 3040
400	16	4 P	5400 4040



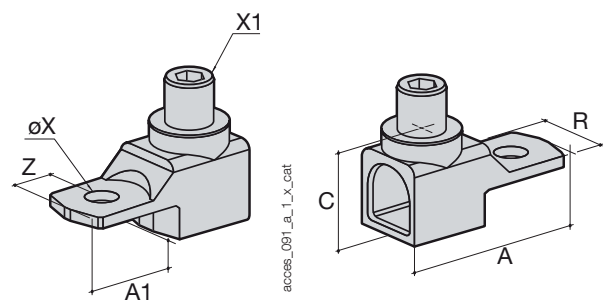
access_053_a_1_cat

Connections

Rating (A)	Flexible cable cross-section (mm ²)	Rigid cable cross-section (mm ²)	Flexible bar width (mm)	Stripped over (mm)
100 ... 160	16 ... 95	16 ... 95	13	22
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34

Dimensions

Rating (A)	A	A1	C	R	ØX	X1	Z
100 ... 160	47.5	22.5	25	20	8.5	M12	10
250	62	31.5	31.5	25	10.5	M16	14
400	71.5	32	38	32	10.5	M20	15



access_091_a_1_x_cat

access_092_a_1_x_cat

Handle key interlocking accessories

Use

Locking in position 0 of the direct, front or right side operation:

- using a padlock (not supplied) in direct right side operation: integrated into the handle,

- using a padlock (not supplied): right-side or front operation switch from 32 to 1250 A, factory integrated

- using a padlock (not supplied) in external operation.

Locking using RONIS EL 11 AP lock (not supplied)

Rating (A)	Frame size	Operation	Figure n°	Reference
CD 20 ... 1250	0 ... 18	external front	2	1499 7701
32 ... 63	1/2	direct	1	3629 7903
100 ... 400	3 ... 6	direct	1	3629 7913
630 ... 1250	17 ... 18	direct		3829 7923

Locking using K-type CASTELL lock (not supplied)

Rating (A)	Frame size	Operation	Figure n°	Reference
CD 20 ... 1250	0 ... 18	external front	3	1499 7702

Locking using FS-type CASTELL lock (not supplied)

Rating (A)	Frame size	Operation	Figure n°	Reference
CD 20 ... 1250	0 ... 18	external front	3	1499 7703

Locking using XOP (not supplied)

Rating (A)	Frame size	Operation	Reference
CD 20 ... 1250	0 18	external front	1499 7702

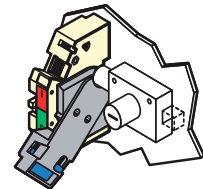


Fig. 1

access_042_a_1_x_cat

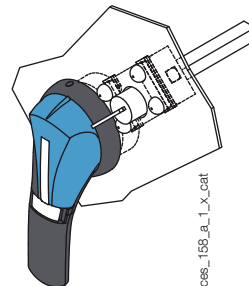


Fig. 2

access_168_a_1_x_cat

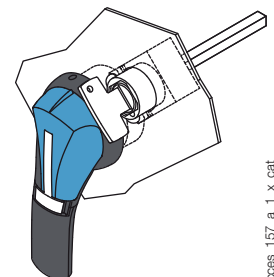


Fig. 3

access_157_a_1_x_cat

Label holder

Use

Recognisable self-adhesive label allowing identification of the devices.

Dimensions W x H (mm)	To be ordered in multiples of	Reference
18 x 13	50	7769 9999



access_044_a_1_cat

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

Characteristics according to IEC 60947-3

20 to 100 A

Thermal current I_{th} (40°C)	20 A	25 A	CD 32 A	CD 32 A	32 A	50 A	63 A	100 A
BS88/DIN fuse size	A1/-	-/10 x 38	-/10 x 38	A1/14 x 51	A1/-	-/14 x 51	A2-A3/00C	A4*/22 x 58
Frame size for direct operation	0	0	0	0	1	1	2	3
Switch body size for front and side operation	0	0	0	0	11	11	12	13
Rated insulation voltage U_i (V)	800	800	800	800	750	750	750	750
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100/100
400 VAC	AC-23 A / AC-23 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100/100
690 VAC	AC-22 A / AC-22 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100 ⁽⁴⁾ /100 ⁽⁴⁾
690 VAC	AC-23 A / AC-23 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100 ⁽⁴⁾ /100 ⁽⁴⁾
220 VDC	DC-20 A / DC-20 B			-/32		32/32	50/50	63/63	100/100
220 VDC	DC-21 A / DC-21 B		-/25 ⁽²⁾			32/32	40/40	40/40	100/100
440 VDC	DC-20 A / DC-20 B					32 ⁽³⁾ /32 ⁽³⁾	50 ⁽³⁾ /50 ⁽³⁾	63 ⁽³⁾ /63 ⁽³⁾	100 ⁽³⁾ /100 ⁽³⁾
440 VDC	DC-21 A / DC-21 B					32 ⁽³⁾ /32 ⁽³⁾	40 ⁽³⁾ /40 ⁽³⁾	40 ⁽³⁾ /40 ⁽³⁾	100 ⁽³⁾ /100 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	9/9	11/11	15/15	15/15	15/15	25/25	30/30	51/51
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	15/15	22/22	25/25	25/25	25/25	45/45	55/55	90/90

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	8	11	15	15	15	23	28	45
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Fuse protected short-circuit withstand BS88/DIN (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	80/-	-/100	-/100	80/100	80/100	-/100	80/100	80/100
Associated fuse rating (A) ⁽⁶⁾	20/-	-/25	-/32	32/32	32/32	-/50	63/63	100/100

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	5.5	5.5	5.5	5.5	9	7.6	10.6	20
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Fuse selection (maximum fuse size)⁽⁷⁾

SOCOMECS BS88	6A10 0020	6012 0025	6012 0032	6A10 0032	6A10 0032		6A30 0063	6A40 0100
SOCOMECS BS88	6A1M 0032	6013 0025	6013 0032	6A1M 0063	6A1M 0032		6A3M 0080	6A4M 0125
SOCOMECS DIN						6022 0050	6600 0063	6032 0100
SOCOMECS DIN						6023 0050	6601 0063	6033 0100
BUSSMANN	NITD 20			NITD 32	NITD 32		BAO 63	CEO 100
BUSSMANN	NITD 20M32			NITD 32M63	NITD 32M63		BAO 63M80	CEO 100M125
LAWSON	NIT 20			NIT 32	NIT 32		TIS 63	TCP 100
LAWSON	NIT 20M32				NIT 20M32		TIS 63M80	CTFP 100M125
GE	NIT 20			NET 32	NET 32		TIS 63	TCP 100
GE	NIT 20M32			NET 32M63	NET 32M63		TIS 63M80	OCP 100M125

Connection

Minimum Cu cable cross-section (mm ²)	2.5	2.5	2.5	2.5	6	6	10	25
Maximum Cu cable cross-section (mm ²)	16	16	16	16	25	25	25	95
Maximum busbar width (mm)								20
Min. / Max. tightening torque min (Nm)	2/-	2/-	2/3	2	2.5/3	2.5/3	2.5/3	8.3/13

Mechanical characteristics

Durability (number of operating cycles)	20 000	20 000	20 000	20 000	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)	0.48	0.48	0.48	0.50	0.80	0.80	1	1.5
Weight of 4 P switch (kg)	0.50	0.50	0.50	0.52	1	1	1.3	2
Weight of 1 P extra (kg)					0.2	0.2	0.3	0.5
Frame pitch (mm)					32	27	32	36

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or terminal screen.

(3) 4-pole device with 2 pole in series by polarity.

(4) Poles cannot be juxtaposed.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_o = 400$ VAC.

(7) Fuse 800 A, 690 VAC does not exist, tests conducted with bars.

* For fuse size A4: max diameter 31 mm.

** Please ensure that fuse let through current does not exceed short-circuit capacity of the switch (kA peak).

125 to 200 A

Thermal current I_{th} (40°C)	125 A	125 A	160 A	CD 160 A	160 A	160 A	CD 200 A	200 A
NFC/DIN fuse size	-/22 x 58	-/00	-/00	A3-A4*/-	A4/0	B1-B2/-	A3-A4*/-	B1-B2/-
Frame size for direct operation	3	3	3		4	4		5
Switch body size for front and side operation	13	13	13	13 A	14	14	13 A	15
Rated insulation voltage U_i (V)	750	750	750	750	750	750	750	750
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	125/125	125/125	160/160	160/160	160/160	160/160	200/200	200/200
400 VAC	AC-23 A / AC-23 B	125/125	125/125	160/160	160/160	160/160	160/160	200/200	200/200
690 VAC	AC-22 A / AC-22 B	125 ^{(2)/125⁽²⁾}	125 ^{(2)/125⁽²⁾}	160 ^{(2)/160⁽²⁾}	160 ^{(2)/160⁽²⁾}	160 ^{(2)/160⁽²⁾}	160 ^{(2)/160⁽²⁾}	160 ^{(2)/160⁽²⁾}	200 ^{(2)/200⁽²⁾}
690 VAC	AC-23 A / AC-23 B	100 ^{(2)/100⁽²⁾}	100 ^{(2)/100⁽²⁾}	125 ^{(2)/125⁽²⁾}	125 ^{(2)/125⁽²⁾}	125 ^{(2)/125⁽²⁾}	125 ^{(2)/125⁽²⁾}	125 ^{(2)/125⁽²⁾}	200 ^{(2)/160⁽²⁾}
220 VDC	DC-20 A / DC-20 B	125/125	125/125	160/160	160/160	160/160	160/160	160/160	200/200
220 VDC	DC-21 A / DC-21 B	100/100	100/100	125/125	125/125	125/125	125/125	125/125	200/200
440 VDC	DC-22 A / DC-22 B	125 ^{(3)/125⁽³⁾}	125 ^{(3)/125⁽³⁾}	160 ^{(3)/160⁽³⁾}	160 ^{(3)/160⁽³⁾}	160 ^{(3)/160⁽³⁾}	160 ^{(3)/160⁽³⁾}	160 ^{(3)/160⁽³⁾}	200 ^{(3)/200⁽³⁾}
440 VDC	DC-23 A / DC-23 B	100 ^{(3)/100⁽³⁾}	100 ^{(3)/100⁽³⁾}	125 ^{(3)/125⁽³⁾}	160 ^{(3)/160⁽³⁾}	125 ^{(3)/125⁽³⁾}	125 ^{(3)/125⁽³⁾}	125 ^{(3)/125⁽³⁾}	200 ^{(3)/200⁽³⁾}

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	63/63	63/63	80/80	80/80	80/80	80/80	80/80	100/100
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	90/90	90/90	110/110	110/110	110/110	110/110	110/110	150/185

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	55	55	75	70	75	75	90	90
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	-/100	-/100	-/100 (50)	50/-	80/100	80/100	50/-	80/-
Associated fuse rating (A) ⁽⁶⁾	-/125	-/125	-/125 (160)	160/-	160/160	160/160	200/-	200/-

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	20	20	20	20	22.7	22.7	20	32.5
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Fuse selection (maximum fuse size)⁽⁷⁾

SOCOMECS BS88				6A40 0160	6A40 0160	6B20 0160	6A40 0200	6B20 0200
SOCOMECS BS88				6A4M 0160	6A4M 0160	6B1M 0200	6A4M 0315	6B2M 0315
SOCOMECS DIN	6032 0125	6692 0125	6692 0160			6702 0160		
SOCOMECS DIN	6033 0125	6693 0125	6693 0160			6703 0160		
BUSSMANN				DEO 160	DEO 160	DD 160	DEO 200	DD 200
BUSSMANN				CEO 100M160	DEO 100M200	CD 100M200	DEO 200M315	DD 200M315
LAWSON				CTFP 160	TFP 160	TF 160	TF 200	TF 200
LAWSON				CTCP 100M160	TCP 100M200	TCP 100M200	TC 200M315	TC 200M315
GE				TCP 100	TFP 160	TF 160	TF 200	TF 200
GE				OCP 100M160	TCP 100M201	TC 100M200	TF 200M315	TF 200M315

Connection

Minimum Cu cable cross-section (mm ²)	35	35	35	35	50	50	35	95
Maximum Cu cable cross-section (mm ²)	95	95	95	95	95	95	95	240
Maximum busbar width (mm)	20	20	20	20	20	20	20	32
Tightening torque min (Nm)	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	20/26

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)	1.5	1.5	1.8	1.8	1.8	1.8	1.8	3.2
Weight of 4 P switch (kg)	2	2	2.3	2.3	2.3	2.3	2.3	4.5
Weight of 1 P extra (kg)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.3
Frame pitch (mm)	36	36	36	36	50	50	36	60

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 400$ VAC.

(7) Fuse 800 A, 690 Vac does not exist, tests conducted with bars.

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

Characteristics according to IEC 60947-3 (continued)

250 to 1250 A

Thermal current I_{th} (40°C)	250 A	315 A	400 A	630 A	800 A	800 A	1250 A
NFC/DIN fuse size	B1-B2-B3/1	B1-B2-B3/-	B1-B2-B3-B4/2	C1-C2/3	C1-C2-C3/3	-/4	D1/4
Frame size for direct operation	5	6	6	17	17	18	18
Switch body size for front and side operation	15	16	16	17	17	18	18
Rated insulation voltage U_i (V)	750	800	800	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	250/250	315/315	400/400	630/630	800/800	800/800	1250/1250
400 VAC	AC-23 A / AC-23 B	250/250	315/315	400/400	630/630	800/800	800/800	1000/1250
690 VAC	AC-22 A / AC-22 B	250 ⁽²⁾ /250 ⁽²⁾	315 ⁽²⁾ /315 ⁽²⁾	400/400	500/630	800/800	800/800 ⁽⁷⁾	800/1250
690 VAC	AC-23 A / AC-23 B	250 ⁽²⁾ /250 ⁽²⁾	250 ⁽²⁾ /315 ⁽²⁾	400/400	315/400	630/630	800/800 ⁽⁷⁾	800/630
220 VDC	DC-20 A / DC-20 B	250/250	250/250	315/315	315/630	800/800	800/800	1250/1250
220 VDC	DC-21 A / DC-21 B	200/200	200/200	200/315	400/630	800/800	800/800	1250/1250
440 VDC	DC-22 A / DC-22 B	250 ⁽³⁾ /250 ⁽³⁾	250 ⁽³⁾ /250 ⁽³⁾	315 ⁽⁴⁾ /315 ⁽⁴⁾	315/630 ⁽⁴⁾	800 ⁽³⁾ /800 ⁽³⁾	800/800	1000 ⁽³⁾ /1000 ⁽³⁾
440 VDC	DC-23 A / DC-23 B	200 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	250 ⁽⁴⁾ /315 ⁽⁴⁾	400 ⁽⁴⁾ /630 ⁽⁴⁾	800 ⁽³⁾ /800 ⁽³⁾	800/800 ⁽³⁾	1000 ⁽³⁾ /1000 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	132/132	160/160	220/220	355/355	450/450	450/450	560/560
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	220/220	220/295	220/295	295/400	400/400	400/400	400/475

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	115	145	185	290	365	355	460
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	80/100	80/-	80/50	80/100	80/100	-/100	-/100
Associated fuse rating (A) ⁽⁶⁾	250/250	315/-	400/400	630/630	800/800	-/800	-/1250

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	32.5	40	40	70	80	80	90
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Fuse selection (maximum fuse size)⁽⁷⁾

SOCOMECS BS88	6B20 0250	6B30 0315	6B40 0400	6C20 0630	6C30 0800		
SOCOMECS BS88	6B2M 3015	6B3M 0400	6B4M 0500				
SOCOMECS DIN	6712 0250		6722 0400	6732 0400		6746 0800	6746 1200
SOCOMECS DIN	6713 0250		6723 0400	6733 0400		6747 0800	6747 1200
BUSSMANN	ED 250	ED 315	ED 400	FF 630	GF 800		
BUSSMANN	DD 200M315	ED 315M400	ED 400M500				
LAWSON	TKF 250	TKF 315	TMF 400	TTM 630	TLM 800		
LAWSON	TF 200M315	TKF 315M400	TMF 400M500				
GE	TKF 250	TKF 315	TMF 400	TTM 630	TLM 800		
GE	TF 200M315	TKF 315M355	TMF 400M450				

Connection

Minimum Cu cable cross-section (mm ²)	95	185	185	2 x 150	2 x 185		
Maximum Cu cable cross-section (mm ²)	240	240	240	2 x 300	2 x 300	4 x 185	4 x 185
Maximum busbar width (mm)	32	45	45	63	63	80	80
Tightening torque min (Nm)	20/26	20/26	20/26	40/45	40/45	40/45	40/45

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	8 000	8 000	5 000	5 000
Weight of 3 P switch (kg)	3.2	4.8	4.8	16	17	25	25
Weight of 4 P switch (kg)	4.5	6.1	6.1	20	21.5	30	30
Weight of 1 P extra (kg)	1.3	1.3	1.3			3	3
Frame pitch (mm)	60	66	66	94	94	120	120

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or terminal screen.

(3) 4-pole device with 2 pole in series by polarity.

(4) Poles cannot be juxtaposed.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_n = 400$ VAC.

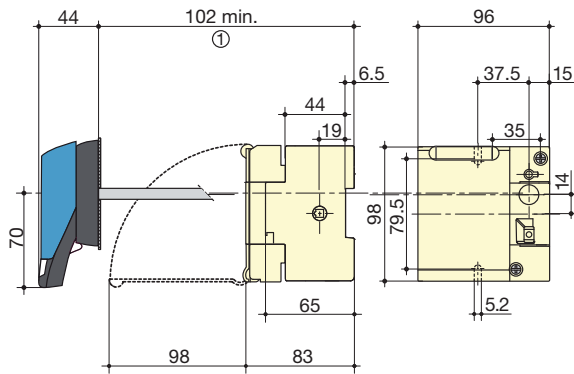
(7) Fuse 800 A, 690 VAC does not exist, tests conducted with bars.

** Please ensure that fuse let through current does not exceed short-circuit capacity of the switch (kA peak).

External operation

BS88 - FUSERBLOC CD 20 to CD 32 A in size A1

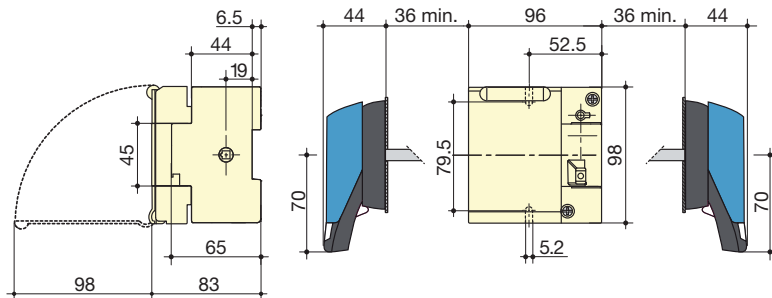
External front operation



v/fuser_292_d_1_x_cat

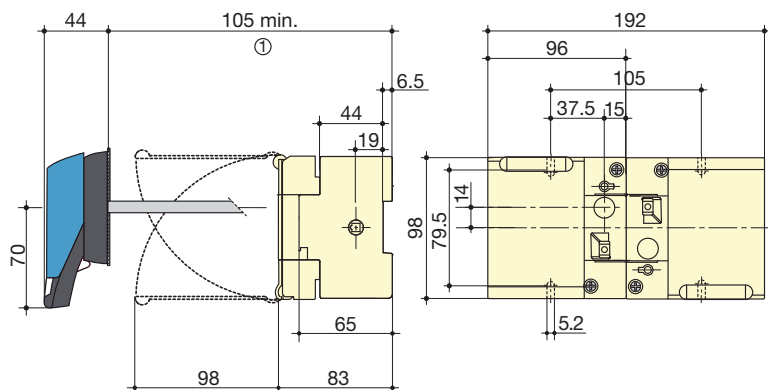
1. With 1 U-type AC: 130 mm
 With 2 U-type AC: 155 mm.

External side operation



fuser_295_c_1_x_cat

External front operation fuse combination changeover



fuser_440_b_1_x_cat

1. With 1 U-type AC: 130 mm
 With 2 U-type AC: 155 mm.

FUSERBLOC

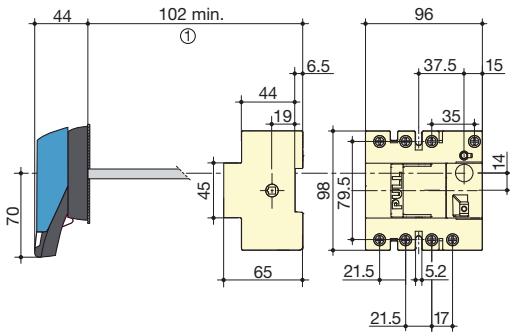
Fuse combination switches

for industrial fuses up to 1250 A

External operation

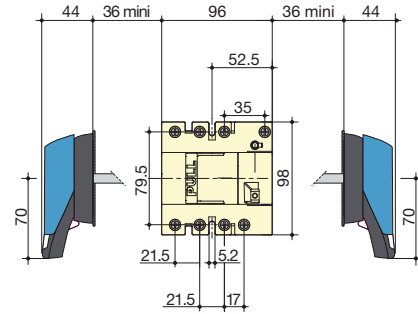
NFC and DIN - FUSERBLOC 25 to 32 A in size 10 x 38

External front operation



fuser_291_d_1_x_cat

External side operation

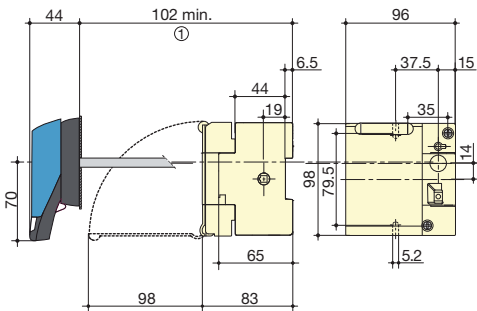


fuser_294_c_1_x_cat

1. With 1 U-type AC: 130 mm.
With 2 U-type AC: 155 mm.

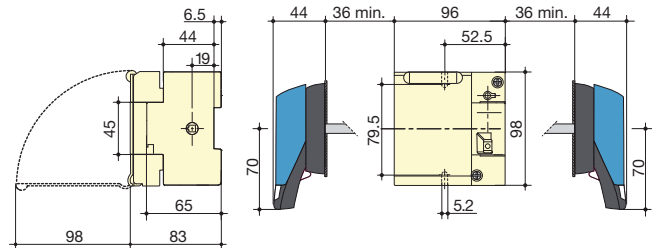
NFC and DIN - FUSERBLOC 32 A in size 14 x 51

External front operation



fuser_292_d_1_x_cat

External side operation

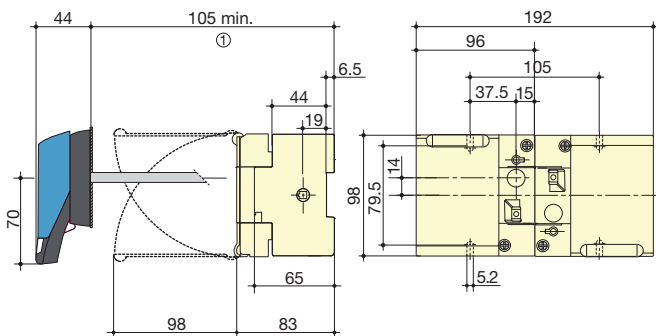


fuser_295_c_1_x_cat

1. With 1 U-type AC: 130 mm.
With 2 U-type AC: 155 mm.

NFC and DIN - FUSERBLOC 25 to 32 A in size 10 x 38 and 14 x 51

External front operation fuse combination changeover



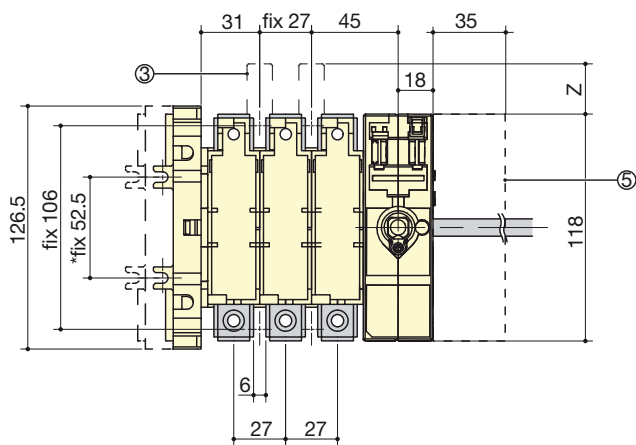
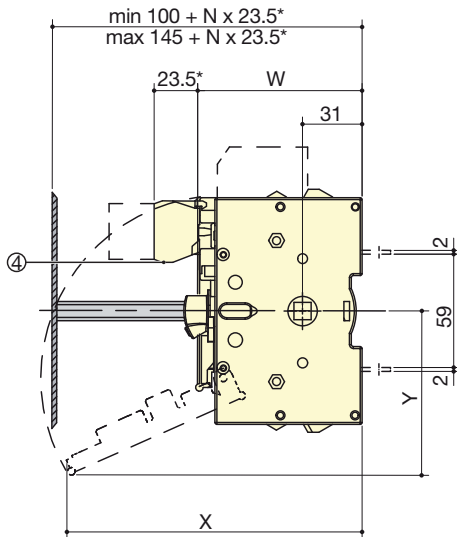
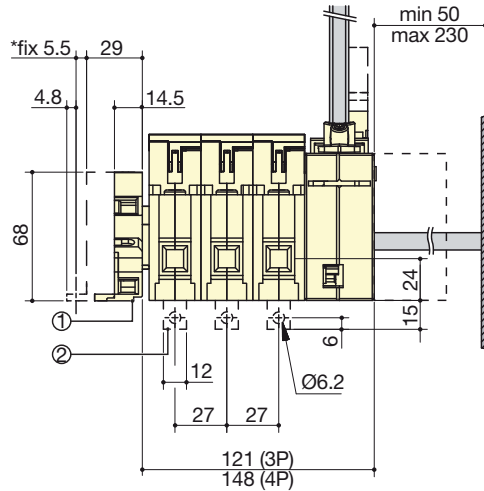
fuser_440_b_1_x_cat

1. With 1 U-type AC: 130 mm.
With 2 U-type AC: 155 mm.

External front or right side operation

BS88 - FUSERBLOC 32 A in fuse size A1

NFC and DIN - FUSERBLOC 50 A in fuse size 14 x 51



* to use if pre-break auxiliary contact number > 4
W: 84.5 for BS88; 87 for NFC and DIN
X: 153 only for DIN
Y: 85 only for DIN
Z: 26 only for DIN

1. S-type auxiliary contact NO + NC to use if block number > 4
2. Rear connection (option)
3. 1 or 2 pre-break auxiliary contact (fuse blown indication)
4. 1 to 4 pre-break auxiliary contact for signalisation
5. Additional contact holder for U-type AC

Dimensions for external operation handles

BS88 - FUSERBLOC 32 to 63 A - NFC and DIN - FUSERBLOC 25 to 63 A

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S1 type Box size 0 				

FUSERBLOC

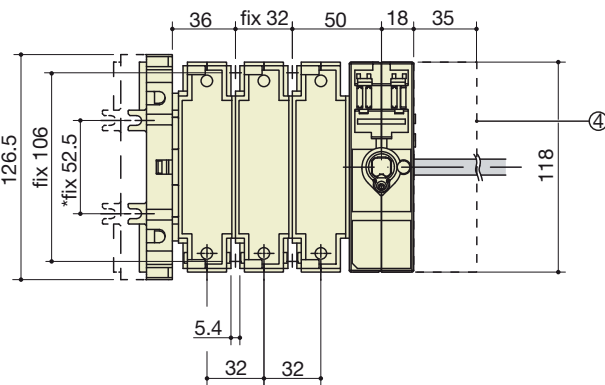
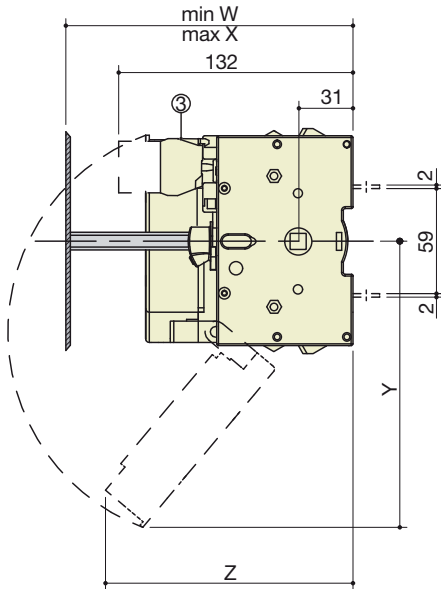
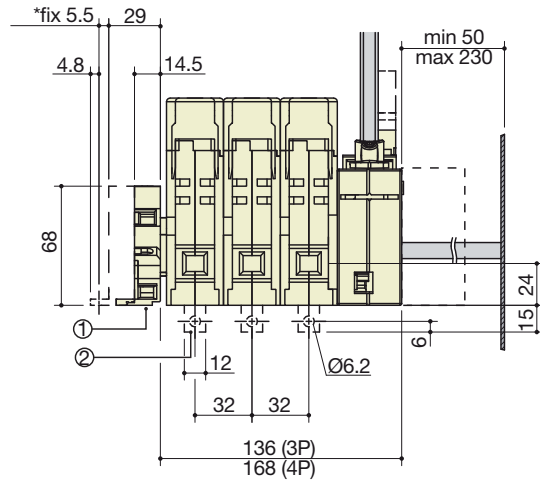
Fuse combination switches

for industrial fuses up to 1250 A

External front or right side operation

BS88 - FUSERBLOC 63 A in fuse size A2 - A3

NFC and DIN - FUSERBLOC 63 A in fuse size 00C



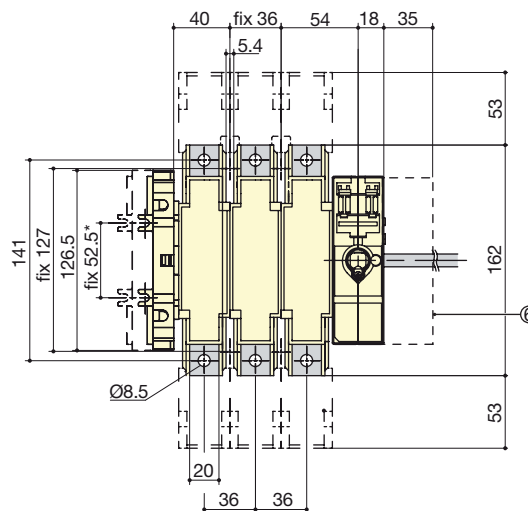
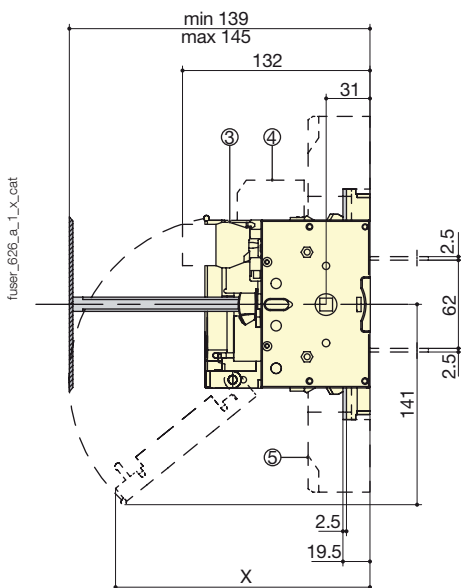
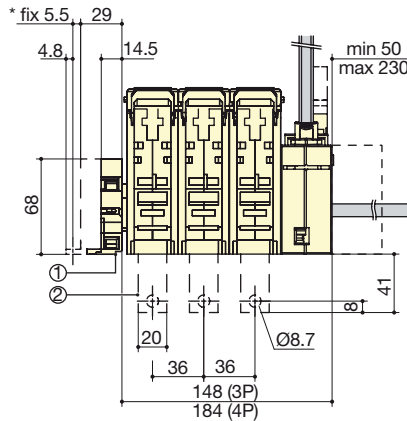
* to use if pre-break auxiliary contact number > 4
 W: 124 + N x 23.5 for BS88; 139 for NFC and DIN
 X: 145 + N x 23.5 for BS88; 145 for NFC and DIN
 Y: 159 only for DIN
 Z: 145 only for DIN

1. S-type auxiliary contact NO + NC to use if block number > 4
 2. Rear connection (option)
 3. 1 to 4 pre-break auxiliary contact for signalisation
 4. Additional contact holder for U-type AC

BS88 - FUSERBLOC 100 A
in fuse size A4 - max Ø 31 mm

NFC and DIN

- FUSERBLOC 100 to 125 A in fuse size 22 x 58
- FUSERBLOC 125 to 160 A in fuse size 00



* to use if pre-break auxiliary contact number > 4
X: 179 for BS88 / NFC and DIN 100 to 125 A
189 for NFC and DIN 125 to 160 A

1. S-type auxiliary contact NO + NC to use if block number > 4
2. Rear connection (option)
3. 1 to 4 pre-break auxiliary contact for signalisation
4. 1 or 2 pre-break auxiliary contact (fuse blown indication)
5. Terminal shrouds
6. Additional contact holder for U-type AC

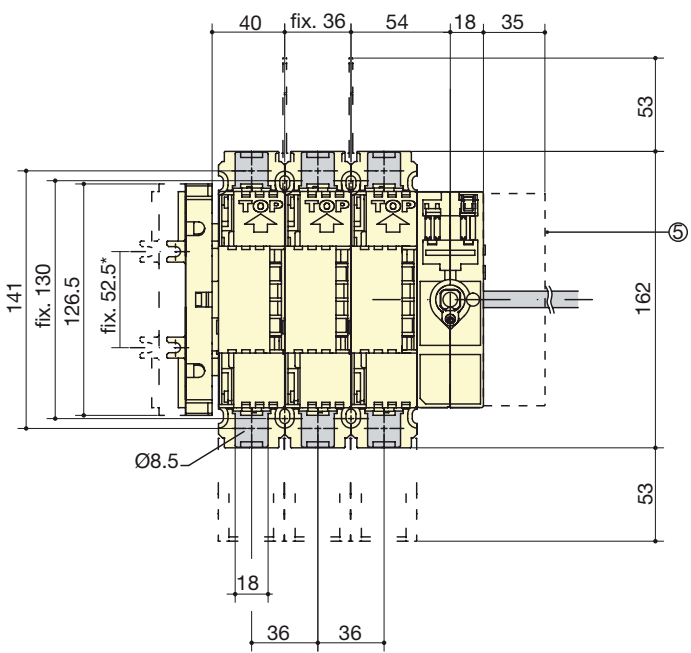
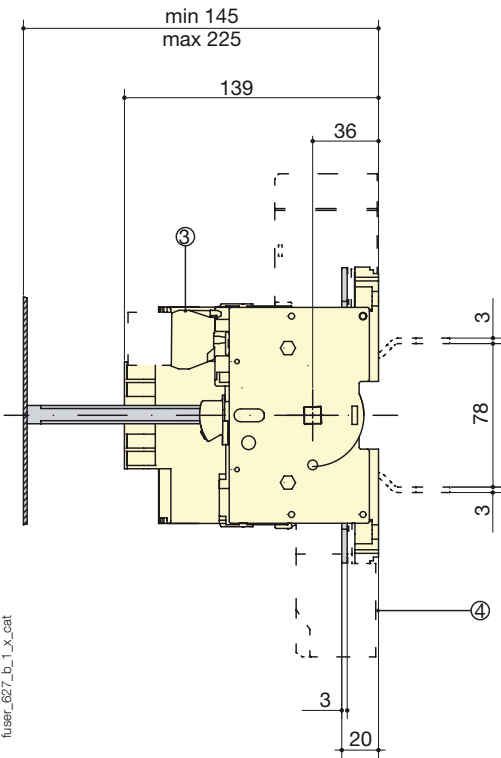
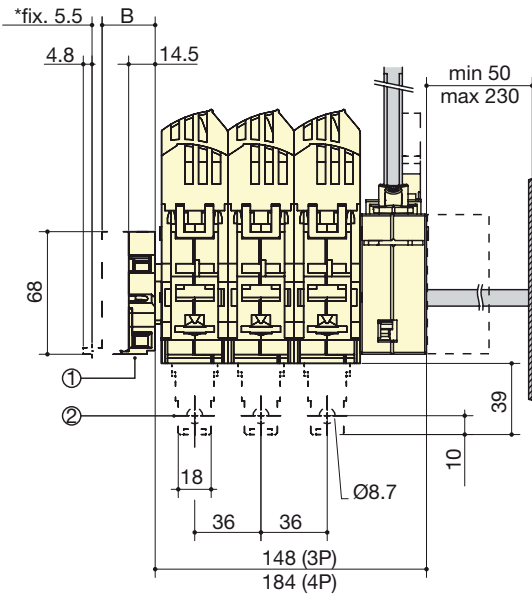
FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

External front or right side operation

BS88 - FUSERBLOC CD 160 to CD 200 A in fuse size A3-A4 (A4 max Ø 31 mm)

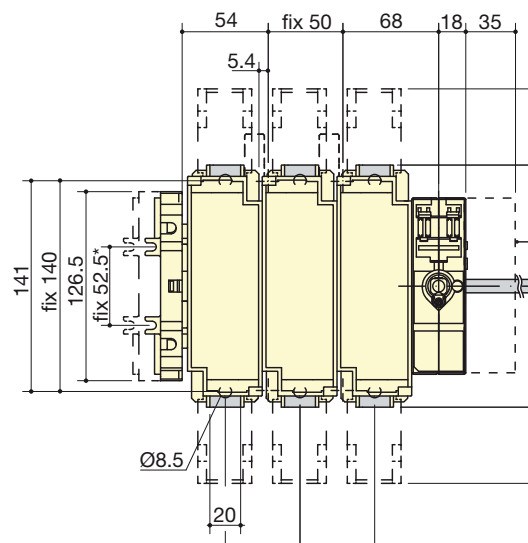
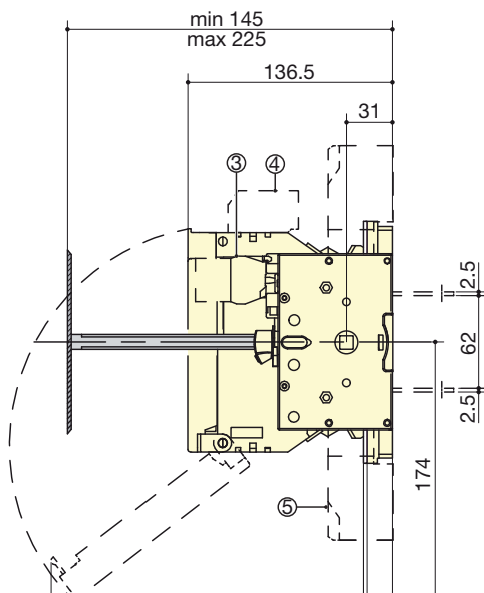
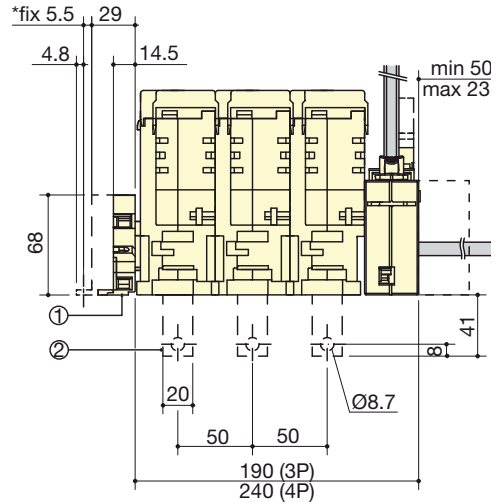


* to use if pre-break auxiliary contact number > 4
 1. S-type auxiliary contact NO + NC to use if block number > 4
 2. Rear connection (option)

3. 1 to 4 pre-break auxiliary contact for signalisation
 4. Terminal shrouds
 5. Additional contact holder for U-type AC

BS88 - FUSERBLOC 160 A in fuse size A4 & B1-B2

NFC and DIN - FUSERBLOC 160 A in fuse size 0



- * to use if pre-break auxiliary contact number > 4
 1. S-type auxiliary contact NO + NC to use if block number > 4
 2. Rear connection (option)
 3. 1 to 4 pre-break auxiliary contact for signalisation

4. 1 or 2 pre-break auxiliary contact (fuse blown indication)
 5. Terminal shrouds
 6. Additional contact holder for U-type AC

FUSERBLOC

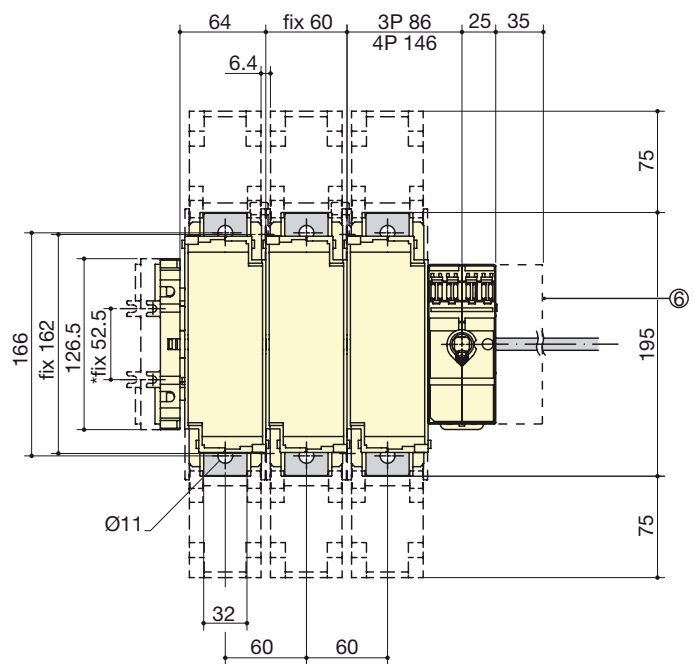
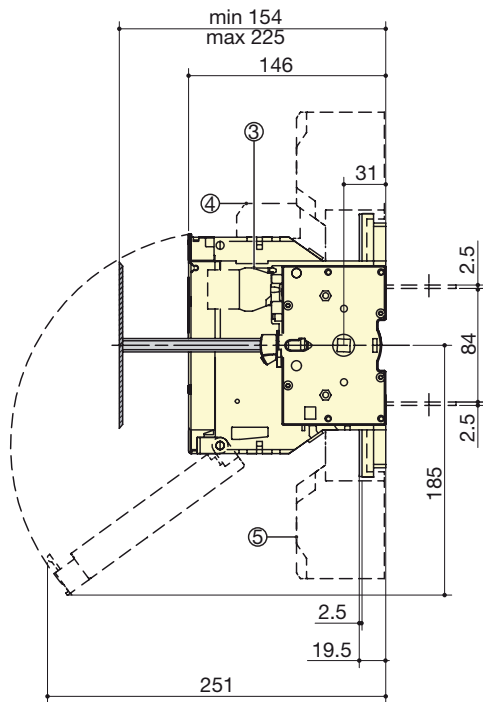
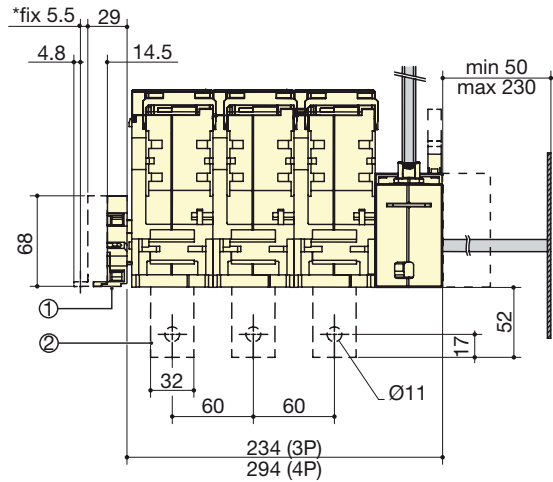
Fuse combination switches

for industrial fuses up to 1250 A

External front or right side operation

BS88 - FUSERBLOC 200 A in fuse size B1-B2
FUSERBLOC 250 A in fuse size B1-B2-B3

NFC and DIN - FUSERBLOC 250 A in fuse size 1



* to use if pre-break auxiliary contact number > 4

1. S-type auxiliary contact NO + NC to use if block number > 4
2. Rear connection (option)
3. 1 to 8 pre-break auxiliary contact for signalisation

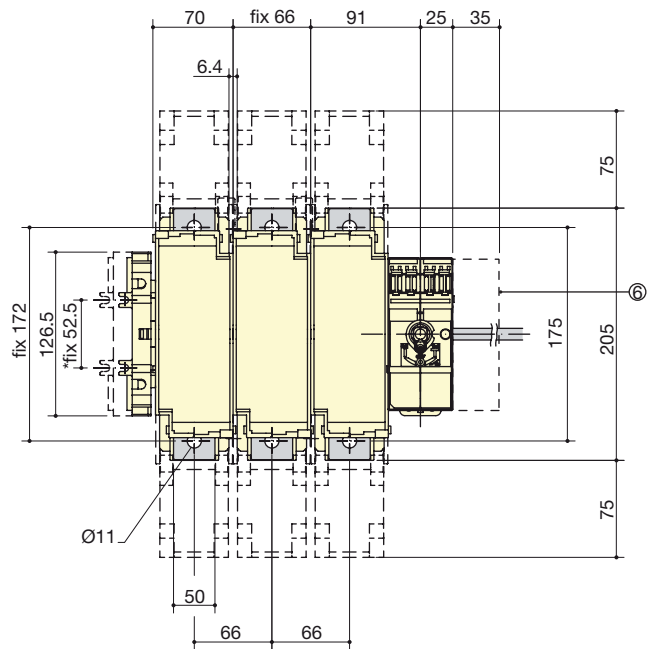
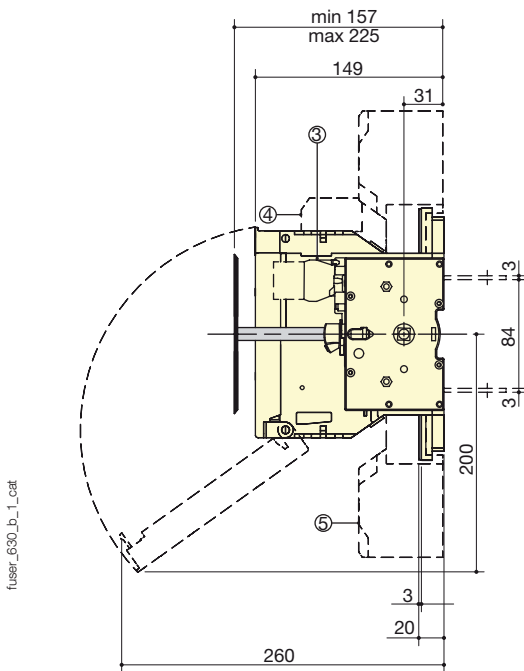
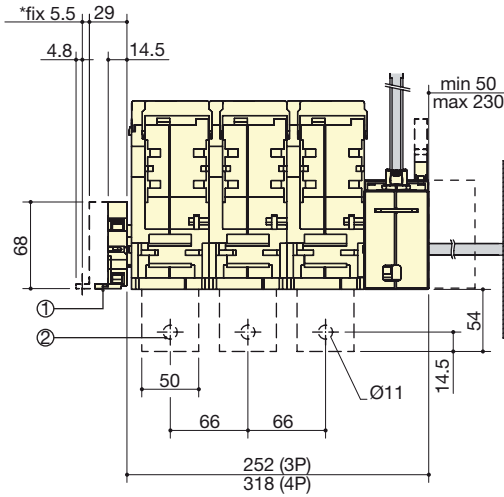
4. 1 or 2 pre-break auxiliary contact (fuse blown indication)

5. Terminal shrouds
6. Additional contact holder for U-type AC

BS88 - FUSERBLOC 315 A in fuse size B1-B2-B3
FUSERBLOC 400 A in fuse size B1-B2-B3-B4

NFC and DIN - FUSERBLOC 400 A in fuse size 2

- * to use if pre-break auxiliary contact number > 4
1. S-type auxiliary contact NO + NC to use if block number > 4
 2. Rear connection (option)
 3. 1 to 8 pre-break auxiliary contact for signalisation, 1 or 2 pre-break auxiliary contact (fuse blown indication)
 4. Terminal shrouds
 5. Additional contact holder for U-type AC



Dimensions for external operation handles

BS88 / NFC and DIN - FUSERBLOC 100 to 400 A

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S2 type Box size 11-16 				

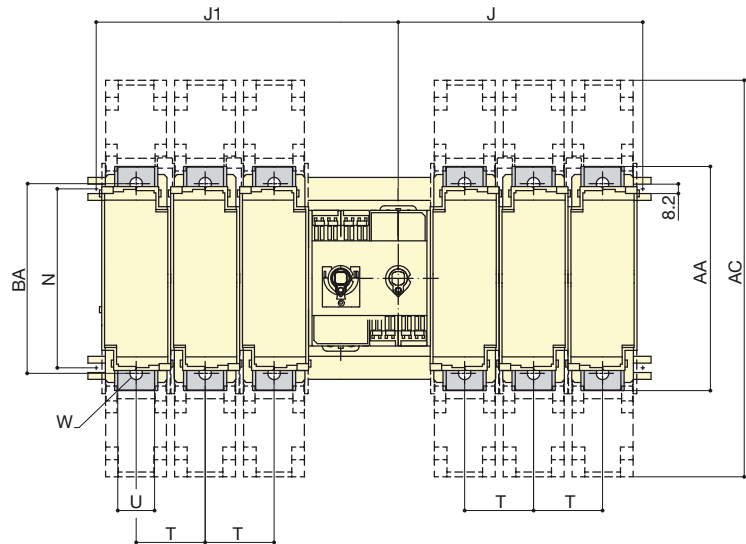
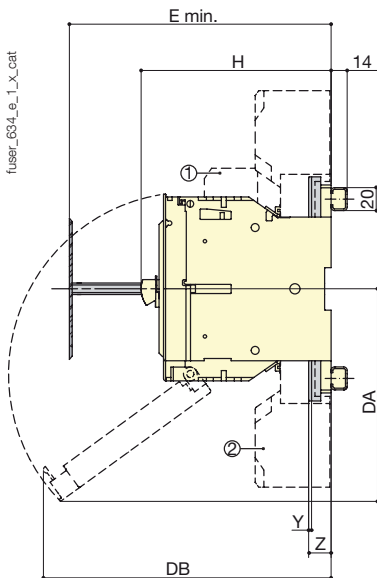
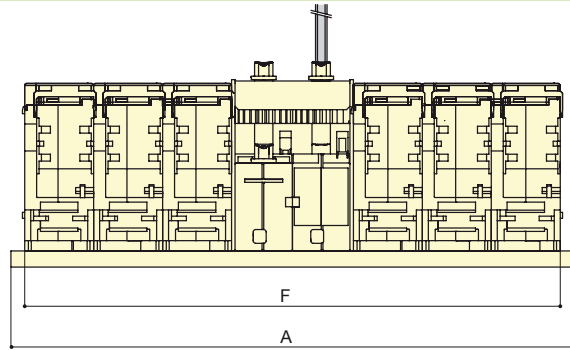
FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

BS88 - External front operation fuse combination changeover

FUSERBLOC 32 to 400 A



- A. S1 handle: 32 and 63 A
- B. S1 handle: 100 to 400 A
- C. Door drilling

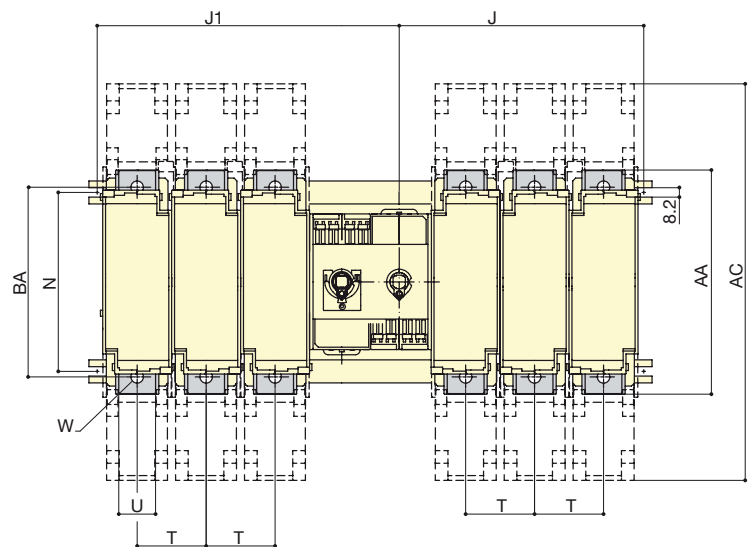
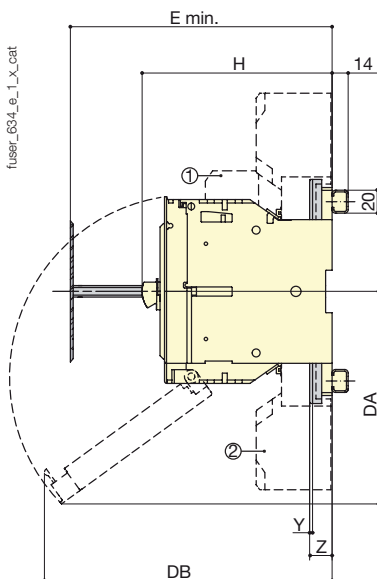
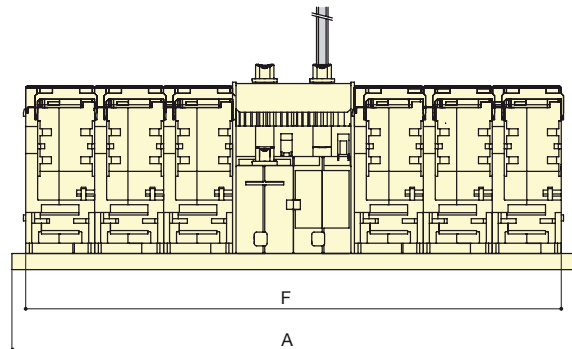
- 1. Fuse blown indication not available for BS88
- 2. Terminal shrouds

Rating (A)	Fuse size	Frame size	Dimensions				Terminal shrouds		Switch body								Switch mounting		Connection					
			A 3 P	A 4 P	E min	E max	AC	F 3 P	F 4 P	H	J 3 P	J 4 P	J 1 3 P	J 1 4 P	DA	DB	N	T	U	W	Y	Z	AA	BA
32	A1	11	264	318	100 ⁽¹⁾	146 ⁽¹⁾		242	296	87	102	129	138	165	85	153	90	27						118
63	A2-A3	12	294	358	124	145		272	336	116.5	121	153	157	189	159	145	90	32						118
100	A4	13	318	390	124	145	268	296	368	116 ⁽²⁾	133	169	169	205	141	179	128	36	20	8.5	2.5	19.5	162	141
CD 160	A3-A4	13 A	318	390	145	225	268	296	368	139	133	169	169	205			128	36	18	8.5	3	20	162	141
160	A4	14	402	502	124	225	268	380	480	136.5	176	226	212	262	174	229	128	50	20	8.5	2.5	19.5	162	141
160	B1-B2	14	402	502	130	225	268	380	480	136.5	176	226	212	262	174	229	128	50	20	8.5	2.5	19.5	162	141
CD 200	A3-A4	13 A	318	390	145	225	268	296	368	139	133	169	169	205			128	36	18	8.5	3	20	162	141
200	B1-B2	15	490	610	130	225	345	468	588	146	213	273	263	323	185	251	155	60	32	11	2.5	19.5	195	166
250	B1-B2-B3	15	490	610	154	225	345	468	588	146	213	273	263	323	185	251	155	60	32	11	2.5	19.5	195	166
315	B1-B2-B3	16	526	658	154	225	355	504	636	149	231	297	281	347	200	260	168	66	50	11	3	20	205	175
400	B1-B2-B3-B4	16	526	658	157	225	355	504	636	149	231	297	281	347	200	260	168	66	50	11	3	20	205	175

(1) 1 AC: + 23.5 mm / 2 AC: + 47 mm.
 (2) 132 mm with 2 AC.

NFC and DIN - External front operation fuse combination changeover

FUSERBLOC 50 to 400 A



- A. S1 handle: 50 and 63 A
- B. S2 handle: 100 to 400 A
- C. Door drilling

- 1. Fuse blown indication not available for BS88
- 2. Terminal shrouds

Rating (A)	Fuse size	Frame size	Overall dimensions				Terminal shrouds AC	Switch body								Switch mounting		Connection							
			A 3p	A 4p	E min	E max		F 3P	F 4P	H	J 3P	J 4P	J1 3P	J1 4P	DA	DB	N	T	U	W	Y	Z	AA	BA	
50	14 x 51	11	264	318	100 ⁽¹⁾	146 ⁽¹⁾		121	148	87 ⁽¹⁾	102	129	138	165	85	153	90	27						118	
63	00C	12	294	358	125	145		136	168	116.5 ⁽²⁾	121	153	158	189	159	145	90	32						118	
100	22 x 58	13	318	390	135	145	268	148	184	116 ⁽²⁾	133	169	169	205	141	187	128	36	20	8.5	2.5	19.5	162	141	
125	22 x 58	13	318	390	135	145	268	148	184	116 ⁽²⁾	133	169	169	205	141	179	128	36	20	8.5	2.5	19.5	162	141	
125	00	13	318	390	135	145	268	148	184	126.5	133	169	169	205	141	193	128	36	20	8.5	2.5	19.5	162	141	
160	00	13	318	390	135	145	268	148	184	126.5	133	169	169	205	141	193	128	36	20	8.5	2.5	19.5	162	141	
160	0	14	402	502	145	225	268	190	240	136.5	176	226	212	262	174	229	128	50	20	8.5	2.5	19.5	162	141	
250	1	15	490	610	154	225	345	234	294	146	213	273	263	323	185	251	155	60	32	11	2.5	19.5	195	166	
400	2	16	526	658	157	225	355	252	318	149	231	297	281	347	200	260	168	66	50	11	3	20	205	175	

(1) 1 AC: +23.5 / 2 AC: +47
(2) 132 with 2 AC

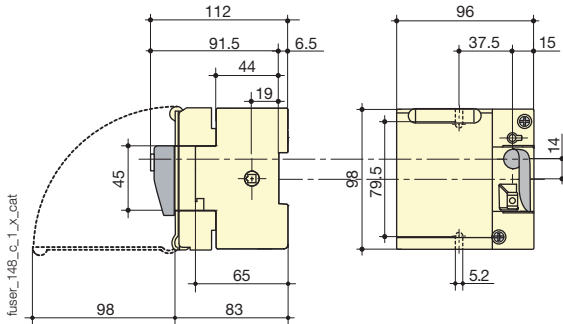
FUSERBLOC

Fuse combination switches

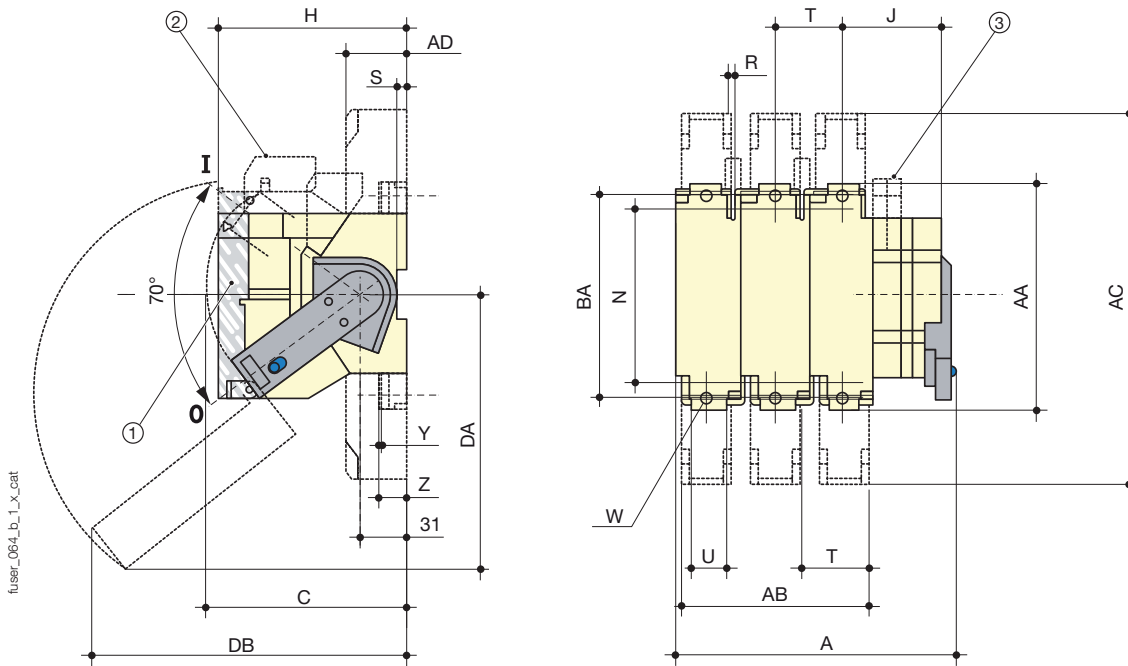
for industrial fuses up to 1250 A

BS88 - Direct operation

FUSERBLOC CD 20 to CD 32 A in frame size 0 / fuse size A1



FUSERBLOC 32 to 400 A



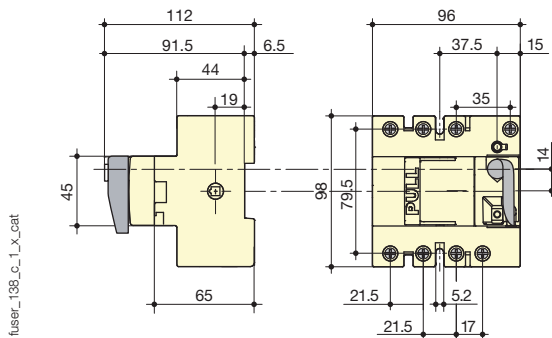
1. Protection screen lockable in position I
2. 1 or 2 fuse blown indication.
3. 1 or 2 A type ACs

Rating (A)	Fuse size	Frame size	Dimensions			Terminal shrouds				Switch body				Switch mounting				Connection										
			A 3 P xxx	A 4 P xxx	C	AB 3 P	AB 4 P	AC	AD	H	J	DA	DB	N	R	S	T	U	W	Y	Z	AA	BA					
32	A1	1	133	165	134					116.5	36	159	145	106	5.4	6.5	27										118	
63	A2-A3	2	133	165	134					116.5	36	159	145	106	5.4	6.5	32										118	
100	A4	3	150	186	173	108	144	268	44	116	38			127	5.4		36	20								162	141	
CD 160	A3-A4	3 A	152	188	173	108	144	268	44	139	38			130	5.4		36	20								162	141	
160	A4	4	150	186	173	108	144	268	44	116	38			127	5.4		50	20								162	141	
160	B1-B2	4	192	242	173	136	172	268	44	123	45			140	5.4		50	20								162	141	
CD 200	A3-A4	3 A	152	188	173	108	144	268	44	139	38			130	5.4		36	20								162	141	
200	B1-B2	5	192	242	173	136	172	345	44	123	45			140	5.4		60	20								195	166	
250	B1-B2-B3	5	253	313	173	180	240	345	65	146	81	185	251	162	6.4		60	32	11	2.5	19.5	19.5				195	166	
315	B1-B2-B3	6	253	313	173	180	240	355	65	146	81	185	251	162	6.4		66	32	11	2.5	19.5	19.5				175		
400	B1-B2-B3-B4	6	271	337	173	192	258	355	65	149	86	200	260	172	6.4		66	50	11	3	20	205				175		

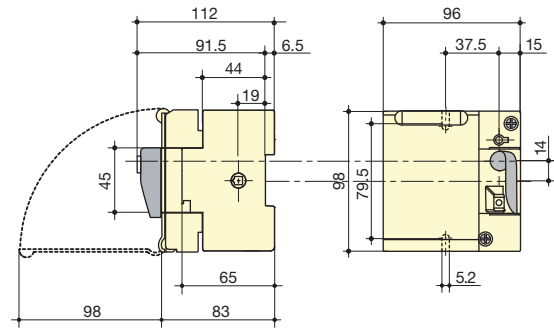
NFC and DIN - Direct operation

FUSERBLOC 25 to 32 A in frame size 0 / fuse size 10 x 38

FUSERBLOC 32 A in frame size 0 / fuse size 14 x 51

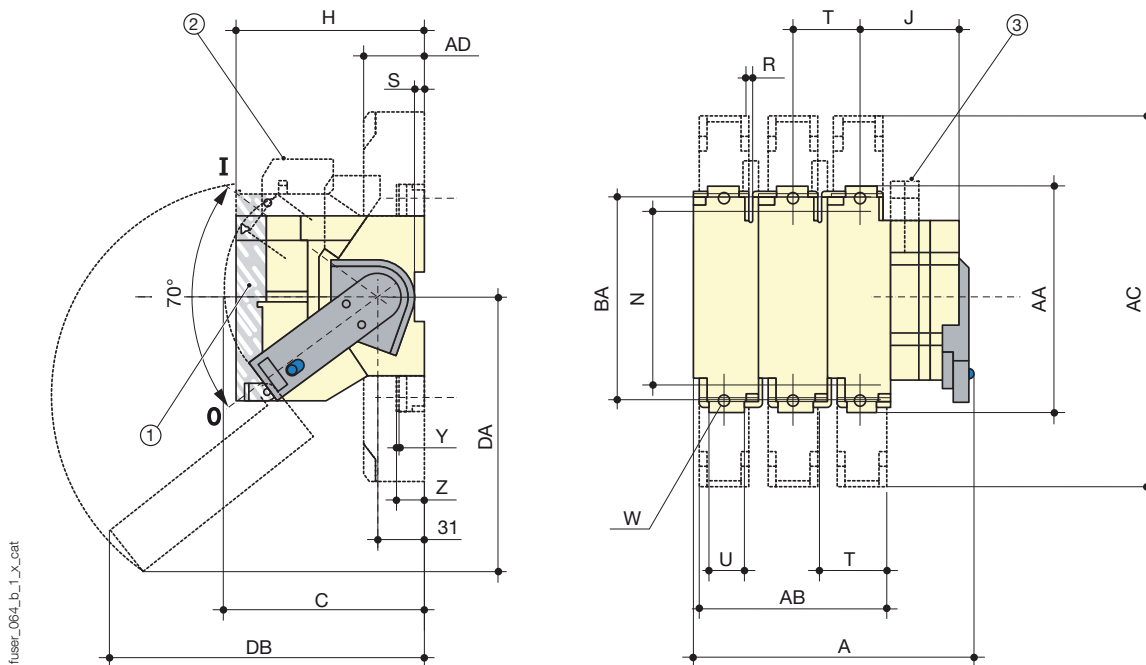


fuser_138_c_1_x_cat



fuser_148_c_1_x_cat

FUSERBLOC 50 to 400 A



fuser_064_b_1_x_cat

1. Protection screen lockable in position I
2. 1 or 2 fuse blown indication.
3. 1 or 2 A type ACs

Rating (A)	Fuse size	Frame size	Overall dimensions			Terminal shrouds				Switch body				Switch mounting				Connection								
			A 3 P	A 4 P	C	AB 3 P	AB 4 P	AC	AD	H	J	DA	DB	N	R	S	T	U	W	Y	Z	AA	BA			
50	14 x 51	1	118	145	134					87	33.5			106	5.4	6.5	27								118	
63	00C	2	133	165	134					116.5	36	159	145	106	5.4	6.5	32								118	
100	22 x 58	3	150	186	173	108	144	268	44	116	38			127	5.4		36	20	8.5	2.5	19.5	162	141			
125	22 x 58	3	150	186	173	108	144	268	44	116	38			127	5.4		36	20	8.5	2.5	19.5	162	141			
125	00	3	150	186	173	108	144	268	44	126.5	38	141	193	127	5.4		36	20	8.5	2.5	19.5	162	141			
160	00	3	150	186	173	108	144	268	44	126.5	38	141	189	127	5.4		36	20	8.5	2.5	19.5	162	141			
160	0	4	192	242	173	136	172	268	44	136.5	45	174	229	140	5.4		50	20	8.5	2.5	19.5	162	141			
250	1	5	253	313	173	180	240	345	65	146	81	185	251	162	6.4		60	32	11	2.5	19.5	195	166			
400	2	6	271	337	173	192	258	355	65	149	86	200	260	172	6.4		66	50	11	3	20	205	175			

FUSERBLOC

Fuse combination switches

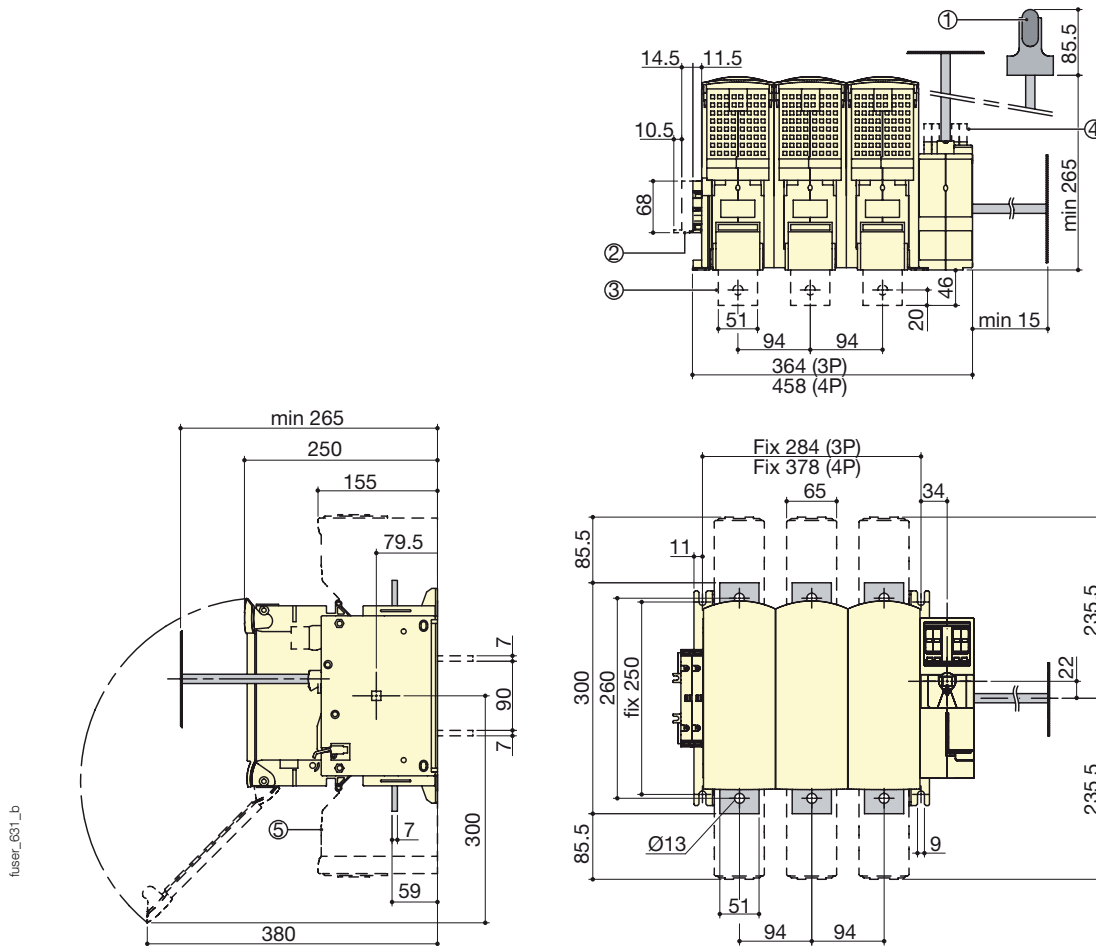
for industrial fuses up to 1250 A

Direct and external front or right side operation

BS88 - FUSERBLOC 630 A in fuse size C1-C2

FUSERBLOC 800 A in fuse size C1-C2-C3

NFC and DIN - FUSERBLOC 630 to 800 A in fuse size 3



1. Direct operation
2. S-type auxiliary contact NO + NC
3. Rear connection (option)
4. 1 to 8 pre-break auxiliary contact for signalisation
5. Terminal shrouds

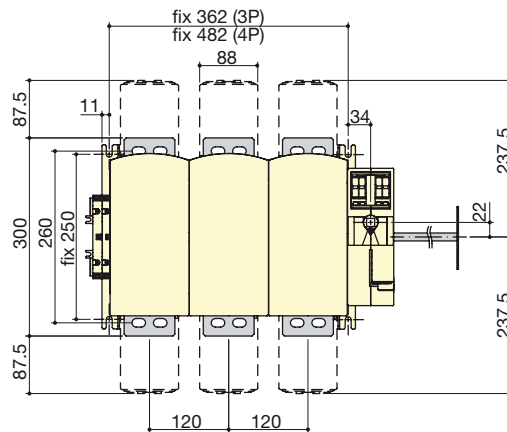
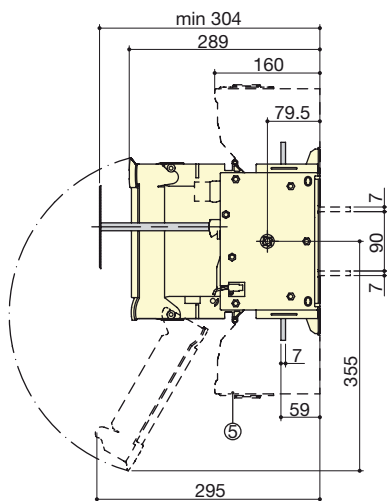
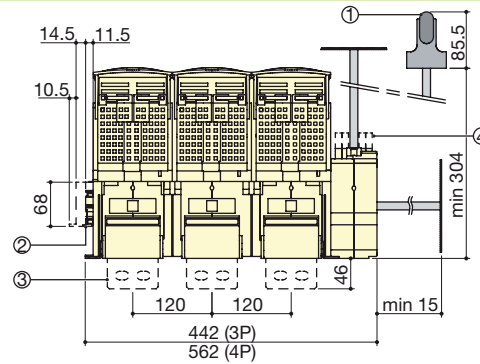
Dimensions for external operation handles

FUSERBLOC 630 to 800 A

Handle type	Direction of operation	Door drilling	Direction of operation	Door drilling
S3 type Box size 17 	Front operation 		Side operation 	

BS88 - FUSERBLOC 1250 A in fuse size D1 NFC and DIN - FUSERBLOC 800 to 1250 A in fuse size 4

1. Direct operation
2. S-type auxiliary contact NO + NC
3. Rear connection (option)
4. 1 to 8 pre-break auxiliary contact for signalisation
5. Terminal shrouds



fuser_632_b_1_x_cat

FUSERBLOC 800 to 1250 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
<p>S3 type Box size 18 Ø3.07 Ø78</p>			
<p>S4 type</p>			

fuser_715_a_1_gb_cat



FUSERBLOC and high-speed fuses (UR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

Fuse protection



fuser_437_a_1_cat

FUSERBLOC
630 to 1250 A



fuser_439_a_1_cat

FUSERBLOC
from 25 to 400 A

The solution for

- > Protection of inverters and variable speed drives.



Strong points

- > Limitation of short-circuit current.

Large range

- > Contact us for any other combinations (1250 V UR fuses, notched fuses with 80 or 110 mm distance between centres, other sizes, etc.)

Function

FUSERBLOC fuse combination switches combined with high speed fuses (UR) provide optimal breaking and making on load, safety isolation and protection of power semiconductors (variable speed drives, inverters...)

Advantages

Limitation of short-circuit current

The limitation of short-circuit current provided by the fuse solution is the most performant and economical on the market (UR fuses).

FUSERBLOC and high-speed fuses (UR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

Characteristics

FUSERBLOC for 690 VAC UR cylindrical fuses

FUSERBLOC CD 50 A for fuse size 14 x 51									
Fuse rating (A)	10	12	16	20	25	32	40	50	
Max. I for the FUSERBLOC (A)	10	12	16	20	25	29	36	40	
FUSERBLOC CD 125 A for fuse size 22 x 58									
Fuse rating (A)	20	25	32	40	50	63	80	100	
Max. I for the FUSERBLOC (A)	20	25	32	40	50	63	71	85	

References

Direct side operation

Fuse rating (A) Frame size	No. of poles	Switch body	Direct handle	Auxiliary contact pre-break and position
50 A / 14 x 51 1	2 P	3615 2005	Black 3629 7900	1 contact NO/NC 3999 0021 2 contacts NO/NC 3999 0022
	3 P	3615 3005		
	4 P	3615 6005		
125 A / 22 x 58 3	2 P	3615 2011	Black 3629 7901	
	3 P	3615 3011		
	4 P	3615 6011		

External right side or front operation

Fuse rating (A) Frame size	No. of poles	Switch body	External front handle	External side handle	Shaft for external handle	Auxiliary contact pre- break and position
50 A / 14 x 51 11	2 P	3831 2005	Black IP55 1411 2111 Red / Yellow IP65 1414 2111	Black IP55 1415 2111 Red / Yellow IP65 1418 2111	320 mm 1400 1032	1 contact NC 3999 0701 1 contact NO 3999 0702
	3 P	3831 3005				
	4 P	3831 6005				
125 A / 22 x 58 13	2 P	3831 2011	Black IP55 1421 2111 Red IP65 1424 2111	Black IP55 1425 2111 Red / Yellow IP65 1428 2111		
	3 P	3831 3011				
	4 P	3831 6011				

Accessories

Other accessories: See the FUSERBLOC pages

FUSERBLOC and high-speed fuses (UR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

Characteristics

FUSERBLOC for DIN 43620 UR knife-edge fuses

FUSERBLOC 160 A for fuse size 000 and 00															
Fuse rating (A)	10	16	20	25	32	40	50	63	80	100	125	160	200	250	315
Max. I for the FUSERBLOC (A)	10	16	20	25	32	32	37	44	51	92	105	121	140	140	140
FUSERBLOC 250 A for fuse size 1*															
Fuse rating (A)				40	50	63	80	100	125	160	200	250	315	350	400
Max. I for the FUSERBLOC (A)				40	50	63	80	100	125	155	178	205	210	215	220
FUSERBLOC 400 A for fuse size 2															
Fuse rating (A)						200	250	315	350	400	450	500	550	630	700
Max. I for the FUSERBLOC (A)						200	250	285	310	330	330	340	340	350	350
FUSERBLOC 630 A for fuse size 3															
Fuse rating (A)									500	550	630	700	800	900	1000
Max. I for the FUSERBLOC (A)									360	380	420	450	480	500	510

References

Direct side operation

Fuse rating (A) Frame size	No. of poles	Switch body	Direct handle	Auxiliary contact pre-break and signalisation	Fuse protection covers
160 A / 00 3	2 P	3615 2015	Black 3629 7901	1 contact NO/NC 3999 0021 2 contacts NO/NC 3999 0022	3990 7015 ⁽¹⁾
	3 P	3615 3015			3990 8015 ⁽¹⁾
	4 P	3615 6015			3990 9015 ⁽¹⁾
160 A / 0 4	2 P	3615 2016			3990 7016 ⁽¹⁾
	3 P	3615 3016			3990 8016 ⁽¹⁾
	4 P	3615 6016			3990 9016 ⁽¹⁾
250 A / 1 5	2 P	3615 2024			3990 7024 ⁽¹⁾
	3 P	3615 3024			3990 8024 ⁽¹⁾
	4 P	3615 6024			3990 9024 ⁽¹⁾
400 A / 2 6	2 P	3615 2039			3990 7039 ⁽¹⁾
	3 P	3615 3039			3990 8039 ⁽¹⁾
	4 P	3615 6039			3990 9039 ⁽¹⁾
630 A / 3 17	2 P	3811 2063	Black 3899 6011	1 contact NC 3999 0701 1 contact NO 3999 0702	3890 8063 ⁽¹⁾
	3 P	3811 3063			3890 9063 ⁽¹⁾
	4 P	3811 6063			

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

FUSERBLOC and high-speed fuses (UR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

External right side or front operation

Fuse rating (A) Frame size	No. of poles	Switch body	External front handle	External side handle	Shaft for external handle	Auxiliary contact pre-break and position	Fuse protection covers												
160 A / 00 13	2 P	3831 2015	Black IP55 1421 2111 Red / Yellow IP65 1424 2111	Black IP55 1425 2111 Red / Yellow IP65 1428 2111	200 mm 1400 1020 320 mm 1400 1032	1 contact NC 3999 0701 1 contact NO 3999 0702	3990 7015 ⁽¹⁾												
	3 P	3831 3015					3990 8015 ⁽¹⁾												
	4 P	3831 6015					3990 9015 ⁽¹⁾												
160 A / 0 14	2 P	3831 2016					Black IP65 1433 3111 Red / Yellow IP65 1434 3111	Black IP65 1437 3111 Red / Yellow IP65 1438 3111	200 mm 1400 1220 320 mm 1400 1232	1 contact NC 3999 0701 1 contact NO 3999 0702	3990 7016 ⁽¹⁾								
	3 P	3831 3016									3990 8016 ⁽¹⁾								
	4 P	3831 6016									3990 9016 ⁽¹⁾								
250 A / 1 15	2 P	3831 2024									Black IP65 1433 3111 Red / Yellow IP65 1434 3111	Black IP65 1437 3111 Red / Yellow IP65 1438 3111	200 mm 1400 1220 320 mm 1400 1232	1 contact NC 3999 0701 1 contact NO 3999 0702	3990 7024 ⁽¹⁾				
	3 P	3831 3024													3990 8024 ⁽¹⁾				
	4 P	3831 6024													3990 9024 ⁽¹⁾				
400 A / 2 16	2 P	3831 2039													Black IP65 1433 3111 Red / Yellow IP65 1434 3111	Black IP65 1437 3111 Red / Yellow IP65 1438 3111	200 mm 1400 1220 320 mm 1400 1232	1 contact NC 3999 0701 1 contact NO 3999 0702	3990 7039 ⁽¹⁾
	3 P	3831 3039																	3990 8039 ⁽¹⁾
	4 P	3831 6039																	3990 9039 ⁽¹⁾
630 A / 3 17	2 P	3811 2063	Black IP65 1433 3111 Red / Yellow IP65 1434 3111	Black IP65 1437 3111 Red / Yellow IP65 1438 3111	200 mm 1400 1220 320 mm 1400 1232	1 contact NC 3999 0701 1 contact NO 3999 0702													3890 8063 ⁽¹⁾
	3 P	3811 3063																	3890 9063 ⁽¹⁾
	4 P	3811 6063																	

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

Accessories

FUSERBLOC for DIN 43620 UR knife-edge fuses

Terminal shrouds for FUSERBLOC fitted fuse blown microswitch

Use

Protection against direct contact with live parts situated in the fuse compartment for FUSERBLOC fitted with UR fuses with fuse blown auxiliary contacts.

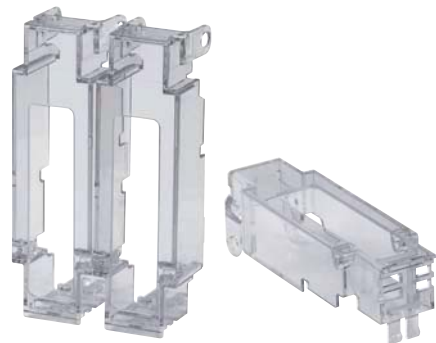
Rating (A)	Fuse ⁽¹⁾	No. of poles	Accessories ⁽²⁾	Options ⁽³⁾
			References	References
160	00	2 P	3990 7015	3999 7015
160	00	3 P	3990 8015	3999 8015
160	00	4 P	3990 9015	3999 9015
160	0	2 P	3990 7016	3999 7016
160	0	3 P	3990 8016	3999 8016
160	0	4 P	3990 9016	3999 9016
250	1	2 P	3990 7024	3999 7024
250	1	3 P	3990 8024	3999 8024
250	1	4 P	3990 9024	3999 9024
400	2	2 P	3990 7039	3999 7039
400	2	3 P	3990 8039	3999 8039
400	2	4 P	3990 9039	3999 9039
630	3	3 P	3890 8063	3899 8063
630	3	4 P	3890 9063	3899 9063

(1) For the fuses: see "UR fuses 10 to 2000 A" page

(2) If ordered at the same time as the standard device.

(3) If ordered later.

Other accessories: See the FUSERBLOC pages



access_221_la

FUSERBLOC and high-speed fuses (UR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

Characteristics

FUSERBLOC for UR fuses type K/50

FUSERBLOC V 800 A for BK fuses size 2														
Fuse rating (A)	400	450	500	550	630	700	800	900	1000	1100	1250			
Max. I for the FUSERBLOC (A)	380	420	440	450	500	520	530	530	530	540	550			
FUSERBLOC 1250 A for fuse size 3														
Fuse rating (A)	500	550	630	700	800	900	1000	1100	1250	1400	1500	1600	1800	2000
Max. I for the FUSERBLOC (A)	500	550	620	630	720	790	870	940	1050	1100	1100	1100	1100	1100

References

Front operation

Rating (A) / Fuse	No. of poles	Switch body only ⁽¹⁾	Direct handle	External handle	Shaft for external handle	Fuse protection covers	Auxiliary contact pre-break and position	Terminal shrouds
800 A / 2	3 P	3680 3081	Please consult us	Black IP55 1443 3111 ⁽²⁾ Red / Yellow IP65 1444 3111	200 mm 1400 1220 320 mm 1400 1232	Please consult us	Please consult us	Please consult us
	4 P	3680 6081						
1250 A / 3	3 P	3680 3121						
	4 P	3680 6121						

(1) Please consult us.

(2) Standard.

Characteristics

FUSERBLOC for UR fuses type K/110

FUSERBLOC 250 A for fuse size 1* (690 VAC) ⁽¹⁾																									
Fuse rating (A)	40	50	63	80	100	125	160	200	250	315	350	400	450	500	550	630									
Max. I for the FUSERBLOC (A)	40	50	63	80	100	120	140	165	195	215	230	240	240	240	230	240									
FUSERBLOC 400 A for fuse size 1* (690 VAC) ⁽¹⁾																									
Fuse rating (A)					200	250	315	350	400	450	500	550	630	700	800	900									
Max. I for the FUSERBLOC (A)					145	165	200	220	240	265	290	310	340	370	395	395									
FUSERBLOC 500 A for fuse size 2* (690 VAC) ⁽¹⁾																									
Fuse rating (A)										400	450	500	550	630	700										
Max. I for the FUSERBLOC (A)										320	345	370	390	425	460										
FUSERBLOC 630 A for fuse size 2 to 690 VAC ⁽¹⁾																									
Fuse rating (A)											800	900	1000	1100	1250										
Max. I for the FUSERBLOC (A)											495	545	590	610	620										
FUSERBLOC 800 A for fuse size 3 to 690 VAC ⁽¹⁾																									
Fuse rating (A)												500	550	630	700	800	900	1000	1100	1250					
Max. I for the FUSERBLOC (A)												370	395	440	480	535	590	645	695	760	800	800	800	800	800

FUSERBLOC 1250 A for fuse size 3 Please consult us.

(1) For UR fuses type K/110 1250 VAC, please consult us.

References

External right side or front operation switch

Rating (A) / Fuse	No. of poles	Switch body	Direct side handle	Direct front handle	Fuse protection covers	Auxiliary contact pre-break and signalisation	Terminal shrouds
250 A / 1*	2 P	36U1 2024	Black 3629 7901		2 P 3990 2839 ⁽¹⁾ 3 P 3990 3839 ⁽¹⁾	1 contact NO/NC 3999 0021	2 P 3998 2025 3 P 3998 3025
	3 P	36U1 3024					
400 A / 1	2 P	36U1 2039					
	3 P	36U1 3039					
500 A / 2	2 P	38U1 2050	Black 1437 7911	Black 3899 6011	2 P 3890 2U63 ⁽¹⁾ 3 P 3890 3U63 ⁽¹⁾	1 contact NC 3999 0701 1 contact NO 3999 0702	2 P 3898 2080 3 P 3898 3080
	3 P	38U1 3050					
630 A / 2	2 P	38U1 2063					
	3 P	38U1 3063					
800 A / 3	2 P	38U1 2080					
	3 P	38U1 3080					
1250 A / 3	2 P	38U1 2120	Black 3899 7011		3890 2U12 ⁽¹⁾		3898 2120
	3 P	38U1 3120			3890 3U12 ⁽¹⁾		3898 3120

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

FUSERBLOC and high-speed fuses (UR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

External right side or front operation

Rating (A) / Fuse	No. of poles	Switch body	External front handle	External side handle	Shaft for external handle	Fuse protection covers	Auxiliary contact pre-break and position	Terminal shrouds
250 A / 1*	2 P	38U1 2024	S2 type Black IP55 1421 2111 S2 type Red IP65 1424 2111	S2 type Black IP55 1425 2111 S2 type Red/yellow IP65 1428 2111	320 mm 1400 1032	2 P 3990 2839 ⁽¹⁾ 3 P 3990 3839 ⁽¹⁾		2 P 3998 2025 3 P 3998 3025
	3 P	38U1 3024						
400 A / 1	2 P	38U1 2039	S3 type Black IP65 1433 3111 S3 type Red/Yellow IP65 1434 3111	S3 type Black IP65 1437 3111 S3 type Red/Yellow IP65 1438 3111	320 mm 1400 1232	2 P 3890 2U63 ⁽¹⁾ 3 P 3890 3U63 ⁽¹⁾	1 contact NC 3999 0701 1 contact NO 3999 0702	2 P 3898 2080 3 P 3898 3080
	3 P	38U1 3039						
500 A / 2	2 P	38U1 2050	S4 type Black IP65 1443 3111 S4 type Red/Yellow IP65 1444 3111			2 P 3890 2U12 ⁽¹⁾ 3 P 3890 3U12 ⁽¹⁾		2 P 3898 2120 3 P 3898 3120
	3 P	38U1 3050						
630 A / 2	2 P	38U1 2063	S4 type Black IP65 1443 3111 S4 type Red/Yellow IP65 1444 3111			2 P 3890 2U12 ⁽¹⁾ 3 P 3890 3U12 ⁽¹⁾		2 P 3898 2120 3 P 3898 3120
	3 P	38U1 3063						
800 A / 3	2 P	38U1 2080	S4 type Black IP65 1443 3111 S4 type Red/Yellow IP65 1444 3111			2 P 3890 2U12 ⁽¹⁾ 3 P 3890 3U12 ⁽¹⁾		2 P 3898 2120 3 P 3898 3120
	3 P	38U1 3080						
1250 A / 3	2 P	38U1 2120	S4 type Black IP65 1443 3111 S4 type Red/Yellow IP65 1444 3111			2 P 3890 2U12 ⁽¹⁾ 3 P 3890 3U12 ⁽¹⁾		2 P 3898 2120 3 P 3898 3120
	3 P	38U1 3120						

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

Accessories

FUSERBLOC for UR fuses type K/110

Terminal shrouds for FUSERBLOC fitted fuse blown microswitch

Use

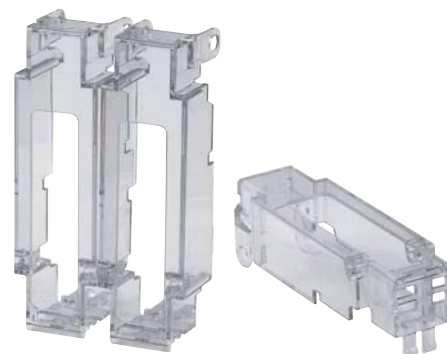
Protection against direct contact with live parts situated in the fuse compartment for FUSERBLOC fitted with UR fuses with fuse blown auxiliary contacts.

Rating (A)	Fuses ⁽³⁾	No. of poles	Accessories ⁽¹⁾	
			Reference	Option ⁽²⁾ Reference
250... 400	1* / 1	2 P	3999 2839	3990 2839
250... 400	1* / 1	3 P	3999 3839	3990 3839
500 ... 800	2 / 3	2 P	3899 2U63	
500 ... 800	2 / 3	3 P	3899 2U63	3890 3U63
1250	3	2 P	3899 2U12	3890 2U12
1250	3	3 P	3899 3U12	3890 3U12
500 ... 800	2 / 3	2 P		3890 2U63

(1) If ordered later.

(2) If ordered at the same time as the standard device.

(3) For the fuses: see "UR fuses 10 to 2000 A" page



access_221_a

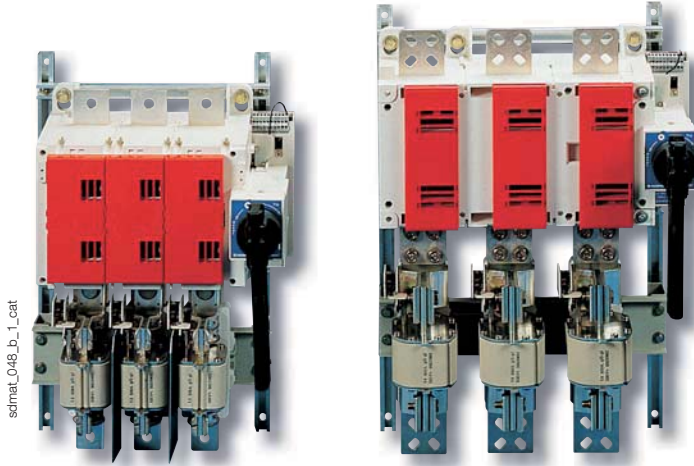
Other accessories: see the FUSERBLOC pages



SIDERMAT combination

Visible breaking and tripping fuse switches
from 630 to 1800 A

Fuse protection



sdmat_048_b_1_cat

The solution for

- > Motor load break.
- > Protection of industrial cabinet.
- > Electrical distribution.



Strong points

- > Tripping upon overload.
- > High breaking capacity.
- > Improved safety.

A complete range

- > Can be combined with UR fuses for the protection of power semi-conductors - Please consult us.

Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > BS EN 60947-3
- > NBN EN 60947-3
- > IEC 60269-1
- > IS 14947-3
- > DIN EN 60269-1
- > NF EN 60269-1
- > IEC 60269-2
- > VDE 0636-1
- > VDE 0660-107



Function

SIDERMAT combination are manually operated tri- or tetrapolar fuse disconnecting switches which can be triggered remotely. They make and break under load conditions and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

Advantages

Tripping upon overload.

Remote breaking by voltage release device

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

They can automatically switch on a power circuit in combination with:

- fuse blown indication,
- thermal relay,
- differential relay,
- protective relays DIRIS,
- other protective devices.

Improved safety

- Double break per phase (top and bottom of fuse - 1600 and 1800 A excluded).
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

References

NFC and DIN - Front operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) / Fuse ⁽⁴⁾	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	1 st position AC	Tripping AC	Terminal shrouds top	Terminal screens top	Inter phase barrier																												
630 A / 3	3 P	3520 3063	Black 3999 6203 ⁽¹⁾	S3 type Black IP55 1431 3511 ⁽¹⁾ Red IP55 1432 3511	320 mm 1401 1532	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3998 3063	3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004																												
	4 P	3520 6063						3998 4063																														
800 A / 4	3 P	3520 3080						Black 3999 6203 ⁽¹⁾			S3 type Black IP55 1431 3511 ⁽¹⁾ Red IP55 1432 3511	320 mm 1401 1532	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004																						
	4 P	3520 6080															3 P 2998 3180 ⁽²⁾ included 2998 4180 ⁽²⁾																					
1250 A / 4	3 P	3520 3120																Black 3999 6203 ⁽¹⁾	S3 type Black IP55 1431 3511 ⁽¹⁾ Red IP55 1432 3511	320 mm 1401 1532	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004														
	4 P	3520 6120																																				
1600 A / 2 x 4*	3 P	3520 3160																							Black 3999 6203 ⁽¹⁾	S3 type Black IP55 1431 3511 ⁽¹⁾ Red IP55 1432 3511	320 mm 1401 1532	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004							
	3 P + NC	3520 4160																																				
	4 P	3520 6160																																				
1800 A / 2 x 4*	3 P	3520 3180 ⁽³⁾																														Black 3999 6203 ⁽¹⁾	S3 type Black IP55 1431 3511 ⁽¹⁾ Red IP55 1432 3511	320 mm 1401 1532	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004
	3 P + NC	3520 4180 ⁽³⁾																																				
	4 P	3520 6180 ⁽³⁾																																				

(1) Standard.

(2) Bottom terminals protection screen as standard.

(3) Only one of the two T4 fuses should be equipped with striker.

(4) For the fuses: see page 236 "NFC-DIN industrial fuselinks 0.16 to 1250 A".

* Two size 4 DIN fuses in parallel per pole.

SIDERMAT combination

Visible breaking and tripping fuse switches

from 630 to 1800 A

Accessories

Direct front operation handle

Rating (A)	Handle colour	Reference
630 ... 1800	Black	3999 6203
630 ... 1800	Red	consult us



access_156_a_2_cat

External front operation handle

Rating (A)	Handle colour	External IP	Reference
630 ... 1800	Black	IP55	1431 3511
630 ... 1800	Red	IP55	1432 3511

S3 type handle



access_151_a_2_cat

access_166_a_2_cat

Alternative S-type handle cover colours

Use

For single lever S3 type handles.

Other colours: consult us.

Colour	To be ordered by multiple	Reference
Light grey	50	1401 0001
Dark grey	50	1401 0011



access_198_a_2_cat

Shaft for external handle

Use

Standard lengths:

- 200 mm,

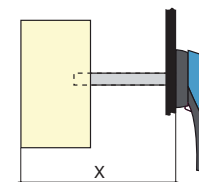
- 320 mm.

Other lengths: consult us.

Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
630 ... 800	350 ... 450	200	1401 1520
630 ... 800	350 ... 570	320	1401 1532
1250 ... 1800	370 ... 570	320	1401 1532



access_144_b_1_cat



access_202_a_1_X_cat

Current-reducing resistor for undervoltage trip coil

Use

Reduces, by limiting the current, the effects on the undervoltage coils used in continuous processes or processes exposed to high ambient temperatures.

Voltage	Reference
110 VAC	3999 3112
230 VAC	3999 3230
400 VAC	3999 3400
110 VDC	3999 4110

Alternative tripping coils

Coils Characteristics: see "SIDERMAT" page 88.

Shunt trip coil		
Voltage	Replacement tripping coil Reference	Original coil ⁽¹⁾ Reference
24 VAC	3990 1024	3991 1024
48 VAC	3990 1048	3991 1048
110 VAC	3990 1110	3991 1110
230 VAC	3990 1220	included
400 VAC	3990 1380	3991 1380
12 VDC	3990 2012	3991 2012
24 VDC	3990 2024	3991 2024
48 VDC	3990 2048	3991 2048
110 / 200 VDC	3990 2220	3991 2220

Undervoltage trip coil		
Voltage	Replacement tripping coil Reference	Original coil ⁽¹⁾ Reference
24 VAC	3990 3024	3991 3024
48 VAC	3990 3048	3991 3048
110 VAC	3990 3110	3991 3110
230 VAC	3990 3220	3991 3220
400 VAC	3990 3380	3991 3380
12 VDC	3990 4012	3991 4012
24 VDC	3990 4024	3991 4024
48 VDC	3990 4048	3991 4048
110 VDC	3990 4110	3991 4110
220 VDC	3990 4220	3991 4220

(1) To be ordered at same time as switch (factory fitted).

Delayed undervoltage trip coil	
Voltage	Reference
230 VAC	3992 3230
400 VAC	3992 3400

Shunt trip coil.



access_049_a_1_cat

Undervoltage trip coil



access_050_a_1_cat

Use

Omnipolar breaking remotely controlled by shunt trip or undervoltage voltage release coil.

Note: the shunt trip coil must not be supplied for more than 5 s. A 230 VAC shunt trip coil is fitted to the standard switch body.

To modify this coil, the reference opposite must be added to the switch reference (use "original coil" reference).

Examples for ordering

- Combined SIDERMAT with shunt trip coil 230 VAC - 1 reference: Combined SIDERMAT 630 A, 3 pole, front operation: 3520 3063.
- Combined SIDERMAT fitted with a non standard coil - 2 references: Combined SIDERMAT 630 A, 3 pole, front operation fitted with a 110 VAC undervoltage trip coil: 3520 3063 + 3991 3110.

Auxiliary contacts

References

NO/NC position contact		
Rating (A)	Position AC	Reference
630 ... 1800	1 st	3999 0051
630 ... 1800	2 nd	3999 0052
NO/NC low level position contact		
Rating (A)	Position AC	Reference
630 ... 1800	1 st	3999 0111
630 ... 1800	2 nd	3999 0112
NO/NC contact, signalling coil tripping		
Rating (A)	Position AC	Reference
630 ... 1800	1	3999 0031

Characteristics

NO/NC position contact						
Rating (A)	Current nominal (A)	Operating current I _o (A)				
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13	
630 ... 1800	16	12	8	14	6	
NO/NC contact, signalling coil tripping						
Rating (A)	Current nominal (A)	Operating current I _o (A)				
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13	
630 ... 1800	16	12	8	12	2	



access_048_a_1_cat

Use

Pre-break and signalling of positions and I:
1 to 2 NO/NC auxiliary contacts

Coil tripping

1 to 2 NO/NC auxiliary contacts

Connection to the control circuit

By 6.35 mm fast-on terminal.

Characteristics

NO/NC auxiliary contact: IP2.

Electrical characteristics

30 000 operations.

SIDERMAT combination

Visible breaking and tripping fuse switches

from 630 to 1800 A

Accessories (continued)

Fuse blown indication

Use

For DIN fuse cartridges with striker.

Electrical principle

A NO/ NC auxiliary contacts detects that the fuse has blown.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

NO/NC changeover contact

Rating (A)	No. of poles	Position AC	Reference
630 ... 1800	3/4 P	1 st	included

Characteristics

Rating (A)	Nominal current (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
630 ... 1800	16	12	8	12	2

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Advantages

Perforations allowing remote thermographic inspection without removal.

Rating (A)	No. of poles	Position	Reference
630	3 P	top	3998 3063
630	4 P	top	3998 4063



access_212_a_2_cat

Terminal screens

Use

Top or bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
800 ... 1600	3 P	top	2998 3120
800 ... 1600	4 P	top	2998 4120
1800	3 P	top	2998 3180
1800	4 P	top	2998 4180
800 ... 1800	3/4 P	bottom	included

Inter phase barrier

Use

Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

Rating (A)	No. of poles	Reference
1250 ... 1800	3 P	2998 0003
1250 ... 1800	4 P	2998 0004



access_036_a_1_cat

Handle key interlocking accessories

Use

Locking in position 0 of the front operation handle:

- using a padlock (not supplied) and the factory integrated padlocking function of the handle.
- using RONIS 1104 A lock (key BC 3318) to be mounted directly on the padlockable handle,
- locking using RONIS EL11AP lock (not supplied).

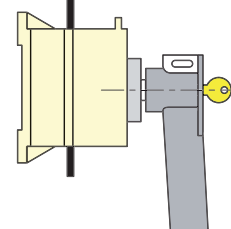
Locking using RONIS EL 1104 A lock (supplied)

Rating (A)	Operation	Reference
630 ... 1800	front direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
630 ... 1250	front direct	3999 7007
1600 ... 1800	front direct	3999 6117
630 ... 1800	external front	1499 7701

Lock RONIS 1104A



access_010_b_1_x_cat

Other specific accessories

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

Characteristics according to IEC 60947-3

630 to 1800 A

Thermal current I_{th} (40°C)	630 A	800 A	1250 A	1600 A	1800 A
Fuse size	3	4	4	2 x 4	2 x 4
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	630/630	800/800	1250/1250	1600/1600	1600/1800
400 VAC	AC-23 A / AC-23 B	630/630	630/630	1250/1250	1600/1600	1600/1600
690 VAC ⁽²⁾	AC-21 A / AC-21 B	630/630	800/800	1250/1250	1600/1600	
690 VAC ⁽²⁾	AC-22 A / AC-22 B	500/630	630/800	1000/1000	1250/1250	
690 VAC ⁽²⁾	AC-23 A / AC-23 B	400/500	500/500	800/800	1000/1000	
220 VDC	DC-21 A / DC-21 B	630/630	800/800	1250/1250	1600/1600	
220 VDC	DC-22 A / DC-22 B	630/630	800/800	1250/1250	1600/1600	
220 VDC	DC-23 A / DC-23 B	500/630	630/800	1250/1250	1250/1250	
440 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600	
440 VDC	DC-21 A / DC-21 B	630/630	800/800	1250/1250	1600/1600	
440 VDC	DC-22 A / DC-22 B	630/630 ⁽³⁾	800/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1600/1600 ⁽⁴⁾	
440 VDC	DC-23 A / DC-23 B	500/630 ⁽³⁾	630/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1250/1250 ⁽⁴⁾	

Motor power output (kW)

At 400 VAC without pre-break in AC-23 ⁽¹⁾⁽⁵⁾	355/355	355/355	710/710	900/900	900/900
At 690 VAC without pre-break in AC-23 ⁽¹⁾⁽⁵⁾	400/475	475/475	750/750	900/900	
At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	355/355	450/450	710/710	900/900	900/900
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	475/600	600/750	900/900	1100/1100	

Reactive power (kvar)

At 400 VAC ⁽⁶⁾	290	365	575		
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	100	100	100	120	120
Associated fuse rating (A) ⁽⁶⁾	630	800	1250	2 x 800	2 x 900

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	55	80	100	120	120
---	----	----	-----	-----	-----

Connection

Minimum Cu cable section (mm ²)	2 x 150	2 x 185			4 x 240
Minimum Cu busbar section (mm ²)	2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5	
Maximum Cu cable section (mm ²)	2 x 300	2 x 300	4 x 185	6 x 240	8 x 240
Maximum Cu busbar width (mm)	50	63	100	100	100
Tightening torque min (Nm)		20	20	40	

Mechanical characteristics

Durability (number of operating cycles)	5000	5000	5000	3000	3000
Weight of 3 P switch (kg)	20	25	27	54	59
Weight of 4 P switch (kg)	24	30	32	70	75

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 pole in series by polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_n = 400$ VAC.

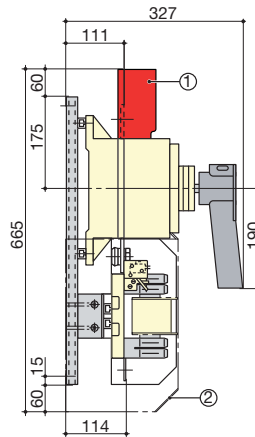
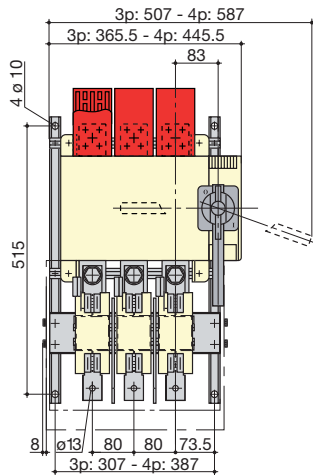
SIDERMAT combination

Visible breaking and tripping fuse switches
from 630 to 1800 A

Dimensions

SIDERMAT combination 630 A

Direct front operation

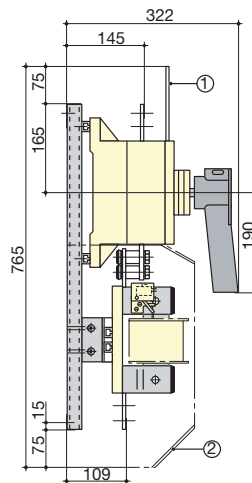
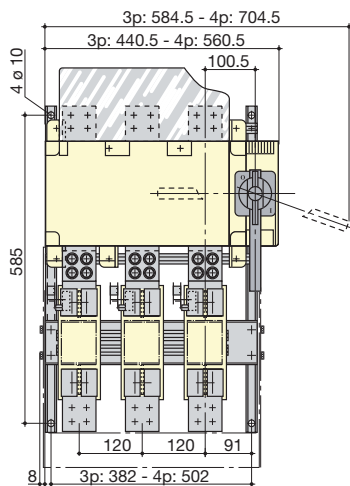


1. Terminal shrouds top.
2. Terminal screens bottom

sidmat_006_c_1_x_cat

SIDERMAT combination 800 to 1250 A

Direct front operation

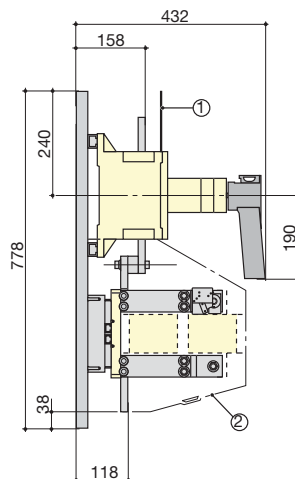
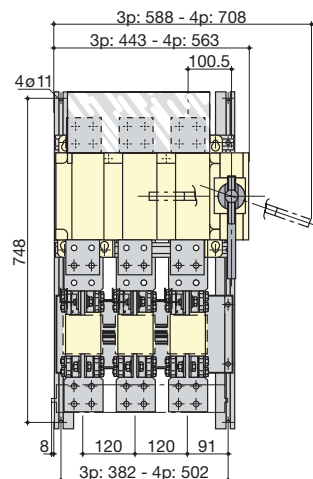


1. Terminal screens top
2. Terminal screens bottom

sidmat_005_a_1_x_cat

SIDERMAT combination 1600 A

Direct front operation

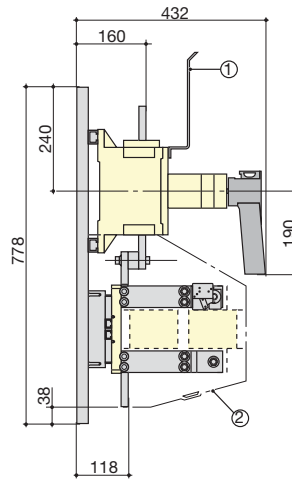
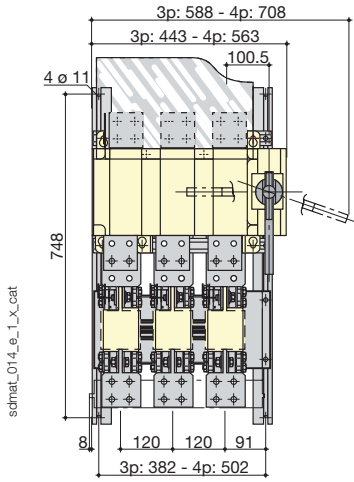


1. Terminal screens top
2. Terminal screens bottom

sidmat_013_a_1_x_cat

SIDERMAT combination 1800 A

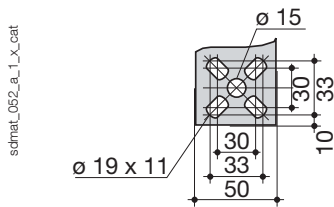
Direct front operation



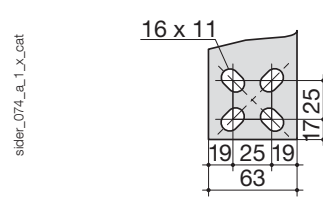
- 1. Terminal screens top
- 2. Terminal screens bottom

Connection terminals

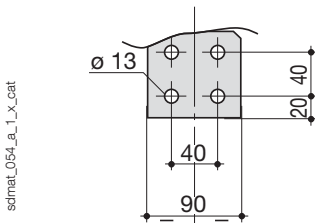
SIDERMAT combination - 630 A



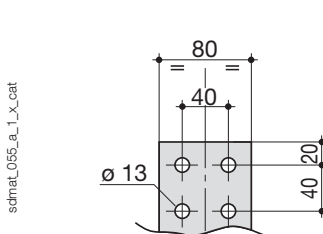
SIDERMAT combination 800 to 1250 A



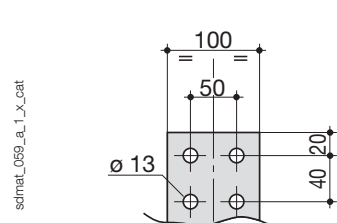
SIDERMAT combination 1600 to 1800 A - bottom



SIDERMAT combination 1600 A - top



SIDERMAT combination 1800 A - top





FUSOMAT

Visible breaking and tripping fuse switches
from 250 to 1250 A

Fuse protection



fusom_063_b_1_cat

The solution for

- > Motor load break.
- > Protection of industrial cabinet.
- > Electrical distribution.



Strong points

- > Tripping upon overload.
- > High breaking capacity.
- > Improved safety.

A complete range

- > Can be combined with UR fuses for the protection of power semi-conductors - Please consult us.

Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > VDE 0660-107
- > NBN EN 60947-3
- > BS 88



Function

FUSOMAT are manually controlled tri- or tetrapolar fuse combination switches.

They can be tripped remotely.

They break or switch off on load and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

They can automatically disconnect a circuit in combination with:

- fuse blown indication.
- thermal relay.
- protective relays DIRIS.
- other protective devices.

Advantages

Tripping upon overload

Remote breaking by voltage release device.

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

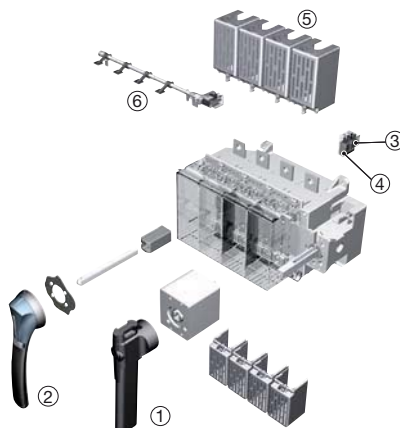
Improved safety

- Double break per phase (top and bottom of fuse - up to 630 A (NFC/DIN) and 800 A (BS88).
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

Configurations

Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation.
2. External front operation.
3. NO/NC position AC.
4. NO/NC AC wired to ready mounted transmission coil.
5. Terminal shrouds.
6. Fuse blown indication device.



fusom_060_b_1_x_cat

References

BS88 - Front and side operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) Fuse ⁽¹⁾	No. of poles	Front operation Switch body	Side operation Switch body	Direct handle ⁽²⁾	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	Terminal shrouds ⁽³⁾	Terminal screens ⁽⁴⁾	Inter phase barrier
250 A B1-B2-B3	3 P	3660 3026	3665 3026	Front operation Black 3999 6201					3 P 3998 3040		
	4 P	3660 6026	3665 6026								
400 A B1-B2-B3-B4	3 P	3660 3041	3665 3041	Side operation Black 3999 6012	S3 type				4 P 3998 4040		
	4 P	3660 6041	3665 6041								
630 A C1-C2	3 P	3660 3064	3665 3064		Front operation Black IP55 1431 3511 ⁽²⁾ Red IP55 1432 3511	Front operation 200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾	1 st contact NO/NC 3999 0051	1 contact NO/NC 3999 0031	3998 3063		
	4 P	3660 6064	3665 6064								
800 A C1-C2-C3	3 P	3660 3080	3665 3080	Front operation Black 3999 6012	Side operation Black IP55 1435 3511 ⁽²⁾ Red IP55 1436 3511	Side operation 200 mm 1403 1520					
	4 P	3660 6080	3665 6080								
1250 A D1	3 P	3660 3121	3665 3121	Side operation Black 3999 6012						3 P 3998 3120 4 P 3998 4120	3 P 2998 0003 4 P 2998 0004
	4 P	3660 6121	3665 6121								

(1) For the fuses: see page 230 "BS88 industrial fuselinks".

(2) Standard.

(3) Top/bottom.

(4) Bottom terminals protection screen as standard.

FUSOMAT

Visible breaking and tripping fuse switches
from 250 to 1250 A

References

NFC and DIN - Front operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) Fuse	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	1 st Fuse blown AC	Terminal shrouds (1 piece)	Terminal screens top	Inter phase barrier										
250 A / 1	3 P	3650 3026	Black 3999 6201 ⁽¹⁾	S3 type Black IP55 1431 3511 ⁽¹⁾	200 mm 1401 1520	1 st contact NO/NC 3999 0051	1 contact NO/NC 3999 0031	3 P 3994 1304	3 P 3998 3040 ⁽²⁾												
	4 P	3650 6026																			
400 A / 2	3 P	3650 3041																			
	4 P	3650 6041																			
630 A / 3	3 P	3650 3064										S3 type Red/yellow IP55 1432 3511	320 mm 1401 1532 ⁽¹⁾	2 nd contact NO/NC 3999 0052			3 P 3994 1306	3 P 3998 3063 ⁽²⁾			
	4 P	3650 6064																			
800 A / 4	3 P	3650 3080																			
	4 P	3650 6080																			
1250 A / 4	3 P	3650 3121		Black 3999 6012 ⁽¹⁾					3 P 3994 1312	3 P 3998 3120 ⁽³⁾	3 P 2998 0003										
	4 P	3650 6121																			
	3 P																				
	4 P																				
	3 P																				
	4 P																				

(1) Standard.

(2) Top/bottom.

(3) Bottom terminals protection screen as standard.

NFC and DIN - Side operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) Fuse	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	1 st Fuse blown AC	Terminal shrouds (1 piece)	Terminal screens top	Inter phase barrier																				
250 A / 1	3 P	3655 3026	Black 3999 6012 ⁽¹⁾	S3 type Black IP55 1435 3511 ⁽¹⁾ S3 type Red IP55 1436 3511	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3994 1304	3 P 3998 3040 ⁽²⁾																						
	4 P	3655 6026																													
400 A / 2	3 P	3655 3041						Black 3999 6012 ⁽¹⁾	S3 type Black IP55 1435 3511 ⁽¹⁾ S3 type Red IP55 1436 3511	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	4 P 3994 1404	4 P 3998 4040 ⁽²⁾																	
	4 P	3655 6041																													
630 A / 3	3 P	3655 3064											Black 3999 6012 ⁽¹⁾	S3 type Black IP55 1435 3511 ⁽¹⁾ S3 type Red IP55 1436 3511	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3994 1306	3998 3063 ⁽²⁾												
	4 P	3655 6064																3994 1406	3998 4063 ⁽²⁾												
800 A / 4	3 P	3655 3080																Black 3999 6012 ⁽¹⁾	S3 type Black IP55 1435 3511 ⁽¹⁾ S3 type Red IP55 1436 3511	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3994 1312		3 P 3998 3120 ⁽³⁾	3 P 2998 0003					
	4 P	3655 6080																													
1250 A / 4	3 P	3655 3121																					Black 3999 6012 ⁽¹⁾	S3 type Black IP55 1435 3511 ⁽¹⁾ S3 type Red IP55 1436 3511	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	4 P 3994 1412		4 P 3998 4120 ⁽³⁾	4 P 2998 0004
	4 P	3655 6121																													

(1) Standard.

(2) Top/bottom.

(3) Bottom terminals protection screen as standard.

FUSOMAT

Visible breaking and tripping fuse switches
from 250 to 1250 A

Accessories

Direct handle

Front operation		
Rating (A)	Handle colour	Reference
250 ... 630	Black	3999 6201
800 ... 1250	Black	3999 6012
250 ... 1250	Red	consult us

Side operation		
Rating (A)	Handle colour	Reference
250 ... 1250	Black	3999 6012
250 ... 1250	Red	3999 6013



access_156_a_2_cat

External handle

Front operation				
Rating (A)	Handle type	Handle colour	External IP	Reference
250 ... 1250	S3	Black	IP55	1431 3511
250 ... 1250	S3	Red	IP55	1432 3511

Side operation				
Rating (A)	Handle type	Handle colour	External IP	Reference
250 ... 1250	S3	Black	IP55	1435 3511
250 ... 1250	S3	Red	IP55	1436 3511



access_151_a_1_cat



access_156_a_2_cat

S3 type handle

S3 type handle

S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles.

Dimensions

Adds 12 mm to the depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



access_157_a_1_cat

Alternative S-type handle cover colours

Use

For single lever S3 type handles.

Other colours: Please consult us.

Colour	To be ordered in multiples of	Handle	Reference
Light grey	50	S3 type	1401 0001
Dark grey	50	S3 type	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041



access_198_a_2_cat

Shaft for external handle

Use

Standard lengths:

- 200 mm
- 320 mm.

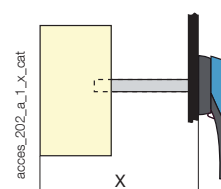
Other lengths: Please consult us.

Front operation				
Rating (A)	Dimension X (mm)	Shaft length (mm)	Type	Reference
250 ... 400	300 ... 422	200	15 x 12	1401 1520
250 ... 400	300 ... 542	320	15 x 12	1401 1532
630 ... 1250	345 ... 467	200	15 x 12	1401 1520
630 ... 1250	345 ... 587	320	15 x 12	1401 1532

Side operation				
Rating (A)	Dimension Y (mm)	Shaft length (mm)	Type	Reference
250 ... 1250	78 ... 200	200	15 x 12	1403 1520

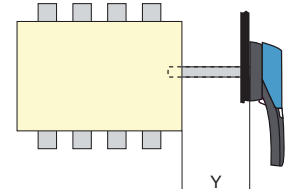


access_144_b_1_1_cat



access_202_a_1_x_cat

X



access_202_a_1_x_cat

Y

Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:
1 to 2 NO/NC auxiliary contacts.

Coil tripping

1 to 2 NO/NC auxiliary contacts.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Characteristics

Auxiliary contact NO/NC IP2.

Electrical characteristics

30 000 operations.

NO/NC position contact

Rating (A)	Current nominal (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1250	16	12	8	14	6

NO/NC contact signalling coil tripping

Rating (A)	Current nominal (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1250	16	12	8	12	2

NO/NC position contact

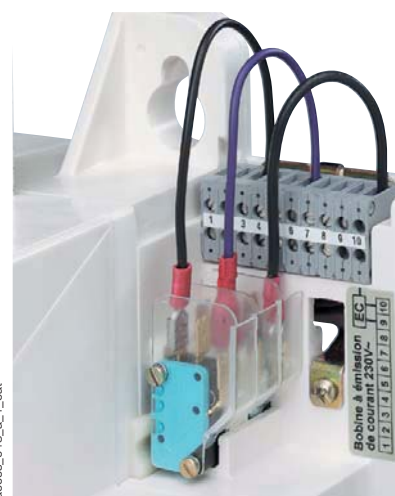
Rating (A)	Position AC	Reference
250 ... 1250	1 st AC	3999 0051
250 ... 1250	2 nd AC	3999 0052
630 ... 1250	3 rd and more	consult us

NO/NC low level position contact

Rating (A)	Position AC	Reference
250 ... 1250	1 st AC	3999 0111
250 ... 1250	2 nd AC	3999 0112

NO/NC contact signalling coil tripping

Rating (A)	Position AC	Reference
250 ... 1250	1 AC	3999 0031



acces_04B_a_1_cat

Alternative tripping coil

Shunt trip coil

Voltage	Replacement tripping coil	Modified Original coil
	Reference	Reference
24 VAC	3990 1024	3991 1024
48 VAC	3990 1048	3991 1048
110 VAC	3990 1110	3991 1110
230 VAC	3990 1220	included
400 VAC	3990 1380	3991 1380
12 VDC	3990 2012	3991 2012
24 VDC	3990 2024	3991 2024
48 VDC	3990 2048	3991 2048
110 / 200 VDC	3990 2220	3991 2220
220 VDC	3990 2220	

Undervoltage trip coil

Voltage	Replacement tripping coil	Modified Original coil
	Reference	Reference
24 VAC	3990 3024	3991 3024
48 VAC	3990 3048	3991 3048
110 VAC	3990 3110	3991 3110
230 VAC	3990 3220	3991 3220
400 VAC	3990 3380	3991 3380
12 VDC	3990 4012	3991 4012
24 VDC	3990 4024	3991 4024
48 VDC	3990 4048	3991 4048
110 VDC	3990 4110	3991 4110
220 VDC	3990 4220	3991 4220

Delayed undervoltage trip coil

Voltage	Reference
230 VAC	3992 3230
400 VAC	3992 3400

Use

Omnipolar breaking remotely controlled by shunt trip or undervoltage voltage release coil.

Note: the shunt trip coil must not be supplied for more than 5 s.

A 230 VAC shunt trip coil is fitted to the standard switch body. To modify this coil, the reference opposite must be added to the switch reference.

Examples for ordering:

- FUSOMAT with shunt trip coil 230 VAC - 1 reference: FUSOMAT 250 A, 3 pole, front operation, reference 3650 3026.
- FUSOMAT fitted with a non standard coil - 2 references: FUSOMAT 250 A, 3 pole, front operation, fitted with a 110 VAC undervoltage trip coil: 3650 3026 + 3991 3110.



Shunt trip coil

acces_049_a_1_cat



acces_050_a_1_cat

FUSOMAT

Visible breaking and tripping fuse switches
from 250 to 1250 A

Accessories (continued)

Current-reducing resistor for undervoltage trip coil

Use

Reduces, by limiting the current, the effects on the undervoltage coils used in continuous processes or processes exposed to high ambient temperatures.

Voltage	Reference
110 VAC	3999 3112
230 VAC	3999 3230
400 VAC	3999 3400
110 VDC	3999 4110

Fuse blown indication

Use

For DIN fuse cartridge with striker.

Electrical principle

A NO/NC auxiliary contact detects that the fuse has blown.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

Characteristics

Rating (A)	Current nominal (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1250	16	12	8	12	2

NO/NC changeover contact

Rating (A)	No. of poles	Position AC	Reference
250 ... 400	3 P	1 st	3994 1304
250 ... 400	4 P	1 st	3994 1404
630	3 P	1 st	3994 1306
630	4 P	1 st	3994 1406
800 ... 1250	3 P	1 st	3994 1312
800 ... 1250	4 P	1 st	3994 1412
250 ... 1250	3/4 P	2 nd	3994 1902

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Advantage

Perforations allowing remote thermographic inspection without removal.

Rating (A)	No. of poles	Position	Reference
250 ... 400	3 P	top or bottom	3998 3040 ⁽¹⁾
250 ... 400	4 P	top or bottom	3998 4040 ⁽²⁾
630	3 P	top or bottom	3998 3063 ⁽¹⁾
630	4 P	top or bottom	3998 4063 ⁽²⁾

(1) Reference composed of 3 pieces.

(2) Reference composed of 4 pieces.



access_213_b_1_cat

Terminal screen

Use

Top or bottom protection against direct contact with terminals or connecting parts.

Rating (A)	No. of poles	Position	Reference
800 ... 1250	3 P	top	3998 3120
800 ... 1250	4 P	top	3998 4120
800 ... 1250	3/4 P	bottom	included



fusom_069_a_1_cat

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

References

Rating max (A)	No. of poles	Reference
250	3 P	5400 3025
250	4 P	5400 4025
400	3 P	5400 3040
400	4 P	5400 4040
500 ... 630	3 P	5400 3063
500 ... 630	4 P	5400 4063



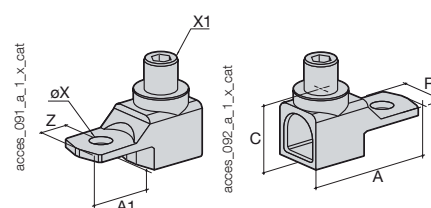
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Connections

Rating (A)	Flexible cable cross-section (mm ²)	Rigid cable cross-section (mm ²)	Width flexible bar (mm)	Stripped over (mm)
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34
500 ... 630	70 ... 300	70 ... 300	24	34

Dimensions

Rating (A)	A	A1	C	R	ØX	X1	Z
250	62	31.5	31.5	25	10.5	M16	14
400	71.5	32	38	32	10.5	M20	15
500 ... 630	76.5	37	38	40	12.5	M20	15



Handle key interlocking accessories

Use

- Locking in position 0 of the front or side operation handle;
- using a padlock (not supplied) and factory integrated into the handle.
- using RONIS 1104 A lock (key BC 3318) to be mounted directly on the padlockable handle.
- Locking using CASTELL K (not supplied)
- Locking using RONIS EL11AP (not supplied).

Locking using RONIS EL 1104 A lock (supplied)

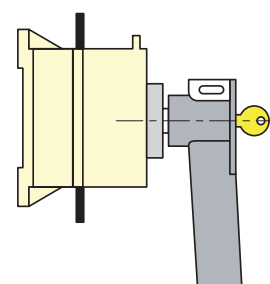
Rating (A)	Operation	Reference
250 ... 1800	front direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
250 ... 1800	external	1499 7701
1600 ... 1800	front direct	3999 6117

Locking using CASTELL lock (not supplied)

Rating (A)	Operation	Reference
250 ... 1250	external	1499 7702



Lock RONIS 1104 A

access_010_b_1_x_cat

Label holder

Use

Recognisable self-adhesive label allowing identification of the devices.

Dimensions W x H (mm)	To be ordered in multiples of	Reference
18 x 13	50	7769 9999



access_044_a_1_cat

Other specific accessories

Use

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

Characteristics according to IEC 60947-3

25 to 1250 A

Thermal current I_{th} (40°C)	250 A	400 A	630 A	800 A	1250 A
NFC/DIN fuse size	1	2	3	4	4
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A / AC-21 B	250/250	400/400	630/630	800/800	1250/1250
400 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1250/1250
400 VAC	AC-23 A / AC-23 B	250/250	400/400	630/630	800/800	1000/1000
690 VAC ⁽²⁾	AC-21 A / AC-21 B	200/200	315/400	500/630	800/800	800/1250
690 VAC ⁽²⁾	AC-22 A / AC-22 B	200/200	315/400	500/630	800/800	800/1000
690 VAC ⁽²⁾	AC-23 A / AC-23 B	200/200	250/315	315/400	630/630	630/630
220 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630	800/800	800/1250
220 VDC	DC-22 A / DC-22 B	200/200	315/315	315/630	800/800	800/1250
220 VDC	DC-23 A / DC-23 B	200/200	200/315	400/630	800/800	800/1000
440 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1250 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	200/200	315/315 ⁽³⁾	315/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1250 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	200/200	200/315 ⁽³⁾	400/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1000 ⁽⁴⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	132/132	220/220	355/355	450/450	560/560
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	185/185	220/295	295/400	400/400	600/600

Reactive power (kvar)

At 400 VAC (kvar) ⁽⁵⁾	115	185	290	365	575
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Fuse protected short-circuit withstand (kA ms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	80/100	80/100	80/100	80/100	80/100
Associated fuse rating (A) ⁽⁶⁾	250	400	630	800	1250

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	30	45	60	80	80
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Connection

Min. connection wire range	95	185	2 x 150		
Minimum Cu busbar section (mm ²)			2 x 30 x 5	2 x 60 x 5	2 x 60 x 5
Maximum Cu cable section (mm ²)	240	240	2 x 300	4 x 185	4 x 185
Maximum Cu busbar width (mm)	40	40	50	100	100
Tightening torque min (Nm)	20	20	40		20

Mechanical characteristics

Durability (number of operating cycles)	8000	8000	5000	5000	5000
Weight of a 3 pole device (kg)	7	8	16	28	28
Weight of a 4 pole device (kg)	8.5	9.5	19	33	33

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 pole in series by polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_o = 400$ VAC.

Dimensions

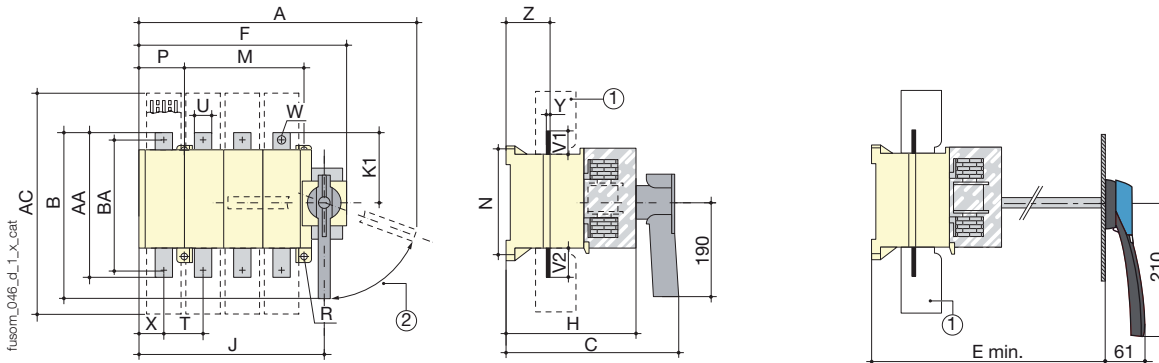
Front operation

BS88 - FUSOMAT 250 to 800 A

NFC and DIN - FUSOMAT 250 to 630 A

Direct front operation

External front operation



1. Terminal shrouds.
2. Reset 70°.

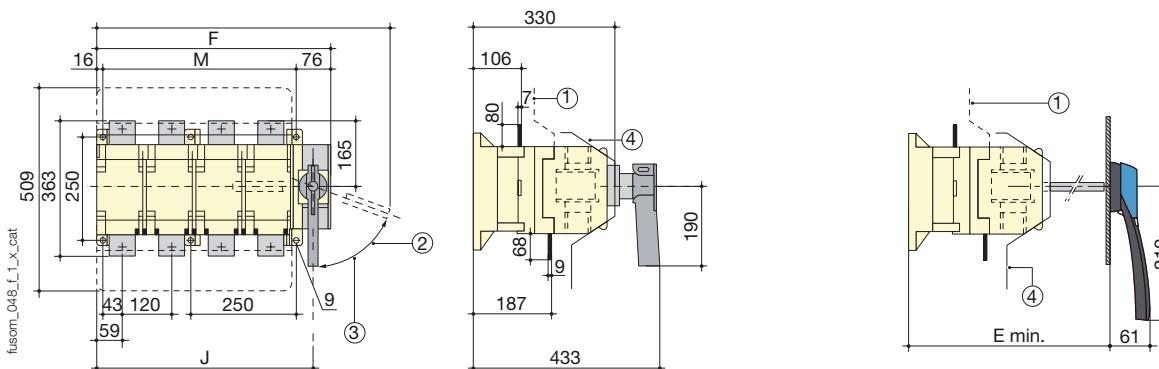
Rating (A)	Dimensions					Terminal shrouds	Switch body					Switch mounting					Connection											
	A 3p.	A 4p.	B	C	E		AC	F 3p.	F 4p.	H	J 3p.	J 4p.	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA
250	435	495	305	307	297 ... 343	380	285	345	221	253	313	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238	208
400	435	495	305	307	293 ... 343	380	285	345	221	253	313	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238	208
630	490,5	570,5	350	348	341 ... 440	470	345,5	425,5	268	308	388	150	250	250	20	100	9	80	50	50	50	13	36	65	7	72	300	260
800	490,5	570,5	350	348	341 ... 440	470	345,5	425,5	268	308	388	150	250	250	20	100	9	80	50	50	50	13	36	65	7	72	300	-

BS88 - FUSOMAT 1250 A

NFC and DIN - FUSOMAT 800 to 1250 A

Direct front operation

External front operation



1. Top terminal screens
2. Reset 70°.
3. Padlocking 65°.
4. Front terminal screens

Rating (A)	Overall dimensions			Switch body				Switch mounting	
	A 3p.	A 4p.	E min	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.
800 ⁽¹⁾	582	702	345	437	557	399,5	519,5	345	465
1250	582	702	345	437	557	399,5	519,5	345	465

(1) NFC and DIN only.



FUSERBLOC UL

Fusible disconnect switches UL and CSA
30 to 800 A

Fuse protection



ul_004_a



fuser-ul_006_a



fuser-ul_005_a

The solution for

- > Motor load break.
- > Protection of industrial cabinet.
- > Electrical distribution.



Strong points

- > Improved safety.
- > High breaking capacity.
- > A complet range of functions.

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > NFPA79 (2002 Edition)
- > UL489, Guide WJAZ, file E255272 (Frame size 1 and 2)
- > UL98, Guide WHTY, file E201138 (Frame sizes 3 to 8)
- > CSA22.2 #5, Class 4652-06, file 112964 (Frame size 1 and 2)
- > CSA22.2 #4, Class 4651-02, file 112964 (Frame sizes 3 to 8)



(1) Product reference on request.

Function

FUSERBLOC UL fusible disconnect switches are heavy duty switches that break and make power circuits on and off load. The switches employ double break contacts per pole that ensure complete isolation of the fuse when the switch is in the "OFF" position. These switches are extremely durable and are tested and approved for use in the most demanding applications. The TEST position function is enabled with handles with the TEST position. This function tests the control circuit auxiliaries without switching the main contacts. It is a simple alternative to a separately wired push button.

Advantages

Improved safety

- On load make and break power circuit applications.
- Double break by phase.
- Touch safe covers.

High breaking capacity.

- Up to 200 kA Short circuit rating.

A complet range of functions

- Compact footprints.
- Front or side operation.
- Flange operation.
- NFPA 79 compliant kits.
- Voltage sensing terminals.

References

Fusible disconnect

Rating (A) Fuses Frame size	No. of poles	Switch body	Direct handle	Front external handle	External right side handle	Shaft external handle	NFPA79 kit	U type auxiliary contacts	Terminal shrouds
CD 30 A CC 1	3 P	3710 3003	Black 3729 4012	S0 type Black IP65 I - 0 1, 3R, 12 1493 0111 4, 4X 149D 0111		S0 type 200 mm 7.9 inches 1405 0620 320 mm 12.6 inches 1405 0632 400 mm 15.7 inches 1405 0640	3729 4532		
	3 P + switched neutral	3710 4003							
	3 P + solid neutral	3710 5003							
CD 30 A J 2	3 P	3710 3004	3729 4014	S1 type Black IP65 I - 0 1, 3R, 12 141F 2111 4, 4X 141D 2111		S1 type 200 mm 7.9 inches 1401 0520 320 mm 12.6 inches 1401 0532 400 mm 15.7 inches 1401 0540		1 contact NC 3999 0701 1 contact NO 3999 0702	standard
	3 P + switched neutral	3710 4004							
	3 P + solid neutral	3710 5004							
30 A J 4	2 P	3861 2004	Black 3629 7910	S1 type Black I - 0 1, 3R, 12 Defeatable 141F 2111 I - 0 4, 4X Defeatable 141D 2111 I - 0 - Test 4, 4X Defeatable 141D 2115	S1 type Black I - 0 4, 4X 141H 6111 S1 type Red / yellow I - 0 4, 4X 141I 6111	S1 type 200 mm 7.9 inches 1400 1020	3729 7540		
	3 P	3861 3004							
	4 P	3861 6004							
60 A J 4	2 P	3861 2005	Black 3629 7910	S1 type Black I - 0 1, 3R, 12 Defeatable 141F 2111 I - 0 4, 4X Defeatable 141D 2111 I - 0 - Test 4, 4X Defeatable 141D 2115	S1 type Black I - 0 4, 4X 141H 6111 S1 type Red / yellow I - 0 4, 4X 141I 6111	320 mm 12.6 inches 1400 1032	3729 7540		
	3 P	3861 3005							
	4 P	3861 6005							

FUSERBLOC UL

Fusible disconnect switches UL and CSA

30 to 800 A

References (continued)

Rating (A) fuses Frame size	No. of poles	Switch body	Direct handle	Front external handles	External right side handle ⁽¹⁾	Shaft for external handle	NFPA79 kit	U type auxiliary contacts	Terminal shrouds	
60 A J 5	2 P	3861 2006	Black 3629 7910	S2 type Black I - 0 1, 3R, 12 Defeatable 142F 2111 Black I - 0 4, 4X Defeatable 142D 2111 Black I - 0 - Test 4, 4X Defeatable 142D 2115	S2 type Black I - 0 4, 4X 142H 6111 Red / yellow I - 0 4, 4X 142I 6111	S1 type 200 mm 7.9 inches 1400 1020 320 mm 12.6 inches 1400 1032	3729 7540	1 contact type NC 3999 0701 1 contact type NO 3999 0702	standard	
	3 P	3861 3006								
	4 P	3861 6006								
100 A J 5	2 P	3861 2010								
	3 P	3861 3010								
	4 P	3861 6010								
200 A J 6	2 P	3861 2020								
	3 P	3861 3020								
	4 P	3861 6020								
400 A J 7	2 P	3861 2038					3729 7544		3898 2020	
	3 P	3861 3038								3898 3020
	4 P	3861 6038								
600 A J 8	2 P	3850 2060	3729 7552	3898 2038						
	3 P	3850 3060			3898 3038					
	4 P	3850 6060				3898 4038				
800 A L 8	2 P	3850 2080		S3 type Black I - 0 1, 3R, 12 Defeatable 143F 3111 4, 4X Defeatable 143D 3111	S3 type 200 mm 7.9 inches 1400 1220 320 mm 12.6 inches 1400 1232	2 P 3898 2080 3 P 3898 3080 4 P 3898 4080				
	3 P	3850 3080								
	4 P	3850 6080								

(1) No door interlocking.

NFPA79 accessories

Flange handle for flange operation

Use

Meets both UL508A and NFPA79 requirements.
 The handle will operate the switch by cable or rod.

Rating (A)	Type	Nema type	Reference
30 ... 200	Standard handle	1, 3, 3R, 4, 12	3729 9002 ⁽¹⁾
30 ... 200	Chrome plated handle	1, 3, 3R, 4, 4X, 12	3729 9003 ⁽¹⁾

(1) Defeatable handle.



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Cable operator

Use

Link between the flange handle and the switch, please order the flange handle, the mechanism and a cable length of your choice.

Rating (A)	Description	Reference
30 ... 200 A	Cable flange mechanism	3729 9903

Cable length (inches)	Cable length (mm)	Reference
36	900	3729 9992
60	1500	3729 9993
120	3000	3729 9994



srco_247_a_1_cat



ul_042_b_1

Rod operator

Use

Link between the flange handle and the switch. The rod flange is an economical solution, please order the flange handle and a rod kit.

Rating 30 ... 200 A

For enclosure depth (inches)	For enclosure depth (mm)	Reference
8 ... 24	203 ... 613	3729 9904



ul_043_a

NFPA79 "Through the door" kit

Use

Meets both UL508A and NFPA79 requirements.
 Allows retrofit of your installations for ratings from 30 to 800 A.
 Please order an S-type external handle separately.

Rating (A)	Reference
CD 30, frame 1 - 2	3729 4532
30 ... 200, frame 3 to 6	3729 7540
400, frame 7	3729 7544
600 ... 800, frame 8	3729 7552



ul_121_b

FUSERBLOC UL

Fusible disconnect switches UL and CSA

30 to 800 A

Accessories

Direct handle

Rating (A)	Colour	fuses	Fig.	Reference
CD 30	Black	CC	1	3729 4012
CD 30	Black	J	1	3729 4014
30 ... 400	Black	J	2	3629 7910
600 ... 800	Black	J / L	2	3859 6011

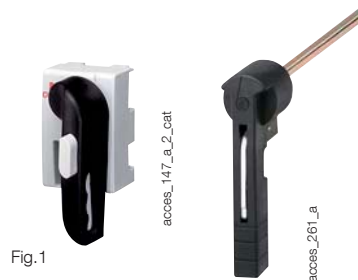


Fig. 1

Fig. 2

External handle

Use

The locking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position, and when the switch is padlocked in the "OFF" position (S1, S2, S3 and S4 type handles only).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only).

The interlocking function is restored when the door is re-closed.



S0 type handle



S1 type handle



S2 type handle



S3 type handle

Front operation

Rating (A)	Frame size	Handle	Nema type	Test	Handle colour	Standard Reference	Heavy duty Reference
CD 30	1	S0 type	1, 3R, 12	I - 0	Black	1493 0111	
CD 30	1	S0 type	1, 3R, 12	I - 0	Red/Yellow	1494 0111	
CD 30	1	S0 type	4, 4X	I - 0	Black	149D 0111	
CD 30	1	S0 type	4, 4X	I - 0	Red/Yellow	149E 0111	
CD 30 ... 60	3/4	S1 type	1, 3R, 12	I - 0	Black	141F 2111	
CD 30 ... 60	3/4	S1 type	1, 3R, 12	I - 0	Red/Yellow	141G 2111	
CD 30 ... 60	3/4	S1 type	4, 4X	I - 0	Black	141D 2111	141D 2911
CD 30 ... 60	3/4	S1 type	4, 4X	I - 0	Red/Yellow	141E 2111	141E 2911
CD 30 ... 60	3/4	S1 type	4, 4X	I - 0 - Test	Black	141D 2115	141D 2915
CD 30 ... 60	3/4	S1 type	4, 4X	I - 0 - Test	Red/Yellow	141E 2115	141E 2915
60...400	5/6/7	S2 type	1, 3R, 12	I - 0	Black	142F 2111	
60...400	5/6/7	S2 type	1, 3R, 12	I - 0	Red/Yellow	142G 2111	
60...400	5/6/7	S2 type	4, 4X	I - 0	Black	142D 2111	142D 2911
60...400	5/6/7	S2 type	4, 4X	I - 0	Red/Yellow	142E 2111	142E 2911
60...400	5/6/7	S2 type	4, 4X	I - 0 - Test	Black	142D 2115	142D 2915
60...400	5/6/7	S2 type	4, 4X	I - 0 - Test	Red/Yellow	142E 2115	142E 2915
600...800	8	S3 type	1, 3R, 12	I - 0	Black	143F 3111	
600...800	8	S3 type	1, 3R, 12	I - 0	Red/Yellow	143G 3111	
600...800	8	S3 type	4, 4X	I - 0	Black	143D 3111	143D 3911
600...800	8	S3 type	4, 4X	I - 0	Red/Yellow	143E 3111	143E 3911

Right side operation

Rating (A)	Frame size	Handle	Nema type	Test	Handle colour	Standard Reference	Heavy duty Reference
30 ... 60	3/4	S1 type	4, 4X	I - 0	Black	141H 6111	141H 6911
30 ... 60	3/4	S1 type	4, 4X	I - 0	Red/Yellow	141I 6111	141I 6911
100 ... 400	5/6/7	S2 type	4, 4X	I - 0	Black	142H 6111	142H 6911
100 ... 400	5/6/7	S2 type	4, 4X	I - 0	Red/Yellow	142I 6111	142I 6911
600 ... 800	8	S3 type	4, 4X	I - 0	Black	consult us	consult us
600 ... 800	8	S3 type	4, 4X	I - 0	Red/Yellow	consult us	consult us

S-type handle raiser

Use

Enables S-type handles to be fitted in place of existing older style SOCOMEC handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Increases distance to door by 12 mm.

Handle colour	Pack qty	External degree of protection (IP)	Reference
Black	10	IP65	1493 0000



access_187_a_1_cat

Alternative colour S-type handle cover

Use

For single lever handle S-type S1, S2, S3 and double lever handle, type S4. Other colours: please consult us.

Handle colour	Pack qty	Handle	Reference
Light grey	50	S2, S3 type	1401 0001
Dark grey	50	S2, S3 type	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041



access_188_a_1_cat

Shaft for external handle

Use

Standard lengths:
- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

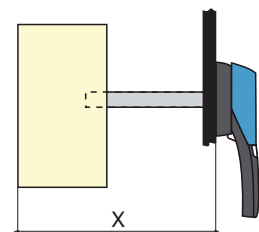
Other lengths: please consult us.

Rating (A)	Dimensions X (in)	Dimensions X (mm)	Handle	Length (inches)	Length (mm)	Reference
CD 30	4.02 ... 9.65	102 ... 245	S0-type	7.9	200	1405 0620
CD 30	4.02 ... 14.37	102 ... 365	S0-type	12.6	320	1405 0632
CD 30	4.02 ... 17.52	102 ... 445	S0-type	15.7	400	1405 0640
CD 30	4.02 ... 9.65	102 ... 245	S1 type	7.9	200	1401 0520
CD 30	4.02 ... 14.37	102 ... 365	S1 type	12.6	320	1401 0532
CD 30	4.02 ... 17.52	102 ... 445	S1 type	15.7	400	1401 0540
30 ... 100	5.3 ... 9.06	135 ... 230	S2, S3 Type	7.9	200	1400 1020
200	5.7 ... 9.06	145 ... 230	S2, S3 Type	7.9	200	1400 1020
400	7.87 ... 10.24	200 ... 260	S2, S3 Type	7.9	200	1400 1020
30 ... 100	5.3 ... 13.78	135 ... 350	S2, S3 Type	12.6	320	1400 1032
200	5.7 ... 13.78	145 ... 350	S2, S3 Type	12.6	320	1400 1032
400	7.87 ... 14.96	200 ... 380	S2, S3 Type	12.6	320	1400 1032
30 ... 100	5.3 ... 16.93	135 ... 430	S2, S3 Type	15.7	400	1400 1040
200	5.7 ... 16.93	145 ... 430	S2, S3 Type	15.7	400	1400 1040
400	7.87 ... 18.1	200 ... 460	S2, S3 Type	15.7	400	1400 1040
600 ... 800	10.63 ... 11.97	270 ... 304	S3 Type	7.9	200	1400 1220
600 ... 800	10.63 ... 16.69	270 ... 424	S3 Type	12.6	320	1400 1232
600 ... 800	10.63 ... 19.84	270 ... 504	S3 Type	15.7	400	1400 1240



access_145_b_1_cat

access_369_a_1_cat



access_202_a_1_cat

FUSERBLOC UL

Fusible disconnect switches UL and CSA

30 to 800 A

Accessories (continued)

Shaft guide for external handle

Use

This accessory enables handle to engage shaft with a misalignment of up to 15 mm. Required for a shaft length over 400 mm for S1 to S3 handles and for a shaft length from 320 mm for S0 handle.

Description	Reference
Shaft guide for S1 to S3 handles	1429 0000
Shaft guide for S0 handle	1419 0000



U type Auxiliary Contacts

Use

U type AC can be configured to be operated on both, standard and TEST position switches from CD 30 to 800 A. Each slot can accommodate up to 2 interlocked ACs.

- For CD 30A/CC, a maximum of 4 ACs (8 with an additional holder),
- For CD 30A/J, maximum 2 ACs (6 with an additional holder),
- For 30 to 200A/J, maximum 4 ACs,
- For 400 to 800A/L, maximum 8 ACs.

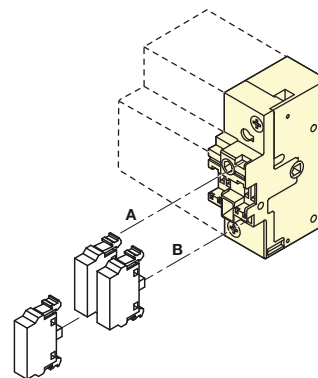
Electrical characteristics

A600.

NO auxiliary contacts		
Rating (A)	Number of contacts	Reference
CD 30 ... 800	1	3999 0701

NC auxiliary contacts		
Rating (A)	Number of contacts	Reference
CD 30 ... 800	1	3999 0702

Contact holder for additional auxiliary contacts		
Rating (A)	Fuses	Reference
CD 30	CC	3999 0710
CD 30	J	3999 0710



S-type auxiliary contacts

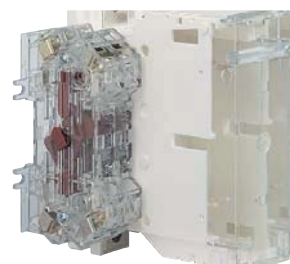
Use

Side operated auxiliary contacts for FUSERBLOC 30 to 400 A, position OFF and ON signalled by 1 to 4 NO + NC auxiliary contacts.

Electrical characteristics

A600/D600.

NO+NC auxiliary contacts		
Rating (A)	Number of contacts	Reference
30 ... 800	1	3999 U041
30 ... 800	2	3999 U042



Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.
2 sets required to fully shroud both line and load terminals.

Front and side operation Rating (A)	No. of poles	Reference ⁽¹⁾
30 ... 100	2/3/4 P	as standard
200	2 P	3898 2020
200	3 P	3898 3020
200	4 P	3898 4020
400	2 P	3898 2038
400	3 P	3898 3038
400	4 P	3898 4038
600 ... 800	2 P	3898 2080
600 ... 800	3 P	3898 3080
600 ... 800	4 P	3898 4080

(1) Top or bottom.



fuser_314_a_1_cat

Terminals lugs

Use

Connection of cables to the terminals.

Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
CD 30	#14 - #10	1		Cu	as standard
30	#14 - #10	1		Cu	as standard
30 ... 60	#10 - #6	1		Cu	as standard
60 ... 100	#12 - #1	1		Cu	as standard
200	#6 - 300MCM	1	2	Cu / Al	3954 2020
200	#6 - 300MCM	1	3	Cu / Al	3954 3020
200	#6 - 300MCM	1	4	Cu / Al	3954 4020
400	#2 - 600MCM	1	2	Cu / Al	3954 2040
400	#2 - 600MCM	1	3	Cu / Al	3954 3040
400	#2 - 600MCM	1	4	Cu / Al	3954 4040
400	2 x (#6 - 350 MCM)	2	2	Cu / Al	3954 2041
400	2 x (#6 - 350 MCM)	2	3	Cu / Al	3954 3041
400	2 x (#6 - 350 MCM)	2	4	Cu / Al	3954 4041
600	2 x (#2 - 600MCM)	1	2	Cu / Al	3954 2060
600	2 x (#2 - 600MCM)	2	3	Cu / Al	3954 3060
600	2 x (#2 - 600MCM)	2	4	Cu / Al	3954 4060



ul_002_a

Solid links

Rating (A)	Fuses	No of links per kit	Reference
60	J	3	3799 9006
60	J	4	3799 8006
100	J	3	3799 9010
100	J	4	3799 8010
200	J	3	3799 9020
200	J	4	3799 8020
400	J	3	3799 9040
400	J	4	3799 8040
600 ... 800	J / L	3	3799 9080
600 ... 800	J / L	4	3799 8080



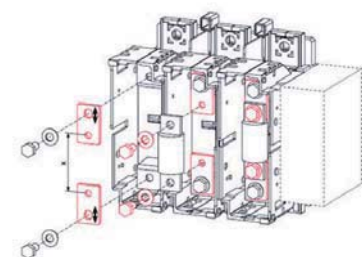
fuser-ul_013_a_1_cat

Class T fuse adapter

Use

The adapter makes it possible to fit class T fuses in the FUSERBLOC fuse switches.

Rating (A)	Size Class T fuse (in/mm)	No. of poles	Reference
100	2.34 / 59.5	3 P	3729 8010
200	2.48 / 63	3 P	3729 8020
400	2.71 / 69	3 P	3729 8040
600	2.95 / 75	3 P	3729 8060
800	3.17 / 80.5	3 P	3729 8080
100	2.34 / 59.5	4 P	3729 9010
200	2.48 / 63	4 P	3729 9020
400	2.71 / 69	4 P	3729 9040
600	2.95 / 75	4 P	3729 9060
800	3.17 / 80.5	4 P	3729 9080



fuser-ul_014_b_1_cat

FUSERBLOC UL

Fusible disconnect switches UL and CSA

30 to 800 A

Characteristics according to UL98/CSA22.2 #4

CD 30 to 800 A

Characteristics UL and CSA	CD 30A ⁽³⁾	CD 30A ⁽³⁾	30A	60A	60A	100A	200A	400A	600A	800A
Short circuit rating at 600 VAC (kA)	100	100	200	100	200	200	200	200	200	200
Type of fuse	CC	J	J	J	J	J	J	J	J	L
Max. fuse rating (A)	30	30	30	60	60	100	200	400	600	800
Operational power / current max Operational 3 ph										
220-240 VAC	7.5 / 22	7.5 / 22	7.5 / 22	15 / 42	15 / 42	30 / 80	60 / 154	125 / 312	200 / 480	200 / 480
440-480 VAC	15 / 21	15 / 21	15 / 21	30 / 40	30 / 40	60 / 77	125 / 156	250 / 302	500 / 590	500 / 590
600 VAC	20 / 22	20 / 22	20 / 22	50 / 52	50 / 52	75 / 77	150 / 144	350 / 336	500 / 472	500 / 472
125 VDC ⁽¹⁾	3 / 25	3 / 25	3 / 25	3 / 25	3 / 25	7.5 / 58	15 / 112	20 / 148		
250 VDC ⁽²⁾	5 / 20	5 / 20	5 / 20	10 / 38	10 / 38	20 / 38	40 / 140	50 / 173		
Mechanical endurance										
Endurance (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	8 000	6 000	5 000	5 000
Connection										
Min. connection cross-section/ (mm ²) ⁽²⁾	#14	#14	#10	#10	#12	#12	#6	#2 or 2 x #6	2 x #2	2 x #2
Max. connection cross-section/ (mm ²) ⁽²⁾	#10	#10	#6	#6	#1	#1	300MCM	600MCM or 2 x 350MCM	2 x 600MCM	2 x 600MCM

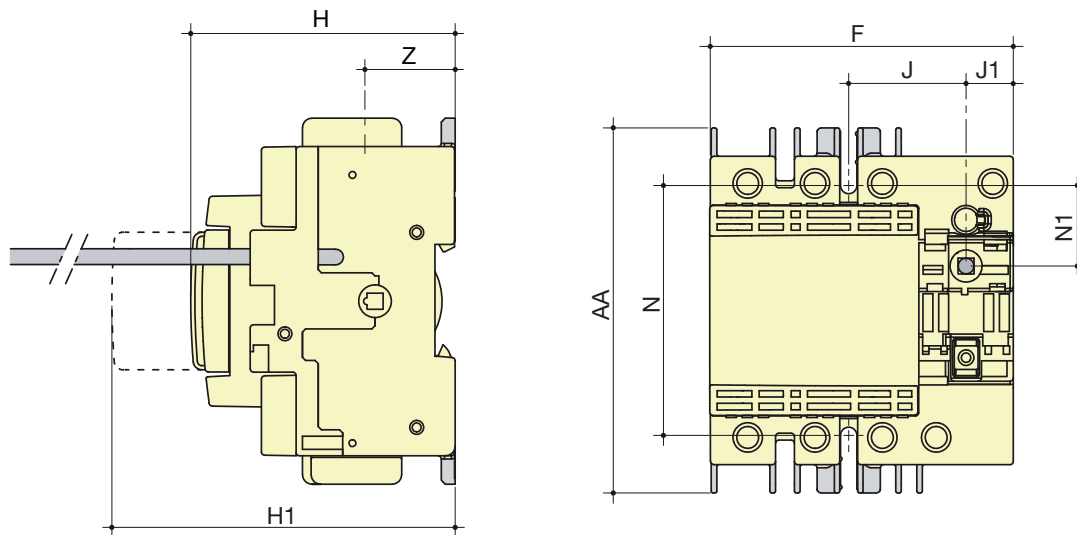
(1) 2 pole in series.

(2) 3 pole in series.

(3) UL 489/CSA22.2 #5.

Dimensions (in/mm)

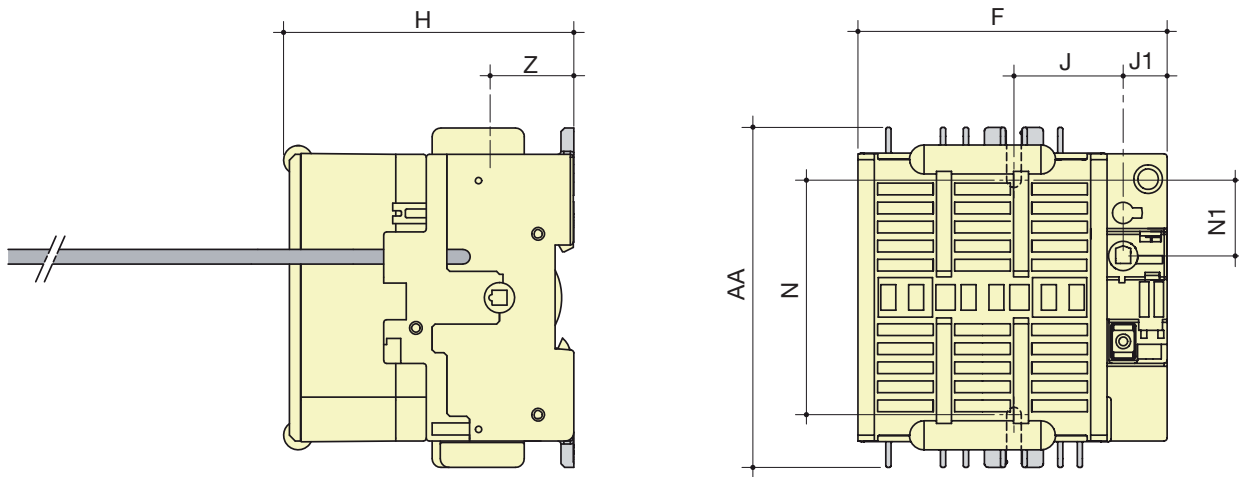
FUSERBLOC CD 30 A / CC - Frame size 1



fuser_605_a_1_x_cat

Rating (A) / Fuse	Unit	Switch body					Switch mounting		Connection	
		F	H	H1	J	J1	N	N1	AA	Z
CD 30 A / CC	in	3.78	3.28	5.19	1.47	0.59	3.13	1	4.56	1.12
	mm	96	83.5	132	37.5	15	79.5	25.5	116	28.5

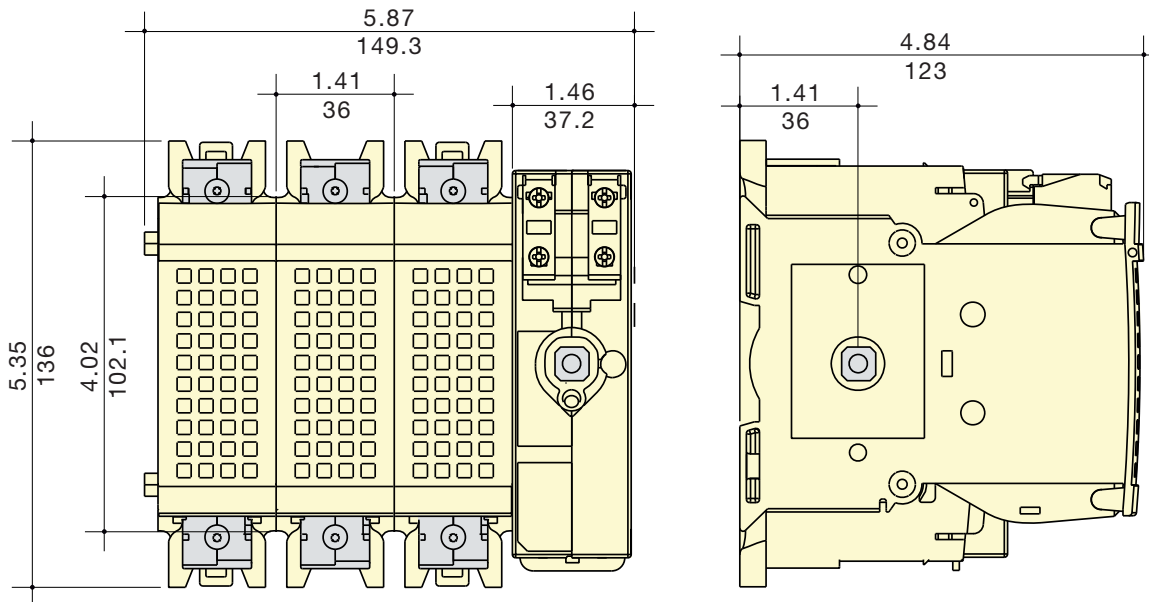
FUSERBLOC CD 30 A / J - Frame size 2



fuser_656_a_1_x_cat

Rating (A) / Fuse	Unit	Switch body				Switch mounting		Connection	
		F	H	J	J1	N	N1	AA	Z
CD 30 A / J	in	4.13	3.89	1.47	0.59	3.30	1	4.56	1.12
	mm	105	99	37.5	15	84	25.5	116	28.5

FUSERBLOC 30 to 60 A / J - Frame size 4



fuser-ul_001_a_1_x_cat

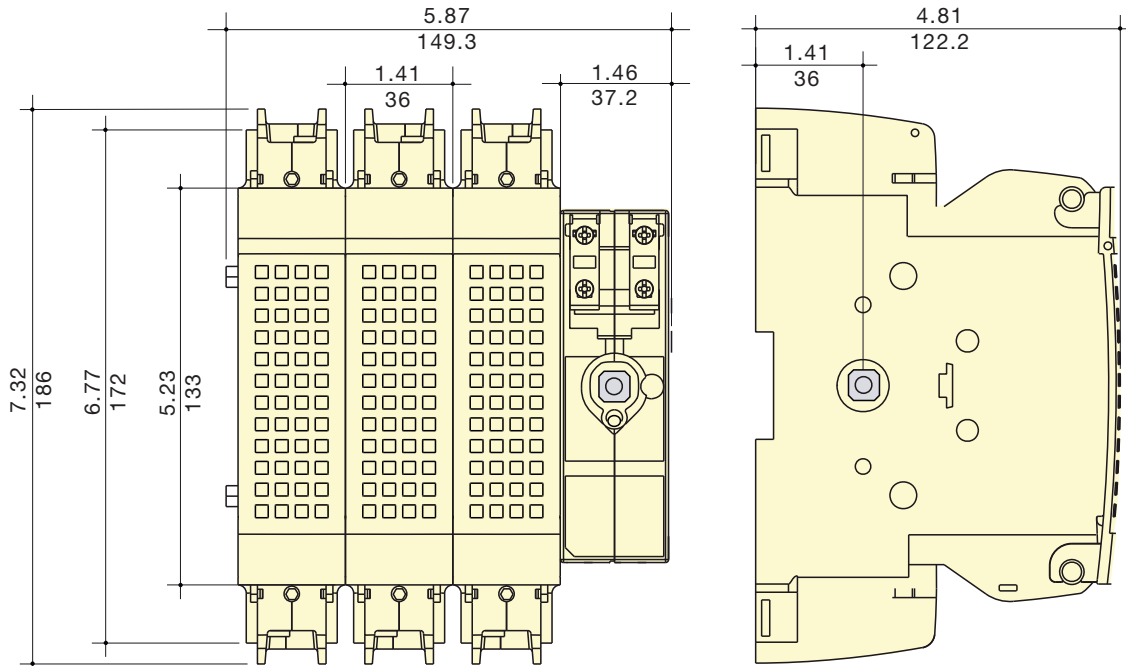
Note for width:
 For 2 pole device decrease overall width by 1.41"/36mm.
 For 4 pole device increase overall width by 1.41"/36mm.

FUSERBLOC UL

Fusible disconnect switches UL and CSA
30 to 800 A

Dimensions (continued)

FUSERBLOC 60 to 100 A / J - Frame size 5



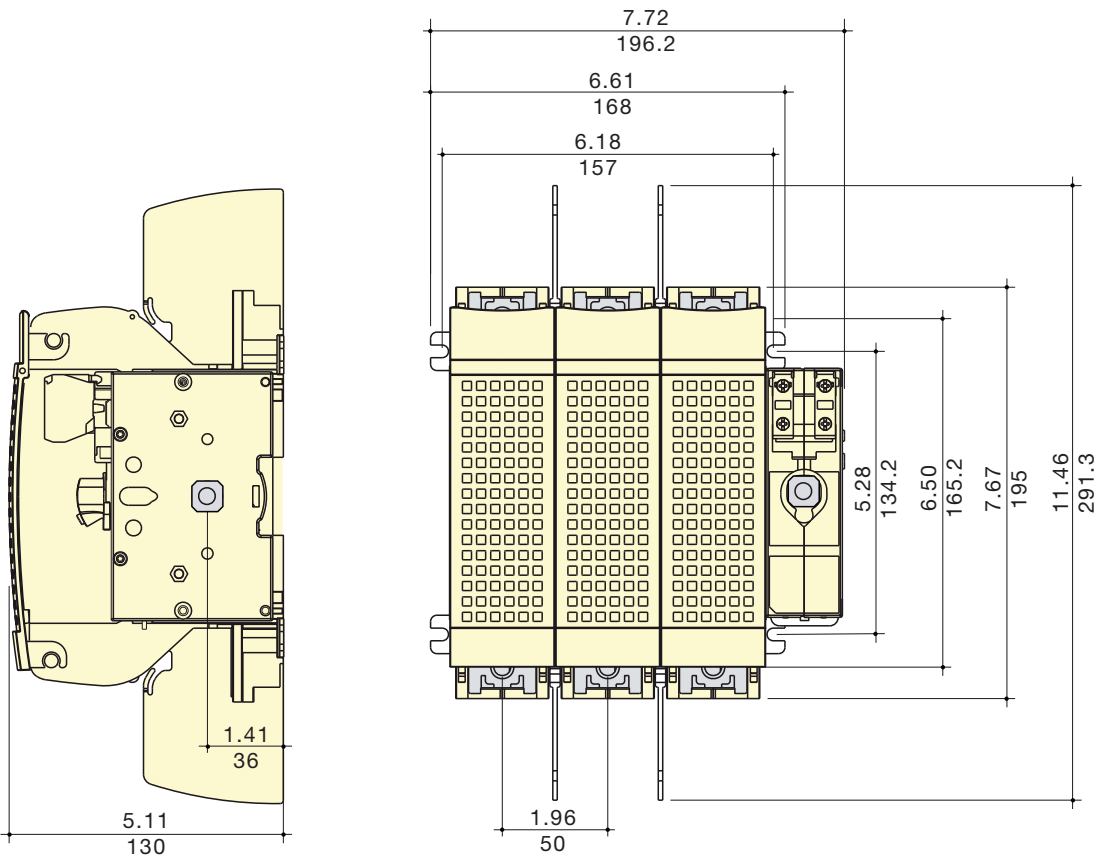
fuser-ul_002_a_1_x_cat

Note for width:

For 2 pole device decrease overall width by 1.41»/36mm.

For 4 pole device increase overall width by 1.41»/36mm.

FUSERBLOC 200 A / J - Frame size 6



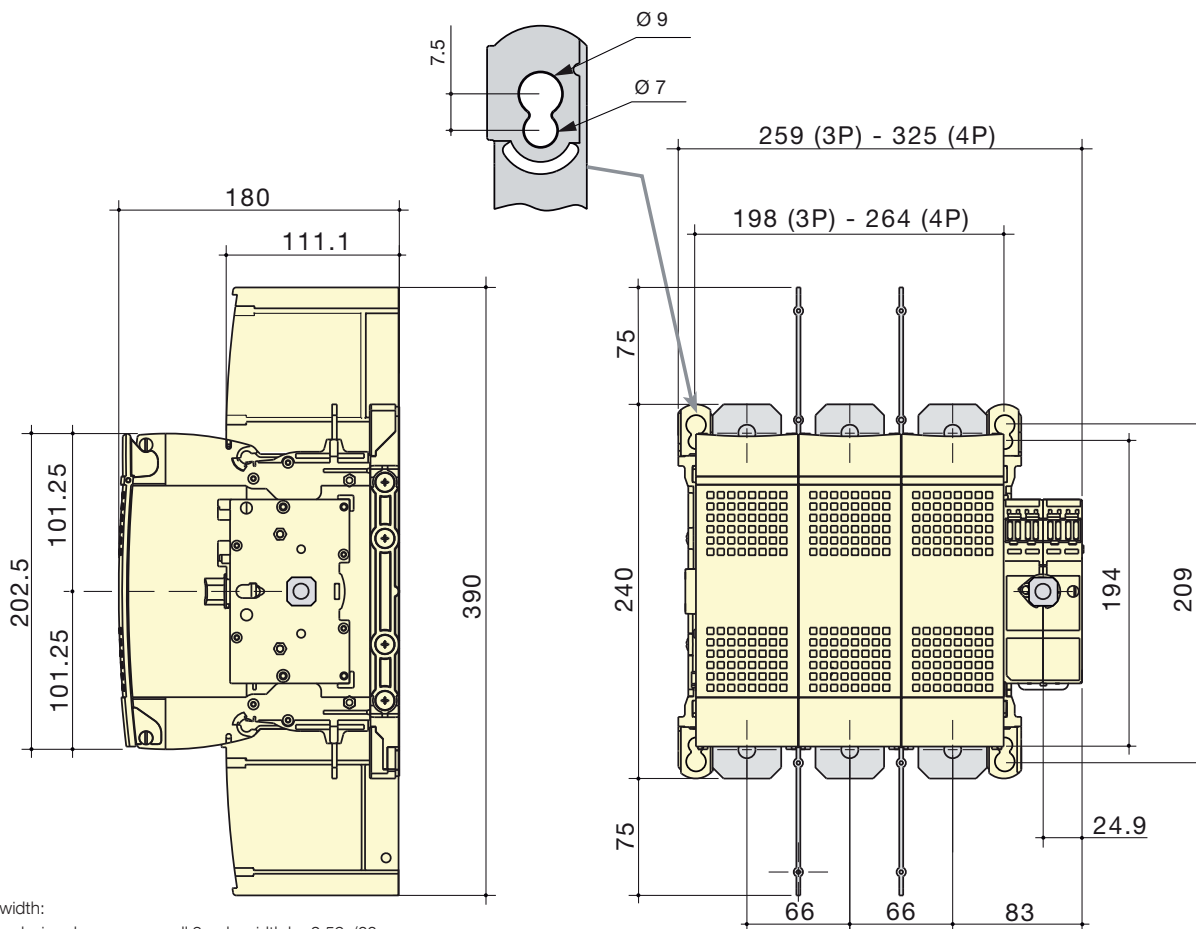
fuser-ul_003_a_1_x_cat

Note for width:

For 2 pole device decrease overall width by 1.96»/50mm.

For 4 pole device increase overall width by 1.96»/50mm.

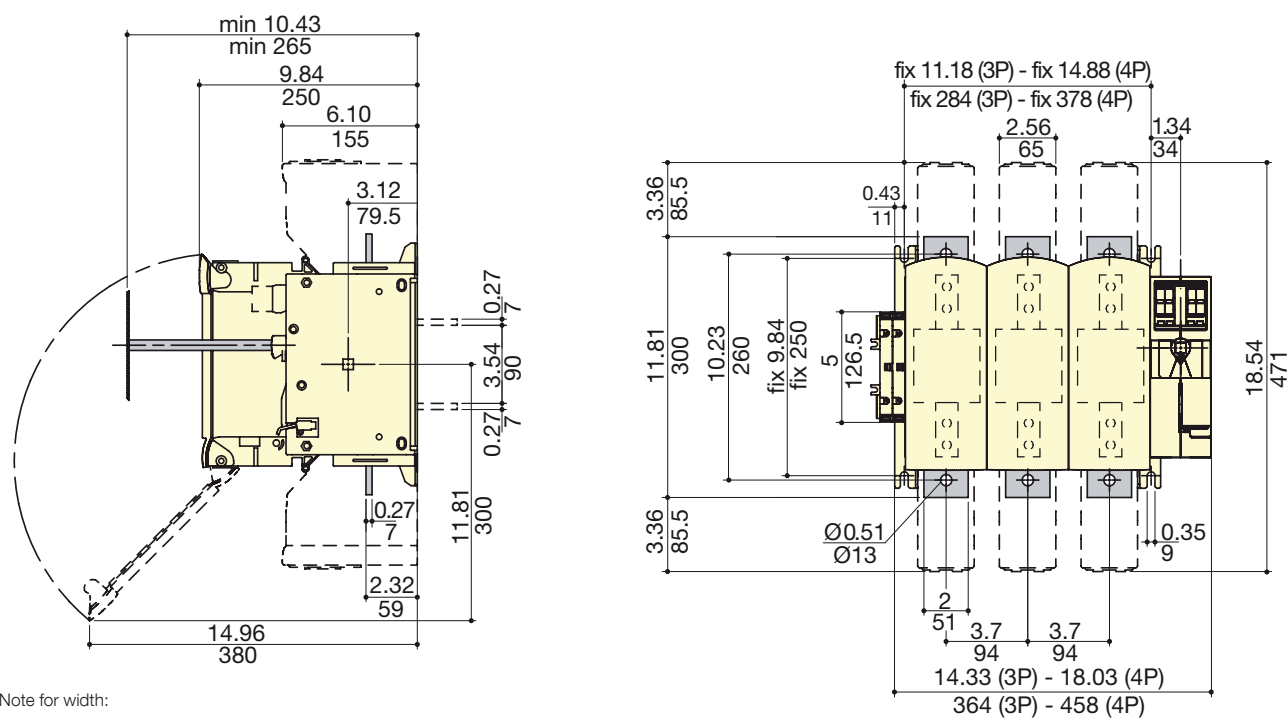
FUSERBLOC 400 A / J - Frame size 7



fuser-ul_004_c_1_x_cat

Note for width:
 For 2 pole device decrease overall 3 pole width by 2.59"/66mm.

FUSERBLOC 600 to 800 A / J - Frame size 8



fuser_631_b_1_gb_cat

Note for width:
 For 2 pole device decrease overall 3 pole width by 3.7"/94mm.

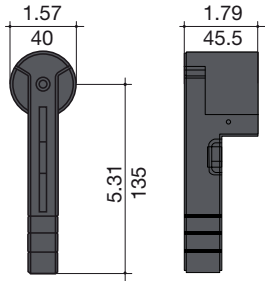
FUSERBLOC UL

Fusible disconnect switches UL and CSA
30 to 800 A

Dimensions (continued)

FUSERBLOC 30 to 400 A

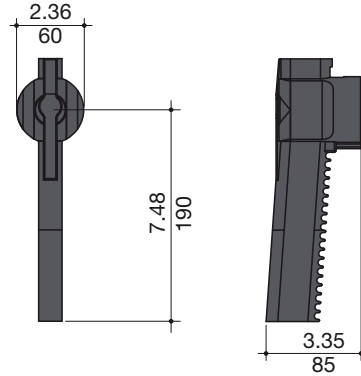
Front direct handle



silco-ul_027_a_1_x_cat

FUSERBLOC 600 to 800 A

Front direct handle



silco_267_b_1_x_cat

External handle dimensions (in / mm)

FUSERBLOC CD 30 A - Frames 1 / 2

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S0 type 			<p>With 4 fixing screws</p> <p>With fixing nut</p>

fuser-ul_015_a_1_gb_cat

FUSERBLOC CD 30 to 60 A - Frames 1 / 2 / 4

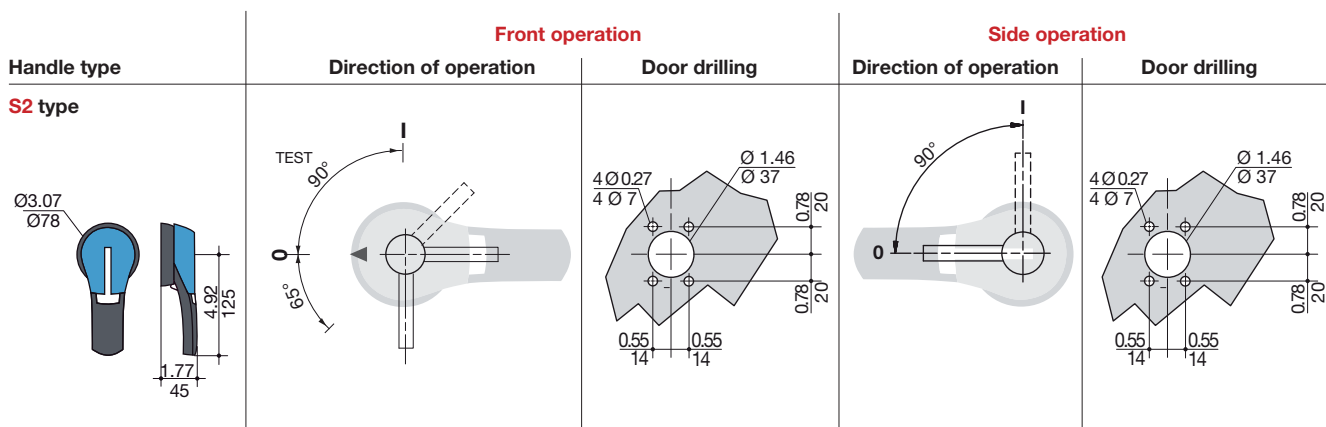
Handle type	Front operation Direction of operation	Door drilling	Side operation ⁽¹⁾ Direction of operation	Door drilling
S1 type 				

fuser-ul_015_b_1_gb_cat

(1) Not for frames 1 and 2.

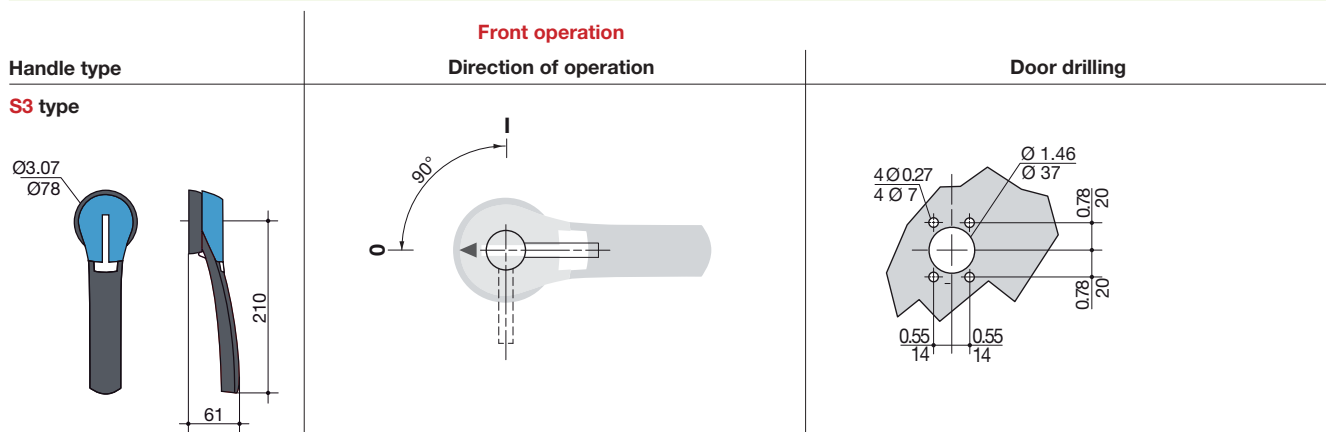
External handle dimensions (in / mm)

FUSERBLOC 60 to 400 A - Frames 5 / 6 / 7



fuser-ul_016_b_1_gp_cat

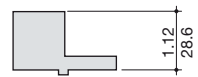
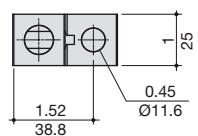
FUSERBLOC 600 and 800 A - Frame 8



fuser-ul_017_b_1_gp_cat

Terminal lugs (in / mm)

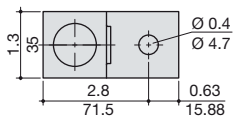
FUSERBLOC 200 A



sirco_115_b_1_x_cat

300 kcmil

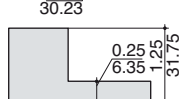
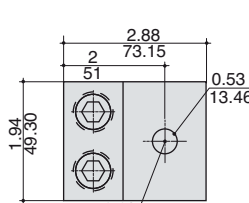
FUSERBLOC 400 A



sirco-ul_010_a_1_x_cat

600 kcmil

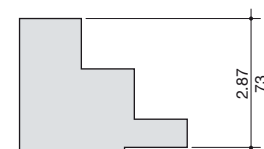
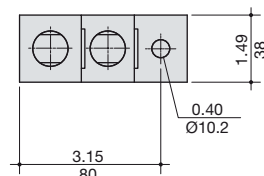
FUSERBLOC 400 A



sirco-ul_026_a_1_cat

2 x 350 kcmil

FUSERBLOC 600 to 800 A



sirco_116_b_1_x_cat

2 x 600 kcmil max



RM - RMS

Fuse disconnect switches

for industrial and high speed cylindrical fuses up to 125 A

Fuse protection

new



The solution for

- > Small outputs.

Strong points

- > Improved safety.
- > High breaking capacity.
- > Specific format and accessories.
- > Label holder.

Large range

- > Pre-break, please consult us.

Conformity to standards

- > IEC 60269-2-1
- > IEC 60269-1
- > IEC 60269-2
- > NF EN 60269-1
- > NF C 63-210
- > NF C 63211
- > VDE 0636-10
- > DIN 43620



Function

RM and RMS are modular fuse disconnect switches for cylindrical fuses. They provide safety disconnection and protection against overloads and short-circuits in any low voltage electrical circuit.

- RM: fuse disconnect switches without signalisation (for fuses without striker).
- RMS: fuse disconnect switches with pre-break, position signalisation and blown indication auxiliary contact.

Advantages

Improved safety

- Omnipolar and simultaneous breaking.
- High dielectric strength. Protection IP2X.

Specific format and accessories.

- Modular DIN 45 mm cut-out.
- Interlocking with accessory available.

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

References

RM - Device without signalisation

Basic device Fuse size	32 A 10 x 38		50 A 14 x 51		100 A 22 x 58	
	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
No. of poles						
1 P	12	5701 0015	6	5702 5001	6	5703 5001
1 P + N (1 module)	12	5601 5005				
1 P + N (2 modules)	6	5701 0017	3	5702 5005	3	5703 5005
1 P with LED signalling	12	5701 0011	6	5702 0011	6	5703 0011
2 P	6	5701 0020	3	5702 5002	3	5703 5002
3 P	4	5701 0018	2	5702 5003	2	5703 5003
3 P + N	3	5701 0019	1	5702 5004	1	5703 5004
4 P			1	5702 5006	1	5703 5006
N	12	5701 0016	6	5702 5000	6	5703 5000

RMS - Device with signalisation auxiliary contact⁽¹⁾

No. of poles	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
1 P with 1 AC	6	5702 5011	6	5703 5011
2 P with 2 AC	3	5702 5012	3	5703 5012
3 P with 1 AC	2	5702 5013	2	5703 5013
3 P with 1 AC N			1	5703 5014
3 P + N with 1 AC	1	5702 5014		
4 P with 2 AC			1	5703 5016

(1) The signalisation auxiliary contact provides the pre-break, fuse presence and also signals a blown fuse.

Think about it



10x38 RMs equipped with 0.5A gG fuses provide effective protection for voltage inputs and auxiliary supplies for all our electronic devices (DIRIS, COUNTIS, ISOM, RESYS differential relays, etc.).

RM - RMS

Fuse disconnect switches

for industrial and high speed cylindrical fuses up to 125 A

Accessories

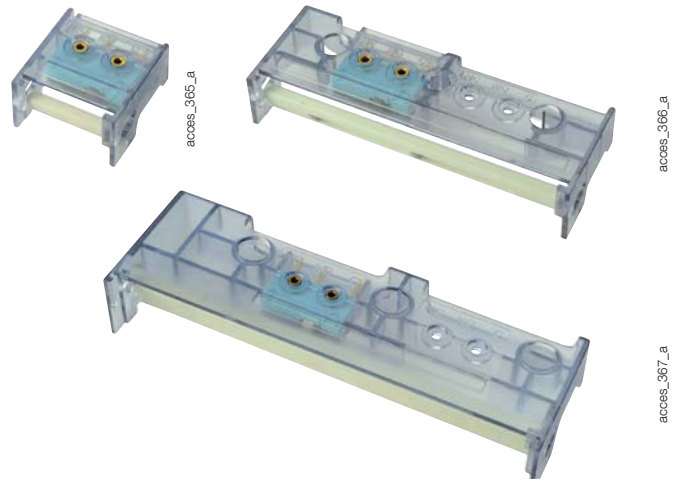
Auxiliary contact

Use

- Pre-break, presence and fuse blown for RMS 50 and 100:
1 or 2 NO/NC auxiliary contacts

Connection

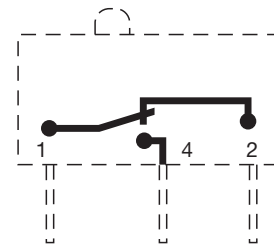
By 6.35 mm fast-on terminal.



Characteristics		Operating current I_o (A) 250 VAC AC-13
Rating (A)	Contact type	
50 ... 100	NO/NC contact	5
50 ... 100	Two level NO/NC contacts	0.1

References NO/NC contact for RMS		
Rating (A)	Contact(s)	Reference
50	1 P with 1 AC	5702 9901
50	3 P with 1 AC	5702 9903
50	3 P with 2 AC	5702 9030
100	1 P with 1 AC	5703 9901
100	3 P with 1 AC	5703 9903
100	3 P with 2 AC	5703 9030

Two-level NO/NC contact for RMS		
Rating (A)	Contact(s)	Reference
50	1 P with 1 AC	5702 9911
50	3 P with 1 AC	5702 9913
100	1 P with 1 AC	5703 9911
100	3 P with 1 AC	5703 9913

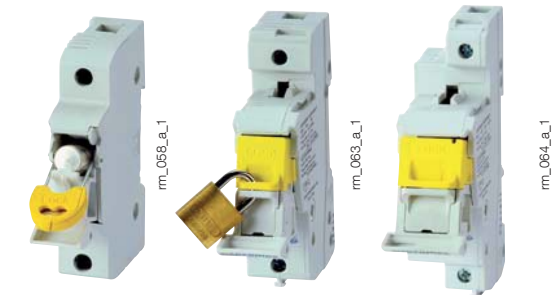


Handle key interlocking accessories

Use

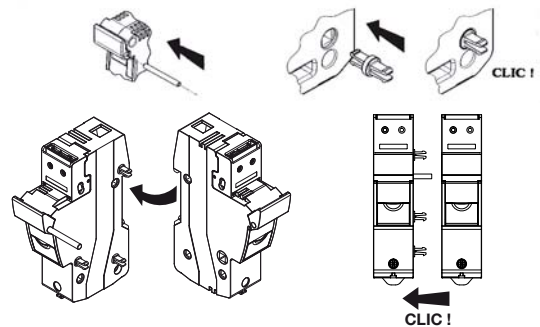
Padlocking of the handle (padlock not supplied).

For RM and RMS	
Rating (A)	Reference
32	5701 9040
50	5702 9040
100	5703 9040



Coupling system for RM	
Rating (A)	Reference
32	5704 0003 ⁽¹⁾⁽²⁾
50 ... 100	5702 9020 ⁽¹⁾⁽²⁾

(1) 1 coupling device allows to link 2 RM/RMS.
(2) 1 reference = 1 pack of 12 coupling devices.
Also sold separately (packs of 100 pieces) for the coupling of large quantities. Please consult us.



Improved isolation kit

Rating (A)	Reference
32	5701 9010 ⁽³⁾

(1) 1 coupling device allows to link 2 RM/RMS.
(2) 1 reference = 1 pack of 12 coupling devices.
Also sold separately (packs of 100 pieces) for the coupling of large quantities.
Please consult us.
(3) 1 reference = 1 pack for 10 RM devices.



Characteristics according to IEC 60947-3

32 to 100 A

Thermal current I_{th} (20 °C)	32 A	50 A	100 A
Fuse size	10 x 38	14 x 51	22 x 58
Rated insulation voltage U_i (V)	690	690	690
Fuse rating (A)			gG/aM
to 400 VAC	32	50	100/125
to 500 VAC	32	50	100/125
to 690 VAC		50	100/125
Fuse protected short-circuit withstand			
Prospective short-circuit (kA rms) ⁽¹⁾	100	100	100
Design current derating coefficient for N pole side by side			
N = 1 ... 3	1	1	1
N = 4 ... 6	0.8	0.8	0.8
N = 7 ... 9	0.7	0.7	0.7
N ≥ 10	0.6	0.6	0.6
Connection			
Minimum Cu cable cross-section (mm ²)	1.5	1.5	1.5
Maximum Cu cable cross-section (mm ²)	25 ⁽³⁾ /16 ⁽⁴⁾	35 ⁽³⁾ /25 ⁽⁴⁾	50 ⁽³⁾ /35 ⁽⁴⁾
Maximum Cu cable cross-section (mm ²) ⁽²⁾	16 ⁽³⁾ /10 ⁽⁴⁾		
Tightening torque	2.5	2.5 ... 3	3.5 ... 4
Mechanical characteristics			
Weight of 1 P or N (kg)	0.1	0.15	0.21
Weight of 1 P + N (kg)		0.31	0.44
Weight of 3 p + N (kg)		0.70	1.10

(1) For a rated operational voltage $U_n = 400$ VAC.

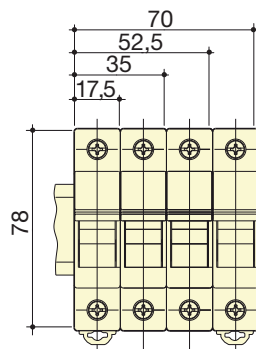
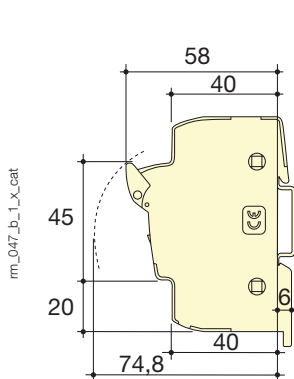
(2) Connection for RM32 1pole + N (1 module).

(3) Rigid cable.

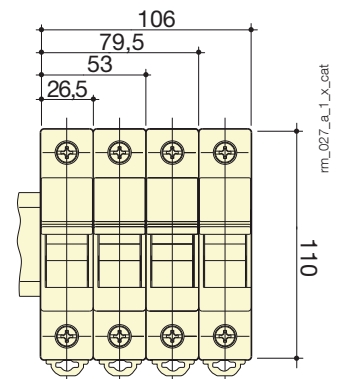
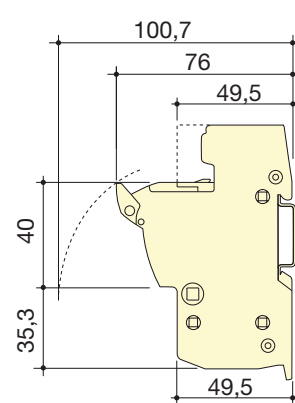
(4) Flexible cable.

Dimensions

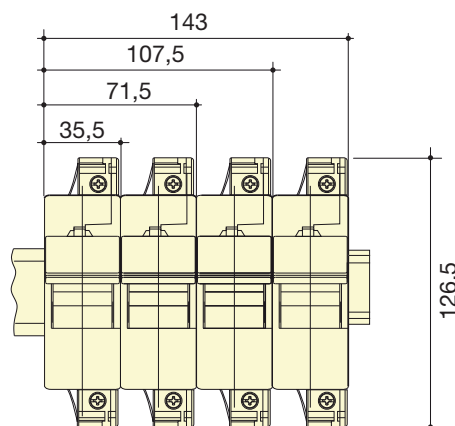
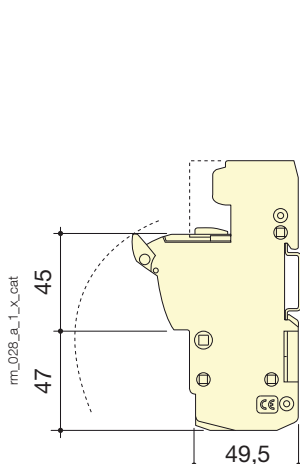
RM 32 A



Single and multipolar RM / RMS 50 A



Single and multipolar RM / RMS 100 A





Fuse bases

Fuse protection

For NH and high speed (UR) fuses 160 to 2500 A

Fuse protection



Base size 1



Base IP2X

The solution for

- > Motor output.
- > Protection of industrial cabinet.



Strong points

- > High electrical safety.
- > Fuse blown detection.
- > Different fixing types.

Conformity to standards

- > IEC 60269-1
- > IEC 60269-2
- > IEC 60269-2-1
- > NF EN 60269-1
- > NF C 63211
- > VDE 0636-10
- > DIN 43620



Function

SOCOMECS fuse bases provide fixed, unipolar or multipolar support for knife edge fuses.

Advantages

High electrical safety

- High dielectric strength.
- Protection IP2X (standard or optional depending on models).

High breaking capacity

Protection against overloads and short-circuits thanks to fuses with a high breaking capacity (100 kA rms).

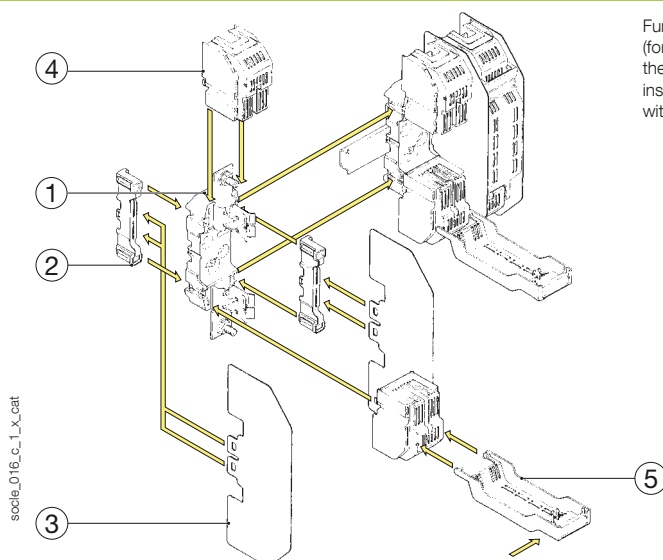
Fuse blown detection

When used with fuses with strikers, it is possible to collect the fuse blow detection information thanks to an auxiliary contact.

Different fixing types

DIN rail or back plate mounting available (depending on models).

Functional diagram



Functional diagram (for further details see the installation instructions supplied with the product).

1. Fuse bases
2. Connecting block:
 - block for assembling unipolar bases T00, T0, T1, T2 and T3,
 - screen support for phases T00, T1, T2 and T3
3. Phase separation shield
4. Terminal shrouds (mandatory for mounting fuse covers)
5. Fuse cover (provides IP2 protection for any brand of fuse).

- IP20 kit:
- unipolar = 2 connecting blocks + 2 phase separation shields + 2 terminal shrouds + 1 cover
 - tripolar = 2 connecting blocks for the ends + 2 phase separation shields for the ends + 6 terminal shrouds + 3 covers.

References

Fuse bases for fuses with or without a striker from 160 to 630 (U = 690 V)

Back plate mounted device		160 A 00	160 A 0	250 A 1	400 A 2	630 A 3
Rating Fuse size	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
1 P	3	6500 1010	6501 1010	6501 1011	6501 1012	6501 1013
3 P	1	6500 1030	6501 1030	6501 1031	6501 1032	6501 1033
DIN rail-mounted device		Reference	Reference	Reference	Reference	Reference
No. of poles	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
1 P	3	6500 1110	6501 1110	6501 1111	6501 1112	6501 1113
3 P	1	6500 1130	6501 1130	6501 1131	6501 1132	6501 1133
Options: IP20 kit		Reference	Reference	Reference	Reference	Reference
No. of poles	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
1 P ⁽¹⁾	3	6510 1010	6511 1010	6511 1011	6511 1012	6511 1013
3 P ⁽²⁾	1	6510 1030	6511 1030	6511 1031	6511 1032	6511 1033

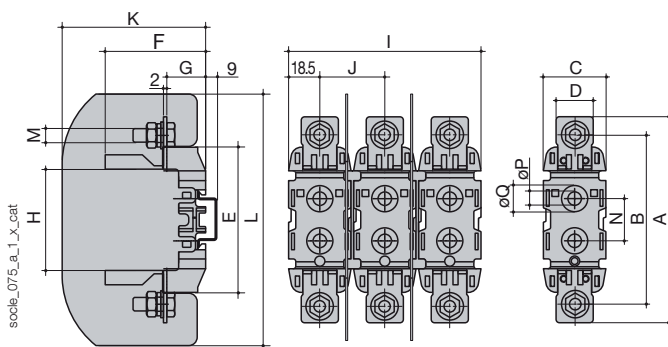
(1) IP20 single-pole kit consisting of 2 connecting blocks, 2 phase separation shields, 2 terminal shrouds and 1 fuse cover.

(2) IP20 three-pole kit consisting of 2 connecting blocks for the ends, 2 phase separation shields for the ends, 6 terminal shrouds and 3 fuse covers.

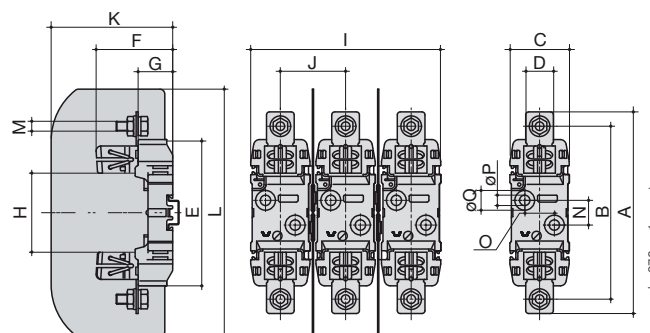
Accessories		Reference	Reference	Reference	Reference	Reference
Description of accessories	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
Connecting block - set of 1 piece	2	6500 0033	6500 0030	6500 0031	6500 0031	6500 0032
Phase separation shield - set of 1 piece	2	6500 0001	6500 0002	6500 0003	6500 0003	6500 0004
Terminal shrouds - set of 1 piece	6	6500 0010	6500 0011	6500 0012	6500 0013	6500 0014
Fuse cover - set of 1 piece	3	6500 0020	6500 0021	6500 0022	6500 0022	6500 0023

Dimensions

Fuse base 160 A size 00



Fuse base 160 to 630 A size 0, 1, 2 and 3



Rating (A)	Fuse size	A	W	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
160	00	122	100	37	22	86	59.5	23		114	38.5	85		M8	25		8	
160	0	170	150	47	24	122	63	29	74	144	48.5	91.5	185	8	25		7.5	15
250	1	200	175	60	28	148	77.5	35	80	192	66	123	250	10	25	30	10.5	20.5
400	2	225	200	60	32	148	88	35	80	192	66	123	250	12	25	30	10.5	20.5
630	3	240	210	60	38	148	97	35	80	224	82	143	270	12	25	30	10.5	20.5

Fuse bases

Fuse protection

For NH and high speed (UR) fuses 160 to 2500 A

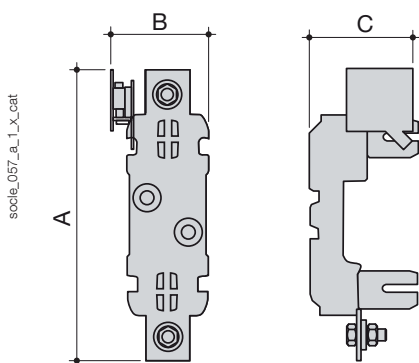
References

Unipolar fuse bases for fuses with a striker from 160 to 630 A (U = 690 V)

Back plate mounted device without AC				
Rating	160 A 0	250 A 1	400 A 2	630 A 3
Fuse size	Reference	Reference	Reference	Reference
No. of poles	Reference	Reference	Reference	Reference
1 P	6501 1010	6501 1011	6501 1012	6501 1013
DIN rail-mounted accessory without AC				
No. of poles	Reference	Reference	Reference	Reference
1 P	6501 1110	6501 1111	6501 1112	6501 1113
Accessories				
Presence and fuse blown signalling AC (DDMM)				
No. of poles	Reference	Reference	Reference	Reference
1 P	6500 0040	6500 0041	6500 0042	6500 0043
Characteristics				
NO/NC contact				
Nominal current I _n (A) 250 VAC	16	16	16	16

Dimensions

Fuse base 160 to 630 A size 0, 1, 2 and 3



Rating (A)	Fuse size	A	W	C
160	0	193	65,5	90
250	1	215	76	98
400	2	227	76	102
630	3	235	76	102

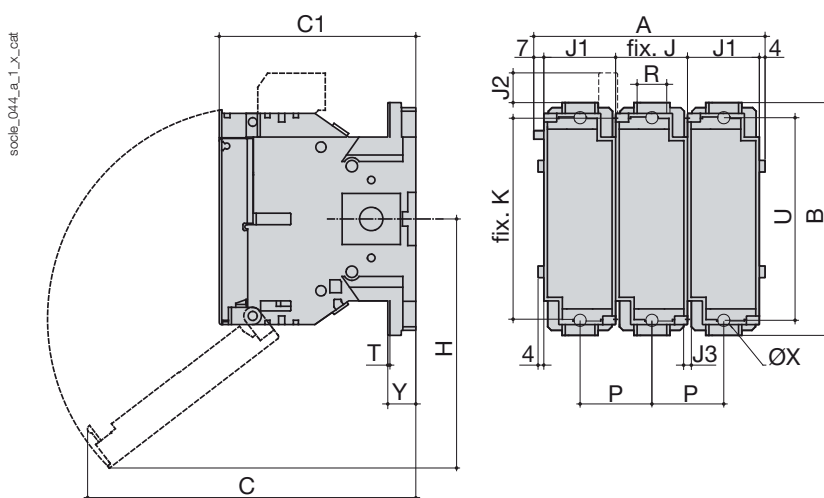
References

Multipolar fuse bases for fuses with a striker from 160 to 400 A (U = 690 V)

Back plate mounted device with presence and fuse blown signalling AC (DDMM)			
Rating	160 A	250 A	400 A
Fuse size	0	1	2
No. of poles	Reference	Reference	Reference
2 P	6301 2016	6301 2024	6301 2039
3 P	6301 3016	6301 3024	6301 3039
4 P	6301 4016	6301 4024	6301 4039
Auxiliary contacts for fuse blown indication			
Position AC	Reference	Reference	Reference
1 st AC	included	included	included
2 nd	3994 1901	3994 1901	3994 1901
Terminal shrouds (1 piece)			
No. of poles	Reference	Reference	Reference
2 P	3998 2016	3998 2025	3998 2025
3 P	3998 3016	3998 3025	3998 3025
4 P	3998 4016	3998 4025	3998 4025

Dimensions

Fuse base 160 to 400 A size 0



Rating (A)	Fuse size	A 2p.	A 3p.	A 4p.	W	C	C1	H	J	J1	J2	J3	K	P	R	T	U	ØX	Y
160	0	111	161	211	162	229	136,5	174	50	60	20,5	5,4	140	50	20	2,5	141	8,5	19,5
250	1	131	191	251	195	251	146	185	60	60	7,5	6,4	162	60	32	2,5	166	11	19,5
400	2	143	209	275	205	260	149	200	66	66	2,5	6,4	172	66	50	3	175	11	20

Fuse bases

Fuse protection

For NH and high speed (UR) fuses 160 to 2500 A

References

Fuse bases for fuses with or without a striker from 1000 to 2500 A (U = 690 V)

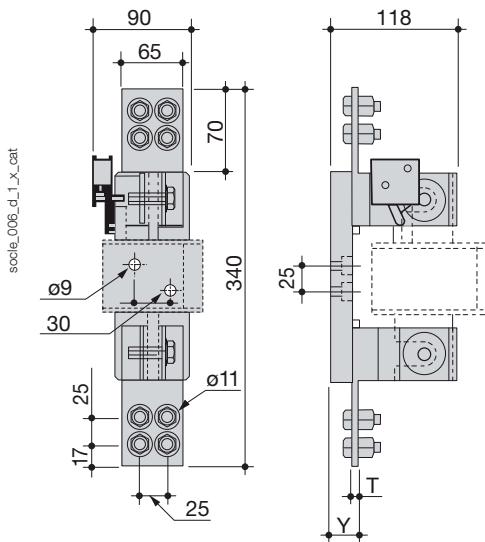
Device without presence and fuse blown signalling (DDMM)					
Rating	1000 A	1250 A	2500 A	2500 A	2500 A
Fuse size	4	4	2 x 4	2 x 4 (S)	6
No. of poles	Reference	Reference	Reference	Reference	Reference
1 P	6431 0004	6431 0005	6431 0006		6431 0007 ⁽¹⁾

(1) Without solid link.

Device with presence and fuse blown signalling (DDMM)					
No. of poles	Reference	Reference	Reference	Reference	Reference
1 P	7304 0001	7305 0001	7306 0001	6433 0005	

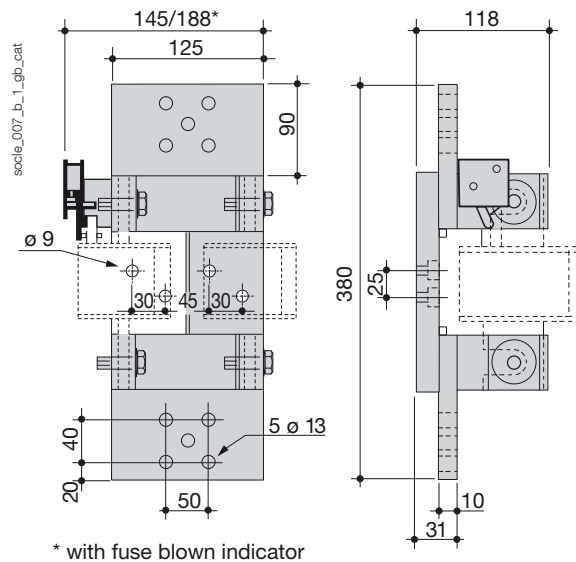
Dimensions

Fuse base 1000 to 2500 A size 4

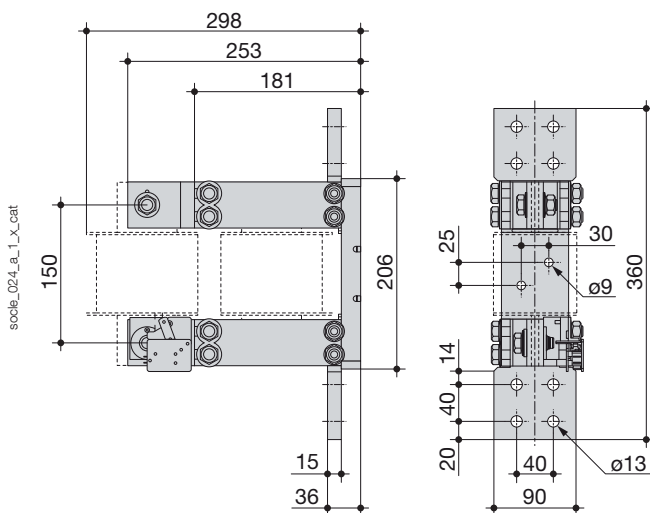


Rating (A)	Y (mm)	T (mm)
1000	25	4
1250	30	9

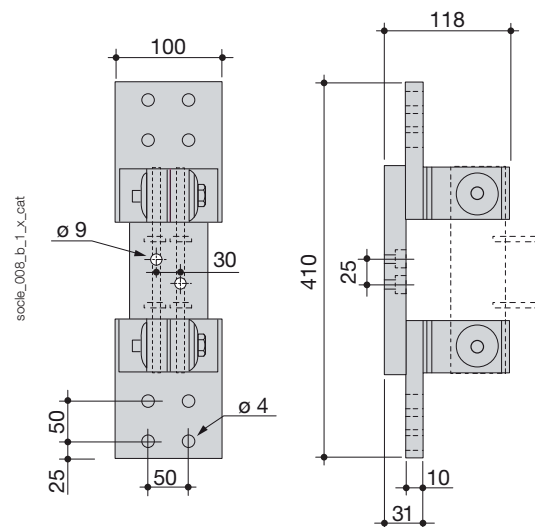
Fuse base 2500 A, size 2 x 4



Fuse base 2500 A, size 2 x 4 (S)



Fuse base 2500 A, size 6 (for neutral)



References

Unipolar fuse bases for UR fuses

L shape bracket 00/80 (distance between centres 80)		690 VAC	1000 VAC	1400 VAC
Thermal current I_{th} at 40°C	Type of fuse	Reference	Reference	Reference
200	00 bolted connection	170A 6080		
400	00 bolted connection		170H 1007	

Knife-edge fuses /80 (distance between centres 80)		Reference	Reference	Reference
Thermal current I_{th} at 40°C	Type of fuse	Reference	Reference	Reference
1250 ⁽¹⁾	from 1* to 3		170H 3004	

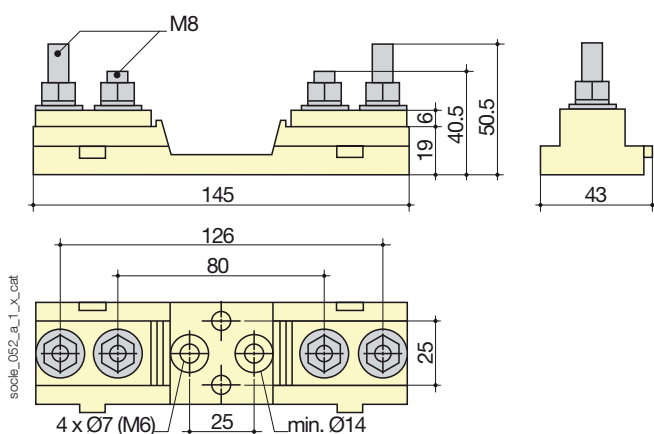
(1) For current > 1250 A, please consult us.

Knife-edge fuses /110 (distance between centres 110)		Reference	Reference	Reference
Thermal current I_{th} at 40°C	Type of fuse	Reference	Reference	Reference
1250 ⁽¹⁾	from 1* to 3			170H 3006

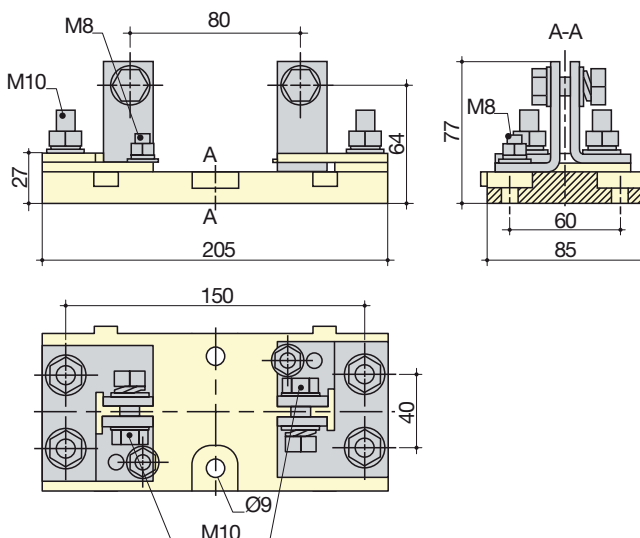
(1) For current > 1250 A, please consult us.

Dimensions

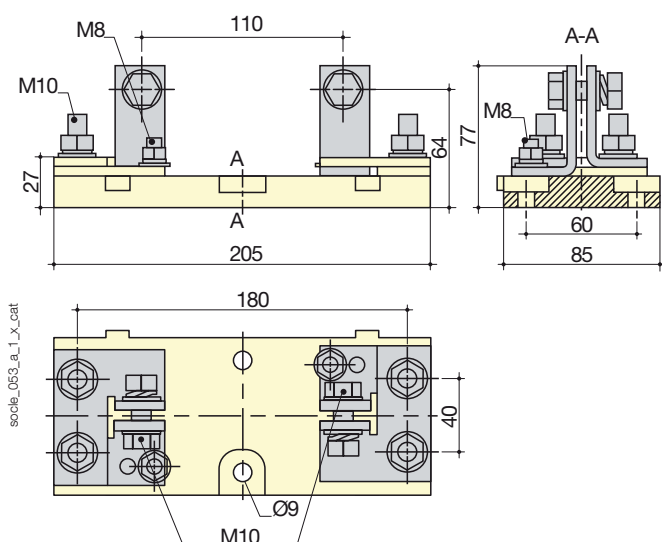
Bracket 00/80 - 200 A - 1000 VAC Ref: 170H 1007



Knife-edge /80 - 1250 A - 1000 VAC Ref.: 170H 3004



Knife-edge /110 - 1250 A - 1400 VAC - Ref. : 170H 3006



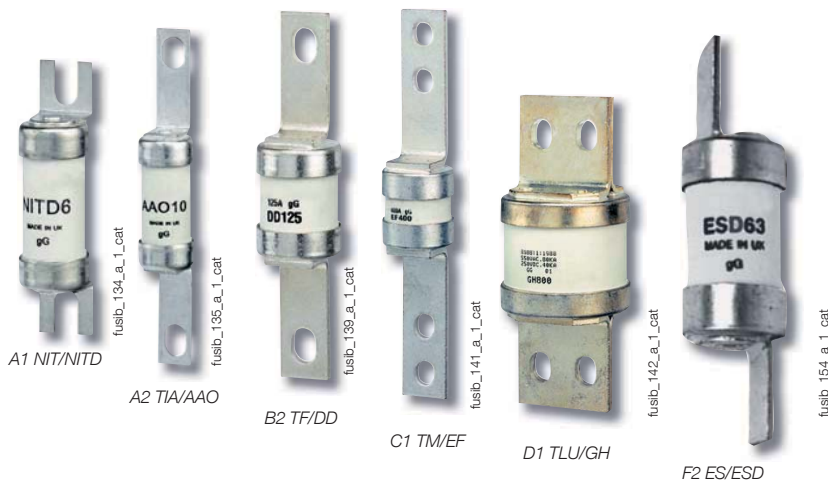


BS88 industrial fuselinks

Fuse protection

2 to 1250 A

Fuse protection



Function

SOCOMEK **industrial fuses** protect installations and people against overcurrents for any low voltage electrical circuit.

Advantages

High level performance

- High breaking capacity 120 kA at 500 V, 80 kA at 690 V.
- High short-circuit limitation capacity.
- Simple, reliable discrimination.

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).

Safety

- The energy given off whilst eliminating the fault is contained within the cartridge.

The solution for

- > Motor protection, cable and device protection.



Strong points

- > High level performance.
- > High reliability.
- > Safety.

Conformity to standards⁽¹⁾

- > IEC 60269-1
- > IEC 60269-2
- > IEC 60269-2-1
- > NF EN 60269-1
- > NF C 63-210
- > NF C 63211
- > VDE 0636-10
- > DIN 43620



⁽¹⁾ Product reference on request.

Available on request

- > EDF application: T2 fuses, in accordance with standard HN 63 - S20.
- > 690 V knife-edge fuses.
- > UL and CSA fuses for North American markets.

References

Distribution industrial fuselinks (type gG)

Rating (A)	Voltage (VAC)	F1 ⁽¹⁾	Voltage (VAC)	F2 ⁽¹⁾	Voltage (VAC)	A1 ⁽¹⁾	Voltage (VAC)	A2 ⁽¹⁾	Voltage (VAC)	A3 ⁽¹⁾
		NS / NSD		ES / ESD		NIT / NITD		TIA / AAO		TIS / BAO
		Reference		Reference		Reference		Reference		Reference
2	550	6F10 0002	550	6F20 0002	550	6A10 0002	550	6A20 0002		
4	550	6F10 0004	550	6F20 0004	550	6A10 0004	550	6A20 0004		
6	550	6F10 0006	550	6F20 0006	550	6A10 0006	550	6A20 0006		
10	550	6F10 0010	550	6F20 0010	550	6A10 0010	550	6A20 0010		
16	550	6F10 0016	550	6F20 0016	550	6A10 0016	550	6A20 0016		
20	550	6F10 0020	550	6F20 0020	550	6A10 0020	550	6A20 0020		
25	550	6F10 0025	550	6F20 0025	550	6A10 0025	550	6A20 0025		
32	550	6F10 0032	550	6F20 0032	550	6A10 0032	550	6A20 0032		
40			550	6F20 0040					550	6A30 0040
50			550	6F20 0050					550	6A30 0050
63			550	6F20 0063					550	6A30 0063

Rating (A)	Voltage (VAC)	A3 ⁽¹⁾	Voltage (VAC)	A4 ⁽¹⁾	Voltage (VAC)	A4 ⁽¹⁾	Voltage (VAC)	B1 ⁽¹⁾	Voltage (VAC)	B1 ⁽¹⁾
		OS / OSD		TCP / CEO		TFP / DEO		TBC / AD		TBC / BD
		Reference		Reference		Reference		Reference		Reference
2							550	6B10 0002		
4							550	6B10 0004		
6							550	6B10 0006		
10							550	6B10 0010		
16							550	6B10 0016		
20							550	6B10 0020		
25							550	6B10 0025		
32			550	6A40 0032			550	6B10 0032		
40			550	6A40 0040					550	6B10 0040
50			550	6A40 0050					550	6B10 0050
63			550	6A40 0063					550	6B10 0063
80	550	6A30 0080	550	6A40 0080						
100	550	6A30 0100	550	6A40 0100						
125					415	6A40 0125				
160					415	6A40 0160				
200					415	6A40 0200				

(1) Offset blade type fuselinks

(2) Offset bolted tag type fuselinks

(3) Centre bolted tag type fuselinks.

Note: pack quantity 3 pieces for each product.

Rating (A)	Voltage (VAC)	B1 ⁽¹⁾	Voltage (VAC)	B2 ⁽¹⁾	Voltage (VAC)	C1 ⁽¹⁾	Voltage (VAC)	B3 ⁽¹⁾	Voltage (VAC)	B4 ⁽¹⁾
		TC / CD		TF / DD		TKM / EFS		TKF / ED		TMF / ED
		Reference		Reference		Reference		Reference		Reference
80	550	6B10 0080								
100	550	6B10 0100								
125			415	6B20 0125	415	6C10 0125				
160			415	6B20 0160	415	6C10 0160				
200			415	6B20 0200	415	6C10 0200				
250					415	6C10 0250	415	6B30 0250		
315					415	6C10 0315	415	6B30 0315		
355									415	6B40 0355
400									415	6B40 0400

BS88 industrial fuselinks

Fuse protection

2 to 1250 A

References (continued)

Distribution industrial fuselinks (type gG)

Rating (A)	Voltage (VAC)	C1 ⁽¹⁾ TM / EF		C2 ⁽¹⁾ TTM / FF		C3 ⁽¹⁾ TLM / GF		D1 ⁽¹⁾ TLU / GH		D1 ⁽¹⁾ TXU / GH
		Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
355	415	6C10 0355								
400	415	6C10 0400								
450			550	6C20 0450						
500			550	6C20 0500						
560			550	6C20 0560						
630			550	6C20 0630						
710					550	6C30 0710	550	6D10 0710		
800					550	6C30 0800	550	6D10 0800		
1000									550	6D10 1000
1250									550	6D10 1250

(1) Centre bolted tag type fuselinks.

Note: pack quantity 3 pieces for each product.

Motor rated industrial fuselinks (type gM)

Rating (A)	Voltage (VAC)	F1 ⁽¹⁾ NS / NSD		F2 ⁽¹⁾		A1 ⁽²⁾ NIT / NITD		A2 ⁽²⁾ TIA / AAO		A3 ⁽²⁾ TIS / BAO
		Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
20M25	415	6F1M 0025			550	6A1M 0025				
20M32	415	6F1M 0032			550	6A1M 0032				
32M36	415	6F1M 0036								
32M40	415	6F1M 0040			550	6A1M 0040	550	6A2M 0040		
32M50	415	6F1M 0050			550	6A1M 0050	550	6A2M 0050		
32M63	415	6F1M 0063			550	6A1M 0063	550	6A2M 0063		
63M80			415	6F2M 0080					550	6A3M 0080
63M100			415	6F2M 0100					550	6A3M 0100

Rating (A)	Voltage (VAC)	B2 ⁽³⁾ TF / DD		B3 ⁽³⁾		B4 ⁽³⁾ TMF / ED		C1 ⁽³⁾ TM / EF
		Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
200M250	415	6B2M 0250						
200M315	415	6B2M 0315						
315M400			415	6B3M 0400				
400M500					550	6B4M 0500	550	6C1M 0500

(1) Offset blade type fuselinks

(2) Offset bolted tag type fuselinks

(3) Centre bolted tag type fuselinks.

Note: pack quantity 3 pieces for each product.

Accessories

Fuse holders for offset blade type fuselinks

References							
Rating (A)	Size	Voltage (VAC)	Color	Output connection	Type	Pack qty	Reference
32	F1	550	black	front/rear	32NNSF	10	5F10 0032
32	F1	550	black	front/rear	32NNSFBS	10	5F10 0132
32	F1	550	black	rear/rear	32NNSBS	10	5F10 0232
32	F1	550	white	front/rear	32NNSFW	10	5F10 1032
32	F1	550	white	front/rear	32NNSFBSW	10	5F10 1132
32	F1	550	white	rear/rear	32NNSBSW	10	5F10 1232
63	F2	550	black	front/rear	63ENSF	5	5F20 0063
63	F2	550	black	front/rear	63ENSFBS	5	5F20 0163
63	F2	550	black	rear/rear	63ENSBS	5	5F20 0263
63	F2	550	white	front/rear	63ENFW	5	5F20 1063
63	F2	550	white	front/rear	63ENSFBSW	5	5F20 1163
63	F2	550	white	rear/rear	63ENSBSW	5	5F20 1263



Voltage: 550 VAC.

fusib_144_a_1_cat

Accessories						
Rating (A)	Size	Output connection	Type	Pack qty	Reference	
32	F1	busbar connecting systems	32BCSNNS	1	5F10 0001	
63	F2	busbar connecting systems	63BCSENS	1	5F20 0001	
32	F1	solid neutral links	32NNL	1	5F10 0002	
63	F2	solid neutral links	63ENL	1	5F20 0002	

Fuse holders for offset bolted tag type fuselinks

References							
Rating (A)	Size	Voltage (VAC)	Color	Output connection	Type	Pack qty	Reference
32	A1	660	black	front/front	CM32FC	10	5A10 0032
32	A1	660	white	front/front	CM32FCW	10	5A10 1032
32	A2	660	black	front/front	CM32F	10	5A20 0032
32	A2	660	white	front/front	CM32FW	10	5A20 1032
63	A3	660	black	front/front	CM63F	5	5A30 0063
63	A3	660	white	front/front	CM63FW	5	5A30 1063
100	as A3	660	black	front/front	CM100F	5	5A30 0100
100	as A3	660	white	front/front	CM100FW	5	5A30 1100



Voltage: 660 VAC.

Output connection: front / front.

fusib_143_a_1_cat

Accessories						
Rating (A)	Size	Output connection	Type	Pack qty	Reference	
32	A1	rear connection studs	32BSC	10	5A10 0001	
32	A2	rear connection studs	32BS	10	5A20 0001	
63 ... 100	A3	rear connection studs	63 / 100BS	5	5A30 0001	
32	A1 - A2	lockable safety carrier	32LSC	3	5A20 0002	
63 ... 100	A3	lockable safety carrier	63 / 100LSC	3	5A30 0002	
32 ... 100	A1 - A3	ganging link pack	GLP	1	5A30 0003	
32 ... 100	A1 - A3	neon indicator (90 - 660 VAC)	NI	3	5A30 0004	
32 ... 100	A1 - A3	security clip	CMSC	10	5A30 0005	

BS88 industrial fuselinks

Fuse protection

2 to 1250 A

Characteristics

Distribution industrial fuselinks (type gG)

Fuse cut off current

Rating (A)	F1 NS / NSD 50 / 80 kA	F2 ES / ESD 50 / 80 kA	A1 NIT / NITD 50 / 80 kA	A2 TIA / AAO 50 / 80 kA	A3 TIS / BAO 50 / 80 kA	A3 OS / OSD 50 / 80 kA	A4 TCP / CEO 50 / 80 kA
2	0.5 / 0.6	0.5 / 0.6	0.5 / 0.6	0.5 / 0.6			
4	0.9 / 1.0	0.9 / 1.0	0.7 / 0.8	1.0 / 1.1			
6	1.4 / 1.6	1.4 / 1.6	1.0 / 1.1	1.5 / 1.8			
10	2.4 / 2.6	2.4 / 2.6	1.7 / 2.0	2.4 / 2.8			
16	2.5 / 2.9	2.5 / 2.9	2.5 / 3.0	2.6 / 3.0			
20	3.2 / 3.8	3.2 / 3.8	2.5 / 3.0	3.4 / 4.0			
25	3.5 / 4.0	3.5 / 4.0	3.5 / 4.0	3.8 / 4.1			
32	4.1 / 4.9	4.1 / 4.9	3.5 / 4.0	4.2 / 5.0			4.4 / 5.0
40		5.0 / 5.9			5.1 / 6.0		5.0 / 6.0
50		5.2 / 6.0			7.0 / 8.0		6.6 / 7.8
63		5.8 / 6.6			9.0 / 10.0		8.9 / 10.0
80						9.5 / 11.0	9.5 / 11.0
100						12.0 / 14.0	12.0 / 14.0

Fuse cut off current

Rating (A)	A4 TFP / DEO 50 / 80 kA	B1 TBC / AD 50 / 80 kA	B1 TBC / BD 50 / 80 kA	B1 TC / CD 50 / 80 kA	B2 TF / DD 50 / 80 kA	C1 TKF / ED 50 / 80 kA	B3 TKF / ED 50 / 80 kA
2		0.4 / 0.5					
4		1.0 / 1.1					
6		1.4 / 1.6					
10		1.8 / 2.0					
16		2.0 / 2.2					
20		2.6 / 3.0					
25		3.6 / 4.0					
32		4.4 / 5.0					
40			5.0 / 6.0				
50			6.6 / 7.8				
63			8.9 / 10.0				
80				9.5 / 11.0			
100				12.0 / 14.0			
125	12.0 / 14.0				12.0 / 14.0	12.0 / 14.0	
160	17.0 / 19.0				17.0 / 19.0	17.0 / 19.0	
200	19.0 / 24.0				19.0 / 24.0	19.0 / 24.0	
250						23.0 / 28.0	23.0 / 28.0
315						27.0 / 30.0	27.0 / 30.0

Fuse cut off current

Rating (A)	B4 TMF / ED 50 / 80 kA	C1 TM / EF 50 / 80 kA	C2 TTM / FF 50 / 80 kA	C3 TLM / GF 50 / 80 kA	D1 TLU / GH 50 / 80 kA	D1 TXU / GH 50 / 80 kA
355	30.0 / 34.0	30.0 / 34.0				
400	30.0 / 34.0	30.0 / 34.0				
450			40.0 / 48.0			
500			42.0 / 50.0			
560			46.0 / 54.0			
630			51.0 / 60.0			
710				55.0 / 64.0	55.0 / 64.0	
800				55.0 / 64.0	55.0 / 64.0	
1000						69.0 / 79.0
1250						90.0 / 105.0

Motor rated industrial fuselinks (type gM)

Fuse cut off current

Rating (A)	F1 NS / NSD 50 / 80 kA	F2 50 / 80 kA	A1 NIT / NITD 50 / 80 kA	A2 TIA / AAO 50 / 80 kA	A3 TIS / BAO 50 / 80 kA	A3 OS / OSD 50 / 80 kA	A4 TCP / CEO 50 / 80 kA
20M25	3.4 / 4.0		4.6 / 5.5				
20M32	4.0 / 5.0		4.6 / 5.5				
32M36	4.5 / 5.1						
32M40	4.8 / 5.5		5.0 / 6.0	5.0 / 6.0			
32M50	5.3 / 6.2		6.5 / 7.5	6.6 / 7.8			
32M63	5.9 / 6.9		7.5 / 10.0	8.5 / 9.0			
63M80		9.0 / 10.0			9.5 / 12.0		
63M100		10.1 / 10.3			12.0 / 13.0		
100M125						13.0 / 15.0	13.0 / 15.0
100M160						17.0 / 20.0	17.0 / 20.0
100M200							20.0 / 23.0

Fuse cut off current

Rating (A)	A4 TFP / DEO 50 / 80 kA	B1 TC / CD 50 / 80 kA	B2 TF / DD 50 / 80 kA	B3 50 / 80 kA	B4 TMF / ED 50 / 80 kA	C1 TM / EF 50 / 80 kA
100M125		13.0 / 15.0				
100M160		17.0 / 20.0				
100M200		20.0 / 23.0				
200M250	25.0 / 29.0		25.0 / 29.0			
200M315	27.0 / 31.0		27.0 / 31.0			
315M400				34.0 / 40.0		
400M500					42.0 / 50.0	42.0 / 50.0



Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A

Fuse protection



gG fuse
from 0.5 to 125 A



aM type fuse
from 6 to 1250 A



gG fuse
from 6 to 315 A

The solution for

- > Motor protection.
- > Cable and device protection.



Strong points

- > High level performances.
- > High reliability.
- > Improved safety.

Conformity to standards

- > IEC 60269-1
- > DIN EN 60269-1
- > NF EN 60269-1
- > IEC 60269-2
- > NF EN 60269-2



Function

SOCOMECA industrial fuses protect installations and people from overcurrents for any low voltage electrical circuit.

Advantages

High level performances

- High breaking capacity - 120 kA at 400/500 V, 80 kA at 690 V.
- High short-circuit limitation capacity.
- Simple and reliable discrimination.

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).
- No downgrading of fuse characteristics over time.

Improved safety

The energy released whilst eliminating the fault (fuse blowing) is contained within the cartridge (no degassing).

References

gG type fuses (in multiples of 10)

Rating (A)	10 x 38 without striker		14 x 51 without striker		14 x 51 with striker		22 x 58 without striker		22 x 58 with striker	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
0.5	500	6012 0000								
1	500	6012 0001	690	6022 0001						
2	500	6012 0002	690	6022 0002	500	6052 0002	690	6032 0002		
4	500	6012 0004	690	6022 0004	500	6052 0004	690	6032 0004	690	6062 0004
6	500	6012 0006	690	6022 0006	500	6052 0006	690	6032 0006	690	6062 0006
8	500	6012 0008	690	6022 0008	500	6052 0008	690	6032 0008	690	6062 0008
10	500	6012 0010	690	6022 0010	500	6052 0010	690	6032 0010	690	6062 0010
12	500	6012 0012	690	6022 0012	500	6052 0012	690	6032 0012	690	6062 0012
16	500	6012 0016	690	6022 0016	500	6052 0016	690	6032 0016	690	6062 0016
20	500	6012 0020	690	6022 0020	500	6052 0020	690	6032 0020	690	6062 0020
25	500	6012 0025	690	6022 0025	500	6052 0025	690	6032 0025	690	6062 0025
32	400	6012 0032	500	6022 0032	500	6052 0032	690	6032 0032	690	6062 0032
40			500	6022 0040	500	6052 0040	690	6032 0040	690	6062 0040
50			400	6022 0050	400	6052 0050	690	6032 0050	690	6062 0050
63							690	6032 0063	690	6062 0063
80							500	6032 0080	500	6062 0080
100							500	6032 0100	500	6062 0100
125							400	6032 0125	400	6062 0125

Description of accessories

	Reference		Reference		Reference		Reference		Reference
Solid cylindrical link	6019 0000		6029 0000		6029 0000		6039 0000		6039 0000

aM type fuses (in multiples of 10)

Rating (A)	10 x 38 without striker		14 x 51 without striker		14 x 51 with striker		22 x 58 without striker		22 x 58 with striker	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
0.16	500	6013 0007								
0.25	500	6013 0005	690	6023 0005						
0.5	500	6013 0000	690	6023 0000						
1	500	6013 0001	690	6023 0001						
2	500	6013 0002	690	6023 0002	500	6053 0002	690	6033 0002		
4	500	6013 0004	690	6023 0004	500	6053 0004	690	6033 0004	690	6063 0004
6	500	6013 0006	690	6023 0006	500	6053 0006	690	6033 0006	690	6063 0006
8	500	6013 0008	690	6023 0008	500	6053 0008	690	6033 0008	690	6063 0008
10	500	6013 0010	690	6023 0010	500	6053 0010	690	6033 0010	690	6063 0010
12	500	6013 0012	690	6023 0012	500	6053 0012	690	6033 0012	690	6063 0012
16	500	6013 0016	690	6023 0016	500	6053 0016	690	6033 0016	690	6063 0016
20	400	6013 0020	690	6023 0020	500	6053 0020	690	6033 0020	690	6063 0020
25	400	6013 0025	690	6023 0025	500	6053 0025	690	6033 0025	690	6063 0025
32			500	6023 0032	500	6053 0032	690	6033 0032	690	6063 0032
40			500	6023 0040	500	6053 0040	690	6033 0040	690	6063 0040
50			400	6023 0050	400	6053 0050	690	6033 0050	690	6063 0050
63							690	6033 0063	690	6063 0063
80							500	6033 0080	500	6063 0080
100							500	6033 0100	400	6063 0100
125							400	6033 0125	400	6063 0125

Description of accessories

	Reference		Reference		Reference		Reference		Reference
Solid cylindrical link	6019 0000		6029 0000		6029 0000		6039 0000		6039 0000

Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves

from 0.16 to 1250 A

References (continued)

Knife-edge fuses (NH), gG type

Rating (A)	000/00C without striker (in multiples of 3)		00 without striker (in multiples of 3)		0 without striker (in multiples of 3)		0 with striker (in multiples of 3)		1 without striker (in multiples of 3)		1 with striker (in multiples of 3)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
6	500	6600 0006										
10	500	6600 0010										
16	500	6600 0016			500	6702 0016						
20	500	6600 0020			500	6702 0020						
25	500	6600 0025			500	6702 0025						
32	500	6600 0032			500	6702 0032	690	6852 0032				
40	500	6600 0040			500	6702 0040	690	6852 0040				
50	500	6600 0050			500	6702 0050	690	6852 0050				
63	500	6600 0063			500	6702 0063	690	6852 0063	500	6712 0063		
80	500	6600 0080			500	6702 0080	690	6852 0080	500	6712 0080	690	6862 0080
100	500	6600 0100			500	6702 0100	690	6852 0100	500	6712 0100	690	6862 0100
125			500	6692 0125	500	6702 0125	500	6852 0125	500	6712 0125	690	6862 0125
160			500	6692 0160	500	6702 0160	500	6852 0160	500	6712 0160	690	6862 0160
200					500	6702 0200	500	6852 0200	500	6712 0200	690	6862 0200
250									500	6712 0250	500	6862 0250
315									400	6712 0315	500	6862 0315

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6420 0000		6420 0000		6421 0000		6421 0000		6421 0001		6421 0001

Rating (A)	2 without striker (in multiples of 3)		2 with striker (in multiples of 3)		3 without striker (to this unit)		3 with striker (to this unit)		4 without striker (to this unit)		4 with striker (to this unit)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
100	500	6722 0100										
125	500	6722 0125	690	6872 0125								
160	500	6722 0160	690	6872 0160								
200	500	6722 0200	690	6872 0200								
250	500	6722 0250	690	6872 0250								
315	500	6722 0315	690	6872 0315	500	6732 0315	690	6882 0315	500	6746 0315	500	6896 0315
400	500	6722 0400	500	6872 0400	500	6732 0400	690	6882 0400	500	6746 0400	500	6896 0400
500	500	6722 0500	500	6872 0500	500	6732 0500	690	6882 0500	500	6746 0500	500	6896 0500
630					500	6732 0630	500	6882 0630	500	6746 0630	500	6896 0630
800					500	6732 0800			500	6746 0800	500	6896 0800
900									500	6746 0900	500	6896 0900
1000									500	6746 1000	500	6896 1000
1250									500	6746 1200	500	6896 1200

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6421 0002		6421 0002		6421 0003		6421 0003		6441 0005		6441 0005

Knife-edge fuses (NH), aM type

Rating (A)	000/00C without striker (in multiples of 3)		00 without striker (in multiples of 3)		0 without striker (in multiples of 3)		0 with striker (in multiples of 3)		1 without striker (in multiples of 3)		1 with striker (in multiples of 3)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
6	500	6601 0006										
10	500	6601 0010										
16	500	6601 0016			500	6703 0016						
20	500	6601 0020			500	6703 0020						
25	500	6601 0025			500	6703 0025						
32	500	6601 0032			500	6703 0032	690	6853 0032				
40	500	6601 0040			500	6703 0040	690	6853 0040				
50	500	6601 0050			500	6703 0050	690	6853 0050				
63	500	6601 0063			500	6703 0063	690	6853 0063				
80	500	6601 0080			500	6703 0080	690	6853 0080			690	6863 0080
100			500	6693 0100	500	6703 0100	690	6853 0100	500	6713 0100	690	6863 0100
125			500	6693 0125	500	6703 0125	690	6853 0125	500	6713 0125	690	6863 0125
160			500	6693 0160	500	6703 0160	690	6853 0160	500	6713 0160	690	6863 0160
200					500	6703 0200	500	6853 0200	500	6713 0200	690	6863 0200
250									500	6713 0250	690	6863 0250
315									500	6713 0315	500	6863 0315

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6420 0000		6420 0000		6421 0000		6421 0000		6421 0001		6421 0001

Rating (A)	2 without striker (in multiples of 3)		2 with striker (in multiples of 3)		3 without striker (to this unit)		3 with striker (to this unit)		4 without striker (to this unit)		4 with striker (to this unit)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
100	500	6723 0100										
125	500	6723 0125										
160	500	6723 0160	690	6873 0160								
200	500	6723 0200	690	6873 0200								
250	500	6723 0250	690	6873 0250								
315	500	6723 0315	690	6873 0315	500	6733 0315	690	6883 0315	500	6747 0315	500	6897 0315
400	500	6723 0400	690	6873 0400	500	6733 0400	690	6883 0400	500	6747 0400	500	6897 0400
500	500	6723 0500	500	6873 0500	500	6733 0500	690	6883 0500	500	6747 0500	500	6897 0500
630					500	6733 0630	500	6883 0630	500	6747 0630	500	6897 0630
800									500	6747 0800	500	6897 0800
1000									500	6747 1000	500	6897 1000
1250									500	6747 1200	500	6897 1200

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6421 0002		6421 0002		6421 0003		6421 0003		6441 0005		6441 0005

Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A

Accessories

Solid cylindrical link

Use

Solid link to be used in conjunction with the neutral pole of cylindrical fused disconnecting switches.

3 sizes: 10 x 38, 14 x 51, 22 x 58.

Rating (A)	Size	To be ordered in multiples of	Reference
32	10 x 38	10	6019 0000
50	14 x 51	10	6029 0000
100	22 x 58	10	6039 0000



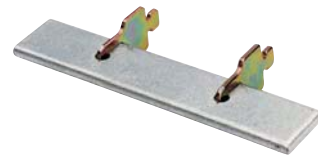
fusib_123_a_1_cat

Solid links

Use

Solid link to be used in conjunction with fuse bases or knife-edge fused disconnecting switches, generally fitted on the neutral pole.
6 sizes: 000/00C/00-0-1-2-3-4.

Rating (A)	Size	Tightening	Reference
160	000/00C/00	elastic	6420 0000
160	0	elastic	6421 0000
315	1	elastic	6421 0001
400	2	elastic	6421 0002
630	3	elastic	6421 0003
1250	4	blocked	6441 0005



fusib_124_a_1_cat

Operating handle

Use

For inserting and extracting knife-edge fuses, sizes 000 to 4.

Type	Reference
Operating handle	6401 0011

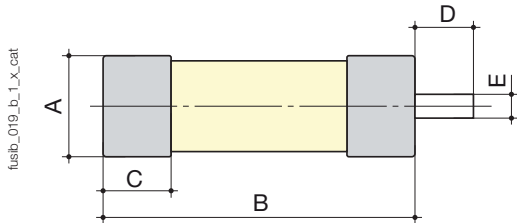


fusib_122_a_1_cat

Dimensions

Cylindrical fuses (NF)

Without striker - with striker

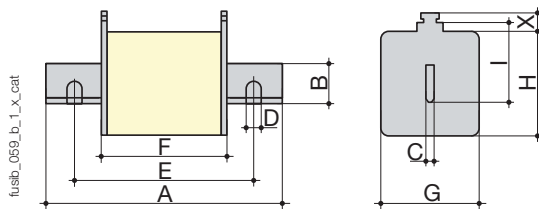


Standard dimensions (mm) as per IEC 60269-2-1

Size	A	B	C	D	E
10 x 38	10.3	38	10.5		
14 x 51	14.3	51	13.8	7.5	3.8
22 x 58	22.2	58	16.2	7.5	3.8

Knife-edge fuses (NH)

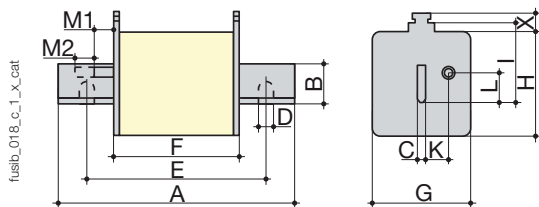
without striker



Standard dimensions (mm) as per IEC 60269-2-1

Size	A maxi	B mini	C	D	E mini	F maxi	G maxi	H maxi	I	X mini
000/00C	80	15	6			54	21	41	35	11
00	80	15	6			54	30	48	35	11
0	127.5	15	6			68	40	48	35	11
1	137.5	20	6			75	52	53	40	11
2	152.5	25	6			75	60	61	48	11
3	152.5	32	6			75	75	76	60	11
4	203	49	8	16	150	90	105	110	87	11

With striker



Standard dimensions (mm) as per IEC 60269-2-1

Size	A maxi	B mini	C	D	E	F maxi	G maxi	H maxi	I	K	L	M1	M2 mini	X mini
0	127.5	15	6			68	45	48	35	11.5	14	25	13	11
1	137.5	20	6			75	52	53	40	13	14.5	25.5	13	11
2	152.5	25	6			75	60	61	48	16	14.5	25.5	13	11
3	152.5	32	6			75	75	76	60	21	14.5	25.5	13	11
4	203	49	8	16	150	90	105	110	87	24.5	14.5	35	13	11

Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A

Curves characteristic of NF and NH gG type fuses

Cut-off current diagram

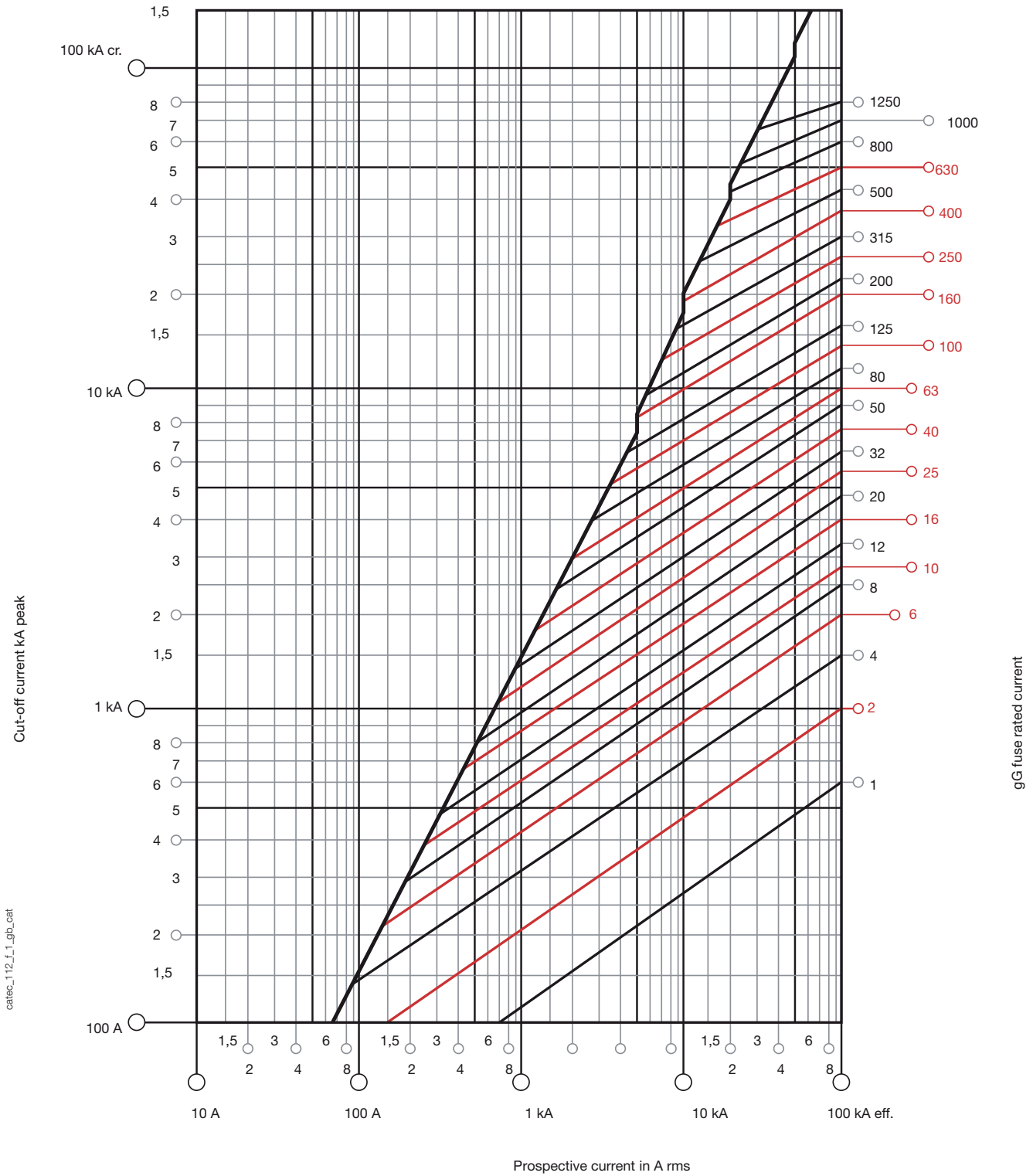
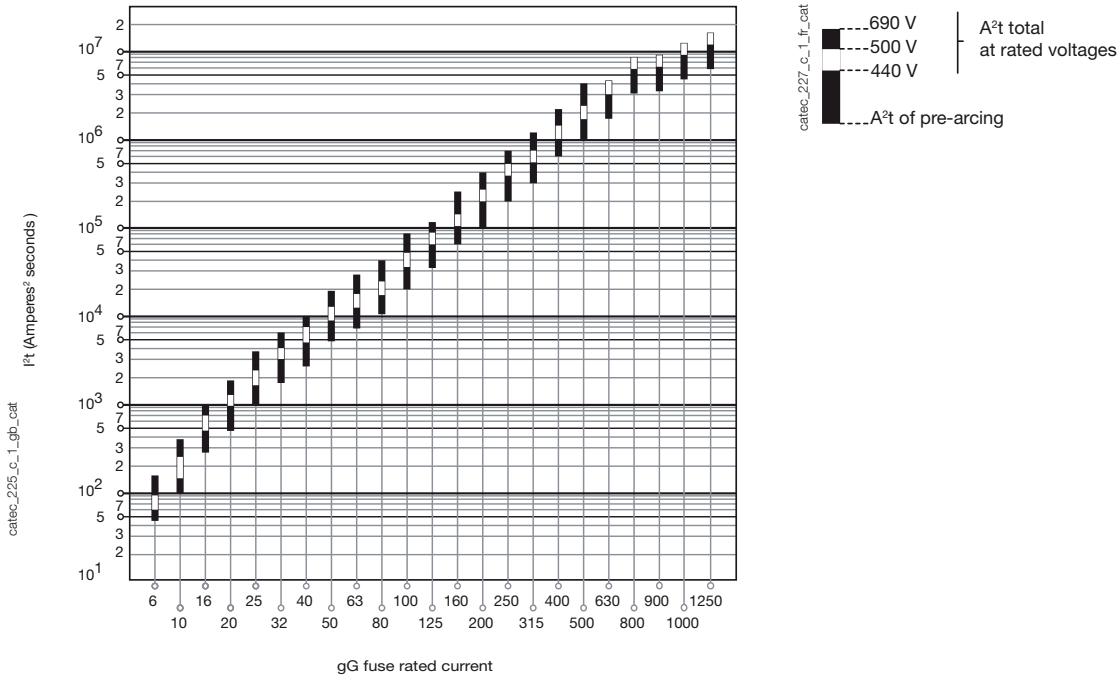
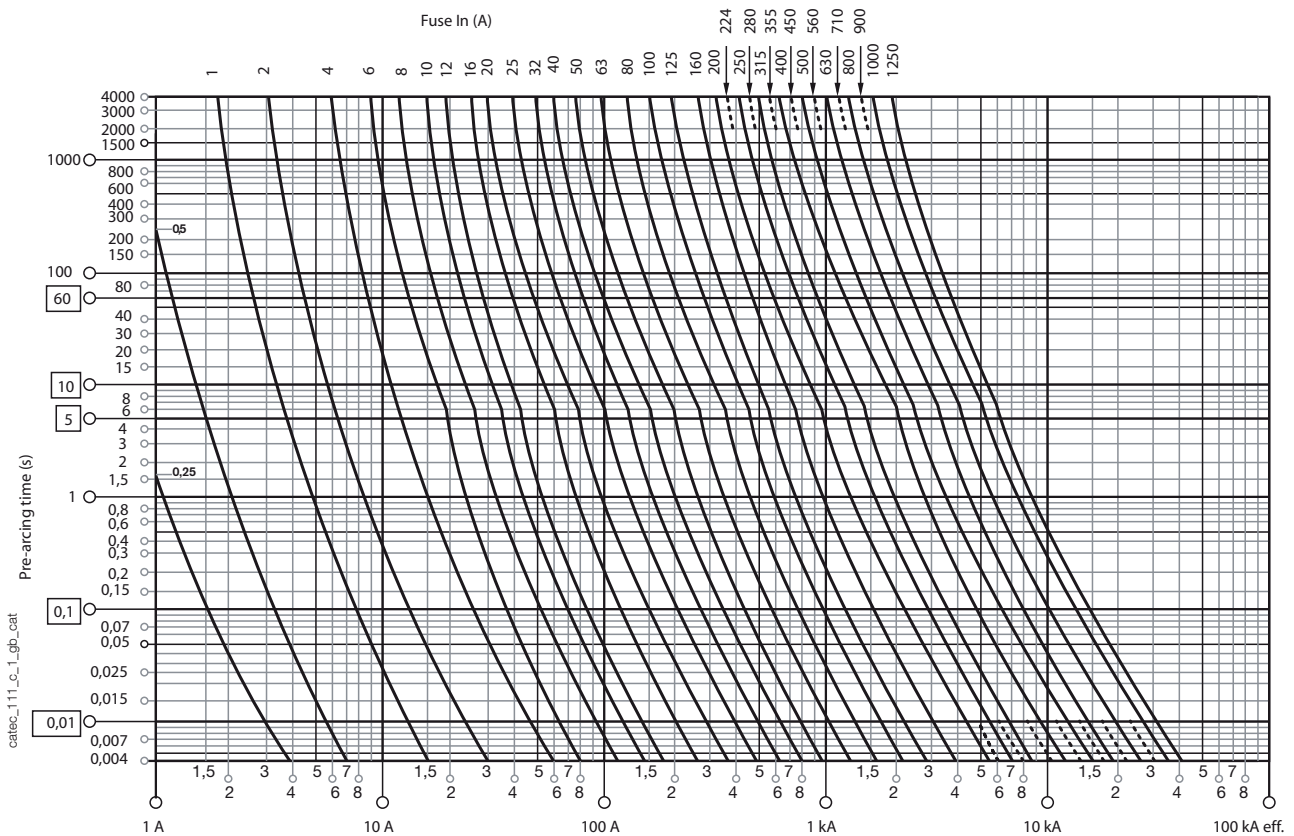


Diagram of thermal constraint limitation



Time/current operation characteristics

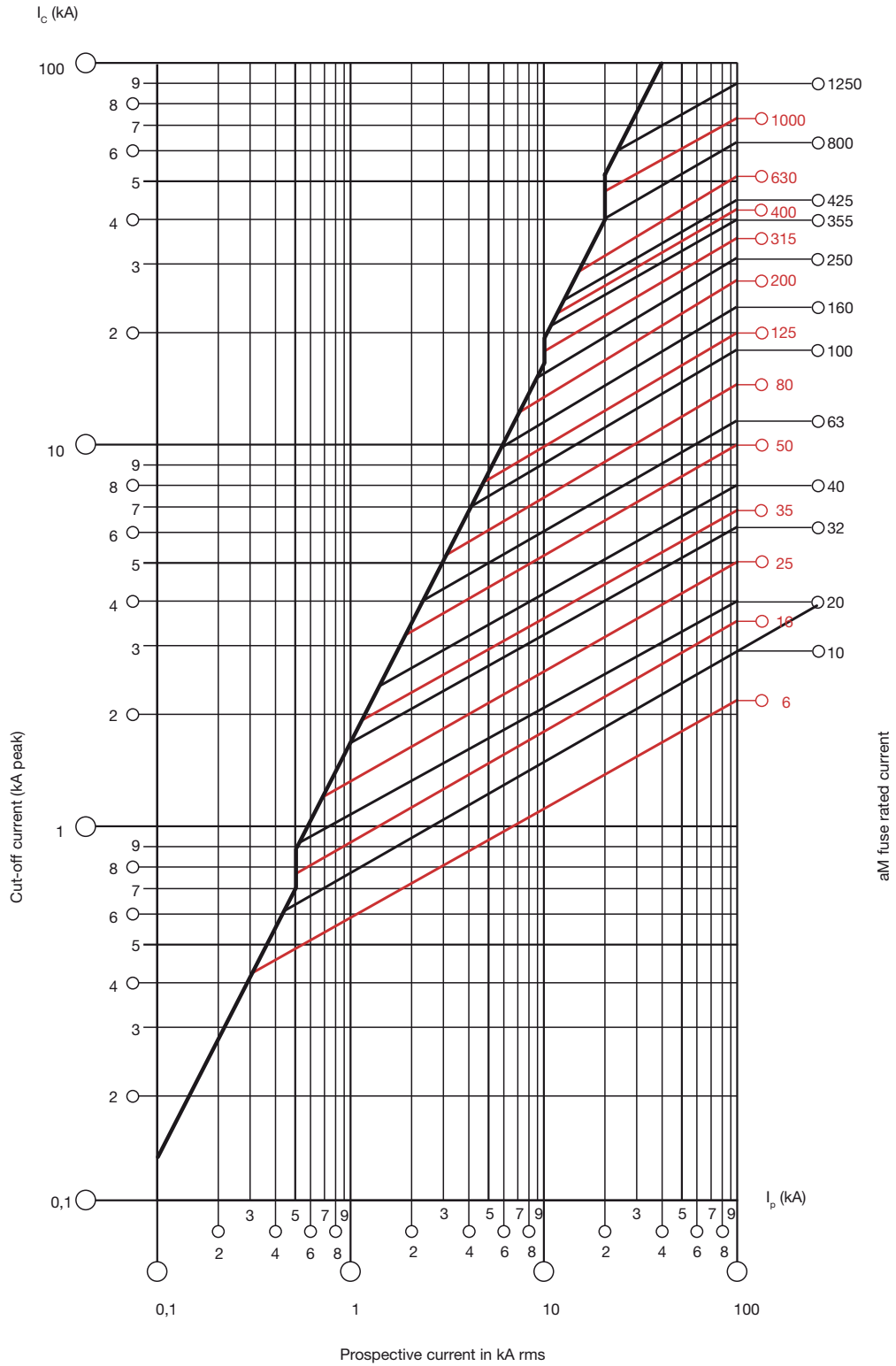


Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A

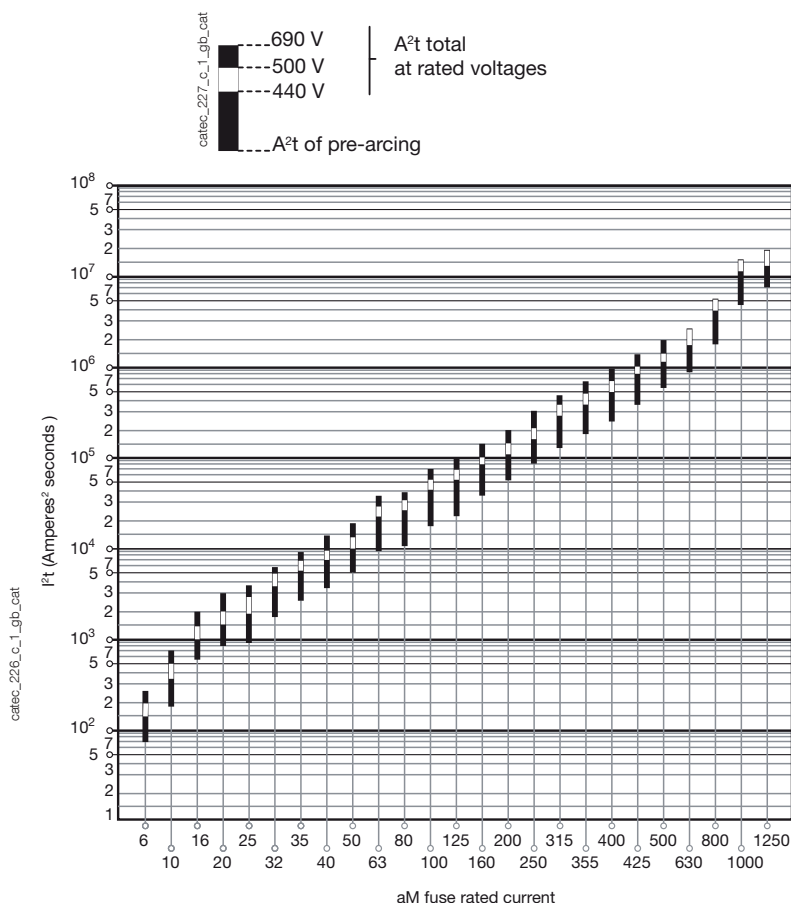
Curves characteristic of NF and NH aM type fuses

Cut-off current diagram



cattec_114_gg_1_gb_cat

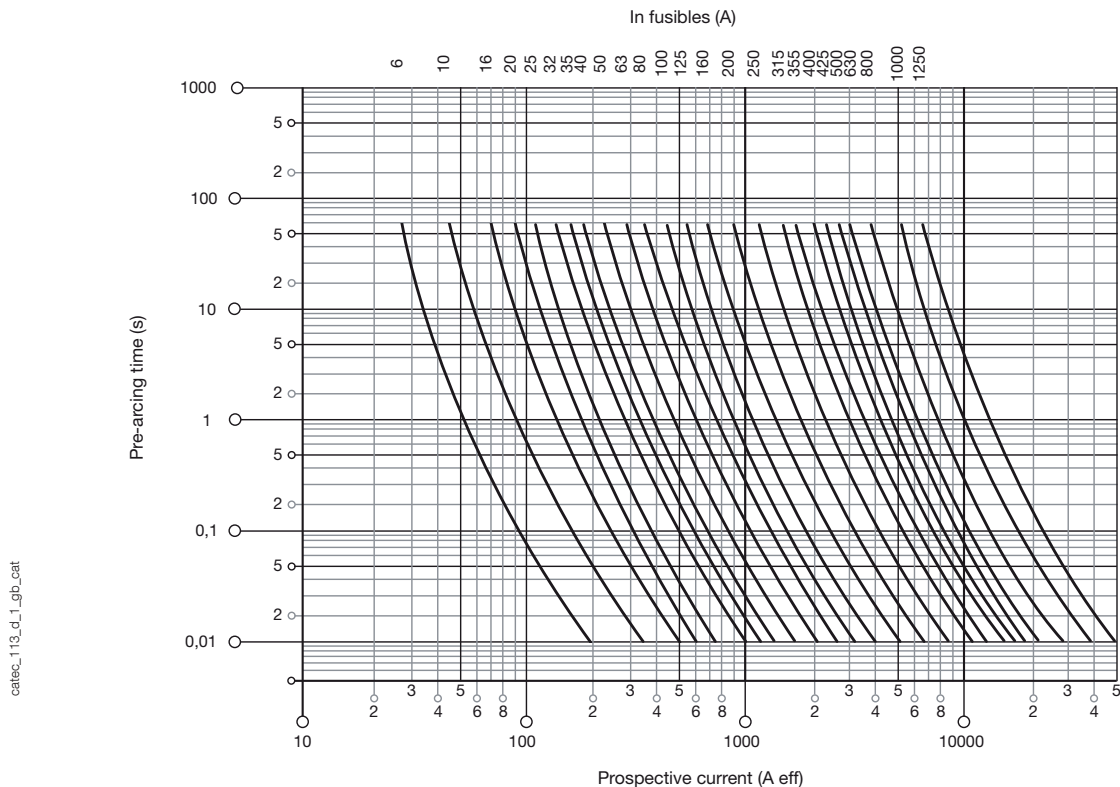
Diagram of thermal constraint limitation



Dissipated power without striker (W)

Rated operational currents In (A)	Fuse size			
	000	00	0/0S	1 2 3 4
6	0.33		0.42	
10	0.52		0.67	
16	0.81		0.98	
20	0.92		1.04	
25	1.08		1.17	
32	1.42		1.67	
35	1.58		1.72	
40	1.68		1.91	
50		2.28	2.51	
63		2.9	3.35	3.2
80		4.19	4.93	4.6
100		5.09	5.72	5.7
125		6.29	7.30	6.98 7.6
160		7.73	9.50	9.2 9.7
200			12.3	13.7 13.9
224				14.0 14.0
250				15.3 17.0
315				26.0 20.6 18.8
355				25.2 23.9
400				29.3 26.5 23.5
425				28.3
500				35.8 34
630				56.9 49
800				70
1000				80
1250				108

Time/current operation characteristics





High speed fuses (UR)

gR and aR curves

5 to 2000 A

Fuse protection



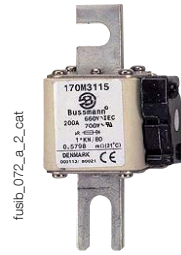
UR type fuses
with or without striker



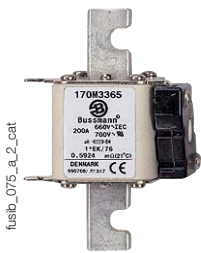
DIN 43620 UR
Knife edge fuses



DIN 43653
Bracket fuse



K/50/80/110 type UR fuses
Notched



EK/76/86/91 type fuses
Notched



BK/50/75/80 type fuses
Threaded bolted tag



T/80 type fuses
Brackets



BT/60 type fuses
Threaded bolted tag

The solution for

- Protection of power semi-conductors (variable speed drives, inverters, etc.)



Strong points

- High level performances.
- High reliability.
- Improved safety.
- Fuse blown detection.

A complete range

- Additional products are available (FUSERBLOC, disconnect switches, fuse bases).

Conformity to standards

- IEC 60269-1
- NF EN 60269-1
- IEC 60269-4
- NF EN 60269-4
- DIN EN 60269-4



Function

High speed fuses (UR) protect power semi-conductors and DC circuits.

Advantages

High level performances

- Very high breaking capacity up to 300 kA.
- Very high limitation of short-circuit currents (and therefore significant reduction in the thermal and mechanical stress).
- High resistance to cyclic loads.

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).
- No downgrading of fuse characteristics over time.

Improved safety

The energy released whilst eliminating the fault (fuse blowing) remains contained within the cartridge (no degassing).

Fuse blown detection

An auxiliary contact can be adapted for fuse blown indication.

References

690 VAC UR Fuses - Size 14 x 51

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 690 V rms (A ² s)	Losses at I _n (W)	Protection	To be ordered in multiples of	14 x 51 UR without striker	14 x 51 UR with striker
						Reference	Reference
5	1.6	11	1.5	aR	10	170N 1405	
10	3.6	38.5	4	aR	10	170N 1410	170L 1410
15	8.6	70	5.5	aR	10	170N 1415	170L 1415
20	26	230	6	aR	10	170N 1420	170L 1420
25	46.5	375	7	aR	10	170N 1425	170L 1425
32	68	600	7.6	aR	10	170N 1432	170L 1432
40	84	750	8	aR	10	170N 1440	170L 1440
50	200	1800	9	aR	10	170N 1450	170L 1450

Description of accessories

	Reference	Reference
Fuse combination switch recommended (see page 188)	FUSERBLOC	FUSERBLOC
Fuse holder recommended (see page 262)	RM 50	RMS 50

690 VAC UR fuses - Size 22 x 58

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 690 V rms (A ² s)	Losses at I _n (W)	Protection	To be ordered in multiples of	22 x 58 UR without striker	22 x 58 UR with striker
						Reference	Reference
20	19	260	5	aR	10	170N 2220	170L 2220
25	34	410	6	aR	10	170N 2225	170L 2225
32	53.5	605	8	aR	10	170N 2232	170L 2232
40	68	750	9	aR	10	170N 2240	170L 2240
50	135	1600	9.5	aR	10	170N 2250	170L 2250
63	280	3080	11	aR	10	170N 2263	170L 2263
80	600	6600	13.5	aR	10	170N 2280	170L 2280
100 ⁽¹⁾	1100	12500	16	aR	10	170N 2299	170L 2299

(1) Voltage: 600 VAC (IEC) / 700 VAC (UL)

Description of accessories

	Reference	Reference
Fuse combination switch recommended (see page 188)	FUSERBLOC	FUSERBLOC
Fuse holder recommended (see page 262)	RM 100	RMS 100

High speed fuses (UR)

gR and aR curves

5 to 2000 A

References (continued)

690 VAC UR fuses - Size 0000

I_n rms value (A)	Pre-arcing I^2t when cold (A ² s)	Operating I^2t at 1250 V rms (A ² s)	Losses at I_n (W)	Protection	DIN 43653 Brackets ⁽¹⁾⁽²⁾ Reference
10	3.8	25.5	3.5	gR	170M 0158
16	8.5	56.5	4.5	gR	170M 0159
20	15	105	5	gR	170M 0160
25	23.5	160	8	gR	170M 0161
32	43.5	290	9	gR	170M 0162
40	77.5	515	11	gR	170M 0163
50	135	915	12	aR	170M 0164
63	260	1750	13	aR	170M 0165
80	485	3250	17	aR	170M 0166
100	860	5700	18	aR	170M 0167

(1) UL / CSA.

(2) Without striker.

(3) With striker.

Description of accessories

	Reference	Reference
Fuse base recommended	170H 1007	(1)

(1) Direct mounting on busbar.

690 VAC UR fuses - Size 000

I_n rms value (A)	Pre-arcing I^2t when cold (A ² s)	Operating I^2t at 1250 V rms (A ² s)	Losses at I_n (W)	Protection	T/80 Brackets ⁽¹⁾	F/70 Brackets ⁽¹⁾⁽²⁾	DIN 43620 Knife-edge ⁽³⁾
					Reference	Reference	Reference
10	3.8	25.5	3	gR	170M 1408	170M 1508	170M 1558
16	7.2	48	5.5	gR	170M 1409	170M 1509	170M 1559
20	11.5	78	7	gR	170M 1410	170M 1510	170M 1560
25	19	130	9	gR	170M 1411	170M 1511	170M 1561
32	40	270	10	gR	170M 1412	170M 1512	170M 1562
40	69	460	12	gR	170M 1413	170M 1513	170M 1563
50	115	770	15	gR	170M 1414	170M 1514	170M 1564
63	215	1450	16	gR	170M 1415	170M 1515	170M 1565
80	380	2550	19	aR	170M 1416	170M 1516	170M 1566
100	695	4650	24	aR	170M 1417	170M 1517	170M 1567
125	1200	8500	28	aR	170M 1418	170M 1518	170M 1568
160	2300	16000	32	aR	170M 1419	170M 1519	170M 1569
200	4200	28000	37	aR	170M 1420	170M 1520	170M 1570
250	7750	51500	42	aR	170M 1421	170M 1521	170M 1571
315	12000	80500	52	aR	170M 1422	170M 1522	170M 1572

(1) UL / CSA.

(2) With striker.

(3) UL.

Description of accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0236		170H 0236
Fuse base recommended	170H 1007	(1)	6500 1010 ⁽²⁾
Fuse combination switch recommended (see page 188)			FUSERBLOC

(1) Direct mounting on busbar.

(2) Single-pole base 160 A Size 00 (see page 266).

690 VAC UR fuses - Size 00

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 1250 V rms (A ² s)	Losses at I _n (W)	Protection	T/80	BT/60
					Brackets	Threaded bolted tag
					Reference	Reference
25	19	130	6	gR	170M 2658	170M 2758
32	28.5	195	7	gR	170M 2659	170M 2759
40	50	360	9	gR	170M 2660	170M 2760
50	95	640	10	gR	170M 2661	170M 2761
63	170	1200	12	gR	170M 2662	170M 2762
80	310	2100	15	gR	170M 2663	170M 2763
100	620	4150	20	aR	170M 2664 ⁽¹⁾	170M 2764
125	1000	6950	25	aR	170M 2665 ⁽¹⁾	170M 2765
160	1900	13000	30	aR	170M 2666 ⁽¹⁾	170M 2766
200	3400	23000	35	aR	170M 2667 ⁽¹⁾	170M 2767
250	6250	42000	45	aR	170M 2668 ⁽¹⁾	170M 2768
315	10000	68500	55	aR	170M 2669 ⁽¹⁾	170M 2769
350	13500	91500	60	aR	170M 2670 ⁽¹⁾	170M 2770
400	18000	125000	70	aR	170M 2671 ⁽¹⁾	170M 2771

⁽¹⁾ UL.

Description of accessories

	Reference	Reference
Fuse blown auxiliary contact	170H 0235	170H 0235
Fuse base recommended	170H 1007	⁽¹⁾

⁽¹⁾ Direct mounting on busbar.

690 VAC UR fuses - Size 0

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 1250 V rms (A ² s)	Losses at I _n (W)	Protection	DIN 43620
					Knife-edge
					Reference
16	3.8	25.5	5	aR	170M 7908
20	7.2	48	6	aR	170M 7909
25	11.5	78	7	aR	170M 7910
32	23.5	160	8	aR	170M 7911
40	40	270	9	aR	170M 7912
50	77	515	11	aR	170M 7913
63	115	770	14	aR	170M 7914
80	185	1250	18	aR	170M 7915
100	360	2450	21	aR	170M 7916
125	550	3700	26	aR	170M 7917
160	1100	7500	30	aR	170M 7918
200	2200	15000	35	aR	170M 7919

Description of accessories

	Reference
Fuse blown auxiliary contact	170H 0236
Fuse base recommended	6501 1010 ⁽¹⁾
Fuse combination switch recommended (see page 188)	FUSERBLOC

⁽¹⁾ Single-pole base 160 A Size 0 (see page 266).

High speed fuses (UR)

gR and aR curves

5 to 2000 A

References (continued)

690 VAC UR fuses - Size 1*

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Notched	K/110 Notched	EK/76 Notched	BK/50 Threaded bolted tag
					Reference	Reference	Reference	Reference
40	40	270	9	aR	170M 3108 ⁽¹⁾	170M 3258 ⁽¹⁾	170M 3358 ⁽¹⁾	170M 3458 ⁽¹⁾
50	77	515	11	aR	170M 3109 ⁽¹⁾	170M 3259 ⁽¹⁾	170M 3359 ⁽¹⁾	170M 3459 ⁽¹⁾
63	115	770	14	aR	170M 3110 ⁽¹⁾	170M 3260 ⁽¹⁾	170M 3360 ⁽¹⁾	170M 3460 ⁽¹⁾
80	185	1250	18	aR	170M 3111 ⁽¹⁾	170M 3261 ⁽¹⁾	170M 3361 ⁽¹⁾	170M 3461 ⁽¹⁾
100	360	2 450	21	aR	170M 3112 ⁽¹⁾	170M 3262 ⁽¹⁾	170M 3362 ⁽¹⁾	170M 3462 ⁽¹⁾
125	550	3 700	26	aR	170M 3113 ⁽¹⁾	170M 3263 ⁽¹⁾	170M 3363 ⁽¹⁾	170M 3463 ⁽¹⁾
160	1100	7 500	30	aR	170M 3114 ⁽¹⁾	170M 3264 ⁽¹⁾	170M 3364 ⁽¹⁾	170M 3464 ⁽¹⁾
200	2200	15000	35	aR	170M 3115 ⁽¹⁾	170M 3265 ⁽¹⁾	170M 3365 ⁽¹⁾	170M 3465 ⁽¹⁾
250	4200	28500	40	aR	170M 3116 ⁽¹⁾	170M 3266 ⁽¹⁾	170M 3366 ⁽¹⁾	170M 3466 ⁽¹⁾
315	7000	46500	50	aR	170M 3117 ⁽¹⁾	170M 3267 ⁽¹⁾	170M 3367 ⁽¹⁾	170M 3467 ⁽¹⁾
350	10000	68500	55	aR	170M 3118 ⁽¹⁾	170M 3268 ⁽¹⁾	170M 3368 ⁽¹⁾	170M 3468 ⁽¹⁾
400	15000	105000	60	aR	170M 3119 ⁽¹⁾	170M 3269 ⁽¹⁾	170M 3369 ⁽¹⁾	170M 3469 ⁽¹⁾
450	21000	140000	65	aR	170M 3120 ⁽¹⁾	170M 3270 ⁽¹⁾	170M 3370 ⁽¹⁾	170M 3470 ⁽¹⁾
500	27000	180000	70	aR	170M 3121 ⁽¹⁾	170M 3271 ⁽¹⁾	170M 3371 ⁽¹⁾	170M 3471 ⁽¹⁾
550	34000	230000	75	aR	170M 3122 ⁽¹⁾	170M 3272 ⁽¹⁾		170M 3472 ⁽¹⁾
630	48500	325000	80	aR	170M 3123 ⁽¹⁾	170M 3273 ⁽¹⁾		170M 3473 ⁽¹⁾

(1) UL / CSA.

Description of accessories

	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069	170H 0069
Fuse base recommended	170H 3004	170H 3006	170A 0601 ⁽¹⁾	⁽²⁾
Fuse combination switch recommended (see page 188)		FUSERBLOC		

(1) I_{max} = 200 A. (2) Direct mounting on busbar.

690 VAC UR fuses - Size 1

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Notched	K/110 Notched	DIN 43620 Knife-edge	EK/86 Notched	BK/50 Threaded bolted tag
					Reference	Reference	Reference	Reference	Reference
40	40	285	4	aR			170M 3808 ⁽¹⁾		
50	78	550	4.5	aR			170M 3809 ⁽¹⁾		
63	120	850	6.5	aR			170M 3810 ⁽¹⁾		
80	185	1 350	8.5	aR			170M 3811 ⁽¹⁾		
100	360	2 600	10	aR			170M 3812 ⁽¹⁾		
125	550	3 900	11	aR			170M 3813 ⁽¹⁾		
160	1 150	8 250	12	aR			170M 3814 ⁽¹⁾		
200	1 650	11 500	45	aR	170M 4108 ⁽²⁾	170M 4258 ⁽²⁾		170M 4358 ⁽²⁾	170M 4458 ⁽²⁾
200	2 300	16 500	12.5	aR			170M 3815 ⁽¹⁾		
250	3 100	21000	55	aR	170M 4109 ⁽²⁾	170M 4259 ⁽²⁾		170M 4359 ⁽²⁾	170M 4459 ⁽²⁾
250	4 350	31000	16	aR			170M 3816 ⁽¹⁾		
315	6 200	42 000	58	aR	170M 4110 ⁽²⁾	170M 4260 ⁽²⁾		170M 4360 ⁽²⁾	170M 4460 ⁽²⁾
315	7 300	52 000	20	aR			170M 3817 ⁽¹⁾		
350	10 000	73 000	21.5	aR			170M 3818 ⁽¹⁾		
350	8 500	59 000	60	aR	170M 4111 ⁽²⁾	170M 4261 ⁽²⁾		170M 4361 ⁽²⁾	170M 4461 ⁽²⁾
400	13 500	91 500	65	aR	170M 4112 ⁽²⁾	170M 4262 ⁽²⁾		170M 4362 ⁽²⁾	170M 4462 ⁽²⁾
400	16 000	115 000	23	aR			170M 3819 ⁽¹⁾		
450	17 000	120 000	70	aR	170M 4113 ⁽²⁾	170M 4263 ⁽²⁾		170M 4363 ⁽²⁾	170M 4463 ⁽²⁾
500	25 000	170 000	72	aR	170M 4114 ⁽²⁾	170M 4264 ⁽²⁾		170M 4364 ⁽²⁾	170M 4464 ⁽²⁾
550	34 000	230 000	75	aR	170M 4115 ⁽²⁾	170M 4265 ⁽²⁾		170M 4365 ⁽²⁾	170M 4465 ⁽²⁾
630	52 000	350 000	80	aR	170M 4116 ⁽²⁾	170M 4266 ⁽²⁾		170M 4366 ⁽²⁾	170M 4466 ⁽²⁾
700	69 500	465 000	85	aR	170M 4117 ⁽²⁾	170M 4267 ⁽²⁾		170M 4367 ⁽²⁾	170M 4467 ⁽²⁾
800	105 000	725 000	95	aR	170M 4118 ⁽²⁾	170M 4268 ⁽²⁾		170M 4368 ⁽²⁾	170M 4468 ⁽²⁾
900	155 000	850 000	100	aR	170M 4119 ⁽²⁾	170M 4269 ⁽²⁾			170M 4469 ⁽²⁾

(1) UL. (2) UL / CSA.

Description of accessories

	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0236	170H 0069	170H 0069
Fuse base recommended	170H 3004	170H 3006	6501 1011 ⁽¹⁾	170A 0611 ⁽²⁾	⁽³⁾
Fuse combination switch recommended (see page 188)		FUSERBLOC	FUSERBLOC		

(1) Single-pole base 250 A Size 1 (see page 266).

(2) I_{max} = 250 A.

(3) Direct mounting on busbar.

690 VAC UR fuses - Size 2

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Notched	K/110 Notched	DIN 43620 Knife-edge	EK/91 Notched	BK/50 Threaded bolted tag
					Reference	Reference	Reference	Reference	Reference
200	1 200	8 200	50	aR			170M 5804 ⁽¹⁾		
250	2 450	16 500	55	aR			170M 5805 ⁽¹⁾		
315	4 950	33 000	60	aR			170M 5806 ⁽¹⁾		
350	7 000	46 500	60	aR			170M 5807 ⁽¹⁾		
400	11 000	74 000	65	aR	170M 5108 ⁽²⁾	170M 5258 ⁽²⁾		170M 5358 ⁽²⁾	170M 5458 ⁽²⁾
450	15 500	105 000	70	aR	170M 5109 ⁽²⁾	170M 5259 ⁽²⁾		170M 5359 ⁽²⁾	170M 5459 ⁽²⁾
500	21 500	145 000	75	aR	170M 5110 ⁽²⁾	170M 5260 ⁽²⁾		170M 5360 ⁽²⁾	170M 5460 ⁽²⁾
550	28 000	190 000	80	aR	170M 5111 ⁽²⁾	170M 5261 ⁽²⁾		170M 5361 ⁽²⁾	170M 5461 ⁽²⁾
630	41 000	275 000	90	aR	170M 5112 ⁽²⁾	170M 5262 ⁽²⁾		170M 5362 ⁽²⁾	170M 5462 ⁽²⁾
700	60 500	405 000	95	aR	170M 5113 ⁽²⁾	170M 5263 ⁽²⁾		170M 5363 ⁽²⁾	170M 5463 ⁽²⁾
800	86 000	575 000	105	aR	170M 5114 ⁽²⁾	170M 5264 ⁽²⁾		170M 5364 ⁽²⁾	170M 5464 ⁽²⁾
900	125 000	840 000	110	aR	170M 5115 ⁽²⁾	170M 5265 ⁽²⁾		170M 5365 ⁽²⁾	170M 5465 ⁽²⁾
1000	180 000	1 250 000	115	aR	170M 5116 ⁽²⁾	170M 5266 ⁽²⁾		170M 5366 ⁽²⁾	170M 5466 ⁽²⁾
1100	245 000	1 600 000	120	aR	170M 5117 ⁽²⁾	170M 5267 ⁽²⁾			170M 5467 ⁽²⁾
1250	365 000	2 400 000	130	aR	170M 5118 ⁽²⁾	170M 5268 ⁽²⁾			170M 5468 ⁽²⁾
400	11 000	79 000	65	aR			170M 5808 ⁽¹⁾		
450	16 000	115 000	70	aR			170M 5809 ⁽¹⁾		
500	21 500	155 000	75	aR			170M 5810 ⁽¹⁾		
550	29 000	215 000	80	aR			170M 5811 ⁽¹⁾		
630	41 000	295 000	90	aR			170M 5812 ⁽¹⁾		
700	60 500	430 000	95	aR			170M 5813 ⁽¹⁾		

(1) UL / CSA. (2) UL / CSA.

Description of accessories

	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0235	170H 0069	170H 0069
Fuse base recommended	170H 3004	170H 3006	6501 1012 ⁽¹⁾	170A 0621 ⁽²⁾	⁽³⁾
Fuse combination switch recommended (see page 188)		FUSERBLOC	FUSERBLOC		FUSERBLOC

(1) Single-pole base 400 A Size 2 (see page 266).

(2) I_{max} = 400 A.

(3) Direct mounting on busbar.

690 VAC UR fuses - Size 3

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Brackets ⁽¹⁾	K/110 Brackets ⁽¹⁾	DIN 43620 Knife-edge ⁽²⁾	EK/91 Brackets ⁽¹⁾	BK/50 Threaded bolted tag ⁽¹⁾
					Reference	Reference	Reference	Reference	Reference
500	14 000	95 000	95	aR	170M 6108	170M 6258	170M 6808	170M 6358	170M 6458
550	19 500	135 000	100	aR	170M 6109	170M 6259	170M 6809	170M 6359	170M 6459
630	31 000	210 000	105	aR	170M 6110	170M 6260	170M 6810	170M 6360	170M 6460
700	44 500	300 000	110	aR	170M 6111	170M 6261	170M 6811	170M 6361	170M 6461
800	69 500	465 000	115	aR	170M 6112	170M 6262	170M 6812	170M 6362	170M 6462
900	100 000	670 000	120	aR	170M 6113	170M 6263	170M 6813	170M 6363	170M 6463
1000	140 000	945 000	125	aR	170M 6114	170M 6264	170M 6814	170M 6364	170M 6464
1100	190 000	1 300 000	130	aR	170M 6115	170M 6265		170M 6365	170M 6465
1250	290 000	1 950 000	140	aR	170M 6116	170M 6266		170M 6366	170M 6466
1400	370 000	2 450 000	155	aR	170M 6117	170M 6267		170M 6367	170M 6467
1500	460 000	3 100 000	160	aR	170M 6118	170M 6268		170M 6368	170M 6468
1600	580 000	3 900 000	160	aR	170M 6119	170M 6269			170M 6469
1800	880 000	5 250 000	165	aR	170M 6120 ⁽³⁾	170M 6270 ⁽³⁾			170M 6470 ⁽³⁾
2000	1 150 000	6 350 000	175	aR	170M 6121 ⁽⁴⁾	170M 6271 ⁽⁴⁾			170M 6471 ⁽⁴⁾

(1) UL / CSA.

(2) UL.

(3) Nominal output voltage 600 VAC.

(4) Nominal output voltage 550 VAC.

Description of accessories

	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0236	170H 0069	170H 0069
Fuse base recommended	170H 3004	170H 3006	6501 1013 ⁽¹⁾	170A 0632 ⁽²⁾	⁽³⁾
Fuse combination switch recommended (see page 188)		FUSERBLOC	FUSERBLOC		FUSERBLOC

(1) Single-pole base 630 A Size 3 (see page 266).

(2) I_{max} = 710 A.

(3) Direct mounting on busbar.

High speed fuses (UR)

gR and aR curves

5 to 2000 A

References (continued)

1250 VAC UR fuses - Size 1*

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 1250 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Brackets ⁽¹⁾	BK/75 Threaded bolted tag ⁽¹⁾	BK/80 Threaded bolted tag ⁽¹⁾
					Reference	Reference	Reference
50	135	1 100	15	aR	170M 3238	170M 3388	170M 3438
63	215	1 750	20	aR	170M 3239	170M 3389	170M 3439
80	420	3 350	25	aR	170M 3240	170M 3390	170M 3440
100	750	5 950	30	aR	170M 3241	170M 3391	170M 3441
125	1 450	11 500	35	aR	170M 3242	170M 3392	170M 3442
160	2 600	21 000	40	aR	170M 3243	170M 3393	170M 3443
200	5 150	41 000	45	aR	170M 3244	170M 3394	170M 3444
250	9 200	73 000	55	aR	170M 3245	170M 3395	170M 3445
315	18 500	150 000	60	aR	170M 3246	170M 3396	170M 3446
350	27 000	220 000	65	aR	170M 3247	170M 3397	170M 3447
400	53 000	335 000	70	aR	170M 3248		170M 3448

(1) UL.

Description of accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Fuse base recommended	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC UR fuses - Size 1

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 1250 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Brackets ⁽¹⁾	BK/75 Threaded bolted tag ⁽¹⁾	BK/80 Threaded bolted tag ⁽¹⁾
					Reference	Reference	Reference
160	1 900	15 500	45	aR	170M 4238	170M 4388	170M 4438
200	3 800	30 000	50	aR	170M 4239	170M 4389	170M 4439
250	7 750	61 500	60	aR	170M 4240	170M 4390	170M 4440
315	15 000	120 000	65	aR	170M 4241	170M 4391	170M 4441
350	20 000	165 000	70	aR	170M 4242	170M 4392	170M 4442
400	29 500	235 000	75	aR	170M 4243	170M 4393	170M 4443
450	42 000	335 000	80	aR	170M 4244	170M 4394	170M 4444
500	69 500	435 000	85	aR	170M 4245	170M 4395 ⁽²⁾	170M 4445
550	95 000	590 000	95	aR	170M 4246	170M 4396 ⁽³⁾	170M 4446
630	130 000	600 000 ⁽⁴⁾	100	aR	170M 4247 ⁽²⁾	170M 4397 ⁽³⁾	170M 4447 ⁽²⁾

(1) UL.

(2) Nominal output voltage 1100 VAC.

(3) Nominal output voltage 1000 VAC.

(4) Operating I²t at 1000 V rms (A²s).

Description of accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Fuse base recommended	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC UR fuses - Size 2

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 1250 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Brackets ⁽¹⁾	BK/75 Threaded bolted tag ⁽¹⁾	BK/80 Threaded bolted tag ⁽¹⁾
					Reference	Reference	Reference
250	6 500	51 500	65	aR	170M 5238	170M 5388	170M 5438
280	9 350	74 500	70	aR	170M 5239	170M 5389	170M 5439
315	13 000	105 000	75	aR	170M 5240	170M 5390	170M 5440
350	16 500	135 000	80	aR	170M 5241	170M 5391	170M 5441
400	23 000	180 000	85	aR	170M 5242	170M 5392	170M 5442
450	34 000	270 000	90	aR	170M 5243	170M 5393	170M 5443
500	48 000	380 000	95	aR	170M 5244	170M 5394	170M 5444
550	62 000	495 000	100	aR	170M 5245	170M 5395	170M 5445
630	115 000	730 000	110	aR	170M 5246	170M 5396 ⁽²⁾	170M 5446
700	160 000	1 050 000	115	aR	170M 5247	170M 5397 ⁽³⁾	170M 5447 ⁽²⁾
800	245 000	1 550 000	120	aR	170M 5248	170M 5398 ⁽³⁾	170M 5448 ⁽³⁾
900	360 000	1 750 000	125	aR	170M 5249 ⁽²⁾		
1 000	480 000	2 350 000	135	aR	170M 5250 ⁽²⁾		

(1) UL.

(2) Nominal output voltage 1100 VAC.

(3) Nominal output voltage 1000 VAC.

Description of accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Fuse base recommended	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC UR fuses - Size 3

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 1250 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Brackets ⁽¹⁾	BK/75 Threaded bolted tag ⁽¹⁾	BK/80 Threaded bolted tag ⁽¹⁾
					Reference	Reference	Reference
315	9 500	77 500	85	aR	170M 6238	170M 6338	170M 6538
350	13 500	110 000	90	aR	170M 6239	170M 6339	170M 6539
400	19 500	160 000	95	aR	170M 6240	170M 6340	170M 6540
450	31 000	245 000	100	aR	170M 6241	170M 6341	170M 6541
500	39 000	310 000	105	aR	170M 6242	170M 6342	170M 6542
550	55 000	435 000	110	aR	170M 6243	170M 6343	170M 6543
630	83 500	665 000	115	aR	170M 6244	170M 6344	170M 6544
700	115 000	940 000	120	aR	170M 6245	170M 6345	170M 6545
800	205 000	1 300 000	125	aR	170M 6246	170M 6346 ⁽²⁾	170M 6546
900	305 000	1 900 000	130	aR	170M 6247	170M 6347 ⁽³⁾	170M 6547 ⁽²⁾
1 000	450 000	2 750 000	135	aR	170M 6248	170M 6348 ⁽³⁾	170M 6548 ⁽²⁾
1 100	575 000	3 600 000	140	aR	170M 6249	170M 6349 ⁽³⁾	170M 6549 ⁽³⁾
1 250	810 000	3 950 000 ⁽⁴⁾	145	aR	170M 6250 ⁽²⁾		
1 400	1 250 000	6 000 000 ⁽⁴⁾	150	aR	170M 6251 ⁽²⁾		

(1) UL.

(2) Nominal output voltage 1100 VAC.

(3) Nominal output voltage 1000 VAC.

(4) Operating I²t at 1000 V rms (A²s).

Description of accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Fuse base recommended	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

High speed fuses (UR)

gR and aR curves

5 to 2000 A

Accessories

Fuse blown auxiliary contact

Connection

6.3 x 0.8 mm fast-on connection.

Electronics principle

An auxiliary contact detects if a fuse has blown.

Electrical characteristics

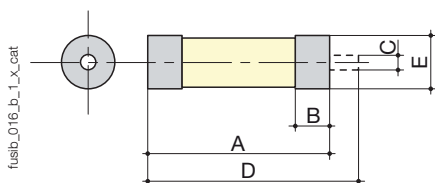
Voltage (VAC)	Nominal current (A)
250	2



fusb_061_a_1_cat

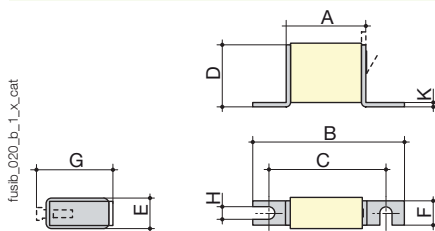
Dimensions - 690 VAC UR fuses

14 x 51 and 22 x 58



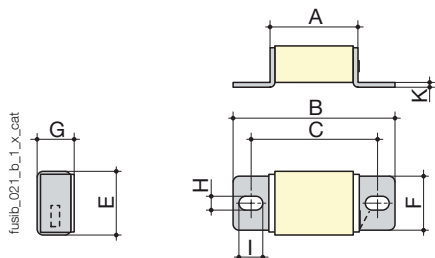
Size	A	W	C	D	E
14 x 51	51	11	4	59	Ø 14.3
22 x 58	58	15	4	66	Ø 22.2

DIN 43653 and T/80



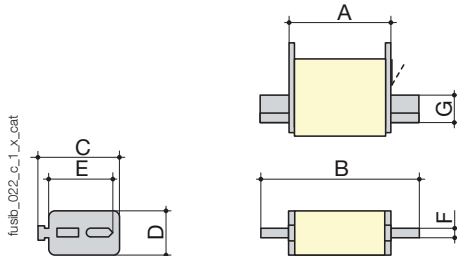
Size	A	W	C	D	E	F	G	H	K
0000	54	100	78	19	18	17		8	1.5
000	54	100	78	40	21	20	51	8	2
00	54	100	78	51	30	28	67	10	2

F/65 and F/70



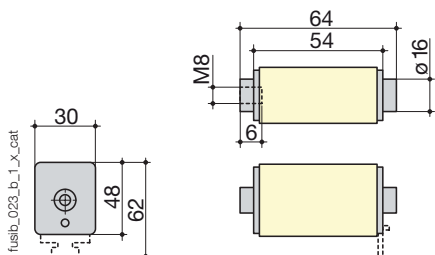
Size	A	W	C	E	F	G	H	I	K
0000	54	78	65	18	13	19	7	10	1.5
00	54	95	70	36	32	23	9	10	2

DIN 43620



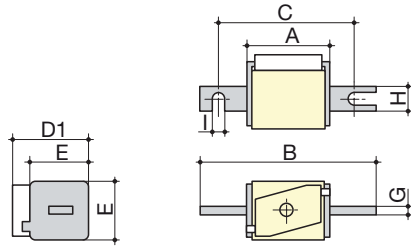
Size	A	W	C	D	E	F	G
000	54	79	48	21	35	6	15
0	68	125	60	35	35	6	15
1*	71	135	58	45	40	6	20
2	72	150	71	55	48	6	26
3	72	150	88	76	60	6	33

BT/60



K/80 and K/110

fusb_024_b_1_x_cat



K/80

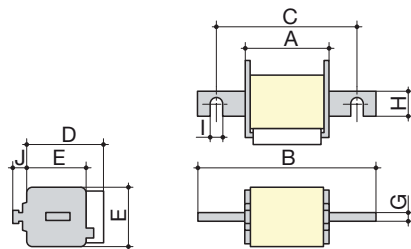
Size	A	W	C	D1	E	G	H	I
1*	50	104	78	59	45	6	22	11
1	50	108	78	69	53	6	25	11
2	50	108	78	77	61	6	25	11
3	51	109	78	92	76	6	30	11

K/110

Size	A	W	C	D1	E	G	H	I
1*	50	134	108	59	45	6	22	11
1	50	138	108	69	53	6	25	11
2	50	138	108	77	61	6	25	11
3	51	139	108	92	76	6	30	11

EK/76 - EK/86 - EK/91

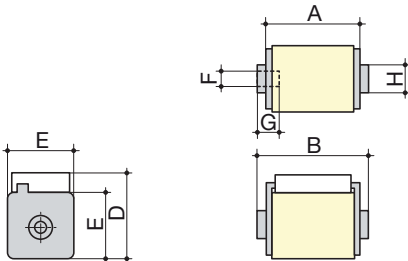
fusb_029_b_1_x_cat



Size	A	W	C	D	E	G	H	I	J
1*	50	102	76	59	45	6	18	9	13
1	50	111	86	69	53	6	25	11	11
2	50	126	91	77	61	6	30	13	12
3	51	126	91	92	76	6	36	13	13

BK/50

fusb_030_b_1_x_cat



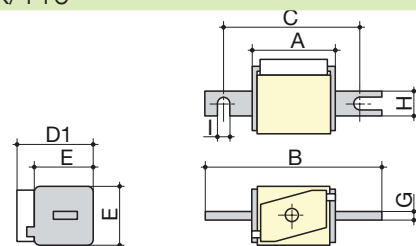
Size	A	W	D	E	F	G	H
1*	50	51	59	45	M8	5	Ø 17
1	50	51	59	53	M8	8	Ø 20
2	50	51 ⁽¹⁾	77	61	M10	10	Ø 24
3	51	53 ⁽²⁾	92	76	M12	10	Ø 30

(1) B = 65 mm for ratings 1100 to 1250 A.
 (2) B = 65 mm for ratings 1600 to 2000 A.

1250 VAC UR fuses

K/110

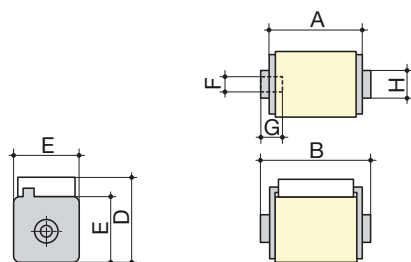
fusb_163_a_1_x_cat



Size	A	W	C	D1	E	G	H	I
1*	80	138	108	59	45	6	20	11
1	80	138	108	69	53	6	25	11
2	80	138	108	77	61	6	25	11
3	81	139	108	92	76	6	30	11

K/75 and K/80

fusb_164_a_1_x_cat



BK/75

Size	A	W	D	E	F	G	H
1*	74	75	59	45	M8	5	Ø 17
1	74	75	69	53	M8	8	Ø 20
2	74	75	77	61	M10	10	Ø 24
3	74	76	92	76	M12	10	Ø 30

BK/80

Size	A	W	D	E	F	G	H
1*	80	81	59	45	M8	5	Ø 17
1	80	81	69	53	M8	8	Ø 20
2	80	81	77	61	M10	10	Ø 24
3	81	83	92	76	M12	10	Ø 30



Photovoltaic fuses

gPV curve
1 to 600 A

Fuse protection

new



The solution for

- > Photovoltaic protection.



Strong points

- > Breaking capacity up to 1000 VDC.
- > Product dedicated to PV applications.
- > High reliability.
- > Improved safety.

Large range

- > Additional range of disconnect switches and fuse bases - dedicated connection accessories.

Conformity to standards

- > IEC 60269-6
- > IEC 60269-1
- > IEC 60269-2
- > NF EN 60269-1
- > VDE 0636-10



Function

SOCOME PV fuses protect the installation against the inverse over-currents which could occur in the photovoltaic installation.

Advantages

Breaking capacity up to 1000 VDC

High breaking capacity at 1000 VDC.

Product dedicated to PV applications.

Operating ranges adjusted for small over-currents specific to PV installations.

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).
- No downgrading of fuse characteristics over time.

Improved safety

The energy released whilst eliminating the fault (fuse blowing) is contained within the cartridge (no degassing).

What you need to know

Used characteristics

- I_{SC} : short circuit current of the string
- $I_{SC\ MAX}$: short circuit current of the string related to maximum sunlight density
- I_{RM} : maximum admitted reverse current
- I_n : fuse rating or fuse rated current (at 25°C in a RM disconnect switch).
- N_c : number of strings connected in parallel
- U_g : maximum fuse rated voltage.
- $U_{OC\ MAX}$: maximum open circuit voltage in the lowest temperature conditions.

When to protect

A PV string requires an over-current protection when its own maximum admissible reverse current characteristic (I_{RM}) is less than the current generated by the rest of the installation (current generated by the "Nc-1" other strings).

How to protect

The overload protection is to be applied at each of the two polarities, regardless of whether the DC installation is earthed or not.

How to choose the fuse protection

Voltage

$$U_g > U_{OC\ MAX}$$

In the absence of complementary information use $U_{OC\ MAX} = 1.2 U_{OC}$

Fuse rating determination

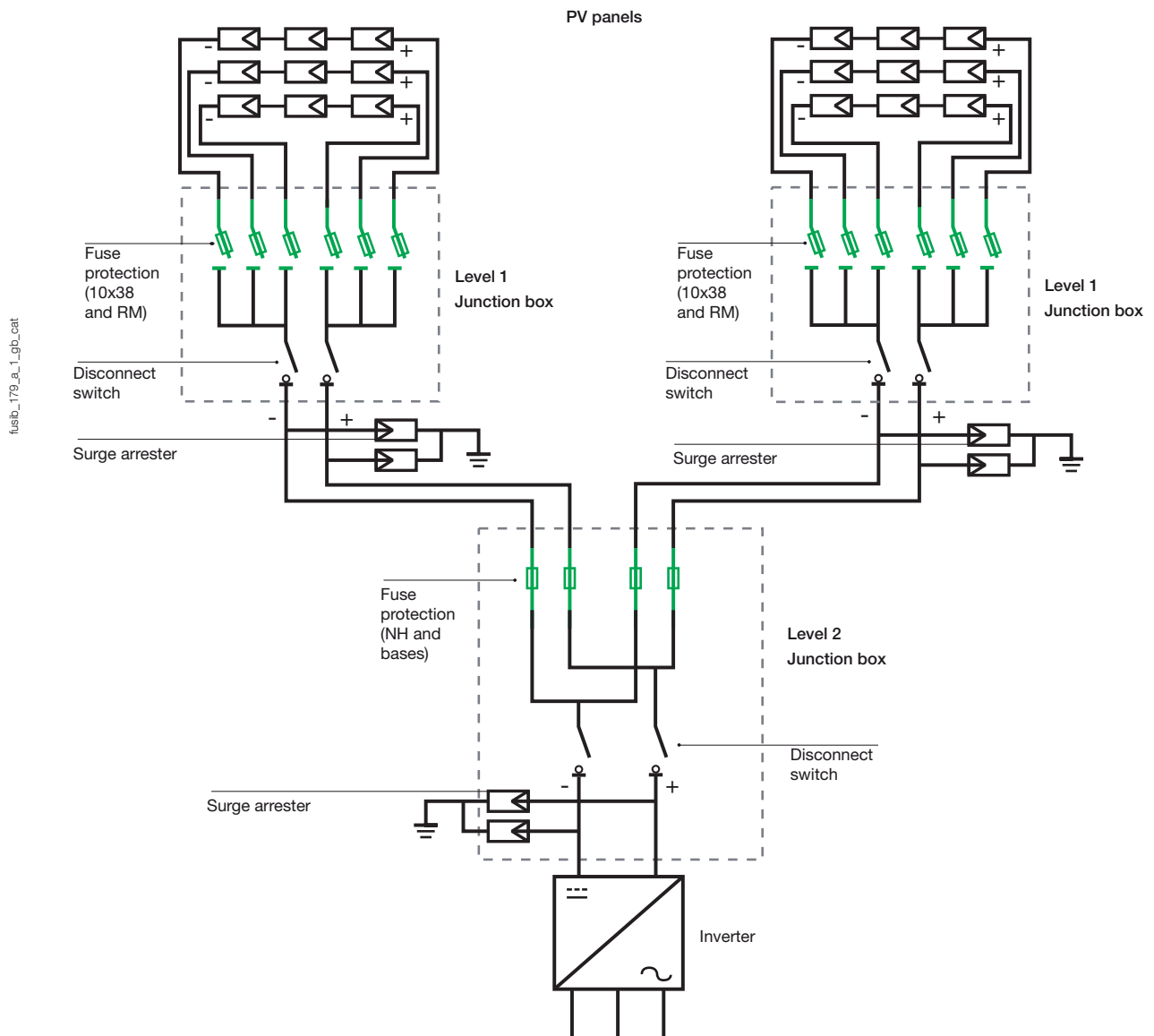
Determination of the fuse rated current consists of choosing a protection capable of:

- Supporting without fusing the normal overload current during the periods of maximum sunlight density at the ambient temperature of the enclosure in which the fuse is installed, $I_n > I_{SC\ MAX}$

In the absence of complementary information use $I_{SC\ MAX} = 1.4 I_{SC}$

- Melting and reliably clearing the fault before the PV modules are damaged by the reverse current.

$$I_n < I_{RM}$$



fusib_179_a_1_gb_cat

Photovoltaic fuses

gPV curve

1 to 600 A

References

gPV cylindrical Fuses

Rating (A)	Rated voltage U DC (V)	Dissipated power		Breaking capacity	10 x 38	14 x 51
		W@ In	W @ 0.8 In		Reference	Reference
1	1000	0.76	0.43	30 kA	60PV 0001	
2	1000	1.54	0.84	30 kA	60PV 0002	
3	1000	1.35	0.74	30 kA	60PV 0003	
4	1000	1.84	1.08	30 kA	60PV 0004	
6	1000	2.50	1.40	30 kA	60PV 0006	
8	1000	2.57	1.47	30 kA	60PV 0008	
10	1000	2.58	1.51	30 kA	60PV 0010	
12	1000	2.61	1.42	30 kA	60PV 0012	
15	1000	2.44	1.08	30 kA	60PV 0015	
16	1000	2.70	1.56	30 kA	60PV 0016	
20	1000	2.99	1.75	30 kA	60PV 0020	
25	1000	5.1	2.7	10 kA		60PV 0C25
32	1000	6.2	3.3	10 kA		60PV 0C25

gPV knife edge fuses

Rating (A)	Rated voltage U DC (V)	Dissipated power		Breaking capacity	Size NH1	Size 2XL	Size 3L
		W@ In	W @ 0.8 In		Reference	Reference	Reference
32	1000	8.5	4.3	50 kA	60PV 0032		
40	1000	9	4.6	50 kA	60PV 0040		
50	1000	10.5	5.4	50 kA	60PV 0050		
63	1000	12	6.1	50 kA	60PV 0063		
80	1000	15.5	7.9	50 kA	60PV 0080		
100	1000	16.5	8.4	50 kA	60PV 0100		
125	1000	17.5	8.9	50 kA	60PV 0125		
160	1000	24	12.2	50 kA	60PV 0160		
200	1000	50	28	33 kA		60PV 0200	
250	1000	60	34	33 kA		60PV 0250	
315	1000	66	40	33 kA		60PV 0315	
355	1000	68	42	50 kA		60PV 0355	
400	1000	82	48	50 kA			60PV 0400
500	1000	85	50	50 kA			60PV 0500
600	1000	118	92	50 kA			60PV 0600

Description of accessories	Size NH1 Reference	Size 2XL Reference	Size 3L Reference
Fuse blown auxiliary contact	56PV 9901	56PV 9901	56PV 9901
Fuse base recommended	65PV 1011	65PV 1112	65PV 1113

Ambient temperature derating factor

$$I_{nf} = I_{scgen} / K_t$$

I_{nf} - gPV fuse rated current.

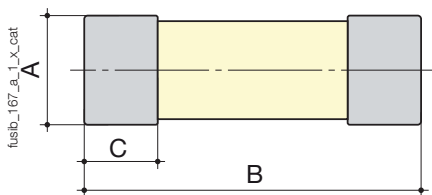
I_{scgen} - PV generator short circuit current under STC.

K_t - derating factor.

Max. ambient temperature (°C)	Kt: derating factor
20	1
40	0.92
45	0.90
50	0.87
55	0.85
60	0.82
65	0.79
70	0.76

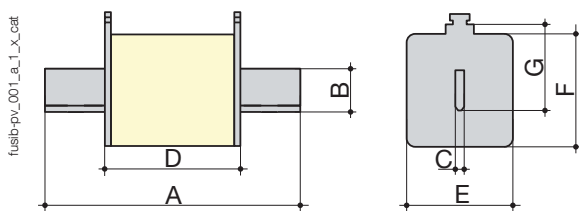
Standard dimensions (mm) as per IEC 60269-2

gPV cylindrical Fuses



Size	Striker	A	W	C
10 x 38	without	10.3	38	10.5
14 x 51	without	14.3	51.5	10.10

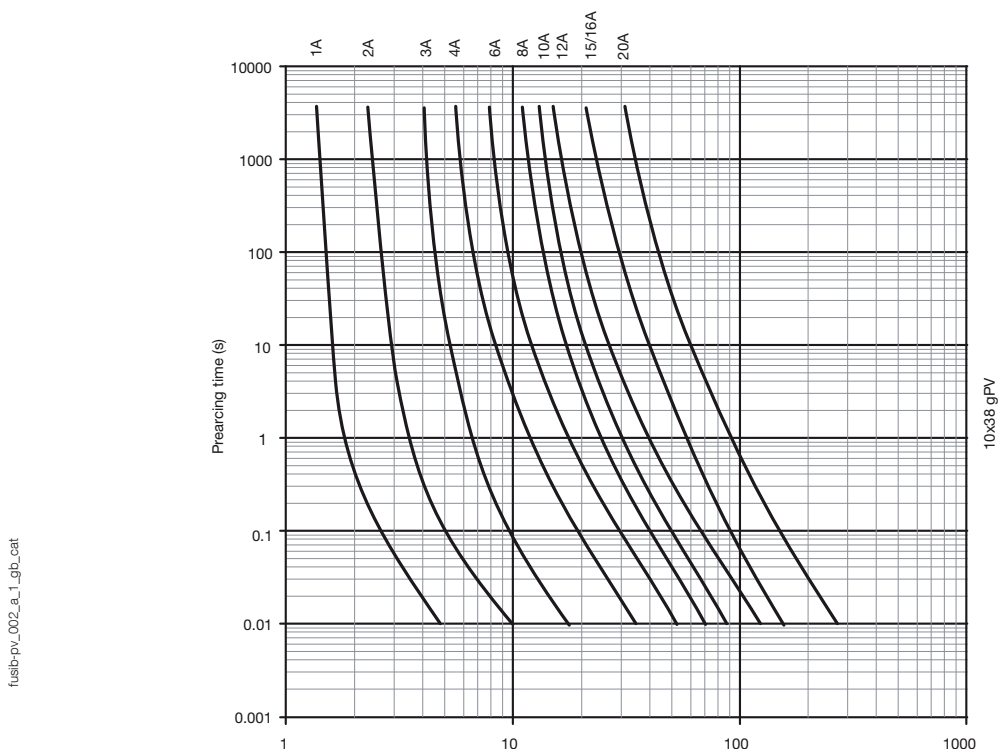
gPV knife edge fuse



Size	Striker	A maxi	W	C	D maxi	E maxi	F maxi	G
NH1	without	137	20	6	67.7	39.65	52.9	40
2XL	without	204.5	26	5.8	123.3	59.2	59.2	47.9
3L	without	204.9	32.3	6	122.3	73.5	73.5	60

Time/current operation characteristics

gPV cylindrical fuses 10x38

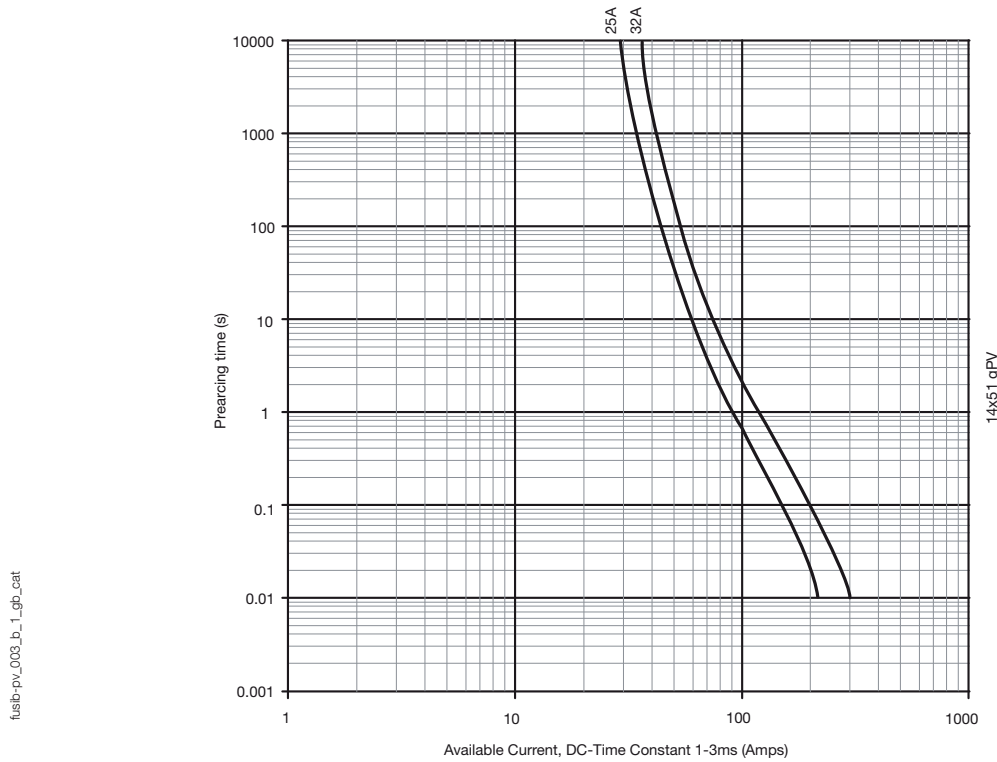


Photovoltaic fuses

gPV curve
1 to 600 A

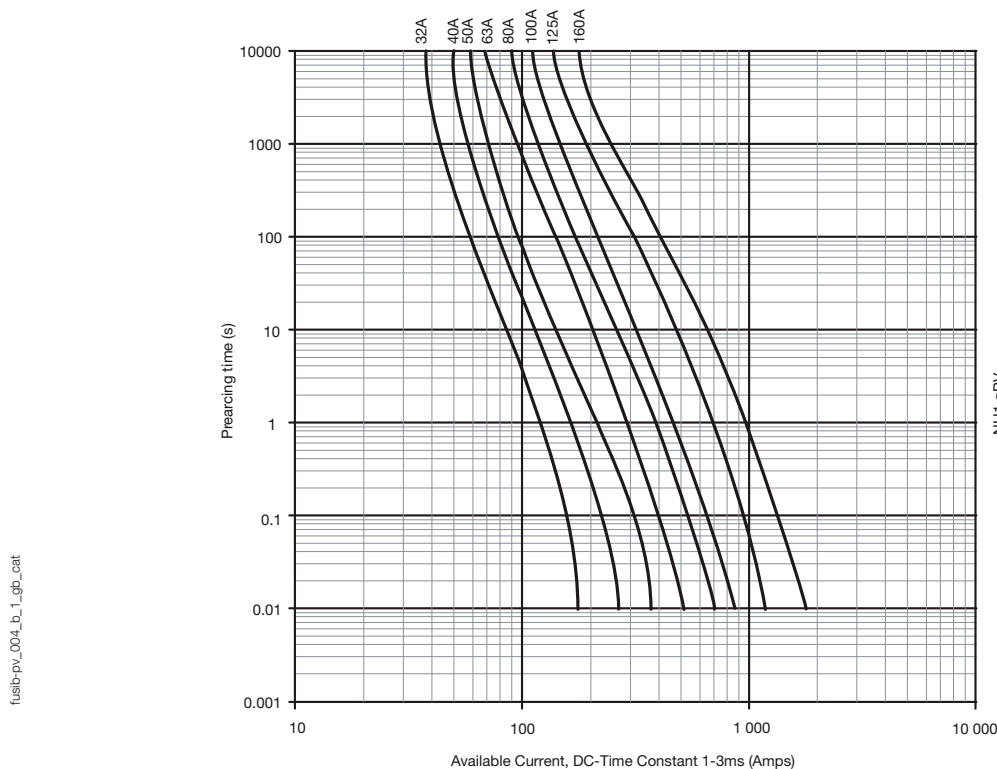
Time/current operation characteristics (continued)

gPV cylindrical fuses 14x51



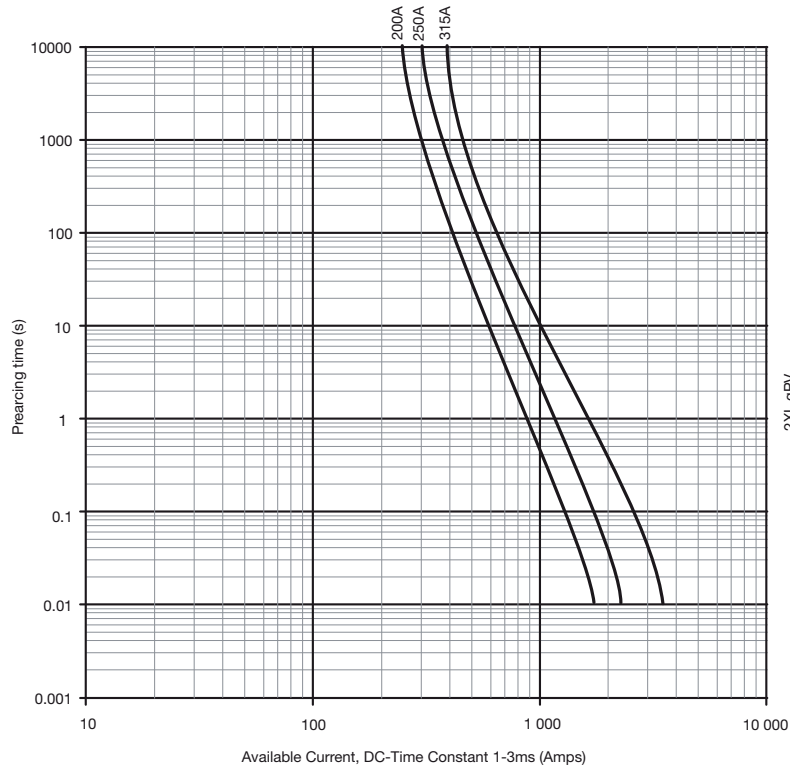
Time/current operation characteristics for gPV knife edge fuses

gPV knife edge fuse (NH1)



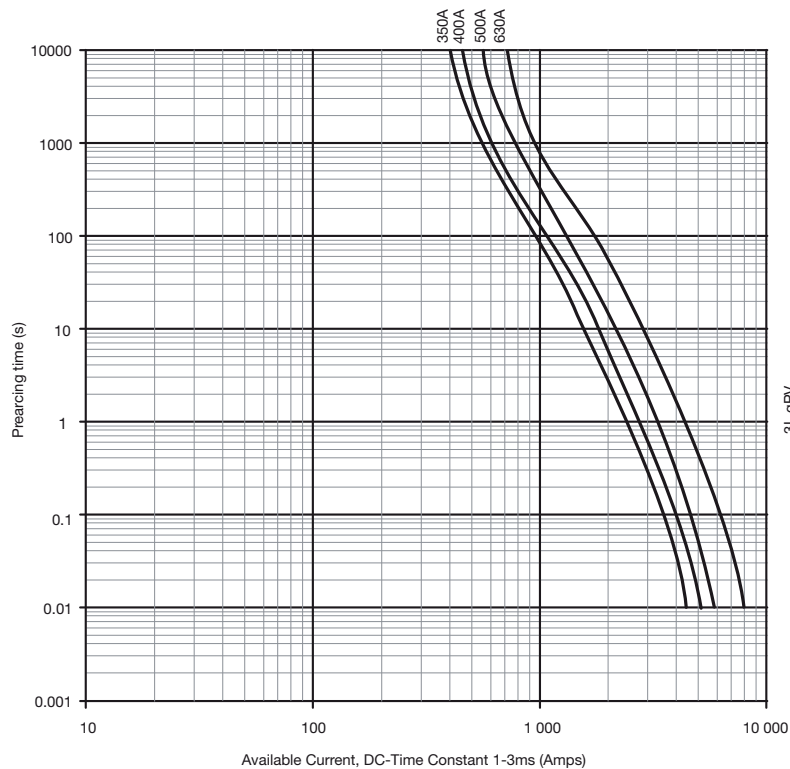
gPV knife edge fuse (2XL)

Time-current characteristics



gPV knife edge fuse (3L)

Time-current characteristics





RM PV

Fuse disconnect switches

for PV cylindrical fuses 10x38 and 14x51

Fuse protection

new



RM PV 10x38
32 A



RM PV 10x38
50 A

The solution for

- > Small installations up to large PV farms.



Strong points

- > Improved safety.
- > Product dedicated to PV applications.
- > Specific format and accessories.

Conformity to standards

- > IEC 60947-3
- > IEC 60269
- > NF EN 60269-1
- > VDE 0636-10
- > DIN 43620



Function

RM PV are modular fuse disconnect switches for cylindrical gPV fuses. They provide safety disconnection and protection against overcurrents in any low DC voltage photovoltaic applications.

RM are fuse disconnect switches with or without light indicators for fuses without striker.

Advantages

Improved safety

- Rated voltage of 1000 VDC.
- Self-extinguishing thermoplastic material.
- Protection IP2X.

Specific format and accessories.

- Modular DIN 45 mm cut-out.
- Interlocking with accessory available.

Product dedicated to PV applications.

Protection against reverse currents thanks to gPV fuses dedicated to PV applications.

References

RM PV

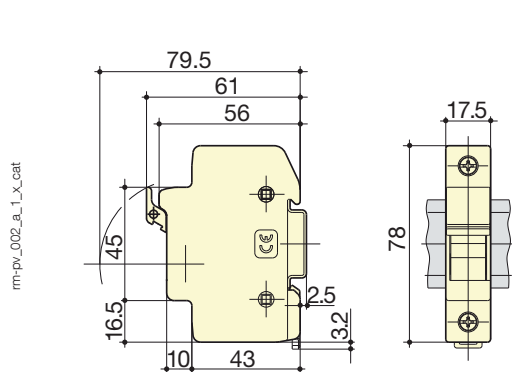
No. of poles	32 A 10 x 38 Reference	50 A 14 x 51 Reference
1 P with signalling	56DC 0015 56PV 0L15	56PV 1401

Characteristics according to IEC 60947-3

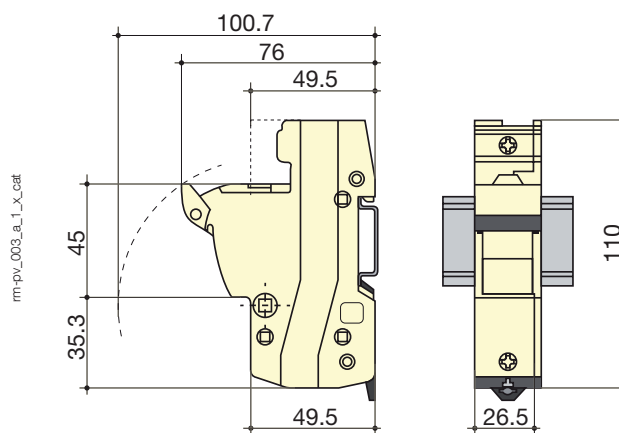
Thermal current I_{th}	32 A	50 A
Fuse size	10 x 38	14 x 51
Rated insulation voltage U _i (V)	1000	1000
Fuse rating		
Fuse rating (A)	1 ... 20	25 ... 32
Power		
Rated dissipated power (W)	3	5
Design current derating coefficient for N pole side by side		
N = 1 ... 3	1	1
N = 4 ... 6	0.8	0.8
N = 7 ... 9	0.7	0.7
N ≥ 10	0.6	0.6
Connection		
Minimum Cu cable cross-section (mm ²)	0.75	1.5
Maximum Cu rigid cable cross-section (mm ²)	10	35
Tightening torque (Nm)	2.5	2.5 ... 3
Mechanical characteristics		
Weight of 1 P (kg)	0.1	0, 15

Dimensions

RM PV 10 x 38



RM PV 14 x 51





PV Fuse bases

Fuse bases for PV applications

For NH gPV fuses 32 to 600 A

Fuse protection

new



Base
size 1



Base
size 2

The solution for

- > Small installations up to large PV farms



Strong points

- > Improved safety.
- > Product dedicated to PV applications.
- > Fuse blown indication.
- > Different fixing types.

Conformity to standards

- > IEC 60269
- > NF EN 60269-1
- > VDE 0636-10
- > DIN 43620



Function

SOCOMECC **fuse bases** provide fixed, unipolar or multipolar support for knife edge fuses dedicated to PV applications.

Advantages

Improved safety

- Rated voltage of 1000 VDC.
- Self-extinguishing thermoplastic material.
- Kit IP2X (depending on models).

Product dedicated to PV applications.

Protection against reverse currents thanks to gPV fuses dedicated to PV applications.

Fuse blown indication

Possibility to collect the fuse blown indication (Please see section PV fuses).

Different fixing types

DIN rail or back plate mounting available (depending on models).

References

Back plate mounted device

Rating Fuse size No. of poles	30-160 A NH1 Reference	200-355 A 2XL Reference	400-600 A 3L Reference
1 P	65PV 1011	65PV 1112	65PV 1113

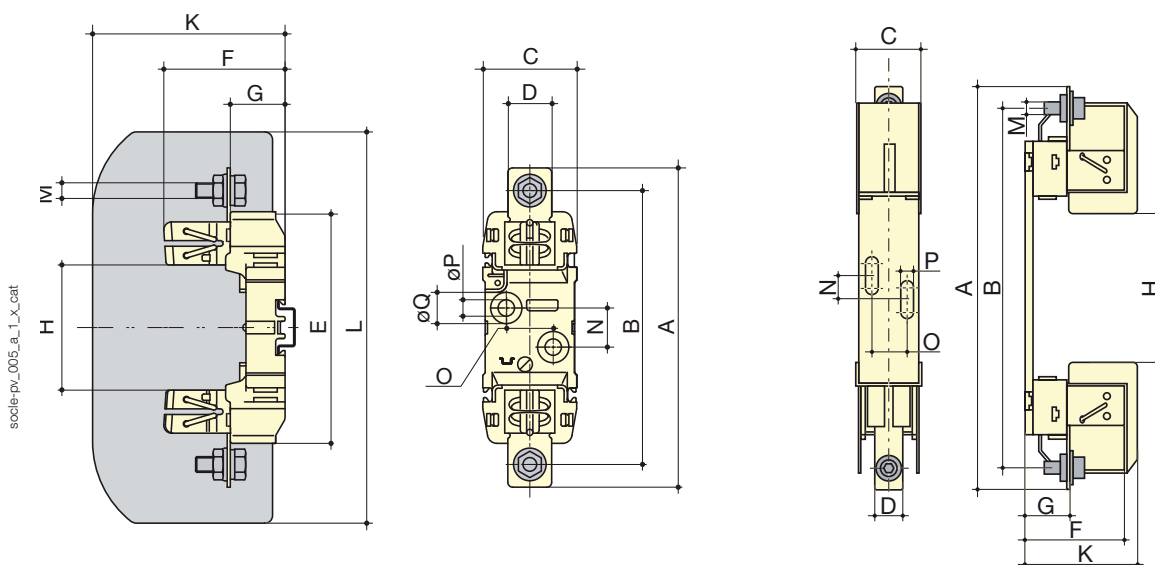
Accessories for NH1 fuses	Reference
Connecting block - set of 1 piece	6500 0031
Phase separation shield - set of 1 piece	6500 0003
Terminal shrouds - set of 1 piece	6500 0012
Fuse cover - set of 1 piece	6500 0022
Kit IP20 1 P	6511 1011 ⁽¹⁾

(1) IP20 single-pole kit consisting of 2 connecting blocks, 2 phase separation shields, 2 terminal shrouds and 1 fuse cover.

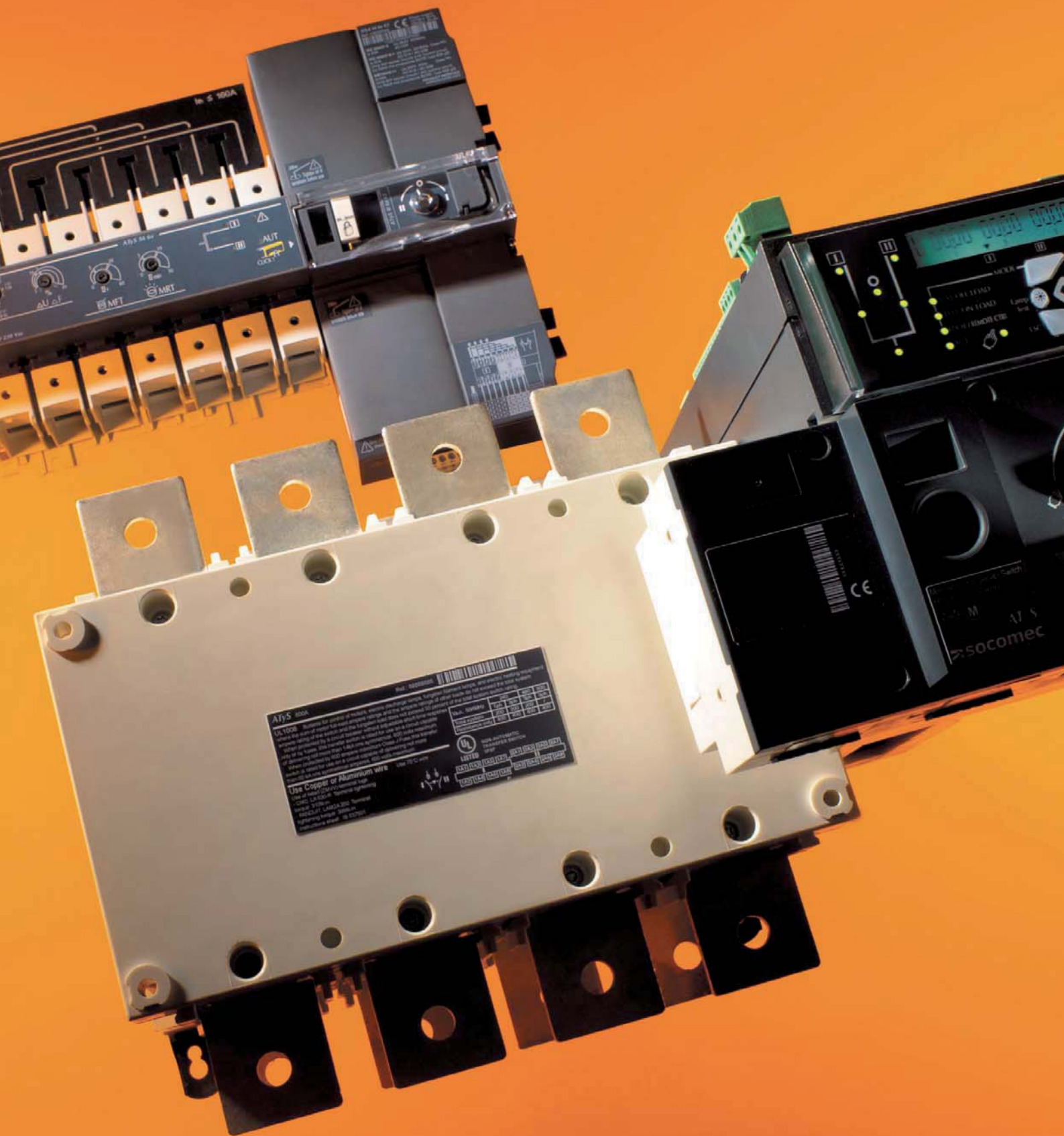
Dimensions

Fuse bases 30 to 160 A - NH1 size

Fuse bases 200 to 600 A - 2XL and 3L sizes



Rating (A)	Fuse size	A	W	C	D	E	F	G	H	K	L	M	N	O	P	Q
30 ... 160	NH1	200	175	60	28	148	77.5	35	80	123	250	M10	25	30	10.5	20.5
200 ... 355	2XL	287	257	64	30	-	100	37	140	103	-	M10	17.5	30	10.5	-
400 ... 600	3L	307	270	68	40	-	103	38	140	-	-	M12	25	30	10.5	-



ATYS 200A

Technical specifications table:

Model	200A	250A	300A	350A	400A
Rated current	200	250	300	350	400
Rated voltage	240	240	240	240	240
Rated power	48	60	72	84	96
Rated energy	100	125	150	175	200

Use Copper or Aluminum wire

Use of lead-free (Pb-free) solder

UL1875

CE

IP20

IP40

IP54

IP65

IP67

IP69K

IP69L

Changeover switches

Safety and reliability for your switching applications	p. 310
ATyS solution: three ranges of motorised/automatic changeover switches	p. 311
Manual changeover switch selection guide	p. 312
Motorised and automatic changeover switch selection guide	p. 314
The new ATyS range	p. 380

Manual changeover switches



COMO C
25 to 100 A
p. 316



SIRCO M
25 to 125 A
p. 320



SIRCO VM1
63 to 125 A
p. 324



SIRCOVER
125 to 3200 A
p. 328



SIRCOVER Bypass
125 to 1600 A
p. 328



SIRCOVER ATS Bypass
125 to 1600 A
p. 346

Modular motorised and automatic changeover switches

From 40 to 160 A



ATyS M 3s Single-phase
p. 366



ATyS M 3s
p. 366



ATyS M 6s
p. 366



ATyS M 6
p. 366

Back-to-back motorised and automatic changeover switches

From 40 to 3200 A



ATyS S ATyS Sd
p. 374



ATyS ATyS d
p. 382



ATyS t
p. 384



ATyS g
p. 386



ATyS p
p. 388

Universal ATS controller

Automatic control of different switching technologies: circuit breakers, contactors, switches.



ATyS C30 / C40
p. 404

Photovoltaic applications



SIRCOVER PV
200 to 630 A
p. 365

More about our products

Enclosed changeover switches

SOCOMEC offers a range of pre-equipped enclosures in steel or polyester.



Enclosed **SIRCOVER**
p. 625



Enclosed **ATyS Bypass**
p. 642



Enclosed **ATyS M**
p. 630



Enclosed **ATyS**
p. 636

Special requests

SOCOMEC develops specific products. We will help you find the best solution for your application.

Please feel free to consult us.

UL range



SIRCOVER UL
p. 350



Safety and reliability for your switching applications

Changeover switches

A world-renowned manufacturer and undisputed leader in changeover switching technology, SOCOMEC constantly innovates to ensure ever more efficient continuity in electrical distribution.

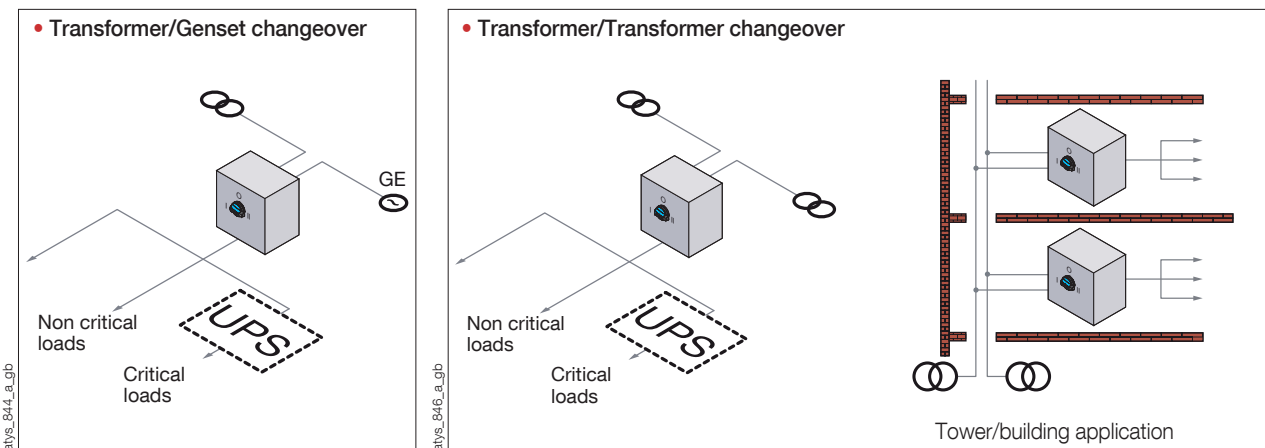
From the 'small' COMO C manual changeover switch (from 25 A) to the ATyS p automatic changeover switch (up to 3200 A), our standard range of changeover switches covers most applications.

Services & Technical Assistance

Our Services & Technical Assistance department will study and define your installation, commission selected equipment and train personnel in charge of its use.

For more information, please get in touch with your usual SOCOMEC contact.

Secure switching for all your applications



Also available

All our changeover switches are available in enclosed versions.



coff_366_a

The complete solution

From 40 to 3200 A, our ATS Bypass solution enables the automatic changeover switch to be completely isolated while guaranteeing the continuity of the installation's power supply.



tablo_D28_a

A specific need?






The experience we have gained from different projects has led us to develop numerous special products (make-before-break contact or mixed pole motorised changeover switches, specific software, etc.). Please contact us if you have any specialist requirements.

Trust the experts with all your applications - even the most critical.

ATyS solution: three ranges of motorised/automatic changeover switches for **an adapted solution to your application**

With over 400 000 motorised changeover switches in service since 1990, **the ATyS range is Trusted by Major Players Worldwide.**

ATyS S range Back-to-back configuration from 40 to 125 A 		ATyS M range Modular profile from 40 to 160 A 			ATyS range Back-to-back configuration from 125 to 3200 A 				
ATyS S	ATyS Sd	ATyS M 3s	ATyS M 6s	ATyS M 6e	ATyS	ATyS d	ATyS t	ATyS g	ATyS p
Switching applications with Genset(s)		Switching applications for industrial or office buildings			Any switching application with Transformers and/or Gensets				

Motorised automatic or remote controlled version

Remotely controlled (RTSE)	•	•	•			•	•			
Automatic (ATSE)				•	•			•	•	•
Dual power supply										
Integrated		•		•	•		•	•	•	•
Automatic controller switching functionalities										
Not integrated	•	•	•			•	•			
Transformer/Transformer application				•	•			•	•	
Transformer/Genset application				•	•				•	•
Specific functionalities										
On load and off load tests				• ⁽¹⁾	•				•	•
Programming of genset startup										•
Power management										•
Communication options					•					•
Integrated webservice option										•

(1) Test on load only.

Glossary as per standard IEC 60947-6-1 for changeover switches

Terms:

- **RTSE** (Remote operated Transfer Switching Equipment)
- **ATSE** (Automatic Transfer Switching Equipment)

Contrary to RTSE, ATSE offer an automatic controller functionality. **ATSE products ensure the supervision of the availability of sources, the genset startup if needed and the automatic transfer** to the available source.




RTSE products require an **external control device** to provide transfer switching orders.



Selection guide

Manual changeover switches

How many poles ?

	 COMO C 25 to 100 A <i>p. 316</i>	 SIRCO M 25 to 125 A <i>p. 320</i>	 SIRCO VM1 63 to 125 A <i>p. 324</i>
Number of poles			
3 P	•	•	•
4 P	•	•	•
Switch operation			
I-0-II	•	•	•
I-I+II-II	•	•	•
Bypass	•		
Indication of breaking			
Positive break indication	•	•	•
Visible contacts			•
Operating handle			
Front direct/external operation	•	•	•
Door mountable switch	•		

(1) Depending on the version. From 125 to 3200 A for SIRCOVER I-0-II; from 125 to 1800 A for SIRCOVER I-I+II-II and from 125 to 1600 A for SIRCOVER Bypass.

What kind of operations ?

What kind of breaking indication ?



SIRCOVER
125 to 3200 A⁽¹⁾
p. 328



SIRCOVER ATS Bypass
125 to 1600 A
p. 346



SIRCOVER PV
200 to 630 A
p. 358



SIRCOVER UL
100 to 1200 A
p. 350

	•	•	•	•
	•	•	•	•
	•	•	•	•
	•	•	•	•
	•	•	•	•
	•	•	•	•
	•	•	•	•
	•	•	•	•
	•	•	•	•
	•	•	•	•



Selection guide

Motorised and automatic changeover switches




ATyS

Changeover switches

Which rating?



Which type of transfer?

ATyS M range: modular products			
40 to 160 A			
			
ATyS M 3s <i>p. 366</i>	ATyS M 6s <i>p. 366</i>	ATyS M 6e <i>p. 366</i>	

Type of transfer

Manual emergency transfer using handle	•	•	•
Remote controlled transfer through volt-free contacts (RTSE)	•		
Automatic transfer (ATSE)		•	•

Number of poles

2 P	•	•	
3 P			
4 P	•	•	•

Type of power supply

Power supply 12, 24 or 48 VDC			
Single power supply 230 VAC	•		
Dual power supply 230 VAC		•	•

Connection of remote control interface

ATyS D10 remote indicator			•
ATyS D20 remote control interface			•

Automatic controller configuration

Configuration using potentiometers and dip switches		•	
Configuration using display and keyboard			•
Voltage and frequency auto-configuration		•(1)	
Fixed function inputs/outputs		•	
Programmable Inputs/Outputs			•

Automatic controller functionalities

Transformer/Genset application		•	•
Transformer/Transformer application		•	•
Contact for product availability		•	•
Monitoring of voltages and frequency		•	•
Phase rotation check			•
Unbalanced phase checking			•
LED indication of source availability		•	•
LED position indication			•
Display of counters and voltage/frequency measurements			•
On load and off load test		•(3)	•
Load shedding			
Display and measurement of powers and energy (when utilising CTs)			

Supervision (with optional module)

Programming of genset startup			•
RS485 JBUS/MODBUS communication			•(2)
Ethernet communication			
Webserver via Ethernet module			
Data logging			

(1) Only available on the 2 pole version.

(2) Only available on the version with COM.

(3) Test on load only.

(4) Indicates availability of 230 VAC supplies for switch operation.



COMO C

Manual changeover switches
from 25 to 100 A

Changeover
switches



como_179_a_1

COMO C
I-I+II-II 4P 63 A



como_178_a_1

COMO C
I-0-II 3P 25 A

The solution for

- > Industry (machine control).



Strong points

- > High number of operations.
- > Flexibility.
- > Pre-installed bridging bars.
- > Compact Design.

Conformity to standards

- > IEC 60947-3



- > UL 508



Function

COMO C are manual multipolar changeover switches with positive break indication. They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

Advantages

High number of operations

COMO C can perform up to 100 000 operation cycles.

Flexibility

Four types of changeover switches are available as standard (I-II, I-0-II, I-I+II-II & Bypass I-0-II). Other switching options are available on request.

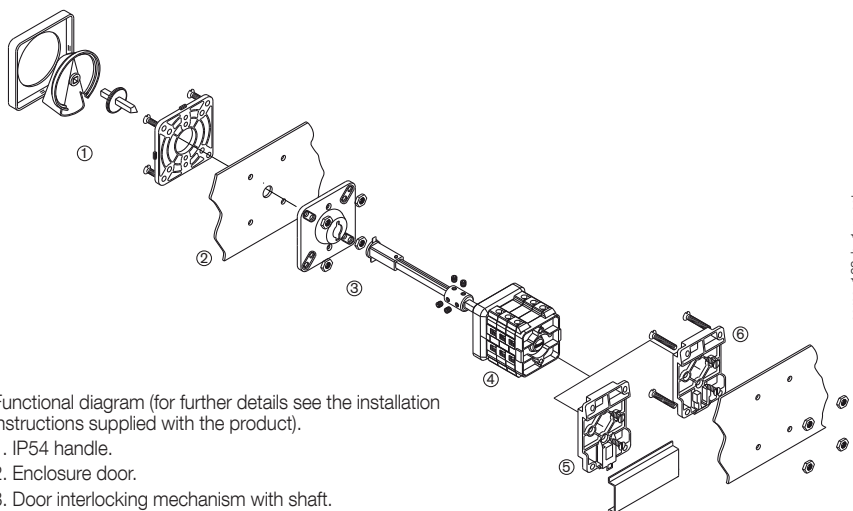
Bridging bars

Bridging bars are supplied factory fitted as standard.

Compact design

With its small frame size, the COMO C can be installed where limited space is available.

Configurations



como_168_b_1_x_cat

Functional diagram (for further details see the installation instructions supplied with the product).

1. IP54 handle.
2. Enclosure door.
3. Door interlocking mechanism with shaft.
4. Switch body
5. DIN rail mounting device.
6. Back plate mounting device.

References

Rating (A)	No. of poles	Switching type	Switch body	IP54 padlockable handle	IP54 non-padlockable white handle	Shaft and escutcheon for external handle	Back plate mounting device	IP65 gasket
25 A	3 P	I - II	4220 3002 ⁽¹⁾	Black/Grey 4259 1042 Red/Yellow 4259 1043	I - II 4259 2022 I - 0 - II and Bypass 4259 3022 I - I+II - II 4259 4022	200 mm 4259 5042	DIN rail mounted 4259 9001 Base-mounted 4259 9040	4299 5001 ⁽²⁾
	4 P	I - II	4220 4002 ⁽¹⁾					
	3 P	I - 0 - II	4230 3002 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4002 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3002 ⁽¹⁾					
	4 P	I - I+II - II	4240 4002 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3002					
	4 + 8 P	Bypass I - 0 - II	4250 4002					
40 A	3 P	I - II	4220 3004 ⁽¹⁾	Black/Grey 4259 1082 Red/Yellow 4259 1083	I - II 4259 2042 I - 0 - II and Bypass 4259 3042 I - I+II - II 4259 4042	200 mm 4259 5082	DIN rail mounted 4259 9001 Base-mounted 4259 9040	4299 5001 ⁽²⁾
	4 P	I - II	4220 4004 ⁽¹⁾					
	3 P	I - 0 - II	4230 3004 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4004 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3004 ⁽¹⁾					
	4 P	I - I+II - II	4240 4004 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3004					
	4 + 8 P	Bypass I - 0 - II	4250 4004					
63 A	3 P	I - II	4220 3006 ⁽¹⁾	Black/Grey 4259 1082 Red/Yellow 4259 1083	I - II 4259 2082 I - 0 - II and Bypass 4259 3082 I - I+II - II 4259 4082	200 mm 4259 5082	DIN rail mounted 4259 9001 Base-mounted 4259 9080	4299 5002 ⁽²⁾
	4 P	I - II	4220 4006 ⁽¹⁾					
	3 P	I - 0 - II	4230 3006 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4006 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3006 ⁽¹⁾					
	4 P	I - I+II - II	4240 4006 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3006					
	4 + 8 P	Bypass I - 0 - II	4250 4006					
80 A	3 P	I - II	4220 3008 ⁽¹⁾	Black/Grey 4259 1082 Red/Yellow 4259 1083	I - II 4259 2082 I - 0 - II and Bypass 4259 3082 I - I+II - II 4259 4082	200 mm 4259 5082	DIN rail mounted 4259 9001 Base-mounted 4259 9080	4299 5002 ⁽²⁾
	4 P	I - II	4220 4008 ⁽¹⁾					
	3 P	I - 0 - II	4230 3008 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4008 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3008 ⁽¹⁾					
	4 P	I - I+II - II	4240 4008 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3008					
	4 + 8 P	Bypass I - 0 - II	4250 4008					
100 A	3 P	I - II	4220 3010	Black/Grey 4259 1082 Red/Yellow 4259 1083	I - II 4259 2082 I - 0 - II and Bypass 4259 3082 I - I+II - II 4259 4082	200 mm 4259 5082	DIN rail mounted 4259 9001 Base-mounted 4259 9080	4299 5002 ⁽²⁾
	4 P	I - II	4220 4010					
	3 P	I - 0 - II	4230 3010					
	4 P	I - 0 - II	4230 4010					
	3 P	I - I+II - II	4240 3010					
	4 P	I - I+II - II	4240 4010					
	3 + 6 P	Bypass I - 0 - II	4250 3010					
	4 + 8 P	Bypass I - 0 - II	4250 4010					

(1) Available enclosed (see page 624).

(2) IP65: protection degree according to IEC 60529 standard.

(3) References available with 1 or 2 A/C, please consult us.

Accessories

IP54 handle

Padlockable handle		
Rating (A)	Handle colour	Reference
25 ... 40	Black/Grey	4259 1042
25 ... 40	Red/Yellow	4259 1043
63 ... 100	Black/Grey	4259 1082
63 ... 100	Red/Yellow	4259 1083

Non-padlockable handle		
Rating (A)	Switching type	Reference
25	I - II	4259 2022
25	I - 0 - II and Bypass	4259 3022
25	I - I+II - II	4259 4022
40	I - II	4259 2042
40	I - 0 - II and Bypass	4259 3042
40	I - I+II - II	4259 4042
63 ... 100	I - II	4259 2082
63 ... 100	I - 0 - II and Bypass	4259 3082
63 ... 100	I - I+II - II	4259 4082



Shaft and escutcheon for external handle

Use

Standard length: 200 mm.

Other lengths: Please consult us.

Rating (A)	Length (mm)	Reference
25 ... 40	200 mm	4259 5042
63 ... 100	200 mm	4259 5082



Characteristics according to IEC 60947-3

25 to 100 A

Thermal current I_{th} (40 °C)		25 A	40 A	63 A	80 A	100 A
Rated insulation voltage U_i (V)		660	660	660	660	660
Rated impulse withstand voltage U_{imp} (kV)		4	4	4	4	4
Rated operational currents I_e (A)						
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A	25/25	40/40	63/63	80/80	100/100
400 VAC	AC-22 A	25/25	40/40	63/63	80/80	100/100
400 VAC	AC-23 A	20/20	32/32	63/63	63/63	63/63
Operational power in AC-23 (kW)						
At 400 VAC without pre-break ⁽¹⁾⁽²⁾		9/9	15/15	22/22	30/30	30/30
Reactive power (kvar)						
At 400 VAC ⁽²⁾		14	18	28	37	
Fuse protected short-circuit withstand (kA rms prospective)						
Prospective short-circuit (kA rms) ⁽³⁾		6	6	8	8	8
Associated fuse rating (A) ⁽³⁾		25	40	63	80	100
Short-circuit capacity						
Closing capacity on short-circuit (kA peak) ⁽³⁾		2	2.6	5.8	5.8	6.5
Connection						
Minimum Cu cable cross-section (mm ²)		2.5	10	16	16	16
Maximum Cu cable cross-section (mm ²)		6	16	50	50	50
Tightening torque min (Nm)		2	2	3.5	3.5	3.5
Mechanical characteristics						
Durability (number of operating cycles)		100 000	100 000	100 000	100 000	100 000
Weight of 3 P switch (kg)		0.25	0.3	0.55	0.63	0.63
Weight of 4 P switch (kg)		0.31	0.4	0.7	0.8	0.8

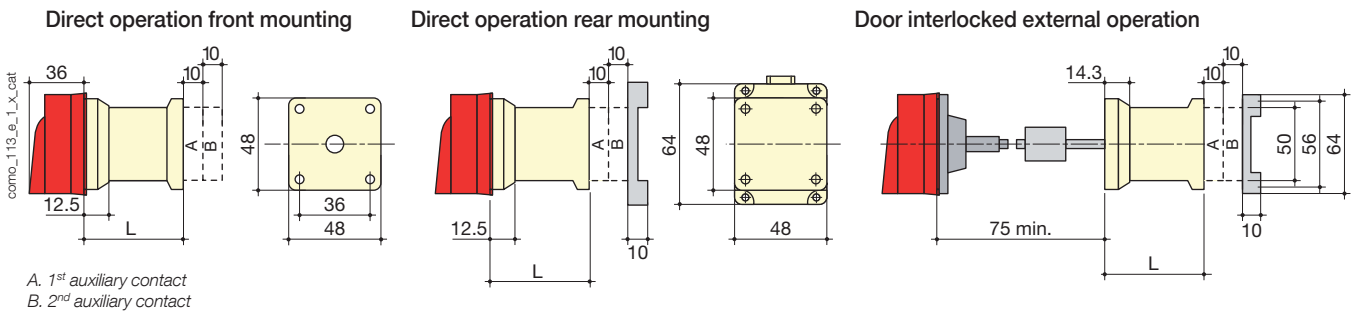
(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operational voltage $U_o = 400$ VAC.

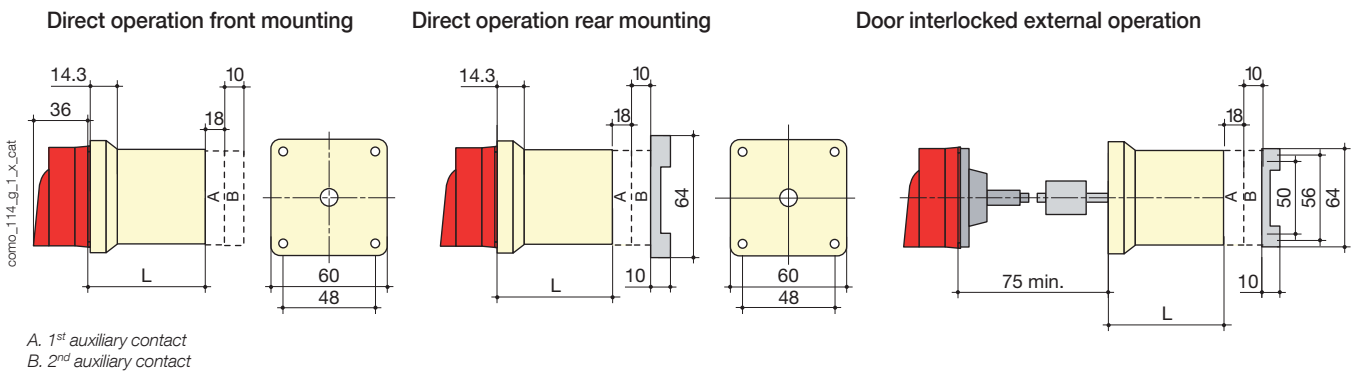
Dimensions

COMO C 25 A



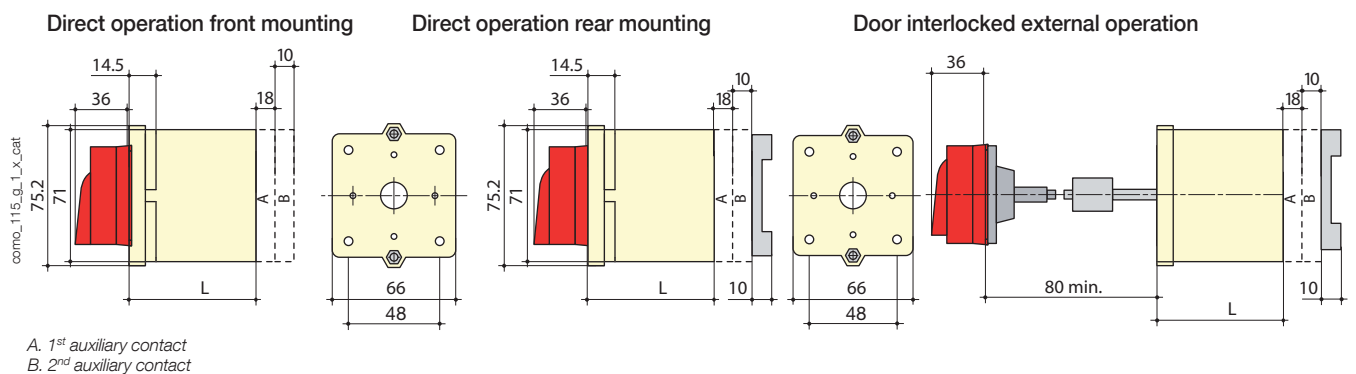
Switching type	L 3p.	L 4p.
I - II	50.5	60.5
I - 0 - II	50.5	60.5
I - I+II - II	50.5	60.5
Bypass I - 0 - II	70.5	80.5

COMO C 40 A



Switching type	L 3p.	L 4p.
I - II	60.3	72.3
I - 0 - II	60.3	72.3
I - I+II - II	60.3	72.3
Bypass I - 0 - II	84.3	96.3

COMO C 63 to 100 A



Switching type	L 3p.	L 4p.
I - II	82	99.5
I - 0 - II	82	99.5
I - I+II - II	82	99.5
Bypass I - 0 - II	117	134.5



SIRCO M

Manual changeover switches from 25 to 125 A

Changeover
switches



sircm_192_a_1_cat

SIRCO M
I-0-II 3 P 63 A



sircm_191_a_1_cat

SIRCO M
I-0-II 4 P 25 A

The solution for

- > Healthcare buildings.
- > Manufacturing industry.



Strong points

- > Secured breaking.
- > Modular device.
- > On load switching.

Conformity to standards

- > IEC 60947-3



Function

SIRCO M are manually operated three or four pole modular switches with positive break indication. They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

Advantages

Secured breaking.

SIRCO M switches include contact point technology and double break per phase as standard, enabling safe, optimal operation of LV electrical circuits.

Modular device

Thanks to their modular format, SIRCO M changeover switches can be fixed to a DIN rail, a backplate or a modular panel.

On load switching

The SIRCO M changeover switch comprises two mechanically interlocked load break switches which are tested in accordance with IEC 60947-3. Its AC23 characteristics enable it to perform on load changeover switching.

What you need to know

- There are two types of operating handle available for the SIRCO M changeover:
 - **direct front** operation
 - **door interlocked external front** operation
- The SIRCO M changeover switch is available in **3 and 4 pole, from 25 to 125 A**, with pre-break or signalisation auxiliary contacts (accessories).



sircm_173_a_1_cat

References

Rating (A)	No. of poles	Switch body	Direct handle	External handle with position 0 padlocking	External handle with 3 position padlocking	Shaft extension for external front handle	Auxiliary contact	Terminal shrouds	Bridging kit																				
25 A	3 P	2230 3002	Blue 2239 5012 Red 2239 5013	S000 type I - 0 - II Black IP65 1463 5113 ⁽¹⁾	S01 type I - 0 - II Black IP65 1403 2813	S00, S000 type 150 mm 1407 0515 200 mm 1407 0520 320 mm 1407 0532	M type contact NO + NC 2299 0001 M type contact 2 NO 2299 0011	1 P 2294 1005 ⁽²⁾ 3 P 2294 3005 ⁽²⁾	3 P 2299 3005 4 P 2299 4005																				
	4 P	2230 4002																											
40 A	3 P	2230 3004						Blue 2239 5012 Red 2239 5013	S00 type I - 0 - II Black IP65 1473 1113 ⁽¹⁾	S01 type I - 0 - II Black IP65 1403 2813	S01 type 200 mm 1404 0520 320 mm 1404 0532	M type contact NO + NC 2299 0001 M type contact 2 NO 2299 0011	1 P 2294 1009 ⁽²⁾ 3 P 2294 3009 ⁽²⁾	3 P 2299 3009 4 P 2299 4009															
	4 P	2230 4004																											
63 A	3 P	2230 3006											Blue 2239 5012 Red 2239 5013	S01 type I - 0 - II Black IP65 1403 2113 ⁽¹⁾	S01 type I - 0 - II Black IP65 1403 2813	S01 type 200 mm 1404 0520 320 mm 1404 0532	M type contact NO + NC 2299 0001 M type contact 2 NO 2299 0011	1 P 2294 1009 ⁽²⁾ 3 P 2294 3009 ⁽²⁾	3 P 2299 3009 4 P 2299 4009										
	4 P	2230 4006																											
80 A	3 P	2230 3008																Blue 2239 5012 Red 2239 5013	S00 type I - 0 - II Black IP65 1473 1113 ⁽¹⁾	S01 type I - 0 - II Black IP65 1403 2813	S00 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	M type contact NO + NC 2299 0001 M type contact 2 NO 2299 0011	1 P 2294 1011 ⁽²⁾ 3 P 2294 3016 ⁽²⁾						
	4 P	2230 4008																											
100 A	3 P	2230 3010																					Blue 2239 5012 Red 2239 5013	S00 type I - 0 - II Black IP65 1473 1113 ⁽¹⁾	S01 type I - 0 - II Black IP65 1403 2813	S00 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	M type contact NO + NC 2299 0001 M type contact 2 NO 2299 0011	1 P 2294 1011 ⁽²⁾ 3 P 2294 3016 ⁽²⁾	
	4 P	2230 4010																											
125 A	3 P	2230 3011	Blue 2239 5012 Red 2239 5013	S00 type I - 0 - II Black IP65 1473 1113 ⁽¹⁾	S01 type I - 0 - II Black IP65 1403 2813	S00 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	M type contact NO + NC 2299 0001 M type contact 2 NO 2299 0011																					1 P 2294 1011 ⁽²⁾ 3 P 2294 3016 ⁽²⁾	
	4 P	2230 4011																											

(1) Defeatable handle.

(2) 2 pieces: For upstream or downstream protection on one side of the changeover switch.

Accessories

See "SIRCO M switches", page 31.

Characteristics according to IEC 60947-3

Thermal current I_{th} (40 °C)	25 A	40 A	63 A	80 A	100 A	125 A
Rated insulation voltage U_i (V)	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-22 A / AC-22 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-23 A / AC-23 B	25/25	40/40	63/63	80/80	100/100	125/125

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽²⁾	11.3	18	28.4	35.5	45	56.3
---	------	----	------	------	----	------

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽³⁾	50	50	50	50	50	25
Associated fuse rating (A) ⁽³⁾	25	40	63	80	100	125

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁴⁾

Rated short-time withstand current 0.3s I_{cw} (kA rms)	2.3	2.3	2.74	2.74	5	5
---	-----	-----	------	------	---	---

Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	1.26	1.26	1.5	1.5	2.75	2.75
Rated short-circuit making capacity I_{cm} (kA peak)	1.8	1.8	2.1	2.1	3.9	3.9

Connection

Minimum Cu cable cross-section (mm ²)	1.5	1.5	2.5	2.5	10	10
Maximum Cu cable cross-section (mm ²)	16	16	35	35	70	70
Tightening torque mini / maxi (Nm)	2 / 2.2	2 / 2.2	3.5 / 3.85	3.5 / 3.85	4 / 4.4	4 / 4.4

Mechanical characteristics

Durability (number of operating cycles)	10000	10000	10000	10000	10000	8000
Weight of a 3 pole device (kg)	0.41	0.41	0.58	0.58	1.1	1.1
Weight of a 4 pole device (kg)	0.51	0.51	0.75	0.75	1.46	1.46

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operational voltage $U_e = 400$ VAC.

(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific a-breaker references, higher short-circuit current values are available. Please consult us.

SIRCO M

Manual changeover switches

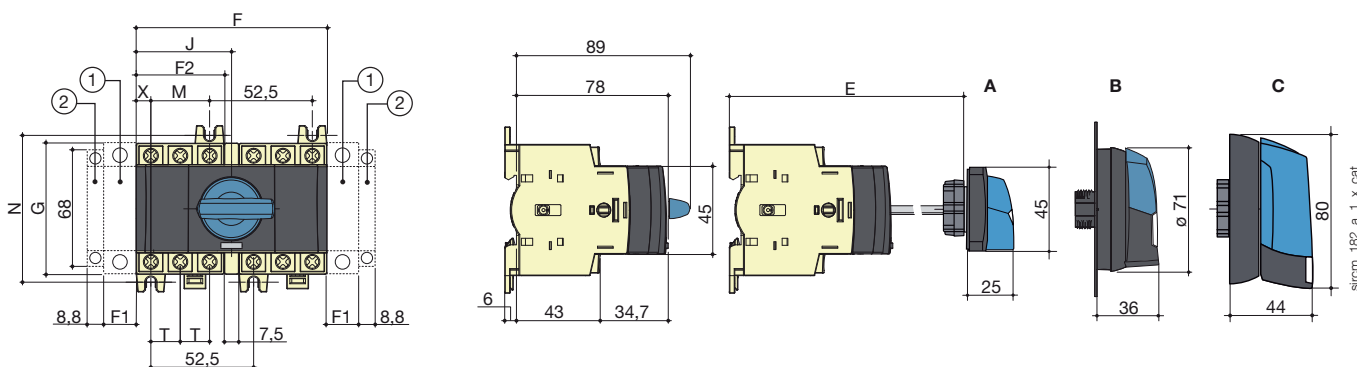
from 25 to 125 A

Dimensions

25 to 80 A

Direct front operation for 3/4 pole changeover switches

External front operation for 3/4 pole changeover switches



1. Location for: 1 main pole or 1 auxiliary contact (See accessories page 34).
2. Position for 1 auxiliary contact only (for 3 pole changeover the 2nd auxiliary contact is for signalisation only).

Note: Maximum 4 additional blocks (3 pole changeover can be fitted with either one main pole and one A/C block, or two A/C blocks per side; 4 pole changeover can be fitted with only one A/C block per side).

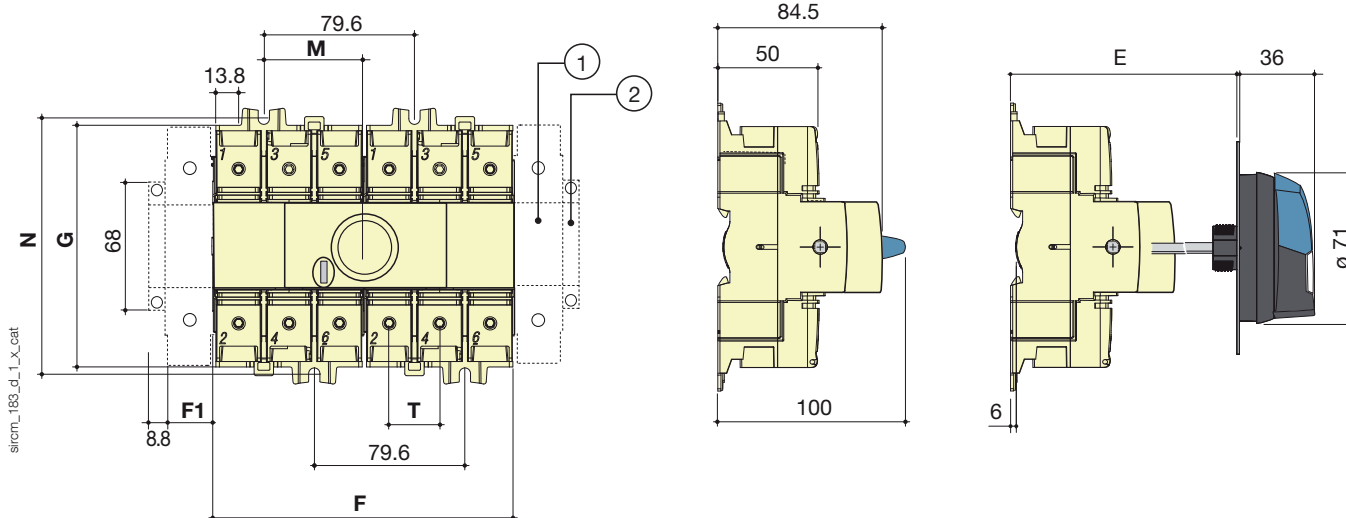
- A. S000 handle
B. S00 handle
C. S01 handle.

Rating (A)	Overall dimensions		Switch body				Switch mounting		Connection		
	E min	E max	F	F1	F2	G	J	M	N	T	X
25 ... 40	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 ... 80	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

100 to 125 A

Direct front operation for 3/4 pole changeover switches

External front operation for 3/4 pole changeover switches



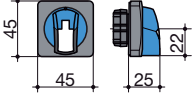
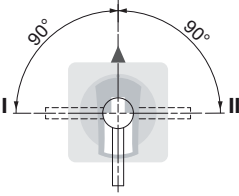
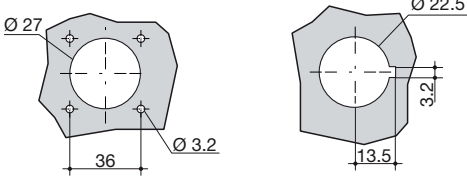
1. Location for: 1 main pole or 1 auxiliary contact (See accessories page 34).
2. Position for 1 auxiliary contact only (this contact is for signalisation only).

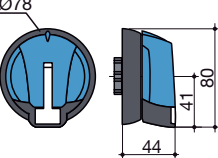
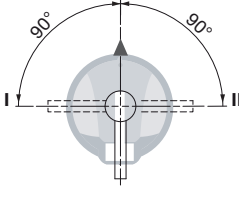
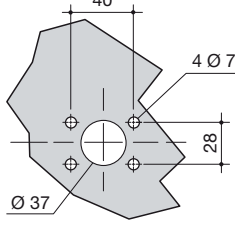
Note: Maximum 4 additional blocks (3 pole changeover can be fitted with either one main pole and one A/C block, or two A/C blocks per side; 4 pole changeover can be fitted with only one A/C block per side).

Rating (A)	Overall dimensions		Switch body			Switch mounting		Connection
	E min	E max	F	F1	G	M	N	T
100 ... 125	105	372	159	26	124.5	52.8	131.5	26

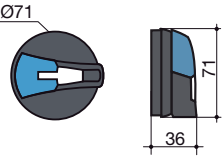
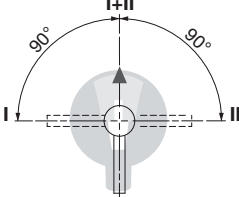
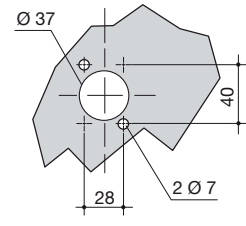
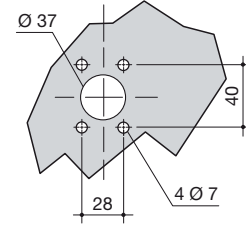
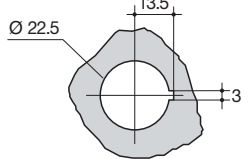
Dimensions for external handles

25 to 80 A

Handle type	Front operation Direction of operation	Door drilling
<p>S000 type Changeover switches I-0-II and I - I+II - II</p> 	<p>0 or I+II</p> 	<p>With 4 fixing screws With fixing nut</p> 

Handle type	Front operation Direction of operation	Door drilling
<p>S01 type Changeover switches I-0-II and I - I+II - II</p> 	<p>0 or I+II</p> 	<p>IP65 with 4 fixing screws</p> 

25 to 125 A

Handle type	Front operation Direction of operation	Door drilling		
<p>S00 type Changeover switches I-0-II and I - I+II - II</p> 	<p>0 or I+II</p> 	<p>IP55 with 2 fixing clips</p> 	<p>IP65 with 4 fixing screws</p> 	<p>With fixing nut</p> 



SIRCO VM1

Manual changeover switches
from 63 to 125 A

Changeover
switches



SIRCO VM1 I-0-II 4P 100 A

The solution for

- > Energy production.
- > Critical buildings.



Strong points

- > Safety isolation.
- > Modular device.
- > Reduced depth.

Conformity to standards

- > IEC 60947-3



Function

SIRCO VM1 changeover switches are manually operated three or four pole changeover switches with visible breaking.

They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

Advantages

Safety isolation

SIRCO VM1 changeovers enable completely secure switching thanks to positive break indication and double visible breaking. The user can assess the condition of the device either during a preventive check or before an operation.

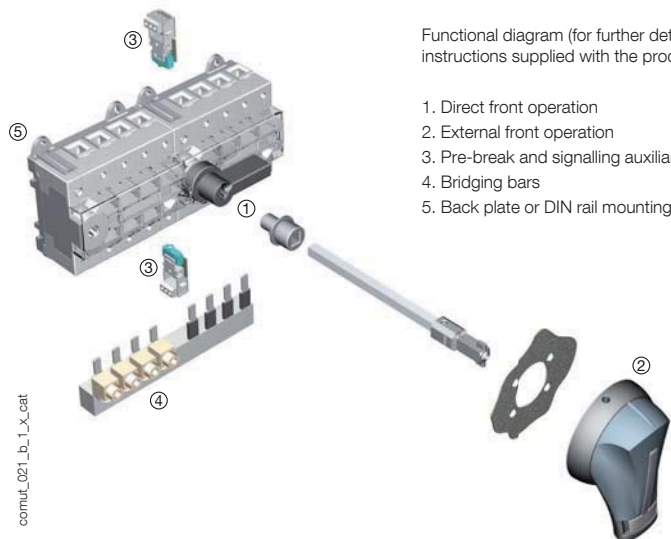
Modular device

SIRCO VM1 changeover switches offer a range of installation configurations: DIN rail, backplate or modular panel.

Reduced depth

With its side-by-side switch arrangement, the SIRCO VM1 changeover can be utilised in panels with a reduced depth.

Configurations



Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation
2. External front operation
3. Pre-break and signalling auxiliary contacts
4. Bridging bars
5. Back plate or DIN rail mounting

References

VM1 changeover switches I-0-II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	IP20 bridging bars ⁽²⁾	Auxiliary contact
63 A	3 P	4430 3006 ⁽¹⁾	Black 4439 5012	S1 type Black IP65 1413 2113	200 mm 1402 0820 320 mm 1402 0832	3 P 4499 3006 4 P 4499 4006	1 auxiliary contact NO/NC 4439 0001
	4 P	4430 4006 ⁽¹⁾					
80 A	3 P	4430 3008 ⁽¹⁾					
	4 P	4430 4008 ⁽¹⁾					
100 A	3 P	4430 3010 ⁽¹⁾					
	4 P	4430 4010 ⁽¹⁾					
125 A	3 P	4430 3012					
	4 P	4430 4012					

(1) Available enclosed (see "Enclosed changeover switches" page 600).

(2) IP: protection degree according to IEC 60529 standard.

VM1 changeover switches I - I+II - II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	IP20 bridging bars ⁽¹⁾
63 A	3 P	4440 3006	Black 4449 5012	S1 type Black IP65 1413 2114	200 mm 1403 0820 320 mm 1403 0832	3 P 4499 3006 4 P 4499 4006
	4 P	4440 4006				
80 A	3 P	4440 3008				
	4 P	4440 4008				
100 A	3 P	4440 3010				
	4 P	4440 4010				
125 A	3 P	4440 3012				
	4 P	4440 4012				

(1) IP: protection degree according to IEC 60529 standard.

Accessories

Direct operation handle

Rating (A)	Switching type	Reference
63 ... 125	I - 0 - II	4439 5012
63 ... 125	I - I+II - II	4449 5012



access_111_a_1_cat

External operation handle

Use

Door interlocked external front operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.

Rating (A)	Switching type	padlockable	External IP ⁽¹⁾	Reference
63 ... 125	I - 0 - II	1 Position	IP55	1411 2113
63 ... 125	I - 0 - II	1 Position	IP65	1413 2113
63 ... 125	I - 0 - II	3 Positions	IP65	1413 2813
63 ... 125	I - I+II - II	1 Position	IP65	1413 2114
63 ... 125	I - I+II - II	3 Positions	IP65	1413 2814



access_111_a_1_cat

(1) IP: protection degree according to IEC 60529 standard.

SIRCO VM1

Manual changeover switches
from 63 to 125 A

Accessories (continued)

Alternative S-type handle cover colours

Use

For single lever type S1 handles.

Other colours: Please consult us.

Colour	To be ordered in multiples of	Reference
Light grey	50	1401 0001
Dark grey	50	1401 0011



access_19E_a_1_cat

S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style SOCOMEC handles. Adapter can also be utilised as a spacer to

increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.

Colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP : protection degree according to IEC 60529 standard.



access_18Z_a_2_cat

Shaft for external handle

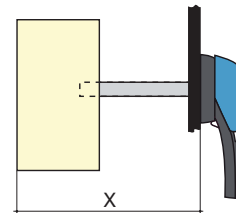
Use

Standard lengths:

- 200 mm,
- 320 mm.

Other lengths: Please consult us.

Switching type I - 0 - II			
Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
63 ... 125	128 ... 290	200 mm	1402 0820
63 ... 125	128 ... 410	320 mm	1402 0832
Switching type I - I + II - II			
Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
63 ... 125	128 ... 290	200 mm	1403 0820
63 ... 125	128 ... 410	320 mm	1403 0832



access_146_b_1_cat

access_202_a_1_X_cat

IP20 bridging bar

Use

For creating a common connection between switches I & II, on the top or bottom side of the SIRCO VM1

changeover, to enable, for example, the load to be fed from either incoming source (I or II).

Rating (A)	No. of poles	Reference
63 ... 125	3 P	4499 3006
63 ... 125	4 P	4499 4006



commL_005_a_1_cat

NO/NC changeover auxiliary contacts

Use

Pre-breaking and signalling of positions I and II:

- 1 NO/NC auxiliary contact for each position.

Characteristics

- Snaps on and is secured by a screw.
- Connector block with a maximum capacity of up to 2 x 1.5 mm² per terminal.

Rating (A)	Switching type	Contact(s)	Reference
63 ... 125	I - 0 - II	1	4439 0001 ⁽¹⁾

(1) Not available for the make before break changeover switch (I-I+II-II).

Characteristics according to IEC 60947-3

63 to 125 A

Thermal current I_{th} (40 °C)	63 A	80 A	100 A	125 A
Rated insulation voltage U_i (V)	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-21 A / AC-21 B	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	63/63	80/80	100/100	125/125
415 VAC	AC-22 A / AC-22 B	63/63	80/80	100/100	125/125
415 VAC	AC-23 A / AC-23 B	63/63	63/63	63/63	63/63
690 VAC ⁽²⁾	AC-20 A / AC-20 B	63/63	80/80	100/100	125/125
690 VAC ⁽²⁾	AC-21 A / AC-21 B	63/63	80/80	80/80	80/80
690 VAC ⁽²⁾	AC-22 A / AC-22 B	40/40	40/40	40/40	40/40
690 VAC ⁽²⁾	AC-23 A / AC-23 B	25/25	25/25	25/25	25/25
220 VDC ⁽³⁾	DC-20 A / DC-20 B	63/63	80/80	100/100	125/125
220 VDC ⁽³⁾	DC-21 A / DC-21 B	63/63	80/80	100/100	125/125
220 VDC ⁽³⁾	DC-22 A / DC-22 B	63/63	80/80	100/100	100/100
220 VDC ⁽³⁾	DC-23 A / DC-23 B	63/63	63/63	63/63	63/63

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 ⁽⁴⁾	30/30	30/30	30/30	30/30
At 690 VAC without pre-break in AC-23 ⁽⁴⁾	22/22	22/22	22/22	22/22

Reactive power (kvar)

At 400 VAC ⁽⁴⁾	28	37	45	55
---------------------------	----	----	----	----

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁵⁾	100	100	100	50
Associated fuse rating (A) ⁽⁵⁾	63	80	100	125

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁶⁾

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	4.5	4.5	4.5	4.5
--	-----	-----	-----	-----

Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	2.5	2.5	2.5	2.5
Rated short-circuit making capacity I_{cm} (kA peak)	3.55	3.55	3.55	3.55

Connection

Minimum Cu cable cross-section (mm ²)	4	4	4	4
Maximum Cu cable cross-section (mm ²)	50	50	50	50
Tightening torque mini / maxi (Nm)	6	6	6	6

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)	1.2	1.2	1.4	1.4
Weight of 4 P switch (kg)	1.4	1.4	1.6	1.6

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 4-pole device with 2 poles in series per polarity.

(4) The power value is given for information only, the current values vary from one manufacturer to another.

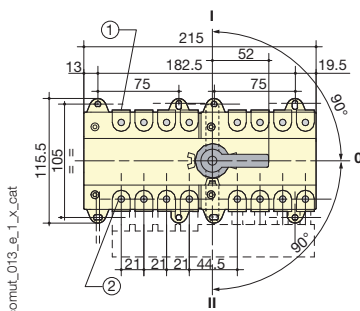
(5) For a rated operational voltage $U_e = 400$ VAC.

(6) Value for coordination with any circuit-breaker ensuring tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

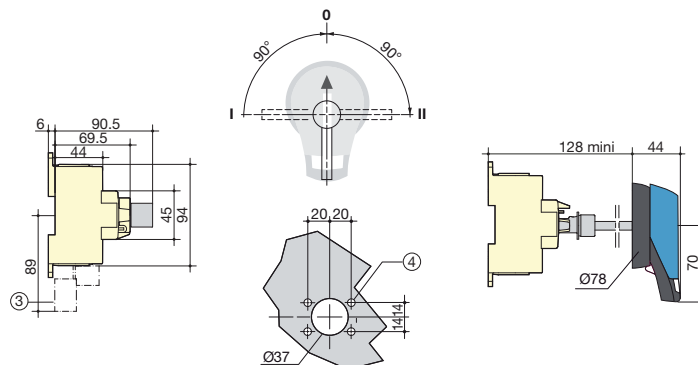
Dimensions

63 to 125 A

Direct front operation



External front operation



1. Max connection
- Rigid: 50 mm²
- Flexible: 35 mm²
2. 6-sided 5 - Pozidriv no. 1
slot 4.5 mm.
3. Bridging bar
4. Handle mounting with
2 or 4 screws Ø 7 mm.



SIRCOVER

Manual changeover switches
from 125 to 3200 A

Changeover
switches



SIRCOVER
3200 A



SIRCOVER Bypass
125 A

The solution for

- > Manufacturing industry.
- > Power distribution.



Strong points

- > A complete range.
- > Easy connections.
- > Stable positions.
- > Improved on load switching.

Specific features SIRCOVER AC I-0-II

- > On load switching AC-33.

Conformity to standards

- > IEC 60947-3
- > IEC 60947-6-1



Approvals and certifications⁽¹⁾



⁽¹⁾ Product reference on request.

Enclosed solution

- > Available enclosed from 125 to 1600 A.

Function

SIRCOVER are manual multipolar changeover switches with positive break indication.

The family includes three ranges:

- **SIRCOVER AC** for dead time switching (I-0-II),
- **SIRCOVER** for overlapping contact switching (I-I+II-II), and
- **SIRCOVER Bypass**. This version is a combination of three interlocked switches enabling use with 3 + 6 poles or 4 + 8 poles.

They provide switching, source inversion and changeover under load for two low voltage power circuits, as well as their safety isolation by double breaking per pole.

Advantages

A complete product range

Three versions of the SIRCOVER are available to ensure compatibility with the maximum number of applications: SIRCOVER AC (I-0-II) with improved on load switching characteristics and isolation position, SIRCOVER with overlapping contacts (I-I+II-II) and a Bypass version.

Easy connections

A copper bar connection kit is available for 2000 to 3200 A ratings. It enables various types of connection: Flat or edgewise connection with top or bottom bridging.

Stable positions

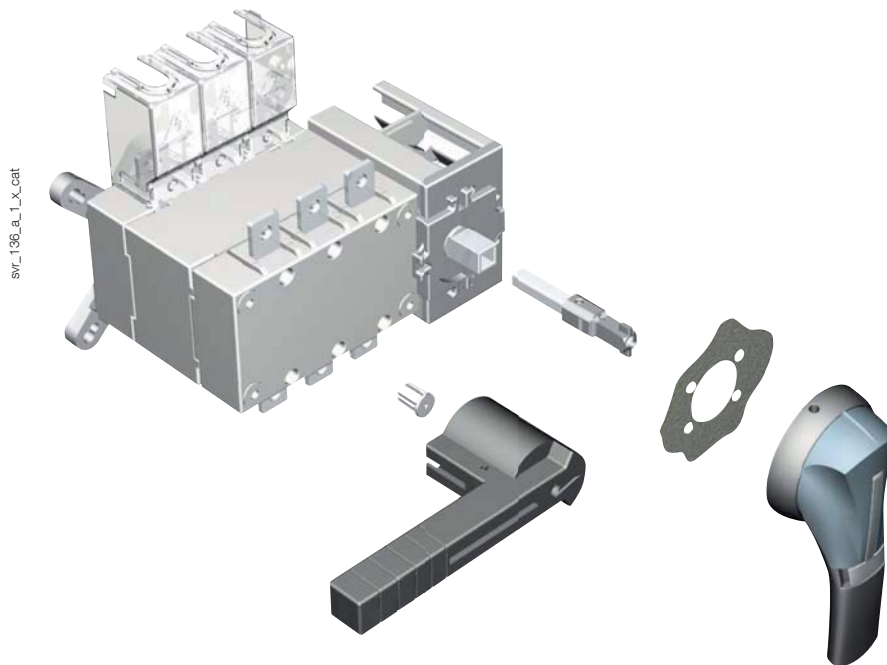
SIRCOVERs have three stable positions which are not affected by voltage drops or vibrations, thus protecting your load against network interference.

Improved on load switching

Thanks to its AC-23 and AC-33 characteristics, which are tested in accordance with standards IEC 60947-3 and IEC 60947-6-1, the SIRCOVER AC enables secure and reliable switching on all types of load, without the need for pre-breaking upstream.

What you need to know

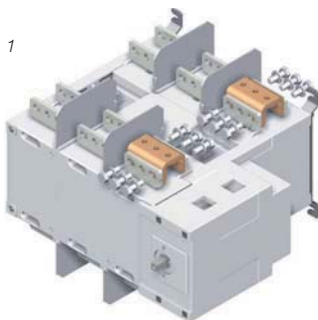
- **SIRCOVER AC (I-0-II)** switches have **3 stable positions**, and are available as 3 or 4 pole devices from 125 to 3200 A. They are available enclosed in a steel or polyester enclosure from 125 to 1600 A.
- **SIRCOVER** with overlapping contacts (I-I+II-II) are 3 or 4 pole devices available from 125 to 1800 A. They are available in a steel enclosure from 125 to 1600 A.
- With 3 stable positions (I-0-II), **SIRCOVER Bypass** are a combination of three interlocked switches enabling the use with 3+6 poles or 4+8 poles from 125 to 1600 A. All ratings are available in a steel enclosure.
- All SIRCOVER can be utilised with a **direct front** or **external operation** handle.



- **Copper bar connection kits** enable the connection between the two power terminals of the same pole (fig.1 & fig.2) and the bridging of the poles on the top or bottom side of the switch (fig.3), for ratings 2000, 2500 and 3200 A.

Fig. 1

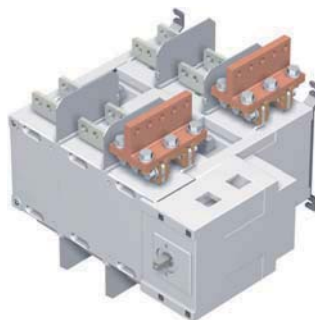
access_226_c_2_cat



Top or bottom **flat connection**

Fig.2

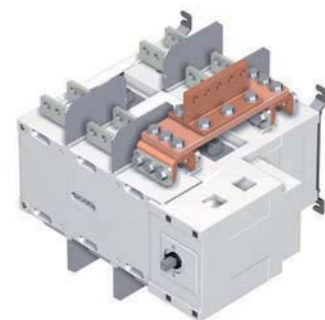
access_229_b_2_cat



Edgewise connection
Top or bottom

Fig. 3

access_231_a_1_cat



Top or bottom **bridging connection**

SIRCOVER

Manual changeover switches

from 125 to 3200 A

References

SIRCOVER AC I-0-II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contact	Terminal shrouds	Terminal screens																			
125 A	3 P	41AC 3013	J2 type Blue 1122 1111 Red 1123 1111	S2 type Black IP55 1421 2113 Black IP65 1423 2113 ⁽¹⁾	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾	4109 0019	1 st /2 nd contact NO/NC 4109 0021 ⁽²⁾	3 P 2694 3014 ⁽³⁾⁽⁴⁾ 4 P 2694 4014 ⁽³⁾⁽⁴⁾	3 P 1509 3012 4 P 1509 4012																			
	4 P	41AC 4013																										
160 A	3 P	41AC 3016																										
	4 P	41AC 4016																										
200 A	3 P	41AC 3020																										
	4 P	41AC 4020																										
250 A	3 P	41AC 3025				J3 type Blue 1132 1111 Red 1133 1111		S4 type Black IP65 1443 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	4109 0025	3 P 2694 3021 ⁽³⁾⁽⁴⁾ 4 P 2694 4021 ⁽³⁾⁽⁴⁾	3 P 1509 3025 4 P 1509 4025																
	4 P	41AC 4025																										
315 A	3 P	41AC 3031																										
	4 P	41AC 4031																										
400 A	3 P	41AC 3039																										
	4 P	41AC 4039																										
500 A	3 P	41AC 3050								J3 type Blue 1132 1111 Red 1133 1111			S4 type Black IP65 1443 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	4109 0050	3 P 2694 3051 ⁽³⁾⁽⁴⁾ 4 P 2694 4051 ⁽³⁾⁽⁴⁾	3 P 1509 3063 ⁽⁵⁾ 4 P 1509 4063 ⁽⁵⁾											
	4 P	41AC 4050																										
630 A	3 P	41AC 3063																										
	4 P	41AC 4063																										
800 A	3 P	41AC 3080	J3 type Blue 1132 1111 Red 1133 1111	S4 type Black IP65 1443 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾		4109 0080								3 P 2694 3051 ⁽³⁾⁽⁴⁾ 4 P 2694 4051 ⁽³⁾⁽⁴⁾			3 P 1509 3080 ⁽⁵⁾ 4 P 1509 4080 ⁽⁵⁾										
	4 P	41AC 4080																										
1000 A	3 P	41AC 3100																										
	4 P	41AC 4100																										
1250 A	3 P	41AC 3120					J3 type Blue 1132 1111 Red 1133 1111												S4 type Black IP65 1443 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	4109 0120	3 P 2694 3051 ⁽³⁾⁽⁴⁾ 4 P 2694 4051 ⁽³⁾⁽⁴⁾	3 P 1509 3160 ⁽⁵⁾ 4 P 1509 4160 ⁽⁵⁾					
	4 P	41AC 4120																										
1600 A	3 P	41AC 3160																										
	4 P	41AC 4160																										
1800 A	3 P	41AC 3180				J3 type Blue 1132 1111 Red 1133 1111		S4 type Black IP65 1443 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾		4109 0160	3 P 2694 3051 ⁽³⁾⁽⁴⁾ 4 P 2694 4051 ⁽³⁾⁽⁴⁾									3 P 1509 3160 ⁽⁵⁾ 4 P 1509 4160 ⁽⁵⁾							
	4 P	41AC 4180																										
2000 A	3 P	41AC 3200									S5 type Black 2799 7042													S5 type Black IP65 1453 8113	200 mm 2799 3015 320 mm 2799 3018 ⁽¹⁾ 450 mm 2799 3019	(6)	1 st contact NO/NC included	included
	4 P	41AC 4200																										
2500 A	3 P	41AC 3250																										
	4 P	41AC 4250																										
3200 A	3 P	41AC 3320																										
	4 P	41AC 4320																										

(1) Standard.

(2) 2 pieces supplied, one for position I and one for position II.

(3) To fully shroud front, rear, top and bottom 4 references required.

(4) To shroud front switch top and bottom 2 references required.

(5) 2 pieces supplied, one for top side and another for bottom side.

(6) See "Copper bar connection kits" page 335.

SIRCOVER I - I+II - II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bar	Auxiliary contact	Terminal shrouds	Terminal screens								
125 A	3 P	4190 3013 ⁽¹⁾	Black 4199 5012 ⁽²⁾	S2 type Black IP65 1423 2114 ⁽²⁾	200 mm 1400 1020 320 mm 1400 1032 ⁽²⁾	4109 0019	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3014 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4014 ⁽⁴⁾⁽⁵⁾	3 P 1509 3012 4 P 1509 4012								
	4 P	4190 4013 ⁽¹⁾															
160 A	3 P	4190 3016 ⁽¹⁾															
	4 P	4190 4016 ⁽¹⁾															
200 A	3 P	4190 3019															
	4 P	4190 4019															
250 A	3 P	4190 3025 ⁽¹⁾				Black 4199 5012 ⁽²⁾		S2 type Black IP65 1423 2114 ⁽²⁾	200 mm 1400 1020 320 mm 1400 1032 ⁽²⁾	4109 0025	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3021 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4021 ⁽⁴⁾⁽⁵⁾	3 P 1509 3025 4 P 1509 4025				
	4 P	4190 4025 ⁽¹⁾															
400 A	3 P	4190 3039 ⁽¹⁾															
	4 P	4190 4039 ⁽¹⁾															
500 A	3 P	4190 3050 ⁽¹⁾								Black 4199 5012 ⁽²⁾		S2 type Black IP65 1423 2114 ⁽²⁾	200 mm 1400 1020 320 mm 1400 1032 ⁽²⁾	4109 0039	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3051 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4051 ⁽⁴⁾⁽⁵⁾	3 P 1509 3063 ⁽⁶⁾ 4 P 1509 4063 ⁽⁶⁾
	4 P	4190 4050 ⁽¹⁾															
630 A	3 P	4190 3063 ⁽¹⁾															
	4 P	4190 4063 ⁽¹⁾															
800 A	3 P	4190 3080 ⁽¹⁾	Black 2799 7052 ⁽²⁾	S4 type Black IP65 1443 3114 ⁽²⁾	200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾	4109 0080	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 1509 3080 ⁽⁶⁾ 4 P 1509 4080 ⁽⁶⁾									
	4 P	4190 4080 ⁽¹⁾															
1250 A	3 P	4190 3120 ⁽¹⁾															
	4 P	4190 4120 ⁽¹⁾															
1600 A	3 P	4190 3160 ⁽¹⁾				Black 2799 7052 ⁽²⁾		S4 type Black IP65 1443 3114 ⁽²⁾	200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾	4109 0120	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾					
	4 P	4190 4160 ⁽¹⁾															
1800 A	3 P	4190 3180															
	4 P	4190 4180															

(1) Available enclosed (see "Enclosed changeover switches" page 625).

(2) Standard.

(3) 2 pieces supplied, one for position I and one for position II.

(4) To fully shroud front, rear, top and bottom 4 references required.

(5) To shroud front switch top and bottom 2 references required.

(6) 2 pieces supplied, one for top side and another for bottom side.

SIRCOVER

Manual changeover switches
from 125 to 3200 A

References (continued)

SIRCOVER Bypass

Rating (A)	No. of poles	Switch body I-0-II	Direct handle	External handle	Shaft for external handle	Bridging bar	Auxiliary contact	Terminal shrouds	Terminal screens							
125 A	3 + 6 P	4100 7013 ⁽¹⁾	Black 4199 5012	S2 type Black IP55 1421 2113 ⁽²⁾ Black IP65 1423 2113	200 mm 1400 1020 320 mm 1400 1032 ⁽²⁾	4109 0019	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3014 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4014 ⁽⁴⁾⁽⁵⁾	3 P 1509 3012 4 P 1509 4012							
	4 + 8 P	4100 9013 ⁽¹⁾														
160 A	3 + 6 P	4100 7016 ⁽¹⁾														
	4 + 8 P	4100 9016 ⁽¹⁾														
200 A	3 + 6 P	4100 7019														
	4 + 8 P	4100 9019														
250 A	3 + 6 P	4100 7025 ⁽¹⁾								Black 2799 7052	S3 type Black IP65 1433 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾	4109 0025	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3021 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4021 ⁽⁴⁾⁽⁵⁾	3 P 1509 3025 4 P 1509 4025
	4 + 8 P	4100 9025 ⁽¹⁾														
400 A	3 + 6 P	4100 7039 ⁽¹⁾														
	4 + 8 P	4100 9039 ⁽¹⁾														
500 A	3 + 6 P	4100 7050 ⁽¹⁾														
	4 + 8 P	4100 9050 ⁽¹⁾														
630 A	3 + 6 P	4100 7063 ⁽¹⁾														
	4 + 8 P	4100 9063 ⁽¹⁾														
800 A	3 + 6 P	4100 7080 ⁽¹⁾	Black 2799 7012	Black IP65 4199 7146	200 mm 2799 3015 320 mm 2799 3018 ⁽²⁾ 450 mm 2799 3019	4109 0080	1 st /2 nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3051 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4051 ⁽⁴⁾⁽⁵⁾	3 P 1509 3063 ⁽⁶⁾ 4 P 1509 4063 ⁽⁶⁾							
	4 + 8 P	4100 9080 ⁽¹⁾														
1250 A	3 + 6 P	4100 7120 ⁽¹⁾														
	4 + 8 P	4100 9120 ⁽¹⁾														
1600 A	3 + 6 P	4100 7160 ⁽¹⁾														
	4 + 8 P	4100 9160 ⁽¹⁾														

(1) Available enclosed (see "Enclosed changeover switches" page 625).

(2) Standard.

(3) 2 pieces supplied, one for position I and one for position II.

(4) To shroud front switch top and bottom 3 references required.

(5) To fully shroud front, rear, top and bottom 6 references required.

(6) 2 pieces supplied, one for top side and another for bottom side.

Accessories

Direct operation handle

SIRCOVER AC I-0-II			
Rating (A)	Handle colour	Handle type	Reference
125 ... 630	Blue	J2 type	1122 1111
125 ... 630	Red	J2 type	1123 1111
800 ... 1800	Blue	J3 type	1132 1111
800 ... 1800	Red	J3 type	1133 1111
2000 ... 3200	Black	S5 type	2799 7042 ⁽¹⁾

SIRCOVER I - I+II - II			
Rating (A)	Handle colour	Handle type	Reference
125 ... 630	Black	B3 type	4199 5012
800 ... 1800	Black	C1 type	2799 7052

SIRCOVER Bypass			
Rating (A)	Handle colour	Handle type	Reference
125 ... 200	Black	B3 type	4199 5012
250 ... 630	Black	C1 type	2799 7052
800 ... 1600	Black	C2 type	2799 7012 ⁽¹⁾

(1) Double lever handle



External operation handle

Use

Door interlocked external front operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.

SIRCOVER AC I-0-II and SIRCOVER I-I+II-II				
Rating (A)	Switching type	External IP ⁽¹⁾	Handle	Reference
125 ... 630	I - 0 - II	IP55	S2 type	1421 2113
125 ... 630	I - 0 - II	IP65	S2 type	1423 2113
125 ... 630	I - I+II - II	IP65	S2 type	1423 2114
800 ... 1800	I - 0 - II	IP65	S4 type	1443 3113 ⁽²⁾
800 ... 1800	I - I+II - II	IP65	S4 type	1443 3114 ⁽²⁾
2000 ... 3200	I - 0 - II	IP65	S5 type	1453 8113 ⁽²⁾

(1) IP : protection degree according to IEC 60529 standard.

(2) Double lever handle.

SIRCOVER Bypass				
Rating (A)	Switching type	External IP ⁽¹⁾	Handle	Reference
125 ... 200	I - 0 - II	IP55	S2 type	1421 2113
125 ... 200	I - 0 - II	IP65	S2 type	1423 2113
250 ... 630	I - 0 - II	IP65	S3 type	1433 3113
800 ... 1600	I - 0 - II	IP65	V2 type	4199 7146

(1) IP : protection degree according to IEC 60529 standard.



Alternative S-type handle cover colours

Use

For single lever handles S1, S2, S3 type and for double lever handle S4 type.
Other colours: Please consult us.

Colour	To be ordered in multiples of	Handle	Reference
Light grey	50	S2, S3 type	1401 0001
Dark grey	50	S2, S3 type	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041



S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style SOCOMEC handles.
Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.

Colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP : protection degree according to IEC 60529 standard.



SIRCOVER

Manual changeover switches

from 125 to 3200 A

Accessories (continued)

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

This accessory enables handle to engage extension shaft with a misalignment of up to 15 mm.

Required for shaft lengths over 320 mm.



access_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

Shaft for external handle

Use

Standard lengths:

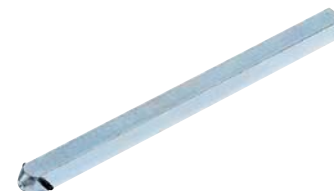
- 200 mm,
- 320 mm,
- 450 mm.

Other lengths: Please consult us.



access_369_a_1_cat

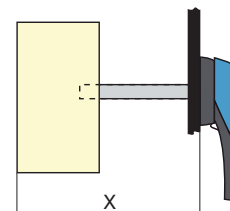
SIRCOVER AC I-0-II and SIRCOVER I-I+II-II			
Rating (A)	Length (mm)	Dimension X (mm)	Reference
125 ... 400	200	210 ... 310	1400 1020
125 ... 400	320	210 ... 430	1400 1032
500 ... 630	200	280 ... 390	1400 1020
500 ... 630	320	280 ... 510	1400 1032
800 ... 1800	200	425 ... 577	1401 1520
800 ... 1800	320	425 ... 697	1401 1532
2000 ... 3200	200	653 ... 803	2799 3015
2000 ... 3200	320	653 ... 923	2799 3018
2000 ... 3200	450	653 ... 1053	2799 3019



access_144_b_1_cat

SIRCOVER Bypass

Rating (A)	Length (mm)	Dimension X (mm)	Reference
125 ... 200	200	320 ... 450	1400 1020
125 ... 200	320	320 ... 570	1400 1032
250 ... 400	200	298 ... 420	1401 1520
250 ... 400	320	298 ... 540	1401 1532
500 ... 630	200	417 ... 539	1401 1520
500 ... 630	320	417 ... 659	1401 1532
800 ... 1600	200	550 ... 680	2799 3015
800 ... 1600	320	550 ... 800	2799 3018
800 ... 1600	450	550 ... 930	2799 3019



access_202_a_1_x_cat

Bridging bars

Use

For creating a common connection between switches I & II, on the top or bottom side of the SIRCOVER, to enable, for example, the load to be fed from either incoming source (I or II).

For SIRCOVER Bypass, two sets of bridging bars are needed as the switch is composed of three basic switch frames.

Rating (A)	Section (mm)	Reference
125 ... 200	20 x 2.5	4109 0019
250	25 x 2.5	4109 0025
315 ... 400	32 x 5	4109 0039
500	32 x 5	4109 0050
630	50 x 5	4109 0063
800 ... 1000	50 x 6	4109 0080
1250	60 x 8	4109 0120
1600 ... 1800	90 x 10	4109 0160

SIRCOVER AC I-0-II and SIRCOVER I-I+II-II

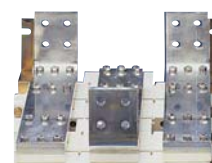


access_205_a_2_cat

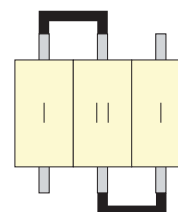
SIRCOVER Bypass



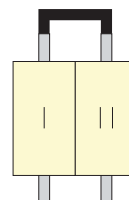
access_208_a_2_cat



access_041_a_1_cat



svr_068_a_1_x_cat



svr_124_a_1_cat

Copper bar connection kits from 2000 to 3200 A - SIRCOVER

Use

Enables:

- connection between the two power terminals of the same pole for 2000 to 3200 A ratings (Fig. 1 and Fig 2).
- top or bottom bridging connection (Fig. 3).

For 3200 A rating, the connection pieces (part A) are delivered bridged from factory. Bolt sets must be ordered separately.

Further details for these specific accessories are available in the user guide downloadable from www.socomec.com.

Fig. 1

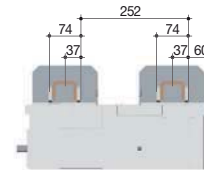


Fig.2

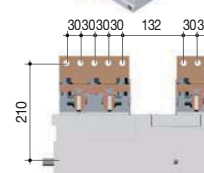
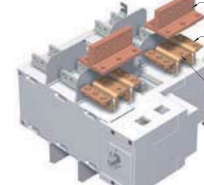
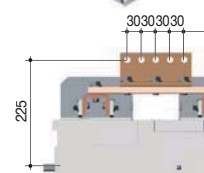
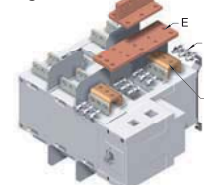


Fig. 3



access_226_b_1_x_cat

access_232_a_1_cat

access_228_b_1_x_cat

access_233_a_1_cat

access_230_b_1_x_cat

access_234_a_1_cat

svr_058_a_1_cat

access_065_a_1_cat

Top or bottom flat connection - Fig. 1

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	2	2619 1200
2000 ... 2500	Bolt set - part B	2	2699 1200
3200	Connection - part A		included
3200	Bolt set - part B	2	2699 1200

(1) Example for 3 pole device equipped upstream only: Order 3 times the indicated quantities.

Top or bottom edgewise connection - Fig. 2

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	2	2619 1200
2000 ... 2500	T piece - part C	2	2629 1200 ⁽²⁾
2000 ... 2500	Bracket - part D	2	2639 1200 ⁽²⁾
3200	Connection - part A		included
3200	T piece - part C	2	2629 1200 ⁽²⁾
3200	Bracket - part D	2	2639 1200 ⁽²⁾

(1) Example for 3 pole device equipped upstream only: Order 3 times the indicated quantities.

(2) Bolt set is provided with the accessories.

Top or bottom bridging connection - Fig. 3

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	2	2619 1200
2000 ... 2500	Bolt set - part B	2	2699 1200
2000 ... 2500	Bar - part E	1	4109 0250 ⁽²⁾
2000 ... 2500	T piece - part C	1	2629 1200 ⁽²⁾
3200	Connection - part A		included
3200	Bolt set - part B	2	2699 1200
3200	Bar - part E	1	4109 0320 ⁽²⁾
3200	T piece - part C	1	2629 1200 ⁽²⁾

(1) Example for 3 pole device equipped upstream only: Order 3 times the indicated quantities.

(2) Bolt set is provided with the accessories.

Auxiliary contact

Use

Pre breaking and signalling of positions I and II: 1 or 2 NO/NC auxiliary contacts in each position.
Low level auxiliary contacts: Please consult us.

Connection to the control circuit

6.35 mm fast-on terminal.

Electrical characteristics

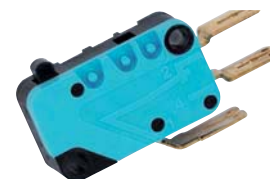
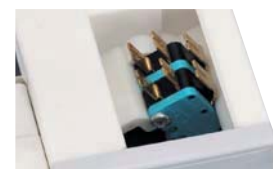
30 000 operations.

Characteristics

Rating (A)	Nominal current (A)	Operating current I _o (A)			
		A - 250 13 VAC	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
125 ... 3200	16	12	8	14	6

NO/NC changeover contact

Rating (A)	Contact(s)	Reference
125 ... 1800	1 st /2 nd	4109 0021
2000 ... 3200	1 st	included



SIRCOVER

Manual changeover switches

from 125 to 3200 A

Accessories (continued)

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Rating (A)	No. of poles	Position	Reference
125 ... 200	3 P	top / bottom / front (I) / rear (II)	2694 3014 ⁽¹⁾⁽²⁾
125 ... 200	4 P	top / bottom / front (I) / rear (II)	2694 4014 ⁽¹⁾⁽²⁾
250 ... 400	3 P	top / bottom / front (I) / rear (II)	2694 3021 ⁽¹⁾⁽²⁾
250 ... 400	4 P	top / bottom / front (I) / rear (II)	2694 4021 ⁽¹⁾⁽²⁾
500 ... 630	3 P	top / bottom / front (I) / rear (II)	2694 3051 ⁽¹⁾⁽²⁾
500 ... 630	4 P	top / bottom / front (I) / rear (II)	2694 4051 ⁽¹⁾⁽²⁾

(1) To shroud front switch top and bottom 4 references required for a SIRCOVER and 6 references for a SIRCOVER Bypass.

(2) To shroud front switch top and bottom 2 references required for a SIRCOVER and a SIRCOVER Bypass.



access_206_a_2_cat

Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
125 ... 200	3 P	top / bottom	1509 3012
125 ... 200	4 P	top / bottom	1509 4012
250 ... 400	3 P	top / bottom	1509 3025
250 ... 400	4 P	top / bottom	1509 4025
500 ... 630	3 P	top / bottom	1509 3063
500 ... 630	4 P	top / bottom	1509 4063
800 ... 1250	3 P	top / bottom	1509 3080
800 ... 1250	4 P	top / bottom	1509 4080
1600 ... 1800	3 P	top / bottom	1509 3160
1600 ... 1800	4 P	top / bottom	1509 4160
2000 ... 3200	3 / 4 P	top / bottom	included



access_207_a_2_cat

Key handle interlocking system

Padlocking in position I, 0 or II

Rating (A) SIRCOVER	Rating (A) SIRCOVER Bypass	Operation	Figure	Reference
125 ... 630	125 ... 200	external	1	1423 2813

Locking using RONIS EL11AP lock in position 0 (not included)

Rating (A) SIRCOVER	Rating (A) SIRCOVER Bypass	Operation	Figure	Reference
125 ... 630	125 ... 200	direct	2	4109 1006 ⁽¹⁾
	250 ... 630	direct	3	Please consult us
800 ... 1800	800 ... 1600	direct	3	4109 1004 ⁽²⁾
2000 ... 3200		direct	3	4109 2007 ⁽²⁾
125 ... 1800	125 ... 630	external	4	1499 7701 ⁽²⁾
2000 ... 3200	800 ... 1600	external	4	2799 7002 ⁽²⁾

⁽¹⁾ Specific handle included.

⁽²⁾ This locking facility can be configured by the user in the 3 positions.

Locking using RONIS EL11AP lock in position I, 0, II (not included)

Rating (A) SIRCOVER	Rating (A) SIRCOVER Bypass	Operation	Figure	Reference
125 ... 630	125 ... 200	direct	2	4109 1002 ⁽¹⁾
	250 ... 630	direct	3	Please consult us
800 ... 1800	800 ... 1600	direct	3	4109 1004 ⁽²⁾
2000 ... 3200		direct	3	4109 2007 ⁽²⁾
125 ... 1800	125 ... 630	external	4	1499 7701 ⁽²⁾
2000 ... 3200	800 ... 1600	external	4	2799 7002 ⁽²⁾

⁽¹⁾ Specific handle included.

⁽²⁾ This locking facility can be configured by the user in the 3 positions.

Locking using 230 VAC undervoltage coil in position (factory fitted)

Rating (A) SIRCOVER	Rating (A) SIRCOVER Bypass	Operation	Figure	Reference
800 ... 3200	800 ... 1600	direct	3	Please consult us

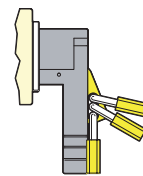
Locking using type K CASTELL lock (not supplied)

Rating (A) SIRCOVER	Rating (A) SIRCOVER Bypass	Operation	Figure	Reference
125 ... 1800	125 ... 630	external	4	1499 7702
2000 ... 3200	800 ... 1600	external	4	2799 7003

Use

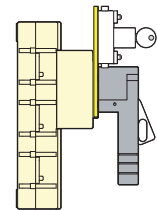
- Using padlock (not supplied). This device is factory mounted in the direct or external operation handle and allows the use of up to 3 padlocks.
- Locking:
 - - using lock (not supplied)
 - - using undervoltage coil.
- The interlocking positions are either determined as standard or configured by the user by removing the pre-formed tabs.
- Padlocking and locking can be combined.

Fig. 1



access_061_a_1_x_cat

Fig.2



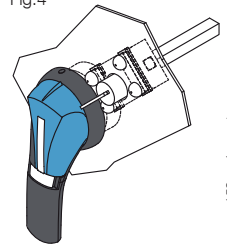
access_001_a_1_x_cat

Fig. 3



access_132_a_1_x_cat

Fig.4



access_158_a_1_x_cat

Other specific accessories



bd_C03_04_01

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Inter phase barrier.
- Connection accessories.
- Low level auxiliary contacts.

SIRCOVER AC I-0-II - Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 630 A

Thermal current I_{th} at 40°C	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A
Rated insulation voltage U_i (V)	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
415 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
415 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	200/200	315/315	400/400	500/500	630/630
500 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
500 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
500 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	200/250	200/315	200/400	500/500	500/500
500 VAC	AC-23 A / AC-23 B	80/80	80/80	80/80	200/200	200/200	200/200	400/400	400/400
690 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
690 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	200/200	200/200	200/200	500/500	500/500
690 VAC	AC-22 A / AC-22 B	125/125	125/125	125/125	160/160	160/160	160/160	400/400	400/400
690 VAC	AC-23 A / AC-23 B	63/80	63/80	63/80	125/125	125/125	125/125	400/400	400/400
220 VDC ⁽²⁾	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
220 VDC ⁽²⁾	DC-21 A / DC-21 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500	630/630
220 VDC ⁽²⁾	DC-22 A / DC-22 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500	630/630
220 VDC ⁽²⁾	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
440 VDC ⁽²⁾	DC-21 A / DC-21 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-22 A / DC-22 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽³⁾	63/63	80/80	80/80	132/132	132/132	280/280	280/280	450/450
At 690 VAC without pre-break in AC ⁽³⁾	55/75	55/75	55/75	90/110	90/110	150/185	150/185	185/220

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	55	75	90	115	145	185	230	290
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Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-31 A / AC-31 B	125	160	200	250	315	400	500	630
415 VAC	AC-32 A / AC-32 B				200	315	400	500	500
415 VAC	AC-33 A / AC-33 B				200	200	200	400	400

Fuse protected short-circuit withstand as per IEC 60947-3 at 690 VAC

Prospective short-circuit current (kA rms)	100 ⁽⁵⁾	100 ⁽⁵⁾	50 ⁽⁵⁾	50	50	50	50	50
Associated fuse rating (A)	125	160	200	250	315	400	500	630

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁴⁾

Rated short-time withstand current 0.3s I_{sc} (kA rms)	12 ⁽⁵⁾	12 ⁽⁵⁾	12 ⁽⁵⁾	15	15	15	17	17
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Short-circuit withstand without protection as per IEC 60947-3 at 690 VAC

Rated short-time withstand current 1s I_{sc} (kA rms)	7 ⁽⁵⁾	7 ⁽⁵⁾	7 ⁽⁵⁾	8	8	8	10	10
Rated short-circuit making capacity I_{cm} (kA peak)	11.9	11.9	11.9	22	22	22	17	17
Rated short-time withstand current 60ms I_{sc} (kA rms) as per IEC 60947-6-1 at 415 VAC				10 ⁽⁶⁾	10 ⁽⁶⁾	10 ⁽⁶⁾	10	12.6

Connection

Minimum Cu cable cross-section (mm ²)	35	50	70	95	150	185	240	2 x 150
Minimum Cu busbar cross-section (mm ²)								2 x 30 x 5
Maximum Cu cable cross-section (mm ²)	50	95	120	150	240	240	2 x 185	2 x 300
Maximum Cu busbar width (mm)	25	25	25	32	32	32	50	50
Tightening torque mini / maxi (Nm)	9/13	9/13	9/13	20/26	20/26	20/26	20/26	20/26

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)	2.9	2.9	2.9	3.8	3.9	3.9	8.6	9.1
Weight of 4 P switch (kg)	4.1	4.1	4.1	4.6	4.9	4.9	10.4	11.1

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-". 4-pole device with 2 pole in series by polarity.

(3) The power value is given for information only, the current values vary from one manufacturer to another.

(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.

For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

(5) Data at 415 VAC

(6) Data at 30 ms

800 to 3200 A

Thermal current I_{th} at 40°C	800 A	1000 A	1250 A	1600 A	1800 A	2000 A	2500 A	3200 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200
415 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	-/2000	-/2500	-/3200
415 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1600/1600	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250	-/1600	-/1600	-/1600
500 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	1600/1600	-/2000	-/2500	-/3200
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000	1000/1000			
500 VAC	AC-23 A / AC-23 B	400/400	630/630	800/800	800/800	800/800			
690 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200
690 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	1600/1600	-/2000	-/2500	-/3200
690 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000	1000/1000			
690 VAC	AC-23 A / AC-23 B	400/400	630/630	800/800	1000/1000	1000/1000			
220 VDC ⁽²⁾	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800			
220 VDC ⁽²⁾	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250			
220 VDC ⁽²⁾	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250			
220 VDC ⁽²⁾	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250			
440 VDC ⁽²⁾	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800			
440 VDC ⁽²⁾	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250			
440 VDC ⁽²⁾	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250			
440 VDC ⁽²⁾	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250			

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽³⁾	710/710	710/710	710/710	710/710	710/710	710/710	710/710		
At 690 VAC without pre-break in AC ⁽³⁾	185/220	475/475	475/475	750/750	750/750	750/750	750/750		

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	365	460	575						
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Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-31 A / AC-31 B	800	1000	1250	1600	1800	2000	2500	3200
415 VAC	AC-32 A / AC-32 B	800	1000	1250	1600	1600	2000	2000	2000
415 VAC	AC-33 A / AC-33 B	800	800	800	1000	1000	1250	1250	1250

Fuse protected short-circuit withstand as per IEC 60947-3 at 415 VAC

Prospective short-circuit current (kA rms)	50	100	100	100	100				
Associated fuse rating (A)	800	1000	1250	2 x 800	2 x 800				

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁴⁾

Rated short-time withstand current 0.3s I_{cw} (kA rms)	47	64	64	78	78	78	78	78	78
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Short-circuit withstand without protection as per IEC 60947-3 at 415 VAC

Rated short-time withstand current 1s I_{sw} (kA rms)	26	35	35	50	50	50	50	50	50
Rated short-circuit making capacity I_{cm} (kA peak)	48	73.5	73.5	110	110	110	110	110	110
Rated short-time withstand current 60ms I_{sw} (kA rms) as per IEC 60947-6-1 at 415 VAC	16	20	25	32	32	40	50	50	50

Connection

Minimum Cu cable cross-section (mm ²)	2 x 185	2 x 240							
Minimum Cu busbar cross-section (mm ²)	2 x 40 x 5	2 x 50 x 5	2 x 60 x 5	2 x 80 x 5	3 x 100 x 5	2 x 100 x 10	2 x 100 x 10	2 x 100 x 10	
Maximum Cu cable cross-section (mm ²)	2 x 300	4 x 185	4 x 185	6 x 185	6 x 185				
Maximum Cu busbar width (mm)	63	63	63	100	100	100	100	100	100
Tightening torque min (Nm)	20/26	20/26	20/26	40/45	40/45	40/45	40/45	40/45	40/45

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)	20.5	21.0	21.6	25.7	25.7	42.0	42.0	52.3	52.3
Weight of 4 P switch (kg)	24.8	25.6	26.2	32.0	32.0	52.9	52.9	66.6	66.6

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-". 4-pole device with 2 pole in series by polarity.

(3) The power value is given for information only, the current values vary from one manufacturer to another.

(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

(5) Data at 415 VAC.

SIRCOVER

Manual changeover switches

from 125 to 3200 A

SIRCOVER I-I+II -II and SIRCOVER Bypass - Characteristics according to IEC 60947-3

125 to 400 A

Thermal current I_{th} at 40°C	125 A	160 A	200 A	250 A	400 A
Rated insulation voltage U_i (V)	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	400/400
415 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	400/400
415 VAC	AC-22 A / AC-22 B	125/125	160/160	160/160	250/250	250/250
415 VAC	AC-23 A / AC-23 B	125/125	160/160	160/160	250/250	250/250
690 VAC ⁽²⁾	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	400/400
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	160/160	200/250	200/250
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	125/125	125/125	125/160	125/160
690 VAC ⁽²⁾	AC-23 A / AC-23 B	63/80	63/80	63/80	100/125	100/125
220 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	400/400
220 VDC	DC-21 A / DC-21 B	125/125	160/160	160/160	250/250	250/250
220 VDC	DC-22 A / DC-22 B	125/125	160/160	160/160	250/250	250/250
220 VDC	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200
440 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	400/400
440 VDC	DC-21 A / DC-21 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾
440 VDC	DC-22 A / DC-22 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾
440 VDC	DC-23 A / DC-23 B	125 ⁽⁴⁾ /125 ⁽⁴⁾	125 ⁽⁴⁾ /125 ⁽⁴⁾	125 ⁽⁴⁾ /125 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	63/63	80/80	80/80	132/132	132/132
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	55/75	55/75	55/75	90/110	90/110

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	55	75	90	115	185
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Fuse protected short-circuit withstand as per IEC 60947-3 at 400 VAC

Prospective short-circuit current (kA rms)	100	100	50	50	18
Associated fuse rating (A)	125	160	200	250	400

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁶⁾

Rated short-time withstand current 0.3s low (kA rms)	15	15	15	17	17
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s low (kA rms)	8	8	8	9	9
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Connection

Minimum Cu cable cross-section (mm ²)	35	50	50	95	185
Minimum Cu busbar cross-section (mm ²)					
Maximum Cu cable cross-section (mm ²)		50	95	95	150
Maximum Cu busbar width (mm)	25	25	25	32	32
Tightening torque min (Nm)	9	9	9	20	20

Mechanical characteristics

Durability (number of operating cycles)	10000	10000	10000	10000	10000
Weight of 3 P switch (kg)	2.9	2.9	2.9	3.8	3.9
Weight of 4 P switch (kg)	4.1	4.1	4.1	4.6	4.9

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 4-pole device with 2 poles in series per polarity.

(4) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-".

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.

For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

500 to 1800 A

Thermal current I_{th} at 40°C	500 A	630 A	800 A	1250 A	1600 A	1800 A
Rated insulation voltage U_i (V)	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	500/500	630/630	800/800	1250/1250	1600/1600	1800/1800
415 VAC	AC-21 A / AC-21 B	500/500	630/630	800/800	1250/1250	1600/1600	1800/1800
415 VAC	AC-22 A / AC-22 B	500/500	630/630	800/800	1250/1250	1600/1600	1800/1800
415 VAC	AC-23 A / AC-23 B	500/500	500/500	800/800	1250/1250	1250/1250	1250/1250
690 VAC ⁽²⁾	AC-20 A / AC-20 B	500/500	630/630	800/800	1250/1250	1600/1600	1800/1800
690 VAC ⁽²⁾	AC-21 A / AC-21 B	400/400	500/500	800/800	800/800	1000/1000	1000/1000
690 VAC ⁽²⁾	AC-22 A / AC-22 B	250/315	315/315	800/800	800/800	1000/1000	1000/1000
690 VAC ⁽²⁾	AC-23 A / AC-23 B	160/200	160/200	200/250	200/250	500/500	500/500
220 VDC	DC-20 A / DC-20 B	500/500	630/630	800/800	1250/1250	1600/1600	1800/1800
220 VDC	DC-21 A / DC-21 B	500/500	630/630	800/800	1250/1250	1250/1250	1250/1250
220 VDC	DC-22 A / DC-22 B	400/500	500/500	800/800	1250/1250	1250/1250	1250/1250
220 VDC	DC-23 A / DC-23 B	400/500	500/500	800/800	1250/1250	1250/1250	1250/1250
440 VDC	DC-20 A / DC-20 B	500/500	630/630	800/800	1250/1250	1600/1600	1800/1800
440 VDC	DC-21 A / DC-21 B	400 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽³⁾ /800 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾
440 VDC	DC-22 A / DC-22 B	315 ⁽³⁾ /400 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽³⁾ /800 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾
440 VDC	DC-23 A / DC-23 B	400 ⁽⁴⁾ /400 ⁽⁴⁾	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽³⁾ /800 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	280/280	280/280	450/450	710/710	710/710	710/710
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	150/185	150/185	185/220	185/220	475/475	475/475

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	230	290	365	575		
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Fuse protected short-circuit withstand as per IEC 60947-3 at 400 VAC

Prospective short-circuit current (kA rms)	100	70	50	100	100	100
Associated fuse rating (A)	500	630	800	1250	2 x 800	2 x 800

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁶⁾

Rated short-time withstand current 0.3s I_{sc} (kA rms)	25	25	50	65	100	100
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s I_{sc} (kA rms)	14	25	50	65	100	100
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Connection

Minimum Cu cable cross-section (mm ²)	240	2 x 150	2 x 185			
Minimum Cu busbar cross-section (mm ²)		2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5	2 x 80 x 5
Maximum Cu cable cross-section (mm ²)	240	240	2 x 300	2 x 300	4 x 185	6 x 185
Maximum Cu busbar width (mm)	40	50	63	63	100	100
Tightening torque min (Nm)	20	20	20	20	40	40

Mechanical characteristics

Durability (number of operating cycles)	5000	5000	3000	3000	3000	3000
Weight of 3 P switch (kg)	9.1	9.1	20.5	21.6	25.7	25.7
Weight of 4 P switch (kg)	11.1	11.1	24.8	26.2	32	32

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 4-pole device with 2 poles in series per polarity.

(4) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-".

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

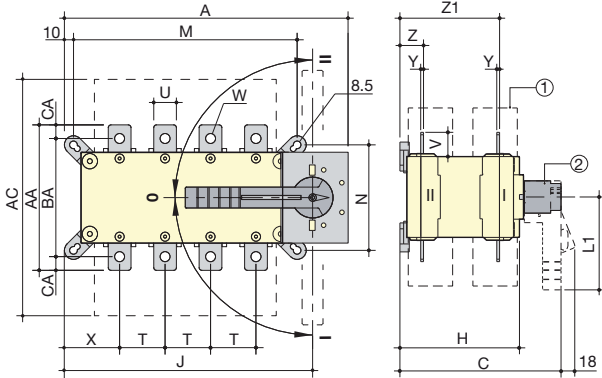
SIRCOVER

Manual changeover switches
from 125 to 3200 A

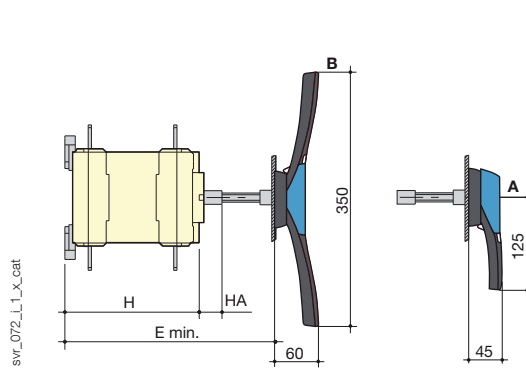
Dimensions

SIRCOVER 125 to 1800 A

Direct front operation



External front operation



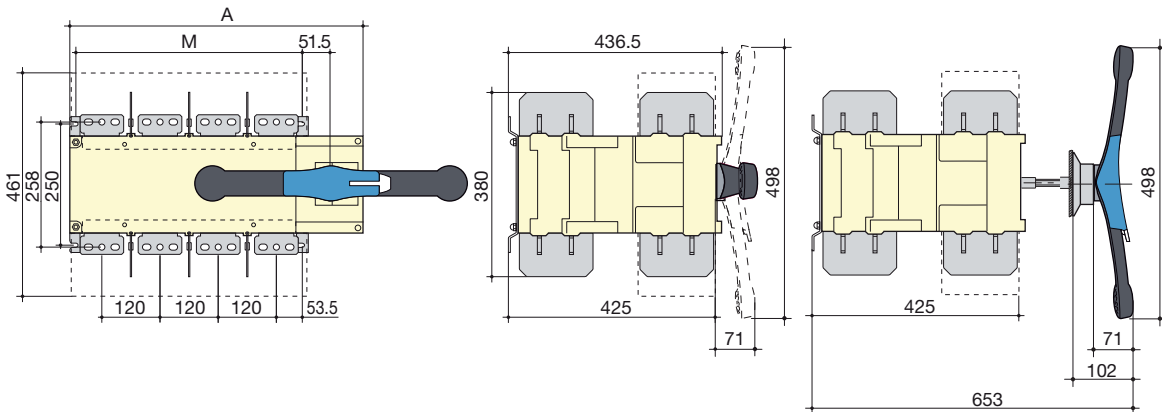
A. S2 type handle for external operation: 125 to 630 A
B. S4 type handle for external operation: 800 to 1800 A

1. Terminal shrouds
2. Direct handle operation:
- 125 to 630 A: L1 = 140 mm,
- 800 to 1800 A: L1 = 210 mm.

Rating (A)	Overall dimensions				Terminal shrouds	Switch body				Switch mounting				Connection										
	A 3p.	A 4p.	C	E min		AC	H	HA	J 3p.	J 4p.	M 3p.	M 4p.	N	T	U	V	W	X 3p.	X 4p.	Y	Z	Z1	AA	BA
125	221	251	218	208 ... 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
160	221	251	218	208 ... 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
200	221	251	218	208 ... 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
250	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	25	30	11	61	61	3.5	30	124	160	130	15
315	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	170	140	15
400	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	170	140	15
500	319	379	295	285 ... 513	401	225	25	272	332	246	306	176	65	32	37	13	70.5	65.5	5	43	180	235	205	15
630	319	379	295	285 ... 513	400	225	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	260	220	20
800	386	466	375	425 ... 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1000	386	466	375	425 ... 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1250	386	466	375	425 ... 577	459	298	29	306.5	386.5	255	336	250	80	60	65	16x11	48	48	7	66.5	255.5	330		29.5
1600	478	598	375	425 ... 577	461	298	29	388.5	518.5	347	467	250	120	90	43.5	12.5x5	54	54	8	66.5	255.5	288		15
1800	478	598	375	425 ... 577	461	298	29	388.5	518.5	347	467	250	120	90	43.5	12.5x5	54	54	8	66.5	255.5	288		15

SIRCOVER 2000 to 3200 A

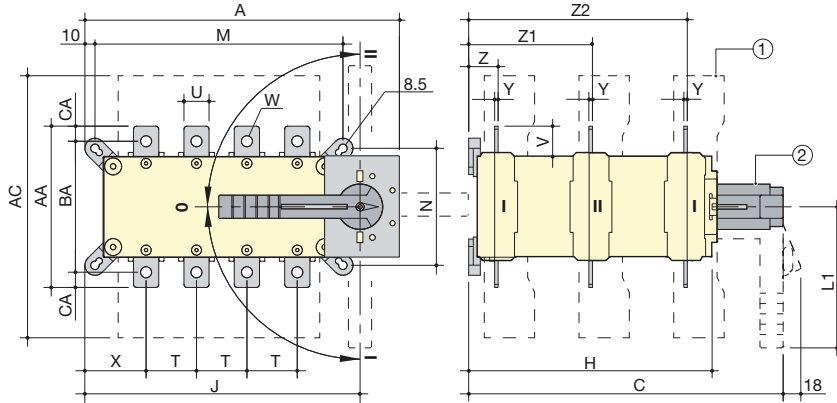
Direct front operation



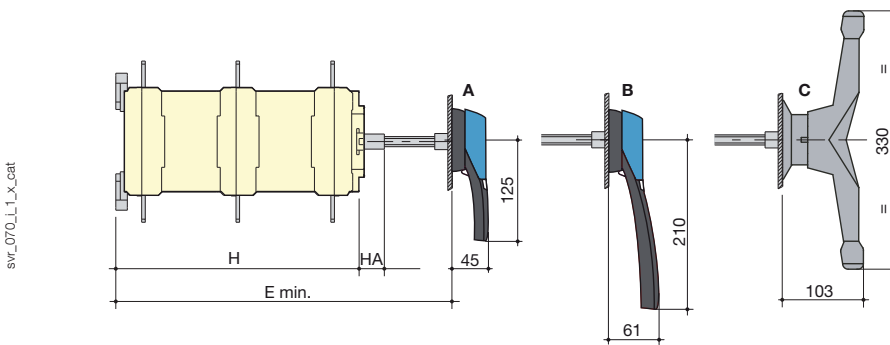
Rating (A)	Overall dimensions		Switch mounting	
	A 3p.	A 4p.	M 3p.	M 4p.
2000 ... 3200	478	598	347	467

SIRCOVER Bypass 125 to 1600 A

Direct front operation



External front operation



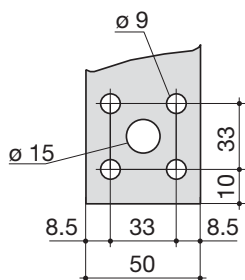
- A. S2 type handle for external operation:
125 to 200 A
- B. S3 type handle for external operation:
250 to 630 A
- C. External double lever handle: 800 to 1600 A

- 1. Terminal shrouds
- 2. Direct handle operation:
- 125 to 200 A: L1 = 140 mm,
- 250 to 630 A: L1 = 210 mm,
- 800 to 1600 A: L1 = Ø 330 mm.

Rating (A)	Overall dimensions				Terminal shrouds	Switch body				Switch mounting				Connection											
	A 3+6p.	A 4+8p.	C	E min.		AC	H	HA	J 3+6 p.	J 4+8 p.	M 3+6 p.	M 4+8 p.	N	T	U	V	W	X 3+6p.	X 4+8p.	Y	Z	Z1	Z1	AA	BA
125	221	251	313	320	235	243	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	219	135	115	10
160	221	251	313	320	235	243	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	219	135	115	10
200	221	251	313	320	235	243	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	219	135	115	10
250	262	312	313	298	280	243	25	223	273	196	246	116	50	25	30	11	61	61	3.5	30	124	219	160	130	10
400	262	312	313	298	280	243	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	219	170	140	15
500	319	379	432	417	401	362	25	272	332	246	306	176	65	32	37	13	70.5	65.5	5	43	180	317	235	205	15
630	319	379	432	417	400	362	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	317	260	220	20
800	386	466	560	550	459	479	29	306.5	386.5	255	335	250	80	50	60.5	15	48	48	7	66.5	253.5	439.5	321		26.5
1250	386	466	560	550	459	479	29	306.5	386.5	255	335	250	80	60	65	16x11	48	48	7	66.5	253.5	439.5	320		29.25
1600	478	598	560	550	461	479	29	388.5	518.5	347	467	250	120	90	43.5	12.5x5	54	54	8	66.5	253.5	439.5	288		15

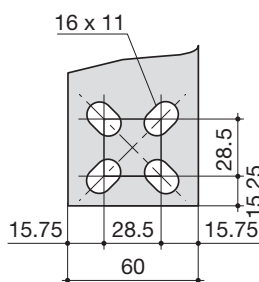
Connection terminals

SIRCOVER and SIRCOVER Bypass 800 A



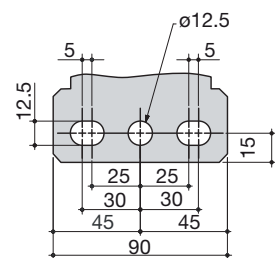
svr_077_a_1_x_cat

SIRCOVER and SIRCOVER Bypass 1250 A



svr_078_b_1_x_cat

SIRCOVER 1600 to 3200 A SIRCOVER Bypass 1600 A



svr_098_a_1_x_cat

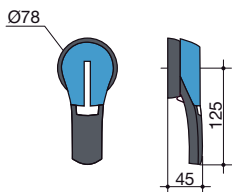
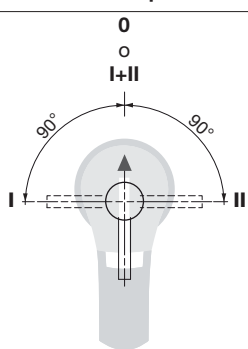
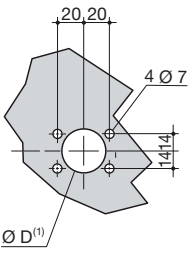
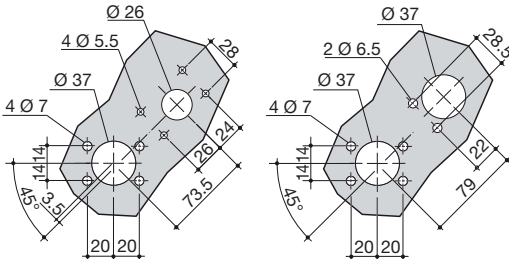
SIRCOVER

Manual changeover switches

from 125 to 3200 A

Dimensions for external handles

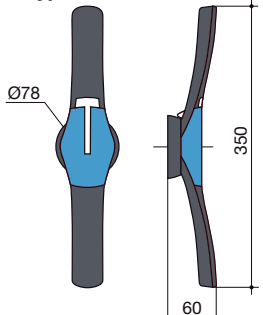
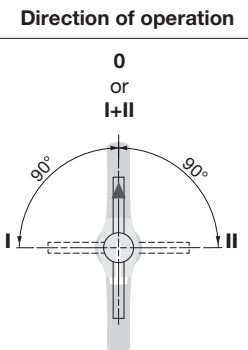
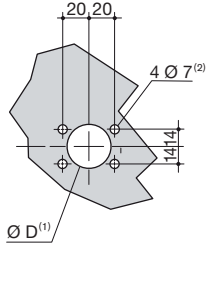
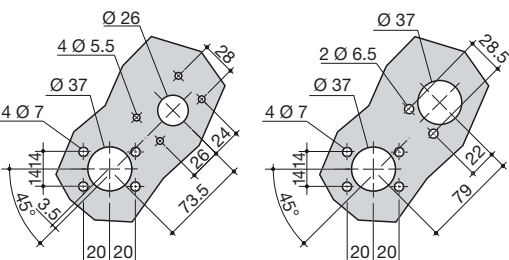
SIRCOVER 125 to 630 A

Handle type	Direction of operation	Front operation	
		Door drilling	
S2 type 			

(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.

poign_030_a_1_gb_cat

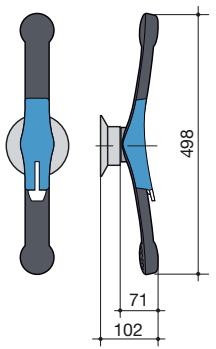
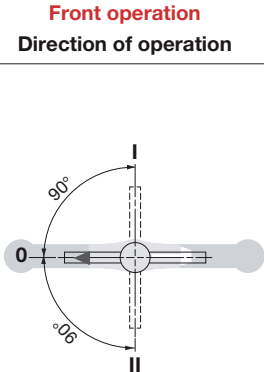
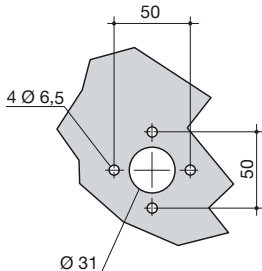
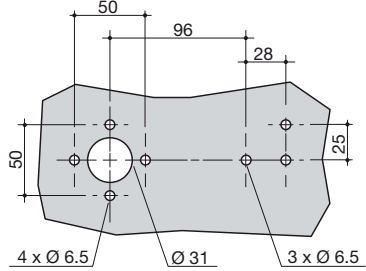
SIRCOVER 800 to 1800 A

Handle type	Direction of operation	Front operation	
		Door drilling	
S4 type 			

(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.
 (2) Ø6 to Ø7: clip mounting.

poign_031_a_1_gb_cat

SIRCOVER 2000 to 3200 A

Handle type	Direction of operation	Front operation	
		Door drilling	
S5 type with V Escutcheon 			

poign_023_a_1_gb_cat

SIRCOVER Bypass 125 to 200 A

Handle type	Direction of operation	Front operation	
		Door drilling	
S2 type			<div style="display: flex; justify-content: space-around;"> <div> <p>With lock RONIS EL11AP</p> </div> <div> <p>With lock CASTELL K</p> </div> </div>

(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.

SIRCOVER Bypass 250 to 630 A

Handle type	Direction of operation	Front operation	
		Door drilling	
S3 type			<div style="display: flex; justify-content: space-around;"> <div> <p>With lock RONIS EL11AP</p> </div> <div> <p>With lock CASTELL K</p> </div> </div>

(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.

SIRCOVER Bypass 800 to 1600 A

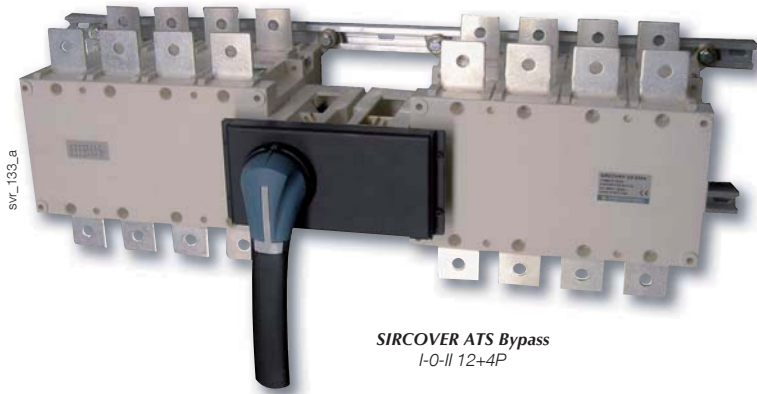
Handle type	Direction of operation	Front operation	
		Door drilling	
C type			<div style="display: flex; justify-content: space-around;"> <div> <p>With lock CASTELL K</p> </div> </div>



SIRCOVER ATS Bypass

Manual changeover switches
from 125 to 1600 A

Changeover
switches



SIRCOVER ATS Bypass
I-O-II 12+4P

The solution for

- > Industry.
- > Healthcare buildings.



Strong points

- > Stable positions.
- > Secured breaking.
- > On load switching.
- > A complete solution.

Conformity to standards

- > IEC 60947-3



Function

SIRCOVER ATS Bypass switches are manual four pole changeover switches with positive break indication. They are designed to isolate ATS type electrical equipment (automatic transfer switch) or UPS, with minimum interruption to the load supply. Integrating a SOCOMEC changeover switch into the installation enables source selection when in Bypass (see operating principle below).

Advantages

Stable positions

SIRCOVER ATS Bypass switches have 3 stable positions which are not affected by voltage drops or vibrations.

On load switching

Thanks to its AC-22 characteristics, tested in accordance with standard IEC 60947-3, the SIRCOVER ATS Bypass enables on load switching.

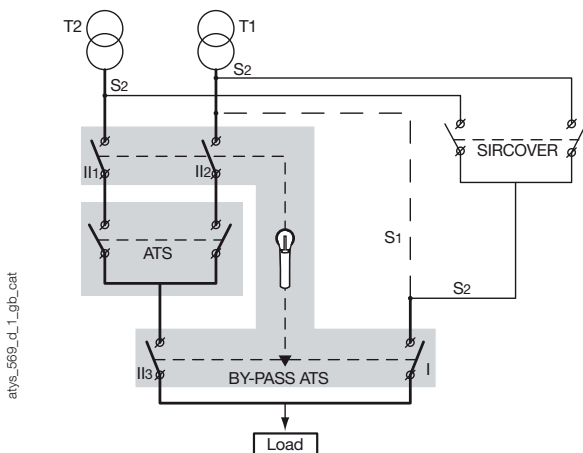
Secured breaking

Simultaneous upstream and downstream isolation and fully visualised breaking.

A complete solution

The SIRCOVER ATS Bypass is a single product offering a genuine solution incorporating both an equipment isolation function and a switching function.

Operating principle



In Bypass position:

- Without SIRCOVER: The load is supplied directly by one of the two power sources (transformer T1 for example).
- With a SIRCOVER: The supply source can be selected.

References

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contact	Terminal shrouds	Terminal screens
125 A	12 + 4 P	4100 9813	S3 type Black IP65 I - O - II 1433 3113	S3 type Black IP65 I - O - II 1433 3113	200 mm 1401 1520	4 P 4109 4019	1 st contact NO/NC included 2 nd contact NO/NC 4109 0021 ⁽¹⁾	4 P 2694 4014 ⁽²⁾⁽³⁾	4 P 1509 4012 ⁽⁴⁾
160 A	12 + 4 P	4100 9816				4 P 4109 4025			
250 A	12 + 4 P	4100 9825				4 P 4109 4039			
400 A	12 + 4 P	4100 9840				4 P 4109 4063			
630 A	12 + 4 P	4100 9863				Black 2799 7062			
800 A	12 + 4 P	4100 9880	4 P 4109 4160						
1000 A	12 + 4 P	4100 9881							
1250 A	12 + 4 P	4100 9882							
1600 A	12 + 4 P	4100 9886							

(1) 2 pieces: one for position I and one for position II.

(2) To fully shroud front, rear, top and bottom 8 references required.

(3) To shroud front switch top and bottom 4 references required.

(4) For complete front protection, order the reference twice.

Accessories

Key handle interlocking system

Locking in position 0 with RONIS EL11AP (lock not supplied)

Rating (A)	Operation	Figure	Reference
125 ... 630	direct	1	4109 1006 ⁽¹⁾
125 ... 630	external	3	1499 7701
800 ... 1600	direct and external	2	Please consult us

(1) Specific handle included.

Locking in positions I, O, II with RONIS EL11AP (lock not supplied)

Rating (A)	Operation	Figure	Reference
125 ... 630	direct	1	4109 1002 ⁽¹⁾
800 ... 1600	direct	2	Please consult us

(1) Specific handle included.

Locking with CASTELL K type lock (lock not supplied)

Rating (A)	Operation	Figure	Reference
125 ... 630	external	3	1499 7702
800 ... 1600	external		Please consult us

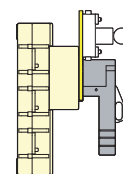


Fig. 1



Fig. 2

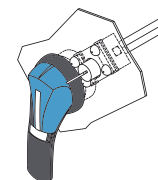


Fig. 3

access_001_a_1_x_cat

access_132_a_1_x_cat

access_156_a_1_x_cat

SIRCOVER ATS Bypass

Manual changeover switches

from 125 to 1600 A

Characteristics according to IEC 60947-3

125 to 1600 A

Thermal current I_{th} at 40°C	125 A	160 A	250 A	400 A	630 A	800 A	1000 A	1250 A	1600 A
Rated insulation voltage U (V)	800	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
415 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
415 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
415 VAC	AC-23 A / AC-23 B	125/125	160/160	250/250	400/400	500/500	800/800	1000/1000	1250/1250	1600/1600
690 VAC ⁽²⁾	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	200/250	200/250	500/500	800/800	800/800	800/800	1000/1000
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	125/125	125/160	125/160	315/315	800/800	800/800	800/800	1000/1000
690 VAC ⁽²⁾	AC-23 A / AC-23 B	63/80	63/80	100/125	100/125	160/200	200/250	200/250	200/250	500/500
220 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	630/630	800/800	1000/1000	1250/1250	1250/1250
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	500/500	800/800	1000/1000	1250/1250	1250/1250
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	500/500	800/800	1000/1000	1250/1250	1250/1250
440 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250/1250	1600/1600
440 VDC	DC-21 A / DC-21 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	125 ⁽⁴⁾ /125 ⁽⁴⁾	125 ⁽⁴⁾ /125 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	63/63	80/80	132/132	132/132	280/280	450/450	710/710	710/710	710/710
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	55/75	55/75	90/110	90/110	150/185	185/220	185/220	185/220	475/475

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	55	75	115	185	290	365	575	575	
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	100	100	50	18	70	50	100	100	100
Associated fuse rating (A) ⁽⁶⁾	125	160	250	400	630	800	1000	1250	2 x 800

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁷⁾

Rated short-time withstand current 0.3s I_{sc} (kA rms)	15	15	17	17	25	50	65	65	100
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Short-circuit capacity (without protection)

Thermal current I_{th} at 40°C	125 A	160 A	250 A	400 A	630 A	800 A	1000 A	1250 A	1600 A
Rated short-time withstand current 1s I_{sc} (kA rms)	8	8	9	9	14	27	36	36	50
Rated short-circuit making capacity								75	75

Connection

Minimum Cu cable cross-section (mm ²)	35	50	95	185	2 x 150	2 x 185			
Minimum Cu busbar cross-section (mm ²)					2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 60 x 5	2 x 80 x 5
Maximum Cu cable cross-section (mm ²)		50	95	150	240	2 x 300	2 x 300	2 x 300	4 x 185
Maximum Cu busbar width (mm)	25	25	32	32	50	63	63	63	100
Tightening torque min (Nm)	9	9	20	20	20	20	20	20	40

Mechanical characteristics

Durability (number of operating cycles)	10000	10000	10000	10000	5000	3000	3000	3000	3000
Weight of 3 P switch (kg)	8.3	8.3	10	10.3	20.7	44.3	45.4	46.4	54.7
Weight of 4 P switch (kg)	10.6	10.6	11.7	12.4	24.8	53	54.4	55.8	67.3

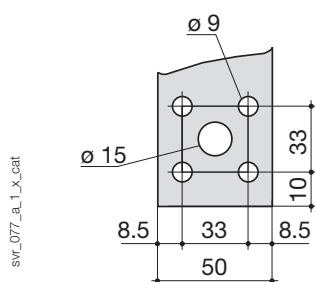
- (1) Category with index A = frequent operation
Category with index B = infrequent operation.
(2) With terminal shrouds.
(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

- (4) 4-pole device with 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage $U_n = 400$ VAC.

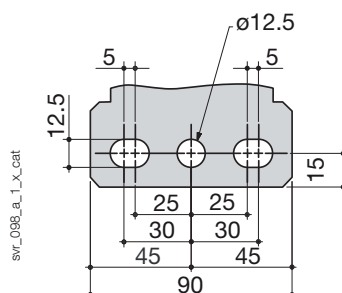
- (7) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

Connection terminals

SIRCOVER ATS Bypass 800 to 1000 A

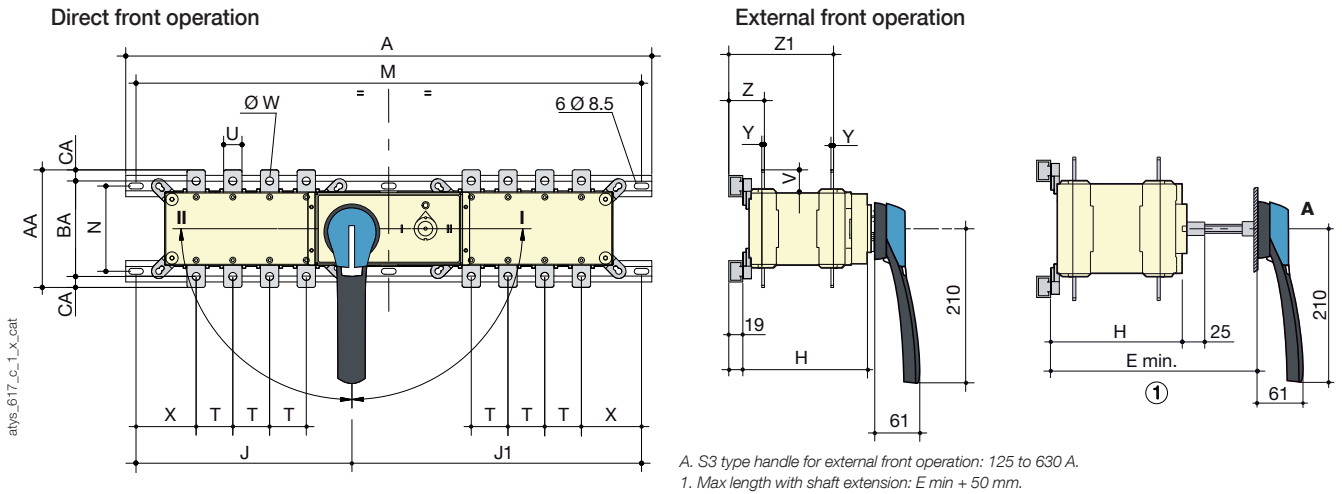


SIRCOVER ATS Bypass 1250 to 1600 A



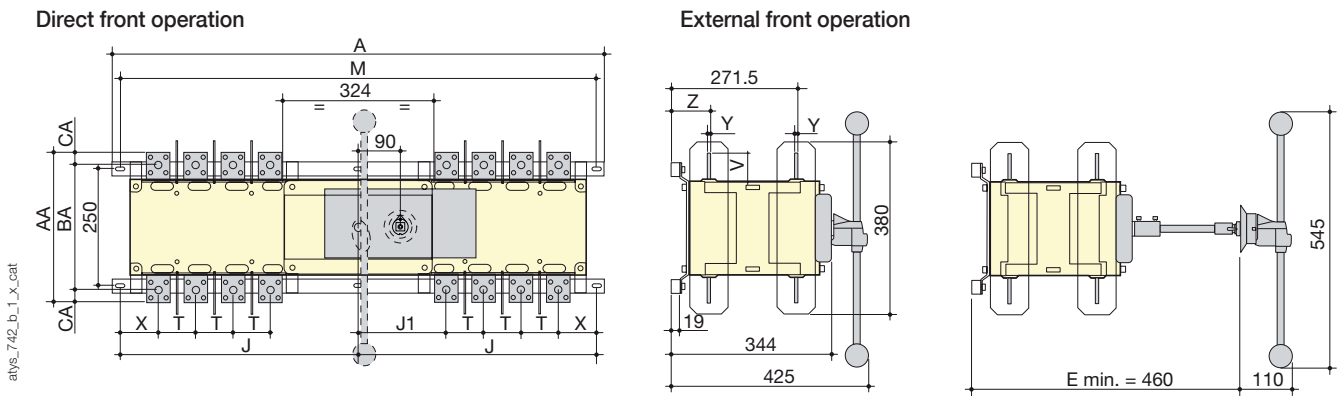
Dimensions

SIRCOVER ATS Bypass 125 to 630 A



Rating (A)	Overall dimensions		Switch body				Switch mounting			Connection								
	A 8p.	E min	H	J 8p.	J1	8p.	M 8p.	N	T	U	V	W	X 8p.	Y	Z	Z1	AA	BA
125	610	260±1	193	238	338	576	101	36	20	25	8.5	76	3.5	47	143	135	115	10
160	610	260±1	193	238	338	576	101	36	20	25	8.5	76	3.5	47	143	135	115	10
250	725	260±1	193	295	396	691	116	50	25	30	11	83.5	3.5	49	143	160	130	10
400	725	260±1	193	295	396	691	116	50	35	35	11	83.5	3.5	49	143	170	140	15
630	850	337±1	270	358	458	816	176	65	45	50	13	91.5	5	62	199	235	220	20

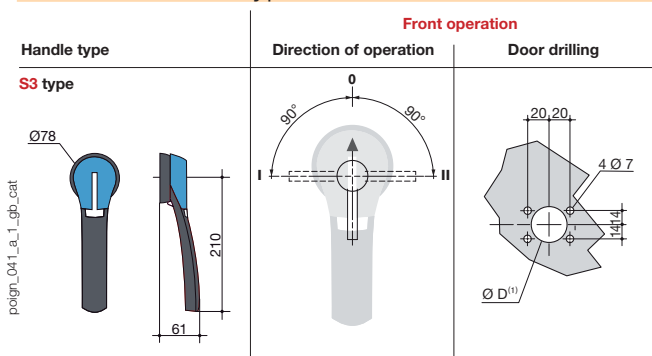
SIRCOVER ATS Bypass 800 to 1600 A



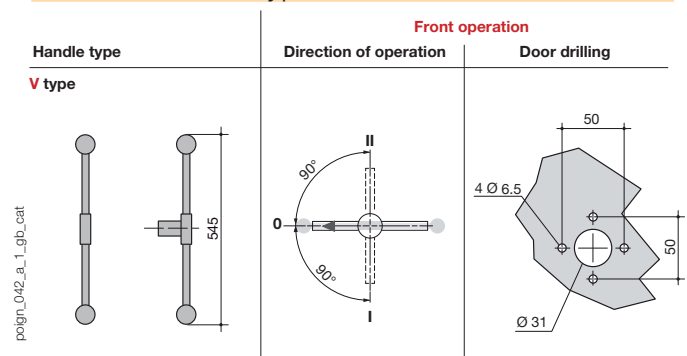
Rating (A)	Overall dimensions		Switch body			Switch mounting		Connection					
	A 8p.	J 8p.	J1	8p.	M 8p.	T	V	X 8p.	Y	Z	AA	BA	AC
800	1 055	510.5	189	1 021	80	60.5	81.5	7	84.5	321	268	26.5	
1000	1 055	510.5	189	1 021	80	60.5	81.5	7	84.5	321	268	26.5	
1250	1 320	643	195	1 286	120	44	88	8	85.5	288	258	15	
1600	1 320	643	195	1 286	120	44	88	8	85.5	288	258	15	

Dimensions for external handles

SIRCOVER ATS Bypass 125 to 630 A



SIRCOVER ATS Bypass 800 to 1600 A

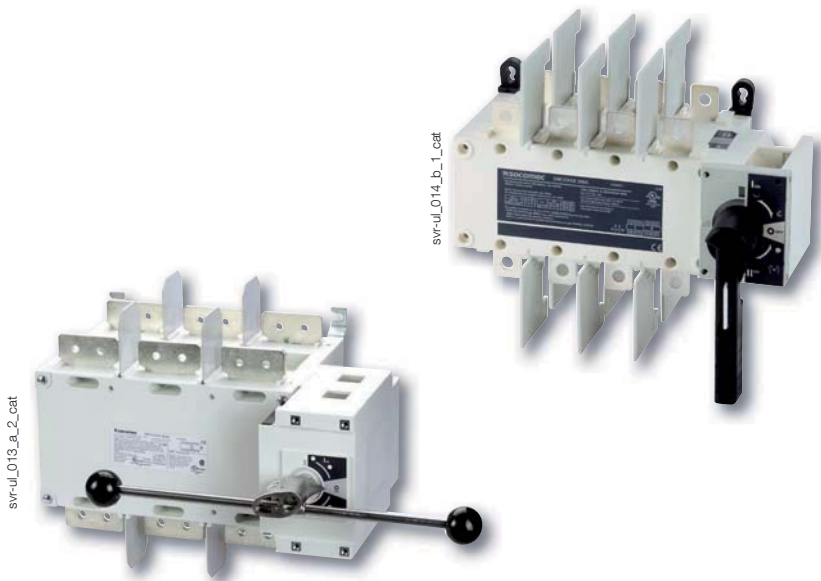




SIRCOVER UL1008/98

Changeover switches standards UL and CSA
100 to 1200 A

Changeover
switches



Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL98, Guide WHTY, file 201138
- > UL1008, Guide WPYV, file 317092
- > CSA 22.2#4, Class 4651-02



(1) Product reference on request.

Function

SIRCOVER UL UL1008/98 are heavy duty manual transfer switches. They ensure switching transfer of sources or transfer of two low voltage circuits on load as well as their safety disconnection.

These switches are extremely durable and are tested and approved for use in the most demanding applications, such as resistive load or total system applications.

Advantages

Stable positions

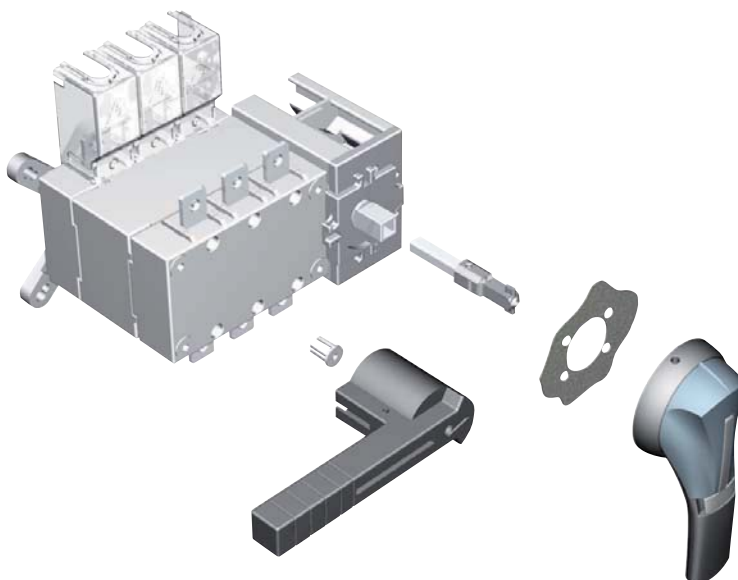
SIRCOVERs have three stable positions which are not affected by voltage drops or vibrations, thus protecting your load against network interference.

On load switching

The SIRCOVER UL enables secure and reliable switching, without the need for pre-breaking upstream.

Compact design

The Sircover are based on a back-to-back switching technology, providing a compact solution.



svr_136_a_2_cat

References

UL 1008 and UL98

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contacts	Terminal screens
100 A	2 P	4150 2011		S2 type Black I - 0 - II 4, 4X 142D 2113	S2 type 200 mm 7.9 inches 1400 1020	2P 4159 2021 3P 4159 3021 4P 4159 4021		2P & 3P 4158 3021 4P 4158 4021
	3 P	4150 3011						
	4 P	4150 4011						
200 A	2 P	4150 2021	Black 4199 4012	S2 type Black I - 0 - II 4, 4X 142D 2813⁽¹⁾	320 mm 12.6 inches 1400 1032 400 mm 15.7 inches 1400 1040	4159 2021 4159 3021 4P 4159 4021	Contact NO/NC 4159 0021 Low level 4159 0022	4158 4021
	3 P	4150 3021						
	4 P	4150 4021						
400 A	2 P	4150 2041		S3 type Black I - 0 - II 4, 4X 143D 3113	S3, S4 type 200 mm 7.9 inches 1401 1520 320 mm 12.6 Inches 1401 1532	2P 4159 2041 3P 4159 3041 4P 4159 4041		2P & 3P 4158 3041 4P 4158 4041
	3 P	4150 3041						
	4 P	4150 4041						
600 A	3 P	4150 3060	Black 4199 7012		200 mm 7.9 inches 1401 1520 320 mm 12.6 Inches 1401 1532	3 P 4159 3063 4 P 4159 4063		3 P 1609 3063 4 P 1609 4063
	4 P	4150 4060						
800 A	3 P	4150 3080	Black 4199 7062	S4 type Black I - 0 - II 4, 4X 144D 3813⁽¹⁾	400 mm 15.7 Inches 1401 1540	3 P 4159 3080 4 P 4159 4080	Contact NO/NC as standard	3 P 1609 3080 4 P 1609 4080
	4 P	4150 4080						
1200 A	3 P	4150 3120						
	4 P	4150 4120						

(1) Padlockable in all 3 positions.

SIRCOVER UL1008/98

Changeover switches standards UL and CSA
100 to 1200 A

Accessories

Direct handle

Rating (A)	Colour	Handle type	Reference
100 ... 400	Black	1 lever	4199 4012
600 ... 1200	Black	2 lever	2799 7042



access_129_a_1_cat

External handle

Rating (A)	Handle type	Colour	Nema type	Lockable in 3 positions	Reference
100 ... 200	S2	Black	4, 4X	no	142D 2113
100 ... 200	S2	Red/Yellow	4, 4X	no	142E 2113
100 ... 200	S2	Black	1, 3R, 12	no	142F 2113
100 ... 200	S2	Red/Yellow	1, 3R, 12	no	142G 2113
100 ... 200	S2	Black	4, 4X	yes	142D 2813
100 ... 200	S2	Red/Yellow	4, 4X	yes	142E 2813
100 ... 200	S2	Black	1, 3R, 12	yes	142F 2813
100 ... 200	S2	Red/Yellow	1, 3R, 12	yes	142G 2813
400 ... 600	S3	Black	4, 4X	no	143D 3113
400 ... 600	S3	Red/Yellow	4, 4X	no	143E 3113
400 ... 600	S3	Black	1, 3R, 12	no	143F 3113
400 ... 600	S3	Red/Yellow	1, 3R, 12	no	143G 3113
400 ... 600	S3	Black	4, 4X	yes	143D 3813
400 ... 600	S3	Red/Yellow	4, 4X	yes	143E 3813
400 ... 600	S3	Black	1, 3R, 12	yes	143F 3813
400 ... 600	S3	Red/Yellow	1, 3R, 12	yes	143G 3813
800 ... 1200	S4	Black	4, 4X	no	144D 3113
800 ... 1200	S4	Black	1, 3R, 12	no	144E 3113
800 ... 1200	S4	Black	1, 3R, 12	no	144F 3113
800 ... 1200	S4	Red/Yellow	1, 3R, 12	no	144G 3113
800 ... 1200	S4	Black	4, 4X	yes	144D 3813
800 ... 1200	S4	Red/Yellow	4, 4X	yes	144E 3813
800 ... 1200	S4	Black	1, 3R, 12	yes	144F 3813
800 ... 1200	S4	Red/Yellow	1, 3R, 12	yes	144G 3813
800 ... 1200	S5	Black	1, 3R, 12 ⁽¹⁾	no	1453 8113
800 ... 1200	S5	Red/Yellow	1, 3R, 12 ⁽¹⁾	no	1454 8113
800 ... 1200	V1	Black	1, 3R, 12 ⁽¹⁾	no	4199 7149

(1) For 4, 4X please consult us.

Use

The handle interlocking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position. Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function (Not S5 and V handles) with the use of a tool (authorized persons only).

The interlocking function is restored when the door is re-closed.



access_150_a_1_cat



access_151_a_1_cat



access_152_a_1_cat



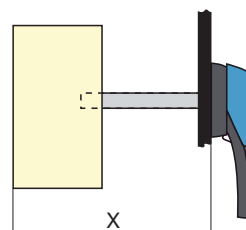
access_296_a_2_cat

Shaft for external handle

Rating (A)	Handle type	Length (in)	Length (mm)	Dimension X (in)	Dimension X (mm)	Reference
100 ... 200	S2 type	7.9	200	10 ... 14.3	254 ... 362	1400 1020
100 ... 200	S2 type	12.6	320	10 ... 19	254 ... 482	1400 1032
100 ... 200	S2 type	15.7	400	10 ... 22.1	254 ... 562	1400 1040
400	S3 type	7.9	200	12 ... 18.4	305 ... 467	1401 1520
400	S3 type	12.6	320	12 ... 23.1	305 ... 587	1401 1532
400	S3 type	15.7	400	12 ... 26.3	305 ... 667	1401 1540
600	S3 type	7.9	200	20 ... 23.4	508 ... 594	1401 1520
600	S3 type	12.6	320	20 ... 28.1	508 ... 714	1401 1532
600	S3 type	15.7	400	20 ... 31.3	508 ... 794	1401 1540
800 ... 1200	S4 type	7.9	200	20 ... 23.4	508 ... 594	1401 1520
800 ... 1200	S4 type	12.6	320	20 ... 28.1	508 ... 714	1401 1532
800 ... 1200	S4 type	15.7	400	20 ... 31.3	508 ... 794	1401 1540
800 ... 1200	V1 / S5 type	12.6	320	20 ... 28.1	508 ... 714	4199 3018
800 ... 1200	V1 / S5 type	15.7	400	20 ... 31.3	508 ... 794	4199 3019



access_369_a_1_cat



access_202_a_1_x_cat

Bridging bars

Use

Creation of a common point, above or below the switch, between positions I and II.

Rating (A)	No. bridging bar	Reference
100 ... 200	2	4159 2021
100 ... 200	3	4159 3021
100 ... 200	4	4159 4021
400	2	4159 2041
400	3	4159 3041
400	4	4159 4041
600	3	4159 3063
600	4	4159 4063
800 ... 1200	3	4159 3080
800 ... 1200	4	4159 4080



access_205_a_1_cat

Terminal protection screen

Use

Top or bottom protection against direct contact with terminals or connecting parts.

Rating (A)	No. of poles	Reference
100 ... 200	2P / 3P	4158 3021
100 ... 200	4 P	4158 4021
400	2P / 3P	4158 3041
400	4 P	4158 4041
600	6 P	1609 3063
600	4 P	1609 4063
800 ... 1200	3 P	1609 3080
800 ... 1200	4 P	1609 4080



access_207_a_1_cat

Auxiliary contacts

Use

Pre-break and signalisation of positions .
For low level ACs and other ACs contact us.

Electrical characteristics

A300.

NO/NC auxiliary contact

Rating (A)	Contact (s)	Reference
100 ... 400	NO/NC on position 1 and 2	4159 0021
100 ... 400	Low level NO/NC on position 1 and 2	4159 0022
600 ... 1200	NO/NC on position 1 and 2	as standard



access_065_a_1_cat

Terminal lugs

Use

Connection of bare copper cables onto the terminals (without lugs).

Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
100 ... 200	6 - 300MCM	1	2	Cu / Al	3954 2020
100 ... 200	6 - 300MCM	1	3	Cu / Al	3954 3020
100 ... 200	6 - 300MCM	1	4	Cu / Al	3954 4020
400	4 - 600MCM	1	2	Cu / Al	3954 2040
400	4 - 600MCM	1	3	Cu / Al	3954 3040
400	4 - 600MCM	1	4	Cu / Al	3954 4040
400	2x (#6 - 350MCM)	2	2	Cu / Al	3954 2041
400	2x (#6 - 350MCM)	2	3	Cu / Al	3954 3041
400	2x (#6 - 350MCM)	2	4	Cu / Al	3954 4041
600	2x (#2 - 600MCM)	2	3	Cu / Al	3954 3060
600	2x (#2 - 600MCM)	2	4	Cu / Al	3954 4060
800 ... 1200	2x 2x(#2 - 600MCM)	2	6	Cu / Al	3954 3120
800 ... 1200	2x 2x(#2 - 600MCM)	2	8	Cu / Al	3954 4120



ul_032_a

SIRCOVER UL1008/98

Changeover switches standards UL and CSA

100 to 1200 A

Characteristics

Characteristics according to UL1008

	100 to 1200 A					
General use rating (A)	100 A	200 A	400 A	600 A	800 A	1200 A
Operation voltage	600	600	600	600	600	600
Short circuit rating at 600 VAC (kA)	100	100	65	100	100	100
Type of fuse	J	J	J	L	L	L
Max. fuse rating (A)	200	400	600	800	1000	1600
Short circuit rating with circuit breaker (kA/ms)	10 / 25	10 / 25	14 / 50	35 / 50	35 / 50	35 / 50

Operational power / current max Operational 1 ph

240 VAC Total system (A)	100	100	200			
240 VAC Resistive load (A)	100	200	400			

Operational power / current max Operational 3 ph

240 VAC Total System (A)	100	100	200	400	700	700
240 VAC Resistive load (A)	100	200	400	600	800	1200
480 VAC Total System (A)	100	100	200	350	600	600
480 VAC Resistive load (A)	100	200	400	600	800	1200
600 VAC Resistive load (A)	100	200	400	600	800	1200

Mechanical endurance

Endurance (number of operating cycles)	6050	6050	6050	6050	3550	3550
--	------	------	------	------	------	------

Connection terminals

Min. connection section / AWG	#6	#6	#4 / 2 x #6	2x #2	4x #2	4x #2
Max. connection section / AWG	300MCM	300MCM	600MCM / 2x 350MCM	2x 600MCM	4x 600MCM	4x 600MCM

Characteristics according to UL98/CSA22.2#4

	100 to 1200 A					
General use rating at 600VAC and 250VDC (A)	100 A ⁽¹⁾	200 A ⁽²⁾	400A ⁽²⁾	600 A	800 A	1200 A
Short circuit rating at 600 VAC (kA)	200	200	200	200	100	100
Type of fuse	J	J	J	J	L	L
Max. fuse rating (A)	100	200	400	600	800	1200

Max. motor, hp / FLA 1 ph motor max.

240 VAC	10 / 50	10 / 50				
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Max. motor, hp / FLA 3 ph motor max.

220-240 VAC	30 / 80	72 / 192	125 / 312	200 / 480		
440-480 VAC	75 / 96	150 / 180	250 / 302	400 / 477		
600 VAC	100 / 99	200 / 192	350 / 336	500 / 472		

Max. motor power, hp / DC FLA motor max.

125 VDC ⁽¹⁾	10 / 76	15 / 112	20 / 148			
250 VDC ⁽²⁾	15 / 55	15 / 55	50 / 173			

Mechanical characteristics

Endurance (number of operating cycles)	10000	8000	6000	6000	3500	3500
Operating torque (lbs.in/Nm)	88.5/10	88.5/10	128.3/14.5	327.5/37	442.5/50	442.5/50

Auxiliary contacts

Electrical characteristics	A300	A300	A300	A300	A300	A300
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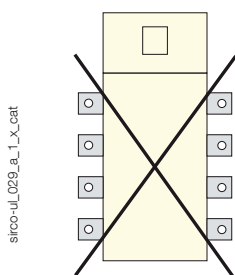
(1) With 2 poles in series

(2) With 3 poles in series

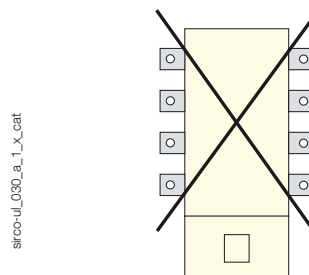
(3) General use rating at 600 VDC with 3 poles in series

Mounting orientation

SIRCOVER - 100 to 400 A

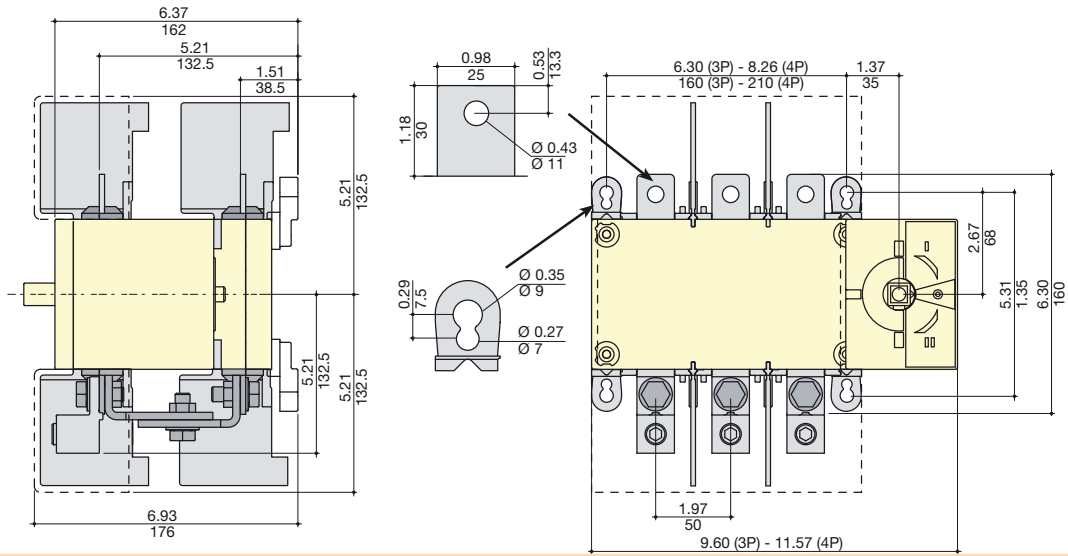


SIRCOVER - 600 to 1200 A



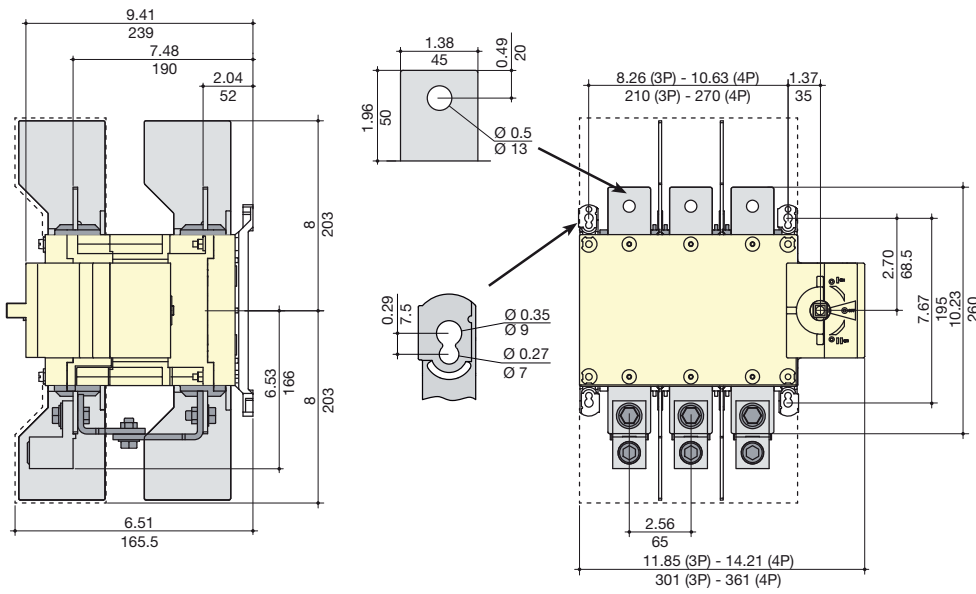
Dimensions (in/mm)

100 to 200 A



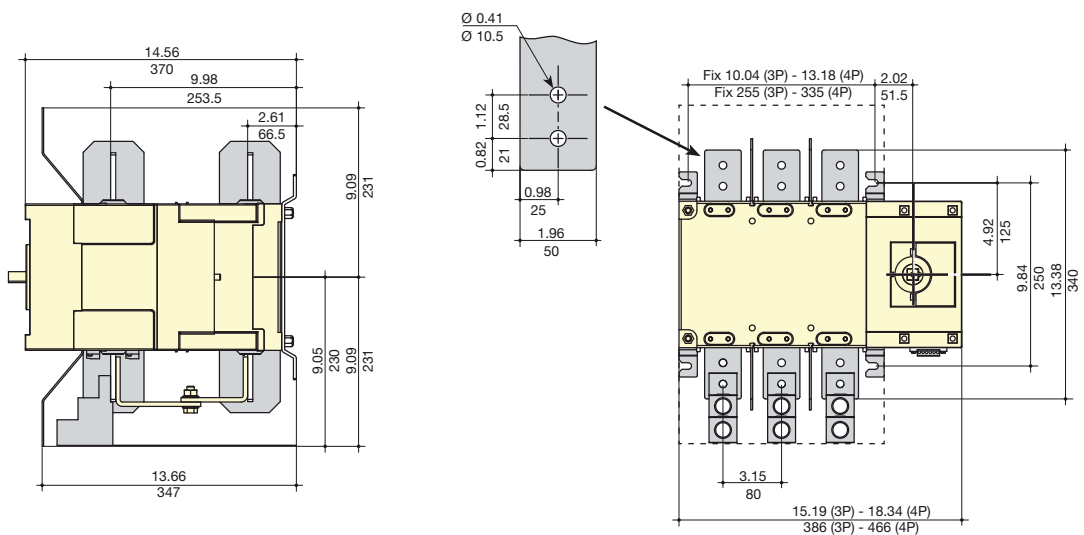
svr-ul_015_a_x_cat

400 A



svr-ul_016_a_x_cat

600 A



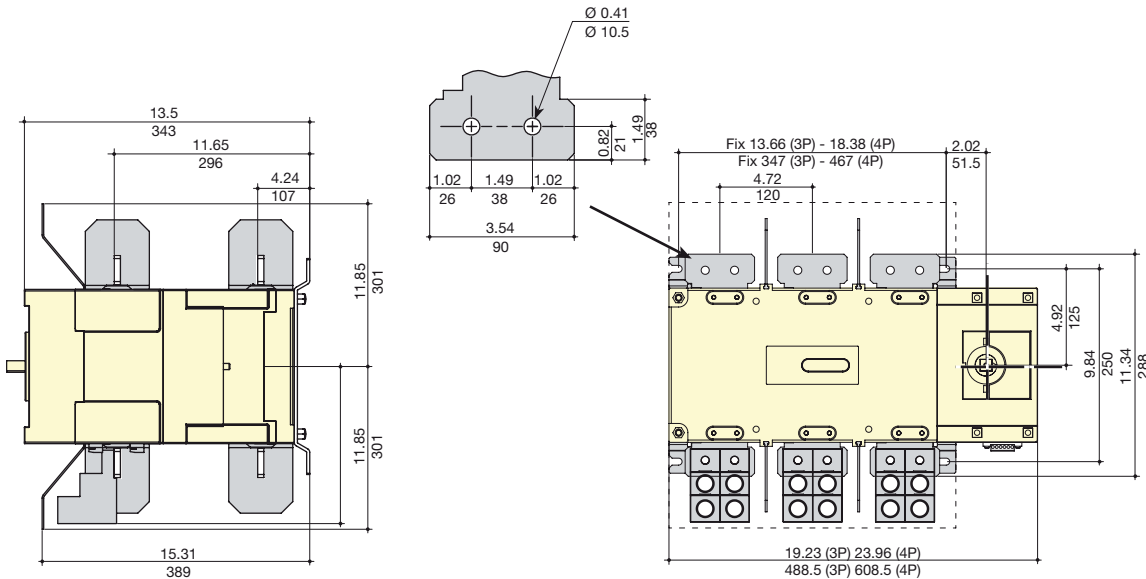
svr-ul_003_a_x_cat

SIRCOVER UL1008/98

Changeover switches standards UL and CSA
100 to 1200 A

Dimensions (in/mm) (continued)

800 to 1200 A



svr-ul_004_b_x_cat

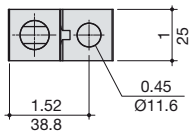
Terminal lugs (in/mm)

SIRCOVER 100 to 200 A

SIRCOVER 400 A

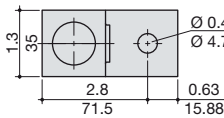
SIRCOVER 400 A

SIRCOVER 600 to 1200 A



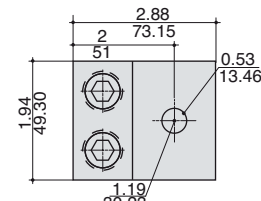
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300 kcmil



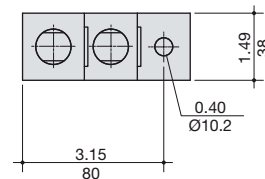
svr-ul_010_a_1_x_cat

600 kcmil



svr-ul_026_b_1_cat

2 x 350 kcmil



svr-ul_116_b_1_x_cat

2 x 600 kcmil

External handles dimensions (in/mm)

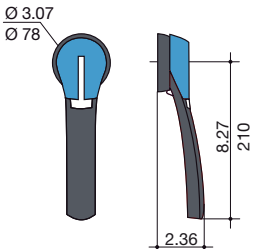
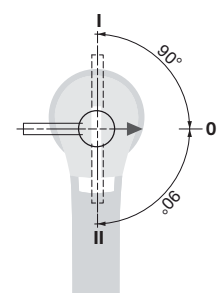
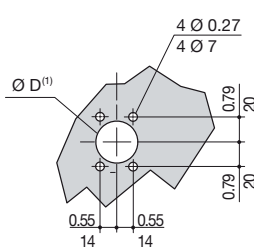
SIRCOVER 100 and 200 A

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

svr-ul_010_a_1_gb_cat

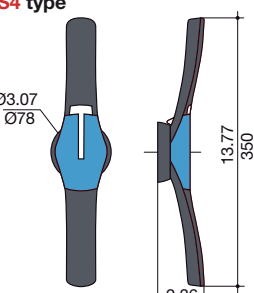
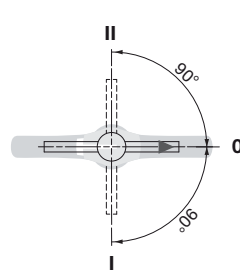
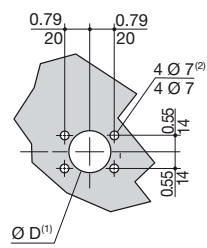
External handles dimensions (in/mm)

SIRCOVER 400 and 600 A

Handle type	Front operation Direction of operation	Door drilling
<p>S3 type</p> 		

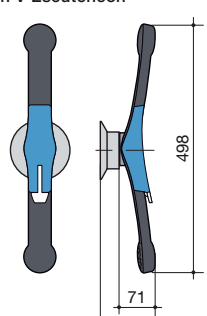
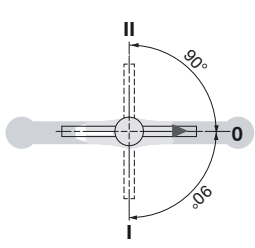
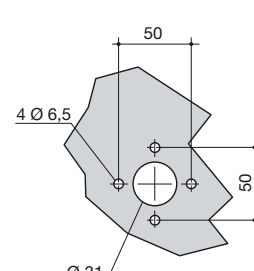
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SIRCOVER 800 to 1200 A

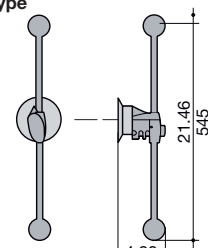
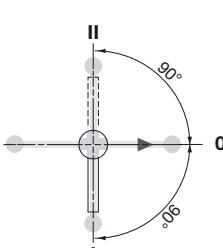
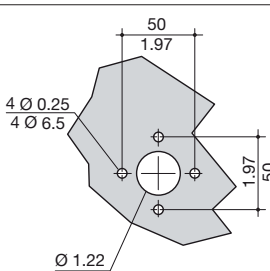
Handle type	Front operation Direction of operation	Door drilling
<p>S4 type</p> 		

svr-ul_011_a_1_gb_cat

SIRCOVER 800 to 1200 A

Handle type	Front operation Direction of operation	Door drilling
<p>S5 type with V Escutcheon</p> 		

poign_023_a_1_gb_cat

Handle type	Front operation Direction of operation	Door drilling
<p>V1 type</p> 		

sirco-ul_031_a_1_gb_cat



SIRCORDER PV

Changeover switches for photovoltaic applications
from 200 to 630 A

Changeover
switches



The solution for

- > Energy management.
- > Continuity of supply for PV applications.



Strong points

- > Stable positions.
- > Secured breaking.
- > Patented safety disconnection.

Conformity to standards

- > IEC 60947-3



A compact solution.

- > The products are available in enclosures.

Function

SIRCORDER PV switches are manual multipolar changeover switches with positive break indication. They ensure source inversion or changeover under load of two photovoltaic installation circuits.

Advantages

Stable positions

SIRCORDER PV switches have three stable positions which are not affected by voltage drops or vibrations.

Secured breaking

Simultaneous upstream and downstream isolation and positive break indication.

Patented safety disconnection

A glass fibre reinforced polyester break chamber with an arc extinguishing system provides a patented safety disconnection system offering rapid extinguishing of the electric arc up to 1000 VDC and current interruption up to 630 A.

What you need to know

A photovoltaic electrical installation is an application that requires switching devices which fully meet the needs of operational reliability and operational safety intervention for this type of installation.

According to IEC 60364 (Part 7-7-12), the characteristics must withstand overcurrents up to 1.25 times the rated short-circuit current (I_{sc} , S_{tc}).

To date, as there is no specific standard regarding 'switchgear for PV installation', the manufacturer can only refer to IEC 60947 and related use categories depending on the type of loads and normal overload conditions.

The utilisation category DC21 defines a device withstand capacity up to 1.5 times the rated current of the installation, with a time constant L/R 1ms, which is significantly above the requirements by the standard IEC 60364-7-712 and PV needs on the basis of these criteria.

However, the manufacturer has the responsibility to propose, according to his expertise, devices meeting the specific requirements of these applications, even if they are not necessarily defined in standards.

Application

The choice of the material cannot be separated from the concept of energy management.

Many applications may require continuous power supply during a PV generator fault, when an isolated site has been electrified, in developing countries, in telecommunications or pumping. SIRCOVER PV changeover switches ensure source inversion or switching under load between two circuits.

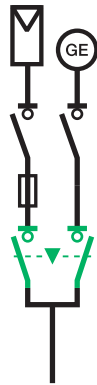
Example: Switching from DC to AC photovoltaic grid.

Source transfer: manual changeover between two photovoltaic sources or a photovoltaic source and a generator set.

Equipment earthing as for a string of photovoltaic panels.

Load inverter : switching the power supply from one load to another in order to guarantee continuous power supply during maintenance operations.

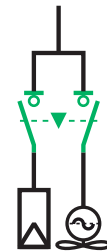
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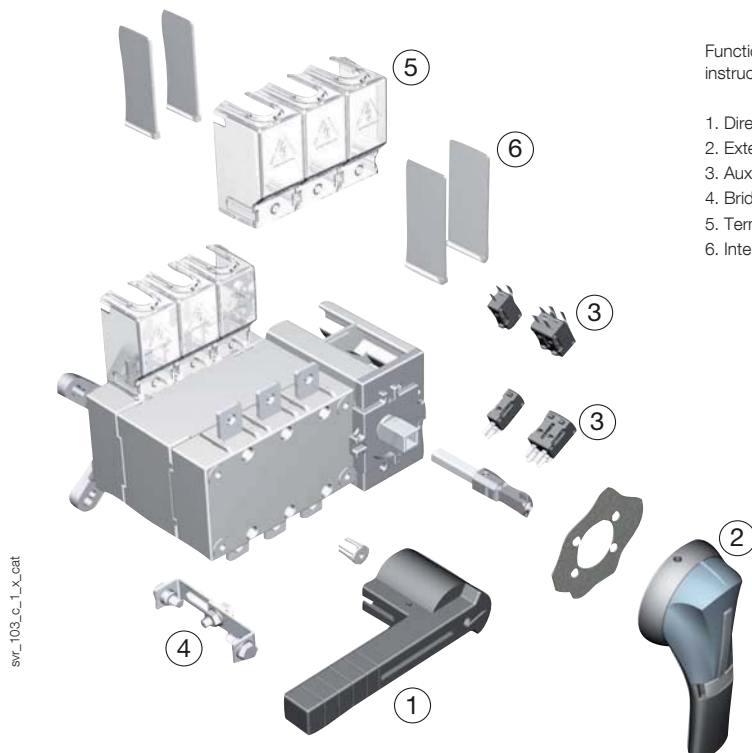
comut_036_a_1_x_cat



comut_037_a_1_x_cat



Functional diagram



svr_103_c_1_x_cat

Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation
2. External front operation
3. Auxiliary contacts
4. Bridging bar.
5. Terminal shrouds.
6. Inter-phase barrier.

SIRCOVER PV

Changeover switches for photovoltaic applications
from 200 to 630 A

References

SIRCOVER PV I-0-II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bar	Auxiliary contact	Terminal screens	Terminal shrouds	
200 A	3 P	41PV 3020	Black 4199 5012	S2 type Black IP55 1421 2113 Black IP65 1423 2113 ⁽¹⁾	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾	2 P 4109 2025	2 nd contact NO/NC 4109 0021 ⁽²⁾	3 P 1509 3025 4 P 1509 4025		
	4 P	41PV 4020								
250 A	3 P	41PV 3025								
	4 P	41PV 4025								
400 A	3 P	41PV 3040								
	4 P	41PV 4040								
500 A	3 P	41PV 3050		S3 type Black IP65 1433 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	2 P 4109 2063		3 P 1509 3063 ⁽³⁾ 4 P 1509 4063 ⁽³⁾		3 P 2694 3051 ⁽⁴⁾ 4 P 2694 4051 ⁽⁴⁾
	4 P	41PV 4050								
630 A	3 P	41PV 3063								
	4 P	41PV 4063								

(1) Standard.

(2) 2 pieces: one for position I and one for position II.

(3) 2 pieces: one for top side and another for bottom side

(4) To shroud switch top and bottom 2 references required.

Accessories

Direct operation handle

Rating (A)	Handle colour	Handle type	Reference
200 ... 630	Black	Single lever	4199 5012



access_114_a_1_cat

External operation handle

Use

Door interlocked external front operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.

Rating (A)	External IP ⁽¹⁾	Handle type	Reference
200 ... 250	IP55	S2 type	1421 2113
200 ... 250	IP65	S2 type	1423 2113
400 ... 630	IP65	S3 type	1433 3113

(1) IP: protection degree according to IEC 60529 standard.



access_150_a_1_cat

S2 type handle



access_151_La_2_cat

S3 type handle

S-type handle adapter

Use

Enables S type handles to be fitted in place of existing older style SOCOMEC handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth.

Handle colour	External IP ⁽¹⁾	To be ordered in multiples of	Reference
Black	IP65	1	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



access_187_a_1_cat

Alternative S-type handle cover colours

Use

For single lever handles type S2 and S3. Other colours: Please consult us.

Colour	To be ordered in multiples of	Handle	Reference
Light grey	50	S2, S3 type	1401 0001
Dark grey	50	S2, S3 type	1401 0011



access_188_a_2_cat

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm. Required for a shaft length over 320 mm.



access_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

Shaft for external handle

Use

Standard lengths:

- 200 mm,
- 320 mm.

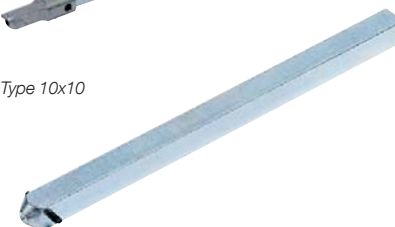
Other lengths: Please consult us.

Rating (A)	Length (mm)	Dimension X (mm)	Type	Reference
200 ... 250	200	210 ... 310	10 x 10	1400 1020
200 ... 250	320	210 ... 430	10 x 10	1400 1032
400 ... 630	200	425 ... 577	15 x 12	1401 1520
400 ... 630	320	425 ... 697	15 x 12	1401 1532



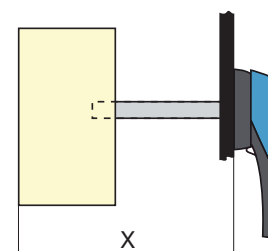
Type 10x10

access_369_a_1_cat



Type 10x10

access_144_b_1_cat



access_202_a_1_cat

SIRCOVER PV

Changeover switches for photovoltaic applications
from 200 to 630 A

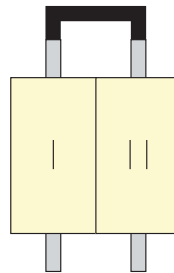
Accessories (continued)

Bridging bars

Use

For creating a common connection between switches I & II, on the top or bottom side of the SIRCOVER, to enable, for example, the load to be fed from either incoming source (I or II).

Rating (A)	No. of poles	Section (mm)	Mounting	Reference
200 ... 250	1 P	25 x 2.5	client	4109 0025
200 ... 250	2 P	25 x 2.5	client	4109 2025
400 ... 630	1 P	50 x 5	client	4109 0063
400 ... 630	2 P	50 x 5	client	4109 2063



svr_124_a_1_cat

access_205_a_2_cat

Bridging bars for connecting poles in series

Use

The bridging bars facilitate the connection of the poles in series, allowing the following configurations:

- Bottom/Bottom
- Top/Top
- Top/Bottom
- Top/Bottom

Connection diagrams: See "Poles connections in serie", page 365.

Rating (A)	Number of poles of the device in series	Pack	Reference
200 ... 250	2 ⁽¹⁾	1 piece	2609 0025
200 ... 250	4 ⁽¹⁾	2 pieces	2609 2025
400 ... 630	2 ⁽¹⁾	1 piece	2609 0063
400 ... 630	4 ⁽¹⁾	2 pieces	2609 2063

(1) on one source

Auxiliary contact

Use

Pre breaking and signalling of positions I and II: 1 or 2 NO/NC auxiliary contacts in each position. Low level auxiliary contacts: please consult us.

Connection to the control circuit

6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

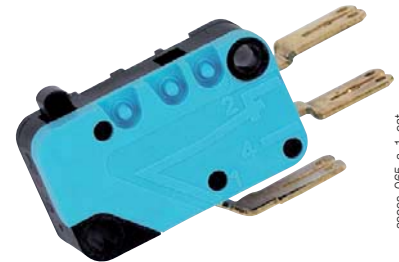
Characteristics

Rating (A)	Nominal current (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC AC-13	48 VDC AC-13
200 ... 630	16	12	8	14	6

References

NO/NC changeover contact

Rating (A)	Contact(s)	Reference
200 ... 630	1 st /2 nd	4109 0021



access_065_a_1_cat



svr_058_a_1_cat

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Rating (A)	No. of poles	Position	Reference
400 ... 630	3 P	top / bottom	2694 3051 ⁽¹⁾
400 ... 630	4 P	top / bottom	2694 4051 ⁽¹⁾

(1) To shroud switch top and bottom 2 references required.



access_206_a_2_cat

Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Pack	Reference
200 ... 250	3 P	top / bottom	1	1509 3025
200 ... 250	4 P	top / bottom	1	1509 4025
400 ... 630	3 P	top / bottom	2	1509 3063
400 ... 630	4 P	top / bottom	2	1509 4063



access_207_a_2_cat

Key handle interlocking system

Use

Using padlock (not supplied). This device is factory mounted in the direct or external operation handle and allows the use of up to 3 padlocks.

Locking:

- a special handle which receives the lock bolt on SIRCOVER CD 125 to CD 630 A (Fig. 2)

The interlocking positions are either determined as standard or configured by the user by removing the pre-formed tabs. Padlocking and locking can be combined.

Padlocking in position I, 0 or II			
Rating (A)	Operation	Figure	Reference
200 ... 250	external	1	1423 2813

Locking using RONIS EL11AP lock in position 0 (not supplied)			
Rating (A)	Operation	Figure	Reference
200 ... 630	direct	2	4109 1006 ⁽¹⁾
200 ... 630	external	3	1499 7701

(1) Specific handle included.

Locking using RONIS EL11AP lock in positions I, 0, II (not supplied)			
Rating (A)	Operation	Figure	Reference
200 ... 630	direct	2	4109 1002 ⁽¹⁾
200 ... 250	external	3	1499 7701

(1) Specific handle included.

Locking using type K CASTELL lock (not supplied)			
Rating (A)	Operation	Figure	Reference
200 ... 630	external	3	1499 7702

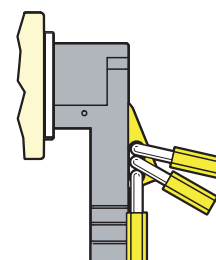


Fig. 1

access_061_a_2_x_cat

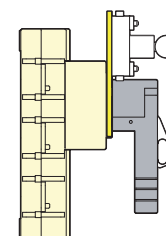


Fig. 2

access_001_a_1_x_cat

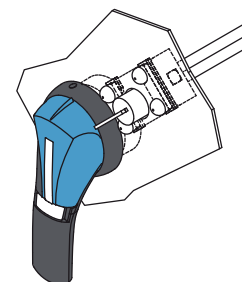


Fig. 3

access_168_a_1_x_cat

Other specific accessories

- Low level auxiliary contacts.

SIRCOVER PV

Changeover switches for photovoltaic applications

from 200 to 630 A

Characteristics according to IEC 60947-3

200 to 630 A

Thermal current I_{th} at 40°C	200 A	250 A	400 A	500 A	630 A
Rated insulation voltage U_i (V)	1200	1200	1200	1200	1200
Rated impulse withstand voltage U_{imp} (kV)	8	8	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	Number of poles of the device	Number of pole(s) in series per polarity	(A)	(A)	(A)	(A)	(A)
750 VDC	DC-21 B	3 P	2 P + and 1 P -	200	250	400	500	630
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	200	250	400	500	630

Connection

Rigid Cu cable cross-section (mm ²)	95	120	240	2 x 150	2 x 185
Maximum Cu busbar width (mm)	32	32	32	40	40
Tightening torque min (Nm)	20	20	20	40	40

Mechanical characteristics

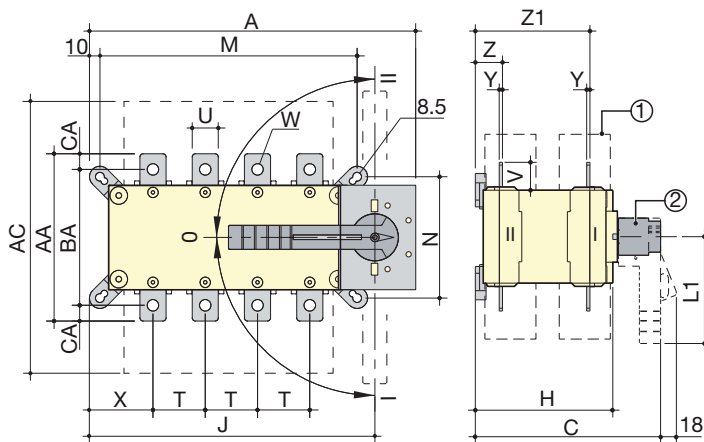
Durability (number of operating cycles) ⁽¹⁾	10000	10000	5000	5000	5000
Weight of a 3 pole device (kg)	3,8	3,8	9	9	9
Weight of a 4 pole device (kg)	4,6	4,6	11	11	11

(1) Improved endurances: Please consult us.

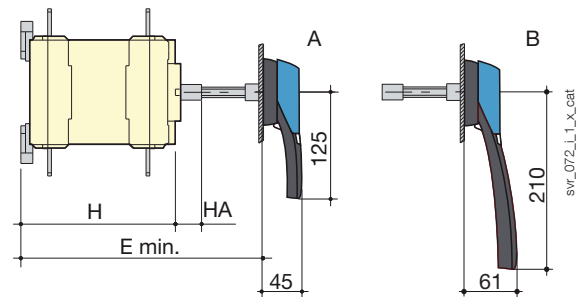
Dimensions

SIRCOVER 200 to 630 A

Direct front operation



External front operation



A. S2 type handle for external operation: 200 to 400 A.
B. S3 type handle for external operation: 500 to 630 A.

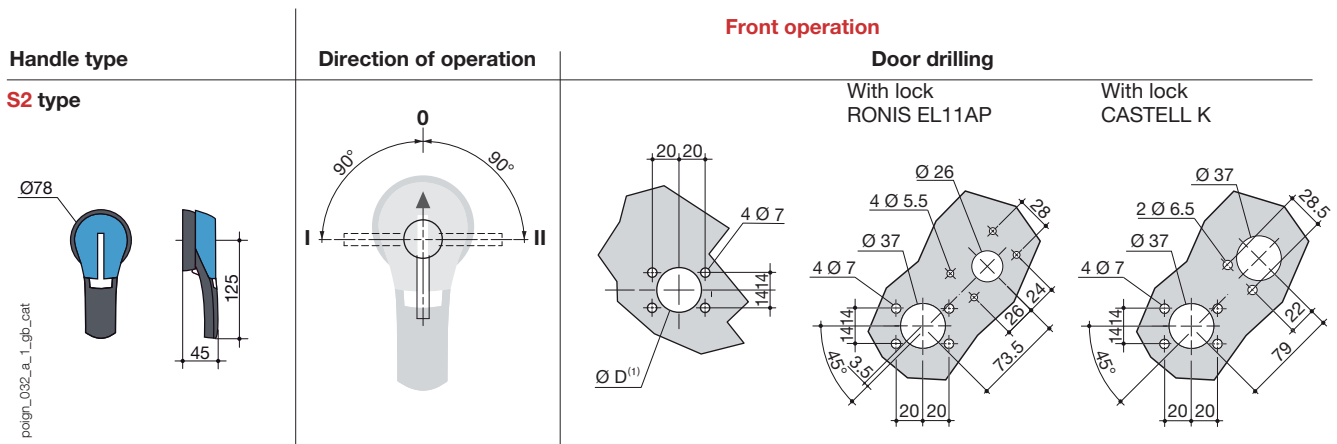
1. Terminal shrouds.
2. Direct handle operation:

- 200 to 400 A: L1 = 140 mm.
- 500 to 630 A: L1 = 210 mm.

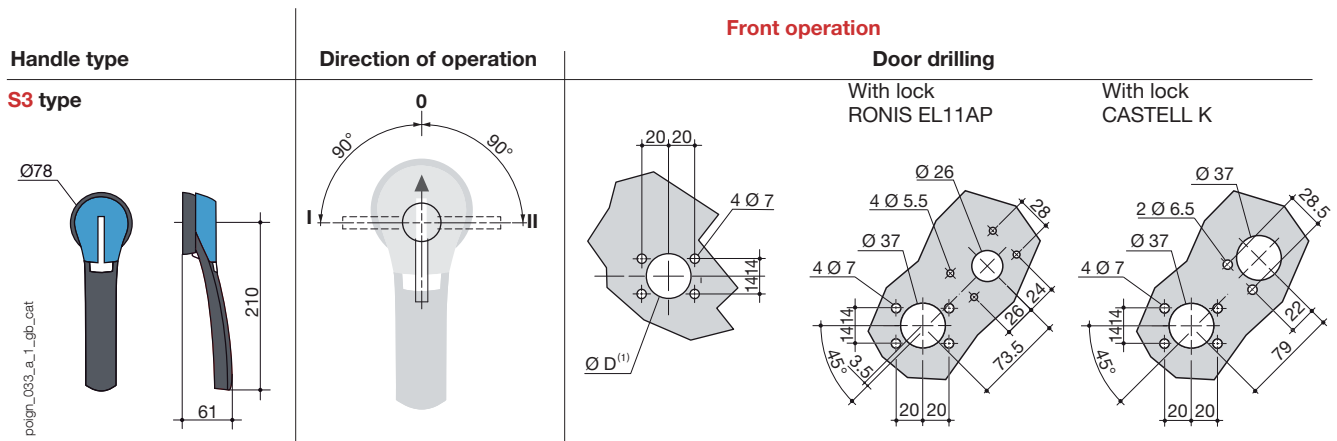
Rating (A)	Overall dimensions				Terminal shrouds	Switch body				Switch mounting				Connection										
	A 3p.	A 4p.	C	E min	AC	H	HA	J 3p.	J 4p.	M 3p.	M 4p.	N	T	U	V	W	X 3p.	X 4p.	Y	Z	Z1	AA	BA	CA
200	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	25	30	11	61	61	3,5	30	124	160	130	15
250	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	25	30	11	61	61	3,5	30	124	160	130	15
400	319	379	295	285 ... 514	400	225	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	260	220	20
500	319	379	295	285 ... 514	400	225	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	260	220	20
630	319	379	295	285 ... 514	400	225	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	260	220	20

Dimensions for external handles

SIRCOVER 200 to 600 A



(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.

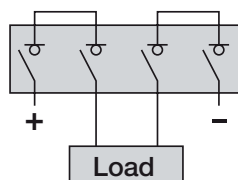
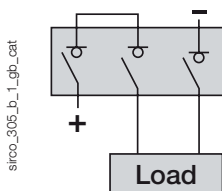


(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.

Pole connections in series⁽¹⁾

3 poles - bottom / top

4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions



ATyS M

Motorised and automatic changeover switches
from 40 to 160 A

Changeover
switches



The solution for

- > Healthcare buildings.
- > Generator manufacturers.
- > Data centres.



Strong points

- > Proven technology.
- > Stable positions.
- > Secure operation.
- > Choice of configuration interface.

Conformity to standards

- > IEC 60947-3
- > IEC 60947-6-1
- > GB 14048.11



Approvals and certifications⁽¹⁾



⁽¹⁾ Product reference on request.

Function

ATyS M is a range of single-phase or three-phase modular motorised changeover switches with positive break indication. They enable on load changeover switching of two supply sources in remote control, automatic or manual mode. They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Proven technology

Two mechanically interlocked SIRCO MV load break switches provide rapid switching, excellent dynamic withstand and a high number of operations.

Stable positions

The ATyS M has three stable positions which are not affected by voltage drops or vibrations, thus protecting your load against network interference.

Secure operation

ATyS M provide positive break indication, confirming switch position, and a back-up manual operation function.

Choice of configuration interface

ATyS M 6 automatic changeover switches are available with a simple or an advanced integrated configuration and control interface:

- ATyS M 6s are configured through the adjustment of dip switches and potentiometers.
- ATyS M 6e are configured through the use of pushbuttons and a display.

Return to position 0

Depending on its configuration, the ATyS M 6e enables a return to position 0 if the power is cut.

Modes of operation



AUT/MAN control



Back-up manual operation

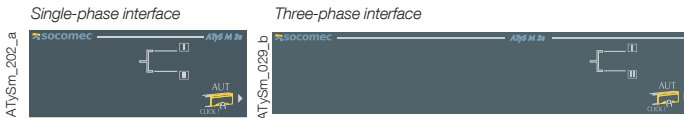


Padlocking facility

What you need to know

On ATyS M 3s models

Power supply



ATyS M 3s is equipped with two independent 230 VAC power inputs (176-288 VAC), 50/60 Hz (45/65 Hz).

These two power supplies can be connected individually one to switch I and the other to switch II:

- Power supply 101-102 must be available to reach position I
- Power supply 201-202 must be available to reach position II.

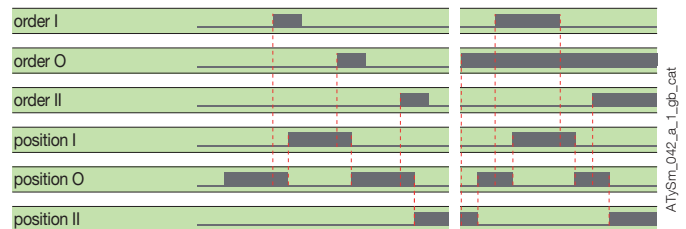
The use of a dual power supply (DPS), or an external supply module, provides full security of the 3 position commands with the availability of either supply.

In this case, both the supply inputs must be connected in parallel in order for them both to be supplied from the output of the DPS.

- Electrical control

The positions are controlled by volt-free contacts which may come from an external automatic controller (e.g. ATyS C30) or, for example, pushbuttons. The positions are stable, even without a supply. Two types of control logic are available:

- Impulse logic
 - A switching command of at least 60 ms is necessary to initiate operation.
 - The first command (order) received (I or II) has priority as long as it remains present.
- Contactor logic
 - Order 0 must be maintained to activate contactor logic (313-317).
 - If command I or II disappears, the device returns to zero position, if power supply is available.



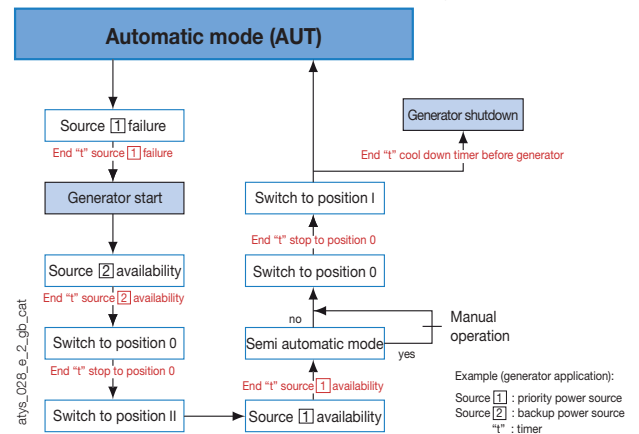
ATyS M 6s and M 6e models

Power supply

- ATyS M 6 products are self powered from incoming supplies: 230 VAC (176-288 VAC for the ATyS M 6s and 160-305 VAC for the ATyS M 6e), 50/60 Hz (45-65 Hz).
- For three-phase, two versions are available:
 - 230 / 400 VAC with distributed neutral conductor: Product is powered between phase and neutral (if there is no neutral, an autotransformer is required)
 - 127 / 230 VAC with or without distributed neutral conductor: product is powered between 2 phases.
- For single-phase, one version is available:
 - 230 VAC networks: Product is powered between phase and neutral.
- The neutral conductor can be connected to the left or right side of each switch.

Automatic control

- ATyS M 6s and M 6e are equipped with a sequence logic.



Configuration

ATyS M 6s

Single-phase interface



Three-phase interface



- Common points between the three-phase and single-phase versions:
 - 2 potentiometers (normal supply loss and return time delays)
 - 2 dip-switches (Pause for 2 seconds in position 0 during switching I->II; Transformer/Transformer or Transformer/Genset application).
- 4 LEDs (Source availability indicators; "AUT" Automatic mode; Fault).
- 3 inputs for external control (Inhibition of the automatic mode; Remote test on load (Priority selection for Transformer/Transformer); Manual retransfer from the alternate supply to the normal supply).
- 1 NO bi-stable output relay for generator starting/stopping.
- 1 NC relay for product availability.
- Specific to three-phase ATyS M:
 - 2 additional potentiometers (Nominal voltage; Voltage/frequency thresholds)
 - 2 additional dip switches (50 or 60 Hz; network selection)
- Specific to the single-phase ATyS M:
 - PRG button: voltage and nominal frequency auto configuration.

ATyS M 6e

Three-phase interface



- Applications: Transformer/Genset, Transformer/Transformer, with or without priority.
- Display + keyboard (Device configuration; Displays supply measurements; Test and control mode access).
- LEDs (Product Power On; Source availability indicators; Position indication; "AUT" Automatic mode; TEST/CONTROL Mode; Fault).
- 3 configurable inputs.
- 3 configurable output relays.
- 1 configurable output relay for generator starting/stopping.
- Connection of a remote interface ATyS D10 or D20.
- RS485 MODBUS communication (COM version).

References

ATyS M 3s

Rating (A)	No. of poles	Power supply voltage	ATyS M 3s	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact block
40 A	2 P	230 VAC	1323 2004	2 P 1309 2006 4 P 1309 4006	2 pieces 1399 4006	2 pieces 2294 4016 ⁽¹⁾	1 st A/C block included
	4 P	230 VAC	1323 4004				
63 A	2 P	230 VAC	1323 2006				
	4 P	230 VAC	1323 4006				
80 A	2 P	230 VAC	1323 2008				
	4 P	230 VAC	1323 4008				
100 A	2 P	230 VAC	1323 2010				
	4 P	230 VAC	1323 4010				
125 A	2 P	230 VAC	1323 2012				
	4 P	230 VAC	1323 4012				
160 A	2 P	230 VAC	1323 2016	1309 2016			
	4 P	230 VAC	1323 4016	1309 4016			

(1) For the three-phase version (4 P), for upstream and downstream protection, please order the reference twice. For the single-phase version (2 P) please order the reference once.

(2) 1 NO/NC contact block for positions I, 0 and II.

ATyS M 6s

Rating (A)	No. of poles	Network (VAC)	ATyS M 6s	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact block	Sealable cover
40 A	2 P	230	1353 2004	2 P 1309 2006 4 P 1309 4006	2 pieces 1399 4006	2 pieces 2294 4016 ⁽¹⁾	1 piece	2 P 1359 2000 4 P 1359 0000
	4 P	127/230	1353 4004					
	4 P	230/400	1354 4004					
63 A	2 P	230	1353 2006					
	4 P	127 / 230	1353 4006					
	4 P	230 / 400	1354 4006					
80 A	2 P	230	1353 2008					
	4 P	127 / 230	1353 4008					
	4 P	230 / 400	1354 4008					
100 A	2 P	230	1353 2010					
	4 P	127 / 230	1353 4010					
	4 P	230 / 400	1354 4010					
125 A	2 P	230	1353 2012					
	4 P	127 / 230	1353 4012					
	4 P	230 / 400	1354 4012					
160 A	2 P	230	1353 2016	2 P 1309 2016				
	4 P	127 / 230	1353 4016	4 P 1309 4016				
	4 P	230 / 400	1354 4016					

(1) For the three-phase version (4 P), for upstream and downstream protection, please order the reference twice. For the single-phase version (2 P) please order the reference once.

(2) 1 NO/NC contact block for positions I, 0 and II.

ATyS M 6e

Rating (A)	No. of poles	Network (VAC)	ATyS M 6e	ATyS M 6e + COM	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact block	Remote control interface
40 A	4 P	127 / 230	1363 4004	1383 4004	4 P 1309 4006	2 pieces 1399 4006	2 pieces 2294 4016 ⁽¹⁾	1 piece	ATyS D10 1599 2010 ATyS D20 1599 2020
	4 P	230 / 400	1364 4004	1384 4004					
63 A	4 P	127 / 230	1363 4006	1383 4006					
	4 P	230 / 400	1364 4006	1384 4006					
80 A	4 P	127 / 230	1363 4008	1383 4008					
	4 P	230 / 400	1364 4008	1384 4008					
100 A	4 P	127 / 230	1363 4010	1383 4010					
	4 P	230 / 400	1364 4010	1384 4010					
125 A	4 P	127 / 230	1363 4012	1383 4012					
	4 P	230 / 400	1364 4012	1384 4012					
160 A	4 P	127 / 230	1363 4016	1383 4016	4 P 1309 4016				
	4 P	230 / 400	1364 4016	1384 4016					

(1) For upstream and downstream protection please order the reference twice.

(2) 1 NO/NC contact block for positions I, 0 and II.

Accessories

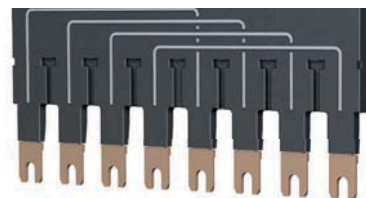
Bridging bars

Use

For providing a common connection between switches I & II on the incoming or outgoing side of the ATyS M (outgoing side only for ATyS M 6), to enable, for example, the load to be supplied from either incoming source (I or II).

The bridging bar set does not reduce the connection capacity of the ATyS M's cage terminals.

Rating (A)	No. of poles	Reference
40 ... 125	2 P	1309 2006
160	2 P	1309 2016
40 ... 125	4 P	1309 4006
160	4 P	1309 4016



atysm_025_a

Voltage sensing and power supply tap

Use

This single-pole voltage sensing tap allows the connection of $2 \times \leq 1.5 \text{ mm}^2$ voltage sensing or power cables to any ATyS M

power terminal without reducing its connection capacity.

Rating (A)	Pack	Reference
40 ... 160	2 pieces	1399 4006



atysm_026_a

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.

Advantages of the terminal shrouds

Perforations allow remote thermographic inspection without the need to remove the shrouds. Tamper seals can be fitted for increased security.

Required quantity

For upstream and downstream protection with a three-phase ATyS M two sets are required. For the single-phase version only one set is required.

Rating (A)	Position	Reference
40 ... 160	top and bottom	2294 4016 ⁽¹⁾

⁽¹⁾ Reference composed of 2 pieces.



atysm_027_a

Auxiliary contact

Use

Auxiliary contacts for position indication. A maximum of two auxiliary contact blocks can be fitted to each product. Each auxiliary contact block integrates 3 NO/NC auxiliary contacts, one per position (I, 0, II). There are two versions of contact block, one with three separate sets of connections and one that has its three common terminals linked internally. With the common points linked the number of signal cables required is

reduced (4 cables instead of 6). The ATyS M 3s is supplied as standard with one auxiliary contact block fitted; this A/C block has separate common points.

Characteristics:

250 VAC / 5 A maximum.
24 VDC / 2 A maximum.

Rating (A)	Type	Reference
40 ... 160	Separate common points	1309 0001
40 ... 160	Linked common points	1309 0011



access_363_a

ATyS M

Motorised and automatic changeover switches

from 40 to 160 A

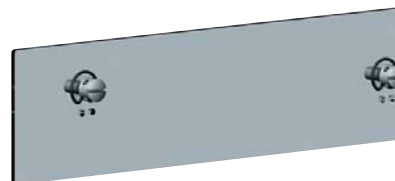
Accessories (continued)

Sealable cover

Use

It prevents access to the configuration panel of the ATyS M 6s.

Rating (A)	No. of poles	Reference
40 ... 160	2 P	1359 2000
40 ... 160	4 P	1359 0000



atysm_043_a_2_cat

Polycarbonate enclosure

Use

Dedicated to the implementation of a three-phase ATyS M, it enables easy access to a compact changeover solution.

Rating (A)	H x W x D (mm)	Reference
40 ... 160	385 x 385 x 193	1309 9006



atysm_001_a

Extension switch body

Use

Combined with the polycarbonate enclosure, the extension unit provides additional space to the enclosure in order to connect 70 mm² cables to the ATyS M.

Rating (A)	Reference
40 ... 160	1309 9007



atysm_039_a_1_x_cat

Residential enclosure

Use

Dedicated to the implementation of a single-phase ATyS M, it provides a compact IP41 changeover solution with easy access.

Rating (A)	H x W x D (mm)	Reference
40 ... 160	410 x 305 x 150	1309 9056



atysm_196_a_1_cat

Auto-transformer

Use

For use with ATyS M 6 in 400 VAC three-phase applications without a distributed neutral. As the ATyS M 6 has integrated measurement and power supply circuits, a neutral connection is required for 400 VAC three-phase applications. When no neutral connection is available this autotransformer (400/230 VAC, 400 VA) provides the 230 VAC required for the ATyS M 6 to function.

Rating (A)	Reference
40 ... 160	1599 4121



trafo_165_a_1

Double power supply - DPS

Use

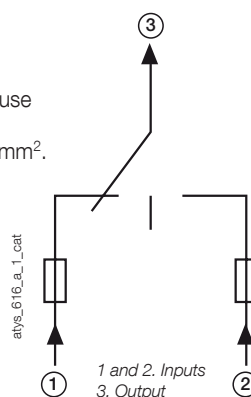
Provides 230 VAC to both ATyS M 3s power supply inputs, enabling remote transfer to any position with either incoming source available.

Input

- The input is considered "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: each input is fuse protected 3.15 A.
- Connection on terminals: max. 6 mm².
- Modular device: 4 module width.

Input 1	Input 2	Output
230 VAC	0 VAC	230 VAC (Input 1)
0 VAC	230 VAC	230 VAC (Input 2)
230 VAC	230 VAC	230 VAC (Input 1)
0 VAC	0 VAC	0 VAC

Description of accessories	Reference
DPS: Double power supply for ATyS M 3s	1599 4001



atys_612_a_2_cat

Remote interfaces for ATyS M 6e

Use

To display source availability and position indication on the front of a panel.

Interfaces are powered from the ATyS M 6e, via the RJ45 connection cable.

Maximum connection distance: 3 m.

ATyS D10

To display source availability and position indication on the front panel of an enclosure.

Protection degree: IP21

ATyS D20

In addition to the functions of the ATyS D10, the D20 displays measurements and enables ATyS M 6e mode control and configuration from the front of a panel.

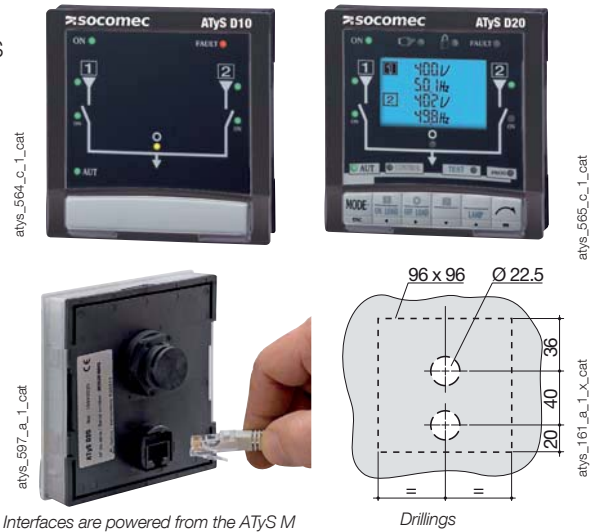
Protection degree: IP21

Door mounting

2 holes $\varnothing 22.5$.

ATyS M connection via RJ45 cable, not isolated.

Cable available as an accessory.



Description of accessories	Reference
ATyS D10	1599 2010
ATyS D20	1599 2020

Interfaces are powered from the ATyS M

Drillings

Connecting cable for remote interfaces

Use

To connect between a remote interface (type D10 or D20) and an ATyS M 6e.

Characteristics:

RJ45 8 wire straight-through, non isolated cable. Length 3m.



Type	Length	Reference
RJ45 cable	3 m	1599 2009

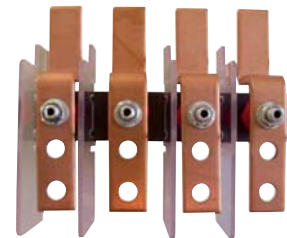
Power connection terminals

Use

The power connection terminals allow conversion of the cage terminals into bolt-on type connection terminals, enabling connection of up to two 35mm² cables or one 70mm² cable. Each power connection terminal is provided with separation screens.

Rating (A)	Reference
40 ... 160	1399 4017 ⁽¹⁾

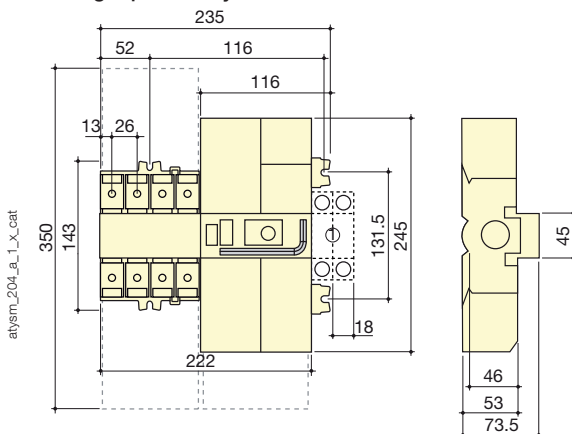
⁽¹⁾ For complete conversion, order 3 times the reference.



Dimensions

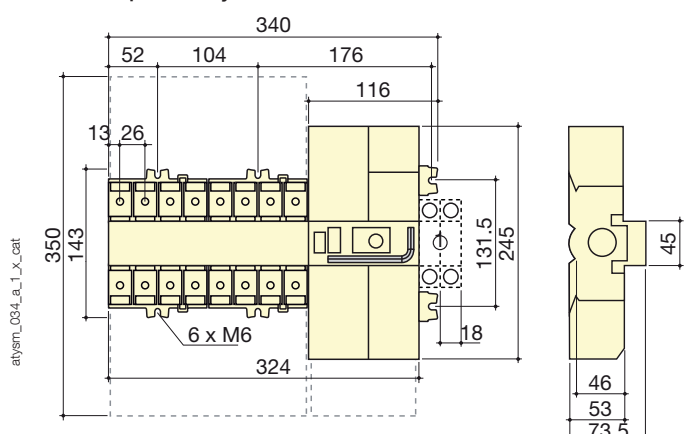
ATyS M 40 to 160 A

Single-phase ATyS M



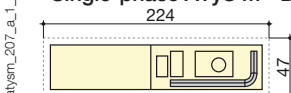
1. Auxiliary contact blocks (2 max).

Three-phase ATyS M

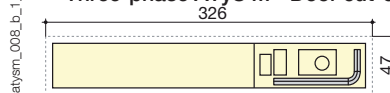


1. Auxiliary contact blocks (2 max).

Single-phase ATyS M - Door cut-out



Three-phase ATyS M - Door cut-out



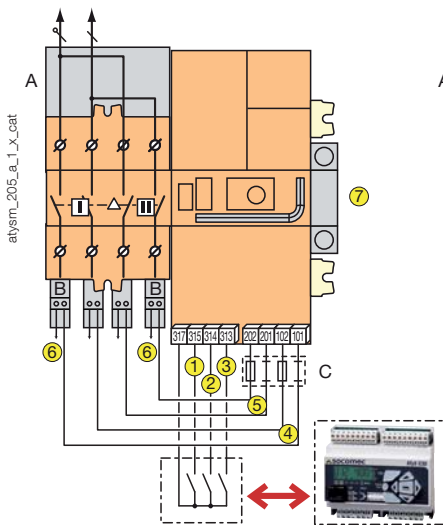
ATyS M

Motorised and automatic changeover switches

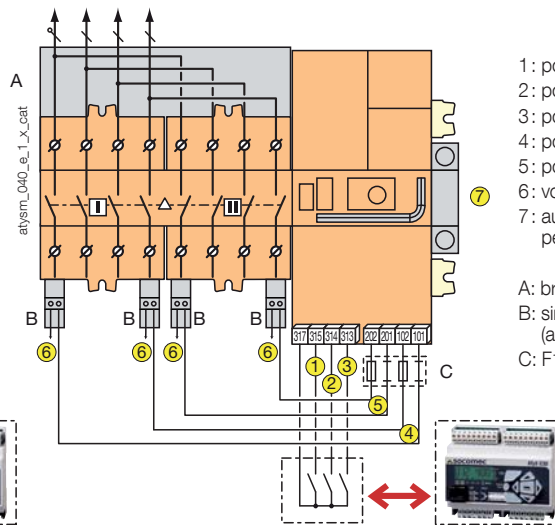
from 40 to 160 A

Terminals and connections

Single-phase ATyS M 3s



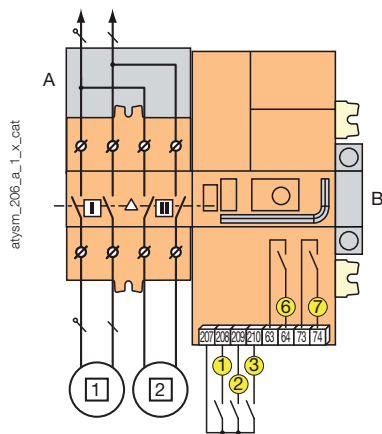
Three-phase ATyS M 3s



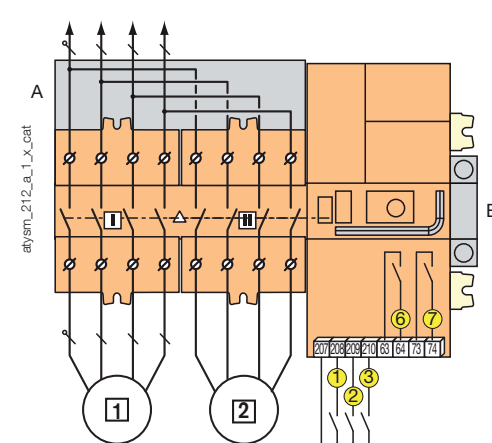
- 1: position I control
- 2: position II control
- 3: position 0 control
- 4: power supply I (230 VAC)
- 5: power supply II (230 VAC)
- 6: voltage tap
- 7: auxiliary contact block - 1 NO/NC contact per position I, 0, II (factory fitted)

- A: bridging bar (accessories)
- B: single-phase voltage sensing tap (accessories)
- C: F1 / F2 = fuse 10 A gG

Single-phase ATyS M 6s



Three-phase ATyS M 6s

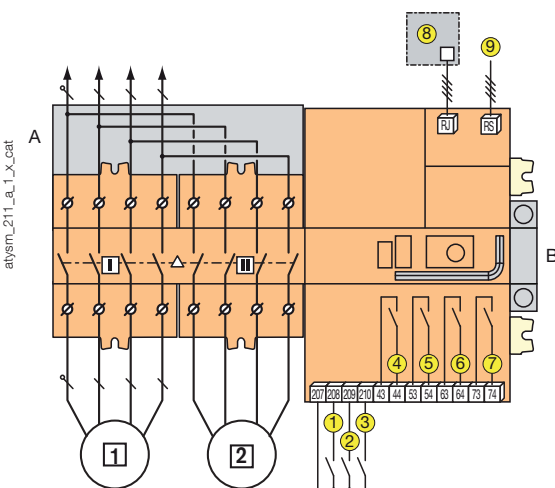


- 1: preferred source
- 2: alternate source

- 1: manual retransfer / priority change
- 2: test on load
- 3: automatic mode inhibition
- 6: relay for product availability
- 7: genset start / stop control

- A: bridging bar (accessories)
- B: auxiliary contact block - 1 NO/NC contact per position I, 0, II (accessories)

Three-phase ATyS M 6e



- 1: preferred source
- 2: alternate source

- 1 - 2 - 3: programmable inputs
- 4 - 5 - 6: programmable outputs
- 7: genset start / stop control
- 8: RJ 45 for connecting a ATyS D10/D20 remote interface
- 9: RS485 for communication on versions with COM.

- A: bridging bar (accessories)
- B: auxiliary contact block - 1 NO/NC contact per position I, 0, II (accessories)

Characteristics according to IEC 60947-3 and IEC 60947-6-1

40 to 160 A

Thermal current I_{th} at 40°C	40 A	63 A	80 A	100 A	125 A	160 A
Rated insulation voltage U_i (V) (power circuit)	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	6	6	6	6	6	6
Rated insulation voltage U_i (V) (operation circuit)	300	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (operation circuit) - ATyS M 3s	4	4	4	4	4	4
Rated impulse withstand voltage U_{imp} (kV) (operation circuit) - ATyS M 6	2.5	2.5	2.5	2.5	2.5	2.5

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	40/40	63/63	80/80	100/100	125/125	125/160
690 VAC ⁽⁵⁾	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
690 VAC ⁽⁵⁾	AC-22 A / AC-22 B	40/40	63/63	80/80	80/80	100/125	100/125
690 VAC ⁽⁵⁾	AC-23 A / AC-23 B	40/40	63/63	63/63	80/80	80/80	80/80

Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-31 A / AC-31 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-32 A / AC-32 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-33 A / AC-33 B	-/40	-/63	-/80	-/100	-/125	-/125

Fuse protected short-circuit withstand as per IEC 60947-3 at 415 VAC

Prospective short-circuit current (kA rms)	50	50	50	50	50	40
Associated fuse rating (A)	40	63	80	100	125	160

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Rated short-time withstand current 0.3s I_{cw} (kA rms)	7	7	7	7	7	7
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Short-circuit capacity (without protection)

Rated short-time withstand current 1 s. I_{cw} (kA rms)	4	4	4	4	4	4
Rated short-circuit making capacity I_{cm} (kA peak)	5.88	5.88	5.88	5.88	5.88	5.88

Connection

Minimum connection cross-section	10	10	10	10	10	10
Maximum Cu cable cross-section (mm ²)	70	70	70	70	70	70
Tightening torque (Nm)	5	5	5	5	5	5

Switching time (Standard setting)

I - 0 or II - 0 (ms) ⁽³⁾	45	45	45	45	45	45
I - II or II - I (ms) ⁽³⁾	180	180	180	180	180	180
Duration of "electrical blackout" I - II (ms) minimum	90	90	90	90	90	90

Power supply

Power supply voltage 230 VAC min / max (VAC) (ATyS M 3s and ATyS M 6s)	176/288	176/288	176/288	176/288	176/288	176/288
Power supply voltage 230 VAC min / max (VAC) (ATyS M 6e)	160/305	160/305	160/305	160/305	160/305	160/305

Control supply power demand

Nominal power (VA)	6	6	6	6	6	6
Max current under 230 VAC (A) - ATyS M 3s and M 6s	30	30	30	30	30	30
Max current under 230 VAC (A) - ATyS M 6e	20	20	20	20	20	20

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000
Weight of single-phase versions - without packaging (kg)	2.8	2.8	2.8	2.8	2.8	2.8
Weight of single-phase versions - with packaging (kg)	3.5	3.5	3.5	3.5	3.5	3.5
Weight of three-phase versions - without packaging (kg)	3.5	3.5	3.5	3.5	3.5	3.5
Weight of three-phase versions - with packaging (kg)	4.2	4.2	4.2	4.2	4.2	4.2

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) For a rated operational voltage $U_n = 400$ VAC.

(3) Between the command given and reaching of position at U_n (under nominal conditions).

(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

(5) Only on ATyS M 3s.

Services and technical assistance

- > Our expertise extends to a complete offer of customised services such as technical site audit and solution specification, commissioning, training, maintenance, and project engineering.



ATyS S - ATyS Sd

Motorised changeover switches
from 40 to 125 A

Changeover
switches

new



atys-s_018_a

The solution for

- > Generator manufacturers.
- > Heating.
- > Air conditioning.
- > Ventilation.
- > Telecommunications.



Strong points

- > Extensive power supply range.
- > Safety and reliability.
- > Easy integration.
- > Simplified maintenance.
- > ATyS Sd Dual power supply.

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3
- > GB 14048-11



Approvals and certifications⁽¹⁾



(1) Product reference on request.

Function

ATyS S is a range of 4 pole motorised changeover switches with positive break indication. They enable the on load transfer of two three-phase supplies via remote volt-free contacts, from either an external automatic controller, using pulse logic, or a switch. They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Extensive power supply range

The ATyS S is available in four supply versions, each with a broad range (+/-30%). The four versions are:

- 230 VAC single power supply,
- 2 x 230VAC dual power supply,
- 12 VDC power supply and
- 24/48 VDC power supply.

Safety and reliability

ATyS S products use stable position technology, ensuring constant pressure on the contacts and preventing premature faults. In addition, they do not require a power supply to maintain position, thus protecting their loads from voltage fluctuations.

Easy integration

ATyS S products can be easily installed inside enclosures.

Their design, and in particular their compact size, enables integration within most 200 mm deep enclosures.

Simplified maintenance

Maintenance can be carried out easily under load, with manual operation still available.

The control and motorisation section can be replaced simply by removing 4 screws, with no work required on the installation cabling.

ATyS Sd: Dual power supply

In addition to the functions offered by the ATyS S, the ATyS Sd incorporates supply redundancy without the need for additional wiring. This is obtained by integrating a double supply (2 independent supplies) directly within the product.

References

Rating (A)	No. of poles	Power supply	ATyS S	Bridging bars	Terminal shrouds	Voltage tap	Terminal retainer	DIN rail
40 A	4 P	24/48 VDC	9506 4004	4 P 9509 4012	Source side 2 pieces 9594 4012 Load side 2 pieces 9594 9012	9599 4001	2 pieces 9599 4003	4 modules 9599 4002
	4 P	12 VDC	9505 4004					
	4 P	2 x 230 VAC	9513 4004					
	4 P	230 VAC	9503 4004					
63 A	4 P	24/48 VDC	9506 4006					
	4 P	12 VDC	9505 4006					
	4 P	2 x 230 VAC	9513 4006					
	4 P	230 VAC	9503 4006					
80 A	4 P	24/48 VDC	9506 4008					
	4 P	12 VDC	9505 4008					
	4 P	2 x 230 VAC	9513 4008					
	4 P	230 VAC	9503 4008					
100 A	4 P	24/48 VDC	9506 4010					
	4 P	12 VDC	9505 4010					
	4 P	2 x 230 VAC	9513 4010					
	4 P	230 VAC	9503 4010					
125 A	4 P	24/48 VDC	9506 4012					
	4 P	12 VDC	9505 4012					
	4 P	2 x 230 VAC	9513 4012					
	4 P	230 VAC	9503 4012					

ATyS S - ATyS Sd

Motorised changeover switches

from 40 to 125 A

Accessories

Bridging bars

Use

For bridging power terminals on the top or bottom side of the switch

Rating (A)	No. of poles	Reference
40 ... 125	4 P	9509 4012



atys-s_019_a

Voltage tap

Use

Enables the required power supply for ATyS S 230 VAC and ATyS Sd products to be tapped directly from the product's incoming power terminals. Can also be utilised in applications without neutral, to provide 400 VAC to the autotransformer.

Rating (A)	Reference
40 ... 125	9509 4001



atys-s_022_a

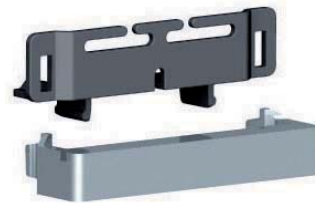
Terminal retainer

Use

These clips have a dual function:

- To prevent direct access to the power supply and control terminals and
- To secure these connector terminals.

Rating (A)	Pack	Reference
40 ... 125	2 pieces	9599 4003



atys-s_021_a

Terminal shrouds

Use

IP2X protection against direct contact with terminals or connecting parts.

Terminal shrouds for the source side		
Rating (A)	Pack	Reference
40 ... 125	2 pieces	9594 4012

Terminal shrouds for the load side		
Rating (A)	Pack	Reference
40 ... 125	2 pieces	9594 9012



atys-s_020_a



atys-s_020_a

Autotransformer 400/230 VAC

Use

For applications without neutral, this autotransformer provides the 230 VAC required to power ATyS S 230 VAC and ATyS Sd products.

Rating (A)	Reference
40 ... 125	9599 4004

DIN rail

Use

This 4-module DIN rail can be installed directly on the front of the ATyS S and can be utilised, for example, for the installation of a surge protection device.

Rating (A)	Reference
40 ... 125	9599 4002

Surge protection device

Use

Provides transient overvoltage protection for one of the incoming supply sources. This device can be installed to the front of the ATyS S, by way of its DIN rail accessory.

Rating (A)	Reference
40 ... 125	9599 4005

Characteristics according to IEC 60947-3 and IEC 60947-6-1

40 to 125 A

Thermal current I_{th} at 40°C	40 A	63 A	80 A	100 A	125 A
Rated insulation voltage U_i (V) (power circuit)	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	6	6	6	6	6
Rated insulation voltage U_i (V) (operation circuit)	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (operation circuit)	4	4	4	4	4

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B	A/B	A/B	A/B	A/B
415 VAC	AC-20 A / AC-20 B	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	100/125
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	100/100
415 VAC	AC-23 A / AC-23 B	-/40	-/63	-/63	-/63	-/63

Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B	A/B	A/B	A/B	A/B
415 VAC	AC-31 B	40	63	80	100	125
415 VAC	AC-32 B	40	63	80	80	80

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit current (kA rms)	50	50	50	25	15
Associated fuse rating (A)	40	63	80	100	125

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽¹⁾

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	3.5	3.5	3.5	3.5	3.5
--	-----	-----	-----	-----	-----

Short-circuit capacity (without protection)

Rated short-time withstand current 1 s. I_{CW} (kA rms)	2.5	2.5	2.5	2.5	2.5
Rated short-circuit making capacity	4.5	4.5	4.5	4.5	4.5

Connection

Maximum Cu cable cross-section (mm ²)	50	50	50	50	50
Tightening torque mini / maxi (Nm)	1.2/3	1.2/3	1.2/3	1.2/3	1.2/3

Switching time (Standard setting)

I - 0 or II - 0 (ms)	500	500	500	500	500
I - II or II - I (ms)	1000	1000	1000	1000	1000
Duration of "electrical blackout" I - II (ms) minimum	500	500	500	500	500

Power supply

Power supply 12 VDC min / max (VDC)	9/15	9/15	9/15	9/15	9/15
Power supply 24/48 VDC min / max (VDC)	17/62	17/62	17/62	17/62	17/62
Power supply 230 VAC min / max (VAC)	160/310	160/310	160/310	160/310	160/310

Control supply power demand

Power supply 12 VDC inrush / nominal (VA)	200/40	200/40	200/40	200/40	200/40
Power supply 24/48 VDC inrush / nominal (VA)	200/40	200/40	200/40	200/40	200/40
Power supply 230 VAC inrush / nominal (VA)	200/40	200/40	200/40	200/40	200/40

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000
Weight ATyS S and ATyS Sd 4 P (kg)	3	3	3	3	3

(1) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

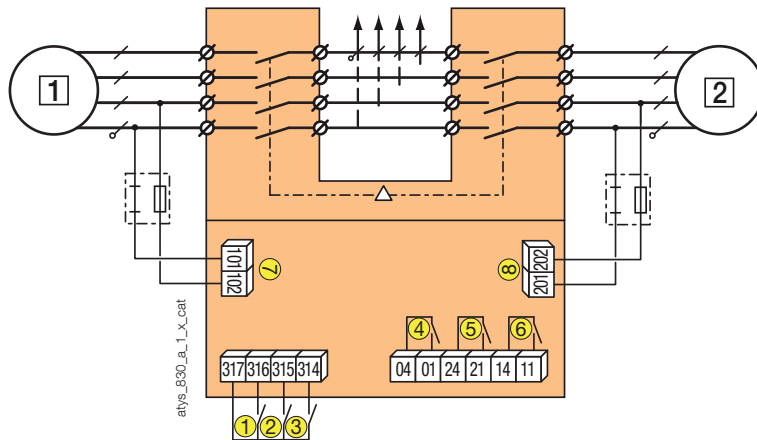
ATyS S - ATyS Sd

Motorised changeover switches

from 40 to 125 A

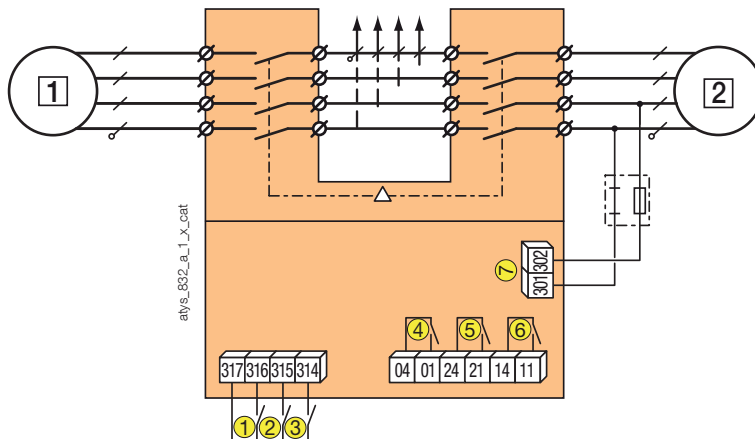
Terminals and connections

ATyS Sd: 2 x 230 VAC



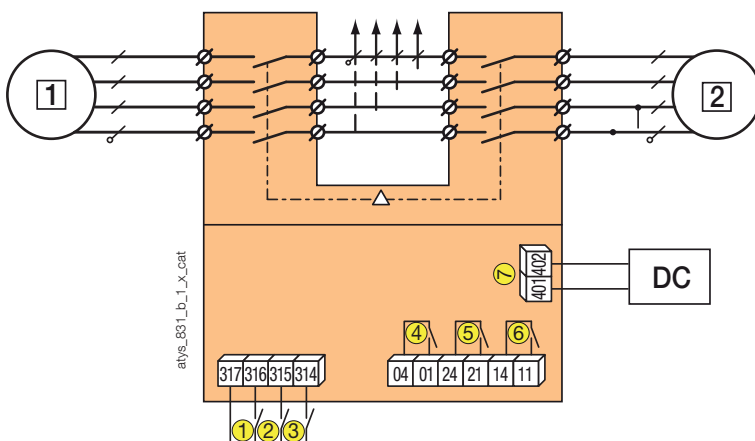
- 1 preferred source
- 2 alternate source
- 1: position 0 control
- 2: position I control
- 3: position II control
- 4: auxiliary contact, closed when the switch is in position 0
- 5: auxiliary contact, closed when the switch is in position II
- 6: auxiliary contact, closed when the switch is in position I
- 7: power supply kit I: 230 VAC (160-310 VAC)
- 8: power supply kit II: 230 VAC (160-310 VAC)

ATyS S: 230 VAC



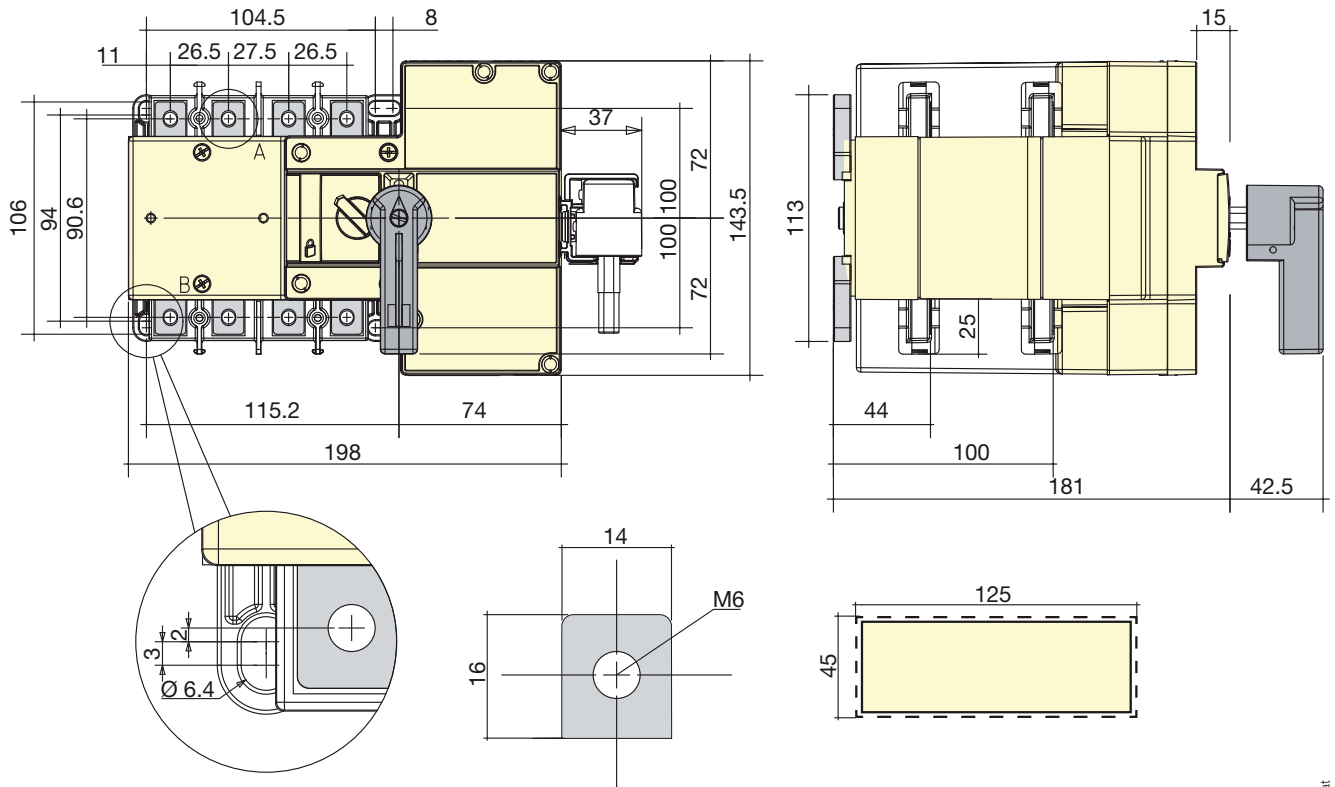
- 1 preferred source
- 2 alternate source
- 1: position 0 control
- 2: position I control
- 3: position II control
- 4: auxiliary contact, closed when the switch is in position 0
- 5: auxiliary contact, closed when the switch is in position II
- 6: auxiliary contact, closed when the switch is in position I
- 7: power supply kit: 230 VAC (160-310 VAC)

ATyS S DC version



- 1 preferred source
- 2 alternate source
- 1: position 0 control
- 2: position I control
- 3: position II control
- 4: auxiliary contact, closed when the switch is in position 0
- 5: auxiliary contact, closed when the switch is in position II
- 6: auxiliary contact, closed when the switch is in position I
- 7: power supply 12 VDC (9-15 VDC) or 24 VDC / 48 VDC (17-62 VDC) depending on the version.

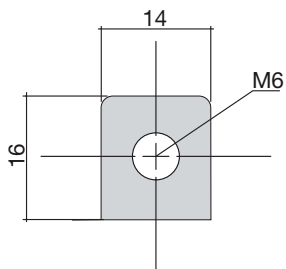
Dimensions



atys-s_024_a_1_x_cat

Connection terminal

atys-s_024_a_1_x_cat





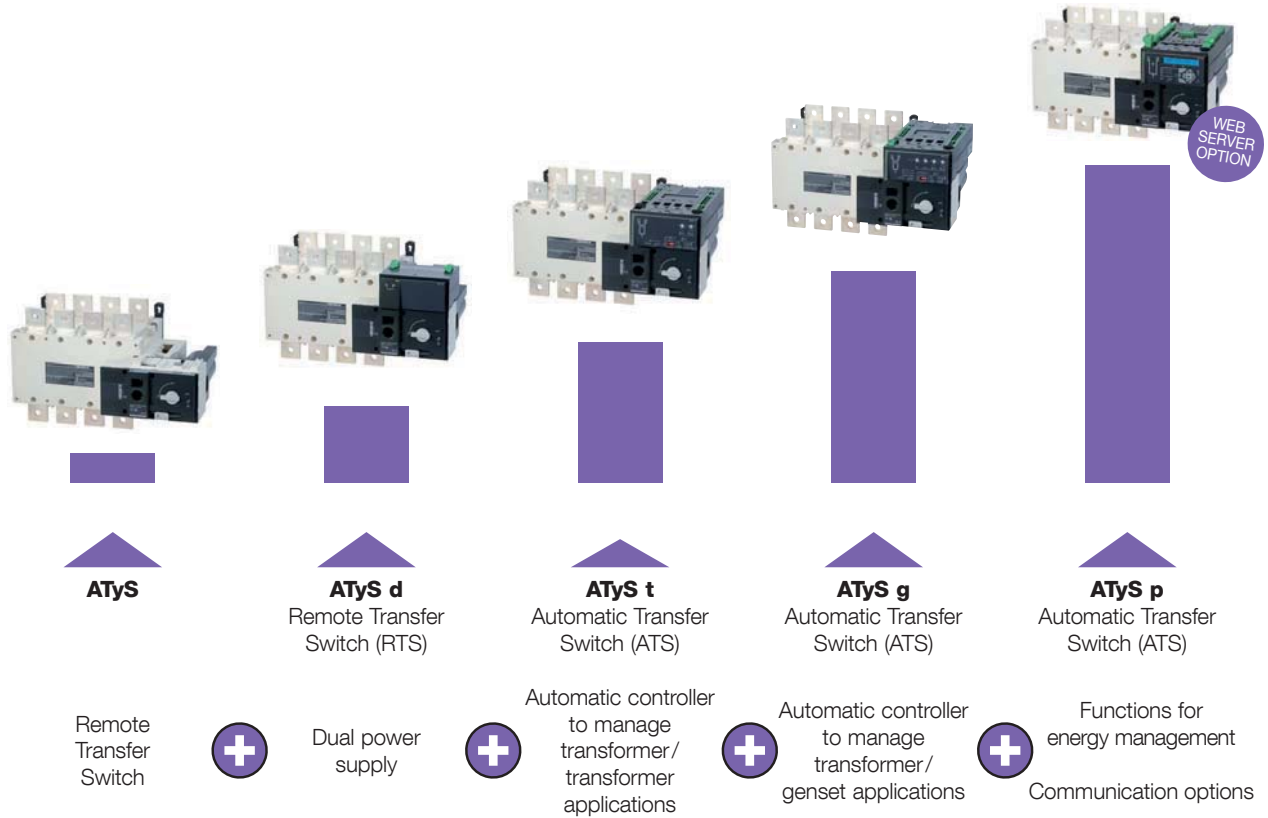
new The new ATyS range: intuitive, safe and robust devices

Changeover switches

A complete range of motorised and automatic changeover switches from 125 to 3200 A

To meet the increasing demands of its users, the ATyS range is constantly evolving to offer new functions.

Five models are available to perfectly meet the needs of your application.



ATyS p special functions:

- Automatic load shedding: Load management based on source power.
- Power and energy monitoring: Measurement of kW, kVar, kVA, kWh, kVarh, kVAh.
- Installation monitoring: Time-stamped event recording, remote access via the Webservice.
- Generator management: Programmed periodic generator starting (Engine Exerciser), on load and off load tests.
- EASY CONFIG configuration software.

Product description	Existing range	New range
Motorised changeover switch with single power supply	ATyS 3s 1523 YXXX*	ATyS 9523 YXXX*
Motorised changeover switch with double power supply	ATyS 3e 1533 YXXX*	ATyS d 9533 YXXX*
Automatic changeover switch for transformer/transformer applications; potentiometer configuration	not available	ATyS t 9543 YXXX*
Automatic changeover switch for transformer/generator applications; potentiometer configuration	not available	ATyS g 9553 YXXX*
Automatic changeover switch for any application, with measurement / configuration display + keypad	ATyS 6e 1563 YXXX*	See ATyS t, ATyS g or ATyS p
Automatic changeover switch for any application, with measurement/configuration display + keypad and power management functions	ATyS 6m 1573 YXXX*	ATyS p 9573 YXXX*

*YXXX:

Y = 3 for a 3 pole device and 4 for a 4 pole device.

XXX =

012: 125 A	050: 500 A	180: 1800 A
016: 160 A	063: 630 A	200: 2000 A
020: 200 A	080: 800 A	250: 2500 A
025: 250 A	100: 1000 A	320: 3200 A
031: 315 A	125: 1250 A	
040: 400 A	160: 1600 A	

The advantages



Safe operation

- Permanent indication of product availability (Watchdog relay).
- Positive break indication.
- Mechanical position interlocking.
- Padlocked mode to secure maintenance operations (lockout).
- Secure access to the product configuration.



Robust integrated solution

A single product with all functions:

- Integrated and tested solution: Components factory assembled and wired.
- Greater reliability: Compliance with IEC 60947-6-1, the standard governing changeover switches.

Proven SOCOMEC technology:

- Combination of two "back-to-back" PC (load break switch) class switches.
- Switching based on stable positions guaranteeing constant pressure on the contacts at all times.
- SIRCO contact technology used in numerous products for over 40 years.



Intuitive use

- Manual emergency control: The product can be controlled **quickly and safely** using an emergency handle (motor installed or removed).
- Simple selection of operating mode (Auto/Manual) using an integrated selector.



Rapid commissioning

- **ATyS** and **ATyS d**: No configuration necessary.
- **ATyS t** and **ATyS g**: Configuration in just a few minutes using a screwdriver.
- **ATyS p**: Simplified configuration (EASY CONFIG software and LCD screen on the device).
- **ATyS t, g, p**: Auto-configuration of the network parameters.



Easy maintenance

- Self-cleaning sliding contacts.
- Easy replacement of the motor and electronic unit, even on load.

Improved on load characteristics

IEC 60947-6-1/GB 14048-11

- AC 31B - up to 3200 A
- AC 32B - up to 2000 A
- AC 33B - up to 1250 A

IEC 60947-3

- AC 23B - up to 1250 A

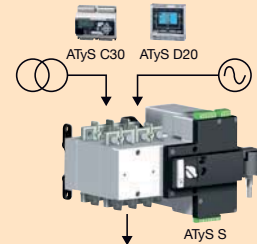
Extended power supply range

- from 166 to 332 VAC.

Also available: ATyS S from 40 to 125 A

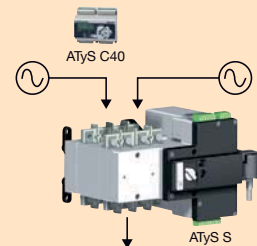
Specially developed for manufacturers of small generators, the ATyS S is a **motorised changeover switch** which enables on load switching between two power supply sources of up to 125 A (< 90 kVA).

• Transformer/generator



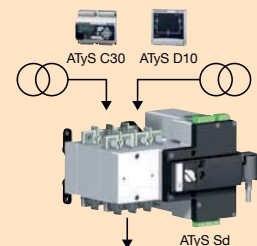
ATyS-S 027 B

• Generator/generator



ATyS-S 028 B

• Transformer/transformer



ATyS-S 026 B



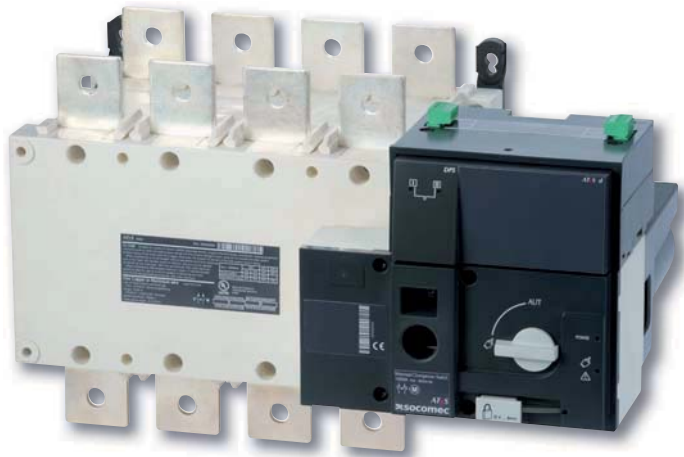
ATyS - ATyS d

Motorised changeover switches
from 125 to 3200 A

Changeover
switches

new

atyS_d_001_a_1_cat



The solution for

- > Non critical buildings.
- > OEM.



Strong points

- > Watchdog relay to check product availability
- > Integrated auxiliary contacts.
- > Extended power supply range.
- > ATyS d: ATyS with integrated DPS.

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3



Enclosed solution

- > Please consult us.

External automatic controller

- > The ATyS and ATyS d are compatible with our ATyS C30 external controllers (for transformer/transformer and transformer/generator applications) and ATyS C40 controllers (for generator/generator applications).

Function

The **ATyS** and **ATyS d** are three-phase motorised changeover switches with positive break indication. They enable the on load transfer of two three-phase supplies via remote volt-free contacts, from either an external automatic controller, using pulse logic, or a switch. They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Watchdog relay to check product availability

ATyS and ATyS d products are equipped with a Watchdog relay which constantly monitors the product, thereby securing your installation.

This relay informs the user of the product's availability, i.e. whether it is operational and ready for source switching.

Integrated auxiliary contacts

As part of the product monitoring function, the ATyS and ATyS d enable the transmission of information relating to their position.

This is possible thanks to the standard integration of an auxiliary contact for each position.

Extended power supply range

ATyS and ATyS d products offer greater availability thanks to their extensive power supply range of 208 to 277 VAC \pm 20%.

ATyS d: ATyS with integrated DPS

In addition to the functions offered by the ATyS, the ATyS d incorporates supply redundancy without the need for additional wiring. This is obtained by integrating a double supply (2 independent supplies) directly within the product.

References

Rating (A)	No. of poles	ATyS	ATyS d ⁽⁵⁾	Bridging bars	Terminal shrouds	Terminal screens	Auxiliary contact	3 position padlocking	Autotransformer										
125 A	3 P	9523 3012	9533 3012	4109 0019	3 P 2694 3014 ⁽²⁾ 4 P 2694 4014 ⁽²⁾	3 P 1509 3012 4 P 1509 4012													
	4 P	9523 4012	9533 4012																
160 A	3 P	9523 3016	9533 3016																
	4 P	9523 4016	9533 4016																
200 A	3 P	9523 3020	9533 3020							4109 0025	3 P 2694 3021 ⁽²⁾ 4 P 2694 4021 ⁽²⁾	3 P 1509 3025 4 P 1509 4025	1599 0002 ⁽⁴⁾	1599 0003 ⁽⁴⁾					
	4 P	9523 4020	9533 4020																
250 A	3 P	9523 3025	9533 3025																
	4 P	9523 4025	9533 4025																
315 A	3 P	9523 3031	9533 3031	4109 0039	3 P 2694 3051 ⁽²⁾ 4 P 2694 4051 ⁽²⁾	3 P 1509 3063 ⁽³⁾ 4 P 1509 4063 ⁽³⁾													
	4 P	9523 4031	9533 4031																
400 A	3 P	9523 3040	9533 3040																
	4 P	9523 4040	9533 4040																
500 A	3 P	9523 3050	9533 3050	4109 0050						3 P 2694 4051 ⁽²⁾	3 P 1509 4063 ⁽³⁾								
	4 P	9523 4050	9533 4050																
630 A	3 P	9523 3063	9533 3063	4109 0063	3 P 2694 4051 ⁽²⁾	3 P 1509 4063 ⁽³⁾													
	4 P	9523 4063	9533 4063																
800 A	3 P	9523 3080	9533 3080	4109 0080											3 P 1509 3080 ⁽³⁾ 4 P 1509 4080 ⁽³⁾	1599 0032 ⁽⁴⁾			400/230 VAC 1599 4064
	4 P	9523 4080	9533 4080																
1000 A	3 P	9523 3100	9533 3100	4109 0120						3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	1599 0004 ⁽⁴⁾								
	4 P	9523 4100	9533 4100																
1250 A	3 P	9523 3120	9533 3120	4109 0160	3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	1599 0004 ⁽⁴⁾													
	4 P	9523 4120	9533 4120																
1600 A	3 P	9523 3160	9533 3160	4109 0160											3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	1599 0004 ⁽⁴⁾			
	4 P	9523 4160	9533 4160																
1800 A	3 P	9523 3180	9533 3180							3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	1599 0004 ⁽⁴⁾								
	4 P	9523 4180	9533 4180																
2000 A	3 P	9523 3200	9533 3200		3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	1599 0004 ⁽⁴⁾													
	4 P	9523 4200	9533 4200																
2500 A	3 P	9523 3250	9533 3250	(1)											included	included			
	4 P	9523 4250	9533 4250																
3200 A	3 P	9523 3320	9533 3320							included	included								
	4 P	9523 4320	9533 4320																

(1) See "Copper bar connection kits" page 393.

(2) To fully shroud front, rear, top and bottom 4 references required.

To shroud front switch top and bottom 2 references required.

(3) 2 pieces: one for top side and another for bottom side.

(4) Factory mounting only.

(5) An optional key operated Auto/Manual selector is available on request.

If required, this option must be requested when ordering the switch;
 please refer to "Auto/Manual key selector" in the accessory section.

Technical information

- > Accessories: see page 392.
- > Characteristics: see page 398.
- > Terminals and connections: see page 400.
- > Dimensions: see page 402.



ATyS t

Automatic changeover switches
from 125 to 3200 A

Changeover
switches

new



atyS_t001_a_1

The solution for

- > Transformer/Transformer applications.



Strong points

- > Rapid commissioning.
- > Functions adapted to transformer/transformer applications.

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3



Enclosed solution

- > Please consult us.

Function

ATyS t is a range of three-phase automatic changeover switches with positive break indication. They incorporate all the functions offered by the ATyS d, as well as functions intended for **transformer/transformer** applications.

In automatic mode they enable the monitoring of, and the on load changeover switching between, two power supply sources, in accordance with the parameters configured via two potentiometers and four DIP switches.

They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Rapid commissioning

ATyS t switches offer significant time saving during commissioning (process takes 2 to 3 minutes). Because they have only two potentiometers and four DIP switches, a simple screwdriver is all you need to configure the parameters.

For added simplicity, they also offer an autoconfiguration function which enables automatic adjustment of the rated voltage and frequency.

Functions adapted to transformer/transformer applications

ATyS t products are automatic changeover switches intended specifically for transformer/transformer applications. Their integrated controller has been designed to provide all the functions necessary for these applications, including monitoring the voltage and frequency of both sources, for three-phase and single-phase networks.

References

Rating (A)	No. of poles	ATyS t ⁽⁵⁾	Bridging bars	Terminal shrouds	Terminal screens	Auxiliary contact	3 position padlocking	Autotransformer						
125 A	3 P	9543 3012	4109 0019	3 P 2694 3014 ⁽²⁾ 4 P 2694 4014 ⁽²⁾	3 P 1509 3012 4 P 1509 4012									
	4 P	9543 4012												
160 A	3 P	9543 3016												
	4 P	9543 4016												
200 A	3 P	9543 3020												
	4 P	9543 4020												
250 A	3 P	9543 3025							4109 0025	3 P 2694 3021 ⁽²⁾ 4 P 2694 4021 ⁽²⁾	3 P 1509 3025 4 P 1509 4025	1599 0002 ⁽⁴⁾	1599 0003 ⁽⁴⁾	
	4 P	9543 4025												
315 A	3 P	9543 3031							4109 0039					
	4 P	9543 4031												
400 A	3 P	9543 3040												
	4 P	9543 4040												
500 A	3 P	9543 3050	4109 0050	3 P 2694 3051 ⁽²⁾ 4 P 2694 4051 ⁽²⁾	3 P 1509 3063 ⁽³⁾ 4 P 1509 4063 ⁽³⁾			400/230 VAC 1599 4064						
	4 P	9543 4050												
630 A	3 P	9543 3063	4109 0063											
	4 P	9543 4063												
800 A	3 P	9543 3080	4109 0080							3 P 1509 3080 ⁽³⁾ 4 P 1509 4080 ⁽³⁾				
	4 P	9543 4080												
1000 A	3 P	9543 3100												
	4 P	9543 4100												
1250 A	3 P	9543 3120	4109 0120											
	4 P	9543 4120												
1600 A	3 P	9543 3160	4109 0160		3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾									
	4 P	9543 4160												
1800 A	3 P	9543 3180												
	4 P	9543 4180												
2000 A	3 P	9543 3200	(1)						included	included				
	4 P	9543 4200												
2500 A	3 P	9543 3250												
	4 P	9543 4250												
3200 A	3 P	9543 3320												
	4 P	9543 4320												

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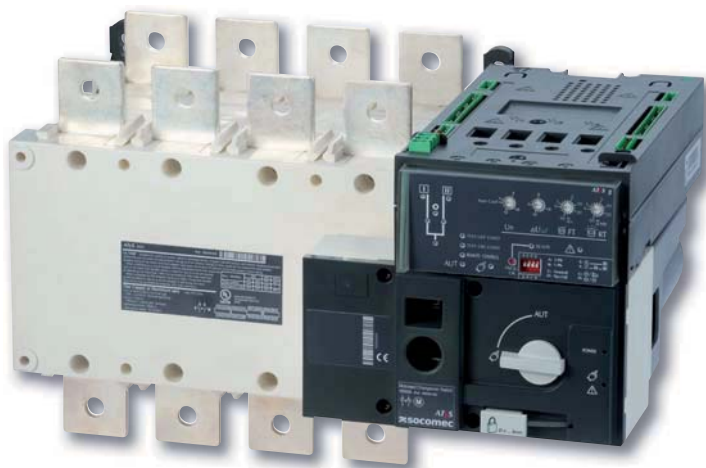
ATyS g

Automatic changeover switches
from 125 to 3200 A

Changeover
switches

new

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The solution for

- > Transformer/generator applications.



Strong points

- > Rapid commissioning.
- > Functions adapted to transformer/genset applications.
- > Generator test functions.

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3



Enclosed solution

- > Please consult us.

Function

ATyS g is a range of three-phase automatic changeover switches with positive break indication. They incorporate all the functions offered by the ATyS d, as well as functions intended for **transformer/generator** applications.

In automatic mode they enable the monitoring of, and the on load changeover switching between, two power supply sources, in accordance with the parameters configured via four potentiometers and four DIP switches.

They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Rapid commissioning

ATyS g switches offer significant time saving during commissioning (process takes approximately 5 minutes). Because they have only four potentiometers and four DIP switches, a screwdriver is all that is needed to configure the parameters.

For added simplicity, they also offer an autoconfiguration function which enables automatic adjustment of the rated voltage and frequency.

Functions adapted to transformer/generator applications

ATyS g products are automatic changeover switches intended specifically for **transformer/generator** applications. Their integrated controller has been designed to provide all the functions necessary for these applications, including monitoring the voltage and frequency of both sources, for three-phase and single-phase networks.

Generator test functions

To ensure compatibility with transformer/generator applications, ATyS g switches integrate the following generator test functions:

Test on load and test off load.

References

Rating (A)	No. of poles	ATyS g ⁽⁵⁾	Bridging bars	Terminal shrouds	Terminal screens	Auxiliary contact	3 position padlocking	Autotransformer							
125 A	3 P	9553 3012	4109 0019	3 P 2694 3014 ⁽²⁾ 4 P 2694 4014 ⁽²⁾	3 P 1509 3012 4 P 1509 4012	1599 0002 ⁽⁴⁾	1599 0003 ⁽⁴⁾	400/230 VAC 1599 4064							
	4 P	9553 4012													
160 A	3 P	9553 3016													
	4 P	9553 4016													
200 A	3 P	9553 3020													
	4 P	9553 4020													
250 A	3 P	9553 3025		4109 0025	3 P 2694 3021 ⁽²⁾ 4 P 2694 4021 ⁽²⁾				3 P 1509 3025 4 P 1509 4025	1599 0002 ⁽⁴⁾	1599 0003 ⁽⁴⁾	400/230 VAC 1599 4064			
	4 P	9553 4025													
315 A	3 P	9553 3031		4109 0039											
	4 P	9553 4031													
400 A	3 P	9553 3040													
	4 P	9553 4040													
500 A	3 P	9553 3050	4109 0050	3 P 2694 3051 ⁽²⁾ 4 P 2694 4051 ⁽²⁾	3 P 1509 3063 ⁽³⁾ 4 P 1509 4063 ⁽³⁾	1599 0002 ⁽⁴⁾	1599 0003 ⁽⁴⁾	400/230 VAC 1599 4064							
	4 P	9553 4050													
630 A	3 P	9553 3063	4109 0063												
	4 P	9553 4063													
800 A	3 P	9553 3080	4109 0080						3 P 1509 3080 ⁽³⁾ 4 P 1509 4080 ⁽³⁾				1599 0032 ⁽⁴⁾	1599 0004 ⁽⁴⁾	400/230 VAC 1599 4064
	4 P	9553 4080													
1000 A	3 P	9553 3100													
	4 P	9553 4100													
1250 A	3 P	9553 3120	4109 0120												
	4 P	9553 4120													
1600 A	3 P	9553 3160	4109 160	3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	1599 0032 ⁽⁴⁾					1599 0004 ⁽⁴⁾	400/230 VAC 1599 4064				
	4 P	9553 4160													
1800 A	3 P	9553 3180													
	4 P	9553 4180													
2000 A	3 P	9553 3200	(1)			included	included	1599 0004 ⁽⁴⁾				400/230 VAC 1599 4064			
	4 P	9553 4200													
2500 A	3 P	9553 3250													
	4 P	9553 4250													
3200 A	3 P	9553 3320													
	4 P	9553 4320													

(1) See "Copper bar connection kits" page 393.

(2) To fully shroud front, rear, top and bottom 4 references required.

To shroud front switch top and bottom 2 references required.

(3) 2 pieces: one for top side and another for bottom side.

(4) Factory mounting only.

(5) An optional key operated Auto/Manual selector is available on request.

If required, this option must be requested when ordering the switch; please refer to "Auto/Manual key selector" in the accessory section.

Technical information

- > Accessories: see page 392.
- > Characteristics: see page 398.
- > Terminals and connections: see page 400.
- > Dimensions: see page 402.



ATyS p

Automatic changeover switches
from 125 to 3200 A

Changeover
switches

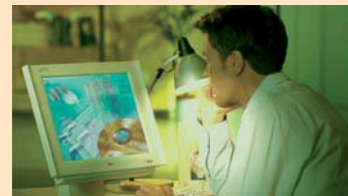
new



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The solution for

- > Applications requiring power management and communication.



Strong points

- > Optional communication modules.
- > Recording of events.
- > Power measurements.
- > Possibility to set periodic genset startup.

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3



Enclosed solution

- > Please consult us.

Webserver

The Webserver function comprises HTML pages embedded in the Ethernet communication module.

These pages can be accessed via an internet browser, simply by entering the IP address.

The webserver offers the following functionalities:

- > Display of source status and switch position.
- > Display of the main measurements.
- > Extraction of the latest logged events.
- > Display of the product configuration.

Function

ATyS p is a range of three-phase automatic changeover switches with positive break indication. They incorporate all the functions offered by the ATyS g, as well as functions designed for **power management and enabling communication**.

In automatic mode they enable the monitoring of, and the on load changeover switching between, two power supply sources, in accordance with the parameters configured via pushbuttons and an LCD screen.

They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Recording of events

ATyS p switches enable effective monitoring of your installation thanks to timestamped event recording. Events can be retrieved and read via the communication system.

Optional communication modules

The ATyS p offers communication functions thanks to the addition of optional modules, such as the RS485 module for Modbus communication or the Ethernet module, which includes a Webserver.

Configuration software

Software (Easyconfig) is available enabling the ATyS p parameters to be easily configured and the existing configuration to be saved.

Power measurements

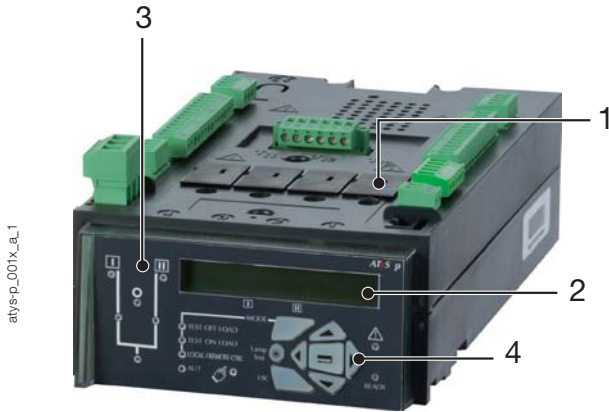
ATyS p products are particularly suited to energy management and monitoring.

In addition to their integrated power and energy measurement functions, programmable inputs/outputs can be utilised to control load shedding based on a load level or tariff.

Generator periodic startup programming (option)

ATyS p switches offer additional functions for maintenance. They include the programmed generator starting function which allows the starting dates and operating times to be configured.

Front panel



1. Slots for optional plug-in modules.
2. Backlit LCD display.
3. Source availability and position indication LEDs.
4. Pushbuttons for programming and mode selection.

Plug-in modules

ATyS p

Number of usable modules per product:
A maximum of four modules can be fitted to each ATyS p, however with the installation of either Ethernet communication module only two additional modules can be installed. Only one pulse output, one analogue output and one communication module can be installed.

	<p>RS485 JBUS/MODBUS® communication</p> <ul style="list-style-type: none"> • RS485 link with JBUS / MODBUS® protocol (speed up to 38400 bauds).
	<p>2 inputs - 2 outputs</p> <ul style="list-style-type: none"> • Each module has 2 programmable inputs and 2 programmable outputs available.
	<p>Ethernet communication</p> <ul style="list-style-type: none"> • Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP. • Embedded Ethernet Webserver software.
	<p>Ethernet communication with RS485 JBUS/MODBUS gateway</p> <ul style="list-style-type: none"> • Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP. • Connection of 1 to 247 RS485 JBUS/MODBUS slaves. • Embedded Ethernet Webserver software.
	<p>Analogue outputs</p> <ul style="list-style-type: none"> • Outputs assignable to: 3I, In, 3V, 3U, F, ±ΣP, ±ΣQ, ΣS.
	<p>Pulse outputs</p> <ul style="list-style-type: none"> • 2 configurable pulse outputs (type, weight and duration) on ± kWh, ±kvarh and kVAh.

References

Rating (A)	No. of poles	ATyS p ⁽⁵⁾	Bridging bars	Terminal shrouds	Terminal screens	Optional modules	Auxiliary contact	Autotransformer																	
125 A	3 P	9573 3012	4109 0019	3 P 2694 3014 ⁽²⁾ 4 P 2694 4014 ⁽²⁾	3 P 1509 3012 4 P 1509 4012																				
	4 P	9573 4012																							
160 A	3 P	9573 3016																							
	4 P	9573 4016																							
200 A	3 P	9573 3020																							
	4 P	9573 4020																							
250 A	3 P	9573 3025							4109 0025	3 P 2694 3021 ⁽²⁾ 4 P 2694 4021 ⁽²⁾	3 P 1509 3025 4 P 1509 4025		1599 0002 ⁽⁴⁾												
	4 P	9573 4025																							
315 A	3 P	9573 3031							4109 0039																
	4 P	9573 4031																							
400 A	3 P	9573 3040																							
	4 P	9573 4040																							
500 A	3 P	9573 3050	4109 0050	3 P 2694 3051 ⁽²⁾ 4 P 2694 4051 ⁽²⁾	3 P 1509 3063 ⁽³⁾ 4 P 1509 4063 ⁽³⁾	RS485 JBUS/ MODBUS communication 4825 0092		400/230 VAC 1599 4064																	
	4 P	9573 4050																							
630 A	3 P	9573 3063	4109 0063																						
	4 P	9573 4063																							
800 A	3 P	9573 3080	4109 0080							3 P 1509 3080 ⁽³⁾ 4 P 1509 4080 ⁽³⁾	2 inputs / 2 outputs 4825 0094														
	4 P	9573 4080																							
1000 A	3 P	9573 3100																							
	4 P	9573 4100																							
1250 A	3 P	9573 3120	4109 0120												3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	Ethernet communication 4825 0203									
	4 P	9573 4120																							
1600 A	3 P	9573 3160	4109 0160		3 P 1509 3160 ⁽³⁾ 4 P 1509 4160 ⁽³⁾	Ethernet communication + RS485 MODBUS gateway 4825 0204																			
	4 P	9573 4160																							
1800 A	3 P	9573 3180																							
	4 P	9573 4180																							
2000 A	3 P	9573 3200	(1)								Analogue outputs 4825 0093														
	4 P	9573 4200																							
2500 A	3 P	9573 3250																	(1)			Pulse outputs 4825 0090			
	4 P	9573 4250																							
3200 A	3 P	9573 3320												(1)											
	4 P	9573 4320																							

(1) See "Copper bar connection kits" page 393.

(2) To fully shroud front, rear, top and bottom 4 references required.

To shroud front switch top and bottom 2 references required.

(3) 2 pieces: one for top side and another for bottom side.

(4) Factory mounting only.

(5) An optional key operated Auto/Manual selector is available on request.

If required, this option must be requested when ordering the switch;

please refer to "Auto/Manual key selector" in the accessory section.

References

Rating (A)	No. of poles	ATyS p	DC power supply	3 position padlocking	Key handle interlocking system	Door protective surround	Mounting spacers	Remote control interface
125 A	3 P	9573 3012	12 VDC / 230 VAC 1599 5012 24 VDC / 230 VAC 1599 5112	1599 0003 ⁽¹⁾	Using lock RONIS EL11AP in position 0 1509 1006 ⁽¹⁾	1539 0012	1 set of 2 spacers 1509 0001	ATyS D20 9599 2020 + RJ45 cable connection 1599 2009
	4 P	9573 4012						
160 A	3 P	9573 3016						
	4 P	9573 4016						
200 A	3 P	9573 3020						
	4 P	9573 4020						
250 A	3 P	9573 3025						
	4 P	9573 4025						
315 A	3 P	9573 3031						
	4 P	9573 4031						
400 A	3 P	9573 3040						
	4 P	9573 4040						
500 A	3 P	9573 3050						
	4 P	9573 4050						
630 A	3 P	9573 3063						
	4 P	9573 4063						
800 A	3 P	9573 3080						
	4 P	9573 4080						
1000 A	3 P	9573 3100						
	4 P	9573 4100						
1250 A	3 P	9573 3120						
	4 P	9573 4120						
1600 A	3 P	9573 3160						
	4 P	9573 4160						
1800 A	3 P	9573 3180						
	4 P	9573 4180						
2000 A	3 P	9573 3200						
	4 P	9573 4200						
2500 A	3 P	9573 3250						
	4 P	9573 4250						
3200 A	3 P	9573 3320						
	4 P	9573 4320						
				1599 0004 ⁽¹⁾	Using lock RONIS EL11AP in position 0 1509 1004 ⁽¹⁾	1539 0080		

(1) Factory mounting only.



ATyS range

ATyS, ATyS **d**, ATyS **t**, ATyS **g**, ATyS **p**
from 125 to 3200 A

Changeover switches

Accessories

Terminal shrouds

Use

IP2X protection against direct contact with terminals or connecting parts.

Advantages

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Rating (A)	No. of poles	Position	Reference
125 ... 200	3 P	top / bottom / front (I) / rear (II)	2694 3014 ⁽¹⁾⁽²⁾
125 ... 200	4 P	top / bottom / front (I) / rear (II)	2694 4014 ⁽¹⁾⁽²⁾
250 ... 400	3 P	top / bottom / front (I) / rear (II)	2694 3021 ⁽¹⁾⁽²⁾
250 ... 400	4 P	top / bottom / front (I) / rear (II)	2694 4021 ⁽¹⁾⁽²⁾
500 ... 630	3 P	top / bottom / front (I) / rear (II)	2694 3051 ⁽¹⁾⁽²⁾
500 ... 630	4 P	top / bottom / front (I) / rear (II)	2694 4051 ⁽¹⁾⁽²⁾

(1) To shroud front switch top and bottom 2 references required.
(2) To fully shroud front, rear, top and bottom 4 references required.



access_206_a_2_cat

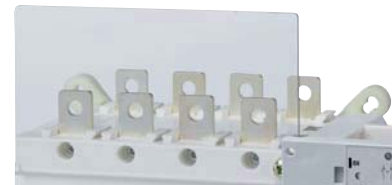
Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.

For upstream and downstream protection, order the reference once.

Rating (A)	No. of poles	Position	Reference
125 ... 200	3 P	top / bottom	1509 3012
125 ... 200	4 P	top / bottom	1509 4012
250 ... 400	3 P	top / bottom	1509 3025
250 ... 400	4 P	top / bottom	1509 4025
500 ... 630	3 P	top / bottom	1509 3063
500 ... 630	4 P	top / bottom	1509 4063
800 ... 1250	3 P	top / bottom	1509 3080
800 ... 1250	4 P	top / bottom	1509 4080
1600 ... 1800	3 P	top / bottom	1509 3160
1600 ... 1800	4 P	top / bottom	1509 4160
2000 ... 3200	3 P	top / bottom	1509 3200
2000 ... 3200	4 P	top / bottom	1509 4200



access_207_a_2_cat

Bridging bars

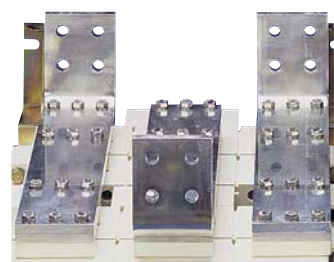
Use

For bridging power terminals on the top or bottom side of the switch.
One piece required per pole.

Rating (A)	Section (mm)	Reference
125 ... 200	20 x 2.5	4109 0019
250	25 x 2.5	4109 0025
400	32 x 5	4109 0039
500	32 x 5	4109 0050
630	50 x 5	4109 0063
800 ... 1000	50 x 6	4109 0080
1250	60 x 8	4109 0120
1600 ... 1800	90 x 10	4109 0160



access_205_a_2_cat



access_041_a_1_cat

Copper bar connection kits

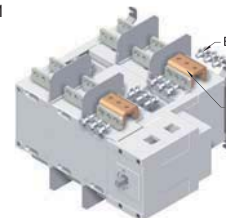
Use

Enables:

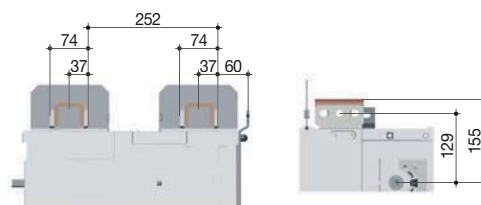
- connection between the two power terminals of the same pole for 2000 to 3200 A ratings (Fig. 1 and Fig 2).
- top or bottom bridging connection (Fig. 3).
 For 3200 A rating, the connection pieces (part A) are delivered bridged from factory.

Bolt sets must be ordered separately.
 The technical notice for these specific accessories can be downloaded from www.socomec.com.

Fig. 1

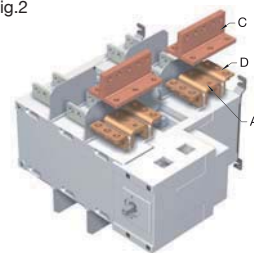


access_226_b_1_x_cat

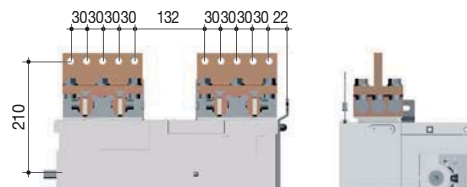


access_202_a_1_cat

Fig.2

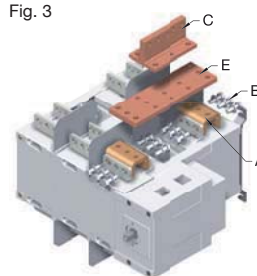


access_228_b_1_x_cat

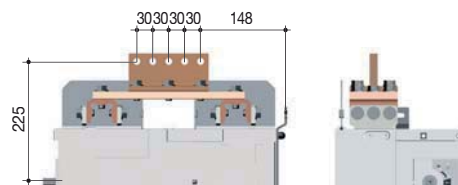


access_233_a_1_cat

Fig. 3



access_230_b_1_x_cat



access_234_a_1_cat

Top or bottom flat connection - Fig. 1

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	2	2619 1200
2000 ... 2500	Bolt set - part B	2	2699 1200
3200	Connection - part A		included
3200	Bolt set - part B	2	2699 1200

Top or bottom edgewise connection - Fig. 2

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	2	2619 1200
2000 ... 2500	T piece - part C	2	2629 1200 ⁽²⁾
2000 ... 2500	Bracket- part D	2	2639 1200 ⁽²⁾
3200	Connection - part A		included
3200	T piece - part C	2	2629 1200 ⁽²⁾
3200	Bracket- part D	2	2639 1200 ⁽²⁾

Top or bottom bridging connection -Fig. 3

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500	Connection - part A	2	2619 1200
2000 ... 2500	Bolt set - part B	2	2699 1200
2000 ... 2500	Bar - part E	1	4109 0250 ⁽²⁾
2000 ... 2500	T piece - part C	1	2629 1200 ⁽²⁾
3200	Connection - part A		included
3200	Bolt set - part B	2	2699 1200
3200	Bar - part E	1	4109 0320 ⁽²⁾
3200	T piece - part C	1	2629 1200 ⁽²⁾

(1) Example for 3 pole device equipped upstream only: Order 3 times the indicated quantities.

(2) Bolt set is provided with the accessories.

ATyS range

ATyS, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

from 125 to 3200 A

Accessories (continued)

Autotransformer 400/230 VAC

Use

For applications without neutral, this autotransformer provides the 230 VAC required to power these ATyS products.

Rating (A)	Reference
125 ... 3200	1599 4064

DC power supply

Use

Allows an ATyS to be supplied from a 12 or 24 VDC source.
To be positioned as close as possible to the DC power supply source.

Rating (A)	Operating voltage	Reference
125 ... 1800	12 VDC / 230 VAC	1599 5012
125 ... 1800	24 VDC / 230 VAC	1599 5112

Voltage sensing and power supply kit

Use

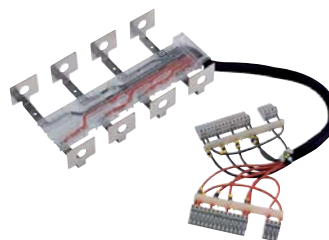
For power supply and voltage measurement (4 wire, three-phase) for the ATyS *t*, *g* and *p*.

Routing of the conductors is controlled, which means that no specific protective device is necessary for these connections.

The kit can be fitted on the top or bottom of the switch.

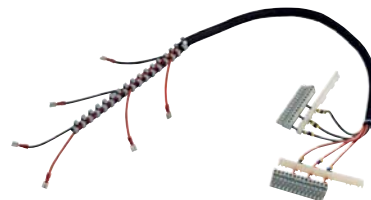
Note: the 3-pole version does not integrate the power supply.

From 125 to 630 A.



atys_606_a_1_cat

From 800 to 3200 A.



atys_606_a_2_cat

For ATyS *t*, *g* and *p* - 3 poles

Rating (A)	Reference
125 ... 160	1559 3012
250	1559 3025
400	1559 3040
630	1559 3063
800 ... 1000	1559 3080
1250	1559 3120
1600 ... 1800	1559 3160
2000 ... 3200	1559 3200

For ATyS *t*, *g* and *p* - 4 poles

Rating (A)	Neutral on the right	Neutral on the left
	Reference	Reference
125 ... 160	1559 4012	1559 4013
250	1559 4025	1559 4026
400	1559 4040	1559 4041
630	1559 4063	1559 4064
800 ... 1000	1559 4080	1559 4081
1250	1559 4120	1559 4121
1600 ... 1800	1559 4160	1559 4161
2000 ... 3200	1559 4200	1559 4201

ATyS DS voltage relay

Use

The ATyS DS is a voltage relay for monitoring a single three-phase power supply source.

Upon failure of the power supply source, the voltage relay's fault contact closes.

This output can be utilised, for example, to order the transfer of an ATyS motorised changeover switch.

Rating (A)	Reference
ATyS DS	192X 0056



atys_762_a_1_cat

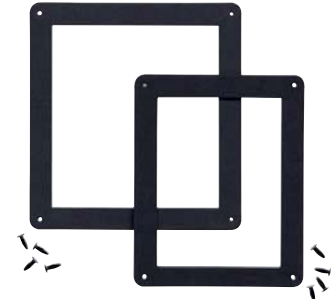
Door protective surround

Use

When direct access to the ATyS front face (mode selection, manual operation, display...) is required, the door surround can be utilised to provide a clean and safe finish to the panel's cut-out.

For Rating (A)	Reference
125 ... 630	1529 0012
800 ... 1800	1529 0080

For ATyS d, t, g and p Rating (A)	Reference
125 ... 630	1539 0012
800 ... 3200	1539 0080



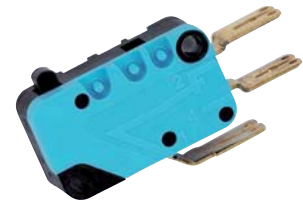
atys_595_a_2_cat

Auxiliary contact

Use

Pre-breaking and signalling of positions I and II. Each reference provides a single factory fitted NO/NC contact for both positions.

Low level auxiliary contacts: Please consult us. If additional auxiliary contacts are required please consult us.



access_065_a_1_cat

Rating (A)	Nominal current (A)	Operating current I _e (A)			
		A - 250 13 VAC	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
125 ... 3200	16	12	8	14	6

Rating (A)	Reference
125 ... 630	1599 0002 ⁽¹⁾
800 ... 1800	1599 0032 ⁽¹⁾
2000 ... 3200	included

(1) Up to 2 auxiliary contacts can be ordered.

Mounting spacers

Use

Increases the distance between the rear power terminals and the backplate by 10 mm.

This accessory may also be used to replace the original mounting spacers.

Rating (A)	Description of accessory	Reference
125 ... 630	1 set of 2 spacers	1509 0001



atys_009_a_2_cat

Auto/Manual key selector

Use

Replaces the standard Auto/Manual selector knob with a key selector, providing added security by preventing unauthorised use of product.

This is a factory fitted option which must be requested when ordering the ATyS switch (ATyS, ATyS d, t, g and p). To order this option simply add "-K" after the ATyS reference.

For example:

9533 4012-K : 4 pole 125 A ATyS d with Auto/Manual key selector. If this option is not required the "-K" should not be added to the product reference.



atys_855_a_1_cat

3 position padlocking (I-0-II)

Use

Enables the ATyS to be padlocked in positions 0, I and II (factory fitted).

Rating (A)	Reference
125 ... 630	1599 0003
800 ... 3200	1599 0004



atys_854_a_1_cat

ATyS range

ATyS, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*
from 125 to 3200 A

Accessories (continued)

Key handle interlocking system

Use

With the product in manual mode, it enables locking in position 0 using a RONIS EL11AP lock (factory fitted).

Locking in all three positions (I-0-II) requires, in addition, the "3 position padlocking" accessory.

Rating (A)	Reference
125 ... 630	1509 1006
800 ... 3200	1509 1004



atys_053_a_1_cat

Current transformers

Use - For ATyS p only

Used with ATyS p switches, current transformers enable information to be obtained on the load current.

Reference

See page 488.



trafo_025_a_2_cat



trafo_077_b_1_cat

Plug-in optional modules

Use - For ATyS p only

Description of accessories	Reference
RS485 MODBUS communication	4825 0092
2 inputs/2 outputs	4825 0094
Ethernet communication (embedded Ethernet webserver software)	4825 0203
Ethernet communication + RS485 JBUS/MODBUS gateway (embedded Ethernet webserver software)	4825 0204
Analogue outputs	4825 0093
Pulse outputs	4825 0090



atys_016_c_1_cat

Remote interfaces

Use

To display source availability and position indication on the front of a panel. Interfaces are powered from the ATyS changeover switch, via the RJ45 connection cable. Maximum connection distance: 3 m.

ATyS D10 - for ATyS d, t and g

To display source availability and position indication on the front panel of an enclosure. Protection degree: IP21.

ATyS D20 - for ATyS p

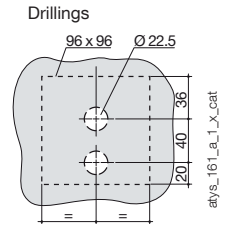
In addition to the functions of the ATyS D10, the D20 displays measurements and enables ATyS p mode control and configuration from the front of a panel. Protection degree: IP21.

Door mounting

2 holes Ø 22.5. ATyS changeover switch connection via RJ45 cable, not isolated. Cable available as an accessory.



Interfaces are powered from the ATyS.



Description of accessories	Reference
ATyS D10	9599 2010
ATyS D20	9599 2020

Connection cable for remote interfaces

Use

To connect between a remote interface (type D10 or D20) and an ATyS changeover switch (ATyS d, t, g or p).

Characteristics

RJ45 8 wire straight-through, non isolated cable. Length 3m.



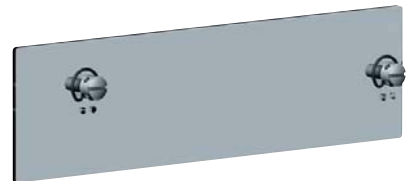
For ATyS d, t, g and p		
Type	Length	Reference
RJ45 cable	3 m	1599 2009

Sealable cover

Use - for ATyS t and g

Prevents access to the ATyS t and g configuration potentiometers and DIP switches (seals supplied).

Rating (A)	No. of poles	Reference
40 ...160	2 P	9599 0000



ATyS range

ATyS, ATyS d, ATyS t, ATyS g, ATyS p

from 125 to 3200 A

Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 630 A

Thermal current I _{th} at 40°C	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A
Rated insulation voltage U _i (V)	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U _{imp} (kV)	8	8	8	12	12	12	12	12
Rated operational currents I_e (A) according to IEC 60947-3								
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	200/200	315/315	400/400	500/500
500 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
500 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
500 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	200/200	315/315	400/400	500/500
500 VAC	AC-23 A / AC-23 B	80/80	80/80	80/80	200/200	200/200	200/200	400/400
690 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
690 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	200/200	200/200	200/200	500/500
690 VAC	AC-22 A / AC-22 B	125/125	125/125	125/125	160/160	160/160	160/160	400/400
690 VAC	AC-23 A / AC-23 B	63/80	63/80	63/80	125/125	125/125	125/125	400/400
220 VDC ⁽²⁾	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
220 VDC ⁽²⁾	DC-21 A / DC-21 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500
220 VDC ⁽²⁾	DC-22 A / DC-22 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500
220 VDC ⁽²⁾	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500
440 VDC ⁽²⁾	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500
440 VDC ⁽²⁾	DC-21 A / DC-21 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500
440 VDC ⁽²⁾	DC-22 A / DC-22 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500
440 VDC ⁽²⁾	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500
Rated operational currents I_e (A) according to IEC 60947-6-1								
Rated voltage	Utilisation category							
415 VAC	AC-31 B	125	160	200	250	315	400	500
415 VAC	AC-32 B				200	315	400	500
415 VAC	AC-33 B				200	200	200	400
Fuse protected short-circuit withstand as per IEC 60947-3 at 690 VAC								
Prospective short-circuit current (kA rms)		100 ⁽³⁾	100 ⁽³⁾	50 ⁽³⁾	50	50	50	50
Associated fuse rating (A)		125	160	200	250	315	400	500
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁴⁾								
Rated short-time withstand current 0.3s I _{sc} (kA rms)		12 ⁽³⁾	12 ⁽³⁾	12 ⁽³⁾	15	15	15	17
Short-circuit withstand without protection as per IEC 60947-3 at 690 VAC								
Rated short-time withstand current 1s I _{sc} (kA rms)		7 ⁽³⁾	7 ⁽³⁾	7 ⁽³⁾	8	8	8	10
Rated short-circuit making capacity I _{cm} (kA peak)		11.9	11.9	11.9	22	22	22	17
Rated short-time withstand current 60ms I _{sc} (kA rms) as per IEC 60947-6-1 at 415 VAC					10 ⁽⁵⁾	10 ⁽⁵⁾	10 ⁽⁵⁾	10
Connection								
Maximum Cu cable cross-section (mm ²)		35	50	70	95	150	185	240
Minimum Cu busbar cross-section (mm ²)								2 x 150
Maximum Cu cable cross-section (mm ²)		50	95	120	150	240	240	2 x 30 x 5
Maximum Cu busbar width (mm)		25	25	25	32	32	32	50
Tightening torque mini / maxi (Nm)		9/13	9/13	9/13	20/26	20/26	20/26	20/26
Switching time (Standard setting)								
I-II or II-I (s)		0.75	0.75	0.75	1.3	1.3	1.3	1.3
I-0 or 0-II (s)		0.45	0.45	0.45	0.85	0.85	0.85	0.85
Duration of "electrical blackout" I-II (s) minimum		0.3	0.3	0.3	0.6	0.6	0.6	0.6
Power supply								
min / max (VAC)		166/332	166/332	166/332	166/332	166/332	166/332	166/332
Control supply power demand								
Power supply 230 VAC inrush / nominal (VA) - ATyS		184/92	184/92	184/92	276/115	276/115	276/115	276/150
Power supply 230 VAC inrush / nominal (VA) - ATyS d, t, g, p		206/114	206/114	206/114	298/137	298/137	298/137	298/172
Mechanical characteristics								
Durability (number of operating cycles)		10 000	10 000	10 000	8 000	8 000	8 000	5 000
Weight ATyS 3 P (kg)		5.7	5.7	5.7	6.6	6.7	6.7	11.4
Weight ATyS 4 P (kg)		6.9	6.9	6.9	7.4	7.8	7.8	13.3
Weight ATyS d 3 P (kg)		6.3	6.3	6.3	7.2	7.3	7.3	12.0
Weight ATyS d 4 P (kg)		7.5	7.5	7.5	8.0	8.4	8.4	13.9
Weight ATyS t, g, p 3 P (kg)		6.8	6.8	6.8	7.7	7.8	7.8	12.5
Weight ATyS t, g, p 4 P (kg)		8.0	8.0	8.0	8.5	8.9	8.9	15.1

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-". 4-pole device with 2 poles in series by polarity.

(3) At 415 VAC

(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.

For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

(5) At 30ms

800 to 3200 A

Thermal current I _{th} at 40°C	800 A	1000 A	1250 A	1600 A	1800 A	2000 A	2500 A	3200 A
Rated insulation voltage U _i (V)	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U _{imp} (kV)	12	12	12	12	12	12	12	12
Courants assignés d'emploi I_e (A) selon CEI 60947-3								
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500
415 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	-/2000	-/2500
415 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1600/1600	1800/1600	-/2000	-/2500
415 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250	-/1600	-/1600
500 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	1600/1600	-/2000	-/2500
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000	1000/1000		
500 VAC	AC-23 A / AC-23 B	400/400	630/630	800/800	800/800	800/800		
690 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500
690 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	1600/1600	-/2000	-/2500
690 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1600/1600	1600/1600		
690 VAC	AC-23 A / AC-23 B	400/400	630/630	800/800	1000/1000	1000/1000		
220 VDC ⁽²⁾	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800		
220 VDC ⁽²⁾	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250		
220 VDC ⁽²⁾	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250		
220 VDC ⁽²⁾	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250		
440 VDC ⁽²⁾	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600	1800/1800		
440 VDC ⁽²⁾	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250		
440 VDC ⁽²⁾	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250		
440 VDC ⁽²⁾	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250		
Rated operational currents I_e (A) according to IEC 60947-6-1								
Rated voltage	Utilisation category	800	1000	1250	1600	1800	2000	2500
415 VAC	AC-31 B	800	1000	1250	1600	1800	2000	2500
415 VAC	AC-32 B	800	1000	1250	1600	1600	2000	2000
415 VAC	AC-33 B	800	800	800	1000	1000	1250	1250
Fuse protected short-circuit withstand as per IEC 60947-3 at 415 VAC								
Prospective short-circuit current (kA rms)	50	100	100	100	100			
Associated fuse rating (A)	800	1000	1250	2x800	2x800			
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽³⁾								
Rated short-time withstand current 0.3s I _{cw} (kA rms)	47	64	64	78	78	78	78	78
Short-circuit withstand without protection as per IEC 60947-3 at 415 VAC								
Rated short-time withstand current 1s I _{cw} (kA rms)	26	35	35	50	50	50	50	50
Rated short-circuit making capacity	48	73.5	73.5	110	110	110	110	110
Rated short-time withstand current 60ms I _{cw} (kA rms) as per IEC 60947-6-1 at 415 VAC	16	20	25	32	32	40	50	50
Connection								
Maximum Cu cable cross-section (mm ²)	2 x 185	2 x 240						
Minimum Cu busbar cross-section (mm ²)	2 x 40 x 5	2 x 50 x 5	2 x 60 x 5	2 x 80 x 5	3 x 100 x 5	2 x 100 x 10	2 x 100 x 10	2 x 100 x 10
Maximum Cu cable cross-section (mm ²)	2 x 300	4 x 185	4 x 185	6 x 185	6 x 185			
Maximum Cu busbar width (mm)	63	63	63	100	100	100	100	100
Tightening torque mini / maxi (Nm)	20/26	20/26	20/26	40/45	40/45	40/45	40/45	40/45
Switching time (Standard setting)								
I-II or II-I (s)	2.6	2.6	2.6	2.6	2.6	2	2	2
I-0 or 0-II (s)	1.6	1.6	1.6	1.6	1.6	1	1	1
Duration of "electrical blackout" I - II (s) minimum	1.5	1.5	1.5	1.6	1.6	1	1	1
Power supply								
min / max (VAC)	166/332	166/332	166/332	166/332	166/332	166/332	166/332	166/332
Control supply power demand								
Power supply 230 VAC inrush / nominal (VA) - ATyS	460/184	460/184	460/184	460/230	460/230	812/322	812/322	812/322
Power supply 230 VAC inrush / nominal (VA) - ATyS d, t, g, p	482/206	482/206	482/206	482/252	482/252	834/344	834/344	834/344
Mechanical characteristics								
Durability (number of operating cycles)	4 000	4 000	4 000	3 000	3 000	3 000	3 000	3 000
Weight ATyS 3 P (kg)	27.9	28.4	28.9	33.1	33.1	50.7	50.7	61.0
Weight ATyS 4 P (kg)	32.2	32.9	33.6	39.4	39.4	61.6	61.6	75.3
Weight ATyS d 3 P (kg)	28.5	29.0	29.5	33.7	33.7	51.3	51.3	61.6
Weight ATyS d 4 P (kg)	32.8	33.5	34.2	40.0	40.0	62.2	62.2	75.9
Weight ATyS t, g, p 3 P (kg)	29.0	29.5	30.0	34.2	34.2	51.8	51.8	62.1
Weight ATyS t, g, p 4 P (kg)	33.3	34.0	34.7	40.5	40.5	62.7	62.7	76.4

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
 (2) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-". 4-pole device with 2 poles in series by polarity.

(3) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.
 For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

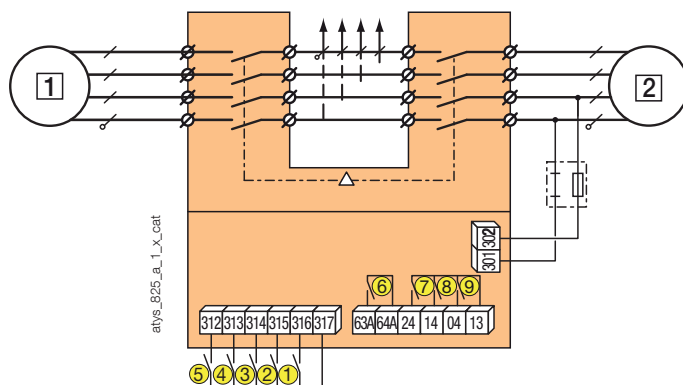
ATyS range

ATyS, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

from 125 to 3200 A

Terminals and connections

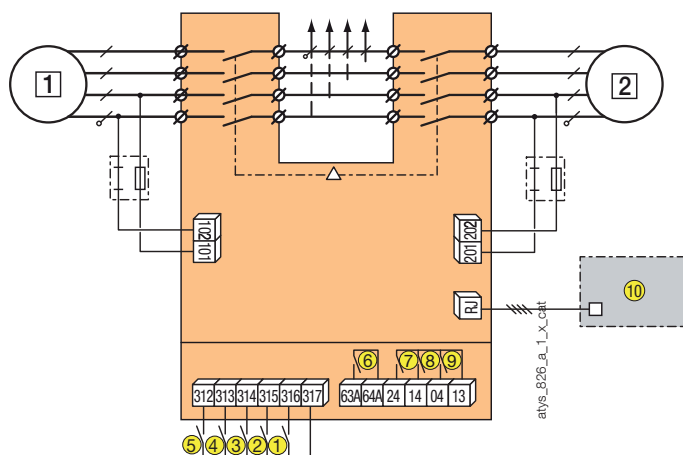
ATyS



- 1 preferred source
- 2 alternate source

- 1: position 0 control
- 2: position 1 control
- 3: position II control
- 4: priority control position 0
- 5: closure of this contact enables the position control orders
- 6: product availability relay
- 7: auxiliary contact, closed when the switch is in position II
- 8: auxiliary contact, closed when the switch is in position I
- 9: auxiliary contact, closed when the switch is in position 0

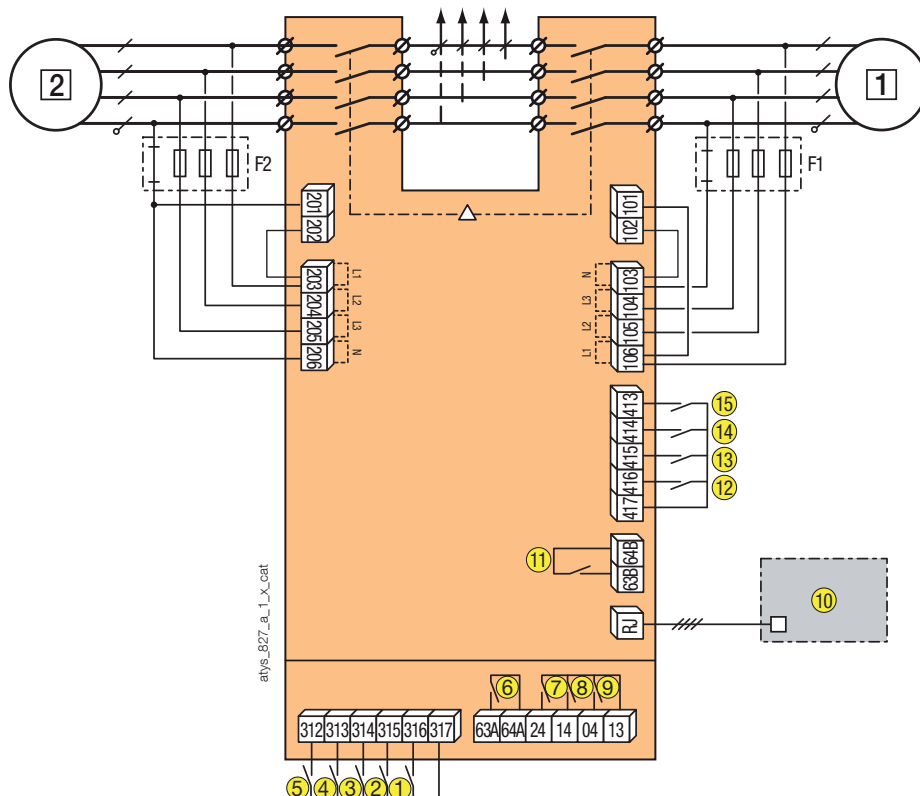
ATyS *d*



- 1 preferred source
- 2 alternate source

- 1: position 0 control
- 2: position 1 control
- 3: position II control
- 4: priority control position 0
- 5: closure of this contact enables the position control orders
- 6: product availability relay
- 7: auxiliary contact, closed when the switch is in position II
- 8: auxiliary contact, closed when the switch is in position I
- 9: auxiliary contact, closed when the switch is in position 0
- 10: Remote display D10

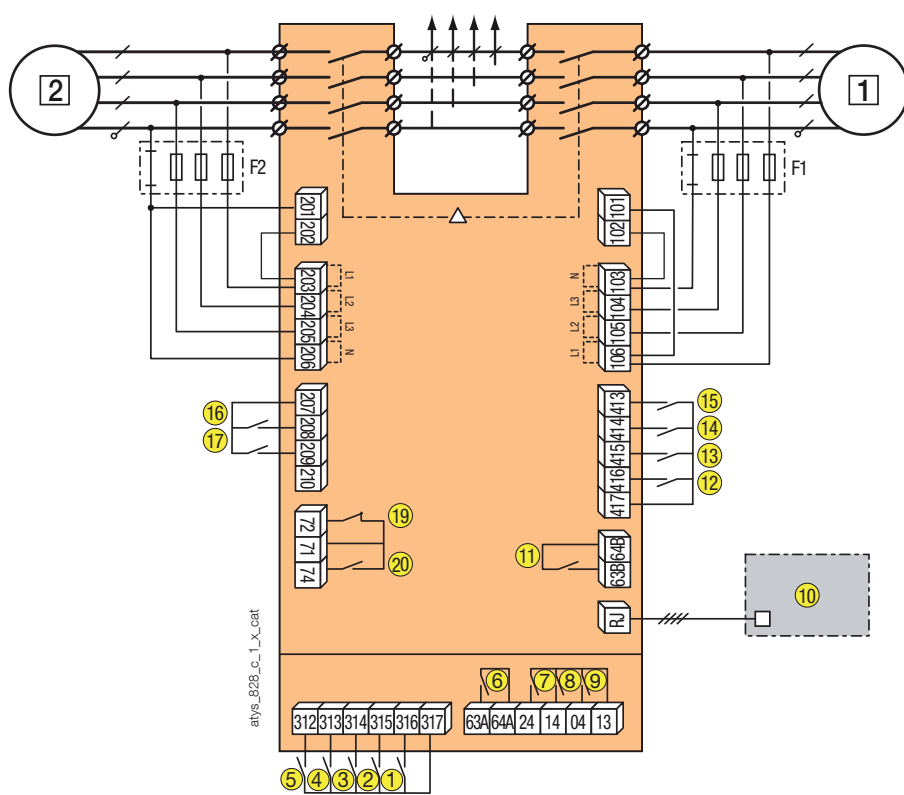
ATyS *t*



- 1 preferred source
- 2 alternate source

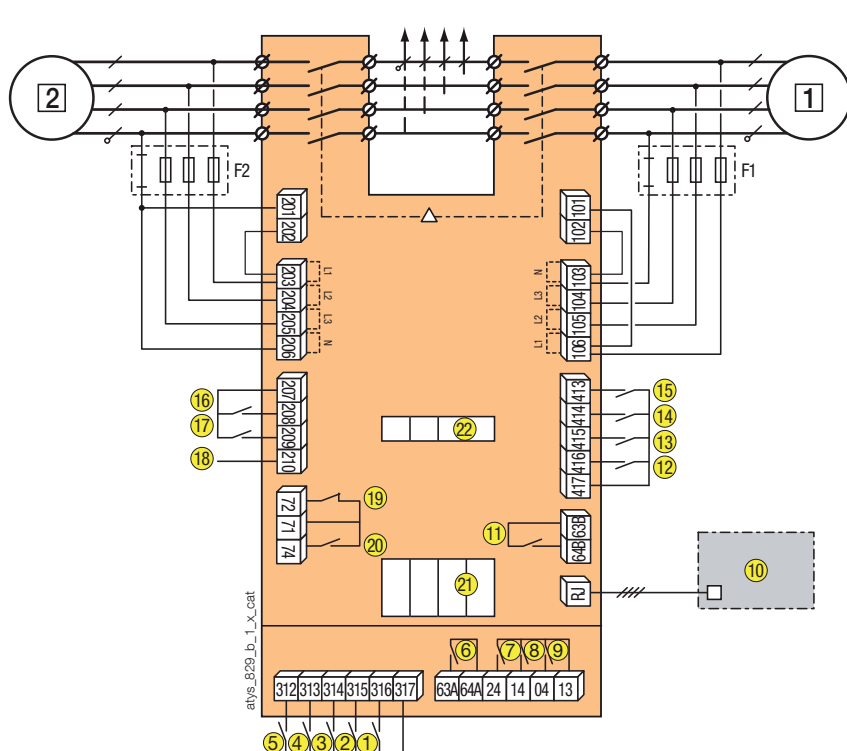
- 1: position 0 control
- 2: position 1 control
- 3: position II control
- 4: priority control position 0
- 5: closure of this contact enables the position control orders
- 6: motorisation unit availability relay
- 7: auxiliary contact, closed when the switch is in position II
- 8: auxiliary contact, closed when the switch is in position I
- 9: auxiliary contact, closed when the switch is in position 0
- 10: remote display D10
- 11: electronic unit availability relay
- 12: automatic operation inhibited
- 13: manual retransfer confirmation
- 14: preferred source selection
- 15: operation with or without priority

ATyS g



- 1 preferred source
- 2 alternate source
- 1 : position 0 control
- 2 : position 1 control
- 3 : position II control
- 4 : priority control position 0
- 5 : closure of this contact enables the position control orders
- 6 : motorisation unit availability relay
- 7 : auxiliary contact, closed when the switch is in position II
- 8 : auxiliary contact, closed when the switch is in position I
- 9 : auxiliary contact, closed when the switch is in position 0
- 10 : remote display D10
- 11 : electronic unit availability relay
- 12 : automatic operation inhibited
- 13 : manual retransfer confirmation
- 14 : 2AT time delay bypass
- 15 : priority for on load test
- 16 : remote test off load
- 17 : remote test on load
- 19 : generator starting and stopping order (NC)
- 20 : generator starting and stopping order (NO)

ATyS p



- 1 preferred source
- 2 alternate source
- 1 : position 0 control
- 2 : position 1 control
- 3 : position II control
- 4 : priority control position 0
- 5 : closure of this contact enables the position control orders
- 6 : motorisation unit availability relay
- 7 : auxiliary contact, closed when the switch is in position II
- 8 : auxiliary contact, closed when the switch is in position I
- 9 : auxiliary contact, closed when the switch is in position 0
- 10 : remote control interface D20
- 11 : electronic unit availability relay
- 12-17 : programmable inputs
- 18 : auxiliary power supply for the use of optional modules
- 19 : generator starting and stopping order (NC)
- 20 : generator starting and stopping order (NO)
- 21 : 4 slots for optional modules
- 22 : current transformer connection

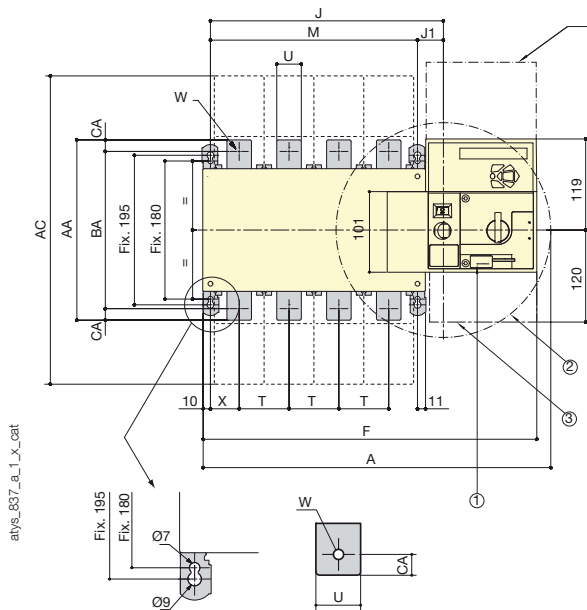
ATyS range

ATyS, ATyS d, ATyS t, ATyS g, ATyS p

from 125 to 3200 A

Dimensions

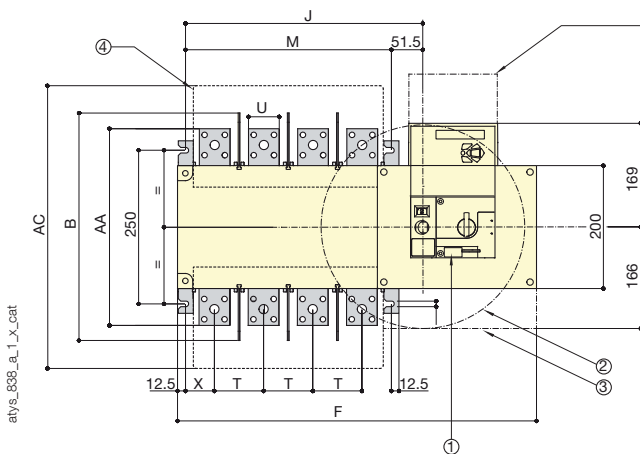
ATyS 125 to 630 A



1. Locking bracket with 3 padlocks max
2. Maximum handle radius, operating angle $2 \times 90^\circ$.
3. Connection and disconnection area
4. Spacers
5. Terminal shrouds
6. Handle

Rating (A)	Overall dimensions			Terminal shrouds		Body						Switch mounting				Connection								
	A 3p.	A 4p.	C	AC	F 3p.	F 4p.	H	J 3p.	J 4p.	J1	M 3p.	M 4p.	T	U	V	W	X 3p.	X 4p.	Y	Z1	Z1	AA	BA	CA
125	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10
160	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10
200	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10
250	345	395	244	288	328	378	152	195	245	35	160	210	50	25	30	11	33	33	3.5	39.5	133.5	160	130	15
315	345	395	244	288	328	378	152	195	245	35	160	210	50	25	30	11	33	33	3.5	39.5	133.5	160	130	15
400	345	395	244	288	328	378	152	195	245	35	160	210	50	35	35	11	33	33	3.5	39.5	133.5	170	140	15
500	394	454	320.5	402	377	437	221	244	304	34	210	270	65	45	50	13	42.5	37.5	5	53	190	260	220	20
630	394	454	320.5	402	377	437	221	244	304	34	210	270	65	45	50	13	42.5	37.5	5	53	190	260	220	20

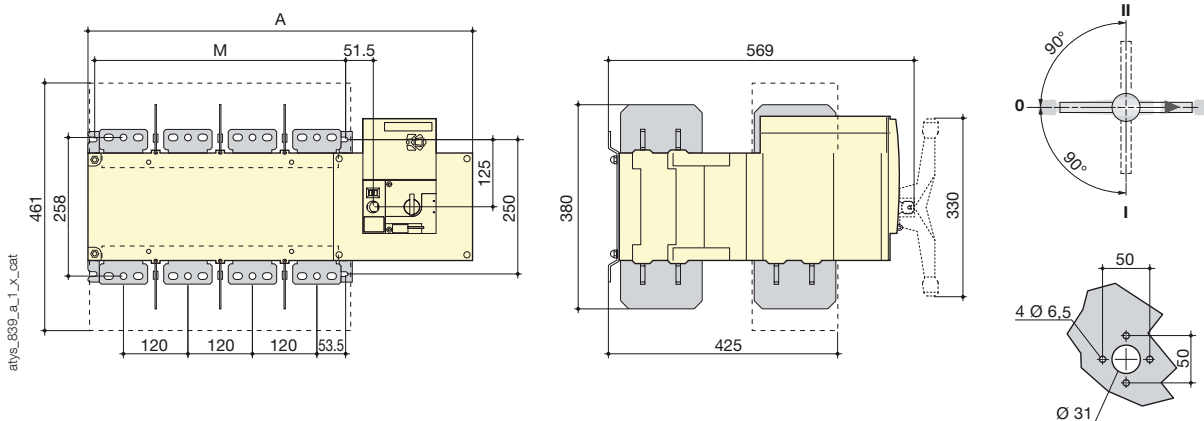
ATyS 800 to 1800 A



1. Locking bracket with 3 padlocks max
2. Maximum handle radius, operating angle $2 \times 90^\circ$.
3. Connection and disconnection area
4. Terminal screens
5. Inter phase barrier
6. Handle

Rating (A)	Overall dimensions		Terminal shrouds		Body				Switch mounting				Connection				
	B	AC	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	X	Y	Z1	AA		
800	370	461	504	584	306.5	386.5	255	335	80	50	60.5	47.5	7	66.5	321		
1000	370	461	504	584	306.5	386.5	255	335	80	50	60.5	47.5	7	66.5	321		
1250	370	461	504	584	306.5	386.5	255	335	80	60	65	47.5	7	66.5	330		
1600	380	531	596	716	398.5	518.5	347	467	120	90	44	53	8	67.5	288		
1800	380	531	596	716	398.5	518.5	347	467	120	90	44	53	8	67.5	288		

ATyS 2000 to 3200 A

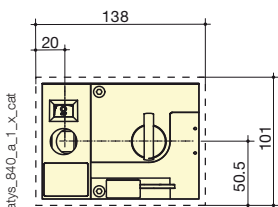


Rating (A)	Overall dimensions		Switch mounting	
	A 3p.	A 4p.	M 3p.	M 4p.
2000 ... 3200	596	716	347	467

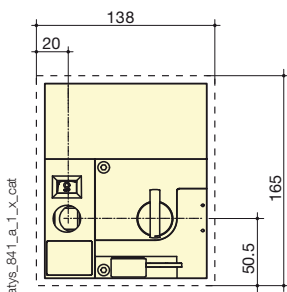
Cut of dimensions

ATyS 125 to 630 A

ATyS

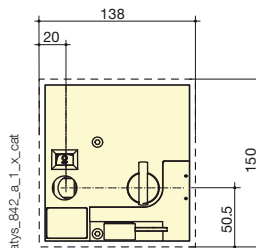


ATyS *d*, *t*, *g*, *p*

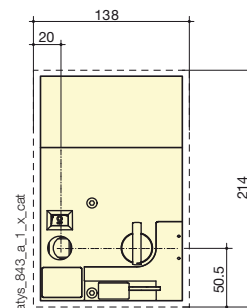


ATyS 800 to 1800 A

ATyS

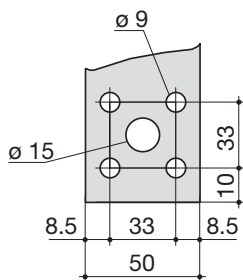


ATyS *d*, *t*, *g*, *p*

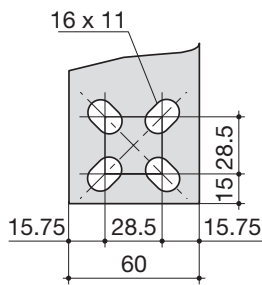


Connection terminals

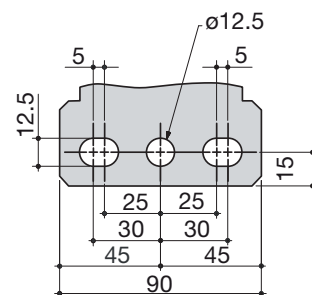
ATyS 800 to 1000 A



ATyS 1250 A



ATyS 1600 to 3200 A

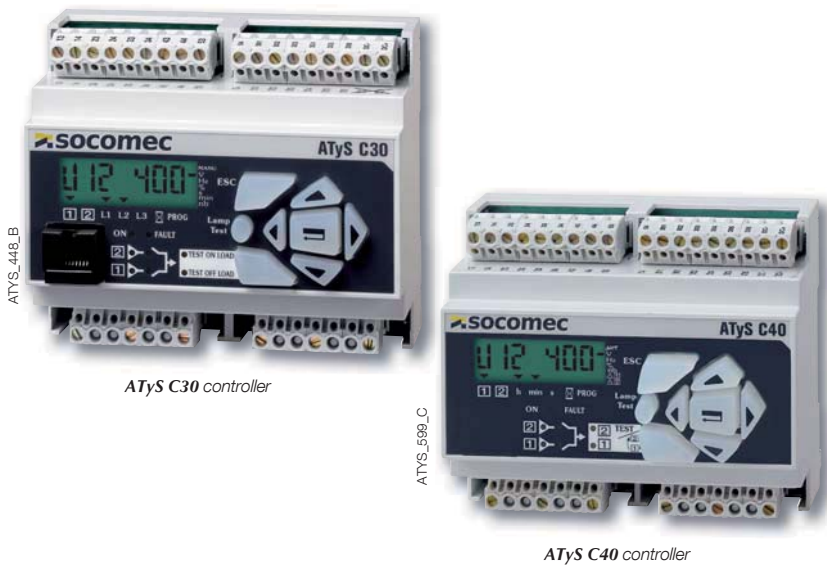




ATyS C30/C40

Control relays

Changeover switches



ATyS C30 controller

ATyS C40 controller

The solution for

- > Non critical buildings.



Strong points

- > Auxiliary power supply.
- > Modular device.
- > Extended compatibility of use.

Conformity to standards

- > IEC 61010-1
- > IEC 61000-4-x
- > IEC 60068-2-x



Function

ATyS C30/C40 are modular control relays. ATyS C30/C40 allows any type of motorised changeover control: ATyS and ATyS M, contactors, circuit breakers or other motorised switches.

General characteristics

ATyS C30

- ATyS D10 or D20 connection available.
- Inputs for auxiliary contact position information.
- 3U measurement on network 1 and 1U on network 2.
- 2 programmable inputs for the following functions: test on/off load, manual retransfer, priority source selection, automatic inhibit...
- Up to 2 programmable outputs for the following functions: source availability information, load shedding relay and circuit breaker control.
- 1 relay output for generator control.

ATyS C40

- Dual genset controller with a redundant genset application cycle (basic cycle).
- 1U measurement on each source - generator 1 & generator 2.
- 3 programmable inputs for the following functions: start/stop transfer cycle, manual retransfer, automatic inhibit...
- 1 programmable output for the following functions : source availability information and circuit breaker control.
- 2 generator control contacts (Gen1 & Gen2).

Advantages

Auxiliary power supply

Two versions of the ATyS C30 are available. One version with an AC supply via the measurement inputs and another with a DC auxiliary supply.

Modular device

The ATyS C30 and C40 are modular products (6 modules, 105 mm wide) which can be DIN rail mounted.

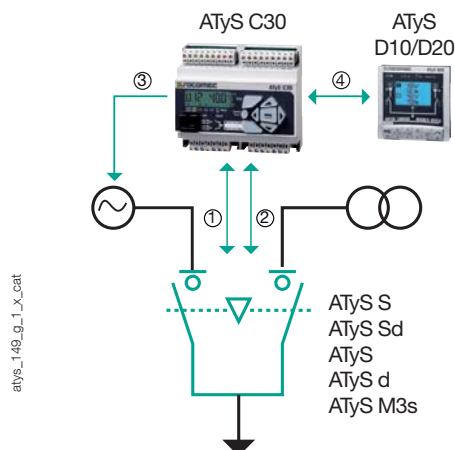
Extended compatibility of use

The product is used with Socomec changeover switches, or those using identical technology. It is also compatible with contactor and circuit breaker technologies.

Configurations

ATyS C30:

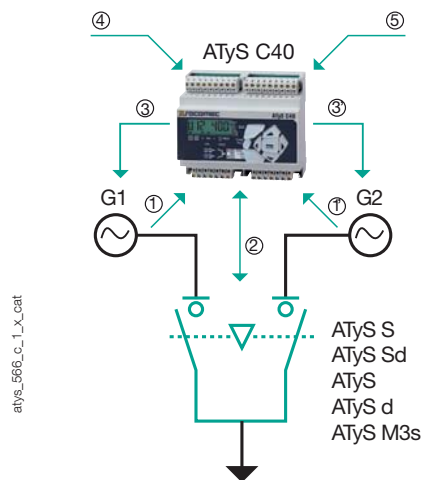
Transformer/transformer and transformer/generator applications



1. Measurement and power supply
2. Control and position information feedback
3. Generator start / stop control
4. ATyS display/interface connection

ATyS C40:

Generator/generator applications



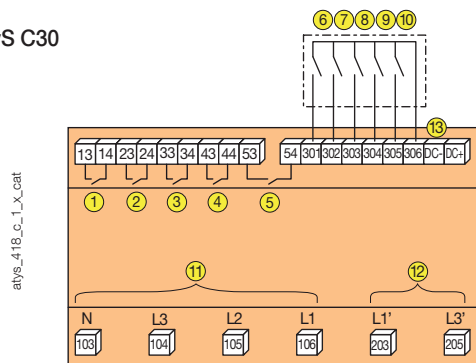
- 1 and 1. 1U measurement for each generator
2. Control and position information feedback
- 3 and 3'. Generator "start/stop" control
4. External "start/stop" command for basic cycle
5. DC power supply

Electrical characteristics

Supplied from measurement circuit	110 ... 400 VAC
DC power supply	9 ... 30 VDC
Measurement range	110 ... 400 VAC / ± 10 %
Frequency	50/60 Hz
Accuracy	± 1 %

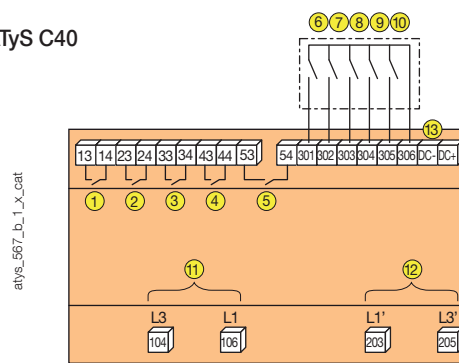
Terminals

ATyS C30



1. Generator start / stop control
2. Position 1 control
3. Position 2 control
4. O1: programmable output
5. O2: programmable output
6. AC1: auxiliary contact position 1
7. AC1: auxiliary contact position 0
8. AC0: auxiliary contact position 2
9. I1: programmable input
10. I2: programmable input
11. Source 1 : 3 U network measurement and power supply
12. Source 2 : 1 U network measurement and power supply
13. DC power supply 9-30 VDC (version 1599 3031)

ATyS C40



1. Generator G1 start / stop control
2. Position 1 control
3. Position 2 control
4. O1: programmable output
5. Generator G2 start / stop control
6. AC1: auxiliary contact position 1
7. I3: programmable input
8. AC2: auxiliary contact position 2
9. I1: programmable input
10. I2: programmable input
11. Generator G1 : 1U measurement
12. Generator G2 : 1U measurement
13. DC power supply 9-30 VDC

References

Type	ATyS C30 Reference	ATyS C40 Reference
Supplied from measurement circuit	1599 3030	
DC power supply	1599 3031	1599 3040



Socomec Benfeld

Du 01/03/2010 au 03/03/2010
EPS - Hiérarchie géo - Socomec Benfeld

Diagnostic énergétique

IDE Etiquette énergétique
CVC - Ecole - Bureau kWh par an

Bâtiment économe



Bâtiment Energivore

Légende



socomec

DIRIS D600

Socomec Diris N600

Transformer 1

03/11/2009 13:35

- Measures
- Energies
- Quality
- Events
- Parameters
- Diagnostic
- System
- Help

GES Etiquette d'émission de GES
Emission kg par an

Faible émission de GES



Forte émission de GES

socomec

000937,4 kWh
T23

socomec

DIRIS A40

12 4003
11 4043
23 3995
33 3935
31 3909
F 5000
E 5444 Hz
0002 17883 kWh

1°C V F P PF MAX AVG

Metering, monitoring & power quality

The benefits of the Energy Efficiency policy	p. 408
The benefits of working with a specialist	p. 410
A complete range of products to suit your requirements	p. 411
Selection guide COUNTIS E	p. 412
Selection guide DIRIS	p. 414
Selection guide for current transformers	p. 416
Selection guide for multifunction meters	p. 418

Active energy meter and concentrator **COUNTIS E**

 new E0x 32 A p. 420	 new E1x 63 A p. 422	 new E2x 63 A p. 424
 E3x 100 A p. 426	 E4x 6000 A p. 428	 E5x 6000 A p. 430
 E63 100 A p. 432	 ECi2/ECi3 p. 434	

Multifunction meters **DIRIS A**

 A10 LV p. 436	 new A17 LV/HV p. 440	 A20 LV p. 444
 A40/A41 LV/HV p. 448	 A60 LV/HV p. 454	 A80 LV/HV p. 460

Management software for **COUNTIS** and **DIRIS**



COUNTIS E and DIRIS A
p. 464

Network analysers **DIRIS N**




N300/N600
LV/HV
p. 474

Pack adapted to existing installations




RETROFIT Line
p. 468

Monitoring software



Power Monitoring Software (PMS)
VERTELIS VISION
p. 482

Communication interfaces



p. 486


Measurement devices




Current transformers
5 to 6000 A
p. 488



Measurement shunt
p. 502



Other solutions
1 to 6000 A
p. 504



Other measurements devices
p. 506

Services & Technical Assistance: second nature!

For further information, see page 8.





The benefits of the Energy Efficiency policy

Solutions that meet your requirements

Energy efficiency is not just about reducing energy bills. Our solutions offer you the ability to:

- Centralise your multi-utility energy measurement and monitoring.
- Significantly reduce your energy costs.
- Easily communicate internally and externally your environment oriented actions.
- Improve and ensure the energy efficiency of your installation.
- Increase the value of your property portfolio and assets thanks to the legislation compliance (EN 50001...).



The three steps in the Energy Efficiency policy.

Solutions adapted to your activities

> Industry

automotive, aviation, food-processing, cement works



VERTE 031 A

Up to **10 %** energy savings

- Receive alerts concerning abnormal operation.
- Prolong equipment operating life.
- Maximize energy output and avoid tariff penalties.
- Obtain energy performance indicators for preparing your annual report.

> Non critical buildings

schools, sport centres, offices, hotels



VERTE 108 A

Up to **30 %** energy savings

- Edit and send automatic reports.
- Reduce and efficiently share your energy consumption.
- Increase occupant awareness of energy consumption habits.
- Facilitate the resale and renting of your building assets.
- Acquire energy labels.

An independent partner working closely with you



SITE 631 A

A comprehensive range

A complete and extensive range incorporating hardware, software and specialist services from one source.

A leader in Energy & Power Management

Measurement is the key link in managing an energy efficiency project. With the COUNTIS and DIRIS ranges, SOCOMEC has developed one of the most advanced multifunction measurement ranges on the market, dedicated to improving your energy performance.

High quality and high performance ranges

The DIRIS range is compliant with the latest IEC 61557-12 standard dedicated to multi-measurement devices (PMD*). The COUNTIS range complies with the requirements of the latest MID** directive (B+D module).

Enhanced skills and expertise in Energy Management Software development

Thanks to the VERTELIS team, having expertise in web based energy efficiency solutions for more than 20 years of experience, SOCOMEC can now propose a global and high-performance offer.

The support of a partner

From the preliminary assessment of your installation required to properly analyse and use the data, to the software adaptation, the experts at SOCOMEC can support you in improving your energy efficiency objectives and to reach your goals.

* Performance Measuring and monitoring Devices.

** MID: Measuring Instruments Directive.

> Critical buildings

hospitals, data centres, shopping centres, high-rise buildings



VERTE 033 A

Up to 30 % energy savings

- Display real-time values (digital or graphic formats).
- Identify abnormalities.
- Display energy targets and their results.
- Secure continuity of manufacturing processes.
- Define a performance reference system.
- Demonstrate respect for regulations currently in force / in the future.

> Infrastructures

transport, network operators, public distribution



SYDOW 111 A

Up to 20 % energy savings

- Validate the network's capacity to accept supplementary loads.
- Choose the best tariff and check energy supplier bills.
- Obtain energy performance indicators for preparing your annual report.
- Improve the quality and energy output of your installation.



The benefits of working with a specialist

Metering, monitoring & power quality

Contractors

Save time, reduce space and have peace of mind by choosing Socomec.



Compact devices: from single DIN 1 module meters to 96x96 multifunction measurement devices, our products are compact.



Guaranteed connections: protection against phase / neutral inversion and wiring errors detection, commissioning is faster and the equipment is guaranteed to operate correctly.



Robust terminals: we only use high quality cable lugs with appropriate tightening torques.

Intuitive ergonomics: Socomec products are designed to reduce the configuration time.



Reliable ranges: our ranges always respect the major international standards such as IEC 62053-21-22-23, IEC 61557-12 (PMD) and EN 50470-1-3 (MID).

Specifiers

The assurance of an adapted solution that conforms to the most stringent standards.



Solutions adapted to your requirements: our comprehensive offer helps you find the perfect product with the needed functions.

In addition:

- We help you to define the right system perfectly suited to your customer needs.
- As a specialist manufacturer we are able to adapt our devices to your specific needs.



Products compliant with major standards:

- All DIRIS devices comply with the requirements of the IEC 61557-12. This guarantees a high level of performance in metrological, mechanical and environmental terms.
- All COUNTIS comply with the requirements of the MID directive B+D module (EN 50470-1, EN 50470-3) ensuring measurement accuracy and products are tamper-proof.

Adapted services

We offer a range of services to help you identify and meet your energy performance objectives:

- assessment and sizing,
- commissioning,
- software adaptation and customisation,
- customised maintenance,
- end-of-life product replacement,
- customised training.

Contact your agency for further information.

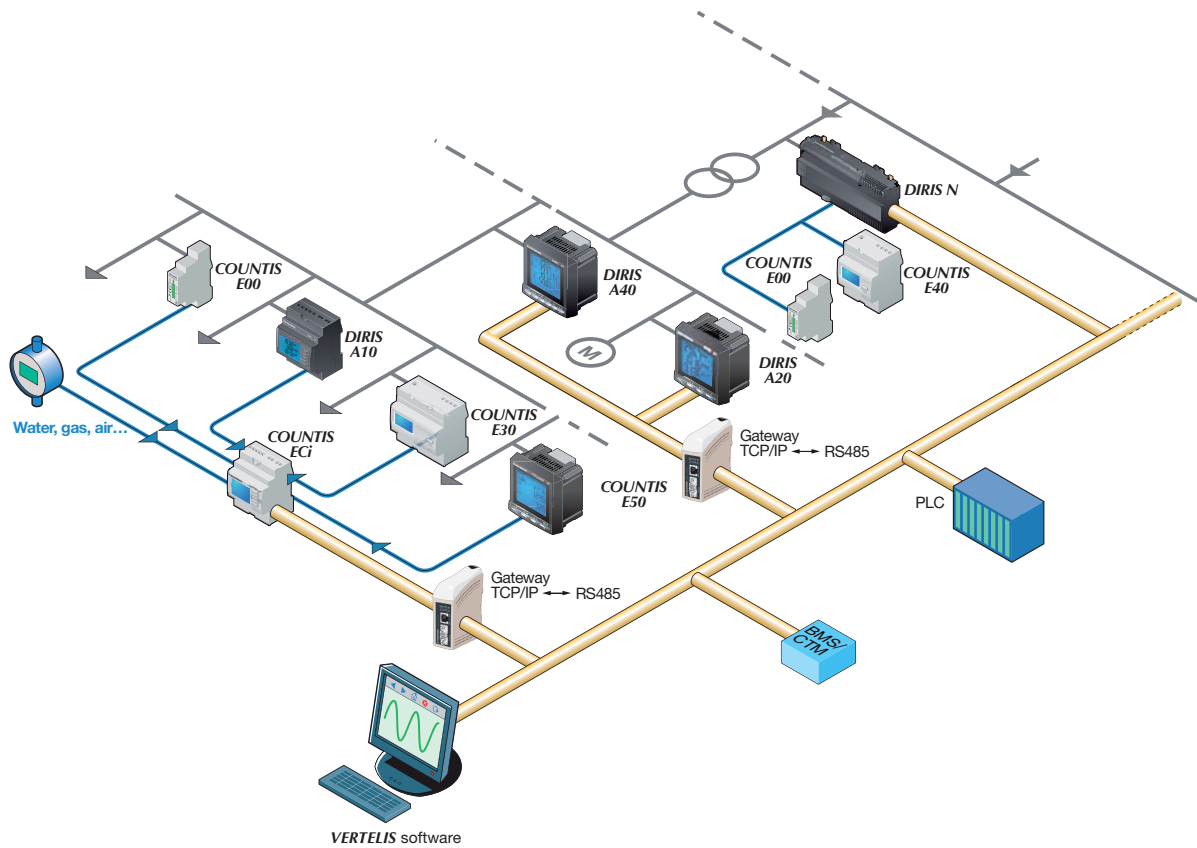


A complete range of products to suit your requirements

Our offer, comprising **products, software and services** are perfectly suited to LV electrical installations, but also are an ideal solution for HV facilities thanks to the DIRIS A and DIRIS N measuring units. In addition, the flexibility of our products and their extensive ranges enable contractors and users to choose the right product for each type of network (single, three-phase, etc.) and the load to be measured.

Take advantage of a complete manufacturer's offer that is flexible and multi-utility compatible, and one that provides:

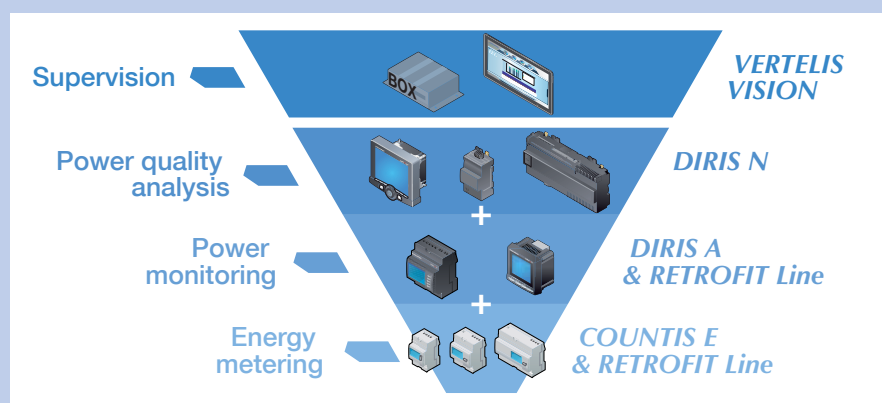
- **cost-effective products:** COUNTIS E energy meters with direct connection up to 100 A, COUNTIS ECi multi-utility pulse collector (electricity, water, gas, analogue values, etc.),
- **advanced products:** DIRIS A multifunction measuring units and DIRIS N network analysers,
- **indispensible range accessories:** current transformers, measurement indicators, communication interfaces, etc.



mesur_112_c_e_cat

Selection guide

A specific solution to implement each step in your Energy Efficiency policy.



DIRIS 897 C



Selection guide

Active energy meters and pulse concentrators COUNTIS E

Which type of network?

Which load current?

Network - Input current	Single-phase Direct up to 32 A		Single-phase Direct up to 63 A	Single-phase Direct up to 80 A		Three-phase Direct up to 63 A	
Active energy meters: COUNTIS E	<i>E00/E02</i> <i>p. 420</i>	<i>E03/E04</i> <i>p. 420</i>	<i>E10/E11/E12</i> <i>p. 422</i>	<i>E13/E14</i> <i>p. 422</i>	<i>E15/E16</i> <i>p. 422</i>	<i>E20/E21</i> <i>p. 424</i>	<i>E23/E24</i> <i>p. 424</i>

Main specifications

MID: EN 50470 module B + D certification	• (E02)	• (E04)	• (E12)	• (E14)	• (E16)		• (E24)
RS485 MODBUS		•		•			•
RS485 M-BUS					•		
Case	1 module	1 module	3 modules	3 modules	3 modules	4 modules	4 modules
Input voltage	230 VAC	230 VAC	230 VAC	230 VAC	230 VAC	230 ... 400 VAC	230 ... 400 VAC

Functions

Total/partial energy kWh	•/-	•/-	•/• (E10, E11)	•/-	•/-	•/•	•/•
Active power / Reactive power			•/-	•/•	•/•	•/-	
Dual tariff for kWh			• (E11, E12)	•	•	• (E21)	•
Total/partial energy kvarh							
kVA							
Load curve							
Measurement (I, V, P, Q, S, F and PF) via communication		•		•	•		•
CT connection indication							
Birectional (energy consumption and production)				•	•		•

Accuracy

Active energy (IEC 62053-21)	class 1	class 1	class 1	class 1	class 1	class 1	class 1
Reactive energy (according to IEC 62053-23)							
Active energy (EN 50470)	class B (E02)	class B (E04)	class B (E12)	class B (E14)	class B (E16)		class B (E24)

Characteristics

Metrological LED	•	•	•	•	•	•	•
Pulse output	100 Wh	100 Wh	100 Wh	100 Wh	100 Wh	100 Wh	100 Wh
Sealing cover (MID version only)	• (E02)	• (E04)	• (E12)	• (E14)	• (E16)		• (E24)
Phase/neutral inversion protection						•	

Pulse concentrator	<i>COUNTIS ECi2</i> <i>p. 434</i>	<i>COUNTIS ECi3</i> <i>p. 434</i>
Case	4 modules	4 modules
Logical inputs	7	7
Analogue inputs		2
ON/OFF output (alarm)	1	1
Partial, total, daily, weekly or monthly kWh or other types of data (liters, m³...)	•	•
Load curve from 8 to 30 minutes	•	•
RS485 MODBUS	•	•

Which accuracy?

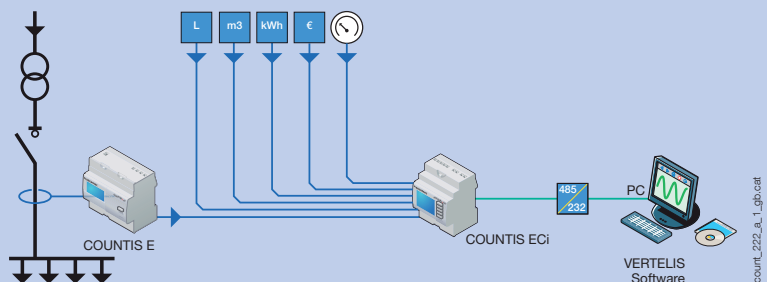
MID certification?

Communication or pulse output?

Three-phase Direct up to 63 A	Three-phase Direct up to 63 A			3 x Single-phase Direct up to 100 A	Three-phase CT/5 A			Three-phase CT/5 A	
E25/E26 p. 424	E30/E31/E32 p. 426	E33/E34 p. 426	E35/E36 p. 426	E63 p. 432	E40/E41/E42 p. 428	E43/E44 p. 428	E45/E46 p. 428	E50 p. 430	E53 p. 430
• (E26)	• (E32)	• (E34)	• (E36)		• (E42)	• (E44)	• (E44)		
•		•	•	•		•	•		•
•			•				•		
4 modules	7 modules	7 modules	7 modules	7 modules	4 modules	4 modules	4 modules	96x96	96x96
230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	100 ... 400 VAC 125 ... 350 VDC	100 ... 400 VAC 125 ... 350 VDC
•/•	•/• (E31)	•/via COM (E34)	•/via COM (E36)	•/•	•/•	•/via COM (E44)	•/via COM (E46)	•/•	•/•
	•/-	•/via COM	•/via COM	•/via COM	•/-	•/via COM	•/via COM	•/•	•/•
•	• (E31/E32)	up to 4 via COM	up to 4 via COM	up to 4 via COM		up to 4 via COM	up to 4 via COM	•	•
		via COM	via COM	via COM		via COM	via COM	•	•
		via COM	via COM	via COM		via COM	via COM	•	•
		via COM	via COM	via COM		via COM	via COM		
•		via COM	via COM	via COM		via COM	via COM	•	•
					•	•	•	•	•
•		• (E33)	• (E35)			• (E43)	• (E45)		
class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1
					class 2	class 2	class 2	class 2	class 2
class B (E26)	class B (E32)	class B (E34)	class B (E36)		class C (E42)	class C (E44)	class C (E46)		
•	•	•	•	•	•	•	•		
100 Wh	100 Wh			100 Wh	configurable				
• (E26)	• (E32)	• (E34)	• (E36)		• (E42)	• (E44)	• (E46)		
	•	•	•	•	•	•	•	•	•

COUNTIS ECi pulse concentrator

Enables pulses from water, gas, compressed air, electricity meters or even analogue sensors (light, temperature, wind etc.) to be registered and stored. All data can be centralised and managed by an energy efficiency software via RS485 communication.





Selection guide




Multifunction meters

DIRIS

Which application?








Which functions?

Applications	Multifunction metering (MFM)		
		new 	
	DIRIS A10 <i>p. 436</i>	DIRIS A17 <i>p. 440</i>	DIRIS A20 <i>p. 444</i>
Multi-measurement			
Currents, voltages (ph/ph and ph/n), active/reactive/apparent powers, power factor, frequency	•	•	•
4 th CT for neutral current measurement			
Voltage/current unbalance			
Currents, voltages, frequency (average values)	(max. average value for currents)	(max. average value for currents)	(max. average value for currents)
Max. power demand	•	•	•
Temperatures	Internal		
Tangent phi			
Hour meter	•		•
Memorisation of min/max instantaneous values			
Metering			
kWh (+/-), kvarh (+/-), kVAh	kWh (+), kvarh (+)	•	kWh (+), kvarh (+)
Logical input(s) for pulse meter(s)		1 as standard	
Multi-tariff meters	•		
Pulse output(s)	1 as standard	1 as standard	1 with optional module
Active energy accuracy / IEC 62053-21 class 1		•	
Active energy accuracy / IEC 62053-22 class 0.5 s	•		•
Active energy accuracy / IEC 62053-22 class 0.2 s			
Reactive energy accuracy / IEC 62053-23 class 2	•		•
Power management			
Load curves (period 5, 8, 10, 15, 20 and 30 minutes)			
Predictive power			
Power quality			
THD voltages, currents and neutral currents	Row 51	Row 31 (for 1 reference)	Row 51
Individual harmonics			
Interharmonics			
Vector diagram			
Flicker			
EN 50160			
Sag, swell and outages, overcurrent			
RMS 1/2 period curve backup			
Plug-in modules			
	As standard: <ul style="list-style-type: none"> • 1 input for tariff selection/remote device status • 1 programmable output for pulse report, alarm report or remote device command • RS485 JBUS/MODBUS (for 1 reference) 	As standard: <ul style="list-style-type: none"> • 1 logical input for pulse metering or remote device status • 1 programmable output for pulse report, alarm report or remote device command • RS485 MODBUS (for 2 references) 	<ul style="list-style-type: none"> • 1 programmable output for pulse report, alarm report or remote device command • RS485 JBUS/MODBUS communication

Which dimensions?

Which communication protocol?

Which options?

	Power monitoring (PMD)		Power monitoring & events analysis (PMD)	Power monitoring & residual current monitoring (PMD+RCM)	Power quality & network analysis (PQA)	
						
	DIRIS A40 p. 448	DIRIS A41 p. 448	DIRIS A60 p. 454	DIRIS A80 p. 460	DIRIS N p. 474	
	•	•	•	•	•	
		•		•	•	
			•	•	•	
	•	•	•	•	•	
	•	•	•	•	•	
	by temperature sensor	by temperature sensor	by temperature sensor		internal + by temperature sensor	
	•	•	•	•		
	optional	optional	•	•	•	
			•	•	•	
	2 inputs / 2 outputs module (maximum 3) up to 6 with optional modules	• up to 6 with optional modules	• up to 6 with optional modules	•	• optional	
					•	
	up to 6 with optional modules	up to 6 with optional modules	up to 6 with optional modules		optional	
	•	•	•	•	•	
	•	•	•	•	•	
	with optional memory module	with optional memory module	•	•	•	
	•	•	•	•	•	
	Row 63	Row 63	Row 63	Row 63	Row 51	
	Row 63	Row 63	Row 63	Row 63	Row 51	
					•	
					•	
			•	•	•	
			•	•	•	
			•	•	•	
	<ul style="list-style-type: none"> • 2 pulse outputs • RS485 MODBUS communication • PROFIBUS DP communication • Ethernet communication (available with RS485 MODBUS gateway). • 2 analogue outputs • 2 inputs / 2 outputs • Memory • Temperature inputs 		<ul style="list-style-type: none"> • Memory fitted as standard • 2 pulse outputs • RS485 MODBUS communication • Ethernet communication (available with RS485 MODBUS gateway). • 2 analogue outputs • 2 inputs / 2 outputs • Temperature inputs 		<ul style="list-style-type: none"> • RS485 MODBUS communication • Ethernet communication (available with RS485 MODBUS gateway). 	<ul style="list-style-type: none"> • 4 digital inputs / 2 digital outputs • 2 analogue inputs • 2 analogue outputs



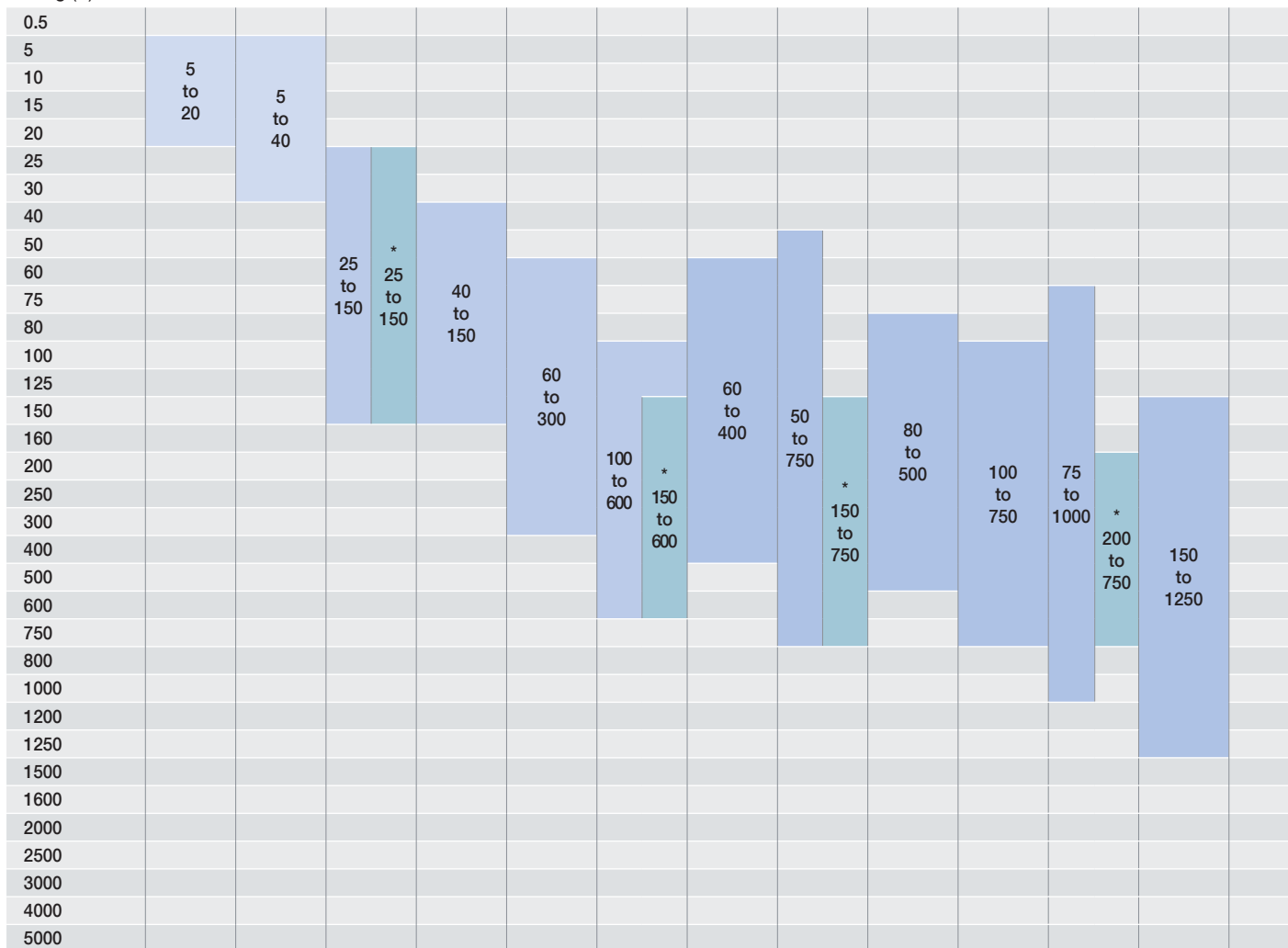
Selection Guide

Current transformers

Metering, monitoring & power quality

Type	TRB 60	TRB 70	TRB 135	TCA 14	TCA 21	TCA 22	TCB 17-20	TCB 26-30	TCB 28-30	TCB 26-40	TCB 32-40	TCB 44-50
Range	Primary wound			Cable-through			Bar or cable-through					
Class	0.5	0.5	0.5	1	0.5/1	1	1	0.5/1	0.5/1	1	0.5/1	0.5/1
0.2S version			(1)			(2)		T2CB 26-30			T2CB 32-40	
	p. 489			p. 491			p. 492 - 493					

Rating (A)



Dimensions

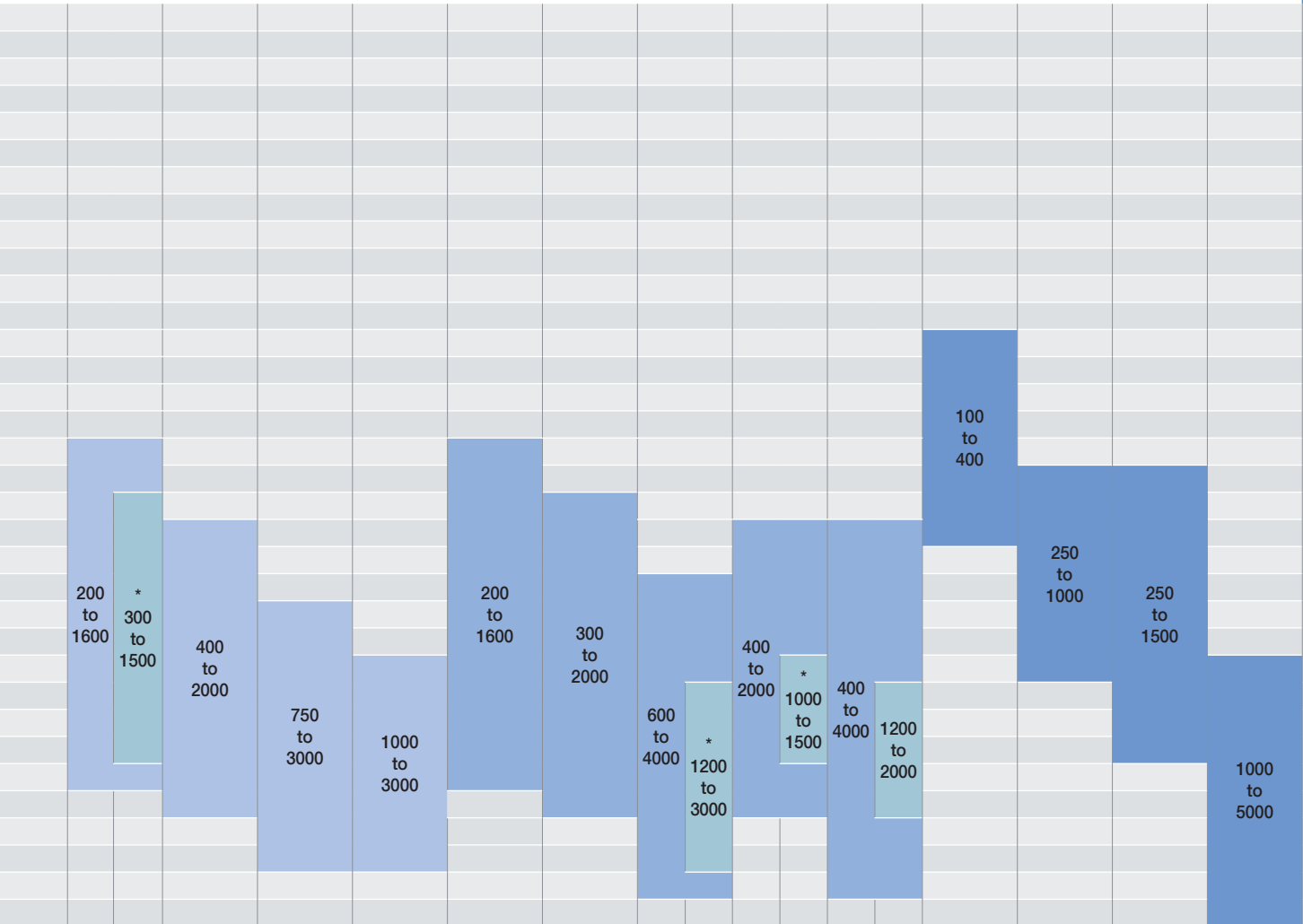
Dimension	TRB 60	TRB 70	TRB 135	TCA 14	TCA 21	TCA 22	TCB 17-20	TCB 26-30	TCB 28-30	TCB 26-40	TCB 32-40	TCB 44-50
Height	75.5	85.5	85	65	65	65	65	61	70	75.5	88.5	98.5
Width	61	71	135	45	45	49.5	49.5	75.5	49.9	61	71	86
Depth	35	45	60	30	30	35	50	48	68	48	58	58
Cable (Ø mm)				14	21	22.5	17.5	26	28	26	32	44
Bar 1							20x5	30x10	30x10	32x18	40x10	50x12
Bar 2								20x10 (x2)		40x12	20x10 (x2)	40x10 (x2)
Bar 3												

* Class 1.

(1) Please see T2RB 115 for a primary wound 0.2S version. Dimensions are different from TRB 135.

(2) Please see T2CA 225 for a cable-through 0.2S version. Dimensions are different from TCA 22.

TCB 44-63	TCB 55-80	TCD 85-100	TCB 100-125	TBA 60	TBA 80	TBA 100	TBA 103	TBA 127	TO 23	TO 58	TO 812	TO 816
Bar or cable-through				Bar-through					Split-core			
0.5	0.5	0.5	0.5	0.5/1	0.5	0.5	0.5	0.5	1/3	0.5/1	0.5/1	0.5
T2CB 44-63						T2BA 100	T2BA 103	T2BA 127				
<i>p. 493</i>				<i>p. 496</i>					<i>p. 500</i>			



105.5	123.5	184.8	184.8	129	117	167	150	175	106	158	198	243
96	120	172	172	88	96	129	99	100	93	125	155	195
58	58	52	52	48	68	78	58	55	58	58	58	79
44	55	85	100									
63x10	80x10	100x10	123x30	60x30	84x34	100x55	103x41	128x38	33x23	85x55	125x85	165x85
50x10 (x2)	60x30	80x10 (x3)	100x10 (x3)									
	60x10 (x2)											



Selection guide

Multifunction meters

Which function?



Which characteristics?

Analogue devices



AC and DC measurements

p. 506

Characteristics

Type	DIN - ROTEX - MODULAR
Scale, display or output	Deviation 90° and 240°
Mounting	Panel or modular DIN rail mounting
Dimensions	48x48 - 72x72 - 96x96 - 144x144 (mm)

AC measurement

Current measurement	Direct from 1 to 100 A Via a CT (1A or 5A) Scale: In; 1.2 In; 5 In	Standard, thermal or changeover switch ammeter
Voltage measurement	Direct from 6 to 600 V Via a VT with a 100 or 110V secondary	Scale: Un; 1.2 Un Standard or changeover switch voltmeter
Frequency measurement	Needle or reed-type Voltage from 40 to 600 V	Network frequencies: 50Hz; 60Hz; 100Hz; 150Hz; 200Hz; 400Hz
Power factor measurement	Voltage from 40 to 440 V Direct or via a CT (1A or 5A)	Scale: 0.8 cap - 1 - 0.2 ind or 0.5 cap - 1 - 0.5 ind or 0 cap - 1 - 0 - 1 ind
Active and reactive power measurement	Voltage from 40 to 440 V Direct or via a CT (1A or 5A)	Scale: Pn; 1.2Pn; Qn; 1.2Qn
Pulse and hour counters	Voltage from 12 to 400 VAC	with or without reset

DC measurement

Current measurement	Direct from 50 µA to 50 A	On shunt 60 mV; 100 mV; 150 mV
Voltage measurement	Direct from 30 mV to 600 V	On divider from 700 to 4000 VDC
Pulse and hour counters	Voltage from 2 to 220 VDC	with or without reset
Other measurements	Synchronisation devices Phase meters Temperature measurement Threshold indicators	Other electrical values Navy applications Railway applications

Customised solutions

	Scale and calibration Sectors and coloured marking IP54 - IP65 - Tropicalisation Customising Anti vibrations
--	--

Which AC measurement?

Which DC measurement?

For which purpose?

Digital devices



Digital meters
p. 506

Transducers



Transducers
p. 506

DG - DGM - DG2M

3 Digits to 4 Digits 1/2

Panel mounting; Modular

72x36; 72x36; 72x72; 96x96 (mm)

CS - CM -- CR

Standard analogue output, RS 232 or RS 235

surface-mounted casing or modular DIN rail mounting; racks

CS: 45, 75 or 150mm; CM: 3, 6 or 9 modules; CR 19"

Direct from 1 to 5 A
Via a CT (1A or 5A)

Standard, multi-indicators, RMS ammeter
programmable, threshold

Direct from 1 to 5 A
Via a CT (1A or 5A)

Self-supplied or auxiliary power supply

Output current 1, 5, 10, 20 mA and 4...20 mA
Output voltage 1, 5, 10 V and 2...10V

Direct from 1.999 to 600 V
Via a VT with a 100 or 110V secondary

Programmable, threshold, RMS or standard
voltmeter

Direct from 40V to 400V

Via a VT with a 100 or 110V secondary

Self-supplied or auxiliary power supply

Output current 1, 5, 10, 20 mA and 4... 20 mA
Output voltage 1, 5, 10 V and 2...10V

Voltage from 40 to 600 V

Frequencies 0-999.9 Hz and 40-999.9 Hz

Voltage from 40 to 440 V

Direct or via a CT (1A or 5A)

0.8 cap - 1 - 0.2 ind or 0.5 cap - 1 - 0.5 ind

Self-supplied or auxiliary power supply

Output current 1, 5, 10, 20 mA and 4... 20 mA
Output voltage 1, 5, 10 V and 2...10V

Voltage from 40 to 600 V
Direct or via a CT (1A or 5A)

0 cap - 1 - 0 ind

Voltage from 40 to 440 V

Direct or via a CT (1A or 5A)

0.8 cap - 1 - 0.2 ind or 0.5 cap - 1 - 0.5 ind

Self-supplied or auxiliary power supply

Output current 1, 5, 10, 20 mA and 4... 20 mA
Output voltage 1, 5, 10 V and 2...10V

Voltage from 40 to 440 V
Direct or via a CT (1A or 5A)

Scale: Pn; 1.2Pn; Qn; 1.2Qn

Voltage from 40 to 440 V

Direct or via a CT (1A or 5A)

Scale: Pn; 1.2Pn; Qn; 1.2Qn

Self-supplied or auxiliary power supply

Output current 1, 5, 10, 20 mA and 4... 20 mA
Output voltage 1, 5, 10 V and 2...10V

Voltage from 40 to 400 VAC

with or without reset

Direct from +/- 199.9 μ A to +/- 1.999 A
On shunt 60 mV; 100 mV; 150 mV

Programmable, threshold or standard ammeter

Direct from 100 μ A to 5 A

On shunt 60 mV; 100 mV; 150 mV

Self-supplied or auxiliary power supply

Output current 1, 5, 10, 20 mA and 4... 20 mA
Output voltage 1, 5, 10 V and 2...10V

Direct from +/- 199.9 mV to +/- 600 V
On divider from 700 to 4000 VDC

Programmable, threshold or standard voltmeter

Direct from 10 mV to 440 V

On divider from 700 to 4000 VDC

Self-supplied or auxiliary power supply

Output current 1, 5, 10, 20 mA and 4... 20 mA
Output voltage 1, 5, 10 V and 2...10V

Voltage from 2 to 48 VDC

with or without reset

Temperature measurement
Threshold indicators
Other electrical values

Navy applications
Railway applications
Multi display

Transducers programmable with RS 232 or RS 485

Resistance measurement
Temperature measurement

Dimensions 48x48; 48x24; 72x24; 96x24 mm

Scale and calibration

Specific rating

IP54 - IP65 - Tropicalisation

Customising

Auxiliary power supply

Scale and calibration

Specific rating

Tropicalisation

Customising

Auxiliary power supply



COUNTIS E0x

Active energy meters
single-phase - direct 32 A

Metering, monitoring
& power quality

new



The solution for

- > Camping sites.
- > Marinas.
- > Shopping centres.
- > Data centres.



Strong points

- > Compact.
- > Pulse output.
- > MID certified B+D module.
- > RS485 communication (MODBUS)

MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3



Function

The COUNTIS E0x is a modular active electrical energy meter displaying the total energy consumed (kWh) directly on its LCD display. It is designed for single-phase load metering and is used for direct connections of up to 32 A. The COUNTIS E02 and E04 has MID certification.

Advantages

Compact

The COUNTIS E0x is only 1 module wide.

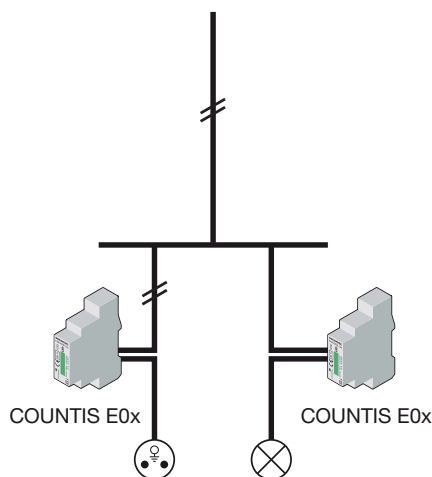
Pulse output

The pulse output enables the kWh consumption to be reported to a remote system (PC/BMS) so that it can be analysed for billing, energy saving or energy cost management purposes.

MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Principle diagram

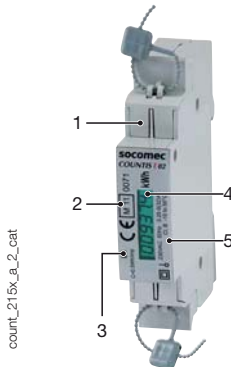


Common characteristics

- Compact design.
- Measurement accuracy: 1 %.
- LCD display.

Models	Key functions
E00	Pulse output
E02	MID + Pulse output
E03	MODBUS RS485 communication
E04	MODBUS RS485 communication + MID

Front panel

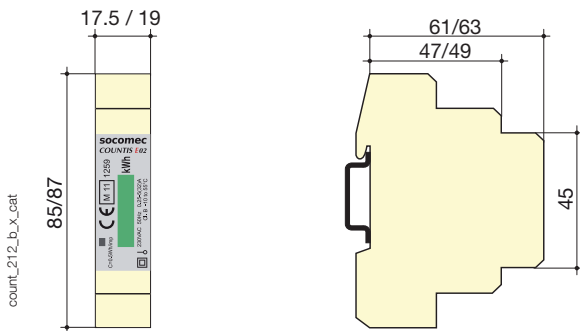


1. Terminal shrouds (COUNTIS E02 + E04).
2. MID Marking (COUNTIS E02 + E04).
3. Metrological LED (2000 pulses/kWh for E00/E02 and 1000 pulses/kWh for E03/E04)
4. kWh display.
5. Serial number (COUNTIS E02).

Electrical characteristics

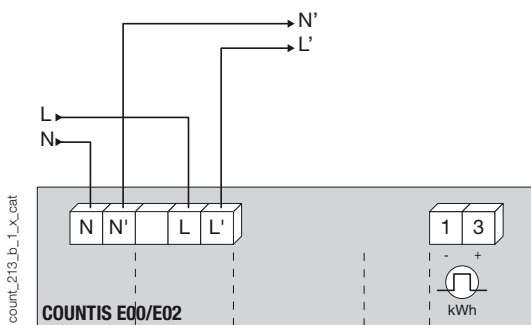
Current measurement (TRMS)		Output (pulsed)	COUNTIS E00/E02
Type	single-phase - direct 32 A	Number	1
Input consumption	< 2 VA	Type of optocoupler	15 VDC max
Permanent overload	32 A	Fixed pulse weight	100 Wh
Intermittent overload	30 I _{max} for 10 ms	Pulse duration	100 ms
Minimum current measured	20 mA	Operating conditions	
Voltage measurements (TRMS)		Operating temperature	- 10 ... + 55 °C
Range of measurement	196 ... 264 VAC	Storage temperature	- 20 ... + 70 °C
Input consumption	8 VA	Relative humidity	95 %
Permanent overload	264 VAC	Communication	COUNTIS E03/E04
Energy accuracy		Link	RS485
Active (according to IEC 62053-21)	Class 1	Type	2 ... 3 half duplex wires
Active (according to EN 50470)	Class B	Protocol	MODBUS® RTU
Power supply		MODBUS speed	1200 ... 38400 bauds
Self-supplied	yes		

Case

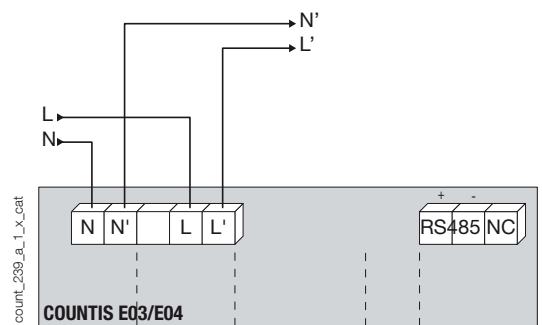


	COUNTIS E00/E02	COUNTIS E03/E04
Type	modular	modular
Number of modules	1	1
Dimensions W x H x D	17,5 x 85 x 61	19 x 87 x 63
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 50	IP 50
Display type	LCD 5+1 digits	LCD 6+1 digits
Rigid cable cross-section	10 mm ²	6 mm ²
Flexible cable cross-section	6 mm ²	4 mm ²
Weight	150 g	150 g

Connection



N - L: network input.
N' - L': network output.
1 - 3: output (pulsed).



References

Type	COUNTIS E00 Reference	COUNTIS E02 Reference	COUNTIS E03 Reference	COUNTIS E04 Reference
Direct 32 A	4850 3019			
Direct 32 A - MID		4850 3020		
Direct 32 A - with MODBUS communication via RS485			4850 3029	
Direct 32 A - with MODBUS communication via RS485 - MID				4850 3030



COUNTIS E1x

Active energy meters

single-phase - direct 63/80 A

Metering, monitoring & power quality

new



COUNTIS E12 - MID



COUNTIS E13

The solution for

- > Marinas.
- > Shopping centres.
- > Data centres.



Strong points

- > RS485 communication (MODBUS or M-BUS) or pulse output.
- > Dual-tariff metering.
- > MID certified B+D module.

MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3



Function

The **COUNTIS E1x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for single-phase load metering and is used for direct connections of up to 63 or 80 A (depending on the model).

COUNTIS E12, E14 and E16 have MID certification.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display (only E10/E11/E12).

Advantages

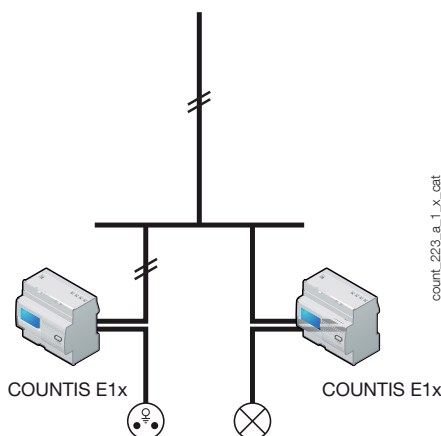
RS485 communication (MODBUS or M-BUS) or pulse output

To enable the remote reporting of energy consumption, COUNTIS E1x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol. In addition to their reporting functions, COUNTIS E1x with RS485 can be configured remotely and enable access to multi-measurement values.

Dual-tariff metering

Two tariffs are available and can be easily accessed through the meter's display. Each tariff can be utilised to assign energy metering to different time slots (high and low demand hours) or different sources (normal/backup).

Principle diagram

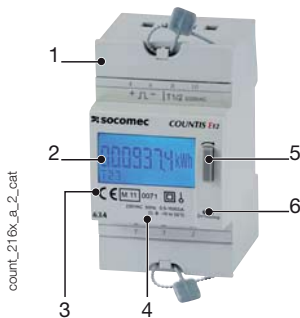


MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Models	Key functions
E10	Pulse output
E11	Dual tariff (2 partial counters) + Pulse output
E12	Dual tariff + MID (Reset impossible) + Pulse output
E13	MODBUS RS485 communication
E14	MODBUS RS485 communication + MID (Reset impossible)
E15	M-BUS communication
E16	M-BUS communication + MID (Reset impossible)

Front panel



1. Terminal shrouds (COUNTIS E12).
2. Backlit LCD display.
3. MID Marking (COUNTIS E12).
4. Serial number (COUNTIS E12).
5. Navigation key.
6. Metrological LED (1000 pulses/kWh).

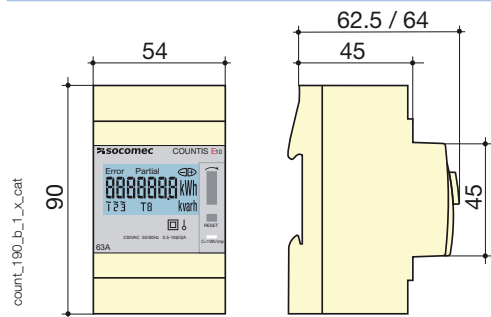
Electrical characteristics

Current measurement	COUNTIS E10...E12	COUNTIS E13...E16
Type	single-phase direct 63 A	single-phase direct 80 A
Input consumption	0.8 VA max.	0.8 VA max.
Startup current (I_{st})	40 mA	20 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾	0.25 A
Transition current (I_T)	1 A ⁽²⁾	0.5 A
Reference current (I_{ref})	10 A ⁽³⁾	5 A
Permanent overload (I_{max})	63 A	80 A
Intermittent overload	1890 A max for 10 ms	2400 A max for 10 ms
Voltage measurement	230 V +/- 20 %	230 V +/- 20 %
Consumption (VA)	0.5 VA max.	0.5 VA max.
Permanent overload	280 V phase-neutral	300 V phase-neutral
Energy accuracy	Class 1	
Active (according to IEC 62053-21)	Class 1	Class 1
Power supply	yes	
Frequency	50/60 Hz	

Output (pulsed)	COUNTIS E10/E11/E12	
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)	
Number	1	
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions	COUNTIS E10...E12	COUNTIS E13...E16
Operating temperature	-10 to 55 °C	-25 to 55 °C
Storage temperature	-20 to 70 °C	-25 to 70 °C
Relative humidity	85 %	85 %
Communication	COUNTIS E13/E14/E15/E16	
Link	RS485	
Type	2 ... 3 half duplex wires	
Protocol	MODBUS® RTU	
MODBUS speed	4800 ... 38400 bauds	
M-BUS speed	300 ... 9600 bauds	

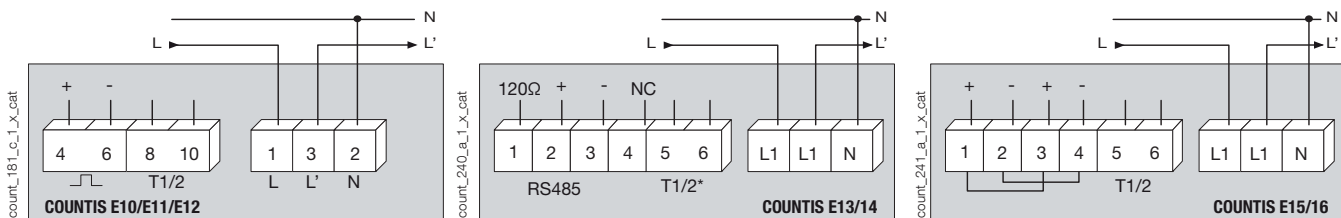
- (1) $I_{min} \leq 0.5 \cdot I_T$
 (2) The accuracy class is guaranteed between I_T and I_{max}
 (3) $I_{ref} = I_T$ (base current) = $10 \cdot I_T$ for direct connection COUNTIS.

Case



	COUNTIS E10...E12	COUNTIS E13...E16
Type	modular	modular
Number of modules	3	3
Dimensions W x H x D	54 x 90 x 62.5 mm	54 x 90 x 64 mm
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 51	IP 51
Display type	LCD display	LCD display
Rigid cable cross-section	1.5 to 16 mm ²	1.5 to 50 mm ²
Flexible cable cross-section	1 to 16 mm ²	1.5 to 50 mm ²
Weight	170 g	170 g

Connection



* Not available on COUNTIS E13

References

Type	COUNTIS E10 Reference	COUNTIS E11 Reference	COUNTIS E12 Reference	COUNTIS E13 Reference	COUNTIS E14 Reference	COUNTIS E15 Reference	COUNTIS E16 Reference
direct 63 A	4850 3000						
direct 63 A - Dual tariff		4850 3001					
direct 63 A - Dual tariff and MID			4850 3002				
direct 80 A - with MODBUS communication via RS 485				4850 3031			
direct 80 A - with MODBUS communication via RS 485 - MID					4850 3032		
direct 80 A - with M-BUS communication						4850 3033	
direct 80 A - with M-BUS communication - MID							4850 3034



COUNTIS E2x

Active energy meters
three-phase - direct 63 A

Metering, monitoring
& power quality

new



count_232_a

count_248_a_1_cat

COUNTIS E20

COUNTIS E23

Function

The **COUNTIS E2x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for three-phase load metering and is used for direct connections of up to 63 A.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display (only E20/E21)
- Detects connection errors

Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

To enable the remote reporting of energy consumption, COUNTIS E2x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol. In addition to their reporting functions, COUNTIS E2x with RS485 can be configured remotely and enable access to multi-measurement values.

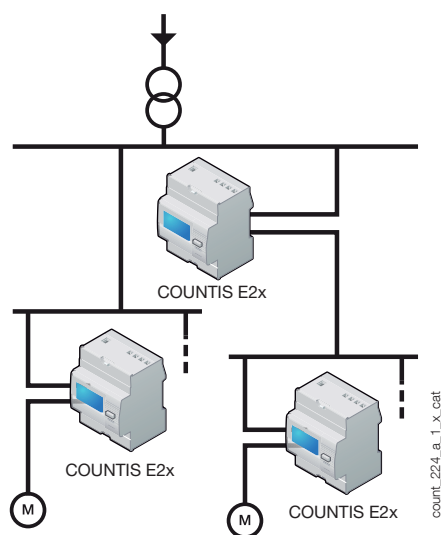
Dual-tariff metering

Two tariffs are available and can be easily accessed through the meter's display. Each tariff can be utilised to assign energy metering to different time slots (high and low demand hours) or different sources (normal/backup).

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Principle diagram



count_224_a_1_x_cat

MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Models	Key functions
E20	Pulse output
E21	Dual tariff (2 partial counters) + Pulse output
E23	MODBUS RS485 communication
E24	MODBUS RS485 communication + MID (Reset impossible)
E25	M-BUS communication
E26	M-BUS communication + MID (Reset impossible)

The solution for

- > Industry.
- > Infrastructure.
- > Data centres.



Strong points

- > RS485 communication (MODBUS or M-BUS) or pulse output.
- > Dual-tariff metering.
- > Detection of connection errors.
- > MID certified B+D module.

Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3



MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Services & Technical Assistance

- > Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.

Front panel



1. Backlit LCD display.
2. Navigation key.
3. Reset key.
4. Metrological LED (1000 pulses/kWh).

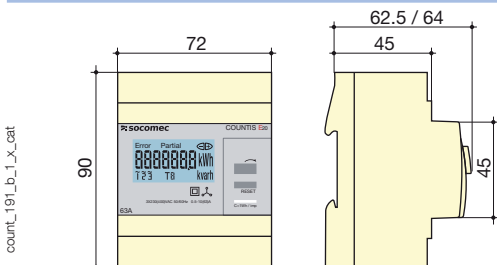
Electrical characteristics

Current measurement	COUNTIS E20/E21	COUNTIS E23...E26
Type	three-phase direct 63 A	three-phase direct 63 A
Input consumption	0.8 VA max. per phase	0.8 VA max. per phase
Startup current (I_{st})	40 mA	15 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾	0.25 A
Transition current (I_T)	1 A ⁽²⁾	0.5 A
Reference current (I_{ref})	10 A ⁽³⁾	5 A
Permanent overload (I_{max})	63 A	63 A
Intermittent overload	1890 A max for 10 ms	1890 A max for 10 ms
Voltage measurement		
Range of measurement	230 ... 400 V +/- 20 %	230 ... 400 V +/- 20 %
Consumption (VA)	2 VA max.	2 VA max.
Permanent overload	280 V phase-neutral / 480 V phase-phase	276 V phase-neutral
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	
Power supply		
Self-supplied	yes	
Frequency	50 Hz	

Output (pulsed)	COUNTIS E20/E21	
Number	1	
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)	
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions	COUNTIS E20/E21	COUNTIS E23...E26
Operating temperature	-10 to 55 °C	-25 to 55 °C
Storage temperature	-20 to 70 °C	-25 to 70 °C
Relative humidity	85 %	85 %
Communication	COUNTIS E23/E24/E25/E26	
Link	RS485	
Type	2 ... 3 half duplex wires	
Protocol	MODBUS® RTU	
MODBUS speed	1200 ... 38400 bauds	
M-BUS speed	300 ... 9600 bauds	

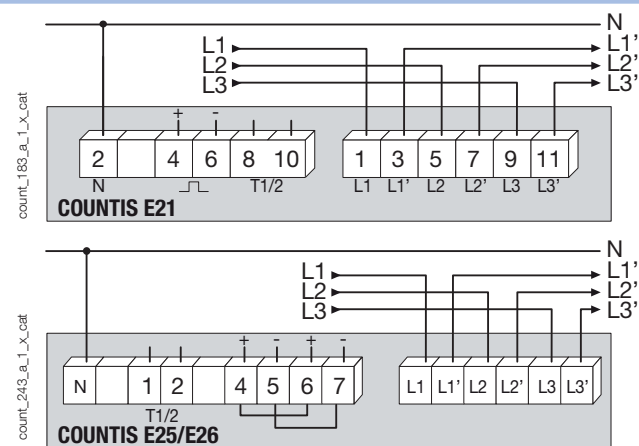
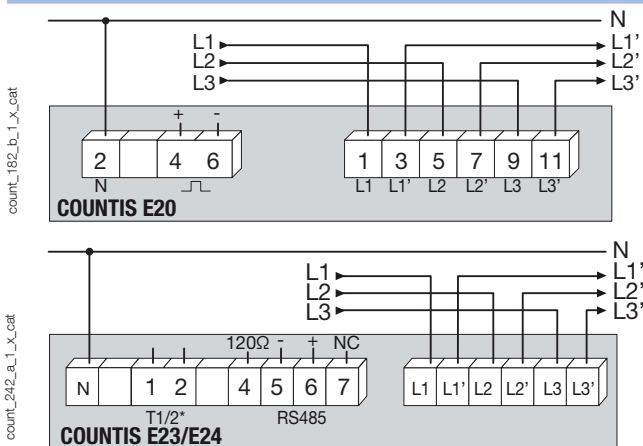
- (1) $I_{min} \leq 0.5 \cdot I_T$
 (2) The accuracy class is guaranteed between I_T and I_{max} .
 (3) $I_{ref} = I_{T3}$ (base current) = $10 \cdot I_{T3}$ for direct connection COUNTIS.

Case



	COUNTIS E20/E21	COUNTIS E23...E26
Type	modular	modular
Number of modules	4	4
Dimensions W x H x D	72 x 90 x 62.5 mm	72 x 90 x 64 mm
Case degree of protection	IP20	IP20
Front degree of protection	IP51	IP51
Display type	LCD display	LCD display
Rigid cable cross-section	1.5 to 16 mm ²	1.5 to 35mm ²
Flexible cable cross-section	1 to 16 mm ²	1.5 to 35mm ²
Weight	245 g	245 g

Connection



* Not available on COUNTIS E23

References

Type	COUNTIS E20 Reference	COUNTIS E21 Reference	COUNTIS E23 Reference	COUNTIS E24 Reference	COUNTIS E25 Reference	COUNTIS E26 Reference
direct 63 A - three-phase	4850 3003					
direct 63 A - three-phase - Dual tariff		4850 3004				
direct 63 A - with MODBUS communication via RS485			4850 3035			
direct 63 A - with MODBUS communication via RS485 - MID				4850 3036		
direct 63 A - with M-BUS communication					4850 3037	
direct 63 A - with M-BUS communication - MID						4850 3038



COUNTIS E3x

Active energy meters

three-phase - direct 100 A

Metering, monitoring & power quality



COUNTIS E32 - MID

Function

The **COUNTIS E3x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for three-phase load metering and is used for direct connections of up to 100 A.

COUNTIS E32, E34 and E36 are MID certified.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display.
- Detects connection errors.

Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

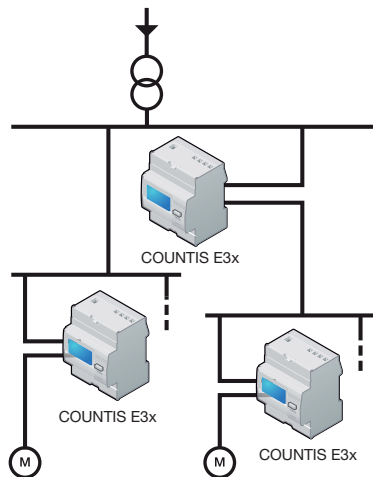
To enable the remote reporting of energy consumption, COUNTIS E3x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol.

In addition to their reporting functions, COUNTIS E3x with RS485 can be configured remotely and enable access to multi-measurement values.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Principle diagram



count_225_a_1_x_cat

MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (available only on the E33 and E35)

This function is for metering energy production or energy consumption.

Multi-measurement and load curve

Display of electrical values (I, U, V, S, PF) and load curve over a 7 day period via communication.

The solution for

- > Industry.
- > Infrastructure.
- > Data centres.



Strong points

- > RS485 communication (MODBUS or M-BUS) or pulse output.
- > Detection of connection errors.
- > MID certified B+D module.
- > Bi-directional metering.
- > Multi-measurement and load curve.

MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62053-11
- > EN 50470-1
- > EN 50470-3



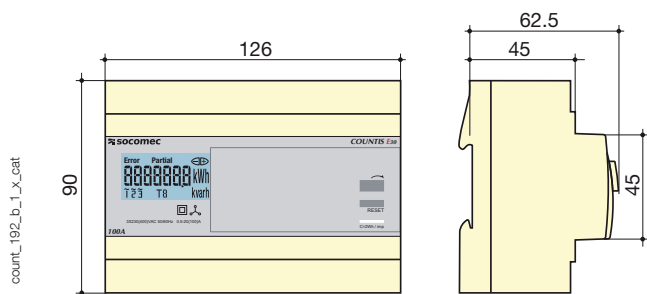
Models	Key characteristics
E30	Pulse output
E31	Dual tariff (2 partial counters) + Pulse output
E32	Dual tariff + MID (Reset impossible) + Pulse output
E33	RS485 MODBUS communication
E34	RS485 MODBUS communication + MID (Reset impossible)
E35	M-BUS communication
E36	M-BUS communication + MID (Reset impossible)

Front panel



1. Terminal shrouds (COUNTIS E32, E34 and E36).
2. Backlit LCD display.
3. MID marking (COUNTIS E32, E34 and E36).
4. Serial number (COUNTIS E32, E34 and E36).
5. Navigation key.
6. Reset key.
7. Metrological LED.

Case



Type	modular
Number of modules	7
Dimensions W x H x D	126 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	2.5 to 35 mm ²
Flexible cable cross-section	2.5 to 35 mm ²
Weight	490 g

Electrical characteristics

Current measurement

Type	three-phase - direct 100 A
Input consumption	0.5 VA max. per phase
Startup current (I_{st})	80 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾
Transition current (I_t)	2 A ⁽²⁾
Reference current (I_{ref})	20 A ⁽³⁾
Permanent overload (I_{max})	100 A
Intermittent overload	3000 A max for 10 ms

Voltage measurement

Range of measurement	230 ... 400 V +/- 20 %
Consumption (VA)	2
Permanent overload	280 V phase-neutral / 480 V phase-phase

Energy accuracy

Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B

Power supply

Self-supplied	yes
Frequency	50 / 60 Hz

Output (pulsed)

Number	1
Type of optocoupler	IEC 62053-31 class A (20 ... 30 VDC)
Fixed pulse weight	100 Wh
Pulse duration	100 ms

Operating conditions

Operating temperature	-10 to 55 °C
Storage temperature	-20 to 70 °C
Relative humidity	85 %

Communication

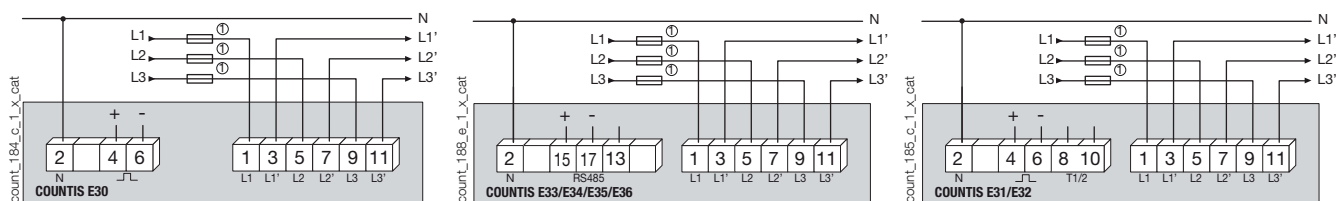
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU / M-BUS
MODBUS [®] speed	4800 ... 38 400 bauds
M-BUS speed	300 ... 9 600 bauds

(1) $I_{min} \leq 0.5 \cdot I_{tr}$

(2) The accuracy class is guaranteed between I_t and I_{max} .

(3) $I_{ref} = I_{(b)}$ (base current) = $10 \cdot I_{(n)}$ for direct connection COUNTIS.

Connection



1. 100 A gG / Am fuses max.

References

Type	COUNTIS E30 Reference	COUNTIS E31 Reference	COUNTIS E32 Reference	COUNTIS E33 Reference	COUNTIS E34 Reference	COUNTIS E35 Reference	COUNTIS E36 Reference
100 A direct	4850 3005						
100 A direct - Dual tariff		4850 3006					
100 A direct - Dual tariff - MID			4850 3007				
100 A direct with RS485 MODBUS communication ⁽¹⁾				4850 3012			
100 A direct with RS485 MODBUS communication - MID ⁽¹⁾					4850 3013		
100 A direct with M-BUS communication ⁽¹⁾						4850 3025	
100 A direct with M-BUS communication - MID ⁽¹⁾							4850 3026
Management software for COUNTIS	See page 464						

(1) 4 tariffs through RS485 communication.



COUNTIS E4x

Active energy meters

three-phase - via CT up to 6000 A

Metering, monitoring & power quality



COUNTIS E44 - MID - (3000 A MID - 6000 A not MID)

Function

The COUNTIS E4x is a modular active and reactive electrical energy meter displaying the energies and active power consumed (kWh, kvarh and kW) directly on its backlit LCD display. It is designed for three-phase load metering with connection via CT and is suitable for applications of up to 6000 A (3000 A for MID).
COUNTIS E42, E44 and E46 are MID certified.

Common characteristics

- Measurement accuracy: 1 %.
- Backlit LCD display.
- Detects connection errors.

Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

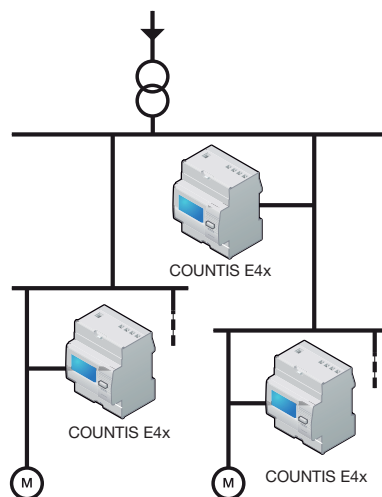
To enable the remote reporting of energy consumption, COUNTIS E4x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol.

In addition to their reporting functions, COUNTIS E4x with RS485 can be configured remotely and enable access to multi-measurement values.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Principle diagram



MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (available on E43 and E45)

This function is for metering energy production or energy consumption.

Multi-measurement and load curve

Display of electrical values (I, U, V, S, PF) and load curve over a 7 day period via communication.

The solution for

- > Industry.
- > Infrastructure.
- > Data centres.



Strong points

- > RS485 communication (MODBUS or M-BUS) or pulse output.
- > Detection of connection errors.
- > MID certified B+D module.
- > Bi-directional metering.
- > Multi-measurement and load curve.

MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



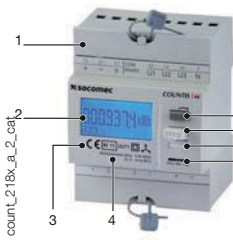
Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-23 class 2
- > IEC 62053-31
- > IEC 62053-11
- > EN 50470-1
- > EN 50470-3



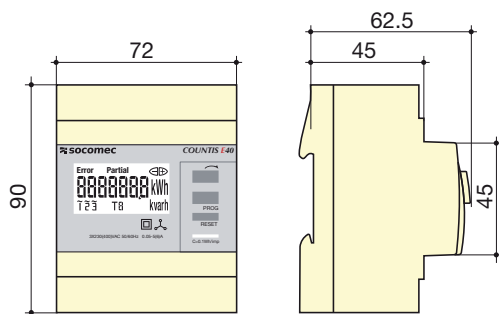
Models	Key functions
E40	Pulse output
E41	Dual tariff (2 partial counters) + Pulse output
E42	Dual tariff + MID (Reset impossible) + Pulse output
E43	RS485 MODBUS communication
E44	RS485 MODBUS communication + MID (Reset impossible)
E45	M-BUS communication
E46	M-BUS communication + MID (Reset impossible)

Front panel



1. Terminal shrouds (COUNTIS E42, E44 and E46).
2. Backlit LCD display.
3. MID marking (COUNTIS E42, E44 and E46).
4. Serial number (COUNTIS E42, E44 and E46).
5. Navigation key.
6. Reset key.
7. Metrological LED.
8. Programming key.

Case



Type	modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	1.5 to 10 mm ²
Flexible cable cross-section	1 to 6 mm ²
Weight	230 g

Electrical characteristics

Current measurement

Type	three-phase on CT/5A up to 6000 A (3000 A for MID products)
Input consumption	0.2 VA per phase
Startup current (I _{st})	10 mA
Minimum current (I _{min})	50 mA ⁽¹⁾
Transition current (I _{tr})	250 mA ⁽²⁾
Reference current (I _{ref})	5 A ⁽³⁾
Permanent overload (I _{max})	6 A
Intermittent overload	120 A for 0.5 s

Voltage measurement

Range of measurement	230 ... 400 V +/- 20 %
Consumption (VA)	2 VA
Permanent overload	280 V phase-neutral / 480 V phase-phase

Energy accuracy

Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B

Power supply

Self-supplied	yes
Frequency	50 / 60 Hz

Output (pulsed)

Number	1
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)
Pulse weight	100 Wh, 1 kWh, 10 kWh, 100 kWh
Pulse duration	50 ms, 100 ms, 200 ms, 400 ms, 800 ms, 1000 ms, 1500 ms

Operating conditions

Operating temperature	-10 to 55 °C
Storage temperature	-20 to 70 °C
Relative humidity	85 %

Communication

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU / M-BUS
MODBUS [®] speed	4800 ... 38400 bauds
M-BUS speed	300 ... 9600 bauds

(1) $I_{min} \leq 0.5 \cdot I_{tr}$

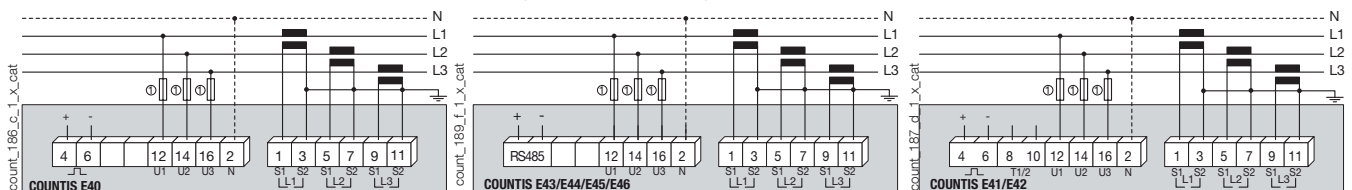
(2) The accuracy class is guaranteed between I_{tr} and I_{max} .

(3) $I_{ref} = I_{(b)}$ (base current) = $10 \cdot I_{tr}$ for direct connection COUNTIS.

Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PT1, an accessory which is included in this catalogue. Please refer to page 428



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Type	COUNTIS E40 Reference	COUNTIS E41 Reference	COUNTIS E42 Reference	COUNTIS E43 Reference	COUNTIS E44 Reference	COUNTIS E45 Reference	COUNTIS E46 Reference
Via CT	4850 3008						
Via CT - Dual tariff		4850 3009					
Via CT - Dual tariff - MID			4850 3015				
Via CT with RS485 MODBUS communication ⁽¹⁾				4850 3017			
Via CT with RS485 MODBUS communication - MID ⁽¹⁾					4850 3014		
Via CT with M-BUS communication ⁽¹⁾						4850 3027	
Via CT with M-BUS communication - MID ⁽¹⁾							4850 3028
Management software for COUNTIS	See page 464						

(1) 4 tariffs through RS485 communication.



COUNTIS E5x

Active energy meters

three-phase - via CT up to 6000 A

Metering, monitoring
& power quality



COUNTIS E53 up to 6000 A via CT

The solution for

- > Industry.
- > Infrastructure.
- > Data centres.



Strong points

- > RS485 MODBUS communication or pulse output.
- > Large backlit LCD display.
- > Detection of connection errors.
- > Direct display of multi-measurement and metering values.

Conformity to standards

- > IEC 62053-23 class 2
- > IEC 62053-22 class 0.5S
- > IEC 61557-12



Management software

- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 464.

Function

The COUNTIS E5x is a panel mounted active and reactive electrical energy meter displaying energy and multi-measurement values directly on its large backlit LCD display. It is designed for utilisation on three-phase or single-phase networks with connection via CT and is suitable for applications of up to 6000 A. The CT ratio can be configured by the user via the keypad and the display, or via RS485 MODBUS communication (E53).

Common characteristics

- Measurement accuracy: 0.5%.
- Large backlit LCD display.
- Direct access to multi-measurement and metering values.
- Detects connection errors.

Advantages

RS485 MODBUS communication or pulse output

To enable the remote reporting of energy consumption, COUNTIS E5x are provided with either a pulse output (E50) or an RS485 MODBUS communication output (E53). Remote configuration of the Countis E53 is possible via RS485 MODBUS communication.

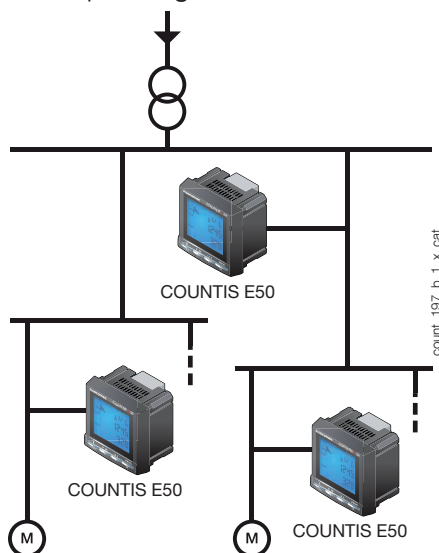
Detection of connection errors

The COUNTIS E5x is protected against phase/neutral inversion and has an integrated test function which can be utilised to detect wiring errors. This function enables CT installation errors to be corrected without having to remake connections. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Large backlit LCD display

Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, COUNTIS E5x provide clear readings and are easy to use.

Principle diagram



They directly display a number of total/partial metering and multi-measurement values : +/- kWh, +/- kvarh, kVAh, I, U, V, S, PF, etc.

Direct display of multi-measurement and metering values

Multi-measurement

- Currents: instantaneous: I1, I2, I3
- Voltages: instantaneous: U1, U2, U3, U12, U23, U31
- Power:
 - instantaneous: 3P, 3Q, 3S
 - maximum average: 3P
- Power factor:
 - instantaneous: 3PF

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent energy: kVAh

models	Key characteristics
E50	Pulse output
E53	RS485 MODBUS communication

References

Type	COUNTIS E50 Reference	COUNTIS E53 Reference
Pulse output	4850 3010	
RS485 MODBUS communication ⁽¹⁾		4850 3011
Management software for COUNTIS	See page 464	

(1) 4 tariffs through RS485 communication.

Electrical characteristics

Current measurement	
Type	three-phase on CT/5A up to 6000 A
Input consumption	< 0.6 VA
Startup current (I_{st})	40 mA
Minimum current (I_{min})	50 mA ⁽¹⁾
Transition current (I_t)	250 mA ⁽²⁾
Reference current (I_{ref})	5 A ⁽³⁾
Permanent overload (I_{max})	6 A
Intermittent overload	50 A for 1 s
Voltage measurement	
Range of measurement	86 ... 520 VAC
Input consumption	< 0.1 VA
Permanent overload	800 VAC
Energy accuracy	
Reactive (according to IEC 62053-23)	Class 2
Active (according to IEC 62053-22)	Class 0.5S
Power supply	
Self-supplied	no
Auxiliary power supply U_s	110 ... 400 VAC / 125... 350 VDC +/-10 %
Frequency	45 ... 65 Hz
Output (pulsed)	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	$\leq 10^8$
Operating conditions	
Operating temperature	-10 ... 55 °C
Storage temperature	-20 ... 85 °C
Relative humidity	95 %

(1) $I_{min} \leq 0.5 \cdot I_t$

(2) The accuracy class is guaranteed between I_t and I_{max} .

(3) $I_{ref} = I_{(D)}$ (base current) = $10 \cdot I_{(N)}$ for direct connection COUNTIS.

Connection

Recommendation:

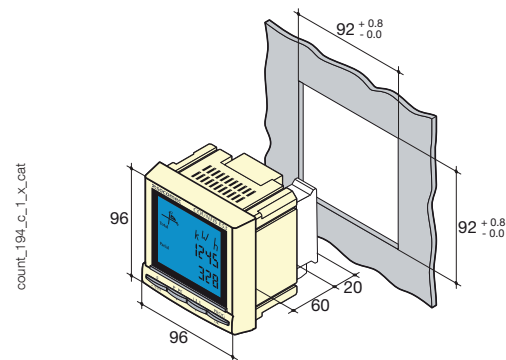
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.

Front panel



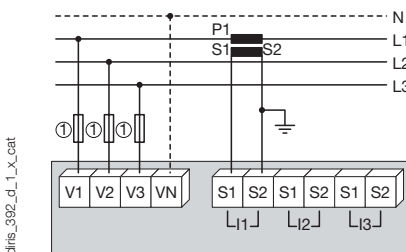
1. Backlit LCD display
2. Energy display and test function key
3. Power and power factor display key
4. Current and voltage display key
5. Programming mode access key

Case



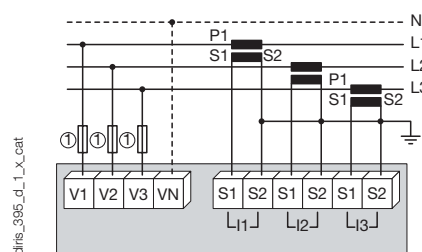
Type	Panel mounting
Dimensions W x H x D	96 x 96 x 80 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Voltage and current connection cross-section	0.5 ... 2.5 mm ²
Current connection cross-section	1.5 ... 6 mm ²
Weight	370 g

Low voltage balanced network 3/4 wires with 1 CT

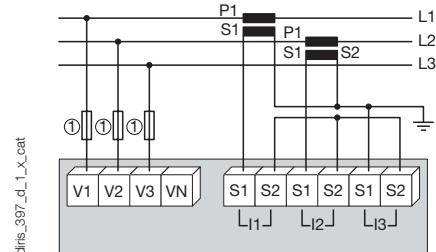


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Low voltage unbalanced network 3/4 wires with 3 CTs



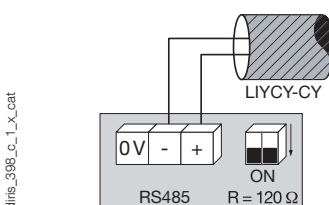
3 wires with 2 CTs



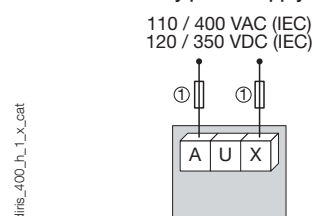
Use of 2 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Additional information

Communication via RS485 link



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.



Metering, monitoring & power quality

COUNTIS E63

Active energy meters

3 x single-phase - Direct 100 A

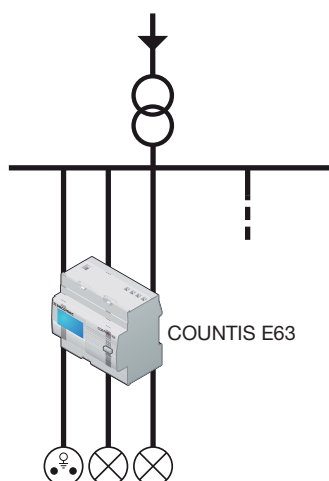


COUNTIS E63

Function

The **COUNTIS E63** is a modular active electrical energy meter which provides metering for three single-phase loads, with direct connection of up to 100 A. It directly displays the total and partial energy and power (kWh and kW) consumed by each single-phase load.

Principle diagram



count_205_a_1_x_cat

Advantages

Compact

Due to the integration of three single-phase meters in the same case (7 modules wide), the COUNTIS E63 provides significant space-saving.

Advanced multi-measurement functions

Advanced multi-measurement functions are available via RS485 MODBUS communication:

- Instantaneous currents: I1, I2, I3
- Instantaneous voltages: U1, U2, U3
- Instantaneous power: 3P, 3S
- Instantaneous power factors: 3PF
- Load curves for each of the 3 phases:
Viewing of average positive active power consumption over a programmable period.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

The solution for

- > Data centres.
- > Infrastructure.



Strong points

- > Compact.
- > Advanced multi-measurement functions.
- > Detection of connection errors.

Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62053-11



Management software

- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 462.

Front panel



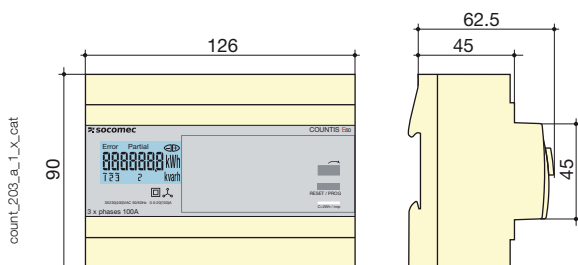
1. Backlit LCD display
2. Navigation key
3. Reset key
4. Metrological LED

Electrical characteristics

Current measurement	
Type	3 x single-phase - direct 100 A
Input consumption	0.5 VA max. per phase
Startup current (I_{st})	80 mA
Minimum current (I_{min})	0.5 A
Transition current (I_T)	2 A
Reference current (I_{ref})	20 A
Permanent overload (I_{max})	100 A
Intermittent overload	3000 A max for 10 ms
Voltage measurement	
Range of measurement	230 ... 400 V +/- 20 %
Consumption on inrush (VA)	2
Permanent overload	280 V phase-neutral / 480 V phase-phase
Energy accuracy	
Active (according to IEC 62053-21)	Class 1

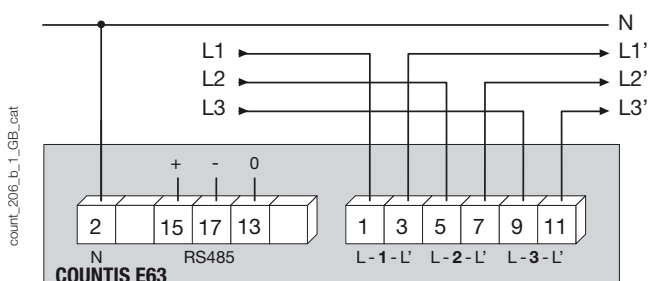
Power supply	
Self-supplied	yes
Frequency	50 / 60 Hz
Operating conditions	
Operating temperature	-10 to 55 °C
Storage temperature	-20 to 70 °C
Relative humidity	95 %
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 ... 38400 bauds

Case



Type	modular
Number of modules	7
Dimensions W x H x D	126 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	2.5 to 35 mm ²
Flexible cable cross-section	2.5 to 35 mm ²
Weight	490 g

Connection



References

Type	3 x single phase - 100 A direct with RS485 MODBUS communication	COUNTIS E63 Reference 4850 3016
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COUNTIS ECix

Multi-utility pulse concentrator

Metering, monitoring
& power quality



COUNTIS ECi3

The solution for

- > Data centres.
- > Industry.
- > Infrastructure.



Strong points

- > Up to 7 multi-utility meters and 2 analogue sensors.
- > Load curves.
- > RS485 MODBUS communication.
- > Improved customisation.

Management software

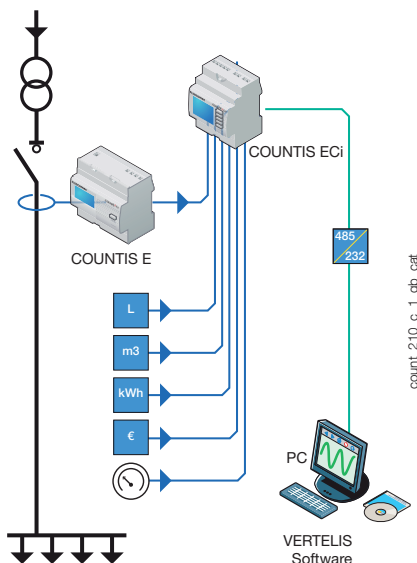
- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 464.

Function

The COUNTIS ECix is a multi-utility pulse concentrator which communicates via an RS485 link using MODBUS protocol.

It enables pulses from water, gas, compressed air, electricity meters and, for the COUNTIS ECi3, the output of analogue sensors (light, temperature, wind etc.) to be registered and stored. All data, ie. total and partial meters and load curves (available for all logical and analogue inputs) can be centralised via RS485 communication using MODBUS protocol.

Principle diagram



Advantages

Up to 7 multi-utility meters and 2 analogue sensors

- 7 logical inputs + 2 analogue inputs.
- Total, partial and programmable metering (day, week, month, year).

Load curves

Load curves are available for each of the 7 logical inputs.

A history of average values are available for the 2 analogue inputs (ECi3).

RS485 MODBUS communication

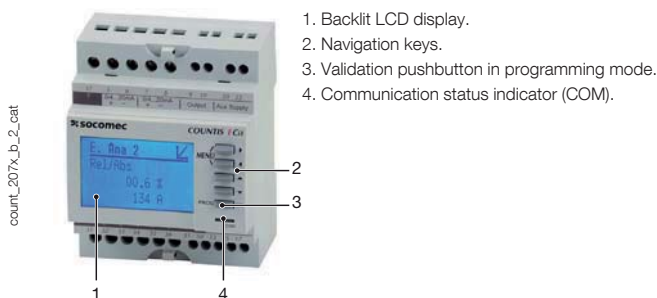
- Centralisation and transmission of pulse and analogue data to a supervision station.
- Remote configuration of COUNTIS ECi device.

Improved customisation

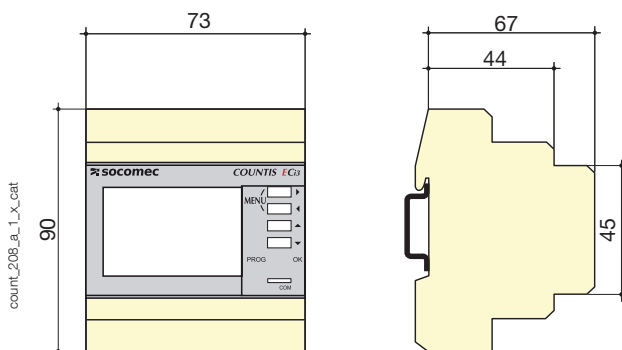
- Selection of the measuring unit: kWh, m³, liters.
 - Selection of the currency unit: €, K€, £, \$.
- Values can be displayed in the unit of your choice and energy costs can be directly calculated.

Models	Key characteristics
ECi2	7 insulated inputs
ECi3	7 insulated inputs + 2 analogue inputs.

Front panel



Case



Type	modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 67 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Terminal blocks type	fixed
Rigid cable cross-section	1... 10 mm ²
Flexible cable cross-section	0.5... 6 mm ²
Weight	215 g

Characteristics

Auxiliary power supply

Self-supplied	no
Alternating voltage	110 / 400 VAC
Direct voltage	120 / 300 VDC
Tolerance	± 10 %
Frequency	45 / 65 Hz
Consumption	5 VA
Insulation voltage	3.5 kV

Communication

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS [®] speed	9600... 38400 bauds

Inputs

Number	7
Control voltage (integrated)	10...30 VDC
Minimum signal width	10 ms
Maximum signal width	2 s
Minimum duration between 2 pulses	30 ms
Edge triggering	rising

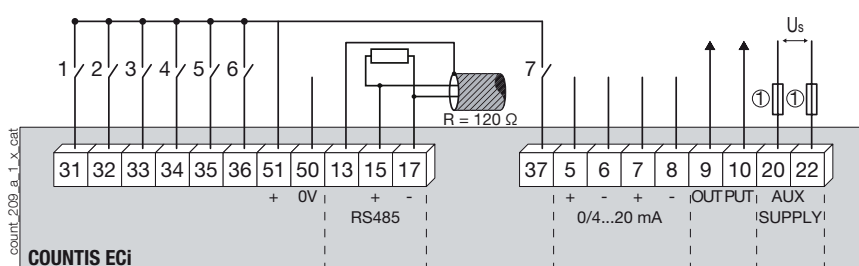
Analogue inputs (ECi3)

Number	2
Current	25 mA
Accuracy	0.5 %
Response time	500 ms
Input resistance	200 Ω
Consumption	0.1 VA

Operating conditions

Operating temperature	-10... +55 °C
Storage temperature	-20... +70 °C
Relative humidity	95 %

Connection



- 31 : logical input n°1.
- 32 : logical input n°2.
- 33 : logical input n°3.
- 34 : logical input n°4.
- 35 : logical input n°5.
- 36 : logical input n°6.
- 37 : logical input n°7.

13-15-17: RS485 link.

5-6: Analogue input n°1.
7-8: Analogue input n°2.

9-10: output.
20-22: power supply
U=110...400 VAC ± 10 %.

51-50: Inputs internal/
external power supply.

1. 0.5 A gG fuses.

References

Auxiliary power supply U _s	COUNTIS ECi2 Reference	COUNTIS ECi3 Reference
230 / 400 VAC	4853 0000	
230 / 400 VAC + 2 analogue inputs		4853 0001
Description of accessories	Reference	Reference
Panel mounting kit	192J 8015	192J 8015
Management software for COUNTIS	See page 464	



DIRIS A10

Multifunction meters - MFM
Modular multifunction meter

Metering, monitoring
& power quality



DIRIS A10

diris_791_c_1_cat

The solution for

- > Industry.
- > Infrastructures.
- > Data centres.



Strong points

- > Easy to use.
- > Integrated temperature sensor.
- > Detects wiring errors.
- > Compliant with IEC 61557-12.

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2



Function

The **DIRIS A10** is a modular multifunction meter for measuring electrical values in low voltage networks. It allows all electrical parameters to be displayed and utilised for communication and/or output functions.

Advantages

Easy to use

Five direct access pushbuttons enable all measurements to be clearly viewed on its backlit LCD display.

Integrated temperature sensor

It allows variations in temperature to be detected.

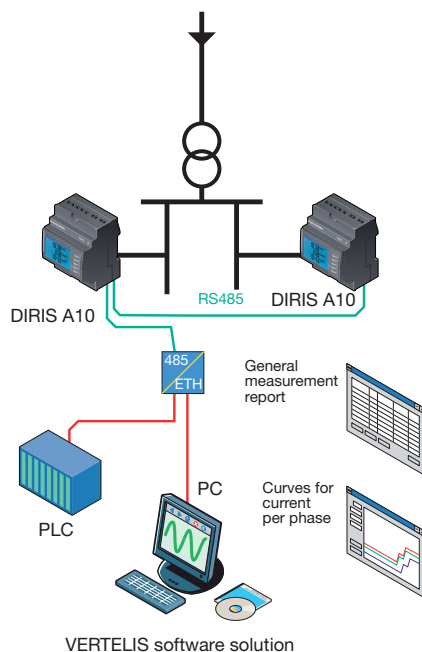
Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Principle diagram



diris_808_L1_gb_cat

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factors
 - instantaneous: 3PF, ΣPF

Metering

- Active energy: + kWh
- Reactive energy: + kVarh
- Hours: ⌚

Harmonic analysis

- Total harmonic distortion (level 51)
 - Currents: thd I1, thd I2, thd I3
 - Phase-to-neutral voltage: thd U1, thd U2, thd U3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Dual tariff function

Selection of one out of 2 billing tariffs

Events

Alarms on all electrical values

Communications⁽¹⁾

RS485 with MODBUS protocol

Input

Tariff selection
Remote device status

Output

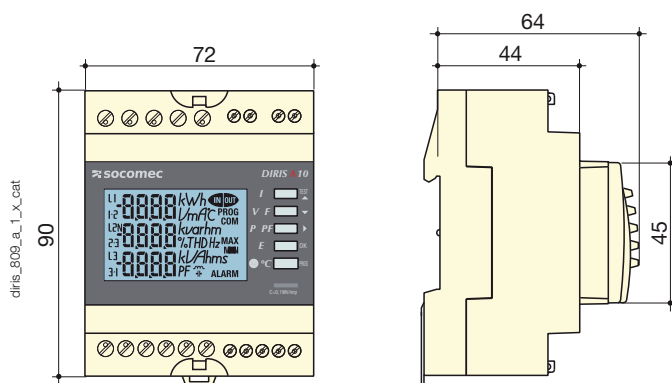
- Remote command of device
- Alarm report
- Pulse report

⁽¹⁾ Available on specific version (see the following pages).

Front panel



Case



Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP 30
Front degree of protection	IP 52
Display type	backlit LCD display
Voltage and current connection cross-section	4 mm ²
Connection cross-section for AUX supply, input, output and comms.	2.5 mm ²
Weight	205 g (4825 0010) - 215 g (4825 0011)

Electrical characteristics

Current measurement on high-impedance inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	< 3 VA
Digital output (pulses or on/off)	
Number	1
Type	20 / 30 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁹
Input (tariff)	
Number	1
Type	0 VAC: T1 / 200-277 VAC: T2
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS [®] speed	2400 ... 38400 bauds
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 70 °C
Relative humidity	85 %

DIRIS A10

Multifunction meters - MFM

Modular multifunction meter

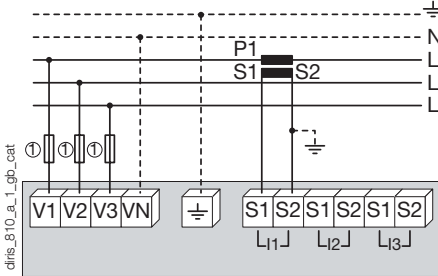
Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.
- It is recommended that the earthing point for the DIRIS A10 and the current transformer secondaries are not earthed at the same time.

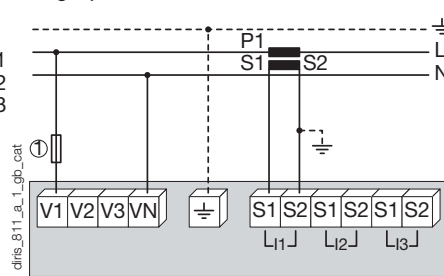
Low voltage balanced network

3/4 wires with 1 CT



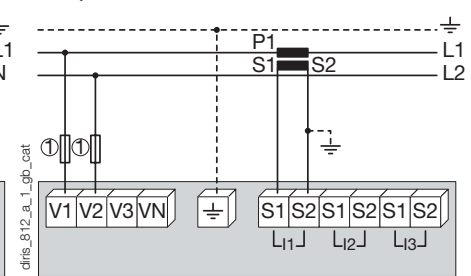
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

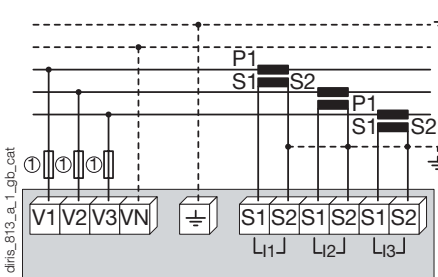
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

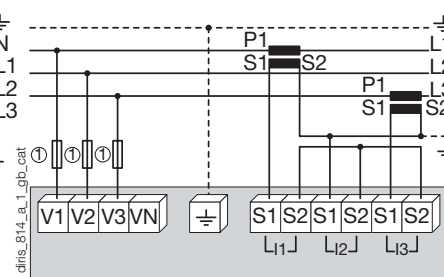
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

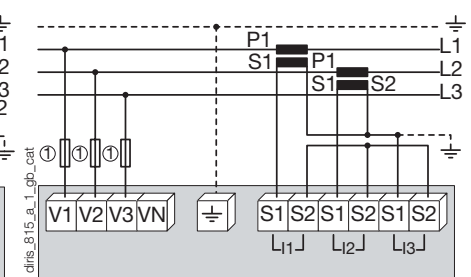
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

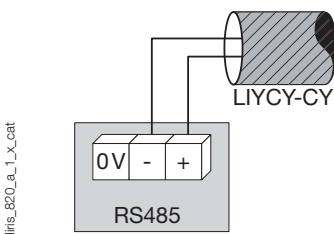


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

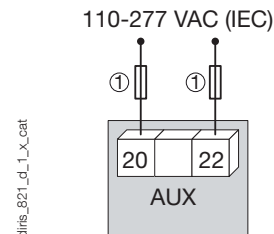
Additional information

Communication via RS485 link



diris_b20_a_1_x_cat

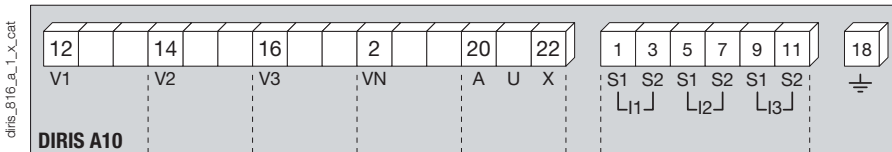
AC auxiliary power supply



diris_b21_d_1_x_cat

1. Fuses 0.5 A gG / 0.5 A class CC.

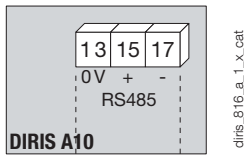
Terminals



AUX: auxiliary power supply U_s .
V1, V2, V3 & VN: voltage inputs.

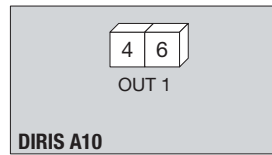
S1 - S2: current inputs.

Communication terminals



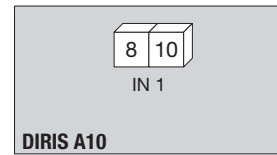
RS485 link.

Pulse or alarm output terminals



4 - 6: output n°1

Input terminals



8 - 10: input n°1

References

Basic device	DIRIS A10	
Description	Reference	
DIRIS A10 (available in light grey on request)	4825 0010	
DIRIS A10 with RS485 MODBUS communication (available in light grey on request)	4825 0011	
Description of accessories	To be ordered in multiples of	Reference
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000
Current transformer range	1	See page 488
Management software for DIRIS		See page 464

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.





DIRIS A17

Multifunction meters - MFM

Multi-measurement meter - dimensions 72 x 72 mm

Metering, monitoring & power quality

new



DIRIS A17

Function

Compact and ergonomic, the DIRIS A17 is a multifunction meter specially adapted for monitoring and managing electrical energy. Its communication function allows the analysis of data collected via a PLC or Vertelis energy management software.

Advantages

Compact

The compact 72 x 72 mm panel-mount format enables easy integration into any type of electrical cabinet, including MCCs (Motor Control Centres).

Compliant with IEC 61557-12

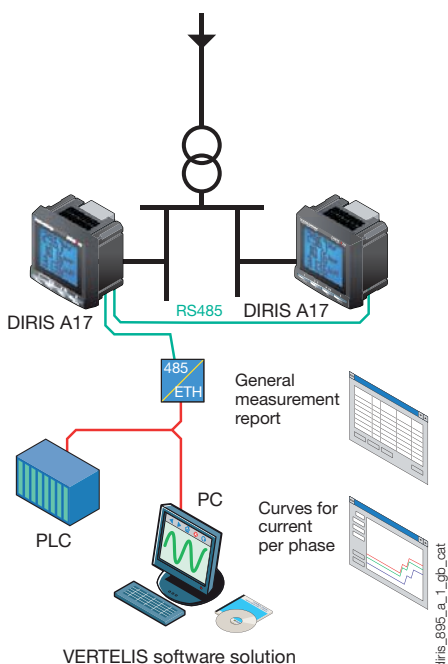
IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Advanced functions

The DIRIS A17 includes a programmable input and output as standard on all versions; input/output functions include pulse metering, alarm report and pulse output.

An RS485 MODBUS communication output is supplied on two versions, allowing the extraction of data and device configuration remotely.

Principle diagram



Easy to use

As well as being compact, the DIRIS A17 also allows easy navigation via its 4 direct access keys. Its screen displays a large amount of information, whilst remaining easy to read.

The solution for

- > Industry.
- > Infrastructure.
- > Non critical buildings.



Strong points

- > Compact.
- > Compliant with IEC 61557-12.
- > Advanced functions.
- > Easy to use.

Conformity to standards

- > IEC 61557-12
- > IEC 62053-21 class 1
- > IEC 62053-23 class 2



Management software

- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 464.

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: U1, U2, U3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factors
 - instantaneous: 3PF, ΣPF

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh

Harmonic analysis

- Total harmonic distortion (level 31)
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd U1, thd U2, thd U3, (4 wire networks)
 - Phase-to-phase voltage: thd U12, thd U23, thd U31, (3 wire networks)

Events

Alarms on all electrical values

Communications

Digital RS485 (MODBUS)

Input

- Pulse metering
- Remote device status

Output

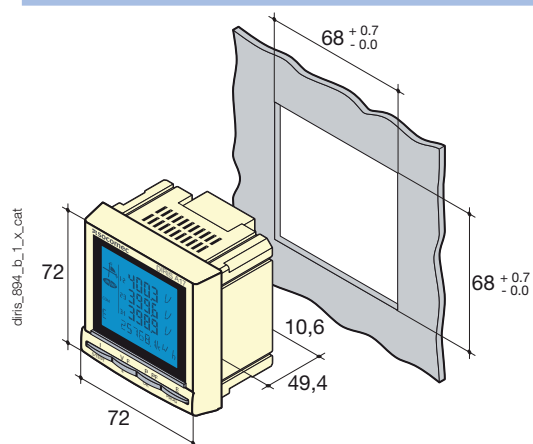
- Remote command of device
- Alarm report
- Pulse report

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instantaneous and maximum), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive and apparent power (instantaneous and maximum) and power factor.
5. Direct access key for energies and programming menu access.

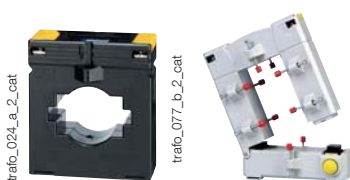
Case



Type	panel mounting
Dimensions W x H x D	72 x 72 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal block type	fixed or plug-in
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	400 g

Accessories

Current transformers
(see page 488)



DIRIS A17

Multifunction meters - MFM

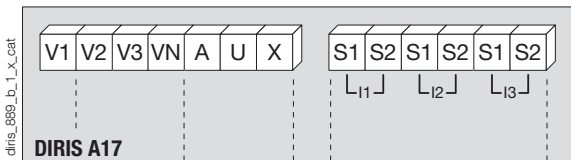
Multi-measurement meter - dimensions 72 x 72 mm

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	69 ... 690 VAC
Direct measurement between phase and neutral	40 ... 400 VAC
VT primary	400 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy at 50 Hz	1 %
Accuracy at 60 Hz	2 %
Power factor measurement	
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-21) at 50 Hz	Class 1
Active (according to IEC 62053-21) at 60 Hz	Class 2
Reactive (according to IEC 62053-23)	Class 2
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %
Auxiliary power supply	
Alternating voltage	220 ... 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	3 VA
Digital pulse and control input	
Number	1
Type	optocoupler 8 to 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS® speed	1200 ... 38400 bauds
Pulse, alarm and control output	
Number	1
Power supply	8 to 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type of optocoupler	IEC 62053-31 Class A (5 ... 30 VDC)
Pulse weight	100 Wh, 1 kWh, 10 kWh, 100 kWh, 1000 kWh, 10000 kWh
Pulse length	100 ms, 200 ms, 300 ms..., 900 ms

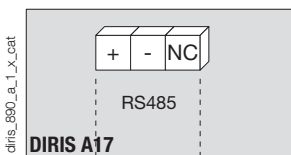
Terminals



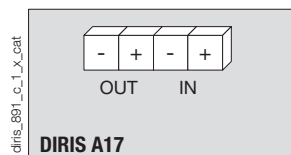
S1 - S2: current inputs.

AUX: auxiliary power supply.
V1, V2, V3 & VN: voltage inputs.

Communication



Input/output



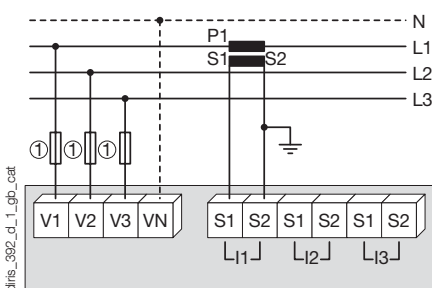
Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us. 440.

Low voltage balanced network

3/4 wires with 1 CT

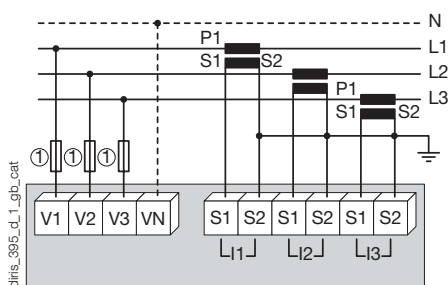


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

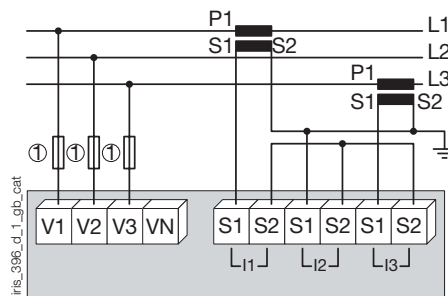
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

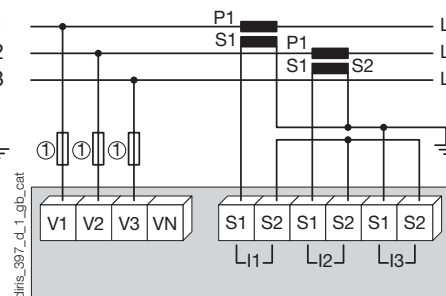
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

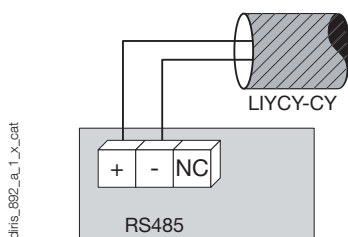


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

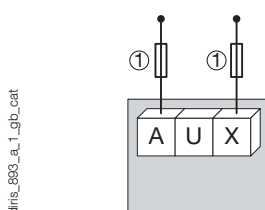
Additional information

Communication via RS485 link



AC auxiliary power supply

220 / 277 VAC



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device		DIRIS A17
Auxiliary power supply U_s		Reference
220 ... 277 VAC with pulse output		4825 0101
220 ... 277 VAC with RS485 MODBUS communication		4825 0102
220 ... 277 VAC with RS485 MODBUS communication		4825 0103
Accessories		Reference
Description of accessories	To be ordered in multiples of	Reference
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000
Current transformer range	1	See page 488
Management software for DIRIS		See page 464

Services & Technical Assistance

> Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.





DIRIS A20

Multifunction meters - MFM

Multi-measurement meter - dimensions 96 x 96 mm

Metering, monitoring & power quality



DIRIS A20

The solution for

- > Industry.
- > Infrastructure.
- > Data centres.



Strong points

- > Easy to use.
- > Compliant with IEC 61557-12
- > Detects wiring errors.

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2



Management software

- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 464.

Function

DIRIS A20 are panel mounted measurement units which ensure the user has access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored.

All this information can be analysed remotely using the VERTELIS software solution.

Advantages

Easy to use

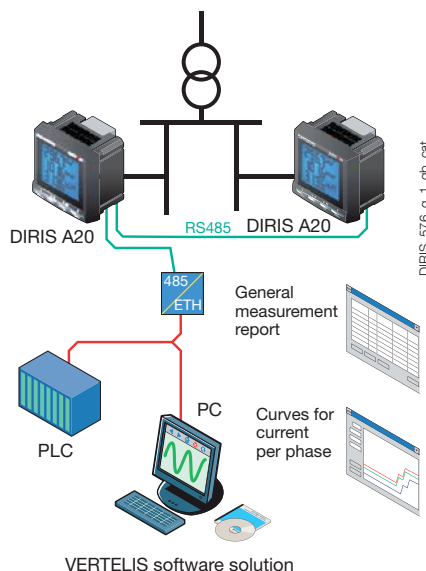
Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, DIRIS A20 provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values : + kWh, + kvarh, I, U, V, F, P, Q, S, PF, etc.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Principle diagram



Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factors
 - instantaneous: 3PF, Σ

Metering

- Active energy: + kWh
- Reactive energy: + kvarh
- Hours: ⌚

Harmonic analysis

- Total harmonic distortion (level 51)
 - Currents: thd I1, thd I2, thd I3
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Events

Alarms on all electrical values

Communications⁽¹⁾

RS485 with MODBUS protocol

Output

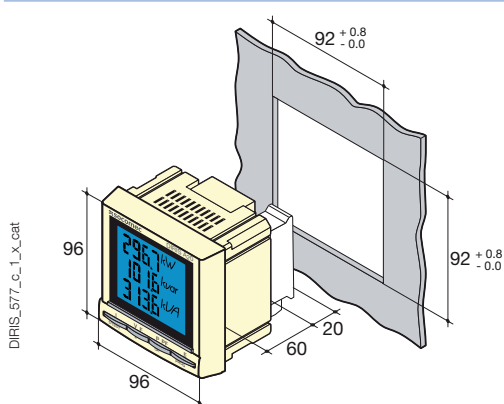
- Remote command of device
 - Alarm report
 - Pulse report
- (1) Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instantaneous and max. values), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies, hour meter and programming menu.

Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal block type	Fixed or plug-in
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	400 g

Plug-in modules

DIRIS® A20



1 Output

- 1 output assignable to:
- Pulses: configurable (type, weight, duration) in kWh or kvarh.
 - Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer.
 - Remote command of device.



Communication

RS485 link with JBUS / MODBUS protocol (speed up to 38400 bauds)

Accessories

Current transformers (see page 488)



IP65 protection



Panel mounting kit for a 144 x 96 mm cut-out



DIRIS A20

Multifunction meters - MFM

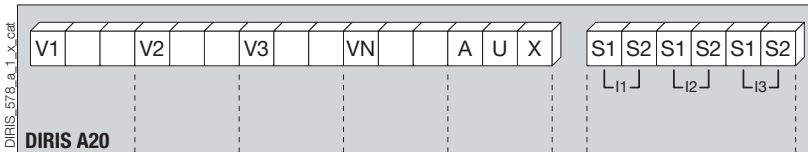
Multi-measurement meter - dimensions 96 x 96 mm

Electrical characteristics

Current measurement on high-impedance inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

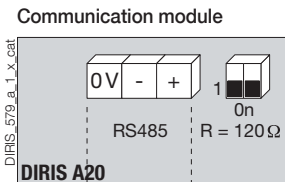
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	10 VA
Pulse or alarm output	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS [®] speed	1400 ... 38400 bauds
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

Terminals

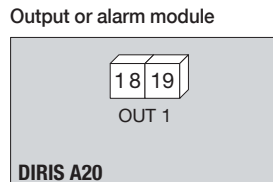


S1 - S2: current inputs.

AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.



RS485 link.
R = 120 Ω: selectable internal resistance for RS485 end of line termination.



18 - 19: output n°1

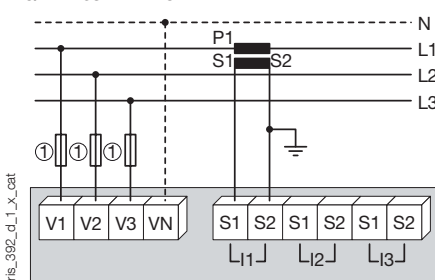
Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.

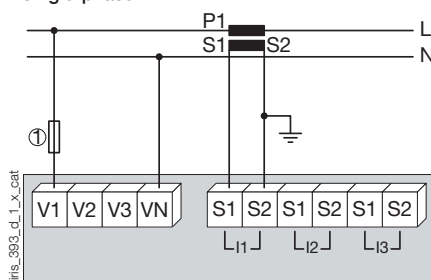
Low voltage balanced network

3/4 wires with 1 CT



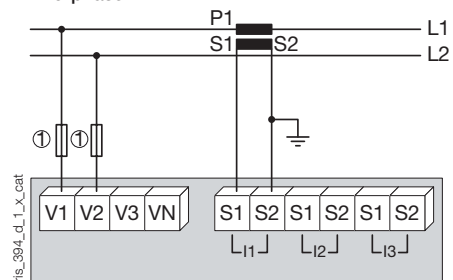
Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

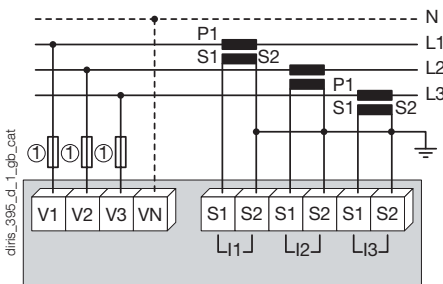
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

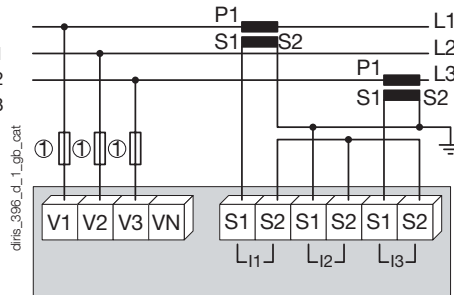
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

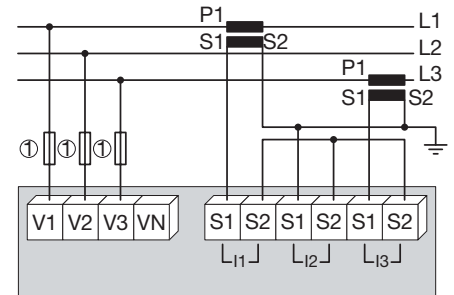
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

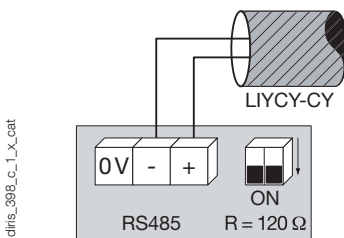


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

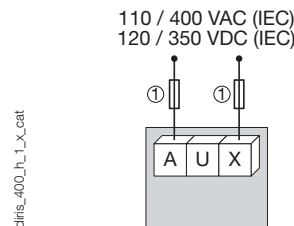
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

Communication via RS485 link



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device		DIRIS A20
Auxiliary power supply U_s		Reference
110 ... 400 VAC / 180 ... 350 VDC		4825 0200
Optional plug-in modules		Reference
1 output		4825 0080
RS485 MODBUS® communication		4825 0082
Accessories		
Description of accessories	To be ordered in multiples of	Reference
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuse type gG 10x38 0.5 A	10	6012 0000
Ferrite to be associated with communication modules	1	4899 0011
Current transformer range	1	See page 488
Management software for DIRIS		See page 464

Services & Technical Assistance

> Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.



DIRIS A40/A41

Multifunction meters - PMD

Multi-measurement meter - dimensions 96 x 96 mm



DIRIS A41

The solution for

- > Industry.
- > Data centres.
- > Infrastructures.



Strong points

- > Easy to use.
- > Detects wiring errors.
- > Customisable.
- > Webserver function.
- > Compliant with IEC 61557-12.

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2



Function

DIRIS A40 and A41 are panel mounted measurement units which ensure the user has access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored.

All this information can be analysed remotely using the VERTELIS software solution.

The DIRIS A41 has a CT current input for measuring the neutral current.

Advantages

Easy to use

Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, DIRIS A4x provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values : +/- kWh, +/- kvarh, kVAh, I, U, V, F, P, Q, S, PF, etc.

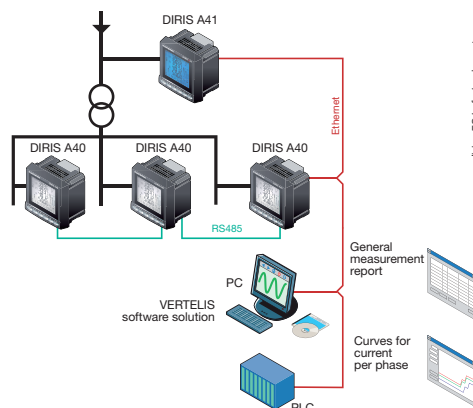
Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Customisable

Thanks to the wide range of optional modules, the product can be customised or upgraded after installation.

Principle diagram



diris_581_f_1_gb_cat

Webserver function

Optional Ethernet communication modules include a Webserver function for monitoring and exploiting data remotely without additional software.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In, Isystem
 - average/maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Ussystem
 - average/maximum average: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
 - predictive: (ΣP), (ΣQ), (ΣS)
- Power factors
 - instantaneous: 3PF, ΣPF
 - average/maximum average: ΣPF

- Temperatures⁽¹⁾
 - internal
 - external via 3 PT100 sensors

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Hours: ⌚

Harmonic analysis

- Total harmonic distortion
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

- Individual up to level 63
 - Currents: HI1, HI2, HI3, HIn
 - Phase-to-neutral voltage: HV1, HV2, HV3,
 - Phase-to-phase voltage: HU12, HU23, HU31

Load curves⁽¹⁾

- Active and reactive power: ΣP+/-; ΣQ+/-
- Voltages & frequency: V1, V2, V3, U12, U23, U31, F

Events⁽¹⁾

- Alarms on all electrical values.

Communications⁽¹⁾

- RS485 MODBUS RTU & PROFIBUS DP
- Ethernet (MODBUS TCP or RTU over TCP and Web server)
- Ethernet with RS485 gateway MODBUS RTU over TCP

Inputs / Outputs⁽¹⁾

- Pulse metering
- Remote control/command
- Alarm report
- Pulse report

Analogue output

- 0/4- 20 mA analogue output

⁽¹⁾ Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents and test function.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current and power values.
6. Direct access key for harmonic values.
7. Direct access key for energies, hour meter and programming menu.

Plug-in modules

DIRIS® A40










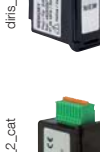

diris_773_a

DIRIS® A41*



diris_774_a

* with a factory fitted neutral CT module.

 <p>diris_445_a_1_cat</p>	<p>Pulse outputs</p> <p>2 configurable pulse outputs (type, weight and duration) on \pm kWh, \pm kvarh and kVAh.</p>
 <p>diris_447_a_1_cat</p>	<p>Communication MODBUS®</p> <p>RS485 link with MODBUS® protocol (speed up to 38400 bauds).</p>
 <p>diris_775_a_1_cat</p>	<p>PROFIBUS® DP communication</p> <p>SUB-D9 link with PROFIBUS® DP protocol (speed up to 12 Mbauds).</p>
 <p>diris_777_a_1_cat</p>	<p>Ethernet communication</p> <ul style="list-style-type: none"> • Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol. • Embedded Webserver function⁽¹⁾.
 <p>diris_776_a_1_cat</p>	<p>Ethernet communication with RS485 MODBUS gateway</p> <ul style="list-style-type: none"> • Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol. • Connection of 1 to 247 RS485 MODBUS slaves. • Embedded Webserver function⁽¹⁾.
 <p>diris_448_a_1_cat</p>	<p>Analogue outputs</p> <p>A maximum of 2 modules may be connected, providing up to 4 analogue outputs. Per module 2 outputs assignable to:</p> <p>3I, In, 3V, 3U, F, \pm ΣP, \pm ΣQ, ΣS, ΣPFL/C, I sys, Vsys, Usys, Ppred, Q pred, Spred, T°C internal, T°C 1, T°C 2, T°C3 and to 17 VDC power supply.</p>
 <p>diris_449_a_1_cat</p>	<p>2 inputs - 2 outputs</p> <p>A maximum of 3 modules may be connected, providing up to 6 inputs and 6 outputs. Per module 2 outputs assignable to:</p> <ul style="list-style-type: none"> - monitoring: 3I, In, 3V, 3U, F, \pm ΣP, \pm ΣQ, ΣS, ΣPFL/C, THD 3I, THD In, THD 3V, THD 3U, Ppred, Qpred, Spred, internal T°C, T°C 1, T°C2, T°C3 and hour meter, - remote control, - timed remote control. - 2 inputs for pulse metering.
 <p>diris_662_a_1_cat</p>	<p>Memory</p> <ul style="list-style-type: none"> • Storing up to a maximum of 62 days of P+, P-, Q+, Q- with an internal or external synchronisation signal of 5, 8, 10, 15, 20, 30 and 60 minutes. • Storing of 10 hour-dated last alarms. • Storing of the last minimum and maximum instantaneous values for 3U, 3V, 3I, In, F, ΣP\pm, ΣQ\pm, ΣS, THD 3U, THD 3V, THD, 3U, THD, 3V, THD, 3I, THD In. • Storing of 3U, 3V and F average values based on synchronisation function (maximum 60 days).
 <p>diris_747_a_2_cat</p>	<p>Temperature⁽²⁾</p> <p>Temperature indication:</p> <ul style="list-style-type: none"> - internal, - external sensor PT 100 (T°C 1), - external sensor PT 100 (T°C 2), - external sensor PT 100 (T°C 3).

(1) See "Management software for DIRIS" p. 464.
 (2) See "external sensor PT 100" p. 505.

DIRIS A40/A41

Multifunction meters - PMD

Multi-measurement meter - dimensions 96 x 96 mm

Accessories

Current transformers
(see page 488)



IP65 protection

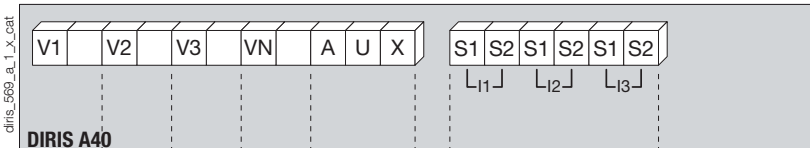


Panel mounting kit for a 144 x 96 mm cut-out



Terminals

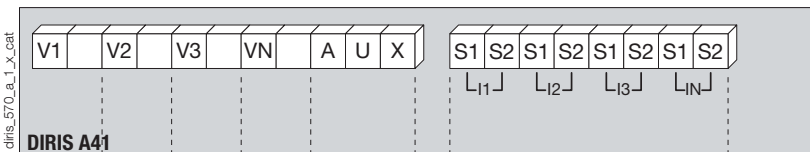
DIRIS A40



S1 - S2: current inputs

AUX: auxiliary power supplies U_s
V1 - V2 - V3 - VN: voltage inputs

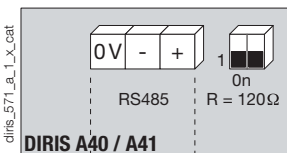
DIRIS A41



S1 - S2: current inputs

AUX: auxiliary power supplies U_s
V1 - V2 - V3 - VN: voltage inputs

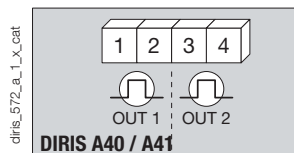
Communication module



DIRIS A40 / A41

RS485 link.
 $R = 120 \Omega$: selectable internal resistance for RS485 end of line termination.

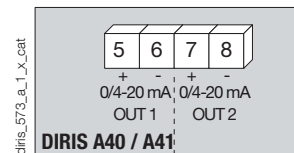
Pulse output module



DIRIS A40 / A41

1 - 2: pulse output n°1.
3 - 4: pulse output n°2.

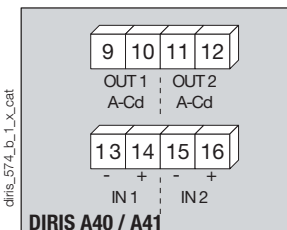
Analogue output module



DIRIS A40 / A41

5 - 6: analogue output n°1.
7 - 8: analogue output n°2.

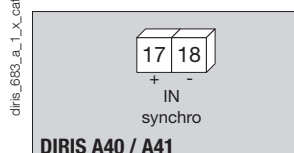
2 inputs / 2 outputs module



DIRIS A40 / A41

9 - 10: relay output n°1.
11 - 12: relay output n°2.
13 - 14: opto input n°1.
15 - 16: opto input n°2.

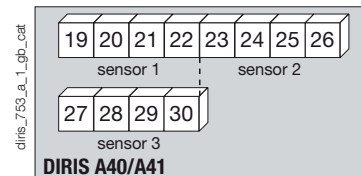
Memory module



DIRIS A40 / A41

17 - 18: synchronisation input.

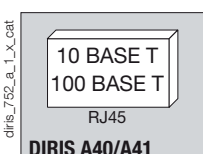
Temperature module



DIRIS A40/A41

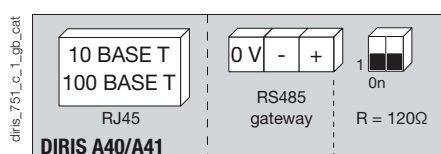
Sensor 1	Sensor 2	Sensor 3
19: red	23: red	27: red
20: red	24: red	28: red
21: white	25: white	29: white
22: white	26: white	30: white

Ethernet Module



DIRIS A40/A41

Ethernet module + RS485 MODBUS gateway



DIRIS A40/A41

Electrical characteristics

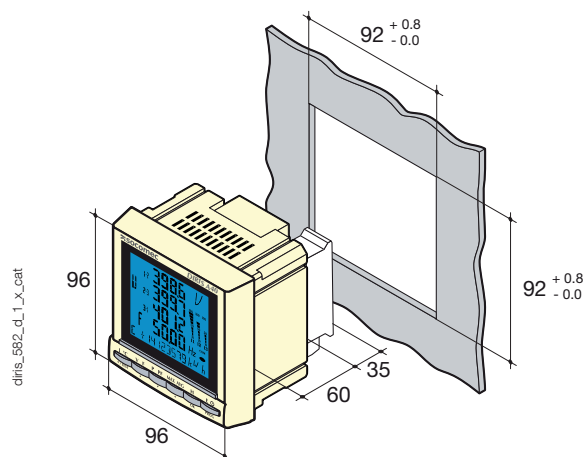
Current measurement on insulated inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 ... 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 700 VAC
Direct measurement between phase and neutral	28 ... 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Current-voltage product	
Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC / 12 ... 48 VDC
DC tolerance	± 20 % / - 6 ... + 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA

2 inputs / 2 outputs module: Outputs (alarms / control)	
Number of relays	2 ⁽¹⁾
Type	250 VAC - 5 A - 1150 VA
2 inputs / 2 outputs module: Phototransistor inputs	
Number	2 ⁽¹⁾
Power supply	10 ... 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	phototransistors
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Analogue output module	
Number of outputs	2 ⁽²⁾
Type	insulated
Range	0 / 4 ... 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS [®] speed	4800 ... 38400 bauds
PROFIBUS-DP communication module	
Link	SUB-D9
Protocol	PROFIBUS [®] DP
PROFIBUS [®] speed	9.8 kbauds ... 12 Mbauds
Ethernet communication module	
Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP
Temperature module (inputs)	
Type	PT100
Connection	2, 3 or 4 wires
Dynamic	- 20 °C ... 150 °C
Accuracy	+/- 1 digit
Maximum length	300 cm
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

(1) Max. 3 modules / DIRIS.

(2) Max. 2 modules / DIRIS.

Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal blocks type	fixed or plug-in
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	400 g

DIRIS A40/A41

Multifunction meters - PMD

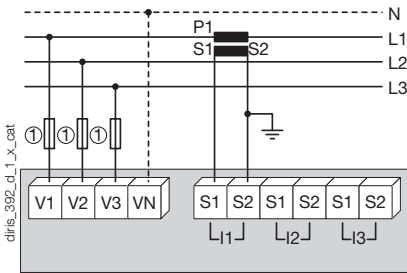
Multi-measurement meter - dimensions 96 x 96 mm

Connections

Recommendation: When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us. In TNC neutral systems it is recommended to use the functional earth module.

Low voltage balanced network for DIRIS A40

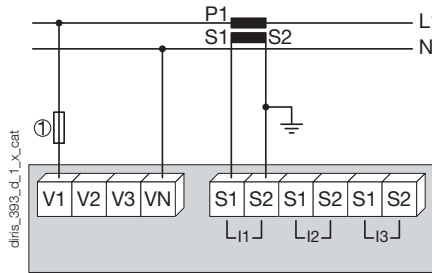
3/4 wires with 1 CT



Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

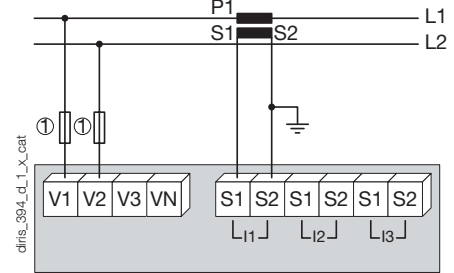
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

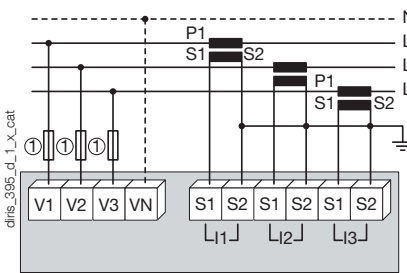
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

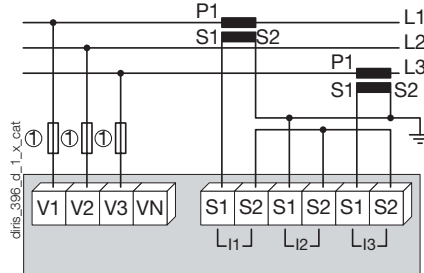
Low voltage unbalanced network for DIRIS A40

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

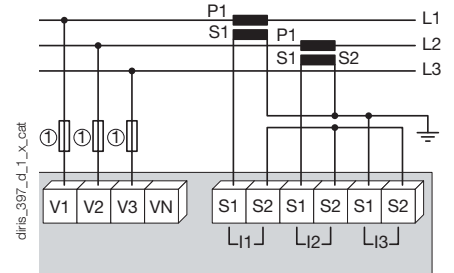
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

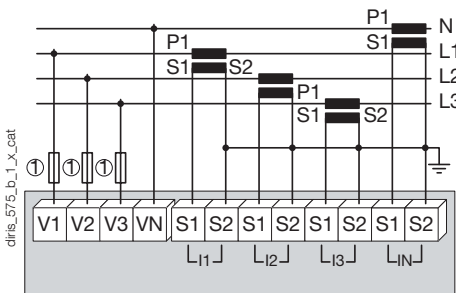


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

Low voltage unbalanced network for DIRIS A41

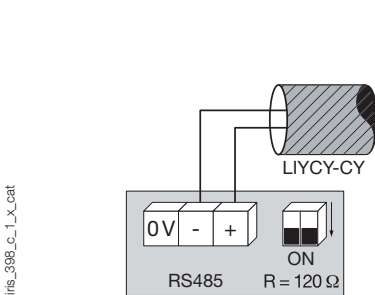
4 wires with 4 CTs



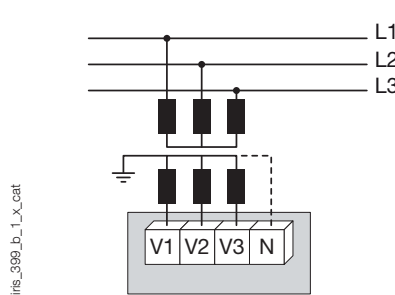
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

Communication via RS485 link

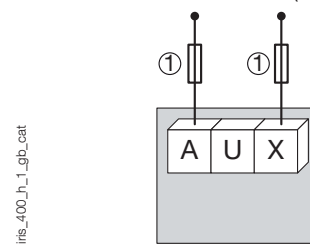


Connection of voltage transformer for HV networks



AC & DC auxiliary power supply

110 / 400 VAC (CEI)
120 / 350 VDC (CEI)



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device	DIRIS A40		DIRIS A41 with CT on the neutral
Auxiliary power supply U_s	Reference		Reference
110 ... 400 VAC / 120 ... 350 VDC	4825 0201		4825 0202
12 ... 48 VDC	4825 1201		4825 1202
Options			
Plug-in modules⁽¹⁾	Reference		Reference
Pulse outputs	4825 0090		4825 0090
RS485 MODBUS [®] communication	4825 0092		4825 0092
Analogue outputs	4825 0093		4825 0093
2 inputs / 2 outputs	4825 0094		4825 0094
Communication Sub D9 PROFIBUS [®] DP ⁽²⁾	4825 0205		4825 0205
Memory	4825 0097		4825 0097
Embedded Webserver function ⁽²⁾ .	4825 0203		4825 0203
Ethernet communication + RS485 MODBUS gateway (Embedded Webserver function) ⁽²⁾	4825 0204		4825 0204
Temperature inputs	4825 0206		4825 0206

(1) Ease of integration for additional functions (maximum 4 slots on A40 and 3 on A41).

(2) Dimension of the plug-in module: 2 slots.

Accessories	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
Description of accessories				
IP65 protection	1	4825 0089	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017	6	5601 0017
Fuse type gG 10x38 0.5 A	10	6012 0000	10	6012 0000
Current transformer range	1	See page 488	1	See page 488
Ferrite to be associated with communication modules	1	4899 0011		4899 0011
Temperature sensor PT100 - M6 screw type	1	4825 0208	1	4825 0208
Temperature sensor PT100 - M6 eyelet type	1	4825 0209	1	4825 0209
Management software for DIRIS				See page 464

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.





DIRIS A60

Multifunction meters - PMD

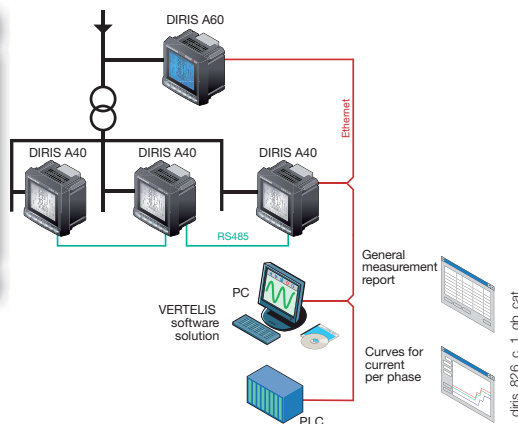
Energy monitoring and event analysis - dimensions 96x96 mm

Metering, monitoring & power quality



DIRIS A60

Principle diagram



The solution for

- > Industry.
- > Infrastructure.
- > Data centres.



Strong points

- > Easy to use.
- > Detects wiring errors.
- > Compliant with IEC 61557-12.
- > Management softwares.
- > Conformity to standard EN 50160.

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2
- > EN 50160



Function

DIRIS A60 is a panel mounted multifunction meter which incorporates all functions of the DIRIS A40 with the addition of enhanced data logging functions, recording curves for quality events. All this information can be analysed remotely using the Analysis software which is available at no charge and can be downloaded from the SOCOMEC website www.socomec.com.

Advantages

Easy to use

Thanks to its large backlit LCD display and its multiple viewing screens with direct key access, the DIRIS A60 provides clear readings and is easy to use.

It directly displays a number of multi-measurement and metering values : +/- kWh, +/- kvarh, kVAh, I, U, V, F, P, Q, S, PF, etc.

Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Management softwares

- Optional Ethernet module with Webserver function: For measurement monitoring, data exploitation and the export of load curves remotely without a specific software (web browser access).
- Analysis software: For the analysis of events data in order to improve the reliability of the electrical installation.
- Easy Config software: For quick and easy remote device configuration; configuration files can be copied from and sent to the DIRIS A60, or they can be created without communication and sent at a later time. Multiple devices can be configured from a single file, which is especially useful for OEMs and panel builders.

Conformity to standard EN 50160

EN 50160 is a standard which defines events relating to the quality of electrical networks. The DIRIS A60 captures voltage events in accordance with this standard.

Functions

In addition to the functions of the DIRIS A40, the DIRIS A60 also:

- shows the current and voltage unbalance
- shows the tangent φ
- stores the load curves (60 days with an interval of 10 minutes) for the active, reactive and apparent power: ΣP +/- ; ΣQ +/- ; ΣS
- detects and stores the last 40 events concerning:
 - overvoltage
 - voltage dips
 - cut-offs
 - overcurrent.

For each stored event, the DIRIS A60 records the relevant RMS 10 ms interval curves for the voltages V1, V2, V3, U12, U23, U31 and the currents I1, I2, I3, In, giving a total of 400 curves.

Other functions: Multi-measurement

- Currents
- instantaneous: I1, I2, I3, In, Isystem,
 - average/maximum average: I1, I2, I3, In,
 - unbalance: I unb.
- Voltages & frequency
- instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Usystem
 - average/maximum average: V1, V2, V3, U12, U23, U31, F
 - unbalance: U unb.
- Power
- instantaneous: 3P, ΣP , 3Q, ΣQ , 3S, ΣS
 - maximum average: ΣP , ΣQ , ΣS
 - predictive: ΣP , ΣQ , ΣS .
- Power factor - PF, ΣPF
 - Instantaneous total tangent φ
 - Instantaneous, average and max. average unbalance

- Temperatures⁽¹⁾
 - internal,
 - external via 3 PT100 sensors

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Hours: \odot

Harmonic analysis (level 63)

- Total harmonic distortion
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31
- Individual
 - Currents: HI1, HI2, HI3, HIn
 - Phase-to-neutral voltage: HV1, HV2, HV3,
 - Phase to phase voltage: HU12, HU23, HU31

Events⁽¹⁾

- Alarms on all electrical values

Communications⁽¹⁾

- 0/4- 20 mA analogue output
- RS485 MODBUS RTU
- Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver)
- Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver) with RS485 MODBUS RTU gateway

Inputs / Outputs⁽¹⁾

- Pulse metering
- Remote control/command
- Alarm report
- Pulse report

⁽¹⁾ Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents, temperatures and test function.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current, voltage and power values.
6. Direct access key for harmonics values.
7. Direct access key for energies, hour meter and programming menu.

Plug-in modules

DIRIS® A60*



* With integrated memory module.



Pulse outputs

- 2 configurable pulse outputs (type, weight and duration) on \pm kWh, \pm kvarh and kVAh.



Communication MODBUS®

- RS485 link with MODBUS® protocol (speed up to 38400 bauds).



Ethernet communication

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Embedded Webserver function⁽¹⁾.



Ethernet communication with RS485 MODBUS gateway

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Connection of 1 to 247 RS485 MODBUS slaves.
- Embedded Webserver function⁽¹⁾.



Analogue outputs

- A maximum of 2 modules may be connected, providing up to 4 analogue outputs.
- Per module 2 outputs assignable to: 3I, In, 3V, 3U, F, \pm Σ P, \pm Σ Q, Σ S, Σ PFL/C, Isys, Vsys, Usys, Ppred, Q pred, Spred, T°C internal, T°C 1, T°C 2, T°C3 and to 17 VDC power supply.



2 inputs - 2 outputs

- A maximum of 3 modules may be connected, providing up to 6 inputs and 6 outputs.
- Per module 2 outputs assignable to:
 - monitoring: 3I, In, 3V, 3U, F, \pm Σ P, \pm Σ Q, Σ S, Σ PFL/C, THD 3I, THD In, THD 3V, THD 3U, Ppred, Qpred, Spred, T°C internal, T°C 1, T°C2, T°C3 and hour meter,
 - remote control,
 - timed remote control,
- 2 inputs for pulse metering.



Temperature⁽²⁾

- Temperature indication:
- Internal
 - External sensor PT 100 (T°C 1)
 - External sensor PT 100 (T°C 2)
 - External sensor PT 100 (T°C 3).

(1) See "Management softwares for DIRIS" p. 464.

(2) See "External sensor PT 100" p. 505.

DIRIS A60

Multifunction meters - PMD

Energy monitoring and event analysis - dimensions 96x96 mm

Accessories

Current transformers
(see page 488)



Split-core current transformers



IP65 protection

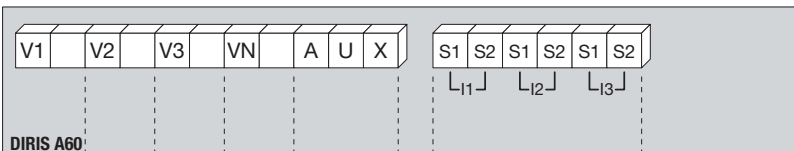


Panel mounting kit
for a 144 x 96 mm cut-out



Terminals

DIRIS A60

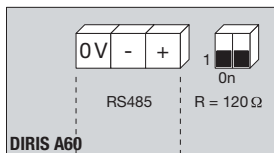


S1 - S2: current inputs

AUX: auxiliary power supplies U_s

V1 - V2 - V3 - VN: voltage inputs

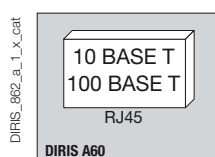
RS485 MODBUS module



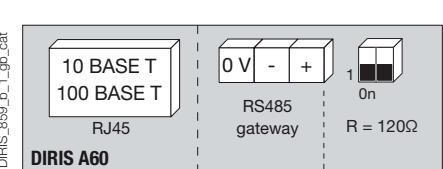
RS485 link.

R = 120 Ω : selectable internal resistance for RS485 end of line termination.

Ethernet module



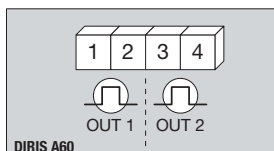
Ethernet module + RS485 MODBUS gateway



RS485 gateway resistor.

R = 120 Ω : selectable internal resistance for RS485 end of line termination.

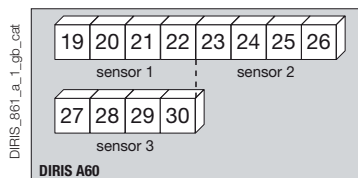
Pulse output module



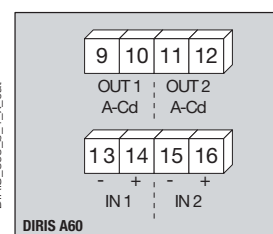
1 - 2: pulse output n°1.

3 - 4: pulse output n°2.

Temperature module



2 inputs / 2 outputs module



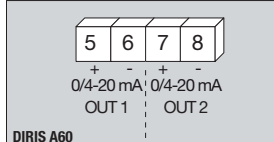
9 - 10: relay output n°1.

11 - 12: relay output n°2.

13 - 14: opto input n°1.

15 - 16: opto input n°2.

Analogue output module



5 - 6: analogue output n°1.

7 - 8: analogue output n°2.

Electrical characteristics

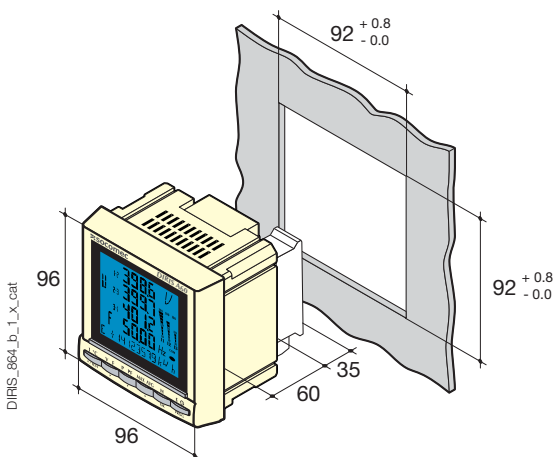
Current measurement on insulated inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5
Measurement range	0 ... 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 700 VAC
Direct measurement between phase and neutral	28 ... 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Current-voltage product	
Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA

2 inputs / 2 outputs module: Outputs (alarms / control)	
Number of relays	2 ⁽¹⁾
Type	250 VAC - 5 A - 1150 VA
2 inputs / 2 outputs module: Phototransistor inputs (pulse metering)	
Number	2 ⁽¹⁾
Power supply	10 ... 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	phototransistors
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Analogue output module	
Number of outputs	2 ⁽²⁾
Type	insulated
Range	0 / 4 ... 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS [®] speed	4800 ... 38400 bauds
Ethernet communication module	
Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP
Temperature inputs	
Type	PT100
Connection	2, 3 or 4 wires
Dynamic	- 20 °C ... 150 °C
Accuracy	+/- 1 digit
Maximum length	300 cm
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

(1) Max. 3 modules / DIRIS.

(2) Max. 2 modules / DIRIS.

Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 95 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal blocks type	fixed or plug-in
Voltage and other terminals connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	450 g

DIRIS A60

Multifunction meters - PMD

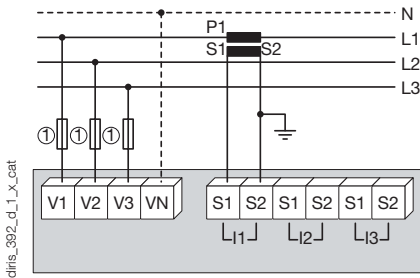
Energy monitoring and event analysis - dimensions 96x96 mm

Connection

Low voltage balanced network for DIRIS A60

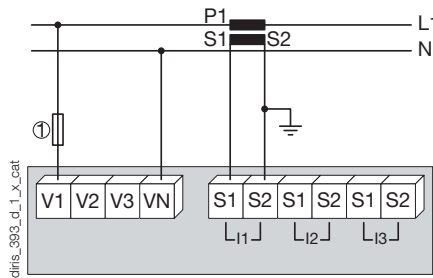
Recommendation: When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, which can be found in the SOCOMEC catalogue: please consult us.

3/4 wires with 1 CT



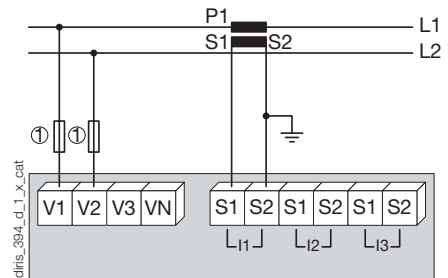
Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

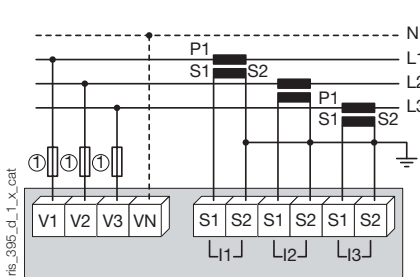
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

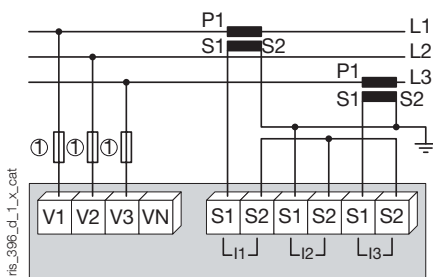
Low voltage unbalanced network for DIRIS A60

3/4 wires with 3 CTs



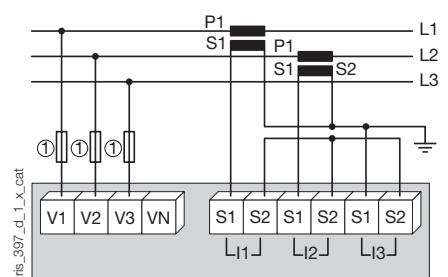
1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. Fuses 0.5 A gG / 0.5 A class CC.

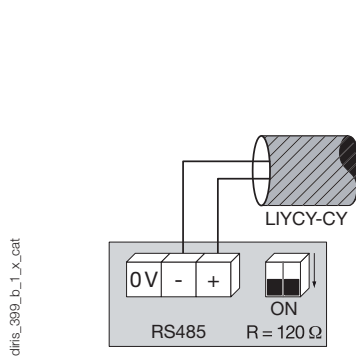
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. Fuses 0.5 A gG / 0.5 A class CC.

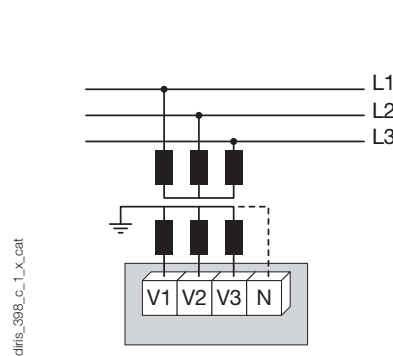
Additional information

Communication via RS485 link



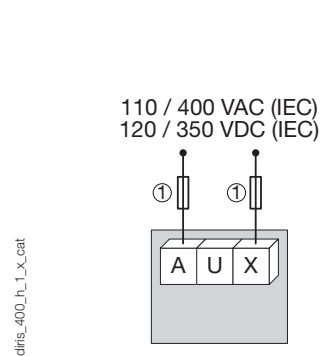
diris_399_b_1_x_cat

Connection of voltage transformer for HV networks



diris_398_c_1_x_cat

AC & DC auxiliary power supply



diris_400_h_1_x_cat

1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device	DIRIS A60
Auxiliary power supply U_s	Reference
110 ... 400 VAC / 120 ... 350 VDC	4825 0207
Options	Reference
Plug-in-modules⁽¹⁾	
Pulse outputs	4825 0090
RS485 MODBUS [®] communication	4825 0092
Analogue outputs	4825 0093
2 inputs / 2 outputs	4825 0094
Ethernet communication (embedded Ethernet Webserv ^{er}) ⁽²⁾	4825 0203
Ethernet communication + RS485 MODBUS gateway (embedded Ethernet Webserv ^{er}) ⁽²⁾	4825 0204
Temperature inputs	4825 0206

(1) Easy integration of additional functions (maximum 3 slots per device).

(2) Dimension of the plug-in module: 2 slots.

Options	To be ordered in multiples of	Reference
Description of accessories		
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuse type gG 10x38 0.5 A	10	6012 0000
Ferrite to be associated with communication modules	1	4899 0011
Current transformer range	1	See page 488
Temperature sensor PT100 - M6 screw type	1	4825 0208
Temperature sensor PT100 - M6 eyelet type	1	4825 0209
Management softwares for DIRIS		See page 464

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.





DIRIS A80

Multifunction meters - PMD + RCM

Monitoring energy and fault currents - dimensions 96x96 mm

Metering, monitoring & power quality



DIRIS A80

Function

DIRIS A80 is a complete panel mounted multifunction meter which incorporates RCM current monitoring (Residual Current Monitoring), for networks with TN-S and TT neutral systems, and enhanced data logging functions for recording curves for quality and RCM events. The DIRIS A80 supplies all the measurements required for energy efficiency projects while its RCM function provides preventative earth leakage information, essential in critical applications to avoid installation shutdowns.

Advantages

Compact

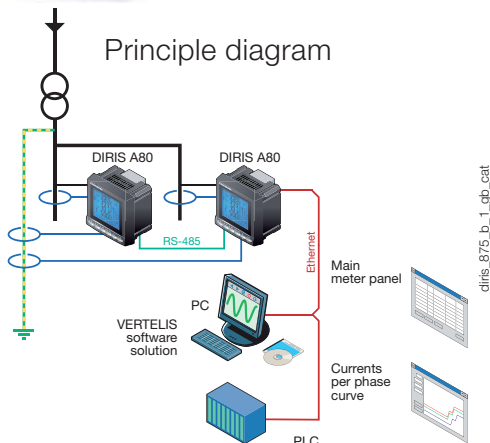
The DIRIS A80 combines two complementary products within a single 96 x 96 mm panel mounted case, enabling faster installation and utilising less space. The DIRIS A80 comprises:

- a multifunction meter with enhanced event logging functions which records curves for quality events.
- an RCM fault current monitoring device (Residual Current Monitoring).

Conformity to standard EN 50160

- EN 50160 is a standard which defines events relating to the quality of electrical networks. The DIRIS A80 captures voltage events in accordance with this standard.

Principle diagram



The solution for

- > Industry.
- > Infrastructure.
- > Health care buildings.
- > Data centres.

Strong points

- > Compact.
- > Patented pending.
- > Management softwares.
- > Compliant with IEC 61557-12.
- > Conformity to standard EN 50160.

Conformity to standards

- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2
- > IEC 61557-12
- > IEC 62020
- > EN 50160



Patent pending

Automatic adjustment of the leakage current alarm threshold in accordance with the load current to avoid false alarms.

Compliant with IEC 61557-12.

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Management softwares

- Optional Ethernet module with Webserver function: For measurement monitoring, data exploitation and the export of load curves remotely without a specific software (web browser access).
- Analysis software: For the analysis of events data in order to improve the reliability of the electrical installation.
- Easy Config software: For quick and easy remote device configuration; configuration files can be copied from and sent to the DIRIS A80, or they can be created without communication and sent at a later time. Multiple devices can be configured from a single file, which is especially useful for OEMs and panel builders.

Functions

The DIRIS A80 offers the following functions:

- The monitoring of fault currents (Residual Current Monitoring)
- Multi-measurement (current, voltage, frequency, power, ...)
- Energy metering
- Harmonic analysis
- Event detection

Fault currents (RCM)

- Measurement of currents $I_{\Delta n}$ ($I_1+I_2+I_3+I_n$) and IPE (protection conductor)
- Permanent monitoring of $I_{\Delta n}$ and IPE
 - Fault current alarms depending on the load current
 - Record of events $I_{\Delta n}$ and IPE (time, duration and curves stored)
 - Alarm report output

Multi-measurement

- Currents
 - instantaneous: $I_1, I_2, I_3, I_n, I_{system}$,
 - average/maximum average: I_1, I_2, I_3, I_n ,
 - unbalance: I_{unb}
- Voltages & frequency
 - instantaneous: $V_1, V_2, V_3, U_{12}, U_{23}, U_{31}, F, V_{system}, U_{system}$
 - average/maximum average: $V_1, V_2, V_3, U_{12}, U_{23}, U_{31}, F$
 - unbalance: U_{unb}
- Power
 - instantaneous: $3P, \Sigma P, 3Q, \Sigma Q, 3S, \Sigma S$
 - maximum average: $\Sigma P, \Sigma Q, \Sigma S$
 - predictive: $\Sigma P, \Sigma Q, \Sigma S$
 - storing of load curves (60 days with an interval of 10 minutes) for the active, reactive and apparent power: $\Sigma P+/-; \Sigma Q+/-; \Sigma S$

- Power factor $PF, \Sigma PF$
- Instantaneous total tangent phi
- Instantaneous, average and max. average unbalance

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Hours \odot

Harmonic analysis (level 63)

- Total harmonic distortion
 - Currents: $thd I_1, thd I_2, thd I_3, thd I_n$
 - Phase-to-neutral voltage: $thd V_1, thd V_2, thd V_3$
 - Phase-to-phase voltage: $thd U_{12}, thd U_{23}, thd U_{31}$.
- Individual
 - Currents: $H1, H2, H3, H_{1n}$
 - Phase-to-neutral voltage: HV_1, HV_2, HV_3
 - Phase-to-phase voltage: $HU_{12}, HU_{23}, HU_{31}$.

Events

- Alarms on all electrical values
- Detection and storing of the last 60 events:
 - overvoltage
 - voltage dips
 - cut-offs
 - overloads.

For each stored event, the DIRIS A80 records the relevant RMS 10 ms interval curves for the voltages $V_1, V_2, V_3, U_{12}, U_{23}, U_{31}$, the currents I_1, I_2, I_3 and I_n . These curves can be synchronised with the event curves $I_{\Delta n}$ and IPE.

Communications⁽¹⁾

- RS485 MODBUS RTU
 - Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver)
 - Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver) with RS485 MODBUS RTU gateway
- (1) Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for the currents, RCM function and alarm reset.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current, voltage and power values.
6. Direct access key for harmonic values and the connection and RCM test functions.
7. Direct access key for energies, hour meter and programming menu.

Accessories

Core balance transformer ΔIC
(See page 522)



Plug-in modules

DIRIS® A80



Communication MODBUS®

- RS485 link with MODBUS® protocol (speed up to 38400 bauds).

Ethernet communication

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Embedded Webserver function⁽¹⁾.

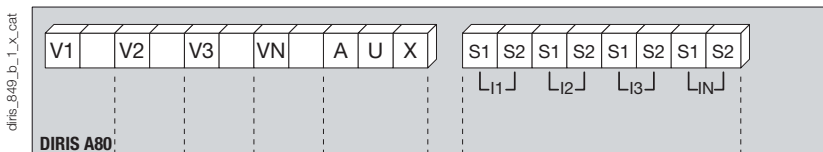
Ethernet communication with RS485 MODBUS gateway

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Connection of 1 to 247 RS485 MODBUS slaves.
- Embedded Webserver function⁽¹⁾.

⁽¹⁾ See "Management softwares for DIRIS" p. 464.

Terminals

DIRIS A80



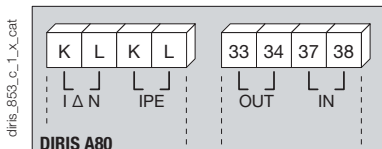
S1 - S2: current inputs

AUX: Auxiliary power supply U_s

V1 - V2 - V3 - VN: voltage inputs

RCM module

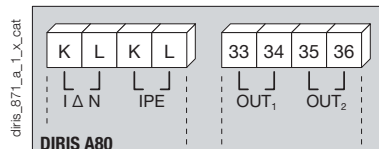
1 input / 1 output



- K-L / IΔN:** residual current
- K-L / IPE:** ground fault current
- 33-34:** relay outputs
- 37-38:** opto inputs

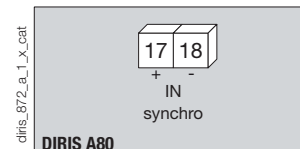
RCM module

2 outputs

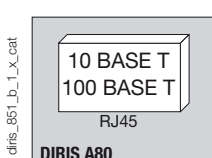


- K-L / IΔN:** residual current
- K-L / IPE:** ground fault current
- 33-34:** relay output n°1
- 35-36:** relay output n°2

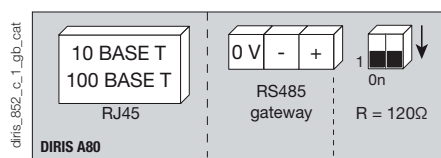
Memory module



Ethernet module

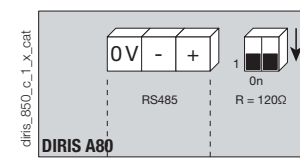


Ethernet module + RS485 MODBUS gateway



- RS485 gateway resistor.**
- R = 120 Ω:** selectable internal resistance for RS485 end of line termination.

RS485 MODBUS module



- RS485 link**
- R = 120 Ω:** selectable internal resistance for RS485 end of line termination.

DIRIS A80

Multifunction meters - PMD + RCM

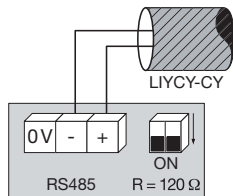
Monitoring energy and fault currents - dimensions 96x96 mm

Connections

Additional information

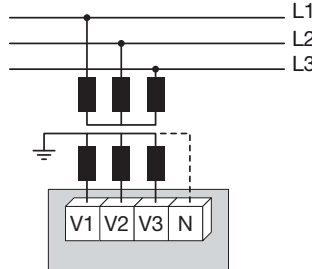
Communication via RS485 link

diris_398_c_1_x_cat



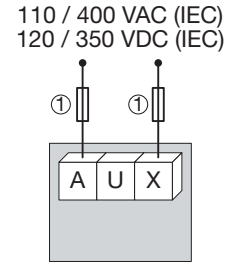
Connection of voltage transformer for HV networks

diris_399_b_1_x_cat



AC & DC auxiliary power supply

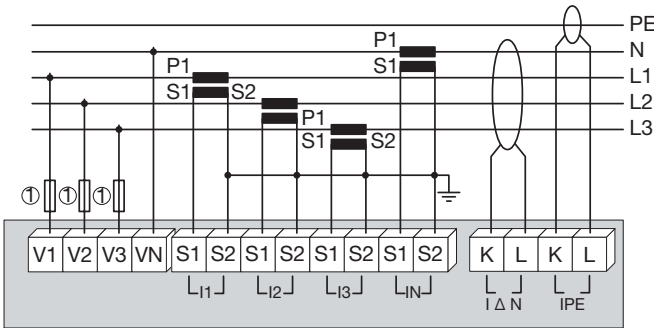
diris_400_h_1_gb_cat



1. Fuses 0.5 A gG / 0.5 A class CC.

Three-phase + N network with RCM

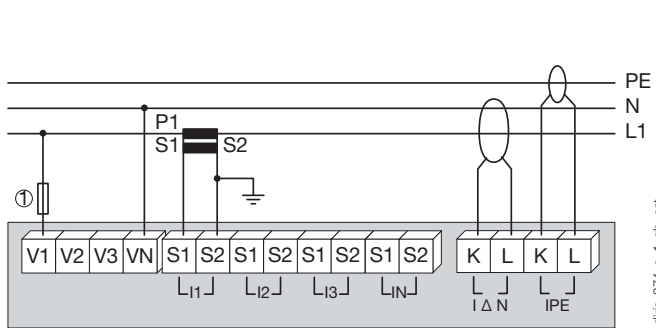
diris_873_a_1_gb_cat



1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase network with RCM

diris_874_a_1_gb_cat



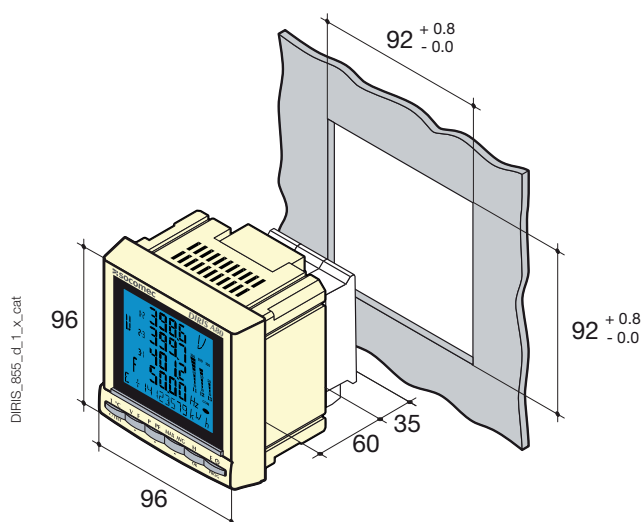
1. Fuses 0.5 A gG / 0.5 A class CC.

Electrical characteristics

Current measurement on insulated inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 ... 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 700 VAC
Direct measurement between phase and neutral	28 ... 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Current-voltage product	
Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Measurement updating period	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

Auxiliary power supply	
Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA
MODBUS communication module	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS® speed	4800 ... 38400 bauds
Ethernet Communication Module	
Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP
Fault current monitoring characteristics (IΔn and IPE)	
Inputs IΔn and IPE	
Number of inputs	2
Dedicated core balance transformers	range ΔIC – transformer ratio 600/1
Measurement of fault current IΔn / IPE	6 mA ... 30 A
Accuracy	1 %
Alarms IΔn and IPE	
Thresholds	adjustment depending on the load currents
Time setting	0 to 10 s
Logging	values, dates, durations and curves
Number of events	max. 1000 events
Optocoupler input	
Number	specific to the reference
Power supply	5...24 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	20 ms
Type	optocoupler
Alarm outputs	
Number of relays	specific to the reference
Type	230 VAC – 1 A
Max. N° of operations	10 ⁴

Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 95 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal blocks type	fixed or plug-in
Current connection cross-section	0.5 ... 6 mm ²
Cable cross-section for currents ΔI_n and I_{PE}	0.14 ... 1.5 mm ²
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Weight	560 g

References

Basic device	DIRIS A80
Type	Reference
With 2 outputs	4825 0213
With 1 input / 1 output	4825 0214
Options	
Plug-in modules	Reference
RS485 MODBUS [®] communication	4825 0092
Ethernet communication (embedded Ethernet Webserver) ⁽¹⁾	4825 0203
Ethernet communication + RS485 MODBUS gateway (embedded Ethernet Webserver) ⁽¹⁾	4825 0204

(1) Dimensions: 2 slots.

Accessories	To be ordered in multiples of	Reference
Description of accessories		
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000
Ferrite to be associated with communication modules	1	4899 0011
Current transformer range	1	See page 488

Core balance transformer ΔIC	Toroid diameter (mm)	Reference
Type		
$\Delta IC \varnothing 15$	15	4950 6015
$\Delta IC \varnothing 30$	30	4950 6030
$\Delta IC \varnothing 50$	50	4950 6050
$\Delta IC \varnothing 80$	80	4950 6080
$\Delta IC \varnothing 120$	120	4950 6120
$\Delta IC \varnothing 200$	200	4950 6200
$\Delta IC \varnothing 300$	300	4950 6300
Management softwares for DIRIS		See page 464

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.



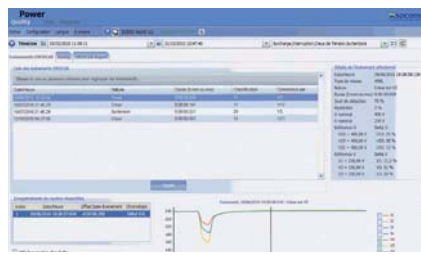


COUNTIS and DIRIS management software tools

Metering, monitoring & power quality



Easy Config software



Analysis software

Compatible with:



COUNTIS E



COUNTIS ECI



DIRIS A

Function

To get the most effective use from your Socomec measurement and metering devices, we can provide dedicated software tools:

Easy Config software

The Easy Config software enables quick and easy remote device configuration for COUNTIS E, COUNTIS ECI and DIRIS A meters. Configuration files can be copied from and sent to these devices, or they can be created without communication and sent at a later time.

Multiple devices can be configured from a single file which is especially useful for OEMs and panel builders, saving time when having to program many devices with the same configuration.

Analysis software

On the basis of an event log and the displayed curves, the Analysis software allows the analysis and extraction of quality data, as well as fault current monitoring (Residual Current Monitoring).

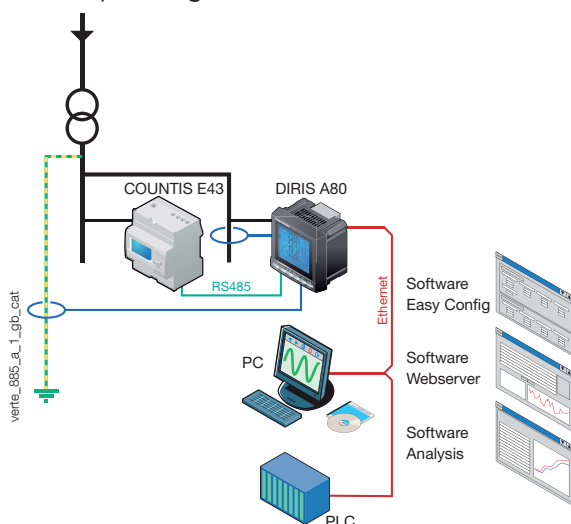
Webserver function

The DIRIS A's optional Ethernet modules integrate HTML pages, enabling the Webserver function to be directly accessed through a standard web browser (Internet Explorer, Firefox...), eliminating the need for software installation.

The Webserver function enables:

- monitoring of electrical values,
- viewing of energy consumption,
- managing alarms,
- configuration of the main parameters of installation,
- viewing and extracting load curves (through a .CSV file).

Principle diagram



	Easy Config	Webserver	Analysis
COUNTIS E with RS485 communication	•	• ⁽¹⁾	
COUNTIS ECI	•	• ⁽¹⁾	
DIRIS A10, A17 and A20 with RS485 communication	•	• ⁽¹⁾	
DIRIS A40 with RS485 communication	•	• ⁽¹⁾	
DIRIS A40 with Ethernet communication module	•	•	
DIRIS A60 and A80 with RS485 communication module	•	• ⁽¹⁾	•
DIRIS A60 and A80 with Ethernet communication module	•	•	•

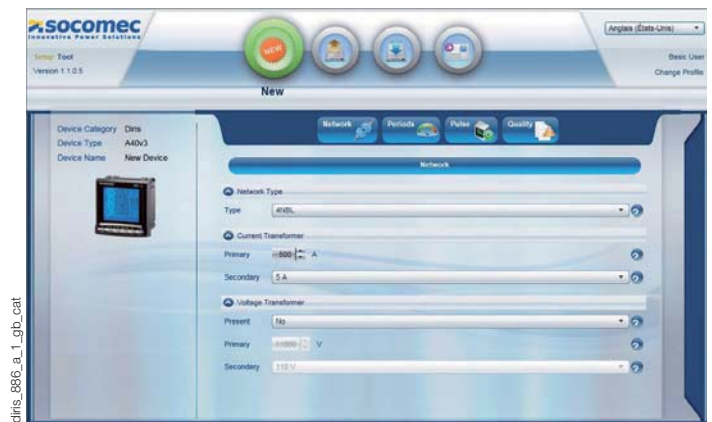
(1) Through DIRIS A fitted with an Ethernet communication module with RS485 gateway.

Easy Config software

The Easy Config software enables quick and easy remote configuration of COUNTIS E and DIRIS A devices.

It offers the following functions:

- Creating the configuration of devices prior to their connection (configuration template).
- Saving a configuration to a PC.
- Loading the configuration to devices through RS485 or Ethernet.
- Retrieving the configuration of a device through RS485 or Ethernet for saving, copying or modification purposes.



Configuration of RCM alarm threshold



Configuration of Quality events



COUNTIS and DIRIS

management software tools

Analysis software

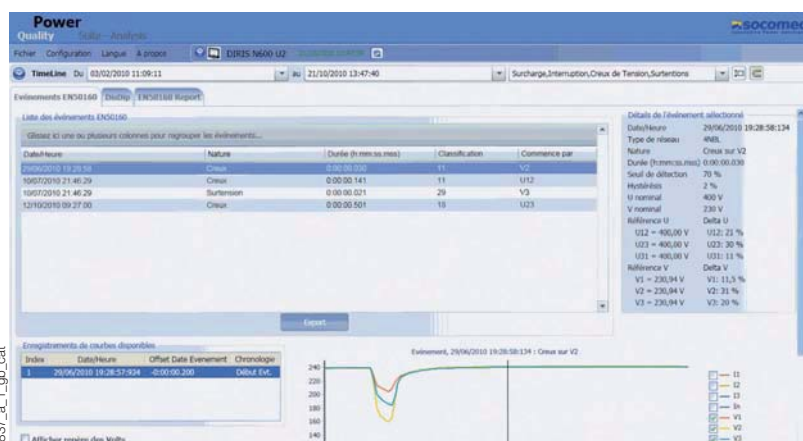
Improvement to the reliability of your electrical installation can be achieved with this software through the analysis of displayed event curves generated from the event log.

It offers the following functions:

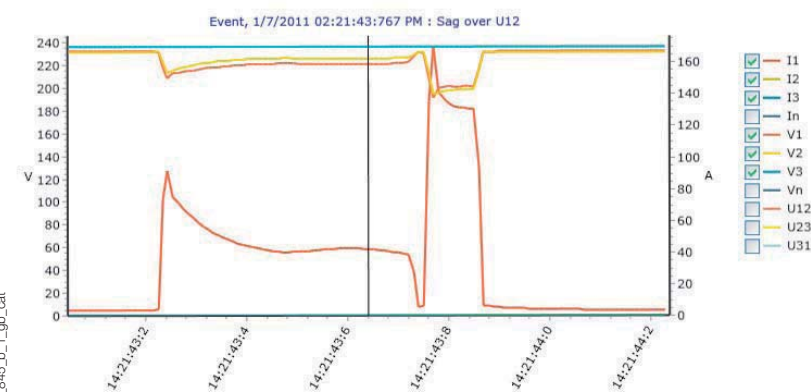
- A list of voltage dips, cut-offs, overvoltages and overcurrents.
- A list of alarms $I\Delta n$ and I_{PE} for DIRIS A80.
- A display of 10 curves (3V, 3U, 3I, In) linked to the event with a zoom functionality.
- The classification of events according to the EN 50160 standard.
- Exporting of pictures or curve files.

This software can be connected to the DIRIS using either an RS485 MODBUS or Ethernet communication module. The Analysis software can be downloaded from the SOCOMEC website: www.socomec.com

Event log



Curves display and analysis



Webserver function

diris_776_a_1_cat



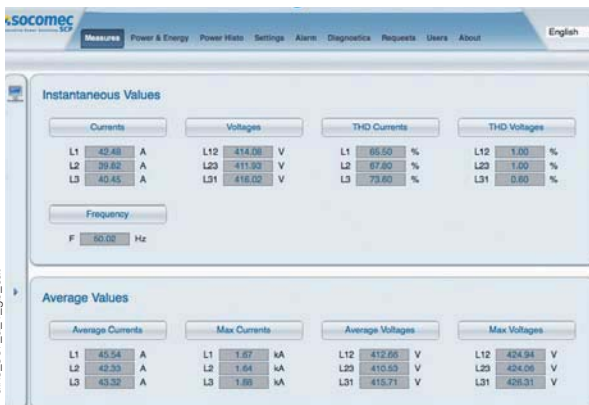
DIRIS A Ethernet communication module with RS485 gateway

The Webserver function comprises HTML pages embedded within the optional Ethernet communication module of the DIRIS A multifunction meter. These pages can be accessed via an internet browser, simply by entering the DIRIS A's IP address. The Webserver offers the following functions:

- Monitoring of electrical values.
- Viewing energy consumption.
- Management of alarms.
- Remote configuration of the main parameters for meters within.
- Viewing and extracting load curves (through a .CSV file).

Instantaneous report of measurements

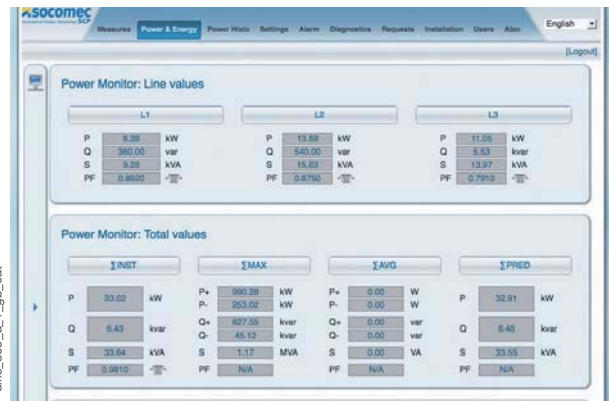
diris_967_a_1_gb_cat



Display for viewing instantaneous and average electrical values.

Power and energy

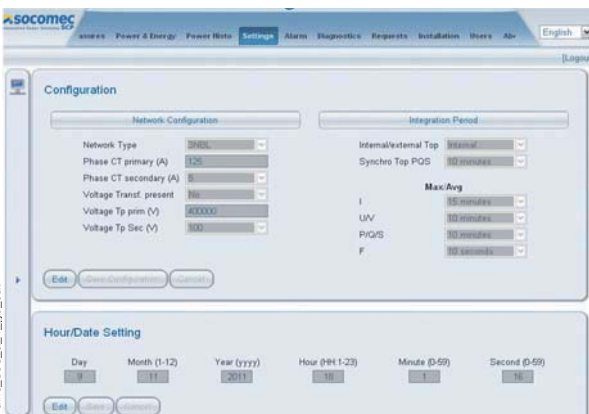
diris_869_a_1_gb_cat



Display for viewing instantaneous and average power measurements and energy consumption.

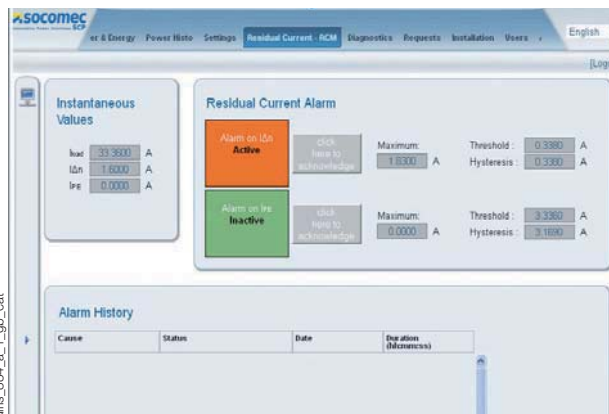
Configuration of the devices

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Alarms

diris_884_a_1_gb_cat



The latest alarms are date and time registered. The duration and value for each alarm (low limit value / high limit value), as well as the related output alarm number, are also displayed. Data can be extracted in *.csv format.



RETROFIT Line

Meters and multifunction meters dedicated to existing installations
RETROFIT meters + current transformers

Metering, monitoring
& power quality



COUNTIS E44R



DIRIS A40R



TCO 36 400 A

The solution for

- > Industry.
- > Infrastructure.
- > Data centres.



Strong points

- > High overall accuracy.
- > Easy installation.
- > Extended range.
- > Proven products.
- > Communication to a Monitoring system.
- > Guaranteed connections.

Conformity to standards

COUNTIS:

- > IEC 62053-21
- > IEC 62053-22
- > IEC 62053-23
- > IEC 62053-31
- > EN 50470 (MID - COUNTIS E42R/E44R)

DIRIS:

- > IEC 61557-12



Function

Existing sites, having been built before optimised energy consumption was a consideration, are especially in need of a dedicated energy efficient solution.

To meet this requirement, the **RETROFIT Line** allows you to easily add metering and measurement points in electrical enclosures which are very restricted in terms of integration. The RETROFIT Line consists of COUNTIS RETROFIT and DIRIS RETROFIT meters

combined with TCO split-core current transformers. Together they allow measuring, metering, monitoring and analysis of single and three-phase networks up to 600 A, even inside the most confined cabinet spaces.

Advantages

High overall accuracy

A global system measuring accuracy of better than 1% in energy from 10 to 120% of nominal current.

Easy installation

TCO split-core transformers mean the power cables do not need to be disconnected.

Operations are quicker and minimise the electrical disconnection time.

Extended range

The range covers energy meters and multifunction meters in modular or panel mounted format.

Proven products

The COUNTIS and DIRIS RETROFIT are based on standard SOCOMEC ranges.

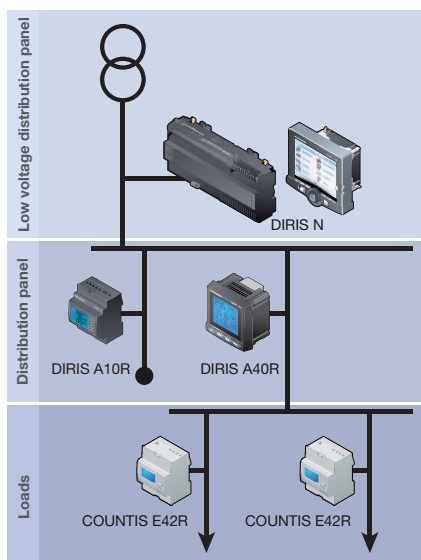
Communication to Monitoring

The data from RETROFIT products can be transferred to a central monitoring system.

Guaranteed connections

The product is protected against phase/neutral inversion and detects wiring errors. Commissioning has been simplified to ensure the device operates correctly: installation costs are therefore reduced.

Principle diagram



RETROFIT Packs



Combination of COUNTIS RETROFIT meters and TCO split-core current transformers

Meter all the values of the electrical network or any other energy (via the pulse concentrator COUNTIS ECi) in order to:

- Optimise and share energy costs,
- Reinvoice the consumption to the user (MID versions).



Combination of DIRIS RETROFIT multi-measurement meters and TCO split-core current transformers

Measure and monitor all the values of the electrical network, or any other energy (via the pulse concentrator COUNTIS ECi), in order to:

- Analyse energy consumption and quality,
- Identify malfunctions,
- Improve the availability of the installation.

RETROFIT Line

Meters and multifunction meters dedicated to existing installations

RETROFIT meters + current transformers

Meters

Function

The **COUNTIS E4xR of the RETROFIT pack** is an active electrical energy meter designed for three-phase networks. It is connected to the network through 3 TCO's up to 600 A.

The **COUNTIS E42R of the RETROFIT pack** is a totalising meter allowing direct reading of the power consumed, using a pulse output. It is a double tariff meter for dual tariff invoicing.

The **COUNTIS E44R pack** offers MODBUS RTU communication via RS485 and includes 4 tariffs.

COUNTIS E42R and **E44R** are MID-certified (B + D module).



The **COUNTIS E5xR pack** includes an active and reactive energy meter (96 x 96 mm unit).

Two partial meters with reset allow the energy to be metered over a specific period.

References

Kit	CT Ratio	COUNTIS E42R RETROFIT Pack Reference	COUNTIS E44R RETROFIT Pack Reference	COUNTIS E50R RETROFIT Pack Reference	COUNTIS E53R RETROFIT Pack Reference
Energy meter kWh MID + 3 TCO	100 A / 1 A	4850 4915	4850 4916		
Energy meter kWh MID + 3 TCO	250 A / 1 A	4850 4925	4850 4926		
Energy meter kWh MID + 3 TCO	400 A / 1 A	4850 4935	4850 4936		
Energy meter kWh MID + 3 TCO	600 A / 1 A	4850 4945	4850 4946		
Energy meter kWh + 3 TCO	100 A / 1 A			4850 4917	4850 4918
Energy meter kWh + 3 TCO	250 A / 1 A			4850 4927	4850 4928
Energy meter kWh + 3 TCO	400 A / 1 A			4850 4937	4850 4938
Energy meter kWh + 3 TCO	600 A / 1 A			4850 4947	4850 4948

Technical characteristics⁽¹⁾

	COUNTIS E42R 	COUNTIS E44R 	COUNTIS E50R	COUNTIS E53R
Current measurement				
Type	TC/1 A up to 600 A	TC/1 A up to 600 A	TC/1 A up to 600 A	TC/1 A up to 600 A
Input consumption	0.2 VA per phase	0.2 VA per phase	< 0.6 VA	< 0.6 VA
Overload	24 A / 0.5 s	24 A / 0.5 s	10 I _n for 1 s	10 I _n for 1 s
Permanent overload	1.2 A	1.2 A	1.2 A	1.2 A
Minimum current measured	10 mA	10 mA	3 mA	3 mA
Voltage measurement				
Range of measurement	230... 400 V ± 15 %	230... 400 V ± 15 %	28 ... 520 VAC	28 ... 520 VAC
Input consumption	2 VA	2 VA	< 0.1 VA	< 0.1 VA
Permanent overload	280 V	280 V	800 VAC	800 VAC
Energy accuracy				
Active (according to EN 50470)	Class C	Class C		
Active (according to IEC 62053-22)			Class 0.5 S	Class 0.5 S
Reactive (according to IEC 62053-23)			Class 2	Class 2

(1) Features not mentioned are identical to those of COUNTIS E4x and E5x standard products.

What are the advantages of a MID meter?

It allows to resell electricity

The MID directive guarantees safe and reliable metering. The meter is tamper-proof and its accuracy is guaranteed thanks to calibration on a metrology bench.

COUNTIS E42R and **E44R** are MID-certified (B + D module). It is mandatory and this means SOCOMEC is required to supply products which meet the design and manufacturing requirements imposed by this standard.

The specificity of MID product

- Standardised accuracy A, B or C: Socomec MID meters have a guaranteed accuracy class C ± 0.5%.
- Tamper-proof devices: protection cover and seals are provided.
- Mandatory markings: CE + MID front and side marking confirms the compliance to modules B + D.
- Related Certificate: provided by Socomec, it formalizes the accuracy verification of the energy meter at four different current levels.



Multi-measurement meters

Function

DIRIS A RETROFIT packs include a multifunction meter and 3 TCO's up to 600 A.

The **DIRIS A10R pack** includes a modular format multifunction meter for measuring electrical values in low voltage networks. It allows all electrical parameters to be displayed and utilised for communication and/or output functions. For further details on functions see the standard DIRIS A10 pages.

The **DIRIS A20R** and **DIRIS A40R** packs include a 96 x 96 mm panel mount multifunction meter, dedicated to low voltage networks. It ensures the user has access to all the measurements required for successfully carrying out energy efficiency project and ensuring the electrical distribution is monitored. For more information, please see the standard DIRIS A20 pages.

The **DIRIS A40R** pack offers advanced features and a larger choice of options. Please see the standard DIRIS A40 pages for more information.

References

Kit	CT Ratio	A10R without COM Reference	A10R with COM Reference	A20R Reference	A40R Reference
DIRIS A10R + 3 TCO	100 A / 1 A	4825 4911			
DIRIS A10R + 3 TCO	250 A / 1 A	4825 4921			
DIRIS A10R + 3 TCO	400 A / 1 A	4825 4931			
DIRIS A10R + 3 TCO	600 A / 1 A	4825 4941			
DIRIS A10R with COM + 3 TCO	100 A / 1 A		4825 4912		
DIRIS A10R with COM + 3 TCO	250 A / 1 A		4825 4922		
DIRIS A10R with COM + 3 TCO	400 A / 1 A		4825 4932		
DIRIS A10R with COM + 3 TCO	600 A / 1 A		4825 4942		
DIRIS A10R + 3 TCO	100 A / 1 A			4825 4913	
DIRIS A20R + 3 TCO	250 A / 1 A			4825 4923	
DIRIS A20R + 3 TCO	400 A / 1 A			4825 4933	
DIRIS A20R + 3 TCO	600 A / 1 A			4825 4943	
DIRIS A40R + 3 TCO	100 A / 1 A				4825 4914
DIRIS A40R + 3 TCO	250 A / 1 A				4825 4924
DIRIS A40R + 3 TCO	400 A / 1 A				4825 4934
DIRIS A40R + 3 TCO	600 A / 1 A				4825 4944

Plug-in optional modules

Plug-in optional modules for DIRIS A20R: see DIRIS A20 pages.

Plug-in optional modules for DIRIS A40R: see DIRIS A40 pages.

Technical characteristics⁽¹⁾

	DIRIS A10R	DIRIS A10R + communication	DIRIS A20R	DIRIS A40R
Current measurement on high-impedance inputs (TRMS)				
Via CT primary	600 A	600 A	600 A	600 A
Via CT secondary	1 A	1 A	1 A	1 A
Input consumption	0.6 VA	0.6 VA	0.6 VA	≤ 0.1 VA
Measurement updating period	1 s	1 s	1 s	1 s
Accuracy	0.2 %	0.2 %	0.2 %	0.2 %
Permanent overload	1.2 A	1.2 A	1.2 A	1.2 A
Intermittent overload	10 I _n for 1 s	10 I _n for 1 s	10 I _n for 1 s	10 I _n for 1 s
Voltage measurements (TRMS)				
Direct measurement between phases	50 ... 500 VAC	50 ... 500 VAC	50 ... 500 VAC	50 ... 700 VAC
Direct measurement between phase and neutral	28 ... 289 VAC	28 ... 289 VAC	28 ... 289 VAC	28 ... 404 VAC
VT primary				500 000 VAC
VT secondary				60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA	≤ 0.1 VA	≤ 0.1 VA	≤ 0.1 VA
Measurement updating period	1 s	1 s	1 s	1 s
Accuracy	0.2 %	0.2 %	0.2 %	0.2 %
Permanent overload	800 VAC	800 VAC	800 VAC	760 VAC
Power measurement				
Measurement updating period	1 s	1 s	1 s	1 s
Accuracy	0.5 %	0.5 %	0.5 %	0.5 %

(1) Characteristics that are not listed are identical to those of the standard DIRIS A10, A20 and A40 range.

RETROFIT Line

Meters and multifunction meters dedicated to existing installations

RETROFIT meters + current transformers

DIRIS RETROFIT: compliant with the requirements of standard IEC 61557-12

Why comply with the IEC 61557-12 standard?

A precise reference, IEC 61557-12 is the common denominator of all PMDs (Performance Monitoring Devices), devices designed to measure and monitor electrical parameters in distribution networks.

What does it bring to the user?

The guarantee of a high level of equipment performance when considering metrological, mechanical and environmental aspects (EMC, temperature, etc.).



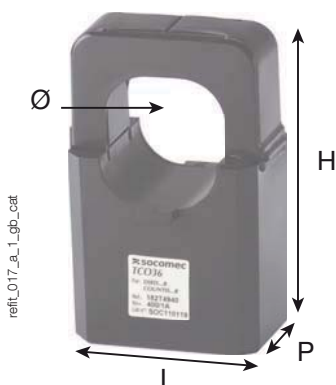
TCO - split-core current transformers

Function

The TCO's included in the RETROFIT pack are compact split-core current transformers, which can be easily and rapidly integrated in existing installations thanks to their reduced dimensions. The TCO small split-core current transformers must be only combined with COUNTIS RETROFIT energy meters and DIRIS RETROFIT multi-measurement energy meters.

The RETROFIT pack guarantees overall accuracy to within less than 1 %.

Technical characteristics



TCO	TCO 24		TCO 36	
	Reference	Reference	Reference	Reference
	182T 4910	182T 4925	182T 4940	182T 4960

The advantages of TCO split-core current transformers

Wide current range

The TCOs accept a primary current between 100 and 600 A making it possible to connect at different points in the installation.

A guaranteed overall accuracy

Combined with the COUNTIS and DIRIS RETROFIT products, the TCO guarantees overall accuracy is better than 1%.

Compact

With their compact and open design, the TCOs are easily positioned on existing installations without the need to disconnect/reconnect the cables or modify the installation. Measurement points can therefore be placed in the most confined panels.

Services

Take advantage of the advice offered by an energy specialist

Socomec offers a full range of customised services for your energy efficiency requirements and can help you find the best solution:

- Implementation
- Training
- Electrical facility audit
- Project engineering.

For more details download our Service brochure available on our web site : www.socomec.com or contact your SOCOMEC office.



Zoom



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Think about it

COUNTIS ECI

Communicate consumption information whatever the energy (electricity, water, gas...) to a PC or PLC. Please see the COUNTIS ECI catalogue pages.

VERTELIS Supervision

Opt for sustainable energy savings by choosing the fully customisable energy efficiency solution provided by SOCOMEC. VERTELIS is a modular offer, including a software, measuring devices adapted to your needs, as well as pre-sales and after sales professional services. For further information, please contact your SOCOMEC branch.

VERTELIS
ENERGY PERFORMANCE SOLUTIONS



DIRIS N300/N600

Network analysers

Network quality control and analysis system

Metering, monitoring & power quality



The solution for

- > Industry.
- > Infrastructure.
- > Health care buildings.
- > Data centres.



Strong points

- > Easy to use.
- > Customisable.
- > Powerful.
- > Accurate.
- > Conformity to standard EN 50160.

Conformity to standards

- > IEC 61557-12
- > IEC 61000-4-30
- > IEC 62053-22 class 0.2 S
- > IEC 62053-23 class 2
- > EN 50160



Function

DIRIS N300 / N600 are multifunction network analysers designed for in-depth analysis of electrical networks in order to improve their availability and efficiency. They actively contribute to procedures for optimising the operation of your electrical networks. They enable you to:

- improve the efficiency of the facility,
- reduce production costs,
- optimise operating costs,
- optimise maintenance costs,

To ensure these aims are achieved, the DIRIS N includes the following functions:

- measurement of electrical values and temperatures,
- management of energy and allocation of other utilities (water, gas),
- monitoring of all parameters,
- control/command of apparatus,
- analysis of the network quality (waveform, EN 50160 report),
- communication.

Advantages

Easy to use

The DIRIS D600 interface enables easy access to the DIRIS N's menus and clearly displays numerical values and graphs on its large colour TFT screen.

Customisable

Optional input/output modules can be utilised to facilitate, for example, switchboard automation control. These modules can be installed after the initial installation, enabling the implementation of additional functions.

Powerful

The DIRIS N600 can detect transient overvoltages down to 1 microsecond.

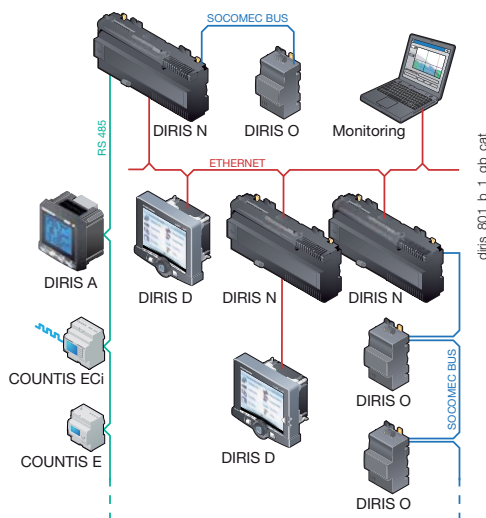
Accurate

High accuracy of the measured electrical values (0.1% for I and U).

Conformity to standard EN 50160

EN 50160 is a standard which defines the characteristics and events relating to the quality of electrical networks. The DIRIS N fully complies to this standard.

Principle diagram



	DIRIS N300 multifunction analyser	DIRIS N600 qualimeter
Advanced multi-measurement	•	•
Measurement history	•	•
Harmonics	•	•
Monitoring	•	•
Load curves	•	•
Dips/Outages/Voltage surges	•	•
Unbalance	•	•
Vector diagram	•	•
Control command (options)	•	•
Interharmonics measurement	•	•
Analysis of transient states	•	•
Flicker	•	•
EN 50160 report	•	•

Functions

The DIRIS N is a true system made up of functional components:

- measurement acquisition and processing: DIRIS N300/N600
- TFT graphic colour interface: DIRIS D 600 (option of using a single DIRIS D 600 for several DIRIS N)
- remote input/output modules: DIRIS O.

In addition, the DIRIS N can provide an interface between products communicating via MODBUS, such as DIRIS A or COUNTIS ECI, for example, using an Ethernet network via an RS485 port to centralise information for monitoring.

General characteristics of the DIRIS N300 and N600

The vast majority of the functions below are available as numerical values (instant, average, minimum and maximum values), graphs (wave captures and 1/2 period RMS) and logs.



Measurements:

- Currents, voltages, frequency (instant, average, minimum and maximum).
- Direct, inverse and homopolar voltages.
- Voltage unbalance.
- Active, reactive, apparent and predictive power.
- Power factor.
- Fresnel diagram.
- Temperatures.



Energy management:

- Active, reactive and apparent energy meters.
- Impulse meters (up to 20 meters).
- Timestamped meters (up to 8 meters).
- Load curves.



Monitoring:

- Display of an alarm and status log.
- Indication of the parameter concerned, the status at time T, the duration and date/time of the start and end of the event.



Control/Command (only with the DIRIS O):

- Controls and commands the position of the remote devices.
- Programmes the logical functions to create automatic processes.



Network and event quality analysis:

- Dips, surges and voltage cut-offs.
- Crest factor.
- Voltage and current harmonics.
- Mains signalling voltages.



Communication:

- RS485 using MODBUS.
- 10BaseT and 100BaseT Ethernet (MODBUS/TCP).
- 2 USB ports (host/device).
- Open CAN (internal bus for DIRIS O modules).

DIRIS N600:

The user also has the following functions:

- Flicker (Pst and Plt).
- EN 50160 report.
- Voltage transients (sampling 1 μ s).
- Voltage and current interharmonics.

A hub of innovation

The **DIRIS N**, developed using innovative technology, has enabled some functions to reach a new level.

Measurements

Optimal calculation functions and sampling in the range of 1 μ s ensuring a very high-level of precision when measuring as shown below:

- Voltages and currents in class 0.1
- Active energy in class 0.2 as per IEC 62053-22
- Harmonics in class 1.

Operation

The DIRIS D600 colour TFT interface module gives the user easy access to all the installation's parameters and clearly displays both numerical values and graphs.

Data stored on the DIRIS N's internal memory can be downloaded onto a USB key via the DIRIS D600's USB port.

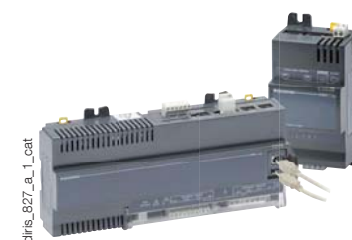
Installation

The DIRIS N is designed to be located within close proximity to the installation being monitored in order to greatly reduce the length of cabling for measurement sensor connection (current and voltage transformers).

Using a remote interface module avoids having multiple cables connected on the inside of the panel door; only an RJ45 cable is required. In the same way, power is supplied to the additional DIRIS O modules directly via the communication bus, thus avoiding the use of yet more cables.



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DIRIS N300/N600

Network analysers

Network quality control and analysis system

Power Quality Suite software

The DIRIS N300/N600 network analyser is delivered with this software package which allows all features to be managed remotely. Simple and intuitive, these software tools ensure the functions of:

PQS - Display software

Displays the real time remote monitoring of your installation

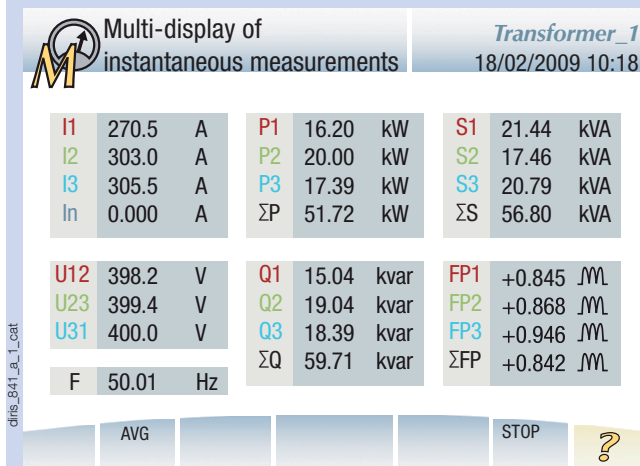
This software reproduces the screens of the DIRIS D600 identically on a PC. Any user can therefore access all the data to save time and increase readability:

- Measurements
- Energies
- Events

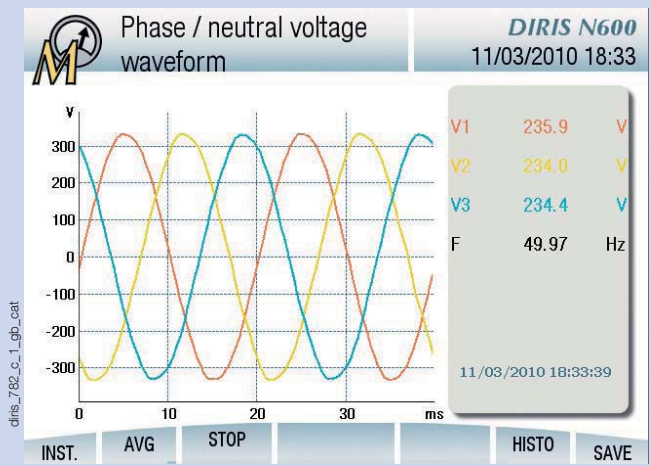
- Quality Parameters
- Diagnosis.
- Configuration.

Communication between the PC and the DIRIS N units is via Ethernet. A simultaneous display of several DIRIS N is possible.

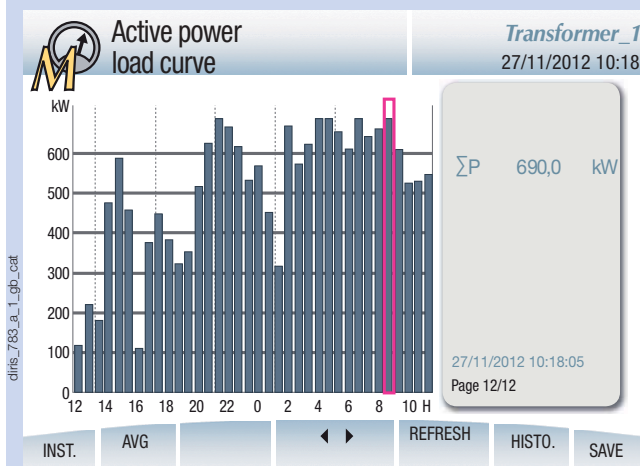
All measurements displayed on a single screen



Voltage waveforms displayed



Load curve displayed



Total and partial consumption displayed per time slot



PQS - Settings software

Configuration software for simple and fast parameter setting

The configuration software enables the user to modify, and to quickly adapt, the configuration parameters of the network analyser. The following parameters are available:

- Networks
- Events
- EN 50160 report thresholds
- Pulse meter

- Histories and load curves
- Control/command functions linked to DIRIS O remote modules.

A maintenance function allows the connection and operation of the DIRIS Ns to be checked after they have been configured.



PQS - Analysis software

Quality parameter analysis

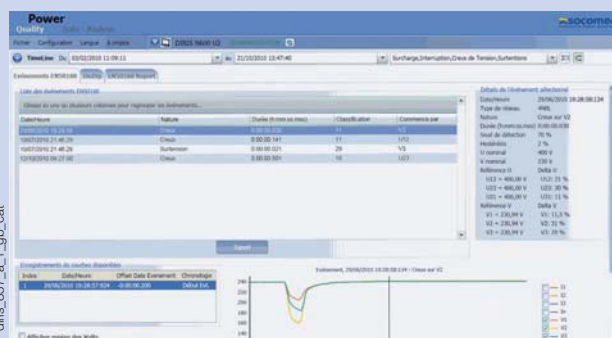
This software analyses the DIRIS N300/N600 quality parameters to improve the efficiency of your electrical installation.

It provides the following functions:

- Classification of voltage dips, cuts and surges (Disdip table).
- EN 50160 automatic reports (voltages, frequencies, harmonics, flickers...).

- Automatic detection of "out of limit" events.
 - Timestamp EN 50160 events list (surges, dips, cut-offs...).
- The application enables reports to be issued for periods which can be customised by the user.
- The temporal display screen allows rapid access to information relating to the desired period.

Event log: Display



Timeline: chronology of events



Contractual number of events



EN 50160 report Display



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diris_786_b_1_gb_cat

diris_837_a_1_gb_cat

diris_838_b_1_gb_cat

diris_839_a_1_fr_cat

diris_840_a_1_fr_cat

DIRIS N300/N600

Network analysers

Network quality control and analysis system

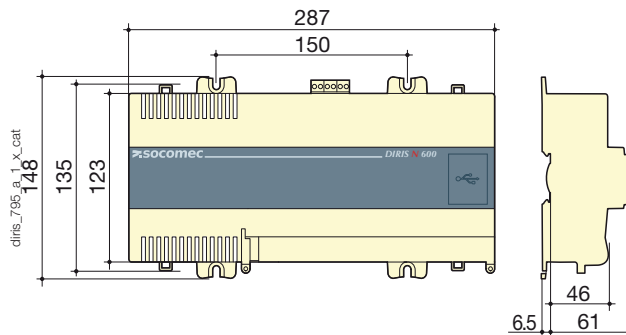
Case

DIRIS N300/N600

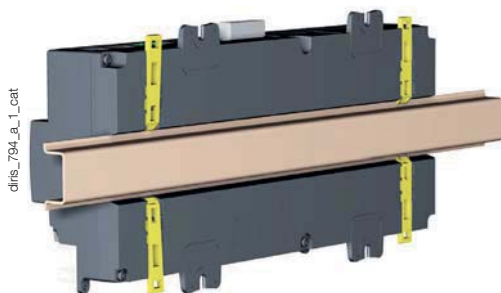
Base-mounting



Overall dimensions

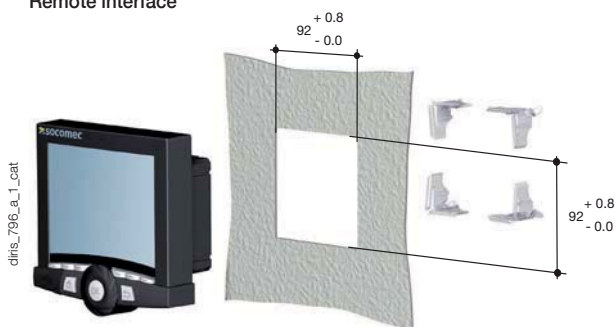


DIN-rail mounting

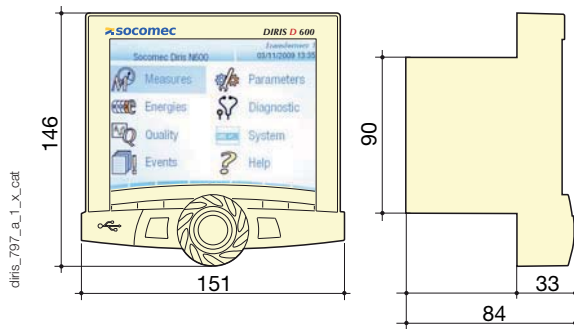


DIRIS D600

Remote interface



Overall dimensions

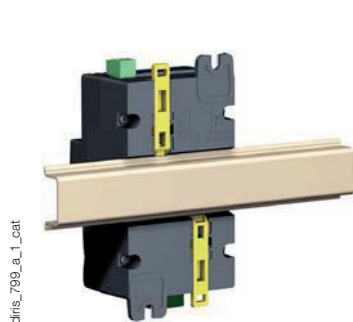


DIRIS O

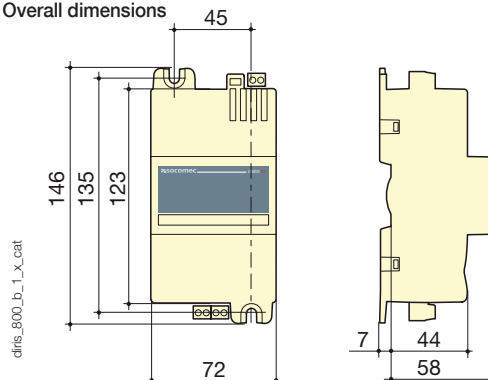
Base-mounting



DIN-rail mounting



Overall dimensions

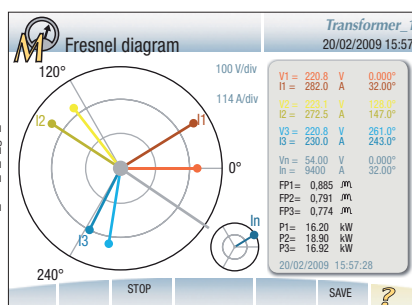
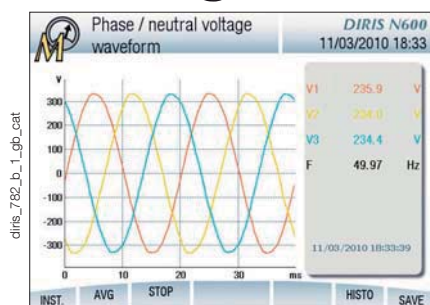


Options

DIRIS D 600: an ergonomic remote colour TFT graphic interface



1. High-definition colour TFT display.
2. Direct access buttons.
3. Control by rotating wheel.



The DIRIS D600 is an interface with a high-definition colour TFT display which allows adaptable, local or remote viewing of the functions of the DIRIS N300 and N600.

A single DIRIS D 600 interface can be used to display information from several DIRIS N through windows on the screen dedicated to measurement, analysis of consumption and energy quality, along with their associated events and curves.

DIRIS O: for extended control-command functions

DIRIS O are optional analogue and/or digital input/output modules which can extend the system's functions by taking into account all information relevant to facility supervision (energies, alarms, etc.).

They communicate with the DIRIS N via a SOCOMEC bus.

They enable you to:

- Acquire and apply the positions of breaker components, contactors, sensors, etc.
- Centralise pulses from water, gas and electricity meters.
- Apply information from analogue sensors (temperature, flow, humidity level, pressure, etc.).
- Actuate breaker components, perform load shedding actions upon alarms. The inputs/outputs can be activated via logic equations.



Characteristics

	DIRIS N300/N600	DIRIS D600 remote interface	DIRIS O 4 inputs - 2 outputs	DIRIS O: 2 analogue inputs 0/4...20 mA	DIRIS O: 2 analogue outputs 0/4...20 mA
Auxiliary power supply					
Alternating voltage	110 ... 240 VAC				
AC tolerance	± 10 %				
Frequency	50 / 60 Hz				
Direct voltage	48...250 VDC	48 VDC ⁽¹⁾	48 VDC ⁽¹⁾	48 VDC ⁽¹⁾	48 VDC ⁽¹⁾
DC tolerance	± 10 %	± 10 %	± 10 %	± 10 %	± 10 %
Connection	2.5 mm ² pull-out 2 point terminal block	2.5 mm ² pull-out 2 point terminal block	2.5 mm ² pull-out 2 point terminal block	2.5 mm ² pull-out 2 point terminal block	2.5 mm ² pull-out 2 point terminal block
Mechanical					
Consumption		10 W	1.5 W	1.3 W	2.5 W
Type	modular		modular	modular	modular
Number of modules	16		4	4	4
Dimensions W x H x D	287 x 123 x 67.5	151 x 146 x 84	72 x 148 x 65	72 x 148 x 65	72 x 148 x 65
Cut-out		92 x 92			
Vibrations	IEC 60068-2-6 compliant	IEC 60068-2-6 compliant	IEC 60068-2-6 compliant	IEC 60068-2-6 compliant	IEC 60068-2-6 compliant
Protection degree	IP40 (panel face), IP20 (unit)	IP52	IP52 (panel face), IP20 (unit)	IP40 (panel face), IP20 (unit)	IP 40 (panel face), IP20 (unit)
Weight	1200 g	600 g	200 g	210 g	220 g

(1) Auxiliary supply or via DIRIS N300/N600 (limited to 15 W) or Power over Ethernet or Power over Can

	DIRIS N300/N600	DIRIS D600 remote interface	DIRIS O 4 inputs - 2 outputs	DIRIS O 2 analogue inputs 0/4...20 mA	DIRIS O 2 analogue outputs 0/4...20 mA
Communication					
Link	RS485	ETHERNET	ETHERNET	BUS OPTION	BUS OPTION
Type	2 half duplex wires	2 half duplex wires			
Protocol	MODBUS RTU	MODBUS [®] TCP or proprietary	Proprietary in TCP mode	Proprietary in CAN mode	Proprietary in CAN mode
MODBUS [®] speed	9.6 ... 115.2 kbauds				
Address	000 ... 256				
Connection	2.5 mm ² pull-out 3 point terminal block	1 x RJ 45 8 point straight cable	1 x RJ 45 8 point straight cable	2 x RJ 45 8 point straight cable	2 x RJ 45 8 point straight cable

Characteristics

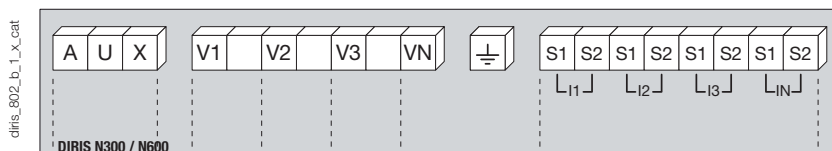
Characteristics of the PMD (IEC 61557-12)	
Evaluation of the power supply quality (possible function)	-
PMD classification	SD
Temperature	K55
Humidity + Altitude	-
Operating performance class of active power or active energy (if possible function)	0.2
Startup duration	50 seconds
Characteristics of the functions/ Evaluation of the power supply quality (IEC 61557-12)	
P (Total active power) - class 0,2	5 % I _n to 2 I _n
Qv (reactive power) - class 1	5 % I _n to 2 I _n
Sv - class 0.2	5 % I _n to 2 I _n
Ea - class 0.2	5 % I _n to 2 I _n
Erv - class 1	5 % I _n to 2 I _n
Eapv - class 0.2	5 % I _n to 2 I _n
f - class 0.02	F _{nom} ±15 %
I - class 0.1	0.1 I _n to 2 I _n
In / Inc - class 0.1	0.1 I _n to 2 I _n
U - class 0.1	
PFv - class 0.5	PF = 0.5 lag. to 0.5 lead.
Pst / Pit - class 5 (complies IEC 61000-4-15)	0 ... 20
Udip - class 0.2	5 % U _n to U _n
Uswl - class 0.2	U _n to 120 % U _n
Utr	0 ... 6 kV
Uint - class 0.2	0 ... 5 % U _n
Unba - class 0.2	
Unb - class 0.2	
Uh - class 1	
THDu - class 1	
THD-Ru - class 1	
Ih - class 1	
THDi - class 2	
THD-Ri - class 1	
Msv - class 1	
Measurements	
Network type	three-phase without neutral or with neutral
Number of power outlets	3 or 4
Measurement category	600V cat III (IEC 61010-1)
Measurement method class	B (A except for temporal aggregation) (IEC 61000-4-30)
TRMS	up to level 50
Measurement sampling frequency	10240 Hz (at the nominal network frequency)
Transient sampling frequency	1 MHz that is 1 μs
Instantaneous measurements refresh frequency	one second
Plot refresh frequency	1 ... 60 minutes
Event log refresh frequency	1 ... 60 s
Voltage inputs	
Number of voltage inputs	3 Phase + Neutral + Earth
Nominal voltage without TP	346 V AC (phase/Neutral) and 600 >V AC (phase/phase)
Voltage transformer	primary maximum: 630 kVAC / Secondary: 60/100/110/115/120/173/190 VAC
Permanent overload	800 VAC
Frequency	45 ... 65 Hz
Insulation	600 V cat III
Connection	2.5 mm ² pull-out 3 point terminal block
Current inputs	
Number of current inputs	3 Phase + Neutral
Nominal current without CT	5 A
Current transformers	primary: max 10000 A / Secondary: 1 or 5 A
Input consumption	< 0.3 VA
Permanent overload	20 A
Intermittent overload	20 I _n / 1s
Insulation	main
Connection	6 mm ² 8 point fixed terminal block
USB	
Host (low power : 100 mA max)	1
Device	1

Memory	
Memory size	128 MB
Environment	
Max. operating temperature	-10 ... +55 °C
Max. storage temperature	-25 ... 70 °C
Humidity	0 ... 75 % RH
Salt spray	EN 60068-2-52
Protection degree	IEC 60259
Sine vibrations	IEC 60068-2-6
Dry heat test (operation and storage)	IEC 60068-2-2
Wet heat cyclic test	IEC 60068-2-30
In-operation and storage cold test	IEC 60068-2-1
Product standards and certification	
Product standard	IEC 61557-12 ed. 1
Active energy metering	IEC 62053-22 class 0.2S
Reactive energy metering	IEC 62053-23 (class 2)
Measurement standards and certification	
Harmonics and interharmonics measurement method	IEC 61000-4-7
Flicker measurement method	IEC 61000-4-15
Supply power quality measurement method	IEC 61000-4-30
Characteristics of the voltage supplied by public distribution networks	EN 50160
Communication standards and certification	
RS485	TIA-485A
	TSB-89-B
	IEE 802-3AF
Ethernet	802-1.3-2005_Section1
	802-1.3-2005_Section2
Protocol standards and certification	
RS485	MODBUS
Ethernet	MODBUS
USB	USB 2.0
CAN	ISO11898-2
DIRIS D600 interface	
Display	TFT
Dimensions	640 x 480 pixels
Dimension	115.2 x 86.4 mm
DIRIS O 4i2o-d (4 inputs/2 outputs): inputs	
Number	4
Type	phototransistors
Power supply	10 ... 30 VDC
Minimum current	1 mA
Main insulation for < 300 VAC Ph/N network	2.5 kVAC rms 1 minute
Leakage path	> 3 mm
Number of switchings	10 ⁸ operations
DIRIS O 4i2o-d (4 inputs/2 outputs): outputs	
Number of operations	≥ 10 ⁵
Power supply	230 VAC - 250 VDC - 0.2 A - 1500 VA - 50 W
Number of relays	2
Leakage path	> 3 mm
Main insulation for < 300 VAC Ph/N network	2.5 kVAC rms 1 minute
DIRIS O 2i-a inputs (2 analogue inputs)	
Number	2
Scale	0 / 4 ... 20 mA
Accuracy	≤ 1 % of full scale (which is ≤ 0.2 mA)
Max. impedance of inputs	200 Ω
Main insulation for < 300 VAC Ph/N network	2.5 kVAC rms 1 minute
Leakage path	> 3 mm
DIRIS O 2o-a outputs (2 analogue outputs)	
Number of outputs	2
Scale	0 / 4 ... 20 mA
Load resistance	600 Ω
Accuracy	≤ 0.5 % of full scale (which is ≤ 0.1 mA)
Maximum current	25 mA
Main insulation for < 300 VAC Ph/N network	2.5 kVAC rms 1 minute
Leakage path	> 3 mm

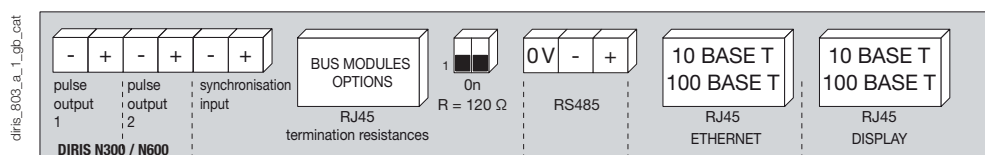
Terminals

DIRIS N300/N600

Lower terminal blocks

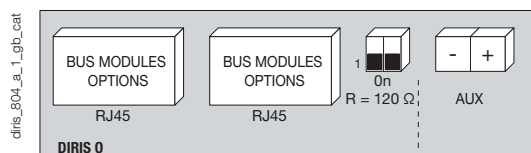


Upper terminal blocks

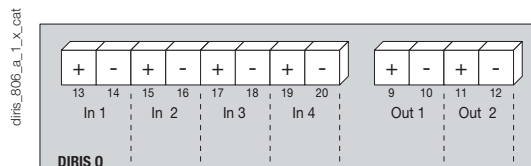


DIRIS O

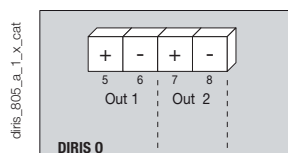
Upper terminal blocks (shared by all modules)



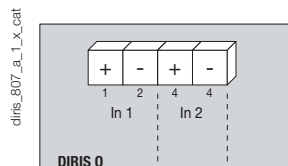
4 inputs / 2 outputs digital



2 analogue outputs, 0/4-20 mA



2 analogue inputs, 0/4-20 mA



References

Description	DIRIS N300/N600 Reference	
DIRIS N300	4826 0001	
DIRIS N600	4826 0002	
Optional Description	DIRIS D600 Reference	
DIRIS D600 (remote interface)	4826 0003	
Description	DIRIS O Reference	
DIRIS O 4i2o-d (4 digital inputs/2 digital outputs)	4826 0071	
DIRIS O 2i-a (2 analogue inputs)	4826 0072	
DIRIS O 2o-a (2 analogue outputs)	4826 0073	
Accessories		
Description of accessories	To be ordered in multiples of	Reference
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000
Current transformer range		See page 488

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.





VERTELIS VISION

Software for Power Monitoring System (PMS)

Metering, monitoring & power quality

VERTELIS VISION



The solution for

- Industry.
- Building.
- Infrastructure.
- Local authority.



Strong points

- Turnkey solution.
- Report auto-configuration.
- Dedicated box.
- Display of multi-utility load curves.

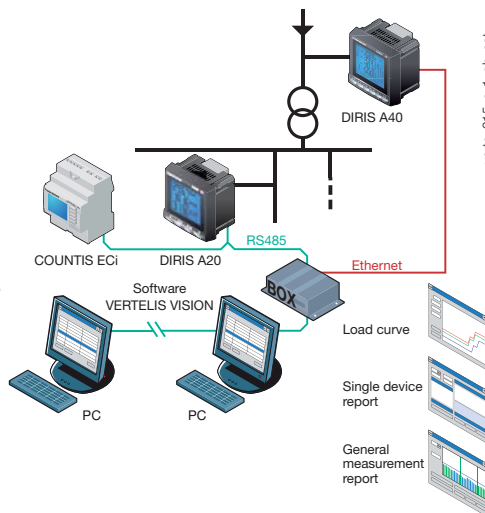
Services & Technical Assistance

- Our expertise extends to a complete offer of customised services like installation audit, commissioning, training, maintenance, and project engineering.

Function

The first step in your Energy Efficiency approach, **VERTELIS VISION** is a solution composed of an industrial PC with embedded software (Vertelis box). Its functionalities can be accessed from any terminal (PC, pad, etc.) using a standard Internet browser (Internet Explorer, Firefox, etc.). Its purpose is to collect data from DIRIS A, DIRIS N, COUNTIS E and COUNTIS ECi products for report analysis and event log or alarm management purposes.

Communication between the Vertelis box and the devices is achieved either by means of the Ethernet network or a serial RS485 port.



Advantages

Turnkey solution

For easy and quick implementation, our solution includes software pre-configuration, commissioning & maintenance.

Report auto-configuration

Only devices, their hierarchy and energy tariffs should be defined.

Dedicated Industrial PC

The VERTELIS VISION software is pre-installed in a dedicated industrial PC offering an enduring and reliable solution.

Display of multi-utility load curves

Key element to check that your contract tariff is adapted to your consumption.

Functionalities

The VERTELIS VISION solution communicates with all SOCOMEC products included in the installation. Thanks to manual or automatic measurements, instantaneous or logged data reports are accessible using an internet browser (Internet Explorer 9, Firefox). It offers the easy supervision of the instantaneous energy consumed by furnaces, manufacturing facilities, office buildings, etc.

The user can also have access to:

- The logs of the selected electrical values over a defined time period.
- The alarms (measurements, consumptions, status...)
- Indications of malfunctions arising from the installation.
- A manual or automatic report extraction.

All of this information is based on the measurements reported on a device or set of devices.

For easy and quick implementation, the VERTELIS VISION solution includes commissioning. Other services can be provided by SOCOMEC, so do not hesitate to consult us.

General characteristics

The VERTELIS VISION solution makes it possible to:

- Supervise up to 50 measurement points.
- Depending on the product characteristics, view energy indexes, electrical values (U, I, FP, f, harmonics, etc.) and alarms.
- View curves and statistics of the data logs selected.

- Remotely set the date and time, the reset of indexes and the relay status.
- Show the load or average curves (10, 15, 20 or 30 min) and the related value charts for DIRIS A40/A60/A80 and COUNTIS Ci / ECi.
- Set the automatic release of reports.

Communication with SOCOMEC products:

- Connection type: RS485, Ethernet.
- Supported protocols:
 - Modbus RTU.
 - Modbus TCP.
 - Modbus RTU over TCP.

Languages

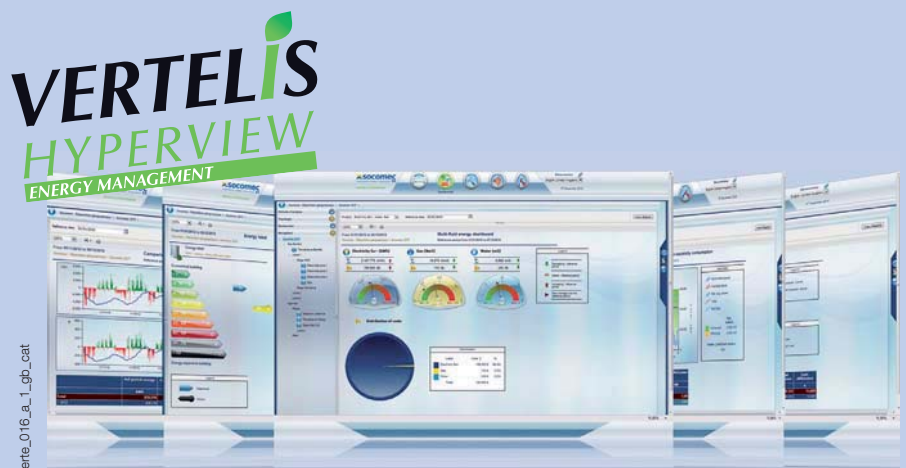
Multi-language software, includes the following as standard: English, French, Spanish, German, Italian, Dutch, Turkish.

Check it out

Supervision software VERTELIS HYPERVIEW

To get more functionalities, services and measurement points, the VERTELIS HYPERVIEW energy efficiency solution is available.

For further information, please contact your SOCOMEC branch.



Functionalities

General instantaneous reports

Measurements, indexes and inputs/outputs are presented in charts. The data availability and content can vary depending on the selected device. The user can decide to include each device in his reports. These pages are automatically refreshed over a defined period of time. They can also be extracted manually.



Measurements

The page presenting the measurement general report shows the following data for the selected device:

- currents,
- phase to neutral voltages,
- phase to phase voltage,
- frequency,
- active, reactive and apparent power per phase,
- power factors,
- impulse metering inputs (DIRIS A).

If data is not available for a specific device or if the network setting is not compatible, a dash (-) is displayed in the corresponding field.

vert_017_a_1_gb_cat

Paramètres	DIRIS Bureau U1	DIRIS N100 Edge1 U1	Countis N100 U2	A40 Montage	A40 Compresseur d'air
Courants					
I1 (A)	15.813	86.942	636.812	13.87	42.307
I2 (A)	4.29	28.816	635.833	13.79	41.39
I3 (A)	13.432	139.81	636.264	26.1	42.062
In (A)	13.813	84.714	48.323		
Tension simple					
V1 (V)	230.28	230.3	230.48		
V2 (V)	230.18	230	230.79		
V3 (V)	231.37	230.35	230.87		
Tension composée					
U12 (V)	402.08	402.58	412.34	412.3	412.53
U23 (V)	402.44	402.17	412.83	412.85	412.87
U31 (V)	405.59	408.46	412.96	412.6	412.72
Fréquence					
F (Hz)	49.87	49.87	49.87	49.87	49.86
Puissance active					
P1 (kW)	2210	13120	104700		
P2 (kW)	740	8100	120000		

Index

The 'Index' page shows the following data categories for all the DIRIS and COUNTIS selected:

- partial electrical values,
- total electrical values,
- partial indexes,
- total indexes.

vert_018_a_1_gb_cat

Paramètres	DIRIS N100 Edge1 U1	Countis N100 U2	A40 Montage	A40 Compresseur d'air
Énergie partielle				
E1 (kWh)	22213		212404	1211034
E2 (kWh)	0		13845	0
E3 (kWh)	3293		17480	469394
E4 (kWh)	884		26347	130518
E5 (kWh)	22236		212034	1210386
Énergie totale				
E1 (kWh)	81094		340504	
E2 (kWh)	0		13842	
E3 (kWh)	17963		21920	
E4 (kWh)	3697		18072	
E5 (kWh)	67862		479308	
Index partiel				
I1 (kWh/kVA)	2245		0	0
I2 (kWh/kVA)	0		0	0
I3 (kWh/kVA)				
I4 (kWh/kVA)				
I5 (kWh/kVA)				

Single device instantaneous reports

Depending on the characteristics of the device selected, the following pages are available:

- measurements,
- index,
- quality,
- inputs/outputs.

These pages are automatically updated over a defined period of time. Data can be extracted in *.csv format.

Measurements

The 'Measures' page displays the following data:

- currents,
- phase to neutral voltages,
- phase to phase voltage,
- frequency,
- power factors,
- active, reactive and apparent power
- impulse metering inputs (DIRIS A).



Index

Digital data viewing depends on the device characteristics:

- index of electrical values,
- values of pulse meters,
- time index,
- index per tariff category.

Quality

For the selected DIRIS A or N, viewing of harmonic curves and distortion rate charts:

- the 3 currents and the neutral (depending on the network type),
- the phase to phase and phase to neutral voltages (depending on the network type).



Functions

Log file

The VERTELIS VISION software has been designed to analyse the remotely reported data stored over a selected period, that is:

- statistics and stored data,
- reports of indexes,
- load curves.

Statistic reports and history logs

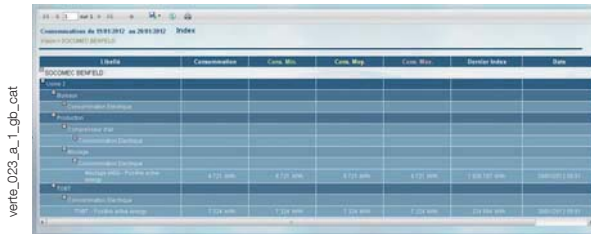
They are classified by:

- index,
- measures,
- quality,
- events.

Parameters stored include:

- the minimum value per day,
- the maximum value per day,
- the latest logged value,
- a link to the statistics page,
- a link to all the data logged.

Index



Statistics on Quality

The minimum, average and maximum values per day over the selected period for analysed data are displayed. Data is displayed under curve and chart format.



Quality history logs

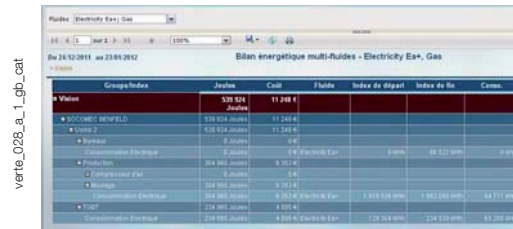
It is possible to view the graph and chart of stored measurements over the selected period.



Index report

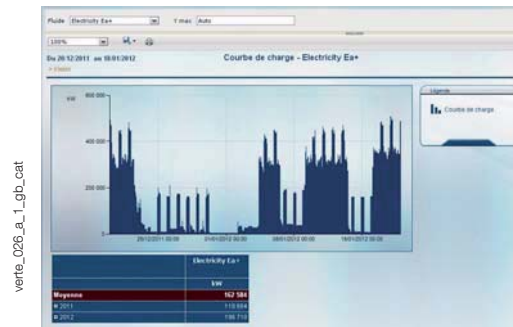
They display a chart including the multi-utility indexes with the following information:

- start value,
- end value,
- consumption difference in the corresponding utility unit,
- consumption difference in a unit common to all utilities,
- average cost over the period.



Load curves

On this page it is possible to view the graphs and average power value charts or the indexes over the selected period.



Alerts

Different types of notifications can be managed:

- alarms released by the DIRIS A,
- alarms about index differences,
- value alarms about the average, minimum and maximum currents, voltage and power values reported.

E-mail alerts are sent to users by means of a message server.

Four web pages are also available to view:

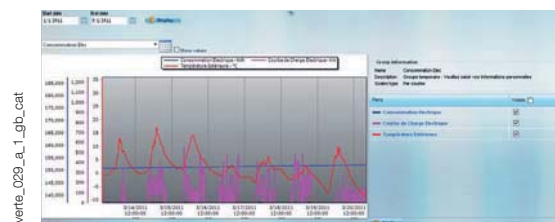
- alarms in progress,
- alarms recorded,
- statistics on a specific alarm,
- alarm notifications.

Tools

They give access to the various tools needed for the correct operation of the software as well as to a specific tool to create curves from the log file.

Example:

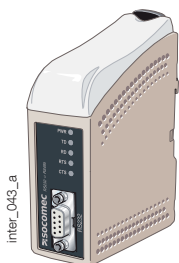
Curve for following up electricity consumption, external temperature and load curves over a selected period.



Communication accessories

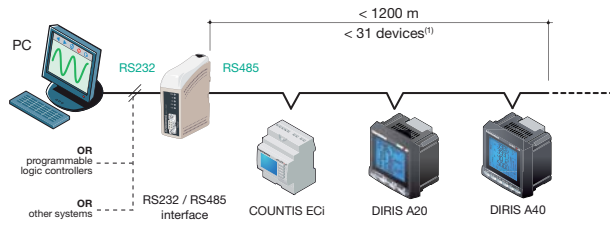
Connecting the RS485 link

RS232 / RS485 interface



Function

If the PC is equipped with an RS232 port, this interface will convert RS232 signal into RS485. Up to 31 devices can be connected to the interface over a distance of 1200 m at 9600 bauds.



(1) Beyond these characteristics, use an "RS422 / RS485 repeater".

References

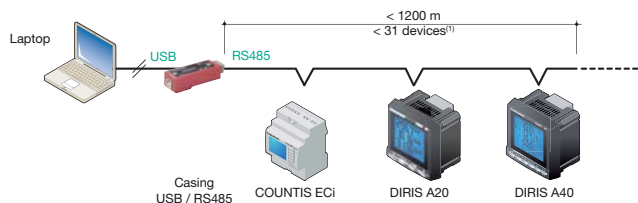
Auxiliary power supply U_s	Frequency	Reference
95 ... 240 VAC / 110 ... 250 VDC	50 Hz	4899 0100

USB / RS485 interface



Function

If the PC is not equipped with a serial port, this interface can be connected via a USB port to obtain an RS485 communication port. Recommended for local use and not for permanent installation.

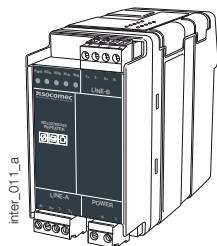


(1) Beyond these characteristics, use an "RS422 / RS485 repeater".

References

Description of accessories	Reference
External USB / RS485 interface unit	4899 0110

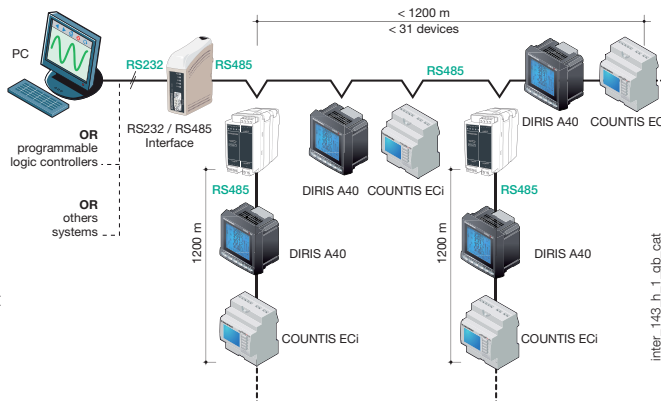
RS422 / RS485 repeater



Function

In some applications the maximum distance and/or the maximum number of devices can be exceeded. One solution to this technical restriction is to install an interface which amplifies the signal over a further 1200 m (at 9600 bauds) for 31 devices.

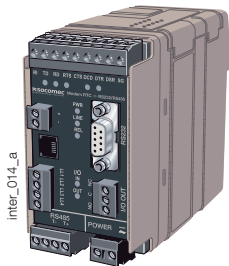
In addition, it allows you to introduce a new branch to the network thereby making it possible to reduce the length of connection cable required by avoiding back and forth cabling.



References

Auxiliary power supply U_s	Frequency	Reference
95 ... 240 VAC / 110 ... 250 VDC	50 Hz	4899 0120

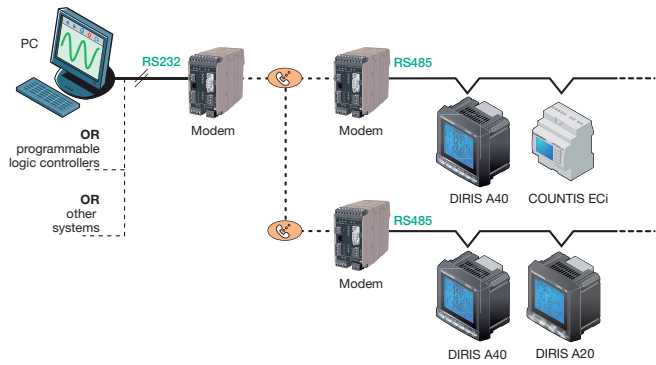
Using the telephone network (RTC Modem / RS232 - RS485)



Function

On some sites it is not possible to connect all the devices using a single cable. In some cases, the distances may be such that the investment would be too great. In these conditions a possible solution is a modem, utilising existing telephone lines to complete the network.

This modem can be configured as a master (RS232: connected directly to PC) or slave (RS485: connected to slave devices, via network).



References

Auxiliary power supply U _s	Frequency	Reference
22 ... 240 VAC / 12 ... 48 VDC	50 Hz	4899 0200

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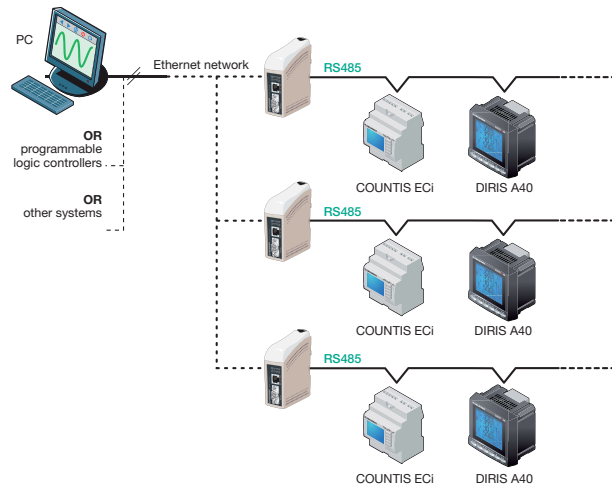
Using the Ethernet network (Ethernet / RS232-RS485 interface)



Function

This interface enables RS485 slave devices to be connected to an Ethernet network.

These interfaces can be configured differently to suit other architectures.

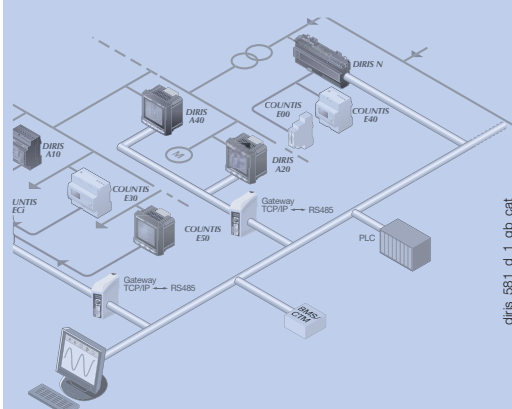


References

Auxiliary power supply U _s	Frequency	Reference
230 VAC / 12 ... 48 VDC	50 Hz	4899 0300

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Other solutions and services



The accessories listed in these pages represent a selection from our range.

We can supply many other solutions upon request, such as SHDSL interfaces, fibre optics/RS485, GSM/GPRS and protocol converter interfaces.

Need something integrating into your network?

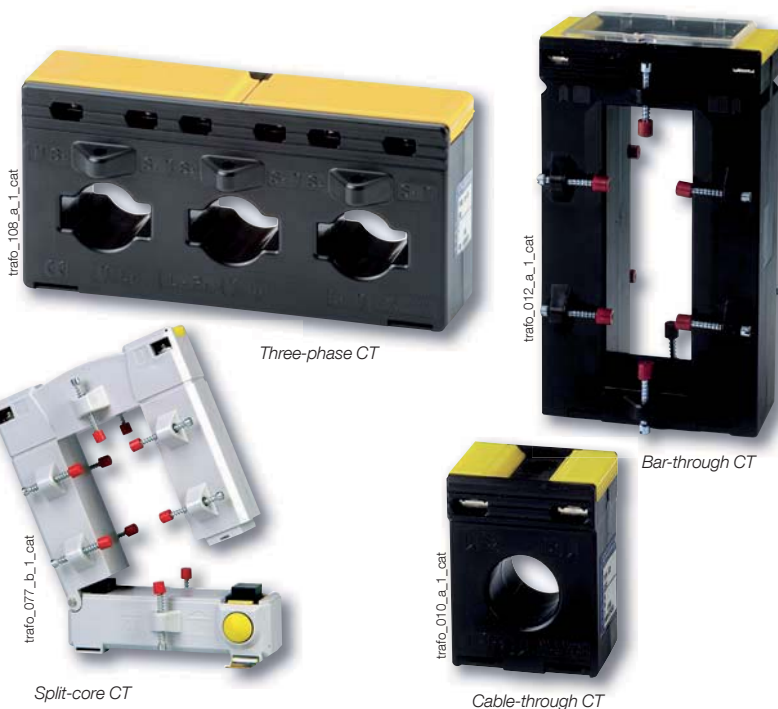
Our **Services and Technical Assistance** department will fully integrate all your SOCOMEC devices. This team of experts offers a complete range of customised solutions, including technical site audit and solution specification, commissioning, training, maintenance, and project engineering.



Current transformers

Measurement devices

from 5 to 5000 A



The solution for

- > Industry.
- > Service sector.



Strong points

- > An adapted accuracy class.
- > A wide range of ratings and dimensions.
- > Quick and easy to mount.

Conformity to standards

- > IEC 61869-2
- > IEC 61439-1



Other products

SOCOMECC also offer customised solutions:

- > 1 A secondary.
- > Double or triple primary ratio.
- > Voltage transformer.
- > Summation CTs.

Function

SOCOMECC current transformers deliver to the secondary a standard current proportional to the primary current and adapted to the rating of the associated device. They are equipped as standard with removable terminal covers and double terminals allowing the secondary to be short-circuited without any risk.

They are mounted using two screw-on metal brackets or, in certain cases, by a clip-on DIN-rail fastener. The connections are made by screws or by fast-on terminals.

- Accuracy class: 0.2s - 0.5 or 1.
- Dielectric quality: 3 kV - 50 Hz - 1 min.
- Operating frequency: 50 - 60 Hz.
- Permanent overload: 1.2 In.
- Insulation class: E (120 °C).

Advantages

An adapted accuracy class

In order to get the best of your DIRIS multifunction meters and COUNTIS energy meters, we can provide current transformers with the following accuracy classes: 0.2s; 0.5; 1 or 3.

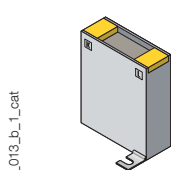
A wide range of ratings and dimensions

Your measurement process can be optimised whatever your needs in terms of ratings, space requirements, conductor sizing or accuracy class. A wide range of combinations are available in our standard range with specific versions available on request (other ratios, tropicalisation and specific frequency, class or burden).

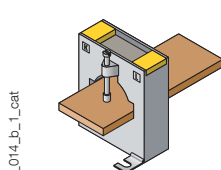
Quick and easy to mount

Our current transformers are adapted to any type of mounting: edgewise or flat mounting, DIN-rail or back-plate mounting. Implementation is easy and rapid.

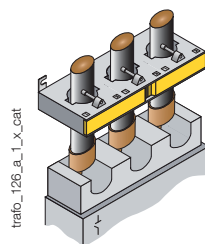
Composition of the range



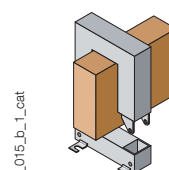
Primary wound moulded case CT



Bar or cable-through CT



Bar or cable-through three-phase CT



Split-core CT

Primary wound moulded case CT

References

Primary	Secondary ⁽¹⁾	TRB 60		TRB 70		T2RB 115		TRB 135	
		Class 0.5	Reference	Class 0.5	Reference	Class 0.2s	Reference	Class 0.5	Reference
5 A	5 A	2.5 VA	192T 0505	10 VA	192T 0521				
10 A	5 A	2.5 VA	192T 0510	10 VA	192T 0522				
15 A	5 A	2.5 VA	192T 0515	10 VA	192T 0523				
20 A	5 A	2.5 VA	192T 0520	10 VA	192T 0524				
25 A	5 A			10 VA	192T 0525	7.5 VA	192U 0402	10 VA	192T 0603
30 A	5 A			5 VA	192T 0530	7.5 VA	192U 0403	10 VA	192T 0607
40 A	5 A			5 VA	192T 0540	7.5 VA	192U 0404	10 VA	192T 0604
50 A	5 A			5 VA	192T 0550	7.5 VA	192U 0405	10 VA	192T 0605
60 A	5 A					7.5 VA	192U 0406	10 VA	192T 0606
75 A	5 A					7.5 VA	192U 0407	10 VA	192T 0608
80 A	5 A					7.5 VA	192U 0408	10 VA	192T 0609
100 A	5 A							10 VA	192T 0610
125 A	5 A					7.5 VA	192U 0412	10 VA	192T 0612
150 A	5 A					7.5 VA	192U 0415	10 VA	192T 0615

(1) Secondary 1 A: on request.

Accessories

Description of accessories	TRB 60 Reference	TRB 70 Reference	TRB 135 Reference
DIN-rail mounting	192T 0003	192T 0005 ⁽¹⁾	
Sealable cover	192T 0105	192T 0103	192T 0101 ⁽²⁾

(1) Not available for 50 A rating

(2) For 125 and 150 A ratings, use reference 192T 0103

CT Plug-in transducer (CEA-VA)

Power supply	Output	TRB 60 Reference	TRB 70 Reference
Self-supplied	0-20 mA/0-10 VDC	192Y 0015	192Y 0025 ⁽¹⁾
230 VAC	0-20 mA/0-10 VDC	192Y 0215	192Y 0225 ⁽¹⁾
24 VDC	0-20 mA/0-10 VDC	192Y 0115	192Y 0125 ⁽¹⁾

(1) Not available for 50 A rating

CT Plug-in transducer (CEA-VA4)

Power supply	Output	TRB 60 Reference	TRB 70 Reference
230 VAC	4-20 mA/0-10 VDC	192Y 0255	192Y 0265 ⁽¹⁾
24 VDC	4-20 mA/0-10 VDC	192Y 0155	192Y 0165 ⁽¹⁾

(1) Not available for 50 A rating

Certificate of performance

Each class 0.2s current transformer is supplied with an individual certificate of performance, attesting to its accuracy.

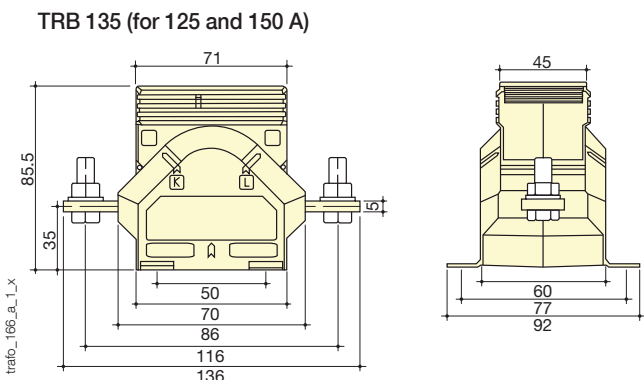
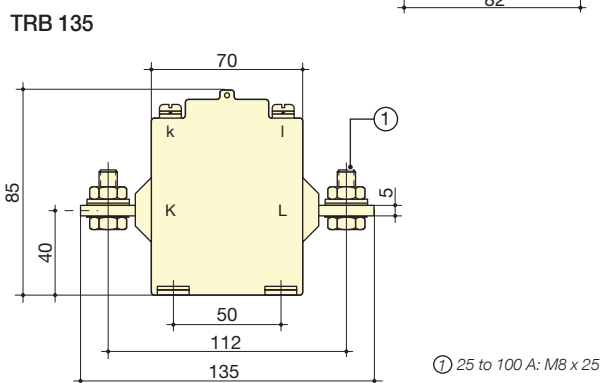
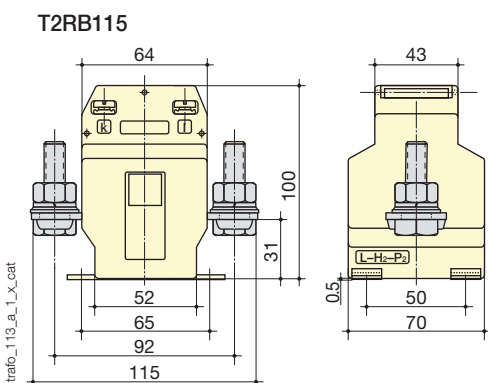
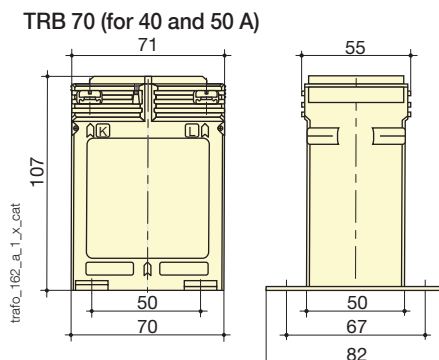
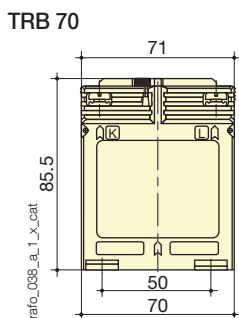
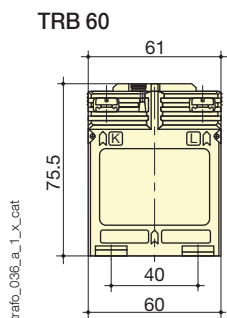
Current transformers

Measurement devices

from 5 to 5000 A

Primary wound moulded case CT (continued)

Dimensions



Primary wound CT	TRB 60	TRB 70 ⁽¹⁾	T2RB 115	TRB 135 ⁽²⁾
H x W x D (mm)	75,5 x 61 x 35	85,5 x 71 x 45	115 x 100 x 70	85 x 135 x 60
DIN-rail mounting	yes	yes	no	no

(1) Dimensions are different for TRB 70 with 40 and 50 A ratings.

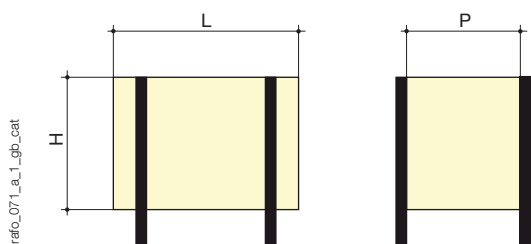
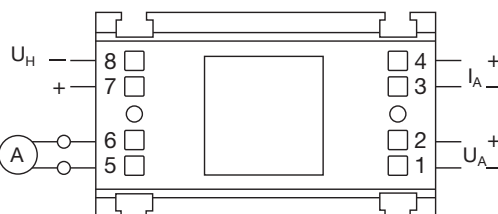
(2) Dimensions are different for TRB 135 with 125 and 150 A ratings.

Associated transducers



Transducer to be associated with adapted current transformers:

- Class 0.5.
- Input: 1 or 5 A.
- Output:
 - 0-20 mA, 0-10 V (type CEA-VA)
 - 4-20 mA, 0-10 V (type CEA-VA4)
- Self-supplied or auxiliary power supply 24 VDC or 230 VAC.
- 3 sizes according to the CT: type 1, 2 or 3.



Dimensions (mm)

Converter	For CT	Height (mm)	Width (mm)	Depth (mm)
Type 1	TRB 60	50.5	60	32.5
Type 2	TRB 70	50	70	43

Cable-through CT

References

Primary	Secondary ⁽¹⁾	TCA 14		TCA 21			TCA 22		T2CA 225	
		Class 1	Reference	Class 1	Class 0.5	Reference	Class 1	Reference	Class 0.2s	Reference
40 A	5 A	1	192T 1404							
50 A	5 A	1	192T 1405							
60 A	5 A	1.5	192T 1406	1 VA		192T 2006				
75 A	5 A	1.5	192T 1407	1.5 VA		192T 2007				
80 A	5 A			1.5 VA		192T 2008				
100 A	5 A	2.5	192T 1410		1.5 VA	192T 2010	1 VA	192T 2022		
125 A	5 A	2.5	192T 1412		1.5 VA	192T 2012				
150 A	5 A	2.5	192T 1415		1.5 VA	192T 2015	1.5 VA	192T 2023	1.5 VA	192U 2215
200 A	5 A				2.5 VA	192T 2020	2.5 VA	192T 2024	2.5 VA	192U 2220
250 A	5 A				2.5 VA	192T 2016	3.75 VA	192T 2025	5 VA	192U 2225
300 A	5 A				2.5 VA	192T 2017	3.75 VA	192T 2030	5 VA	192U 2230
400 A	5 A						5 VA	192T 2034	5 VA	192U 2240
500 A	5 A						5 VA	192T 2035 ⁽²⁾	10 VA	192U 2250
600 A	5 A						5 VA	192T 2036 ⁽²⁾	10 VA	192U 2260

(1) Secondary 1 A: on request.

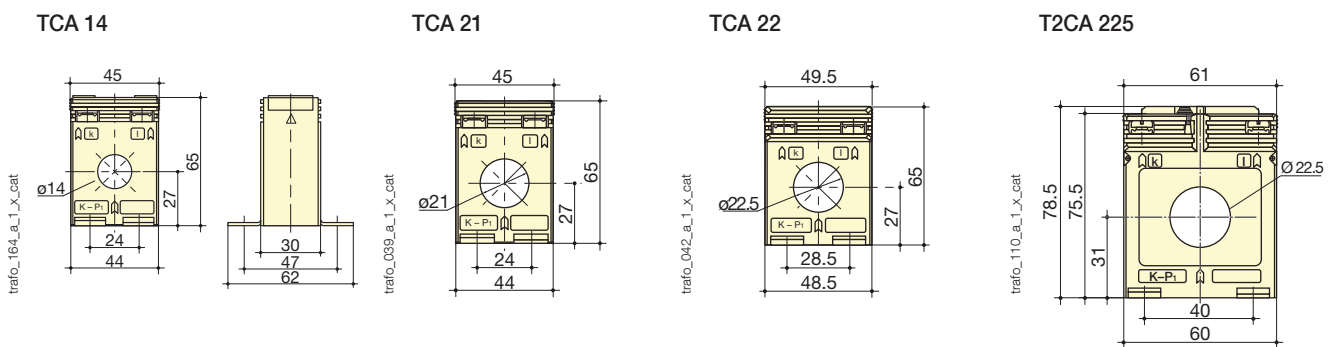
(2) Dimensions of T2CA 225

Accessories

Description of accessories	TCA 14 Reference	TCA 21 Reference	TCA 22 Reference	T2CA 225 Reference
DIN-rail mounting	192T 0006	192T 0006	192T 0007	192T 0003
Copper guide tube Ø 8.5 mm ⁽¹⁾		192T 0020		
Copper guide tube Ø 12.5 mm ⁽¹⁾		192T 0021	192T 0023	
Copper guide tube Ø 16.5 mm ⁽¹⁾			192T 0024	
Sealable cover				192T 0105

(1) For centralising cables within the CT aperture.

Dimensions



Cable-through CT	TCA 14	TCA 21	TCA 22	T2CA 225 ⁽¹⁾
Ø cable (mm)	14	21	22.5	22.5
H x W x D (mm)	65 x 45 x 30	65 x 45 x 30	65 x 49.5 x 35	78.5 x 61 x 35
DIN-rail mounting	yes	yes	yes	yes

(1) Dimensions are different for 600 A: 78.5x61x35.

Current transformers

Measurement devices

from 5 to 5000 A

Bar or cable-through CT

References

Primary	Secondary ⁽¹⁾	TCB 17-20		TCB 26-30			T2CB 26-30		TCB 28-30		
		Class 1	Reference	Class 0.5	Class 1	Reference	Class 0.2s	Reference	Class 0.5	Class 1	Reference
50 A	5 A				1 VA	192T 2305					
60 A	5 A	1 VA	192T 2106		1 VA	192T 2306					
75 A	5 A	1 VA	192T 2107		1.5 VA	192T 2307					
80 A	5 A	1.25 VA	192T 2108		1.5 VA	192T 2308				1.25 VA	192T 2408
100 A	5 A	1.5 VA	192T 2110	1.5 VA		192T 2310				1.5 VA	192T 2410
125 A	5 A	1.5 VA	192T 2112	1.5 VA		192T 2312				2.5 VA	192T 2412
150 A	5 A	2.5 VA	192T 2115	1.5 VA		192T 2315	1.5 VA	192U 2315		2.5 VA	192T 2415
160 A	5 A	2.5 VA	192T 2116								
200 A	5 A	2.5 VA	192T 2120	2.5 VA		192T 2320	2.5 VA	192U 2320	2.5 VA		192T 2420
250 A	5 A	5 VA	192T 2125	5 VA		192T 2325	2.5 VA	192U 2325	2.5 VA		192T 2425
300 A	5 A	5 VA	192T 2130	5 VA		192T 2330	5 VA	192U 2330	2.5 VA		192T 2430
400 A	5 A	5 VA	192T 2140	5 VA		192T 2340	5 VA	192U 2340	5 VA		192T 2440
500 A	5 A			5 VA		192T 2350	5 VA	192U 2350	5 VA		192T 2450
600 A	5 A			5 VA		192T 2360	5 VA	192U 2360			
750 A	5 A			5 VA		192T 2375	5 VA	192U 2375			

(1) Secondary 1 A: on request.

Primary	Secondary ⁽¹⁾	TCB 26-40		TCB 32-40			T2CB 32-40	
		Class 1	Reference	Class 0.5	Class 1	Reference	Class 0.2s	Reference
75 A	5 A				1.5 VA	192T 4007		
100 A	5 A	1.5 VA	192T 3210	1.5 VA		192T 4010		
125 A	5 A	2.5 VA	192T 3212	1.5 VA		192T 4012		
150 A	5 A	2.5 VA	192T 3215	2.5 VA		192T 4015		
160 A	5 A	2.5 VA	192T 3216					
200 A	5 A	2.5 VA	192T 3220	5 VA		192T 4020	2.5 VA	192U 4020
250 A	5 A	2.5 VA	192T 3225	5 VA		192T 4025	5 VA	192U 4025
300 A	5 A	5 VA	192T 3230	10 VA		192T 4030	5 VA	192U 4030
400 A	5 A	5 VA	192T 3240	10 VA		192T 4040	5 VA	192U 4040
500 A	5 A	5 VA	192T 3250	10 VA		192T 4050	5 VA	192U 4050
600 A	5 A	5 VA	192T 3260	10 VA		192T 4060	5 VA	192U 4060
750 A	5 A	10 VA	192T 3275	10 VA		192T 4075	5 VA	192U 4075
800 A	5 A			10 VA		192T 4080		
1000 A	5 A			10 VA		192T 4090		

(1) Secondary 1 A: on request.

Accessories

Description of accessories	TCB 17-20 Reference	TCB 26-30 Reference	TCB 26-40 Reference	TCB 32-40 Reference
DIN-rail mounting	192T 0007	192T 0003	192T 0003	192T 0005
Sealable cover		192T 0105	192T 0105	192T 0103

CT Plug-in transducer (CEA-VA)

Power supply	Output	TCB 26-30 Reference	TCB 26-40 Reference	TCB 32-40 Reference
Self-supplied	0-20 mA/0-10 VDC	192Y 0015	192Y 0015	192Y 0035
230 VAC	0-20 mA/0-10 VDC	192Y 0215	192Y 0215	192Y 0235
24 VDC	0-20 mA/0-10 VDC	192Y 0115	192Y 0115	192Y 0135

CT Plug-in transducer (CEA-VA4)

Power supply	Output	TCB 26-30 Reference	TCB 26-40 Reference	TCB 32-40 Reference
230 VAC	4-20 mA/0-10 VDC	192Y 0255	192Y 0255	192Y 0275
24 VDC	4-20 mA/0-10 VDC	192Y 0155	192Y 0155	192Y 0175

References

Primary	Secondary ⁽¹⁾	TCB 44-50		TCB 44-63		T2CB 44-63	
		Class 0.5	Reference	Class 0.5	Reference	Class 0.2s	Reference
150 A	5 A	1.5 VA	192T 5015				
200 A	5 A	2.5 VA	192T 5020	1.5 VA	192T 6420		
250 A	5 A	5 VA	192T 5025	1.5 VA	192T 6425		
300 A	5 A	5 VA	192T 5030	2.5 VA	192T 6430	5 VA	192U 6430
400 A	5 A	10 VA	192T 5040	5 VA	192T 6440	5 VA	192U 6440
500 A	5 A	10 VA	192T 5050	10 VA	192T 6450	10 VA	192U 6450
600 A	5 A	10 VA	192T 5060	10 VA	192T 6460	10 VA	192U 6460
750 A	5 A	10 VA	192T 5075	10 VA	192T 6475	10 VA	192U 6475
800 A	5 A	15 VA	192T 5080	10 VA	192T 6480		
1000 A	5 A	15 VA	192T 5090	15 VA	192T 6490	10 VA	192U 6490
1200 A	5 A	15 VA	192T 5092	15 VA	192T 6492	10 VA	192U 6492
1250 A	5 A	15 VA	192T 5095	15 VA	192T 6493	10 VA	192U 6493
1500 A	5 A			15 VA	192T 6495	10 VA	192U 6495
1600 A	5 A			15 VA	192T 6494		

(1) Secondary 1 A: on request.

Primary	Secondary ⁽¹⁾	TCB 55-80		TCB 85-100		TCB 100-125	
		Class 0.5	Reference	Class 0.5	Reference	Class 0.5	Reference
400 A	5 A	2.5 VA	192T 8140				
500 A	5 A	5 VA	192T 8150				
600 A	5 A	5 VA	192T 8160				
750 A	5 A	10 VA	192T 8175	2.5 VA	192T 9675		
800 A	5 A	10 VA	192T 8180	5 VA	192T 9680		
1000 A	5 A	15 VA	192T 8190	10 VA	192T 9690	5 VA	192T 9590
1200 A	5 A	15 VA	192T 8192	10 VA	192T 9692	10 VA	192T 9592
1250 A	5 A	15 VA	192T 8193	15 VA	192T 9693	10 VA	192T 9593
1500 A	5 A	15 VA	192T 8195	15 VA	192T 9695	15 VA	192T 9595
1600 A	5 A	15 VA	192T 8194	15 VA	192T 9694		
2000 A	5 A	15 VA	192T 8196	30 VA	192T 9696	30 VA	192T 9596
2500 A	5 A			30 VA	192T 9697	30 VA	192T 9597
3000 A	5 A			30 VA	192T 9698	30 VA	192T 9598

(1) Secondary 1 A: on request.

Accessories

Description of accessories	TCB 44-50 Reference	TCB 44-63 Reference	TCB 55-80 Reference	TCB 85-100 Reference	TCB 100-125 Reference
Sealable cover	192T 0102	192T 0102	192T 0102	192T 0106	192T 0106

CT Plug-in transducer (CEA-VA)

Power supply	Output	TCB 44-50 Reference	TCB 44-63 Reference	TCB 55-80 Reference
Self-supplied	0-20 mA/0-10 VDC		192Y 0045	192Y 0045
230 VAC	0-20 mA/0-10 VDC		192Y 0245	192Y 0245
24 VDC	0-20 mA/0-10 VDC		192Y 0145	192Y 0145

CT Plug-in transducer (CEA-VA4)

Input	Output	TCB 44-50 Reference	TCB 44-63 Reference	TCB 55-80 Reference
230 VAC	4-20 mA/0-10 VDC		192Y 0285	192Y 0285
24 VDC	4-20 mA/0-10 VDC		192Y 0185	192Y 0185

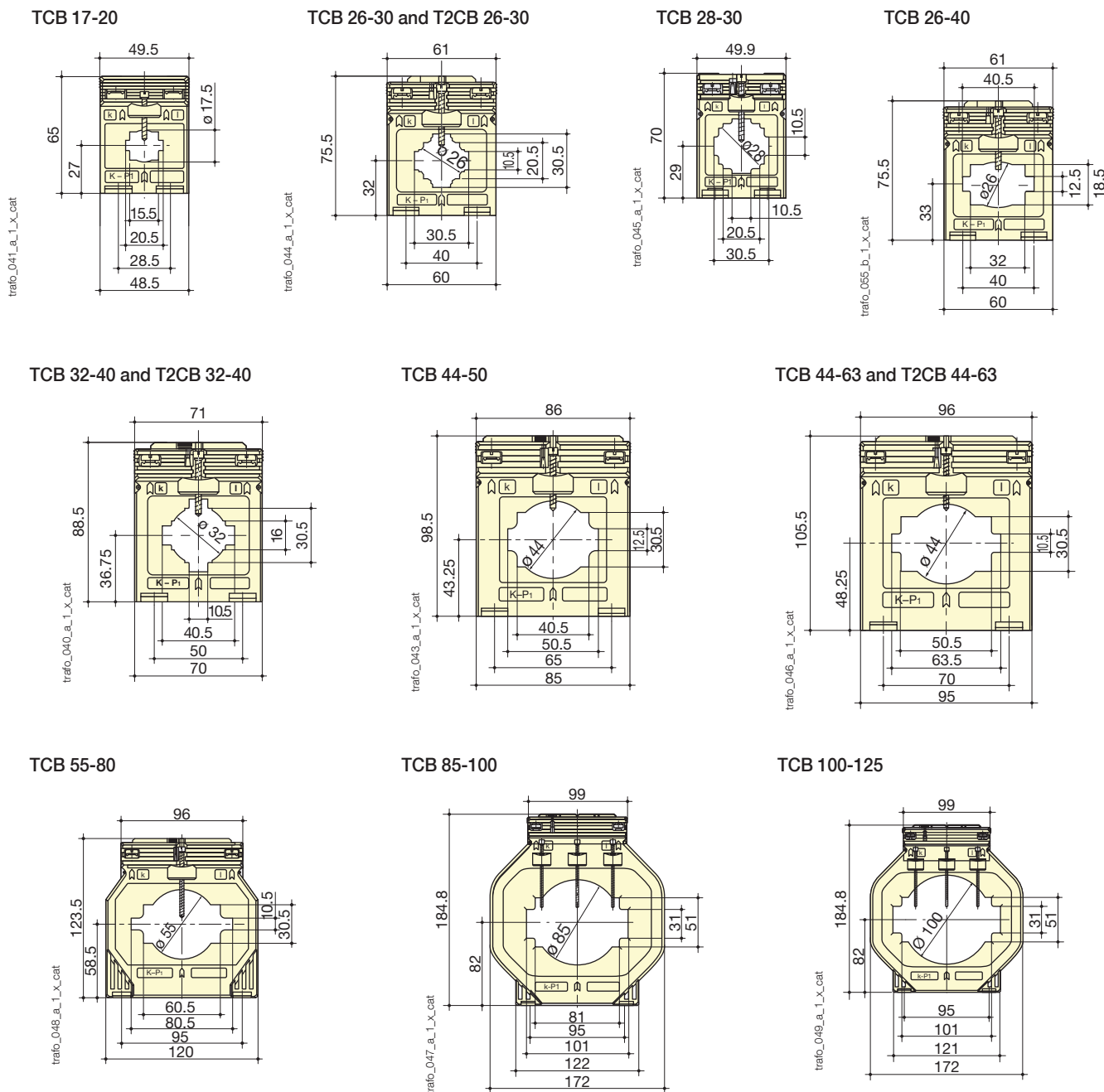
Current transformers

Measurement devices

from 5 to 5000 A

Bar or cable-through CT

Dimensions



Bar or cable-through CT	TCB 17-20	TCB 26-30	T2CB 26-30	TCB 26-40	TCB 28-30	TCB 32-40	T2CB 32-40
Bar (mm)	20 x 5 (x 1)	30 x 10 (x 1) / 20 x 10 (x 1...2)	30 x 10 (x 1) / 20 x 10 (x 1...2)	40 x 12 (x 1) / 32 x 18 (x 1)	30 x 10 (x 1)	40 x 10 (x 1) / 30 x 5 (x 1...2)	40 x 10 (x 1) / 30 x 5 (x 1...2)
ϕ cable (mm)	17.5	26	26	26	28	32	32
H x W x D (mm)	65 x 49.5 x 50	75.5 x 61 x 48	75.5 x 61 x 48	75.5 x 61 x 48	70 x 49.9 x 68	88.5 x 71 x 58	88.5 x 71 x 58
DIN-rail mounting	yes	yes	yes	yes	no	yes	yes

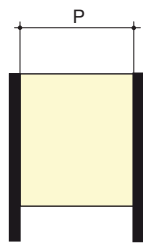
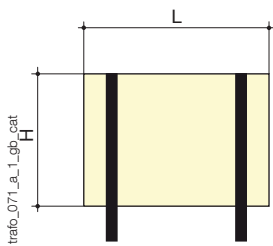
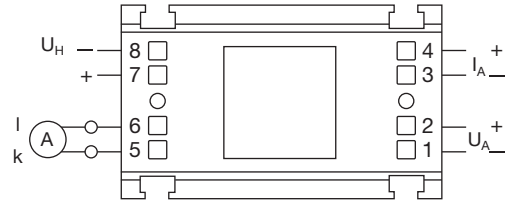
Bar or cable-through CT	TCB 44-50	TCB 44-63	T2CB 44-63	TCB 55-80	TCB 85-100	TCB 100-125
Bar (mm)	50 x 12 (x 1) / 40 x 10 (x 1...2)	63 x 10 (x 1) / 50 x 10 (x 1...2)	63 x 10 (x 1) / 50 x 10 (x 1...2)	80 x 10 (x 1) / 60 x 30 (x 1) / 60 x 10 (x 1...2)	100 x 10 (x 1...2) / 80 x 10 (x 1...3)	123 x 30 (x 1) / 100 x 10 (x 1...3)
ϕ cable (mm)	44	44	44	55	85	100
H x W x D (mm)	98.5 x 86 x 58	105.5 x 96 x 58	105.5 x 96 x 58	123.5 x 120 x 58	184.5 x 172 x 52	184.5 x 172 x 52

Associated transducers



Transducer to be associated with adapted current transformers:

- Class 0.5.
- Input: 1 or 5 A
- Output:
 - 0-20 mA, 0-10 V (model CEA-VA),
 - 4-20 mA, 0-10 V (model CEA-VA4),
- self-supplied or auxiliary power supply 24 VDC or 230 VAC.
- 3 sizes according to the CT: type 1, 2 or 3.



Dimensions (mm)

Converter	For CT	Height (mm)	Width (mm)	Depth (mm)
Type 1	TCB 26-30	50.5	60	32.5
Type 1	TCB 26-40	50.5	60	32.5
Type 2	TCB 32-40	50	70	43
Type 3	TCB 44-63	50.5	95	43
Type 3	TCB 55-80	50.5	95	43

Current transformers

Measurement devices

from 5 to 5000 A

Bar-through CT

References

Primary	Secondary	TBA 60			TBA 80		TBA 100		T2BA 100	
		Class 0.5	Class 1	Reference	Class 0.5	Reference	Class 0.5	Reference	Class 0.2s	Reference
200 A	5 A		2.5 VA	192T 7020						
250 A	5 A	2.5 VA		192T 7025						
300 A	5 A	2.5 VA		192T 7030	2.5 VA	192T 7530				
400 A	5 A	5 VA		192T 7040	5 VA	192T 7540				
500 A	5 A	5 VA		192T 7050	5 VA	192T 7550				
600 A	5 A	10 VA		192T 7060	5 VA	192T 7560	5 VA	192T 8060		
750 A	5 A	10 VA		192T 7075	5 VA	192T 7575	5 VA	192T 8075		
800 A	5 A	10 VA		192T 7080	10 VA	192T 7580	5 VA	192T 8080		
1000 A	5 A	15 VA		192T 7090	15 VA	192T 7590	5 VA	192T 8090		
1200 A	5 A	15 VA		192T 7092	15 VA	192T 7592	10 VA	192T 8092	5 VA	192U 8092
1250 A	5 A	15 VA		192T 7093	15 VA	192T 7593	10 VA	192T 8093	5 VA	192U 8093
1500 A	5 A	15 VA		192T 7095	15 VA	192T 7595	15 VA	192T 8095	5 VA	192U 8095
1600 A	5 A	15 VA		192T 7094	15 VA	192T 7594	15 VA	192T 8094		
2000 A	5 A				15 VA	192T 7596	15 VA	192T 8096	5 VA	192U 8096
2500 A	5 A						30 VA	192T 8097	10 VA	192U 8097
3000 A	5 A						30 VA	192T 8098 ⁽¹⁾	10 VA	192U 8098
4000 A	5 A						30 VA	192T 8099 ⁽¹⁾		

(1) Dimensions are different for TBA 100 with 3000 and 4000 A primary.

Primary	Secondary	TBA 103		T2BA 103		TBA 127		T2BA 127	
		Class 0.5	Reference	Class 0.2s	Reference	Class 0.5	Reference	Class 0.2s	Reference
400 A	5 A	2.5 VA	192T 9340			2.5 VA	192T 9740		
500 A	5 A	2.5 VA	192T 9350			2.5 VA	192T 9750		
600 A	5 A	2.5 VA	192T 9360			2.5 VA	192T 9760		
750 A	5 A	2.5 VA	192T 9375			2.5 VA	192T 9775		
800 A	5 A	5 VA	192T 9380			5 VA	192T 9780		
1000 A	5 A	10 VA	192T 9390	5 VA	192U 9390	10 VA	192T 9790		
1200 A	5 A	10 VA	192T 9392	5 VA	192U 9392	10 VA	192T 9792	5 VA	192U 9792
1250 A	5 A	10 VA	192T 9393	5 VA	192U 9393	10 VA	192T 9793	5 VA	192U 9793
1500 A	5 A	15 VA	192T 9395	5 VA	192U 9395	15 VA	192T 9795	5 VA	192U 9795
1600 A	5 A	10 VA	192T 9394			15 VA	192T 9794		
2000 A	5 A	15 VA	192T 9396			15 VA	192T 9796	5 VA	192U 9796
2500 A	5 A					15 VA	192T 9797		
3000 A	5 A					25 VA	182T 9798 ⁽¹⁾		
4000 A	5 A					30 VA	182T 9799 ⁽¹⁾		

(1) Replacement model TRA 127 for this rating.

Accessories

Description of accessories	TBA 60 Reference	TBA 80 Reference	TBA 100 Reference	T2BA 100 Reference	TBA 103 Reference	T2BA 103 Reference	TBA 127 Reference	T2BA 127 Reference
Sealable cover	192T 0102	-	192T 0102	192T 0102	-	-	192T 0102	192T 0102

CT Plug-in transducer (CEA-VA)

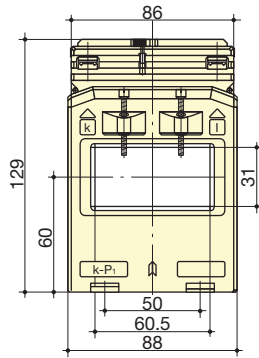
Power supply	Output	TBA 100 Reference
Self-supplied	0-20 mA/0-10 VDC	192Y 0045
230 VAC	0-20 mA/0-10 VDC	192Y 0245
24 VDC	0-20 mA/0-10 VDC	192Y 0145

CT Plug-in transducer (CEA-VA4)

Power supply	Output	TBA 100 Reference
230 VAC	4-20 mA/0-10 VDC	192Y 0285
24 VDC	4-20 mA/0-10 VDC	192Y 0185

Dimensions

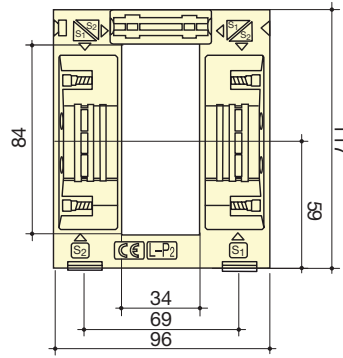
TBA 60



trafo_050_a_1_x_cat

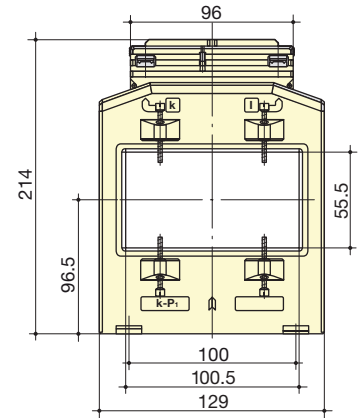
TBA 80

600 to 3000 A



TBA 100 and T2BA 100

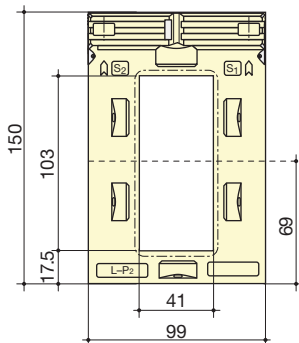
4000 A



trafo_059_a_1_x_cat

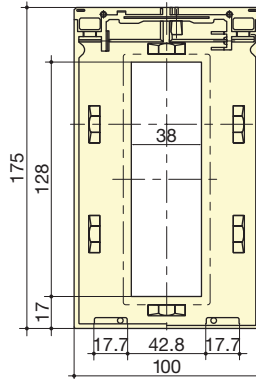
trafo_082_a_1_x_cat

TBA 103 and T2BA 103



trafo_054_a_1_x_cat

TBA 127 and T2BA 127



trafo_052_a_1_x_cat

Bar-through CT	TBA 60	TBA 80	TBA 100	T2BA 100	TBA 103	T2BA 103	TBA 127	T2BA 127
Bar (mm)	60 x 30	84 x 34	100 x 55	100 x 55	103 x 41	103 x 41	128 x 38	128 x 38
H x W x D (mm)	129 x 88 x 78	117 x 96 x 68	167 x 129 x 78 ⁽¹⁾	167 x 129 x 78	150 x 99 x 58	150 x 99 x 58	175 x 100 x 55	175 x 100 x 55

(1) Dimensions are different for TBA 100 with 3000 and 4000 A primary.

Current transformers

Measurement devices

from 5 to 5000 A

Three-phase bar or cable-through CT

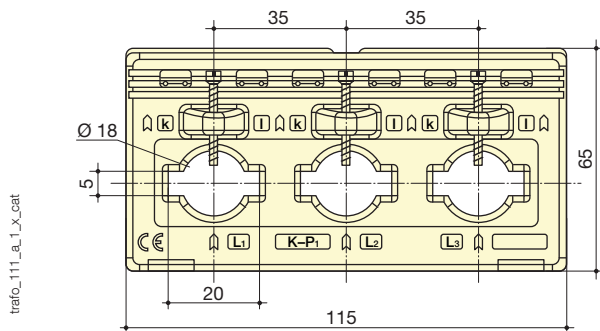
References

Primary	Secondary ⁽¹⁾	TCB3 18-20		TCB3 22-30	
		Class 1	Reference	Class 1	Reference
3 x 100 A	3 x 5 A	1 VA	192T 3310		
3 x 150 A	3 x 5 A	1.25 VA	192T 3315		
3 x 200 A	3 x 5 A	1.5 VA	192T 3320		
3 x 250 A	3 x 5 A	2.5 VA	192T 3325	2.5 VA	192T 3425
3 x 300 A	3 x 5 A			3.75 VA	192T 3430
3 x 400 A	3 x 5 A			5 VA	192T 3440
3 x 500 A	3 x 5 A			5 VA	192T 3450
3 x 600 A	3 x 5 A			5 VA	192T 3460

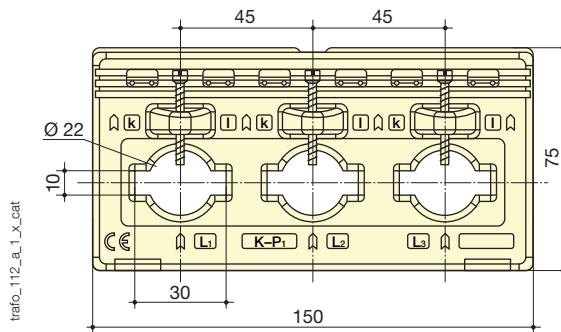
(1) Secondary 1 A: on request.

Dimensions

TCB3 18-20



TCB3 22-30



Three-phase bar or cable-through CT	TCB3 18-20	TCB3 22-30
Ø cable (mm)	18	22
Bar	20 x 5	30 x 10
H x W x D (mm)	115 x 65 x 37	150 x 75 x 37
DIN-rail mounting	no	no

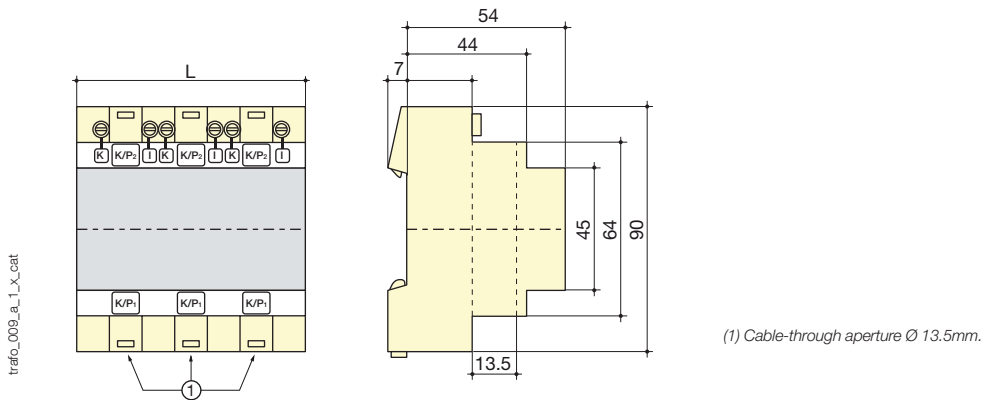
References

Primary	Secondary ⁽¹⁾	TCA 13 - 3P	
		Class 1	Reference
3 x 50 A	5 A	1 VA	192T 1905
3 x 60 A	5 A	1.25 VA	192T 1906
3 x 75 A	5 A	1.5 VA	192T 1907
3 x 80 A	5 A	1.5 VA	192T 1908
3 x 100 A	5 A	2.5 VA	192T 1910
3 x 125 A	5 A	2.5 VA	192T 1912
3 x 150 A	5 A	2.5 VA	192T 1915
3 x 160 A	5 A	2.5 VA	192T 1916

(1) Secondary 1 A: on request.

Dimensions

TCA 13 – 3P



Number of modules	Front degree of protection	Terminal block degree of protection	W (mm)	Mounting
6	IP65	IP20	105	35 mm DIN-rail

Current transformers

Measurement devices

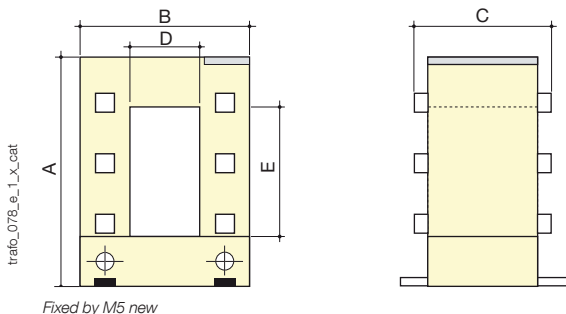
from 5 to 5000 A

Split-core CT

References

Primary	Secondary	TO 23			TO 58			TO 812			TO 816	
		Class 1	Class 3	Reference	Class 0.5	Class 1	Reference	Class 0.5	Class 1	Reference	Class 0.5	Reference
100 A	5 A		1.25 VA	192T 4601								
150 A	5 A		1.5 VA	192T 4602								
200 A	5 A		2.5 VA	192T 4603								
250 A	5 A	1.5 VA		192T 4604		1.5 VA	192T 4625		1.5 VA	192T 4725		
300 A	5 A	3.75 VA		192T 4605		2.5 VA	192T 4630		2.5 VA	192T 4730		
400 A	5 A	5 VA		192T 4606	1 VA		192T 4640		2.5 VA	192T 4740		
500 A	5 A				2.5 VA		192T 4650	2.5 VA		192T 4750		
600 A	5 A				2.5 VA		192T 4660	2.5 VA		192T 4760		
750 A	5 A				2.5 VA		192T 4675	2.5 VA		192T 4775		
800 A	5 A				2.5 VA		192T 4680	2.5 VA		192T 4780		
1000 A	5 A				5 VA		192T 4610	5 VA		192T 4710	10 VA	192T 4810
1250 A	5 A							7.5 VA		192T 4712	10 VA	192T 4812
1500 A	5 A							7.5 VA		192T 4715	10 VA	192T 4815
1600 A	5 A										10 VA	192T 4814
2000 A	5 A										10 VA	192T 4820
2500 A	5 A										10 VA	192T 4825
3000 A	5 A										15 VA	192T 4830
4000 A	5 A										15 VA	192T 4840
5000 A	5 A										15 VA	192T 4850

Dimensions



Dimensions (mm)

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
TO 23	106	93	58	23	33
TO 58	158	125	58	55	85
TO 812	198	155	58	85	125
TO 816	243	195	79	85	165

Split-core CT	TO 23	TO 58	TO 812	TO 816
H x W x D (mm)	106 x 93 x 58	158 x 125 x 58	198 x 155 x 58	243 x 195 x 75

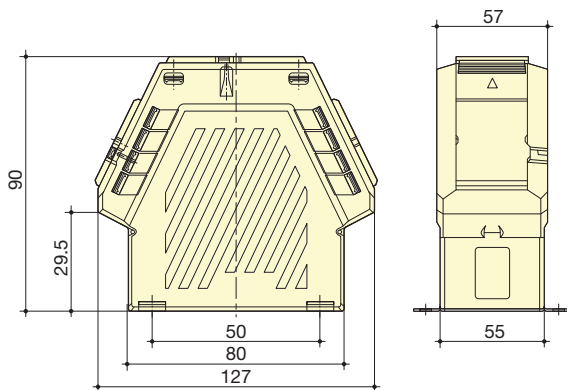
Summation CT

Reference

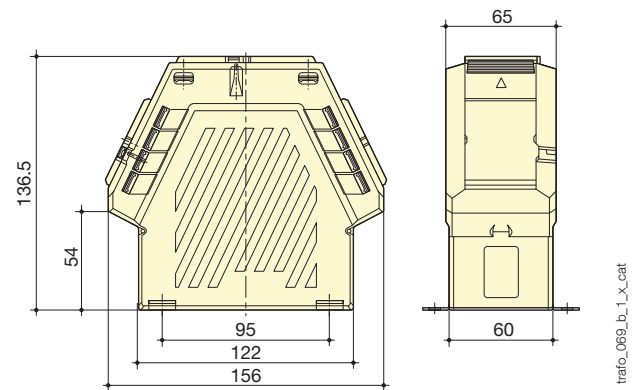
Primary	Secondary	BSA 02 Reference	BSA 03 Reference	BSA 04 Reference
5 + 5/5 A	5 A	192T 0802		
5 + 5 + 5/5 A	5 A		192T 0803	
5 + 5 + 5 + 5/5 A	5 A			192T 0904

Dimensions

BSA 02 et BSA 03



BSA 04



Summation CT	BSA 02	BSA 03	BSA 04
H x W x D (mm)	90 x 127 x 57	90 x 127 x 57	136.5 x 156 x 65
DIN-rail mounting	no	no	no



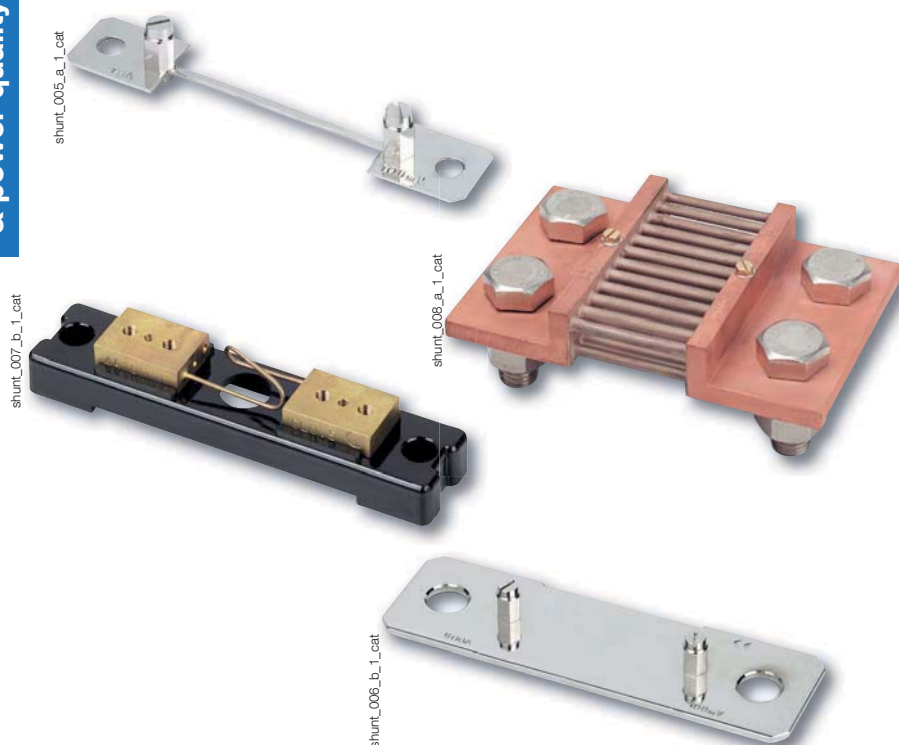
Measurement shunts

Measurement devices

Metering, monitoring
& power quality

Composition of the range

> 20 ratings available from 1 to 6000 A, with 100 mV output.



Function

SOCOMEc shunts provide indirect measurement of direct current by creating a standardised voltage drop.

Characteristics

- Voltage drop: 100 mV for nominal rating.
- Accuracy class: 0.5.
- Permanent overload: 1.2 In.
- 10 In / 5s rating \leq 500 A
- 5 In / 5s rating 600 to 1500 A
- 2 In / 5s rating \geq 2500 A

References

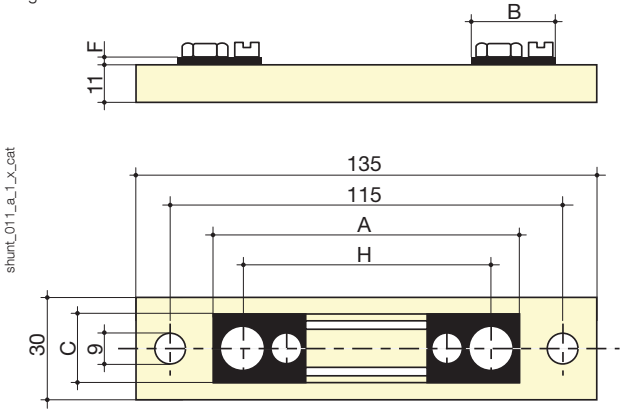
Rating ⁽¹⁾	Secondary voltage drop	DIN series Reference
1 A	100 mV	192S 2101
4 A	100 mV	192S 2104
6 A	100 mV	192S 2106
10 A	100 mV	192S 2110
15 A	100 mV	192S 2112
25 A	100 mV	192S 2114
40 A	100 mV	192S 2116
60 A	100 mV	192S 2118
100 A	100 mV	192S 2120
150 A	100 mV	192S 2125
200 A	100 mV	192S 2220
250 A	100 mV	192S 2235
300 A	100 mV	192S 2230
400 A	100 mV	192S 2240
600 A	100 mV	192S 2250
1000 A	100 mV	192S 2255
1500 A	100 mV	192S 2260
2500 A	100 mV	192S 2165
4000 A	100 mV	192S 2170
6000 A	100 mV	192S 2175

(1) Other ratings : Please consult us.

Dimensions

DIN Series: 1 to 25 A

Fig. 1

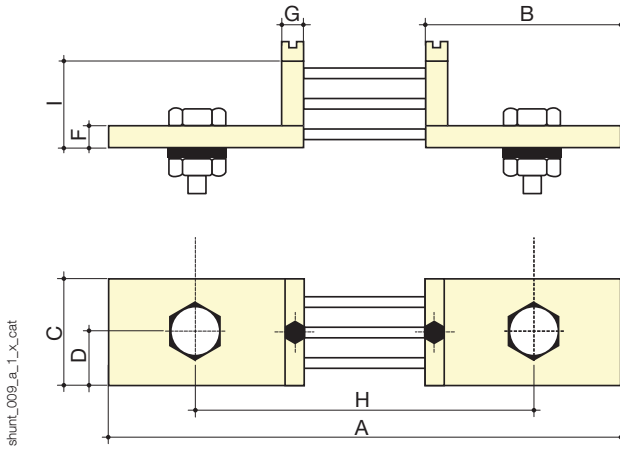


Rating ⁽¹⁾	Figure	A	B	C	D	E	F	G	H	I
1 A	1	90	28	20			8		78	
4 A	1	90	28	20			8		78	
6 A	1	90	28	20			8		78	
10 A	1	90	28	20			8		78	
15 A	1	90	28	20			8		78	
25 A	1	90	28	20			8		78	
40 A	2	123	33	20			8		103	
60 A	2	123	33	20			8		103	
100 A	2	123	33	20			8		103	
150 A	2	123	33	20			8		103	
200 A	2	168	55	30	15		10	10	128	30
250 A	2	168	55	30	15		10	10	128	30
300 A	2	168	55	40	20		10	10	128	30
400 A	2	168	55	40	20		10	10	128	30
600 A	2	168	55	40	20		10	10	128	30
1000 A	2	188	65	60	30		10	10	138	30
1500 A	3	188	65	90	21	48	10	10	138	30
2500 A	3	188	65	120	30	60	10	10	138	30
4000 A	3	188	65	120	30	60	15	10	138	60
6000 A	3	188	65	180	30	60	15	10	138	60

(1) Connection: 2 M5 screws x 8 and 2 washers Ø 5.3 mm.

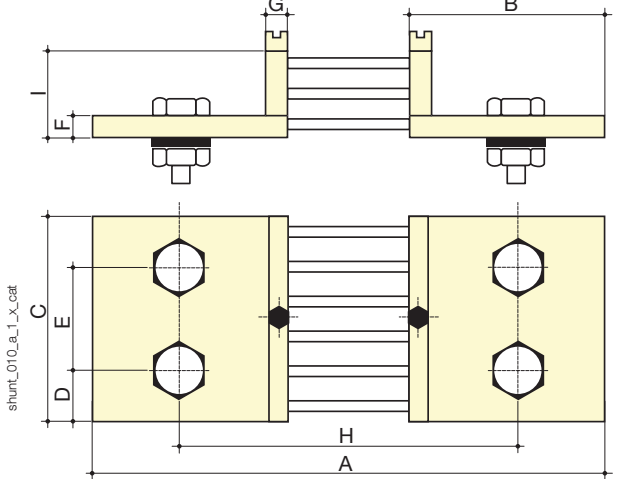
DIN Series: 40 to 1000 A

Fig. 2



DIN Series: 1500 to 6000 A

Fig. 3





Other products

Measurement devices

Metering, monitoring & power quality

PTI: CT automatic short-circuiter



Use

This device provides automatic short-circuiting of the CT : if the measuring circuit is opened.

Conformity to standards

- > NF C 15-100 article 473.1.4-556.3.
- > GAM EG 13.C (military standard).

Other regulations

- > Decree n° 88-1056 from 14-11-88: protection of workers.
- > Complies with the Mines and Quarries decree n° 91-986.

References

Rating (A)	Trigger voltage	Operating frequency	Max. differential voltage	Reference
5	21 VAC	45 ... 400 Hz	600 VAC	4990 0521
5	25 VAC	45 ... 400 Hz	600 VAC	4990 0525 ⁽¹⁾

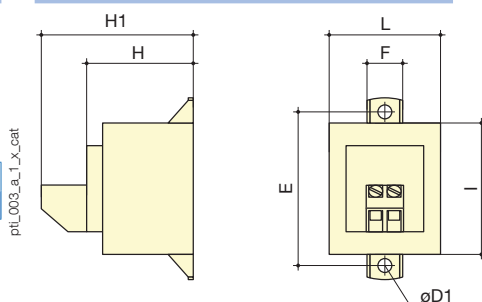
(1) DCN approved (French State Naval Construction Company).

Characteristics

Case degree of protection	IP55
Terminal protection degree	IP20
Connection cross-section	2.5 mm ²
Weight	82 g

Rating (A)	D1	E	F	H	H1	I	L
5	4.2	47	9.6	32	44	41	34.7

Dimensions



Bar or cable-through saturable transformer TCS 30 - 40

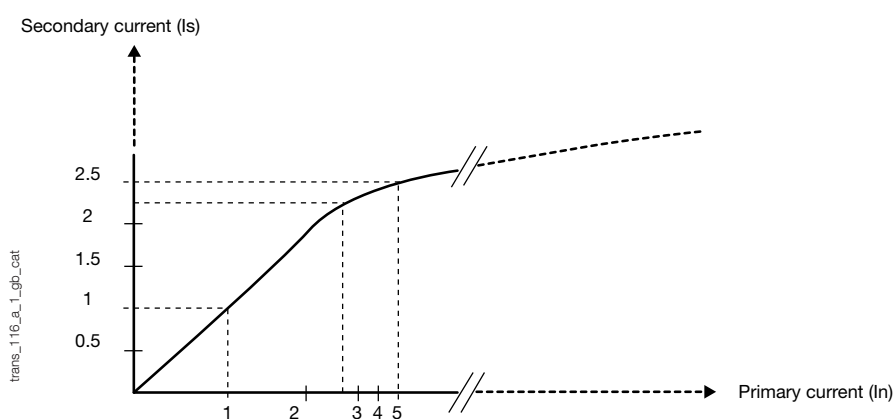


Use

The protection transformers are used for thermal relays. They protect the low power terminal relays against the motor inrush current.

Available in primary wound version for current between 1 to 75 A - (1 A secondary, 2 VA, Cl. 1). Please consult us.

Saturation curve



References

Rating (A)	Secondary	Class 1	Reference
100	1 A	2	192T 0710
150	1 A	2	192T 0715
200	1 A	2	192T 0720
300	1 A	2	192T 0730
400	1 A	2	192T 0740
500	1 A	2	192T 0750

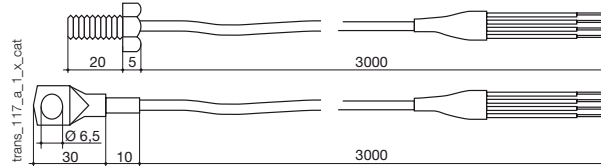
Sensor PT100 - screw type

- Element sensitivity as per standard IEC 751 class A.
- 4 wire mounting.
- 3 meter length output of Teflon isolated cable.
- Tolerance class A:
 - Accuracy at +50°C: $\pm 0,14$ °C,
 - Accuracy at 0 °C: $\pm 0,13$ °C,
 - Accuracy at +50 °C: $\pm 0,25$ °C,
 - Accuracy at +100 °C: $\pm 0,26$ °C,
 - Accuracy at +150 °C: $\pm 0,33$ °C.

References

Products	Reference
Temperature sensor PT100 - M6 screw type	4825 0208
Temperature sensor PT100 - eyelet type	4825 0209

Dimensions

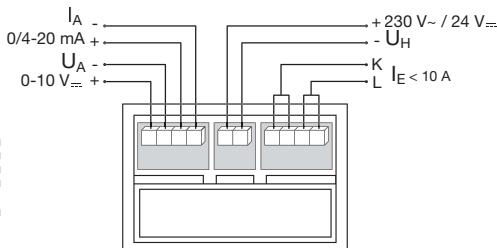


Transformer with integrated converter (CTA-VA)



Compact measurement converter with cable-through transformer ($\varnothing 27$ mm) or bar transformer (40 x 10 mm).

- Input:
 - Direct Connection 0 to 10 A,
 - CT primary of 40 to 800 A (self-supplied)
 - CT primary of 15 to 800 A (auxiliary supply)
- Output:
 - 0-20 mA, 0-10 V (type CTA-VA)
 - 4-20 mA and 0-10 V (type CTA-VA4).
- Self-supplied or auxiliary power supply 24 VDC or 230 VAC.
- Dimension: 135 x 80 x 50 mm.



References

Primary	0-20 mA / 0-10 VDC Self supplied	0-20 mA / 0-10 VDC 230 VAC	0-20 mA / 0-10 VDC 24 VDC	4-20 mA / 0-10 VDC 230 VAC	4-20 mA / 0-10 VDC 24 VDC
	Reference	Reference	Reference	Reference	Reference
1 A	192Y 0401	192Y 0501	192Y 0801	192Y 0601	on request
5 A	192Y 0402	192Y 0502	192Y 0802	192Y 0602	192Y 0902
10 A		192Y 0503	192Y 0803	192Y 0603	on request
15 A		192Y 0504	192Y 0804	192Y 0604	192Y 0904
20 A		192Y 0505	on request	192Y 0605	192Y 0905
25 A		on request	on request	192Y 0606	192Y 0906
30 A		192Y 0507	192Y 0807	192Y 0607	192Y 0907
40 A	192Y 0408	192Y 0508	on request	192Y 0608	192Y 0908
50 A	192Y 0409	192Y 0509	192Y 0809	192Y 0609	192Y 0909
60 A	192Y 0410	192Y 0510	on request	192Y 0610	192Y 0910
75 A	192Y 0411	192Y 0511	192Y 0811	192Y 0611	192Y 0911
100 A	192Y 0412	192Y 0512	192Y 0812	192Y 0612	192Y 0912
150 A	192Y 0415	on request	192Y 0815	192Y 0615	on request
200 A	192Y 0420	192Y 0520	on request	192Y 0620	on request
250 A	192Y 0425	192Y 0525	192Y 0825	192Y 0625	192Y 0925
300 A	192Y 0430	192Y 0530	192Y 0830	192Y 0630	192Y 0930
400 A	192Y 0440	192Y 0540	192Y 0840	192Y 0640	192Y 0940
500 A	192Y 0450	192Y 0550	192Y 0850	192Y 0650	on request
600 A	192Y 0460	192Y 0560	on request	on request	192Y 0960
750 A	192Y 0475	on request	192Y 0875	192Y 0675	192Y 0975
800 A	192Y 0480	192Y 0580	192Y 0880	192Y 0680	192Y 0980

Voltage transformer BTV 25



Applications

Measurement and conversion of the input value read at the primary of a transformer in a directly proportional voltage signal.
BTV 25 products are voltage transformers.

Recommendation

Voltage transformers are used specifically for supplying measurement equipment, therefore it is not recommended to connect other components which could affect accuracy. This is due to the effect of the phase shift error. If the consumption is greater than 25 VA, another transformer must be added.

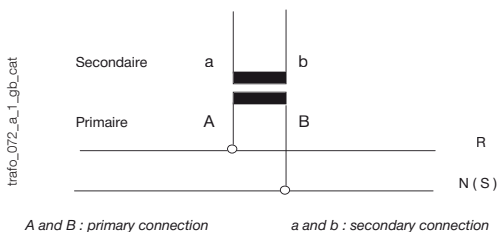
Characteristics

Accuracy class	1 %
Dielectric quality	3 kV for 1 min.
Operating frequency	50 - 60 Hz
Permanent overload	1.2 U _n

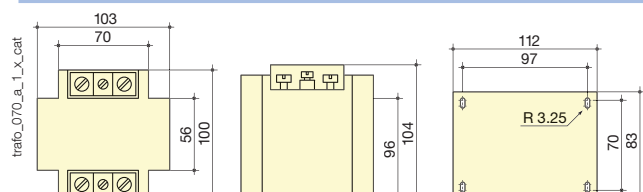
References

Primary	Secondary	Power	Reference
230 VAC	100 VAC	25 VA	192M 2020
400 VAC	100 VAC	25 VA	192M 2030
440 VAC	100 VAC	25 VA	192M 2044
500 VAC	100 VAC	25 VA	192M 2050
600 VAC	100 VAC	25 VA	192M 2060
660 VAC	100 VAC	25 VA	192M 2066
800 VAC	100 VAC	25 VA	Please consult us

Connection



Dimensions





Other electrical measurement devices

Measurement devices

Transducers



trans_071_a_2_cat

They provide conversion of an AC electrical value (A, V, Hz, Cos phi, W, Var) into a DC signal, with standardised current or voltage.

They are available in surface-mount casings (CS range).

These devices are designed for DIN rail or back plate mounting.

Type CS transducers are available in two sizes:

- 75 mm for current, voltage and frequency converters,
- 150 mm for power or three-phase converters.

Consult us.

Modular transducers



trans_076_a_2_cat

Available in:

- 3-DIN module housings (52.5 mm) for current, voltage and frequency converters,
- 6-DIN module housings (105 mm) for current (output 4-20 mA), voltage (output 4-20 mA) converters,
- 9-DIN module housings (157.5 mm) for power or three-phase converters.

Consult us.

Analogue meters



freq_003_a_3_cat

freq_002_a_1_cat

phase_002_b_3_cat

amper_027_a_1_cat

amper_003_a_2_cat

SOCOMEc ferromagnetic ammeters and voltmeters measure the AC current/voltage of any electrical circuit. SOCOMEc vibrating reed or needle type frequency meters have a converter either integrated or in a separate casing and measure the frequency of any electrical circuit.

The wattmeters, varmeters and phase-meters consist of an analogue meter and a separate converter. They are available in 3 types of casing: Rotex round barrel model in 72 or 96, in a DIN 48 to 144 body or a modular casing (3 modules).

With pointer deflections of 90° and 240°, they can be flush-mounted into cubicles, enclosures or other equipment.

Consult us.

Selector switches



Voltmeter and ammeter switches that allow phase selection on a three-phase circuit for voltage and current measurement.

They are available in three different casings:

- for screw mounting,
- with a central \varnothing 22 mm mounting,
- for DIN rail mounting.

Consult us.

Digital meters



They measure all types of electrical values (A, V, Hz, Cos phi, P, Q...).

The range:

- 2 different types of casing: rectangular or square:
 - 2 sizes of rectangular casing,
 - 2 sizes of square casing.
- direct measurement or connection to a current or voltage transformer,
- 2000-point (3.5 digits) or 20000-point (4.5 digits) display,
- possibility of having 2 or 3 different types of measurement in the same square casing (AAA-VVV-AVF...),
- multi-indicator version,
- RMS-value.

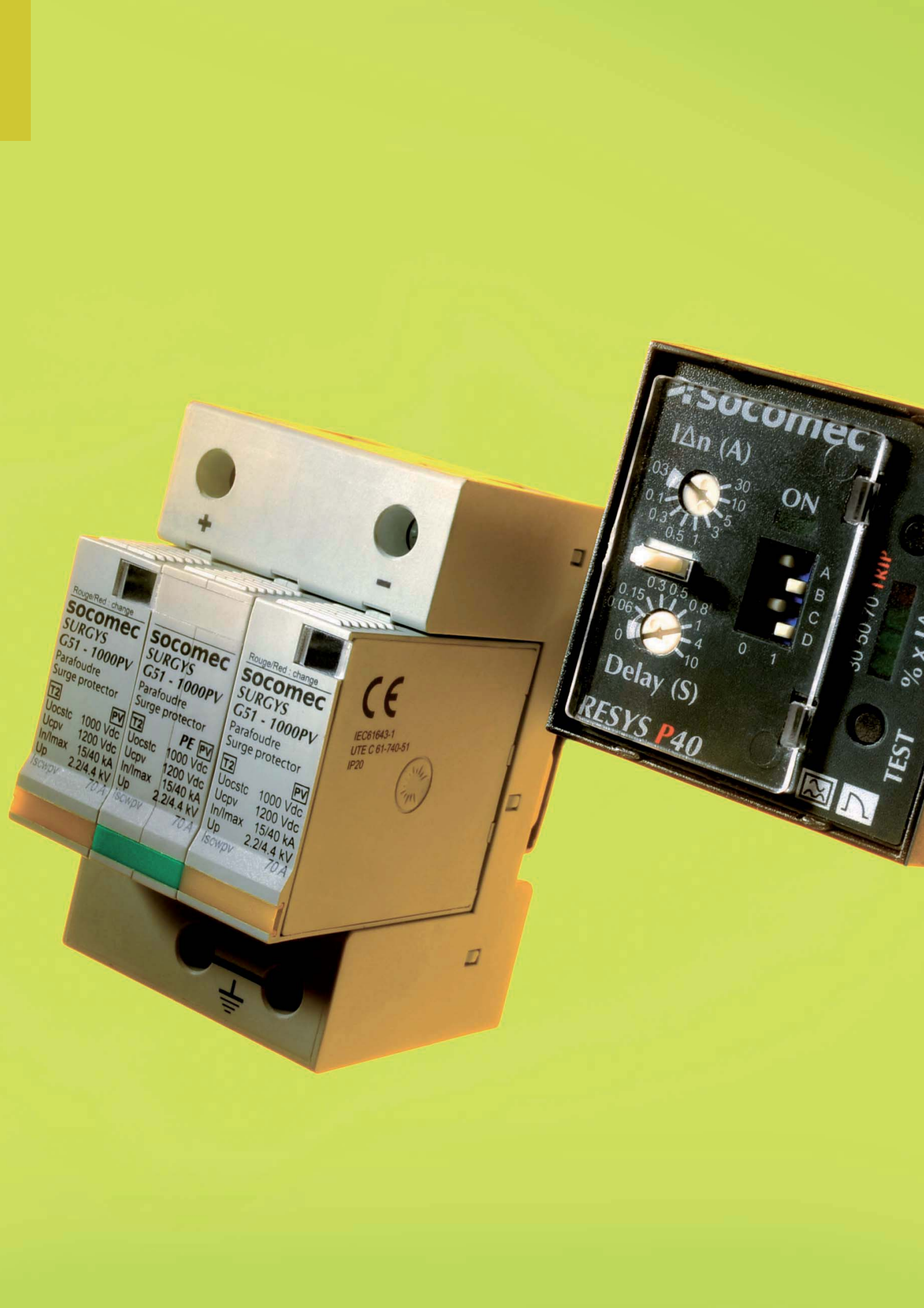
Consult us.

Hour counters



Often combined with analogue meters in an electrical panel, hour counters count the total operating time of machines or electrical equipment.

Consult us.



Rouge/Red : change
socomec
SURGYS
G51 - 1000PV
Parafoudre
Surge protector

socomec
SURGYS
G51 - 1000PV
Parafoudre
Surge protector

Rouge/Red : change
socomec
SURGYS
G51 - 1000PV
Parafoudre
Surge protector

T2
Uocstc 1000 Vdc
Ucpv 1200 Vdc
In/lmax 15/40 kA
Up 2,2/4,4 kV
Iscwpv 70A

PE PV
Uocstc 1000 Vdc
Ucpv 1200 Vdc
In/lmax 15/40 kA
Up 2,2/4,4 kV
Iscwpv 70A

T2
Uocstc 1000 Vdc
Ucpv 1200 Vdc
In/lmax 15/40 kA
Up 2,2/4,4 kV
Iscwpv 70A

CE
IEC61643-1
UTE C 61-740-51
IP20

socomec

IΔn (A)

0.03 0.1 0.3 0.5 1 3 5 10 30

ON

Delay (S)

0.06 0.15 0.3 0.5 0.8 1 4 10

A B C D
0 1

RESYS P40

50 50 70 1 kV
TEST

Electronic protection

Effective protection for your electrical installation	p. 510
Differential protection selection guide	p. 512
SURGYS surge protection selection guide	p. 514

Differential protection



Protection against overvoltages



Services & Technical Assistance: second nature!

For further information, see page 8.



CORPO 213A

Effective protection for your electrical installation

All electrical installations, particularly those which incorporate sensitive receivers, must be appropriately protected or monitored against indirect contact, earth leakage currents, short circuits or even temporary voltage surges.

In the section titled 'Electronic protection', we have grouped together all the devices which protect your installation against these various hazards:

- **RESYS earth leakage relays**
Please refer to our "Differential protection" selection guide *p. 512*.
- **SURGYS surge arresters**
Please refer to our "Protection against overvoltages" selection guide *p. 514*.

With long-term experience in industry and complete knowledge of installation standards, SOCOMEC guarantees much more than the supply of high-performance products. Our expertise extends to services such as:

- audits of your LV installation,
- defining protection requirements,
- perfect integration of products in your electrical distribution system,
- commissioning,
- product training and related installation standards,
- provision of turnkey supervision solutions.

Contact us now to see how we can help with your project.

Important:

Sound knowledge of your electrical network is essential to ensure the successful outcome of your protection project.

In fact, the choice of electronic protection products and their place of installation depend on:

- the type of the supply source,
- the length of the conductors,
- the type and nature of the electrical receivers connected to the network.

Services & Technical Assistance: Our expertise at your service.

We will help you design your protection solution, guaranteeing perfect integration of the products in your operating environment.

For further information, please contact your nearest SOCOMEC branch.

Differential protection: a RESYS solution for each application



Motor output application.



Industrial site application.



Battery technical plant application.

Differential relays fulfil two essential functions:

- **Protection against indirect contact** in the following neutral systems:
 - TT (systematically),
 - TNS and IT on second fault (with long cabling systems),
 - IT (with distinct LV earthing points).
- **Prevention/signalling** in the case of TNS or TT neutral systems.

In both cases, it is necessary to correctly identify the type of load present on your network and to select the appropriate differential relay.

There are three types of relay:

- **type AC** for loads which can generate a sinusoidal alternating earth leakage current,
- **type A** for loads which can generate a pulsating earth leakage current,
- **type B** for loads which can generate a continuous earth leakage current.

The combinations of core balance transformers and differential relays offered by SOCOMEC are designed to meet the requirements of every application:

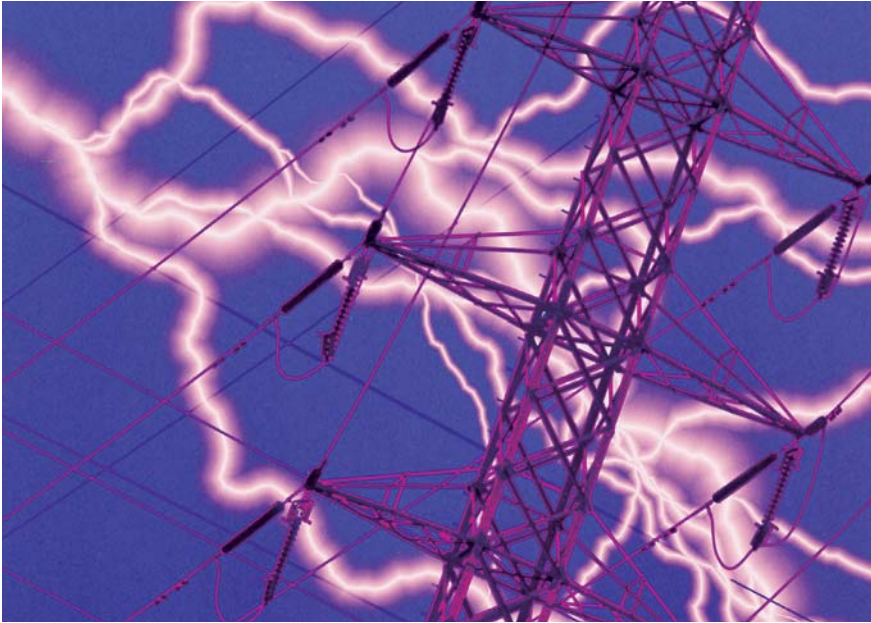
- disturbed network due to variable speed drives, dimmers, etc.: RESYS relay type A or B.
- presence of pulsed components: RESYS relay type A,
- presence of direct current circuits: RESYS relay type B.

Where type AC differential relays are not suitable for industrial applications, SOCOMEC offers type A and B relays.

Did you know?

You can identify the different categories of load present on our website: www.socomec.com/en/resys

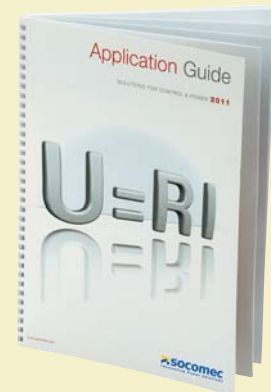
Protection against overvoltages: SURGYS technology and performance



SITE 201 A

Did you know?

To identify the selection and installation criteria for lightning rods, you can consult our Application Guide in the section "Protection against transient overvoltages".



p. 14

SOCOMEC's **SURGYS surge protection device** ensures the electrical receivers are protected against temporary voltage surges from various sources:

- indirect effects of a lightning strike,
- operations on an industrial network,
- disruptive loads (switched-mode power supplies, inductive loads, etc.).

Lightning rods are selected on the basis of normative criteria (e.g. minimum I_n value) and installation-specific constraints (e.g. high lightning density with use of a corresponding discharge current).

Designed for compatibility with all types of electrical installation

SURGYS surge protection devices cover both strong and weak currents. Different versions are available depending on:

- the type or class of tests (1, 2, 3 or weak currents),
- the operating voltage (U_o),
- the network configuration (single-phase / three-phase with or without neutral / DC),
- the level of discharge currents (I_{imp} , I_{max} , I_n),
- the protection level (U_p),
- the protection technology (varistors, arresters, clipping diodes),
- the functions (differential mode, pluggability, remote signalling, etc.).

The benefits of varistor technology:

The majority of SURGYS surge protection devices are based on varistor technology. The use of varistors offers numerous benefits, including the flow of a significant discharge current and the absence of follow current. The absence of follow current is a major benefit as it is responsible for tripping the installation's residual differential protection devices. In addition, some versions of the SURGYS protection devices (G40-FE, D40 and E10 in differential mode and the weak current range) use other technology (varistor/arrester or arrester/diode combinations) which can significantly improve the level of protection.



Selection Guide



Differential protection

Electronic protection

Which need?




Which application?

Applications	Motor load break	
	 new	 new
Model	RESYS M40 <i>p. 516</i>	RESYS P40 <i>p. 520</i>
Characteristics		
Type of protection DDR	A type	A type
Tripping threshold	30 mA ... 30 A	30 mA ... 30 A
Time setting	0 ... 10 s	0 ... 10 s
Automatic reclosing function		
Pre-alarm function	•	•
Output contact	2	2
Case	Modular	Panel mounting
Dimensions (mm)	44	48x48
Accessories		
Core balance transformers		
Circular closed toroids (Δ IC)	<i>p. 522</i>	•
new Rectangular split-core toroids (WS)	<i>p. 522</i>	•
Rectangular closed toroids (WR)	<i>p. 522</i>	•



Which type of protection?

	Isolated sites
	
	RESYS M40R <i>p. 518</i>
	A type
	30 mA ... 30 A
	0 ... 10s
	•
	2
	Modular
	44
	•
	•
	•



Selection Guide



Protection against overvoltages
SURGYS surge arresters

Electronic
protection

Which
application?



Which type of
network?

Applications	Photovoltaic sites	Sites equipped with surge arresters			
Type of protected network	PV DC network	Top of installation	Top of installation	Main switchboard equipped with sensitive products	Main switchboard equipped with sensitive products
Model	new  G51-PV <i>p. 526</i>	new  G100-F <i>p. 528</i>	 G100-F <i>p. 530</i>	new  G50-FE <i>p. 532</i>	 G50-FE <i>p. 534</i>

Protection

Type	Type 2	Types 1 and 2	Type 1	Types 1 and 2	Types 1 and 2
Mode	MC / MD (*)	MC	MC	MC	MC / MD

Characteristics

	500 - 600 - 800 - 1000 - 1500 VDC (*)	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC
Nominal voltage U_n	500 - 600 - 800 - 1000 - 1500 VDC (*)	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC
Neutral system		TT, TN, IT	TT, TN, IT	TT, TN, IT	TT, TN
Voltage U_c	600 - 720 - 960 - 1200 - 1800 VDC (*)	400 VAC	400 VAC	400 VAC	400 VAC
Level of protection U_p	2.2 - 2.8 - 2 - 2.2 - 4.5 kV	2 kV	2.5 kV	1.3 kV	1.5 kV
Nominal discharge current I_n	15 kA	40 kA	50 kA	12.5 kA	20 kA
Max. discharge current I_{max}	40 kA	100 kA	140 kA	50 kA	40 kA
Discharge current I_{mp} (per pole)		25 kA	25 kA	12.5 kA	15 kA
Plug-in modules	•	•		•	
Remote signalling	(*)	•	•	•	•

MC: Common Mode with respect to earth.







MD: Differential Mode between active conductors.

(*) specific to the reference

Which model?

Which level of protection?

Which characteristics?

Sites exposed to frequent lightning strikes or industrial networks subject to operational voltage surges		Sensitive electrical receivers or loads		Strategic installations subject to lightning strikes		
				Protection of RS422/485 connection, T2 digital phone connection, Ethernet 10baseT connection	Bus protection (Profibus, Fieldbus, LONworks, Interbus...)	Protection of analogue line, modem, autocom, phone alarm, ADSL
						
G70 p. 536	D40 p. 538	E10 p. 540	RS-3 p. 542	mA-3/mA-3x2 p. 542	TEL-3 p. 542	
Type 2	Type 2	Types 2 and 3	Low currents	Low currents	Low currents	
MC	MC / MD (*)	MC / MD (*)	MC / MD	MC / MD	MC / MD	
230 / 400 VAC	230 / 400 VAC	230 / 400 VAC (*)	6 V	48 V	150 V	
TT, TN, IT	TT, TN, IT (*)	TT, TN, IT (*)				
400 VAC	255 - 400 VAC (*)	255 - 400 VAC (*)	8 V	53 V	170 V	
1.8 kV	1.25 - 1.8 kV (*)	0.9 - 1.5 kV (*)	25 V	70 V	220 V	
30 kA	20 kA	5 kA	5 kA	5 kA	5 kA	
70 kA	40 kA	10 kA	20 kA	20 kA	20 kA	
•	•	•	•	•	•	
•	•	•				



RESYS M40

Type A differential relays
for motor load break

Electronic
protection

new



resys_083_a_1_cat

Function

RESYS M40 earth leakage relays associated with a remote trip breaking device (automatic power breaking), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

Advantages

Fully configurable

- 2 relays with configurable function (alarm or pre-alarm at 50% $I_{\Delta n}$)
- Adjustment of $I_{\Delta n}$ from 0.03 to 30 A.
- Time delay 0 to 10 s.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.

Tripping accuracy by TRMS measurement.

Improves immunity to nuisance tripping.

Instantaneous display of permanent leakage currents.

The LED bargraph provides a real-time display of fluctuations in leakage currents.

Compact modular design

44 mm in width, the unit allows easy integration into dedicated enclosures. The adjustment buttons are protected by a sealable cover, while the display of available alarms is displayed directly on the front face of the device.

Improved immunity to EMC interferences

The device has new electronics which improve electromagnetic compatibility.

The solution for

- > Processes.
- > Manufacturing.
- > Oil, gas and petrochemistry.
- > Energy production.

Strong points

- > Fully configurable.
- > Measurement accuracy by TRMS (True Root Mean Square).
- > Instantaneous display of permanent leakage currents.
- > Compact and modular case with LED bargraph.
- > Improved immunity to EMC interferences.

Conformity to standards

- > IEC 60755
- > IEC 60947-2
- > IEC 62020
- > IEC 60364



Approvals and certifications⁽¹⁾



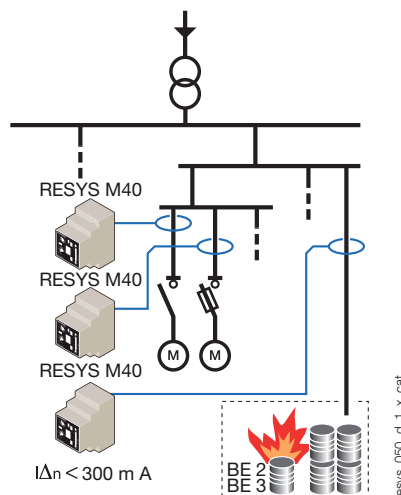
(1) Product reference on request.

Applications

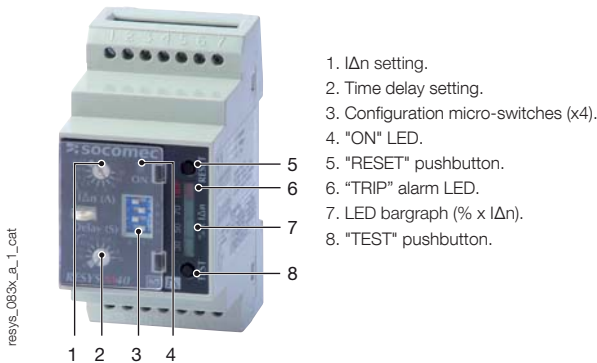
Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production.

Protection against fire or explosion risks

The use of Residual Differential Devices (with adjustment $I_{\Delta n} \leq 300$ mA) provides protection against the risk of fire or explosion generated by tracking currents to earth, in areas classed as BE2 or BE3 respectively. This protection is mandatory in TT, TN and IT neutral systems.



Front panel



General characteristics

- RESYS M40 with 2 configurable relays:
 - either 2 alarm relays,
 - or 1 alarm relay and 1 pre-alarm relay (50 % $I_{\Delta n}$).
- Adjustment sensitivity from 0.03 mA to 30 A.
- Time delay 0 to 10 s.
- Tripping accuracy by TRMS measurement.
- Automatic instantaneous tripping at 30 mA.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.
- Automatic permanent relay-toroid connection test.
- Sealable cover.

Characteristics

Auxiliary power supply U_s	
Frequency	47 ... 63 Hz
AC operating zone	0.8 ... 1.15 U_s
DC operating zone	0.8 ... 1.05 U_s
Max. consumption	6 VA (AC) / 5 W (DC)
Insulation (according to IEC 60664-1 standard)	
Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230/400 VAC)
Degree of pollution	Class 3
Threshold values	
$I_{\Delta n}$ setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % $I_{\Delta n}$
Domain of network frequency	15 ... 400 Hz
Time delay setting	0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 s
PRE-ALARM relay tripping	50 % $I_{\Delta n}$
Hysteresis of the PRE-ALARM relay	20 % $I_{\Delta n}$

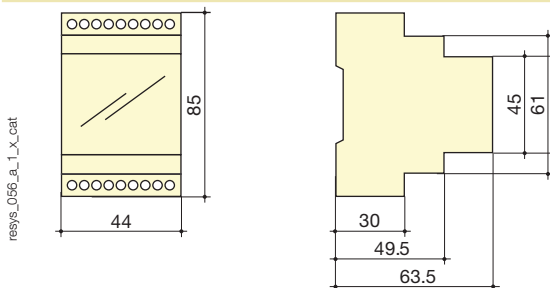
Alarm	
Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	manual by pushbutton / using terminal

Output contacts	
Number of contacts	2
Type of ALARM 1 contact	250 VAC - 8 A - 2000 VA
Type of ALARM 2 or PRE-ALARM contact	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	positive / negative security ⁽¹⁾
ALARM 2 or PRE-ALARM operating mode	positive security ⁽¹⁾
Factory setting of ALARM 1 operating mode	negative security
Factory setting of ALARM 2 operating mode	positive security

(1) Negative security: relay activated in case of alarm / Positive security: relay not activated in case of alarm.

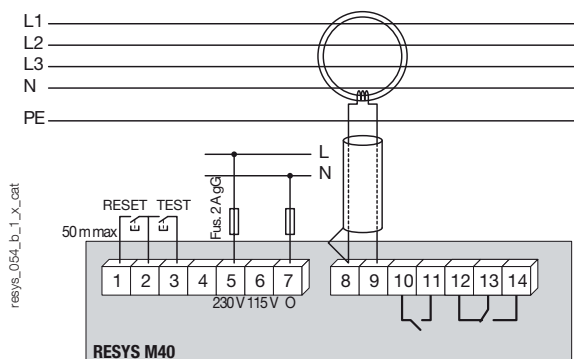
Operating conditions	
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

Case



Type	modular
Number of modules	2.5
Dimensions W x H x D	44 x 85 x 63.5
Case protection index	IP40
Terminal protection index	IP20
Rigid cable cross-section	0.2 ... 4 mm ²
Flexible cable cross-section	0.2 ... 2.5 mm ²
Weight	190 g

Terminals and connections



- 1 - 2 - 3: external pushbuttons
- 5 - 6 - 7: auxiliary power supplies U_s
- 8 - 9: SOCOMEC differential toroid connections
- 10 - 11: alarm relay 2 or pre-alarm outputs
- 12 - 13 - 14: alarm relay 1 output

Note: The earth conductor must not pass through the C.T.

For single phase applications, only the live and neutral need to be passed through the C.T.

Cabling: for distances > 1 m, use twisted pair cable between the unit and C.T. Do not connect the shield to earth.

References

Auxiliary power supply U_s⁽¹⁾	RESYS M40 Reference
115 / 230 VAC	4941 3723 ⁽²⁾
400 VAC	4941 3740 ⁽²⁾
12 ... 125 VDC	4941 3602 ⁽²⁾

(1) Other rating: Please consult us. (2) References and characteristics of closed, split core and rectangular toroids: see "Core balance transformers type A" p. 522.



RESYS M40R

Type A earth leakage relays
with automatic reclosing

Electronic
protection

new



resys_082_a_1_cat

Function

RESYS M40R earth leakage relays associated with a remote trip breaking device (automatic power breaking and reclosing), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.
- reclosing of trip breaking device after earth leakage detection and power supply breaking.

The relay recloses the system up to six consecutive times after different time intervals. If the fault is still present after the sequence of six reclosing attempts, the relay is locked in alarm mode and a manual intervention will be required.

Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production. TRMS measurement avoids repeated random tripping and the bargraph allows the display of permanent leakage current.

Advantages

Automatic reclosing

This function provides protection, particularly in isolated sites or for processes requiring a restart in the event of transient faults (continuity of service ensured in the absence of a maintenance team).

Fully configurable

- Adjustment of $I_{\Delta n}$ from 0.03 to 30 A.
- Time delay 0 to 10 s.

Ensures continuity of the power supply for strategic applications or in isolated sites

In the majority of cases, where the fault is not permanent, simply reclosing may resolve the situation.

Tripping accuracy by TRMS measurement.

Improves immunity to nuisance tripping.

Instantaneous display of permanent leakage currents.

The LED bargraph provides a real-time display of fluctuations in leakage currents.

The solution for

- > Power distribution (Public lighting).
- > Water treatment.
- > Processes.
- > Telecom, Datacom and broadcasting.
- > Farm buildings.

Strong points

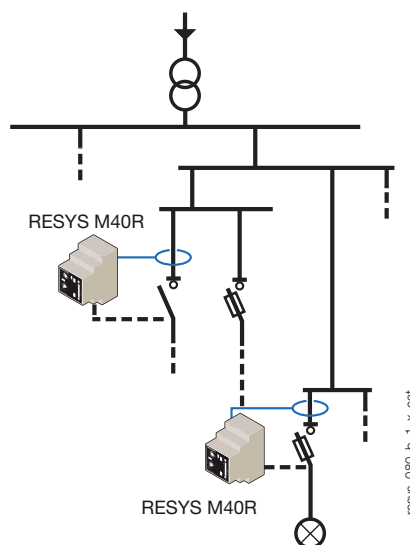
- > Automatic reclosing.
- > Fully configurable.
- > Tripping accuracy by TRMS measurement.
- > Instantaneous display of permanent leakage currents.
- > Compact and modular case with LED bargraph.

Conformity to standards

- > IEC 60755
- > IEC 60947
- > IEC 62020



Applications

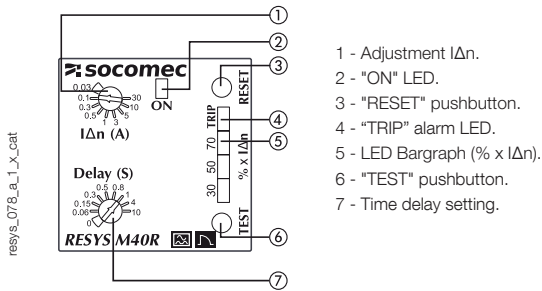


resys_080_b_1_x_cat

The RESYS M40R relay must be combined with an automatic tripping/reclosing breaking device:

- a motorised switch
- a device fitted with an undervoltage coil
- a contactor.

Front panel



- 1 - Adjustment $I\Delta n$.
- 2 - "ON" LED.
- 3 - "RESET" pushbutton.
- 4 - "TRIP" alarm LED.
- 5 - LED Bargraph (% $\times I\Delta n$).
- 6 - "TEST" pushbutton.
- 7 - Time delay setting.

Characteristics

Auxiliary power supply U_s	
Frequency	47 ... 63 Hz
AC operating zone	0.8 ... 1.15 U_s
DC operating zone	0.8 ... 1.05 U_s
Max. consumption	6 VA (AC) / 5 W (DC)
Insulation (according to IEC 60664-1 standard)	
Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230/400 VAC)
Degree of pollution	Class 3
Threshold values	
$I\Delta n$ setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % $I\Delta n$
Domain of network frequency	15 ... 400 Hz
Time delay setting	0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 s
Reclosing	
Nb of automatic reclosing attempts	6 max
Time delay between two reclosing	7.5 - 15 - 30 - 60 - 120 - 240 s
Reset of automatic reclosing counter (t_{CR})	15 min.

Alarm

Alarm configuration mode	automatic reset (6x max, then recording)
Reset	manual by pushbutton / using terminal

Output contacts

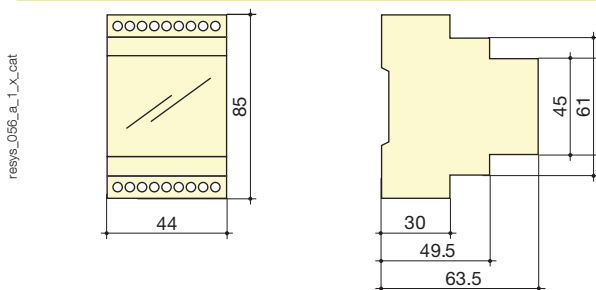
Number of contacts	2
Type of ALARM 1 contact	inverter
Type of ALARM 2 contact	simple
Characteristics contact ALARM 1	250 VAC - 8 A - 2000 VA
Characteristics contact ALARM 2	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	negative security ⁽¹⁾
ALARM 2 operating mode	positive security ⁽¹⁾

(1) Negative security: relay activated in case of alarm / Positive security: relay not activated in case of alarm.

Operating conditions

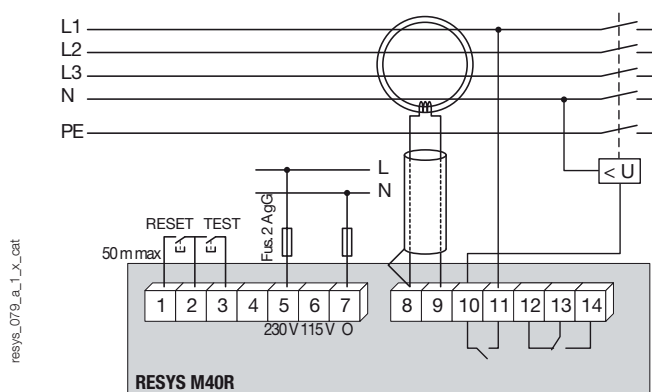
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

Case



Type	modular
Number of modules	2.5
Dimensions W x H x D	44 x 85 x 63.5
Case protection index	IP40
Terminal protection index	IP20
Rigid cable cross-section	0.2 ... 4 mm ²
Flexible cable cross-section	0.2 ... 2.5 mm ²
Weight	190 g

Terminals and connections



1 - 2 - 3: external pushbuttons

5 - 6 - 7: auxiliary power supplies U_s

8 - 9: SOCOMEC differential toroid connections

10 - 11: alarm relay 2 output

12 - 13 - 14: alarm relay 1 output

Note: The earth conductor must not pass through the C.T.

For single phase applications, only the live and neutral need to be passed through the C.T.

Cabling: for distances > 1 m, use twisted pair cable between the unit and C.T. Do not connect the shield to earth.

References

Auxiliary power supply U_s ⁽¹⁾	RESYS M40R Reference
115/230 VAC	4941 3724
400 VAC	4941 3741

(1) Other rating: Please consult us.



RESYS P40

Type A earth leakage relays
for motor load break

Electronic
protection

new



RESYS P40

Function

RESYS P40 earth leakage relays associated with a remote trip breaking device (automatic power breaking), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

Advantages

Fully configurable

- 2 relays with configurable function (alarm or pre-alarm at 50% $I_{\Delta n}$).
- Adjustment of $I_{\Delta n}$ from 0.03 to 30 A.
- Time delay 0 to 10 s.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.

Tripping accuracy by TRMS measurement.

Improves immunity to nuisance tripping.

Instantaneous display of permanent leakage currents.

The LED bargraph provides a real-time display of fluctuations in leakage currents.

Compact 48x48mm panel-mounted unit

The adjustment buttons are protected by a sealable cover, while the display of available alarms is displayed directly on the front face of the device.

Improved immunity to EMC interferences

The device has new electronics which improve electromagnetic compatibility.

The solution for

- > Process.
- > Manufacturing.
- > Oil, gas and petrochemistry.

Strong points

- > Fully configurable.
- > Tripping accuracy by TRMS measurement.
- > Instantaneous display of permanent leakage currents.
- > Compact and modular case with LED bargraph.
- > Improved immunity to EMC interferences.

Conformity to standards

- > IEC 60755
- > IEC 60947-2
- > IEC 62020
- > IEC 60364



Approvals and certifications⁽¹⁾



(1) Product reference on request.

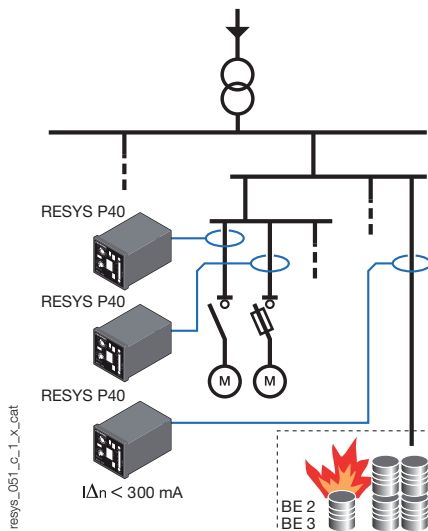
Applications

Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production.

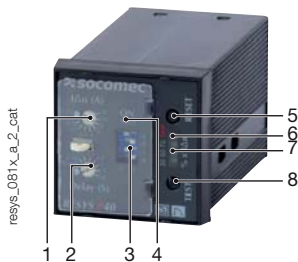
RESYS P40 are particularly suitable for insertion in electricity control panels with withdrawable compartments.

Protection against fire or explosion risks

The use of Residual Differential Devices (with adjustment $I_{\Delta n} \leq 300$ mA) provides protection against the risk of fire or explosion generated by tracking currents to earth, in areas classed as BE2 or BE3 respectively. This protection is mandatory in TT, TN and IT neutral systems.



Front panel



1. $I_{\Delta n}$ setting.
2. Time delay setting.
3. Configuration micro-switches (x4).
4. "ON" LED.
5. "RESET" pushbutton.
6. "TRIP" alarm LED.
7. LED bargraph (% $I_{\Delta n}$).
8. "TEST" pushbutton.

Characteristics

Auxiliary power supply U_s	
Frequency	47 ... 63 Hz
AC operating zone	0.8 ... 1.15 U_s
DC operating zone	0.8 ... 1.05 U_s
Consumption	6 VA (AC) / 5 W (DC)
Insulation (according to IEC 60664-1 standard)	
Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230/400 VAC)
Degree of pollution	Class 3
Threshold values	
$I_{\Delta n}$ setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % $I_{\Delta n}$
Domain of network frequency	15 ... 400 Hz
Time delay setting	0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 s
PRE-ALARM relay tripping	50 % $I_{\Delta n}$
Hysteresis of the PRE-ALARM relay	20 % $I_{\Delta n}$

Alarm

Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	manual by pushbutton / using terminal

Output contacts

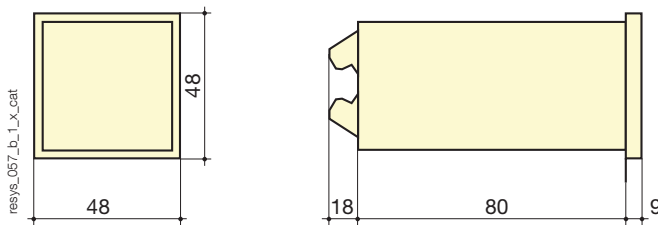
Number of contacts	2
Type of ALARM 1 contact	250 VAC - 8 A - 2000 VA
Type of ALARM 2 or PRE-ALARM contact	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	positive / negative security ⁽¹⁾
ALARM 2 or PRE-ALARM operating mode	positive security ⁽¹⁾
Factory setting of ALARM 1 operating mode	negative security
Factory setting of ALARM 2 operating mode	positive security

⁽¹⁾ Negative security: relay activated in case of alarm / Positive security: relay not activated in case of alarm.

Operating conditions

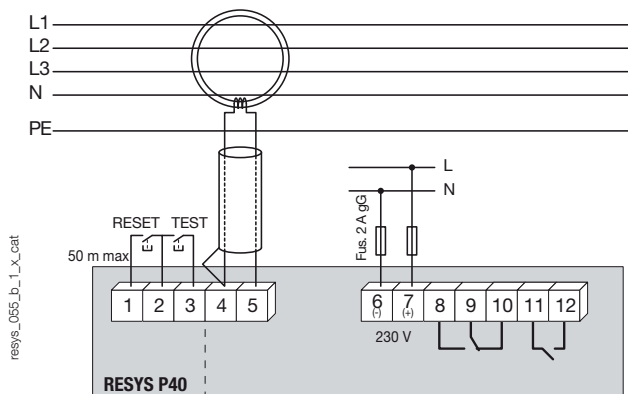
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

Case



Type	panel mounting
Dimensions W x H x D	48 x 48 x 107
Case protection index	IP40
Terminal protection index	IP20
Rigid cable cross-section	0.2 ... 4 mm ²
Flexible cable cross-section	0.2 ... 2.5 mm ²
Weight	190 g
Cutout	45 x 45 mm

Terminals and connections



- 1 - 2 - 3: external pushbuttons
- 4 - 5: SOCOMEC differential toroid connections
- 6 - 7: Auxiliary power supply U_s
- 8 - 9 - 10: alarm relay 1 output
- 11 - 12: alarm relay 2 or pre-alarm outputs

Note: The earth conductor must not pass through the C.T.
For single phase applications, only the live and neutral need to be passed through the C.T.
Cabling: for distances 1 m, use twisted pair cable between the unit and C.T.
Do not connect the shield to earth.

References

Auxiliary power supply U_s⁽¹⁾	RESYS P40 Reference
115 VAC	4942 3711 ⁽²⁾
230 VAC	4942 3723 ⁽²⁾
12 ... 125 VDC	4942 3602 ⁽²⁾

⁽¹⁾ Other rating: Please consult us. ⁽²⁾ References and characteristics of closed, split core and rectangular toroids: see "Core balance transformers type A" p. 522.

Description of accessories	Reference
Soft protection cover IP65	4942 0000



Core balance transformers - type A

Dedicated to RESYS and DIRIS A80

Electronic protection



torre_015_a_1_cat
CORE BALANCE TRANSFORMER (WR)



torre_016_a_1_cat
CORE BALANCE TRANSFORMER (WS)

new



terre_046_a_1_cat
CORE BALANCE TRANSFORMER (ΔIC)

The solution for

- > Industry.
- > Infrastructure.
- > Non critical buildings.
- > OEM.
- > Renewable energy.



Strong points

- > A complete product range.
- > A wide range of fixing systems (ΔIC).
- > A patented cable locator (ΔIC).

Conformity to standards

- > IEC 60044-1



Function

The installation of protection or signalling resources such as earth leakage protection relays involves the use of **core balance transformers**.

Active conductors pass through the aperture of the core balance transformer, providing the differential summation of vector currents which enables the detection of leakage currents.

The core balance transformers (toroids) proposed by SOCOMEC meet requirements in terms of measurement sensitivity and are suitable for earth leakage protection relays RESYS M40/P40 and DIRIS A80.

Closed (series ΔIC, WR and TFR) or split-core (series WS) types, suit all wiring configurations.

Advantages

A complete product range

- All dimensions and types are available for compatibility with any bar and cable configurations or diameters.

A wide range of fixing systems (ΔIC)

- ΔIC core balance transformers can be mounted on DIN-rail, on back-plate or directly on the cable. These products can be adapted into confined spaces with high integration constraints and provide easy and rapid cabling.

A patented cable locator (ΔIC)

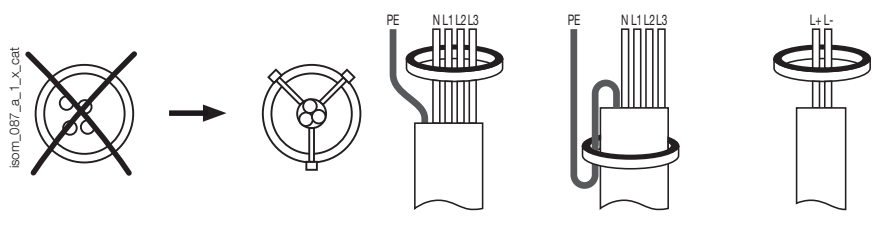
- The SOCOMEC cable locator is a patented innovation. The cable is perfectly centralised in the core balance transformer to ensure accurate measurement and enhanced immunity to network interferences. It also enables direct mounting of the core balance transformer onto the cable.

Implementation

All of the active conductors must be passed through the detection toroid's aperture. The protective conductor must pass on the outside of the toroid or pass once for each direction.

Installation limiting distortions during heavy load switching

Installation of the detection toroids



Characteristics

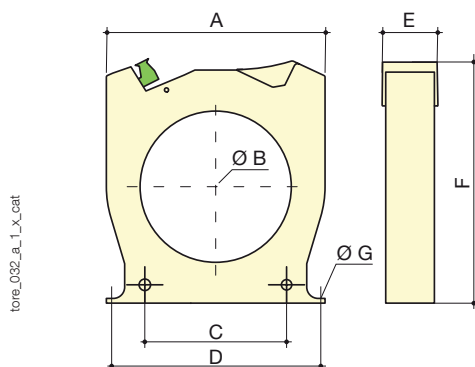
Electrical characteristics ΔIC	
Insulation coordination	according to IEC 60664-1 ⁽¹⁾
Insulation voltage	800 VAC
Rated impulse voltage	8 kV
Dielectric quality	6 kV
Degree of pollution	3
Winding ratio	600 / 1
Rated primary current	10 A
Nominal power	20 mVA
Max. accuracy class	3
Operating temperature	-40 ... +80 °C
Flammability class	UL94V-0

Electrical characteristics WR, TFR and WS series	
Insulation coordination	according to IEC 60664-1 ⁽¹⁾
Insulation voltage	690 VAC
Rated impulse voltage	8 kV
Dielectric quality	6 kV
Degree of pollution	3
Winding ratio	600 / 1
Rated primary current	10 A
Nominal power	50 mVA
Max. accuracy class	5
Operating temperature	-10 ... +55 °C
Flammability class	UL94V-0

(1) Serie W-B: please consult us

Dimensions

Closed toroids - ΔIC series

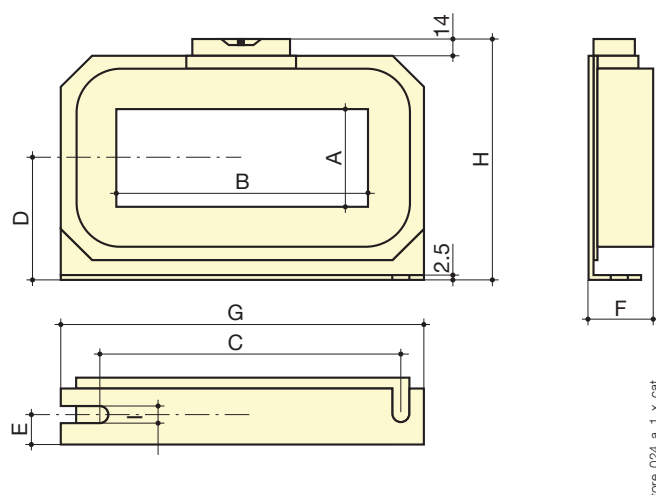


Dimensions (mm)

Type	A	B	C	D	E	F	G	Weight (kg)
$\Delta IC \text{ } \varnothing 15$	53	17.3	27.8	50	26	81	M4	0.10
$\Delta IC \text{ } \varnothing 30$	92	30	50	85	26	103.5	M4	0.13
$\Delta IC \text{ } \varnothing 50$	102.5	50	50	90	26	125	M5	0.18
$\Delta IC \text{ } \varnothing 80$	116	80	75	105	26	142.5	M5	0.22
$\Delta IC \text{ } \varnothing 120$	163	120	100	150	26	182.5	M6	0.38
$\Delta IC \text{ } \varnothing 200$	253	200	150	175 x 41.2	51	274	M6	0.88
$\Delta IC \text{ } \varnothing 300$	370	300	200	250 x 41.5	50	390	M6	1.72

- A. Width.
- B. Diameter.
- C. Distance between fixing centres.
- D. Distance between rear fixing brackets.
- E. Depth.
- F. Height.
- G. Diameter of fixing screws.

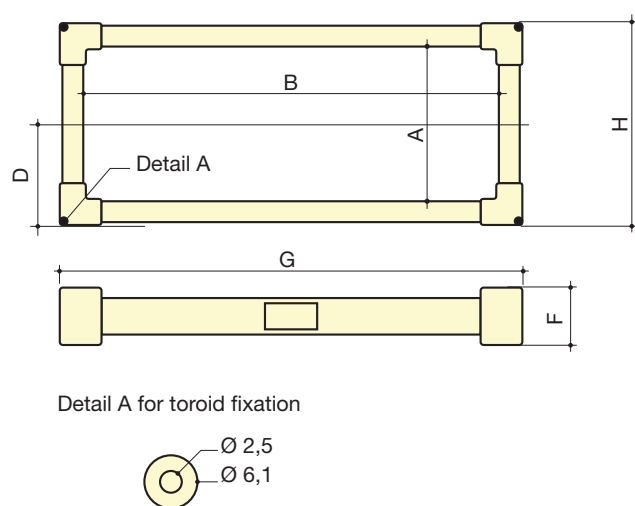
Rectangular closed toroids - WR series



Dimensions (mm)

Type	A	B	C	D	E	F	G	H	I	Weight (kg)
WR 70 x 175	70	175	225	85	22	46	261	176	7.5	2.9
WR 115 x 305	115	305	360	116	25	55	402	240	8	6.3
WR 150 x 350	150	350	415	140	28	55	460	285	8	8.2

Rectangular closed toroids - TFR series



Dimensions (mm)

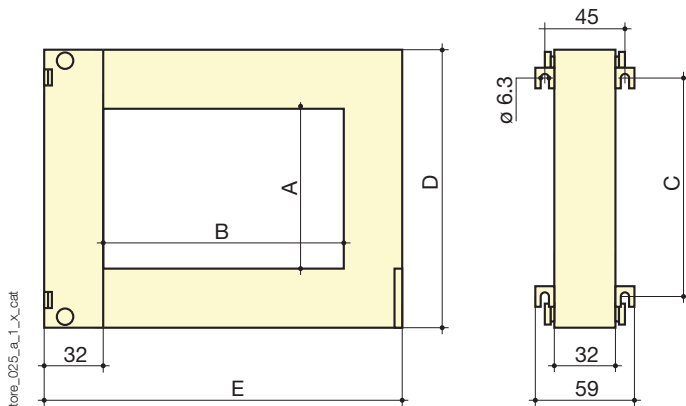
Type	A	B	D	F	G	H	Weight (kg)
TFR 200 x 500	200	500	140	62	585	285	7.2

Core balance transformers - type A

Dedicated to RESYS and DIRIS A80

Dimensions (continued)

Split- core toroids - WS series



Dimensions (mm)

Type	A	B	C	D	E	Weight (kg)
WS 50 x 80	50	80	78	114	145	0.9
WS 80 x 80	80	80	108	144	145	1.1
WS 80 x 120	80	120	108	144	185	1.4
WS 80 x 160	80	160	108	144	225	2.8

References

Closed toroids type A - ΔIC series

Type	Rated operational current I_n (A)	Toroid diameter (mm)	Reference
ΔIC Ø15	36	15	4950 6015 ⁽¹⁾
ΔIC Ø30	65	30	4950 6030 ⁽¹⁾
ΔIC Ø50	85	50	4950 6050 ⁽¹⁾
ΔIC Ø80	160	80	4950 6080 ⁽¹⁾
ΔIC Ø120	250	120	4950 6120 ⁽¹⁾
ΔIC Ø200	400	200	4950 6200 ⁽¹⁾
ΔIC Ø300	630	300	4950 6300 ⁽¹⁾

(1) Toroids for RESYS relays M40 / P40 and DIRIS A80.

Rectangular closed toroids type A - WR and TFR series

Type	Toroid diameter (mm)	Reference
WR 70 x 175	70 x 175	4795 0717 ⁽¹⁾
WR 115 x 305	115 x 305	4795 1130 ⁽¹⁾
WR 150 x 350	150 x 350	4795 1535 ⁽¹⁾
TFR 200 x 500	200 x 500	4795 2050 ⁽¹⁾

(1) Toroids for RESYS relays M40 / P40 and DIRIS A80.

Split-core toroids type A - WS series

Type	Toroid diameter (mm)	Reference
WS 50 x 80	50 x 80	4795 0508 ⁽¹⁾
WS 80 x 80	80 x 80	4795 0808 ⁽¹⁾
WS 80 x 120	80 x 120	4795 0812 ⁽¹⁾
WS 80 x 160	80 x 160	4795 0816 ⁽¹⁾

(1) Toroids for RESYS relays M40 / P40 and DIRIS A80.

Accessories for Δ IC toroids

Cable locator

Enables the cables to be centred in the toroid's aperture. Use of this accessory allows the core balance transformer to be directly mounted onto the cables.

Description of accessories	Reference
Cable locator , \varnothing 30 mm	4950 0011
Cable locator , \varnothing 50 mm	4950 0012
Cable locator , \varnothing 80 mm	4950 0013
Cable locator , \varnothing 120 mm	4950 0014



terre_040_a_1_cat

Mounting bracket

Description of accessories	Reference
Mounting bracket, \varnothing 30 mm	4950 0001
Mounting bracket, \varnothing 50 mm	4950 0002
Mounting bracket, \varnothing 80 mm	4950 0003
Mounting bracket, \varnothing 120 mm	4950 0003
Mounting bracket, \varnothing 200 mm	4950 0004
Mounting bracket, \varnothing 300 mm	4950 0005



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Detachable screw terminal

Description of accessories	Reference
Detachable screw terminal	4950 0041



terre_042_a_1_cat

Sealable protection cover

Description of accessories	Reference
Sealable protection cover	4950 0020



terre_043_a_1_cat

DIN-rail clip

For DIN-rail mounting SOCOMEC core balance transformers

Description of accessories	Reference
DIN-rail clip	4950 0031



terre_037_a_1_cat

Detachable push-in terminal

Description of accessories	Reference
Detachable push-in terminal	4950 0040



terre_041_a_1_cat



SURGYS® G51-PV

Surge arrester - Type 2
for photovoltaic installations

Electronic
protection

new



SURGYS G51 - 1000 PV

Function

SURGYS G51-PV surge Protective Device is designed to ensure protection for photovoltaic supply networks against transient overvoltages. It is compliant with test requirements UTE 61-740-51 and EN 50-539-11 as well as with installation requirements UTE C 15-712-1.

Advantages

Monobloc base with plug-in module

The SURGYS is supplied complete and ready for installation. Its Monobloc base is fitted with replaceable plug-in modules which, at the end of their service life, can be easily and quickly replaced without having to disconnect the Monobloc base.

Remote signalling

The remote plug-in signalling contact allows alarm report to a supervision station.

New 1500 VDC version

Adapted to the protection of high power installations.

The solution for

> Solar energy.



Strong points

- > Monobloc base with plug-in module.
- > Remote signalling.
- > New 1500 VDC version.

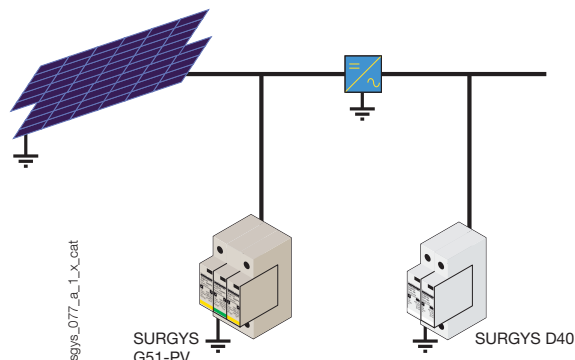
Approvals and certifications

- > Compliant with test guide UTE C61-740-51 and NF EN 50 539-11
- > Compliant with installation guide UTE C15-712-1 (2010).

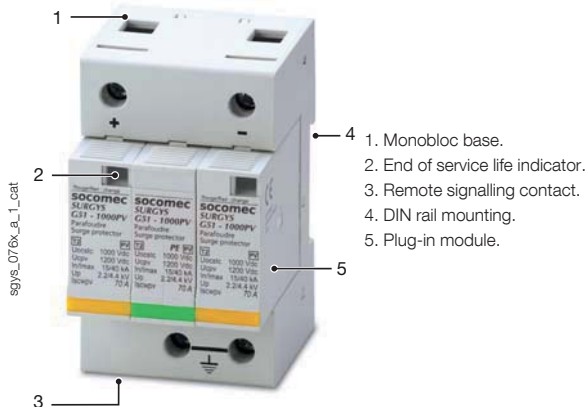
Applications

Main incoming protection in a photovoltaic network:

- SURGYS G51-PV is installed on the DC side, in the combiner box, close to the solar cell strings, for protecting the downstream DC equipment from the indirect effects of lightning.
- SURGYS AC, SURGYS D40 for instance, is installed downstream of the inverter for load protection.

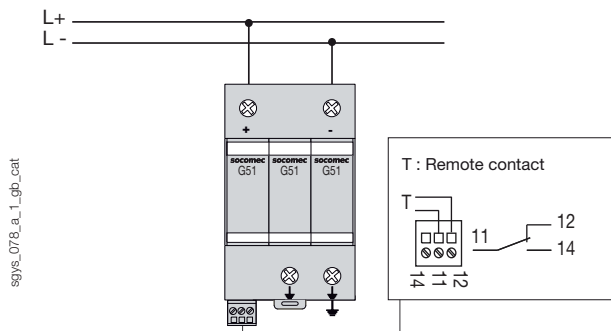


Front panel



Connection

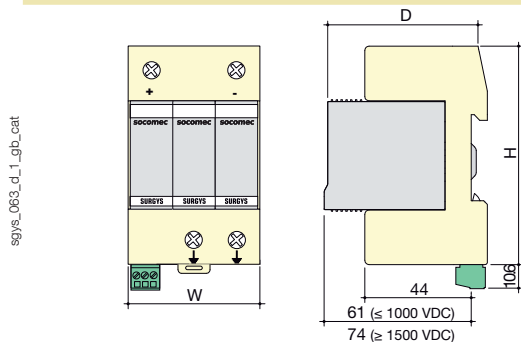
Common mode / differential mode protection



Characteristics

Network	
Network type	500 VDC / 600 VDC / 800 VDC / 1000 VDC / 1500 VDC
PV voltage U_{ocSTC}	500 VDC / 600 VDC / 800 VDC / 1000 VDC / 1500 VDC
Max. voltage U_{CPV}	600 VDC (version 500 V) / 720 VDC (version 600 V) / 960 VDC (version 800 V) / 1200 VDC (version 1000 V) / 1500 VDC (version 1500 V)
Protection characteristics	
Mode of protection	MC: 500 V / 600 V / 800 V / 1000 V / 1500 V MD: 800 V / 1000 V / 1500 V
Level of protection ($U_{P,MD}$)	- / - / 3,6 kV (800 V) / 4,4 kV (1000 V) / 4,5 kV (1500 V)
Level of protection MC ($U_{P,MC}$)	2,2 kV (500 V) / 2,8 kV (600 V) / 2 kV (800 V) / 2,2 kV (1000 V) / 3,2 kV (1500 V)
Short circuit current (I_{SCWPV})	1000 A
Maximum discharge current (1 shock 8/20 μ s) I_{max}	40 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	15 kA
Associated characteristics	
Residual current I_c	500 / 600 V : < 0.1 mA 800 / 1000 / 1500 V : 0 mA
Response time t_r	< 25 ns
Follow current I_f	none
End of life mode	thermal disconnection
Type of disconnection indicator	mechanical
Number of disconnection indicators	1
Remote signalling contact	
Contact type	inverter
AC making capacity	0.5 A
DC making capacity	3 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	plug-in screw terminal
Max. cross-section of terminal connections	1.5 mm ²
Operating conditions	
Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

Case



Type	monobloc design
2 modules dimensions W x H x D \leq 800 VDC	36 x 90 x 67 mm
3 modules dimensions W x H x D \leq 1000 VDC	54 x 90 x 67 mm
3 modules dimensions W x H x D \geq 1500 VDC	54 x 90 x 77 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	UL94-V0 thermoplastic
Network connection cross-section	4 ... 25 mm ²
Earth connection cross-section	6 ... 25 mm ²

References

Network voltage	Description	No. of poles	Mode of protection	Number of modules	SURGYS® G51-PV Reference
500 VDC	without remote signal	2	MC ⁽¹⁾	2	4982 2500
500 VDC	with remote signal	2	MC ⁽¹⁾	2	4982 2501
600 VDC	without remote signal	2	MC ⁽¹⁾	2	4982 2530
600 VDC	with remote signal	2	MC ⁽¹⁾	2	4982 2531
800 VDC	without remote signal	2	MC / MD ⁽²⁾	3	4982 2510
800 VDC	with remote signal	2	MC / MD ⁽²⁾	3	4982 2511
1000 VDC	without remote signal	2	MC / MD ⁽²⁾	3	4982 2520
1000 VDC	with remote signal	2	MC / MD ⁽²⁾	3	4982 2521
1500 VDC	without remote signal	2	MC / MD ⁽²⁾	3	4982 2540
1500 VDC	with remote signal	2	MC / MD ⁽²⁾	3	4982 2541

(1) Common mode

(2) MC / MD: Common / Differential mode.

Description of accessories	Mode of protection	Reference
Spare plug-in module m-G51 for 500 VDC	MC ⁽¹⁾	4982 2509
Spare plug-in module m-G51 for 600 VDC	MC ⁽¹⁾	4982 2539
Spare plug-in module m-G51 for 800 VDC	MC / MD ⁽²⁾	4982 2519
Spare plug-in module m-G51 for 1000 VDC	MC / MD ⁽²⁾	4982 2529
Spare plug-in module m-G51 for 1500 VDC	MC / MD ⁽²⁾	4982 2549

(1) Common mode

(2) MC / MD: Common / Differential mode.



SURGYS® G100-F

Surge arrester - Type 1 and 2

for installations with lightning conductor and for classified sites

Electronic protection

new



SURGYS G100-F 1 pole

Function

The SURGYS G100-F surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation overvoltages and overvoltages owing to lightning. This type of surge arrester is particularly recommended in case of risk of direct impact of lightning strikes.

Advantages

Recommended in case of risk of direct impact of lightning strikes

Thanks to an admitted impulse current I_{imp} (surge 10/350 μ s) of 25 kA, it is recommended for use on main switchboards.

Absence of follow current

The multi-varistors technology ensures there is no follow currents and prevents from any risk of inadvertent tripping of input protections.

Thermal disconnection device

Guarantees the end of service life disconnection of the surge arrester.

End of service life indicator

End of service life indication for internal components.

Remote signalling

The remote plug-in signalling contact allows disconnection alarm report to a supervision station.

Monobloc base with plug-in module

The SURGYS is supplied complete and ready for installation. Its Monobloc base is fitted with replaceable plug-in modules which, at the end of their service life, can be easily and quickly replaced without having to disconnect the Monobloc base.

The solution for

- > Industry.
- > All types of buildings (critical, non critical).



Strong points

- > Recommended in case of risk of direct impact of lightning strikes.
- > Absence of follow current.
- > Thermal disconnection device.
- > End of service life indicator.
- > Remote signalling.
- > Monobloc base with plug-in module.

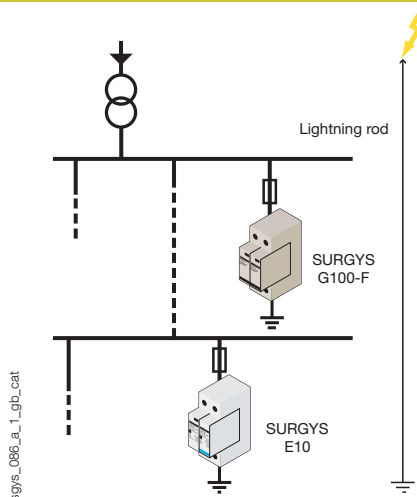
Conformity to standards

- > NF EN 61643-11
- > IEC 61643-11

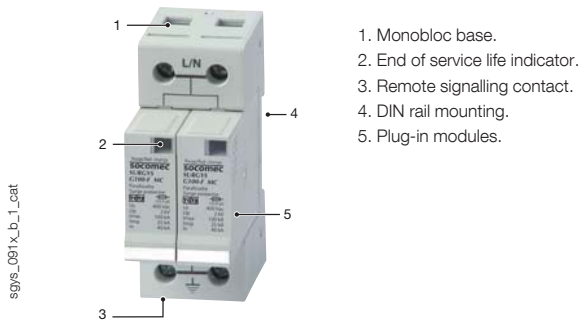


Applications

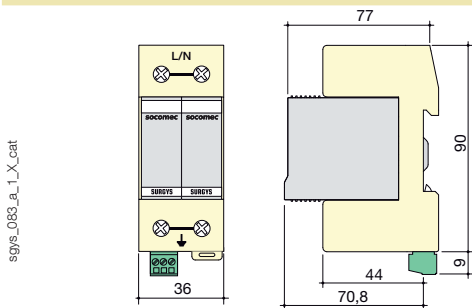
- Upstream location of the distribution surge arresters.
- TGBT + building protected against lightning either:
 - through lightning conductors
 - through mesh cages.
- TGBT in buildings subjected to high level risk of lightning strikes such as classified installations, installations located in areas prone to high density of lightning strikes, high-rise buildings, presence of antenna towers, chimneys.
- Sites located at high altitude.
- Distribution board of a building with presence of Lightning Protection Systems.



Front panel



Case



Type	monobloc design
Dimensions W x H x D in 2 poles	72 x 90 x 77 mm
Dimensions W x H x D in 3 poles	108 x 90 x 77 mm
Dimensions W x H x D in 4 poles	144 x 90 x 77 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	PEI UL94-5VA thermoplastic
Network connection cross-section	4 ... 25 mm ²
Earth connection cross-section	4 ... 25 mm ²

Characteristics

Network

Network type	230 / 400 VAC
Neutral systems	TT-TN-IT
Nominal voltage U_n	400 VAC
Maximum voltage U_c	400 VAC
Temporary overvoltage at industrial frequency U_T	400 VAC

Protection characteristics

Level of protection U_p	2 kV
Maximum discharge current (1 shock 8/20 μ s) I_{max}	100 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	40 kA
Residual voltage at I_{mp}	1.5 kV
Impulse current (1 shock 10/350 s) I_{mp}	25 kA
Mode of protection	common

Associated characteristics

Residual current I_c	< 1 mA
Response time t_r	< 25 ns
Follow current I_f	none
Rated conditional short circuit current I_{cc}	25 kA
Recommended disconnectors	fuses gG 125 A ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnection indicators	1

Remote signalling contact

Contact type	inverter
AC making capacity	0.5 A
DC making capacity	2 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	screw terminal block
Max. cross-section of terminal connections	1.5 mm ²

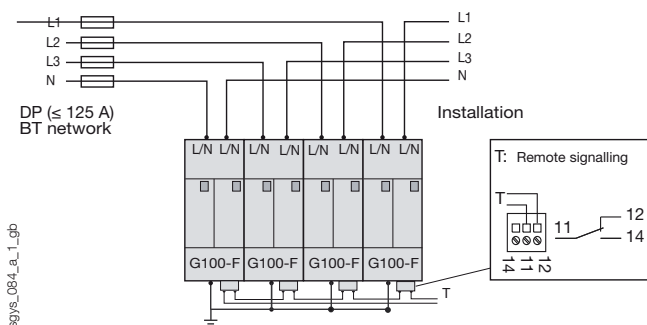
Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

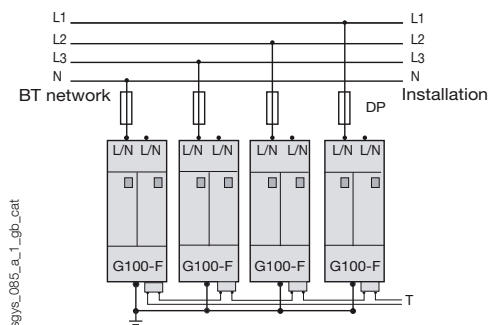
(1) Value complies with article 534.1.5.3 of standard NF C 15100; higher ratings may however be used if reinforced continuity of service of the lightning rod branch is desired.

Connection

Series arrangement



Parallel arrangement



References

No. of poles	Number of side-by-side modules	SURGYS® G100-F Reference
2	4	4981 1020
3	6	4981 1030
4	8	4981 1040
Description of accessories		Reference
Spare plug-in module m-G100-F		4981 1019



SURGYS® G140-F

Surge arrester - Type 1

for installations with lightning conductor and for classified sites

Electronic protection



SURGYS G140-F 2 poles

Function

The SURGYS® G140-F surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation overvoltages and overvoltages owing to lightning.

This type of surge arrester is particularly recommended where there is a risk of direct impact of lightning strikes.

NEW : impulse current (I_{imp}) of 25 kA per pole.

Advantages

Remote signalling

The remote plug-in signalling contact allows alarm report to a supervision station.

End of service life indicator

End of service life indication for internal components.

Modular design

Easy assembling.

The solution for

- > Industry.
- > All types of buildings (critical, non critical).



Strong points

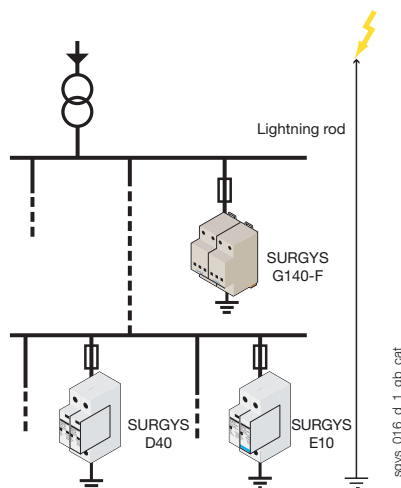
- > Remote signalling.
- > Modular design.
- > End of service life indicator.

Approvals and certifications

- > Conformity to test guide UTE C61-740-51.
- > Conformity to installation guide UTE C15-712-1 (2010).

Applications

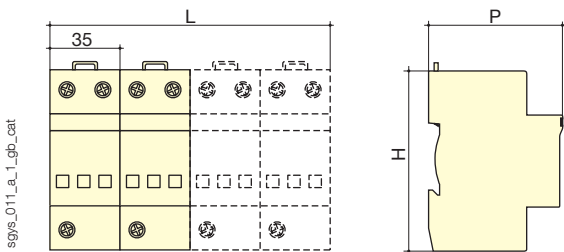
- Upstream location of the distribution surge arresters
- TGBT + building protected against lightning either: - through lightning conductors - through mesh cages.
- TGBT in buildings subjected to high level risk of lightning strikes such as classified installations, installations located in areas prone to high density of lightning strikes, high-rise buildings, presence of antenna towers, chimneys.
- Sites located at high altitude.
- Distribution board of a building with presence of Lightning Protection Systems.



General characteristics

- Type 1 surge arrester.
- Designed to resist discharge linked to direct lightning strike.
- Max. discharge current 140 kA.
- Protection in common mode.
- Thermal disconnection device.
- End of service life indicator.
- Remote signalling contact.
- Absence of follow current.
- Possibility of parallel or series arrangement.
- Fuse combination switch recommended: FUSERBLOC (see page 188).

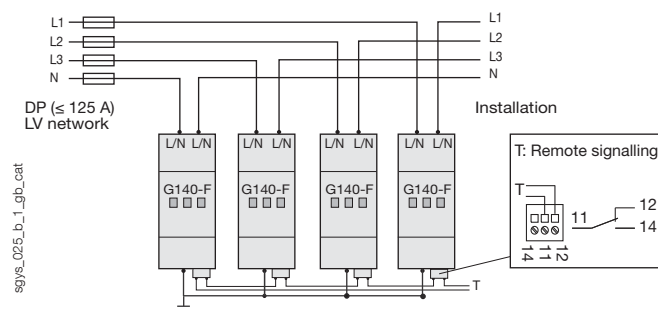
Case



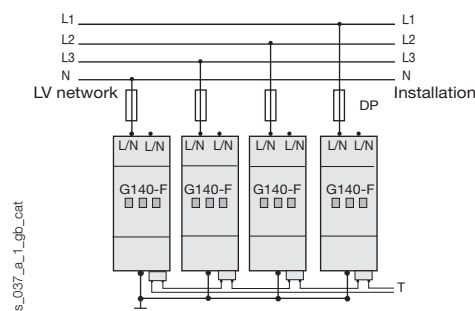
Type	modular
2P dimensions W x H x D	70 x 90 x 67 mm
3P dimensions W x H x D	105 x 90 x 67 mm
Dimensions W x H x D in 4 poles	140 x 90 x 67 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL94-5VA
Network connection cross-section	10 ... 50 mm ²
Earth connection cross-section	10 ... 50 mm ²

Connection

Series arrangement



Parallel arrangement



Front panel



Characteristics

Network

Network type	230 / 400 VAC
Neutral systems	TT-TN-IT
Nominal voltage U _n	400 VAC
Maximum voltage U _c	400 VAC
Temporary surge in power line frequency U _T	400 VAC

Protection characteristics

Level of protection U _p	2.5 kV
Maximum discharge current (1 shock 8/20 μs) I _{max}	140 kA
Nominal discharge current (15 shocks 8/20 μs) I _n	50 kA
Residual voltage at I _{imp}	1.5 kV
Impulse current (1 shock 10/350 s) I _{imp}	25 kA
Mode of protection	common

Associated characteristics

Residual current I _c	< 2 mA
Response time t _r	< 25 ns
Follow current I _f	none
Rated conditional short circuit current I _{cc}	50 kA
Recommended disconnectors	fuses gG 125 A ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnection indicators	3

Remote signalling contact

Number of contacts per pole	1
Contact type	inverter
AC making capacity	3 A
DC making capacity	2 A
AC nominal voltage	125 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	screw block
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value complies with article 534.1.5.3 of standard NFC 15100; higher ratings may however be used if reinforced continuity of service of the lightning rod branch is desired.

References

No. of poles	Number of side-by-side modules	SURGYS® G100-F Reference
2	2	4981 1521
3	3	4981 1531
4	4	4981 1541



SURGYS® G50-FE

Surge arrester - Type 1 and 2

for installations with lightning conductor and for classified sites

Electronic protection

new



SURGYS G50-FE 4 poles

The solution for

- > Industry.
- > All types of buildings (critical, non critical).



Strong points

- > Recommended in case of risk of direct impact of lightning strikes.
- > Absence of follow current.
- > Thermal disconnection device.
- > End of service life indicator.
- > Remote signalling.
- > Monobloc base with plug-in module

Conformity to standards

- > NF EN 61643-11
- > IEC 61643-11



Function

The SURGYS G50-FE surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation overvoltages and overvoltages owing to lightning. This type of surge arrester is particularly recommended in case of risk of direct impact of lightning strikes at the main switchboard level, containing electronic devices sensitive to overvoltages.

Advantages

Recommended in case of risk of direct impact of lightning strikes

Thanks to an admitted impulse current I_{imp} (surge 10/350 μ s) of 12.5kA, it is recommended for use on main switchboards.

Absence of follow current

The multi-varistors technology ensures there is no follow currents and prevents from any risk of inadvertent tripping of input protections.

Thermal disconnection device

Guarantees the end of service life disconnection of the surge arrester.

End of service life indicator

Indicates the end of life of varistors.

Remote signalling

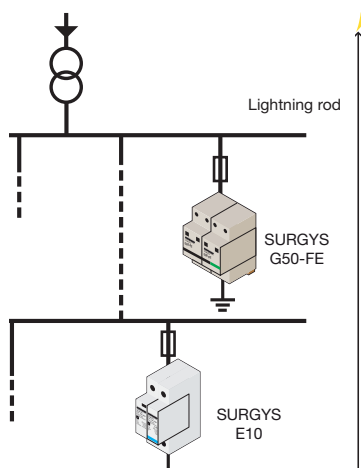
The remote plug-in signalling contact allows disconnection alarm report to a supervision station.

Monobloc base with plug-in module

The SURGYS is supplied complete and ready for installation. Its Monobloc base is fitted with replaceable plug-in modules which, at the end of their service life, can be easily and quickly replaced without having to disconnect the Monobloc base.

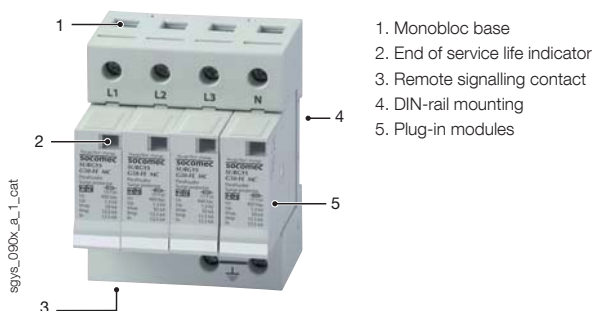
Applications

- Main switchboard or main distribution panel of a building, equipped with electronic devices (multi-function measurement devices, PLC, etc.) with presence of lightning conductors or protection through meshed cages.
- Main switchboard equipped with electronics in buildings subjected to high level risk of lightning strikes such as classified installations, installations located in areas prone to high density of lightning strikes, high-rise buildings.
- Main switchboard equipped with PLC, BMS or CTM, remote monitoring, technical alarms, modems...
- High-rise buildings safety main switchboard.
- Lift machinery unit located in the higher part of the building.
- Safety inverter units.
- Main switchboard or remote sites containing electronics.

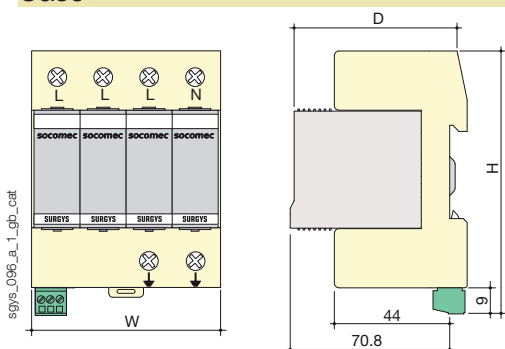


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Front panel



Case



Type	monobloc design
2P dimensions W x H x D	36 x 99 x 77 mm
3P dimensions W x H x D	54 x 99 x 77 mm
Dimensions W x H x D in 4 poles	72 x 99 x 77 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	PEI UL94-5VA thermoplastic
Network connection cross-section	5 ... 25 mm ²
Earth connection cross-section	5 ... 25 mm ²

Characteristics

Network

Network type	230 / 400 VAC
Neutral systems	TT-TN-IT
Nominal voltage U_n	400 VAC
Maximum voltage U_c	400 VAC
Temporary overvoltage at industrial frequency U_T	400 VAC

Protection characteristics

Level of protection U_p	1.3 kV
Maximum discharge current (1 shock 8/20 μ s) I_{max}	50 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	12.5 kA
Residual voltage at I_{mp}	1.5 kV
Impulse current (1 shock 10/350 s) I_{mp}	12.5 kA
Mode of protection	common

Associated characteristics

Residual current I_c	< 1 mA
Response time t_r	< 25 ns
Follow current I_f	none
Rated conditional short circuit current I_{cc}	25 kA
Recommended disconnectors	fuses gG 125 A ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnection indicators	1

Remote signalling contact

Contact type	inverter
AC making capacity	0.5 A
DC making capacity	2 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	plug-in screw terminal
Max. cross-section of terminal connections	1.5 mm ²

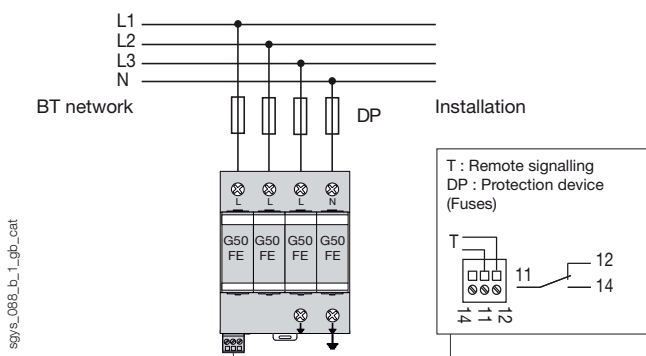
Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

Value complies with article 534.1.5.3 of standard NF C 15100: higher ratings may however be used if reinforced continuity of service of the lightning rod branch is desired.

Connections

Parallel arrangement



References

No. of poles	Number of side-by-side modules	SURGYS® G50-FE Reference
2	2	4981 0520
3	3	4981 0530
4	4	4981 0540
Description of accessories		Reference
Spare plug-in module m-G50-FE		4981 0519



SURGYS® G40-FE

Surge arrester - Type 1 and 2

for installations with lightning conductor and for sensitive receivers



SURGYS G40-FE 2 poles

The solution for

- > Industry.
- > All types of buildings (critical, non critical).



Strong points

- > Recommended in case of risk of direct impact of lightning strikes.
- > Varistor technology.
- > End of service life indicator.
- > Remote signalling.
- > Thermal disconnecter.

Conformity to standards

- > NF EN 61643-11
- > IEC 61643-11



Function

The SURGYS® G40-FE surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation overvoltages and overvoltages owing to lightning.

This type of Surge Protective Device is particularly recommended in case of risk of direct impact of lightning strikes at the main switchboard level, containing electronic devices sensitive to overvoltages.

Advantages

Recommended in case of risk of direct impact of lightning strikes

Thanks to an admitted impulse current (I_{imp}) of 15 kA (surge 10/350 μ s), it is suitable for use on main switchboards.

Varistor / spark-gaps technology

This technology ensures an optimum protection level (low voltage $U_p=1.5$ kV), as well as an improved type 1/type 2 coordination.

End of service life indicator

End of service life indication for internal components.

Remote signalling

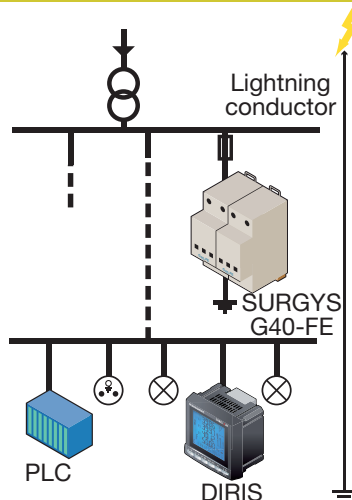
The remote plug-in signalling contact allows alarm report to a supervision station.

Thermal disconnecter

The built-in disconnection device ensures there is no damage on the installation in case of end of service life.

Applications

- Main switchboard or main distribution panel of a building, equipped with electronic devices (multi-function measurement devices, PLC, etc.) with presence of lightning conductors or protection through meshed cages.
- Main switchboard equipped with electronics in buildings subjected to high level risk of lightning strikes such as classified installations, installations located in areas prone to high density of lightning strikes, high-rise buildings.
- Main switchboard equipped with PLC, BMS or CTM, remote monitoring, technical alarms, modems...
- High-rise buildings safety main switchboard.
- Lift machinery unit located in the higher part of the building.
- Safety inverter units.
- Main switchboard or remote sites containing electronics.



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General characteristics

- Type 1 and 2 surge arrester.
- Designed to resist discharge linked to direct lightning strike.
- Optimised protection level U_p at 1.5 kV.
- Protection in common mode.
- End of service life indicator.
- Remote signalling contact.
- Absence of follow current.
- Fuse combination switch recommended: FUSERBLOC (see page 126).

Front panel



1. End of service life indicator.
2. Earthing comb connection.
3. Remote signalling contact.
4. DIN rail mounting.

Characteristics

Network	
Network type	230 / 400 VAC
Neutral systems	TT-TN
Nominal voltage U_n	400 VAC
Maximum voltage U_c	255 VAC
Temporary overvoltage at industrial frequency U_T	400 VAC
Protection characteristics	
Level of protection U_p (NF EN 61643-11)	1.5 kV
Maximum discharge current (1 shock 8/20 μ s) I_{max}	40 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	20 kA
Residual voltage at I_{imp}	800 V
Impulse current (1 shock 10/350 s) I_{imp}	15 kA
Mode of protection	common
Associated characteristics	
Residual current I_c	< 10 μ A
Response time t_r	< 100 ns
Follow current I_f	none
Rated conditional short circuit current I_{cc}	50 kA
Recommended disconnectors	fuses gG 125 A ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnection indicators	1

Remote signalling contact

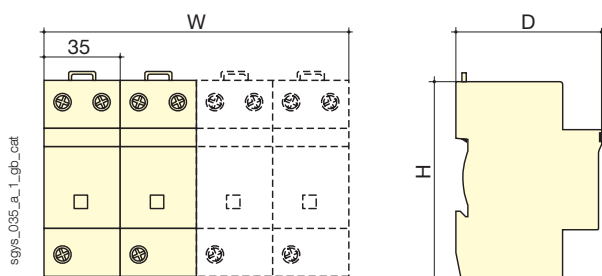
Number of contacts per pole	1
Contact type	inverter
AC making capacity	3 A
DC making capacity	2 A
AC nominal voltage	125 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	plug-in screw terminal
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value complies with article 534.1.5.3 of standard N F C 15-100: higher ratings may however be used if reinforced continuity of service of the lightning rod branch is desired.

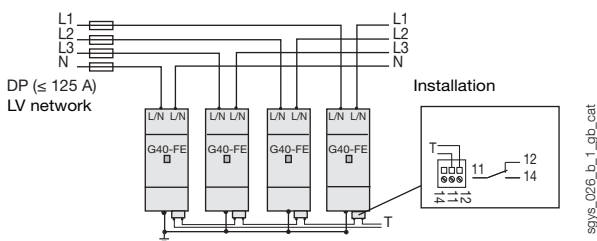
Case



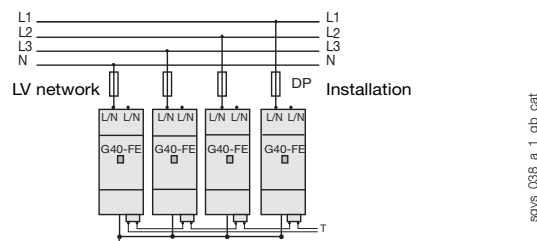
Type	modular
Dimensions W x H x D in 2 poles	70 x 90 x 67 mm
Dimensions W x H x D in 3 poles	105 x 90 x 67 mm
Dimensions W x H x D in 4 poles	140 x 90 x 67 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL94-5VA
Network connection cross-section	10 ... 50 mm ²
Earth connection cross-section	10 ... 50 mm ²

Connections

Series arrangement



Parallel arrangement



References

No. of poles	Number of side-by-side modules	SURGYS® G40-FE Reference
2	2	4981 0420
3	3	4981 0430
4	4	4981 0440

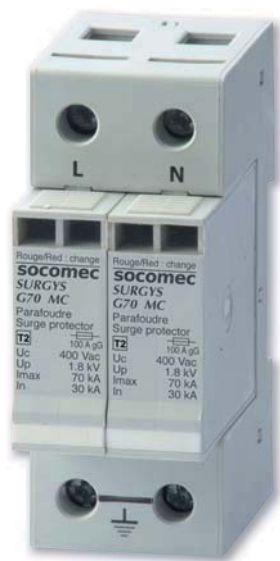


SURGYS® G70

Surge arrester - Type 2

for sites frequently struck by lightning

Electronic protection



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Function

The SURGYS® G70 surge arrester is designed to ensure reinforced protection of single-phase and three-phase networks. It acts against industrial operation overvoltages and overvoltages owing to lightning.

This type of Surge Protective Device is particularly recommended in case of heightened risk of nearby lightning strikes.

Advantages

Monobloc base with plug-in module

The SURGYS is supplied complete and ready for installation. Its Monobloc base is fitted with replaceable plug-in modules which, at the end of their service life, can be easily and quickly replaced without having to disconnect the Monobloc base.

Remote signalling

The remote plug-in signalling contact allows alarm report to a supervision station.

End of service life indicator

End of service life indication for internal components.

The solution for

- > Industry.
- > All types of buildings (critical, non critical).



Strong points

- > Monobloc base with plug-in module.
- > Remote signalling.
- > End of service life indicator.

Conformity to standards

- > NF EN 61643-11
- > IEC 61643-11

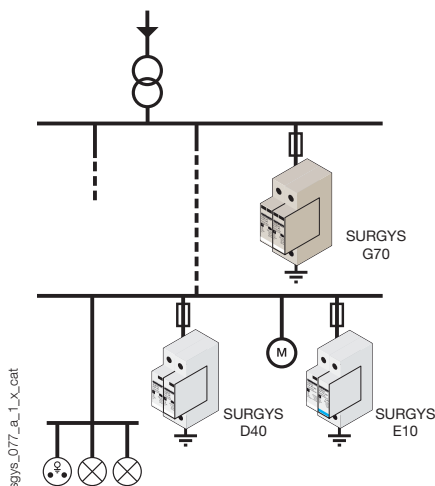


Customised solutions

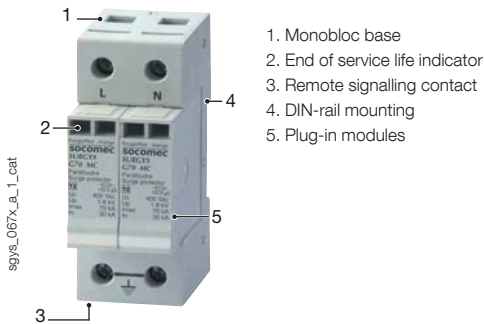
- > Specific shock and vibration treatment + tropicalisation (type "W"): please consult us.

Applications

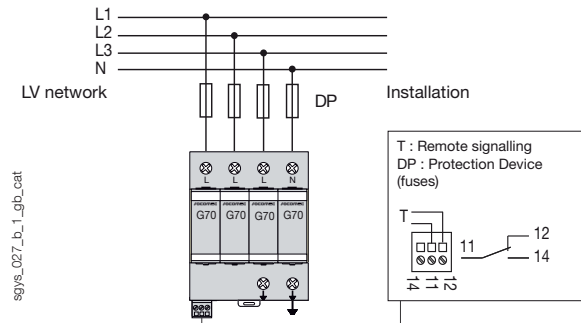
- Main power control switchboard.
- Main safety switchboard.
- Main switchboard to high power inverters.
- Distribution boards of remote sites.
- Protection of electrotechnical equipment such as motors, switching devices, control devices...



Front panel



Connections



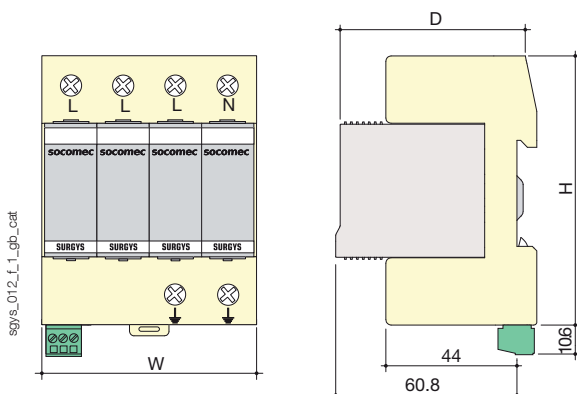
Characteristics

Network	
Network type	230 / 400 VAC
Neutral systems	TT-TN-IT
Nominal voltage U_n	400 VAC
Maximum voltage U_c	400 VAC
Temporary overvoltage at industrial frequency U_T	400 VAC
Protection characteristics	
Level of protection U_p	1.8 kV
Maximum discharge current (1 shock 8/20 μ s) I_{max}	70 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	30 kA
Mode of protection	common
Associated characteristics	
Residual current I_c	< 1 mA
Response time t_r	< 25 ns
Follow current I_f	none
Rated conditional short circuit current I_{cc}	25 kA
Recommended disconnectors	fuses gG 100 A ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnection indicators	2

Remote signalling contact	
Contact type	inverter
AC making capacity	0.5 A
DC making capacity	2 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	through screw block
Max. cross-section of terminal connections	1.5 mm ²
Operating conditions	
Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value complies with article 534.1.5.3 of standard N F C 15100: higher ratings may however be used if reinforced continuity of service of the lightning rod branch is desired.

Case



Type	monobloc design
2P dimensions W x H x D	36 x 90 x 67 mm
3P dimensions W x H x D	54 x 90 x 67 mm
Dimensions W x H x D in 4 poles	72 x 90 x 67 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL94-V0
Network connection cross-section	4 ... 25 mm ²
Earth connection cross-section	4 ... 25 mm ²⁽¹⁾

(1) Minimum cross-section 10 mm² with lightning rod.

References

No. of poles	Number of side-by-side modules	SURGYS® G70 Reference
2	2	4982 1720
3	3	4982 1730
4	4	4982 1740
Description of accessories		Reference
Spare plug-in module m-G70		4982 0719



SURGYS® D40

Surge arrester - Type 2
for distribution boards

Electronic
protection



SURGYS D40 2 poles

Function

The SURGYS® D40 surge arrester is designed to ensure protection of LV distribution circuits and equipment against transient overvoltages. It acts against industrial operation overvoltages and overvoltages owing to lightning.

Advantages

Monobloc base with plug-in module

The SURGYS is supplied complete and ready for installation. Its Monobloc base is fitted with replaceable plug-in modules which, at the end of their service life, can be easily and quickly replaced without having to disconnect the Monobloc base.

Remote signalling

The remote plug-in signalling contact allows alarm report to a supervision station.

End of service life indicator

End of life indication for internal components.

The solution for

- > Industry.
- > Infrastructure.
- > All types of buildings (critical, non critical).
- > OEM.



Strong points

- > Monobloc base with plug-in module.
- > Remote signalling.
- > End of service life indicator.

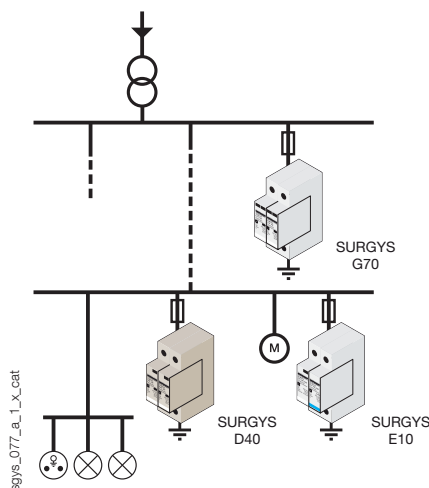
Conformity to standards

- > NF EN 61643-11
- > IEC 61643-11

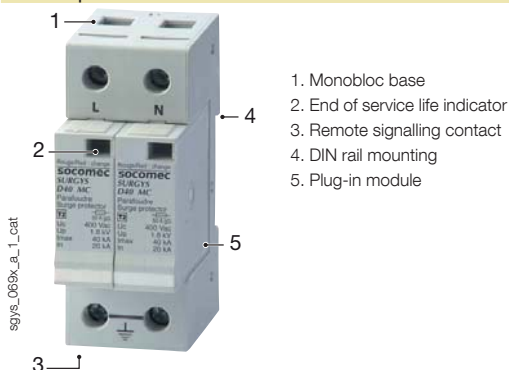


Applications

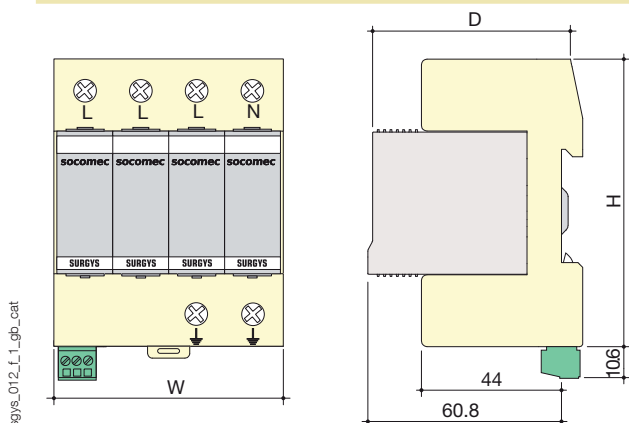
- Power distribution unit (downstream of a main switchboard).
- Autonomous power supply units such as generator sets, medium power UPS.
- Machine equipment unit.



Front panel



Case



Type	monobloc design
Dimensions W x H x D in 2 poles	36 x 90 x 67 mm
Dimensions W x H x D in 3 poles	54 x 90 x 67 mm
Dimensions W x H x D in 4 poles	72 x 90 x 67 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL94-V0
Earth connection cross-section	4 ... 25 mm ²
Network connection cross-section	4 ... 25 mm ²

Characteristics

Network

Network type	230 / 400 VAC
Neutral systems	TT-TN-IT (MC) TT-TN (MC/MD)
Nominal voltage U _n	400 VAC
Maximum voltage U _c	400 VAC (MC) 255 VAC (MC/MD)
Temporary overvoltage at industrial frequency U _T	400 VAC

Protection characteristics

Level of protection U _p	1.8 kV (MC) 1.5 kV/1.25 kV (MC/MD)
Maximum discharge current (1 shock 8/20 μs) I _{max}	40 kA
Nominal discharge current (15 shocks 8/20 μs) I _n	20 kA
Mode of protection	common and differential

Associated characteristics

Residual current I _c	< 1 mA
Response time t _r	< 25 ns
Follow current I _f	none
Rated conditional short circuit current I _{cc}	25 kA
Recommended disconnectors	fuses gG 50 A ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnection indicators	1

Remote signalling contact

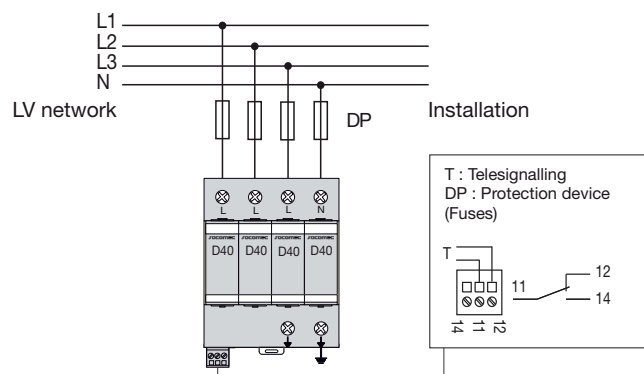
Contact type	inverter
AC making capacity	0.5 A
DC making capacity	2 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	screw terminal block
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value complies with article 534.1.5.3 of standard NF C 15100: higher ratings may however be used if reinforced continuity of service of the lightning rod branch is desired.

Connection



References

No. of poles	Neutral systems	Mode of protection	Number of side-by-side modules	SURGYS® D40 Reference
2	TT, TN, IT	MC ⁽¹⁾	2	4982 1422
3	TT, TN, IT	MC ⁽¹⁾	3	4982 1432
4	TT, TN, IT	MC ⁽¹⁾	4	4982 1442
2	TT, TN	MC ⁽¹⁾ / MD ⁽²⁾	2	4982 1424
4	TT, TN	MC ⁽¹⁾ / MD ⁽²⁾	4	4982 1444

Description of accessories	Mode of protection	Reference
Spare plug-in module m-D40	MC ⁽¹⁾	4982 0419
Spare plug-in module m-D40	MC ⁽¹⁾ / MD ⁽²⁾	4982 0418

(1) Common mode. (2) Differential mode.



SURGYS® E10

Surge arrester - Type 2 and 3
for terminal receivers and sensitive loads

Electronic
protection



sgys_070_a_1_cat

SURGYS E10 - 2 poles MC/MD

The solution for

- > Industry.
- > Infrastructure.
- > All types of buildings (critical, non critical).
- > OEM.



Strong points

- > Monobloc base with plug-in modules.
- > Remote signalling.

Conformity to standards

- > NF EN 61643-11
- > IEC 61643-11



Function

SURGYS® E10 surge arrester is designed to ensure protection of installations connected to single-phase, three-phase or DC networks against industrial operation overvoltages. They act against transient overvoltages owing to lightning.

Advantages

Monobloc base with plug-in modules

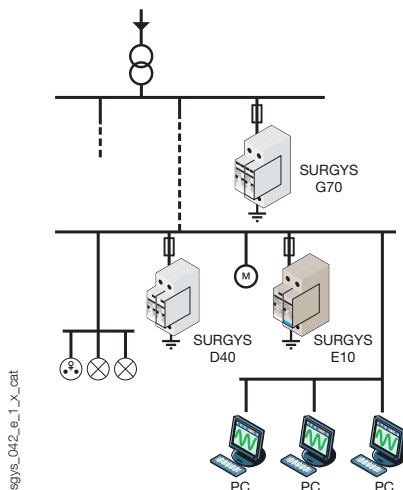
The SURGYS is supplied complete and ready for installation. Its Monobloc base is fitted with replaceable plug-in modules which, at the end of their service life, can be easily and quickly replaced without having to disconnect the Monobloc base.

Remote signalling

The remote plug-in signalling contact allows alarm report to a supervision station.

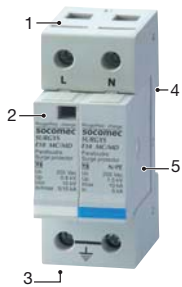
Applications

- AC or DC power distribution unit (downstream of a main switchboard).
- Protection of electrotechnical equipment such as motors, switching devices, control devices...



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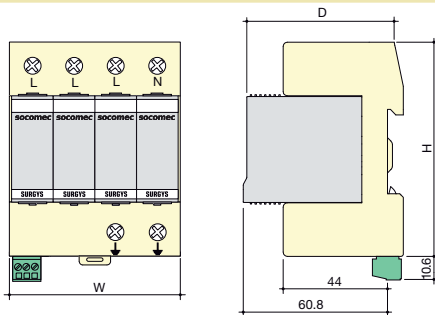
Front panel



1. Monobloc base
2. End of service life indicator
3. Remote signalling contact
4. DIN rail mounting
5. Plug-in module

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Cases



sgsys_043_d_1_gp_cat

Type	monobloc design
Dimensions W x H x D (DC versions)	17.5 x 90 x 67 mm
Dimensions W x H x Din 2 poles (AC version)	36 x 90 x 67 mm
Dimensions W x H x Din 3 poles (AC version)	54 x 90 x 67 mm
Dimensions W x H x D in 4 poles (AC version)	72 x 90 x 67 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL 94-V0
Network connection cross-section	1.5 ... 10 mm ² (E10 2p.) / 1.5 ... 16 mm ² (E10 4p.)
Earth connection cross-section	4 ... 25 mm ² (E10 2p.) / 4 ... 16 mm ² (E10 4p.)

Characteristics

Network

Network type	single-phase, three-phase (E10-AC) / direct (E10-DC)
Nominal voltage U_n	230 / 400 VAC
Maximum voltage U_c	400 VAC (MC) 255 VAC (MC/MD)
Temporary overvoltage at industrial frequency U_T	400 VAC

Protection characteristics

Level of protection (MC/MD) $U_p^{(1)}$	1.3 kV (MC) 1.5 / 0.9 kV (MC/MD)
Maximum discharge current (1 shock 8/20 μ s) I_{max}	10 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	5 kA
Voltage U_{oc}	10 kV
Mode of protection	common and differential

Associated characteristics

Residual current I_c	< 1 mA
Response time t_r	< 25 ns
Follow current I_f	none
Rated conditional short circuit current I_{sc}	25 kA
Recommended disconnectors	fuses gG 20 A ⁽²⁾
Type of disconnection indicator	mechanical
Number of disconnection indicators	1

Remote signalling contact

Contact type	inverter
AC making capacity	0.5 A
DC making capacity	2 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	through screw block
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

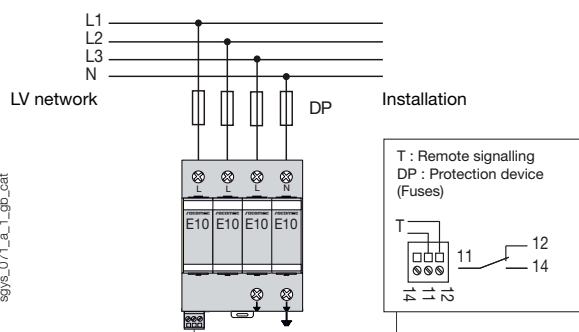
(1) MC / MD: Common / Differential mode.

(2) Value complies with article 534.1.5.3 of standard NF C 15100: higher ratings may however be used if reinforced continuity of service of the lightning rod branch is desired.

Connection

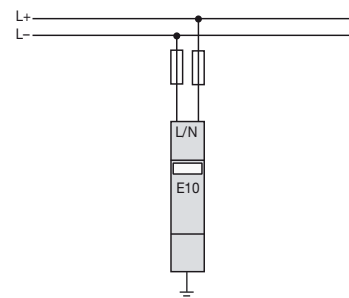
AC version

Common mode (MC) and differential mode (MC/MD) protection



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DC version



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References

Applications AC			SURGYS® E10-AC
No. of poles	Neutral systems	Mode of protection	Reference
2	TT, TN, IT	MC ⁽¹⁾	4983 1125
3	TT, TN, IT	MC ⁽¹⁾	4983 1135
4	TT, TN, IT	MC ⁽¹⁾	4983 1145
2	TT, TN	MC ⁽¹⁾ / MD ⁽²⁾	4983 1126
4	TT, TN	MC ⁽¹⁾ / MD ⁽²⁾	4983 1146
Spare plug-in module for AC application			SURGYS® E10-AC
Mode of protection			Reference
MC ⁽¹⁾ / MD ⁽²⁾			4983 0198
MC ⁽¹⁾			4983 0199

Applications DC		SURGYS® E10-DC
No. of poles	Network voltage	Reference
2	12 VDC	4983 2601
2	24 VDC	4983 2602
2	48 VDC	4983 2604
Spare module for DC application		SURGYS® E10-DC
Network voltage		Reference
12 VDC		4983 9901
24 VDC		4983 9902
48 VDC		4983 9904

(1) Differential mode. (2) Common mode.



SURGYS® RS-3, mA-3, TEL-3

Low current surge arresters

for telecommunication and data networks

Electronic protection

new



sgys_092_a

SURGYS RS-3



sgys_092_a

SURGYS mA-3x2

The solution for

- > Processes.
- > Manufacturing.
- > Water treatment.
- > Telecom, Datacom and broadcasting.
- > Data centres.



Strong points

- > Versions 1 pair or 2 pairs (model "x2").
- > Plug-in modules.
- > End of service life indicator.
- > Direct earthing.
- > Common mode / differential mode protection.

Conformity to standards

- > NF EN 61643-21
- > IEC 61643-21



Function

For protection against transient overvoltages of equipment connected to telecommunication and data transmission networks the SURGYS® range includes 3 surge arrester models:

- SURGYS® RS-3.
- SURGYS® mA-3.
- SURGYS® TEL-3.

Advantages

NEW

Versions 1 pair or 2 pairs (model "x2").

Ultra-compact design if multi-pair protection is needed.

NEW

Plug-in modules

Rapid maintenance for end of service life modules.

End of service life indicator

Indication is achieved through line interruption.

Direct earthing

Earth bonding is made using a DIN rail fixing clip.

Common mode / differential mode protection

The differential mode offers an improved protection efficiency.

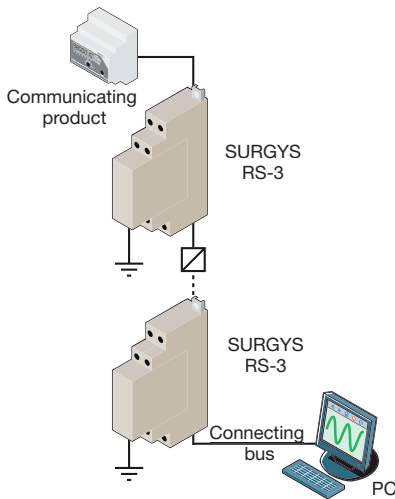
SURGYS® RS-3, mA-3, TEL-3

Low current surge arresters
for telecommunication and data networks

Applications

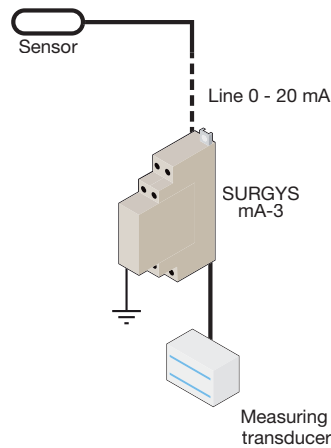
SURGYS® RS-3

- Protection of the RS422/RS485 connections.
- Digital telephone line T2.
- ETHERNET connection (10 baseT).



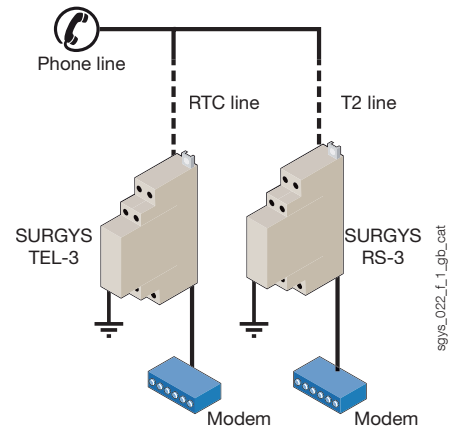
SURGYS® mA-3

- Field bus:
 - Profibus (DP, PA, FMS...),
 - Fieldbus (H1, H2),
 - LONworks,
 - Interbus,...
- Measurement loops, measurement acquisition cards:
 - current loops 0 / 4-20 mA,
 - analog signals 0 to 10 V.
- Regulation, control loops.
- RS232 connections.
- Numeris network (RNIS-T0).
- Specialised telephone connections.

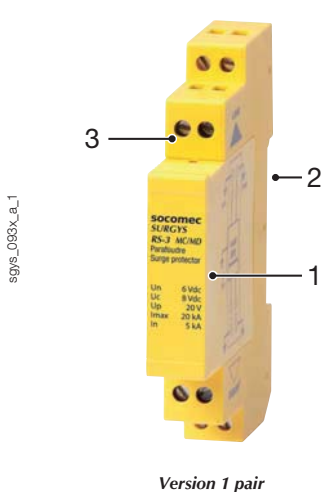


SURGYS® TEL-3

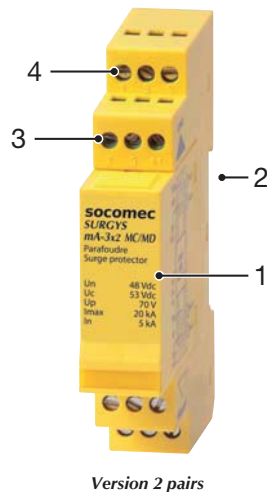
- Analogue telephone line:
 - modem,
 - automatic switch,
 - telephone alarm,
 - DSL.



Front panel



Version 1 pair



Version 2 pairs

1. Plug-in module
2. Mounting on DIN rail ensuring earthing
3. Connection 1 pair
4. Connection 2 pairs

SURGYS® RS-3, mA-3, TEL-3

Low current surge arresters

for telecommunication and data networks

Characteristics

SURGYS®	RS-3	mA-3	TEL-3
Use	RS422/RS485/Telecom T2/Ethernet 10baseT	4-20 mA, field bus	via land line
Nominal line voltage U_n	12 V	48 V	150 V
Maximum voltage U_c	8 V	53 V	170 V
Max operating frequency	20 MHz	20 MHz	2 kHz
Level of protection U_p	30 V	70 V	220 V
Line impedance	50 - 150 Ohms	50 - 150 Ohms	600 Ohms

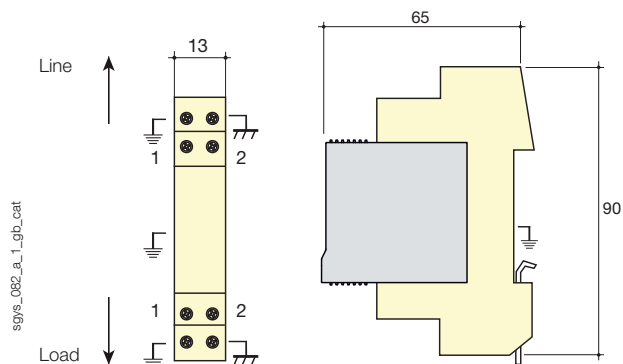
Characteristics	
Protected configuration	2-wire or 4-wire ("x2" version)
Maximum line intensity	300 mA ⁽¹⁾
Maximum discharge current (1 shock 8/20 μ s) I_{max}	20 kA
Nominal discharge current (20 shocks 8/20 μ s) I_n	5 kA
Type of protection	spark-gaps / clamping diode
End of life	earth leakage current

Operating conditions	
Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Line current of equipment to be protected greater than 200 mA or other direct current application: please consult us

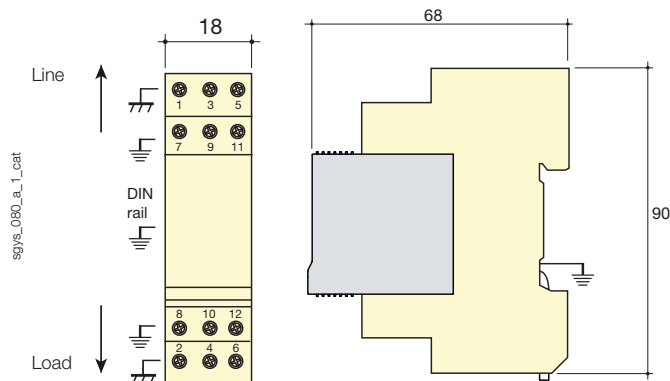
Case

Version 1 pair



Type	modular
Dimensions W x H x D	13 x 90 x 65 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	UL94-V0 thermoplastic
Connection cross-section	0.4 ... 1.5 mm ²
Earth connection cross-section	0.4 ... 1.5 mm ²

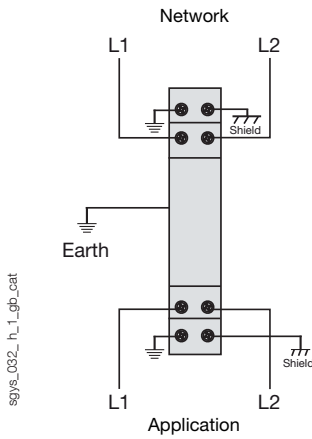
Version 2 pairs



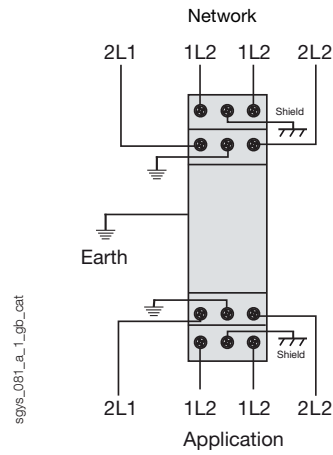
Type	modular
Dimensions W x H x D	18 x 90 x 68 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	UL94-V0 thermoplastic
Connection cross-section	0.4 ... 1.5 mm ²
Earth connection cross-section	0.4 ... 1.5 mm ²

Connections

Version 1 pair



Version 2 pairs



References

SURGYS	Versions 1 pair			Versions 2 pairs		
	RS-3 Reference	mA-3 Reference	TEL-3 Reference	RS-3x2 Reference	mA-3x2 Reference	TEL-3x2 Reference
Protection of high speed data and telephone networks	4986 3020			4986 3021		
Protection of measurement-control-regulation circuits and field bus		4987 3420			4987 3421	
Protection of telephone networks			4985 3170			4985 3171
Description of accessories	RS-3	mA-3	TEL-3	RS-3x2	mA-3x2	TEL-3x2
Spare plug-in module m-RS-3	4986 3029					
Spare plug-in module m-mA-3		4987 3429				
Spare plug-in module m-TEL-3			4985 3179			
Spare plug-in module m-RS-3x2				4986 3028		
Spare plug-in module m-mA-3x2					4987 3428	
Spare plug-in module m-TEL-3x2						4985 3178



Enclosures & accessories

Range overview p. 548

Enclosures

Enclosures in polyester with sealed cover



COMBIESTER
p. 550

Steel units



CADRYS enclosures
p. 551

Enclosures



CADRYS DELTA modular
p. 552

Distribution

High power



Terminals
p. 582



Cable clamps and cage terminals
p. 584



Distribution blocks
p. 586

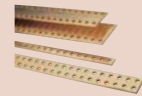
Mid power



Distribution blocks
p. 586

Busbar

For dimensioning



Rigid copper bars
p. 558



Flexible copper bars
p. 558

new



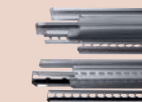
Insulated copper braids
p. 560



Busbar supports
p. 562

Mounting accessories

For device mounting



Mounting rails and profiles
p. 592

More about our products

Our teams are always on hand for advice on the design and realisation of special enclosures (units or cabinets).

Contact your SOCOMEC office.



Range overview

All the components to facilitate the use of your electrical equipment

This section brings together the complete SOCOMEC range of components for building units and cabinets designed for electrical distribution.

These pages have been set out to facilitate your search and selection of the right solution for your requirements.

Did you know?

Socomec offers a wide range of pre-equipped units for breaking, protection and switching; these units fully meet requirements in terms of secure usage and installation conditions (see our section on "Integrated products and solutions").

SOCOMECE works with your Design Office

• Sizing a cabinet

Please do not hesitate to contact us if you need help with a customised thermal sizing of your enclosure.

• Integration of electric functions

In this catalogue, you will find solutions for all of your requirements in terms of LV distribution.

p. 2

• Sizing a busbar

In addition to the practical guide given in the following pages, the Mechanical Systems software allows you to size the busbar for your panel with the greatest of ease: It defines the best bar section and distance between each support for the electrical characteristics of the panel.

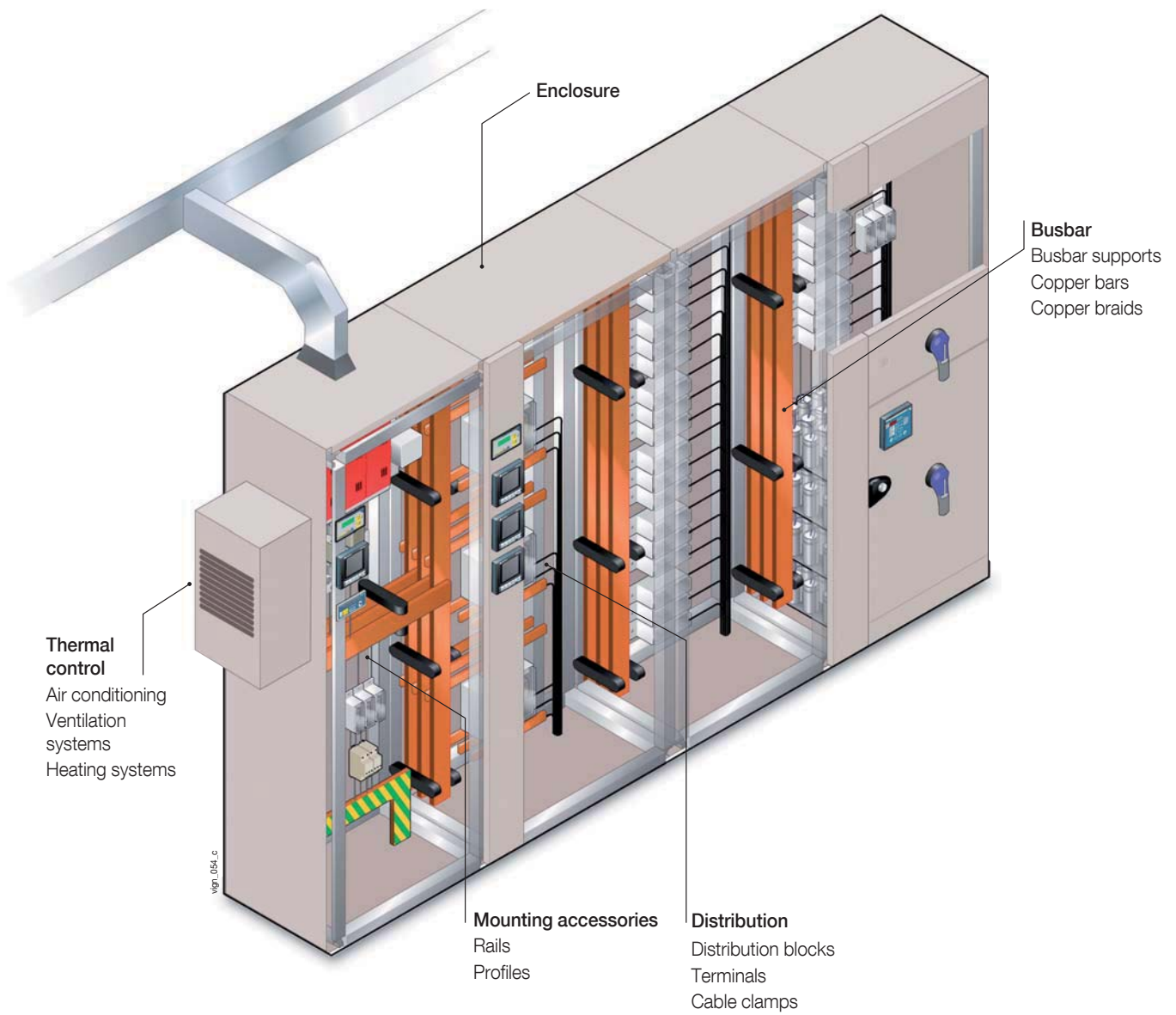
p. 562

• A specific need?

Our teams can support you in the design and realisation of special enclosures or cabinets.

p. 596







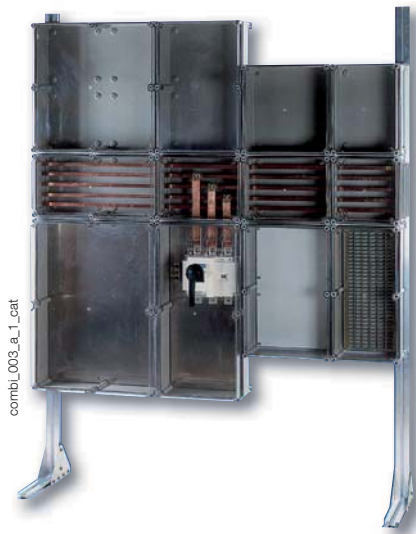
COMBIESTER

Enclosures

Enclosures
& accessories



COMBIESTER
with transparent cover



COMBIESTER
constructible version

The solution for

- > Any electrical device.



Strong points

- > Safety.
- > Extended range.
- > Protection degree: IP65 and IK9.
- > Flexibility: assembling.

Conformity to standards

- > IEC 60529
- > NF C 20010-20455



Load break switches

- > SIRCO and SIRCO AC products can be easily mounted into COMBIESTER enclosures.
- > SIRCO AC is intended for severe applications 690 VAC - AC23.



Available on request

- > Pre-drilled casing and cover.
- > Pres-assembled enclosures.
- > Pre-mounted accessories.
- > Construction of support frames.

Function

COMBIESTERs are constructible insulated enclosures. They protect all low voltage electrical equipment against direct contact.

General characteristics

- a 960°C self-extinguishable ability (polyester glasswool loaded) : 850 °C (polycarbonate); 650 °C (polyamide).
- Protection degree IP65, IK9.
- Colour RAL 7035 for case and opaque cover.

Advantages

Safety

These enclosures provide an electrical safety with double insulation, good resistance to creepage currents, as well as an excellent withstanding to climatic conditions and a good withstanding to chemical agents.

Extended range

- Monobloc and constructible enclosures.
- 4 dimensions for monobloc enclosures and 15 dimensions for constructible enclosures.
- 2 types of sealable covers: transparent or opaque (polycarbonate).



CADRYs enclosures

Enclosures



kdhys_288_a_1_cat

CADRYs ST with solid door



kdhys_289_a_1_cat

CADRYs SP with transparent door



kdhys_419_a_1_cat

CADRYs SH with solid door

Function

CADRYs wall-mounted enclosures are intended to include automation or control equipment.

General characteristics

- Double bar locking.
- Bottom closing plate with pressed neoprene seal,
- Concealed hinges.
- Earthing screw.
- Door profiles perforated every 25 mm.
- Casing and solid door, polyester epoxy paint RAL 7035.
- Reversible doors.

Advantages

Safety

- These enclosures ensure electrical safety with a degree of protection IP55 (casing edge in channel form, robot positioned polyurethane seal).
- A folded and welded casing provides an improved rigidity and a high resistance to chemicals (carbon steel FE 40 + 70 µpolyester epoxy paint; stainless steel 304 L brushed and polished).

Wide range

A wide range is available to meet any requirement:

- 22 models for the SI range.
- 36 models for the ST range.
- 22 models for the SH range.
- 17 models for the SP range.

The solution for

- > Automation equipment.
- > Electrical distribution.



Strong points

- > Safety.
- > Wide range.

Conformity to standards

- > IEC 60439-1
- > NF C 15-100



Available on request

- > Monobloc CADRYs cabinet for automation equipment and electrical distribution.



Available on request

- > Special paint,
- > Specific cutouts (enclosures, plates...)
- > Specific dimensions.
- > Enclosures with top and bottom openings.



CADRYS DELTA modular

Enclosures

Enclosures
& accessories



CADRYS DELTA



CADRYS DELTA
with integrated PC-workspace

The solution for

- Any customer applications.



Strong points

- Easy implementation.
- Wide range of dimensions.
- Reinforced handling feet.
- Reversible hinge system.
- Hinged rear panel.
- Available on request.

Conformity to standards

- IEC 60529
- IEC 61439-2
- NF C 15-100
- NF C 20010
- IEC 62208



Function

CADRYS DELTA enclosures are modular steel enclosures. They are intended to include automation or electrical equipment.

They can be placed side by side, back to back and/or side to back. They can be delivered pre-assembled or, on request, in kit form.

Advantages

- Thanks to its galvanised sheet structure, **CADRYS DELTA** ensures the role of a FARADAY cage, thus reducing electromagnetic interferences and ensuring correct earth bonding.
- **CADRYS DELTA** enclosures are provided with 100 mm reinforced handling feet which can be fitted with a bottom panel.
- Single-wing **CADRYS DELTA** enclosures have left/right reversible doors requiring no tools.
- **CADRYS DELTA** are provided as standard with a reversible hing system for easy access.
- Specific configurations can be proposed as per customer's specifications. (colour, dimension, factory pre-assembling, etc.).

Composition of the range⁽¹⁾

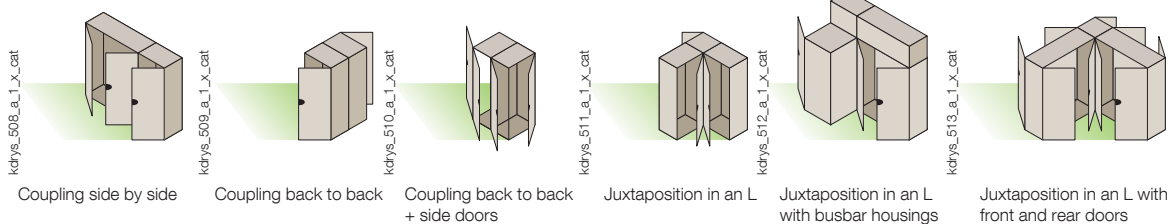
- 4 heights 1600, 1800, 2000, 2200 mm,
- 7 widths 300, 400, 600, 800, 1000, 1200 and 1600 mm,
- 4 depths 400, 500, 600 and 800 mm.
- 96 models available in the following standard presentations:
 - enclosure with transparent front door, dismantlable rear panel,
 - enclosure with solid front and rear doors.
- In its basic version, the enclosure is equipped with a chassis, a front door, a rear panel (or door) and a top panel.
- It is supplied on a handling pallet H 100 mm.

⁽¹⁾ Please consult us.

kcdrys_471_b_2_x_cat



1. Framework in welded 17.5/10 mm steel with double perforation every 25 mm.
2. Casing in folded, welded 12/10 mm steel. Structured finish powders polyester, colours RAL 7035.
3. Solid or transparent door in 15/10 mm steel with single or double wings depending on the width of the enclosure. Single-wing enclosures have left/right reversible doors requiring no tools.
4. CNOMO (option) automatic locking handle with standard interchangeable double bar key lock.
5. Bottom plate of enclosure in 1.5 mm steel with central opening.
6. Removable roof made of 12/10 mm steel with possibility of a bus bar set box.
7. The frame elements are assembled by screwing onto a tripod.



External options

Tripod

The frame elements are assembled by screwing onto a tripod.



kcdrys_304_a_1_cat

Back panel

The back panel can be replaced by a door without the addition or removal of any accessories.



kcdrys_432_a_2_cat

Door

The door can be reversed without removing the handle or hinges in 3 easy steps:

1. Remove the hinge pins.
2. Reversing of the door.
3. Replace the hinge pins.



kcdrys_429_a_1_cat

kcdrys_430_a_1_cat

kcdrys_431_a_1_cat

1

2

3

Bases

- The bases have 4 removable sides made of folded 1.2 mm steel. The angle pieces are 3 mm steel reinforced by welding.
- They are designed to allow several bases to be stacked so as to obtain the height required.



kcdrys_406_a_1_cat

kcdrys_407_a_1_cat

Busbar housing

- Fits in between the top panel and the top of the cubicle.
- Takes bars up to 160 mm high.



kcdrys_426_a_1_cat

Side panels

- Thanks to a special anchoring system, the side and back panels are easily mounted.
- The side panel can be replaced by a door without the addition or removal of any accessories.



kcdrys_433_a_1_cat

kcdrys_428_a_1_cat

Handle

- An ergonomic automatic locking handle that does not require the use of a key. This handle cannot be locked with the door open (CNOMO system).
- When the door is reversed, it is not necessary to remove the handle.



kcdrys_253_a_2_cat

Juxtaposition

The juxtaposition of cubicles side or back to back is achieved using a kit that guarantees IP55 sealing.



Internal options

Perforated plate

- The placing of the plates is facilitated by an anchoring system.
- No intermediate pieces are needed to fix them in place.



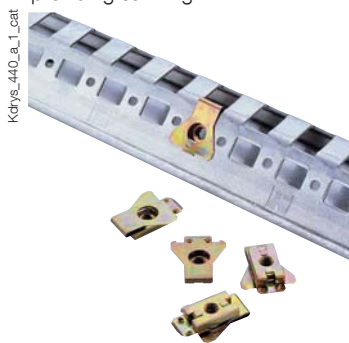
Solid plate

A system of slides and clips facilitate the positioning of the plates and holds them in place during assembly.



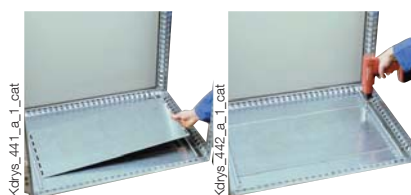
Nuts

The clip-on nuts fit onto the mounting profiles and perforated plates whilst also providing earthing.



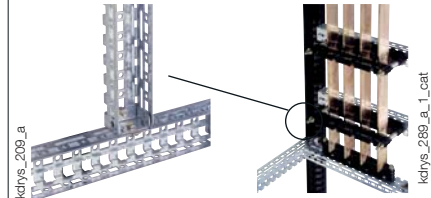
Gland plate

- The closing plate is fixed in place by a knurled nut.
- It is tightened manually with no tools required.



Mounting profiles

The perforations in these profiles allow the positioning of the nuts every 25 mm or continuously.



Notched mounting profiles

- These facilitate the positioning of the nuts and provide support during assembly.
- These provide good slip resistance, particularly in the event of vibration during transport.



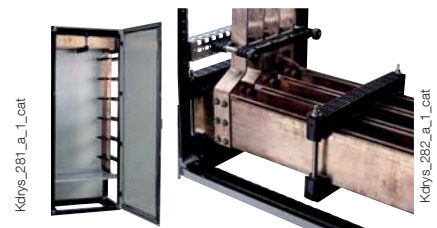
Internal door

- This allows the mounting of control auxiliaries and measuring devices protected by a solid or transparent front door.
- It is fixed onto the frame and can be depth-adjusted at a pitch of 25 mm.



Structural profiles

- In 1.75 mm steel double perforated every 25 mm so as to allow made-to-measure dimensions.
- These profiles allow the direct mounting of SOCOMEC SBC 10 and 20 bar supports.



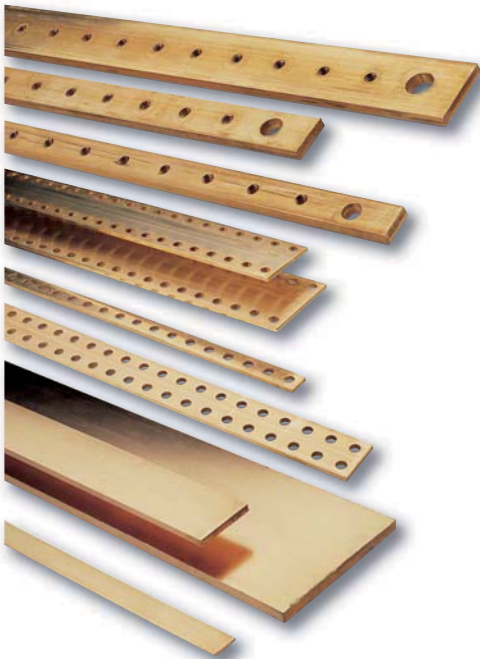


Rigid copper bars

Busbar

Enclosures
& accessories

barre_001_a_1_cat



Function

The SOCOMEC **rigid copper bars** are suitable for providing main or distribution connections.

Composition of the range

Solid bars

- Thickness: 4.5 and 10 mm.
- Width: 20 to 160 mm.
- Length: 1750, 2900, 5800 mm.

Pre-punched bars

- Thickness: 5 and 10 mm.
- Width: 25 to 125 mm.
- Length: 1750 mm.

Pre-punched and threaded bars

- Thickness: 5 mm.
- Width: 15 to 32 mm.
- Length: 990 mm.

Solid bars

- Determination of the admissible current I_z (A) for solid bars, in usual use conditions (T° ambient 45° , admissible warming of the bars 35° , 50 Hz current).

Pre-punched copper bars

- For the pre-punched bars of same dimensions as the solid bars:
pre-punched $I_z = 0.9 I_z$ solid.

Aluminium bars

- For the aluminium bars of same dimensions as the solid bars:
 I_z aluminium = $0.78 I_z$ solid copper.

Connector for drill-free connection on the busbar

- Cable for 2.5 to 185 mm².
- Bars for thickness 5 or 10 mm.

Connection Earth / Neutral

- Corner piece for Earth / Neutral connection, L = 1750 mm.
- Earth bar, L = 470 mm and L = 120 mm.

The solution for

- > Electrical distribution.



Edgewise mounting

Bar section l x e (mm)	Number of bars per phase			
	I	II	III	IIII
20 x 4	240	430	600	750
15 x 5	220	390	540	650
25 x 5	330	590	800	1000
32 x 5	410	700	1000	1250
40 x 5	500	850	1200	1500
50 x 5	600	1050	1450	1850
63 x 5	700	1250	1800	2250
80 x 5	900	1550	2200	2750
100 x 5	1100	1900	2650	3350
125 x 5	1300	2350	3250	4100
30 x 10	600	1050	1450	1800
50 x 10	850	1550	2150	2700
60 x 10	1000	1800	2400	3150
80 x 10	1300	2300	3200	4000
100 x 10	1550	2750	3850	4850
125 x 10	1900	3350	4650	5900
160 x 10	2350	4150	5800	7300

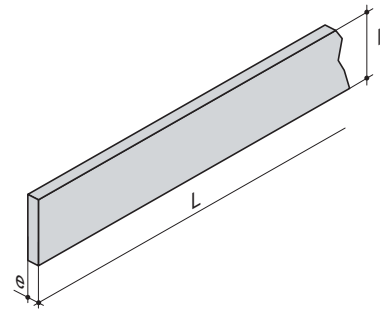
Flat mounting

Bar section l x e (mm)	Number of bars per phase			
	I	II	III	IIII
20 x 4	210	340	460	570
15 x 5	190	310	420	510
25 x 5	280	470	600	750
32 x 5	350	580	750	950
40 x 5	420	700	900	1150
50 x 5	510	850	1100	1400
63 x 5	620	1000	1350	1700
80 x 5	750	1250	1700	2100
100 x 5	900	1500	2050	2550
125 x 5	1100	1850	2500	3050
30 x 10	490	800	1100	1350
50 x 10	750	1200	1650	2050
60 x 10	850	1400	1900	2350
80 x 10	1100	1800	2450	3000
100 x 10	1350	2200	2950	3650
125 x 10	1600	2700	3600	4400
160 x 10	2000	3300	4450	5500

References

Solid bars

I x e (mm)	Weight (kg/ml)	L = 1750	L = 2900	L = 5800
		To be ordered by multiple 1 bar	To be ordered by multiple 1 bar	To be ordered in multiples of 5 or 10 bars
		Reference	Reference	Reference
20 x 4	0.71	4510 2004	4513 2004	4514 2004 ⁽¹⁾
25 x 5	1.11	4510 2505	4513 2505	4514 2505 ⁽¹⁾
32 x 5	1.42	4510 3205	4513 3205	4514 3205 ⁽¹⁾
40 x 5	1.78	4510 4005	4513 4005	4514 4005 ⁽¹⁾
50 x 5	2.22	4510 5005	4513 5005	4514 5005 ⁽¹⁾
63 x 5	2.80	4510 6305	4513 6305	4514 6305 ⁽¹⁾
80 x 5	3.56	4510 8005	4513 8005	4514 8005 ⁽²⁾
100 x 5	4.45	4510 9005	4513 9005	4514 9005 ⁽²⁾
125 x 5	5.56	4510 9205	4513 9205	4514 9205 ⁽²⁾
30 x 10	2.67	4510 3010	4513 3010	4514 3010 ⁽²⁾
50 x 10	4.45	4510 5010	4513 5010	4514 5010 ⁽²⁾
60 x 10	5.33	4510 6010	4513 6010	4514 9205 ⁽²⁾
80 x 10	7.11	4510 8010	4513 8010	4514 8010 ⁽²⁾
100 x 10	8.89	4510 9010	4513 9010	4514 9010 ⁽²⁾
125 x 10	11.11	4510 9210	4513 9210	4514 9210 ⁽²⁾
160 x 10	14.22	4510 9610	4513 9610	4514 9610 ⁽²⁾

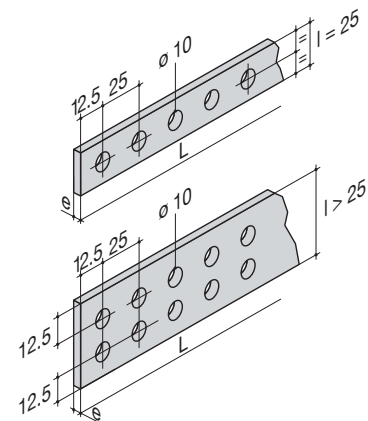


barre_002_a_1_x_cat

(1) To be ordered by multiple 10 bars
(2) To be ordered by multiple 5 bars

Pre-punched bars

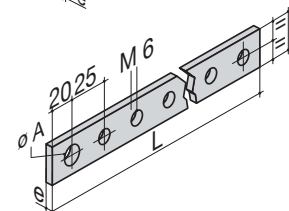
I x e (mm)	W (mm)	Weight (kg/ml)	Nb de rows	To be ordered in multiples of	Reference
25 x 5	1750	1.11	1	5	4511 2505
50 x 5	1750	2.22	2	5	4511 5005
63 x 5	1750	2.80	2	5	4511 6305
80 x 5	1750	3.56	2	5	4511 8005
100 x 5	1750	4.45	2	5	4511 9005
125 x 5	1750	5.56	2	5	4511 9205
50 x 10	1750	4.45	2	5	4511 5010
60 x 10	1750	5.33	2	5	4511 6010
80 x 10	1750	7.11	2	5	4511 8010
100 x 10	1750	8.89	2	5	4511 9010
125 x 10	1750	10.70	2	5	4511 9210



barre_003_a_1_x_cat

Pre-punched and threaded bars

I x e (mm)	W (mm)	Weight (kg/ml)	Ø A (mm)	To be ordered in multiples of	Reference
15 x 5	990	0.67 kg	8.2	5	4512 1505
20 x 5	990	0.89 kg	10.2	5	4512 2005
32 x 5	990	1.42 kg	12.2	5	4512 3205



barre_004_a_1_x_cat

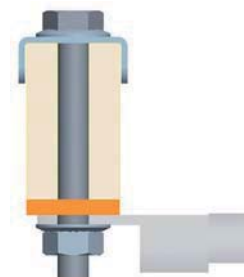
Accessories

Drill-free connection accessories

Use

- Allows the drill-free connection of flexible bars or cables onto a busbar.
- Connection across 2 bars, 10 mm thick, placed side by side, 10 mm apart.
- Compatible with busbar supports in the SBC range.
- For terminals or flexible bars with widths greater than 40 mm, use 2 connection accessories.
- Secured with M10 screws, tightening torque 45Nm.
- To make a connection: 1 securing clamp and 1 screw adapted to the height of the bars are required.

Type	Bar (mm)	To be ordered in multiples of	Reference
Securing clamp M10	all	12	5119 4423
Screw M10	30	100	5119 4503
Screw M10	50	100	5119 4505
Screw M10	60	100	5119 4506
Screw M10	80	100	5119 4508
Screw M10	100	100	5119 4510
Screw M10	125	100	5119 4512



barre_020_a_1_x_cat



Insulated flexible copper bars

Busbars

Enclosures
& accessories

barre_011_a_1_cat



Function

SOCOMECC **insulated flexible** copper bars are mainly utilised for providing the power connections between series of distribution busbars and the disconnection devices within an electrical panel.

The insulated layered copper allows the flexible copper bar to be easily formed to provide a customised solution.

Advantages

Easy to install

- Compact version.
- High level of flexibility enabling easy manipulation of the busbar.
- Reduced installation time with the elimination of terminal lugs and their crimping.

Increased safety by the elimination of crimped connections

- Better behaviour under short-circuit conditions.
- Decreased number of heating points.
- More reliable connections.

Characteristics

- Width of 9 to 100 mm.
- Copper layer thickness from 0.8 to 1 mm.
- Length of 2 m.

Conductor

- Layers of electrolytic copper Cu/ETP, final annealing state.

Insulator

- High temperature co-extruded vinyl compound on the copper strips (insulation thickness: 1.5 to 2 mm).
- Self-extinguisher: NFC 32200 and UL 94 V0.
- Continuous temperature withstand: 105 °C.
- Shore hardness A: 89 +/- 2.
- Module 100 % elongation: 16 Mpa.
- Resistance to elongation: < 15 % mini.
- Breaking stress: 20 Mpa.
- Transversal volume resistivity: 6.1015 Ω.
- Oxygen index: 29.5 %.
- Scratch and tear resistant.

Insulated flexible busbar

- Operating-temperature range: from -40 °C to +105 °C.
- Maximum operating voltage: 1000 VAC / 1500 VDC.
- Alternating voltage withstand (10 minute test):
 - between core and insulation: 16.5 kV,
 - between two insulating elements in contact: 33 kV,
 - Conductivity: 100 IACS,
 - HV < 50,
 - Resistance to traction $R_m > 200 \text{ N/cm}^2$,
 - Stretch before break 35 %,
 - Resistivity: 1.724 micro Ω/cm at 20 °C.

The solution for

- > Electrical distribution.



Strong points

- > Easy to install.
- > Increased safety by the elimination of crimped connections.

Conformity to standards

- > VDE 207 Y16
- > BS 6746
- > NF A 51-050
- > VDE 207 YM4
- > DIN 40050

Available on request

- > Specific lengths.
- > Halogen-free.
- > UL.
- > Please consult us.

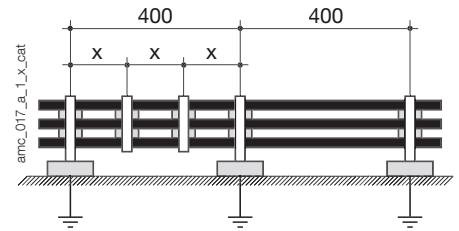
References

I x N x e (mm)	L (mm)	Permissible amperage for ΔT (°C) ⁽¹⁾			To be ordered in multiples of	Reference
		40°C (A)	50°C (A)	60°C (A)		
9 x 2 x 0.8	2000	113	129	143	4	4518 0902
9 x 3 x 0.8	2000	140	160	178	4	4518 0903
9 x 4 x 0.8	2000	165	188	209	4	4518 0904
9 x 5 x 0.8	2000	187	214	238	4	4518 0905
9 x 6 x 0.8	2000	208	238	264	4	4518 0906
13 x 3 x 0.5	2000	142	162	180	4	4518 1303
13 x 4 x 0.5	2000	165	189	210	4	4518 1304
13 x 5 x 0.5	2000	186	213	237	4	4518 1305
13 x 6 x 0.5	2000	206	235	261	4	4518 1306
15.5 x 2 x 0.8	2000	167	191	212	4	4518 1502
15.5 x 3 x 0.8	2000	207	237	263	4	4518 1503
15.5 x 4 x 0.8	2000	242	277	308	4	4518 1504
15.5 x 6 x 0.8	2000	304	347	386	4	4518 1506
15.5 x 8 x 0.8	2000	358	409	455	4	4518 1508
15.5 x 10 x 0.8	2000	408	466	519	4	4518 1510
20 x 2 x 1	2000	228	261	290	4	4518 2002
20 x 3 x 1	2000	283	324	360	4	4518 2003
20 x 4 x 1	2000	331	378	421	4	4518 2004
20 x 5 x 1	2000	374	428	476	4	4518 2005
20 x 6 x 1	2000	415	474	527	4	4518 2006
20 x 8 x 1	2000	488	558	621	4	4518 2008
20 x 10 x 1	2000	556	635	705	4	4518 2010
24 x 2 x 1	2000	263	301	335	4	4518 2402
24 x 3 x 1	2000	326	373	414	4	4518 2403
24 x 4 x 1	2000	380	435	483	4	4518 2404
24 x 5 x 1	2000	429	491	546	4	4518 2405
24 x 6 x 1	2000	475	542	603	4	4518 2406
24 x 8 x 1	2000	557	636	708	4	4518 2408
24 x 10 x 1	2000	632	722	803	4	4518 2410
32 x 2 x 1	2000	331	379	421	4	4518 3202
32 x 3 x 1	2000	409	468	520	4	4518 3203
32 x 4 x 1	2000	476	544	605	4	4518 3204
32 x 5 x 1	2000	536	612	681	4	4518 3205
32 x 6 x 1	2000	591	675	751	4	4518 3206
32 x 8 x 1	2000	689	787	876	4	4518 3208
32 x 10 x 1	2000	777	887	987 ⁽¹⁾	4	4518 3210
40 x 2 x 1	2000	398	455	506	2	4518 4002
40 x 3 x 1	2000	490	560	623	2	4518 4003
40 x 4 x 1	2000	569	650	723	2	4518 4004
40 x 5 x 1	2000	639	730	812	2	4518 4005
40 x 6 x 1	2000	703	803	893	2	4518 4006
40 x 8 x 1	2000	815	932	1036	2	4518 4008
40 x 10 x 1	2000	915	1045	1163	2	4518 4010
50 x 3 x 1	2000	589	673	749	2	4518 5003
50 x 4 x 1	2000	682	780	867	2	4518 5004
50 x 5 x 1	2000	764	873	971	2	4518 5005
50 x 6 x 1	2000	838	957	1062	2	4518 5006
50 x 8 x 1	2000	967	1105	1229	2	4518 5008
50 x 10 x 1	2000	1080	1234	1373	2	4518 5010
63 x 3 x 1	2000	715	816	908	2	4518 6303
63 x 4 x 1	2000	825	943	1048	2	4518 6304
63 x 5 x 1	2000	921	1052	1171	2	4518 6305
63 x 6 x 1	2000	1041	1187	1324	2	4518 6306
63 x 8 x 1	2000	1157	1321	1470	2	4518 6308
63 x 10 x 1	2000	1286	1469	1634	2	4518 6310
80 x 3 x 1	2000	874	998	1110	2	4518 8003
80 x 4 x 1	2000	1006	1149	1278	2	4518 8004
80 x 5 x 1	2000	1119	1279	1422	2	4518 8005
80 x 6 x 1	2000	1220	1393	1550	2	4518 8006
80 x 8 x 1	2000	1393	1592	1771	2	4518 8008
80 x 10 x 1	2000	1543	1763	1961	2	4518 8010
100 x 4 x 1	2000	1211	1383	1538	2	4518 9004
100 x 5 x 1	2000	1343	1534	1707	2	4518 9005
100 x 6 x 1	2000	1460	1668	1855	2	4518 9006
100 x 8 x 1	2000	1660	1897	2110	2	4518 9008
100 x 10 x 1	2000	1833	2094	2329	2	4518 9010
100 x 12 x 1	2000	1993	2277	2531	2	4518 9012

(1) For ambient air temperature of 40 °C
Important: max. busbar temperature = 105 °C.
L: length of bar in metres.

I: width of bare busbar in mm.
N: number of copper layers.
e: copper layer thickness in mm.

Implementation



Flexible bars should be mounted on insulated supports with a maximum distance of 400 mm. Bars should also be held together with straps, as shown in the above diagram. The distance between successive straps depends on the electro-dynamic constraints in the event of a short-circuit. The table below gives the recommended distances between straps.

I _{cc} max. (kA rms)	Distance x between straps (mm) ⁽¹⁾
20	350
25	200
35	100
45	70

(1) 9 mm straps, load 80 kg.



Insulated flat copper braids

Busbars

Enclosures
& accessories

new



tress_002_a_1_cat

The solution for

- > Electrical distribution.



Strong points

- > Easy to install.
- > Wide range of utilisation.
- > Compatibility.

Conformity to standards



Customised solutions

- > Tin-plated contact surface.
- > Other lengths: please consult us.

Function

SOCOMEC **insulated flat copper braids** are mainly utilised for providing the power connections between series of distribution busbars and the disconnection devices within an electrical panel.

Their flexibility is especially adapted to achieve complex and customised connections in cases where minimum space is available.

Technical characteristics

- Electrolytic copper, final annealing state.
- Operating voltage 1000 VAC - 1500 VDC
- Dielectric strength 20 KV / mm
- Operating temperature: - 40°C / +105°C
- Self-extinguishing: UL 94 V0
- Contact surface: bare copper

Advantages

Easy to install

- Compact and flexible.
- Length and orientation are easily adapted.
- Pre-mounted connection terminals reduces installation time.

Wide range of utilisation




- Parallel connections permit currents of up to 1000 A.
- Adapted to various types of connection terminals.
- Connection distance from 200 to 800 mm.

Compatibility

- With SOCOMECE devices.
- With most circuit-breakers on the market.

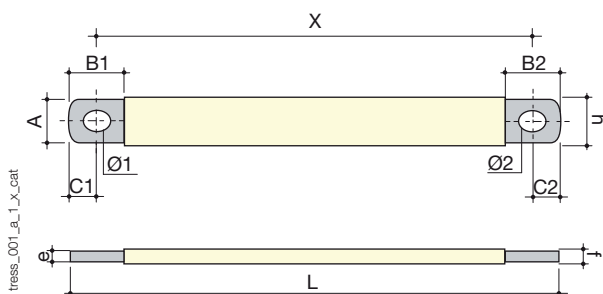
References

Connections in parallel

Facteur de correction	
	Rated current (no derating)
	2 x rated current x 0.8
	3 x rated current x 0.65

Dimensions						Admissible current at an ambient temperature of			Reference
A Width (mm)	e Thickness (mm)	L Length (mm)	Ø 1 (mm)	Ø 2 (mm)	X Fixing centres (mm)	35 °C (A)	Nominal rating 45 °C (A)	55 °C (A)	
20	1.5	220	8.5	10.5	200	180	160	140	4516 1620
20	1.5	270	8.5	10.5	250	180	160	140	4516 1625
20	1.5	320	8.5	10.5	300	180	160	140	4516 1630
20	1.5	370	8.5	10.5	350	180	160	140	4516 1635
20	1.5	420	8.5	10.5	400	180	160	140	4516 1640
20	1.5	520	8.5	10.5	500	180	160	140	4516 1650
20	3	220	8.5	10.5	200	280	250	220	4516 2520
20	3	270	8.5	10.5	250	280	250	220	4516 2525
20	3	320	8.5	10.5	300	280	250	220	4516 2530
20	3	370	8.5	10.5	350	280	250	220	4516 2535
20	3	420	8.5	10.5	400	280	250	220	4516 2540
20	3	420	8.5	10.5	500	280	250	220	4516 2550
25	5	272	10.5	10.5	250	440	400	320	4516 4025
25	5	322	10.5	10.5	300	440	400	320	4516 4030
25	5	372	10.5	10.5	350	440	400	320	4516 4035
25	5	422	10.5	10.5	400	440	400	320	4516 4040
25	5	522	10.5	10.5	500	440	400	320	4516 4050
25	5	622	10.5	10.5	600	440	400	320	4516 4060
25	5	822	10.5	10.5	800	440	400	320	4516 4080
30	10	274	12.5	10.5	250	690	630	560	4516 6325
30	10	324	12.5	10.5	300	690	630	560	4516 6330
30	10	374	12.5	10.5	350	690	630	560	4516 6335
30	10	424	12.5	10.5	400	690	630	560	4516 6340
30	10	524	12.5	10.5	500	690	630	560	4516 6350
30	10	624	12.5	10.5	600	690	630	560	4516 6360
30	10	824	12.5	10.5	800	690	630	560	4516 6380

Dimensions



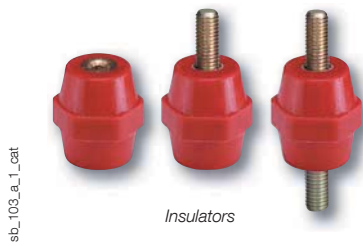
Nominal rating 45 °C (A)	A (mm)	e (mm)	B1 (mm)	B2 (mm)	C1 (mm)	C2 (mm)	Ø1 (mm)	Ø2 (mm)	f (mm)	h (mm)
160	20	1.5	25	30	8	12	8.5	10.5	3.5	22
250	20	3	25	30	8	12	8.5	10.5	5	22
400	25	5	25	30	10	12	10.5	10.5	7	27
630	30	10	35	30	12	12	12.5	10.5	12	32



Busbar supports

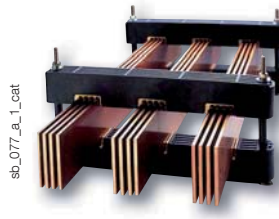
Busbar

Enclosures & accessories



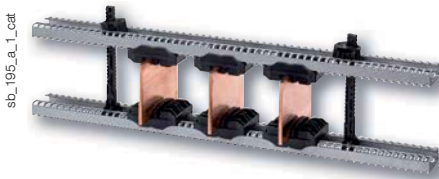
sb_103_a_1_cat

Insulators



sb_077_a_1_cat

Busbar supports with fixed interphase



sb_195_a_1_cat

Busbar supports with adjustable interphase



sb_084_a_1_cat

Stair type supports

The solution for

- > Electrical distribution.



Conformity to standards

- > IEC 60439-1
- > IEC 60865-1



Approvals and certifications⁽¹⁾

- > ASEFA/LCIE



(1) Product reference on request.

Available on request

- > Please consult us.

Function

SOCOMEK **insulating busbar supports** allow the fixation of a copper or aluminium bar or busbar.

Characteristics

Insulators

- Polyester without halogene.
- UL94 VO self-extinguishable.
- Colour red RAL 3002.
- Operating temperature from - 40°C to + 130°C.
- Deformation under load temperature (ASTM D643): > 200 °C.
- Dielectric constant (ASTM D150): 4/5.
- Arc resistance (ASTM D495): > 180 s.
- Water absorption (ASTM D570): < 0.3 %.

Busbar support

- High dielectric strength.
- High mechanical resistance.
- Amagnetism of assembly parts.
- High resistance to damp heat (supplied "tropicalised").

Stair type supports

- Thermoplastic material.
- VO self-extinguishable.
- Insulation voltage: 1000 V.

Software tool for size selection

Mechanical systems is a software which is used to size bar sets. It defines the best bar section and distance between each support for the electrical characteristics of the panel compliant with standard IEC 60439-1. It runs in a Windows® 95, 98, 2000, NT ou XP environment.



Selection guide

Edgewise mounting

• Busbar supports with **fixed interphase**

I_{cc} up to 120 kA
(short circuit current)

I_{cc} up to 50 kA

SB C 10 p. 564

SB C 10 p. 564

SB C 20
p. 566

SB C 30
p. 568

100 A 400 A 500 A 630 A 1000 A 1600 A 2500 A 4000 A 5800 A 7000 A

Nominal current I_n

I_{cc} up to 40 kA

SB C ER
p. 570

I_{cc} up to 80 kA

SB C ER Power
p. 571

• Busbar supports with **adjustable interphase**

Flat mounting

• **Unipolar** busbar supports



SB 205 p. 572



SB 306 p. 572

I_{cc} up to 80 kA

100 A 400 A 500 A 630 A 1000 A 1600 A 2500 A 4000 A 5800 A 7000 A

Nominal current I_n



SB 7500 p. 573

I_{cc} up to 50 kA



SB P 30 p. 574

I_{cc} up to 80 kA

• **Multipolar** busbar supports

Other supports

• **Unipolar** busbar supports



I_{cc} up to 50 kA

1. Hexagonal insulators p. 575
2. SB 1 and SB 2 p. 578
3. SB 3 p. 579

100 A 400 A 500 A 630 A 1000 A 1600 A 2500 A 4000 A 5800 A 7000 A

Nominal current I_n



4. SB E 44 p. 580
5. SB P 10 p. 581
6. SB P 44 p. 581



I_{cc} up to 40 kA

I_{cc} up to 40 kA

• **Tetrapolar** busbar supports

Busbar supports

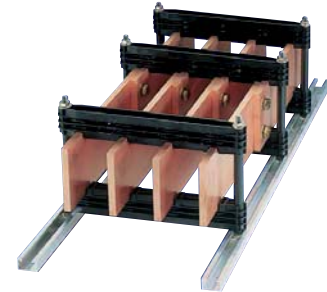
Busbar

■ SB C 10 Multipolar flat mounting busbar supports with fixed interphase

References

2 bars of 5 mm or 1 bar of 10 mm

No. of poles	Insulation voltage (VAC)	Number of bars max x bar thickness (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	1000	2 x 5 / 1 x 10	160	25	1	5024 6304
3	1000	2 x 5 / 1 x 10	160	40	1	5024 6309
3	1000	2 x 5 / 1 x 10	190	50	1	5024 6310
3	1000	2 x 5 / 1 x 10	190	60	1	5024 6312
3	1000	2 x 5 / 1 x 10	190	63	1	5024 6313
3	1000	2 x 5 / 1 x 10	220	80	1	5024 6317
4	1000	2 x 5 / 1 x 10	160	25	1	5024 6504
4	1000	2 x 5 / 1 x 10	160	40	1	5024 6509
4	1000	2 x 5 / 1 x 10	190	50	1	5024 6510
4	1000	2 x 5 / 1 x 10	190	60	1	5024 6512
4	1000	2 x 5 / 1 x 10	190	63	1	5024 6513
4	1000	2 x 5 / 1 x 10	220	80	1	5024 6517
4	1000	2 x 5 / 1 x 10	220	100	1	5024 6518



sb_061_b_2_cat

Bar holder

Number of bars max x bar thickness (mm)	No. of poles	Pack qty	Reference
2 x 5 / 1 x 10	3	1	5024 9031 ⁽¹⁾
2 x 5 / 1 x 10	4	1	5024 9041 ⁽¹⁾

(1) Bar holder: 1 support without insert + 2 screws M8 + 2 nuts.

Installation corner piece

Type	For enclosure D (mm)	Pack qty	Reference
For bar holder SB C 10 / SB C 20	Min 400	1	5024 9000
For bar holder SB C 10 / 20 / 30	Min 600	1	5024 9001

1 or 2 bars of 10 mm

No. of poles	Insulation voltage (VAC)	Number of bars max x bar thickness (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	800	1 x 10 / 2 x 10	160	25	1	5024 6404
3	800	1 x 10 / 2 x 10	160	40	1	5024 6409
3	800	1 x 10 / 2 x 10	190	50	1	5024 6410
3	800	1 x 10 / 2 x 10	190	60	1	5024 6412
3	800	1 x 10 / 2 x 10	190	63	1	5024 6413
3	800	1 x 10 / 2 x 10	220	80	1	5024 6417
3	800	1 x 10 / 2 x 10	220	100	1	5024 6418
4	1000	1 x 10 / 2 x 10	160	25	1	5024 6604
4	1000	1 x 10 / 2 x 10	160	40	1	5024 6609
4	1000	1 x 10 / 2 x 10	190	50	1	5024 6610
4	1000	1 x 10 / 2 x 10	190	60	1	5024 6612
4	1000	1 x 10 / 2 x 10	190	63	1	5024 6613
4	1000	1 x 10 / 2 x 10	220	80	1	5024 6617
4	1000	1 x 10 / 2 x 10	220	100	1	5024 6618



sb_174_a_2_cat

Bar holder

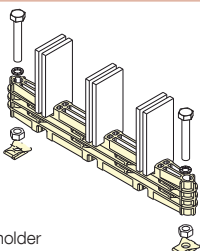
Number of bars max x bar thickness (mm)	No. of poles	Pack qty	Reference
1 x 10 / 2 x 10	3	1	5024 9034 ⁽¹⁾
1 x 10 / 2 x 10	4	1	5024 9044 ⁽¹⁾

(1) Bar holder: 1 support without insert + 2 screws M8 + 2 nuts.

Installation corner piece

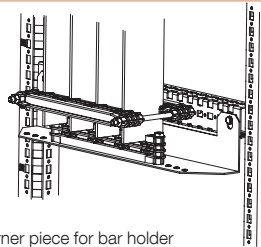
Type	For enclosure D (mm)	Pack qty	Reference
For bar holder SB C 10 / SB C 20	Min 400	1	5024 9000
For bar holder SB C 10 / 20 / 30	Min 600	1	5024 9001

Accessories



Bar holder

sb_094_a_1_x_cat



Installation corner piece for bar holder

sb_177_a_1_x_cat

Characteristics

Characteristics of 3 and 4 poles with 5 mm for SB C 10

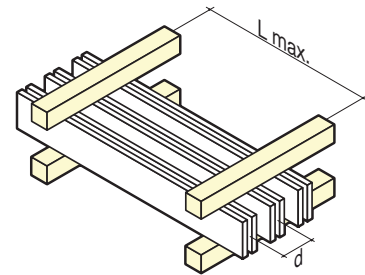
peak I_{sc} rms I_{sc} Bar x no.	Max. L (distance between centres of supports in mm) for						d (mm)	Iz (A) ⁽¹⁾
	15 kA 9 kA	24 kA 12 kA	48 kA 23 kA	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA		
25 x 5 x 1	775	475	225	175	140	100	60	330
25 x 5 x 2	675	425	200	160	125		60	590
40 x 5 x 1	1000	625	300	225	175	130	60	500
40 x 5 x 2	950	575	275	225	170	125	60	850
50 x 5 x 1	1000	700	350	250	200	130	60	600
50 x 5 x 2	1000	675	325	250	200	145	60	1050
60 x 5 x 1	1000	775	375	300	225	130	60	700
60 x 5 x 2	1000	775	375	300	225	165	60	1200
63 x 5 x 1	1000	800	400	300	225	130	60	700
63 x 5 x 2	1000	800	400	300	225	170	60	1250
80 x 5 x 1	1000	950	475	350	225	125	60	900
80 x 5 x 2	1000	975	475	375	275	200	60	1550
100 x 5 x 1	1000	1000	550	400	225	125	60	1100
100 x 5 x 2	1000	1000	575	425	325	225	60	1900

(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.

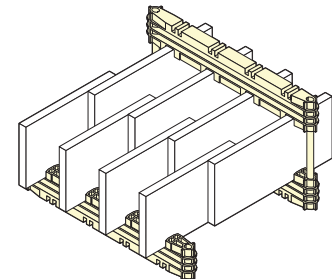
Characteristics of 3 and 4 poles with 10 mm for SB C 10

peak I_{sc} rms I_{sc} Bar x no.	Max. L (distance between centres of supports in mm) for						d (mm)	Iz (A) ⁽¹⁾
	15 kA 9 kA	24 kA 12 kA	48 kA 23 kA	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA		
25 x 10 x 1	1000	1000	500	375	275	200	65	
25 x 10 x 2	1000	1000	525	400	300	200	90	850
40 x 10 x 1	1000	1000	650	475	375	250	65	700
40 x 10 x 2	1000	1000	700	525	400	275	90	1250
50 x 10 x 1	1000	1000	725	550	425	300	65	850
50 x 10 x 2	1000	1000	800	600	475	325	90	1550
60 x 10 x 1	1000	1000	800	625	475	325	65	1000
60 x 10 x 2	1000	1000	900	675	525	350	90	1800
63 x 10 x 1	1000	1000	825	625	475	350	65	1050
63 x 10 x 2	1000	1000	925	700	550	350	90	1850
80 x 10 x 1	1000	1000	975	725	550	400	65	1300
80 x 10 x 2	1000	1000	1000	850	650	350	90	2300
100 x 10 x 1	1000	1000	1000	850	650	400	65	1550
100 x 10 x 2	1000	1000	1000	975	675	350	90	2750

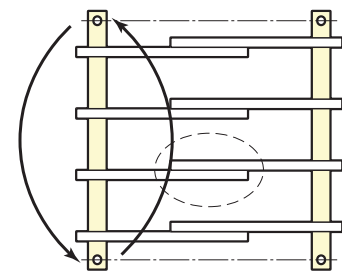
(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



Adhering to the **maximum distances** between two supports ensures the busbar supports are able to withstand the given short circuit current values. At these values, deformation of the copper bars may occur. These deformations are permitted by standard IEC 60439-1 as long as they adhere to the insulation distances.



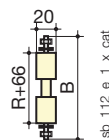
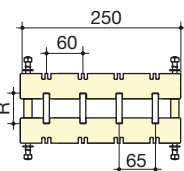
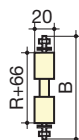
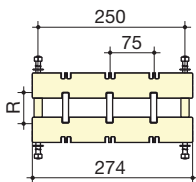
Mounting of one or two bars per pole



Bars joined by reversing a support

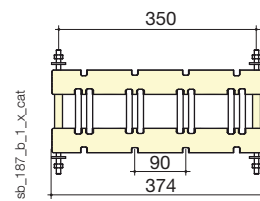
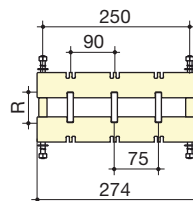
Dimensions

2 bars of 5 mm or 1 bar of 10 mm



sb_112_e_1_x_cat

1 or 2 bars of 10 mm



sb_187_b_1_x_cat



sb_178_b_1_x_cat

Fixed interphase:

- 3 poles 2 x 5, 1 x 10: 75 mm

- 4 poles thickness bars. 5 mm: 60 poles thickness bars. 10 mm: 65 mm.

Fixed interphase:

- 3 poles 1 bar of 10 mm: 75 mm
2 bars of 10 mm per pole: 90 mm

- 4 poles 1 or 2 bars of 10 mm 90 mm.

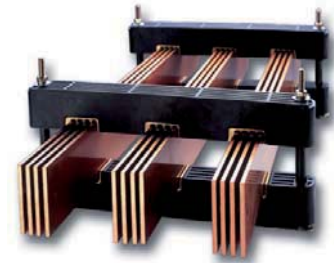
Busbar supports

Busbar

■ SB C 20 Multipolar flat mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	No. of bars	Thickness of the bar (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	1000	1 ... 4	5	190	50	1	5024 8310
3	1000	1 ... 4	5	190	60	1	5024 8312
3	1000	1 ... 4	5	190	63	1	5024 8313
3	1000	1 ... 4	5	220	80	1	5024 8317
3	1000	1 ... 4	5	220	100	1	5024 8318
3	1000	1 ... 4	5	245	120	1	5024 8320
3	1000	1 ... 4	5	245	125	1	5024 8321
3	1000	1 ... 4	5	280	160	1	5024 8324
3	1000	1 ... 2	10	190	50	1	5024 7310
3	1000	1 ... 2	10	190	60	1	5024 7312
3	1000	1 ... 2	10	190	63	1	5024 7313
3	1000	1 ... 2	10	220	80	1	5024 7317
3	1000	1 ... 2	10	220	100	1	5024 7318
3	1000	1 ... 2	10	245	120	1	5024 7320
3	1000	1 ... 2	10	245	125	1	5024 7321
3	1000	1 ... 2	10	280	160	1	5024 7324
4	1000	1 ... 4	5	190	50	1	5024 8410
4	1000	1 ... 4	5	190	60	1	5024 8412
4	1000	1 ... 4	5	190	63	1	5024 8413
4	1000	1 ... 4	5	220	80	1	5024 8417
4	1000	1 ... 4	5	220	100	1	5024 8418
4	1000	1 ... 4	5	245	120	1	5024 8420
4	1000	1 ... 4	5	245	125	1	5024 8421
4	1000	1 ... 4	5	280	160	1	5024 8424
4	1000	1 ... 2	10	190	50	1	5024 7410
4	1000	1 ... 2	10	190	60	1	5024 7412
4	1000	1 ... 2	10	190	63	1	5024 7413
4	1000	1 ... 2	10	220	80	1	5024 7417
4	1000	1 ... 2	10	220	100	1	5024 7418
4	1000	1 ... 2	10	245	120	1	5024 7420
4	1000	1 ... 2	10	245	125	1	5024 7421
4	1000	1 ... 2	10	280	160	1	5024 7424



sb_077_a_1_cat

Our advantages

- > The details which make a difference: SB C 20 busbar supports have threaded holes which allow a protective screen to be attached. The supports are put in place using threaded rods and M8 nuts.



Threaded rods and M8 nuts.

SB C 20 Threaded holes

Bar holder

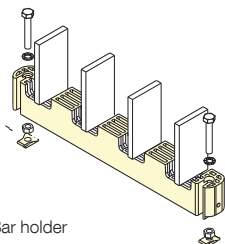
No. of poles	To be ordered in multiples of	Reference
3	1	5024 9032 ⁽¹⁾
4	1	5024 9042 ⁽¹⁾

(1) Bar holder: 1 support without insert + 2 screws M8 + 2 nuts.

Installation corner piece

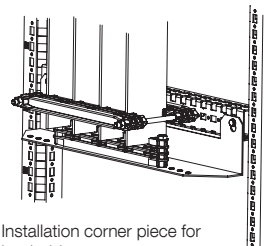
Type	For enclosure D (mm)	To be ordered in multiples of	Reference
For bar holder SB C 10 / SB C 20	Min 400	1	5024 9000
For bar holder SB C 10 / 20 / 30	Min 600	1	5024 9001

Accessories



sb_093_a_1_x_cat

Bar holder



sb_177_a_1_x_cat

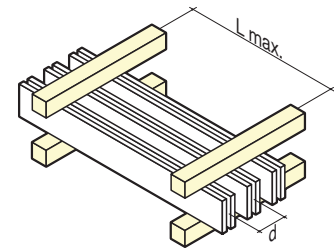
Installation corner piece for bar holder

Characteristics

Characteristics of 3 and 4 poles with 5 mm for SB C 20

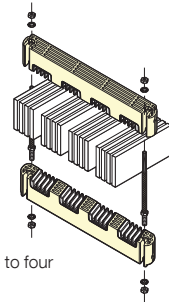
peak I_{sc} rms I_{sc}	Max. L (distance between centres of supports in mm) for								d (mm)	Iz (A) ⁽¹⁾
	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA	152 kA 69 kA	165 kA 75 kA	187 kA 85 kA	220 kA 100 kA	264 kA 120 kA		
Bar x no.										
50 x 5 x 1	625	475	350	250	225	200	175	150	90	600
50 x 5 x 2	525	400	300	225	200	175	155	130	90	1050
50 x 5 x 3	600	450	325	250	225	200	175	145	90	1450
50 x 5 x 4	675	525	375	275	250	225	175	160	90	1850
60 x 5 x 1	675	525	375	275	250	225	200	165	90	700
60 x 5 x 2	600	450	325	250	225	200	175	145	90	1200
60 x 5 x 3	675	525	375	275	250	225	175	165	90	1700
60 x 5 x 4	750	575	400	300	275	250	200	175	90	2150
63 x 5 x 1	700	550	375	275	250	225	200	170	90	700
63 x 5 x 2	625	475	350	250	225	200	175	150	90	1250
63 x 5 x 3	700	525	375	275	250	225	200	170	90	1800
63 x 5 x 4	775	600	425	325	275	250	200	175	90	2250
80 x 5 x 1	800	625	450	325	300	250	225	175	90	900
80 x 5 x 2	725	550	400	300	275	250	200	175	90	1550
80 x 5 x 3	800	625	450	325	300	275	225	175	90	2200
80 x 5 x 4	875	675	475	350	325	300	250	200	90	2750
100 x 5 x 1	900	700	500	375	350	300	250	200	90	1100
100 x 5 x 2	850	650	475	350	325	275	225	200	90	1900
100 x 5 x 3	925	700	500	375	350	300	250	200	90	2650
100 x 5 x 4	975	750	525	400	375	325	275	225	90	3350
125 x 5 x 1	1000	800	575	425	400	350	300	250	90	1300
125 x 5 x 2	975	750	550	400	375	325	275	225	90	2350
125 x 5 x 3	1000	800	575	425	400	350	300	250	90	3250
125 x 5 x 4	1000	825	575	425	400	350	300	250	90	4100

(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



sb_021_b_1_x_cat

Adhering to the **maximum distances** between two supports ensures the busbar supports are able to withstand the given short circuit current values. At these values, deformation of the copper bars may occur. These deformations are permitted by standard IEC 60439-1 as long as they adhere to the insulation distances.



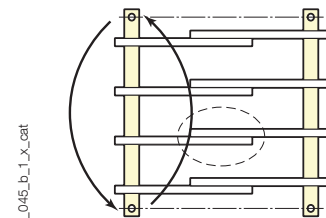
sb_063_a_1_x_cat

Mounting of one to four bars per pole

Characteristics of 3 and 4 poles with 10 mm for SB C 20

peak I_{sc} rms I_{sc}	Max. L (distance between centres of supports in mm) for								d (mm)	Iz (A) ⁽¹⁾
	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA	152 kA 69 kA	165 kA 75 kA	187 kA 85 kA	220 kA 100 kA	264 kA 120 kA		
Bar x no.										
50 x 10 x 1	1000	925	675	500	450	400	350	275	90	850
50 x 10 x 2	1000	850	600	450	400	350	300	250	90	1550
60 x 10 x 1	1000	1000	725	550	500	450	375	300	90	1000
60 x 10 x 2	1000	925	675	500	450	400	350	275	90	1800
63 x 10 x 1	1000	1000	750	550	525	450	375	325	90	1050
63 x 10 x 2	1000	950	675	500	475	400	350	275	90	1890
80 x 10 x 1	1000	1000	850	625	575	525	425	350	90	1300
80 x 10 x 2	1000	1000	775	575	525	475	400	325	90	2300
100 x 10 x 1	1000	1000	950	700	650	575	475	400	90	1550
100 x 10 x 2	1000	1000	850	625	575	525	425	350	90	2750
125 x 10 x 1	1000	1000	1000	800	725	650	550	450	90	1900
125 x 10 x 2	1000	1000	925	675	625	550	475	400	90	3350
160 x 10 x 1	1000	1000	1000	900	825	725	625	500	90	2350
160 x 10 x 2	1000	1000	950	700	650	575	475	400	90	4150

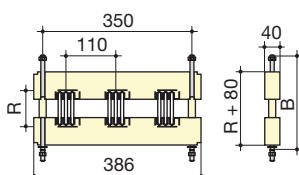
(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



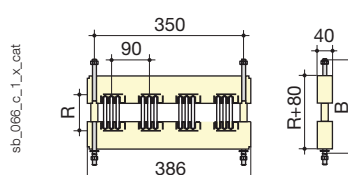
sb_046_b_1_x_cat

Bars joined by reversing a support

Dimensions



Fixed interphase:
• 3 poles: 110 mm



• 4 poles: 90 mm

sb_067_c_1_x_cat

Busbar supports

Busbar

■ SB C 30 Multipolar flat mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	No. of bars	Thickness of the bar (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	1000	1 ... 3	10	190	50	1	5024 5310
3	1000	1 ... 3	10	190	60	1	5024 5312
3	1000	1 ... 3	10	190	63	1	5024 5313
3	1000	1 ... 3	10	190	70	1	5024 5315
3	1000	1 ... 3	10	220	80	1	5024 5317
3	1000	1 ... 3	10	220	100	1	5024 5318
3	1000	1 ... 3	10	245	120	1	5024 5320
3	1000	1 ... 3	10	245	125	1	5024 5321
3	1000	1 ... 3	10	280	160	1	5024 5324
3	1000	1 ... 3	10	325	200	1	5024 5325
4	1000	1 ... 3	10	190	50	1	5024 5510
4	1000	1 ... 3	10	190	60	1	5024 5512
4	1000	1 ... 3	10	190	63	1	5024 5513
4	1000	1 ... 3	10	190	70	1	5024 5515
4	1000	1 ... 3	10	220	80	1	5024 5517
4	1000	1 ... 3	10	220	100	1	5024 5518
4	1000	1 ... 3	10	245	120	1	5024 5520
4	1000	1 ... 3	10	245	125	1	5024 5521
4	1000	1 ... 3	10	280	160	1	5024 5524
4	1000	1 ... 3	10	325	200	1	5024 5525



sb_173_a_2_cat

Bar holder

No. of poles	Pack qty	Reference
3 / 4	1	5024 9033 ⁽¹⁾

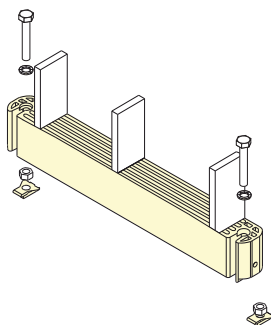
(1) Bar holder: 1 support without insert + 2 screws M8 + 2 nuts.

Installation corner piece

Type	For enclosure D (mm)	Pack qty	Reference
For bar holder SB C 10 / SB C 2030 ¹	Min 600	1	5024 9001

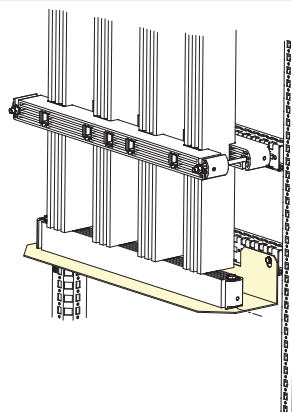
(1) For enclosure $D \geq 400$ mm.

Accessories



Bar holder

sb_122_b_1_x_cat



Installation corner piece for bar holder

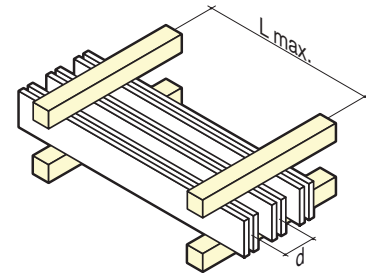
sb_180_a_1_x_cat

Characteristics

Characteristics of 3 and 4 poles with 10 mm for SB C 30

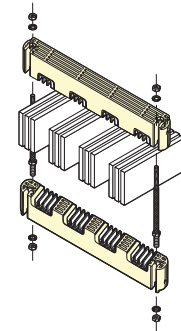
peak I_{sc} rms I_{sc}	Max. L (distance between centres of supports in mm) for								d (mm)	I_z (A) ⁽¹⁾
	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA	152 kA 69 kA	165 kA 75 kA	187 kA 85 kA	220 kA 100 kA	264 kA 120 kA		
Bar x no.										
50 x 10 x 1	1000	1000	800	600	550	475	400	350	130	850
50 x 10 x 2	1000	900	650	475	450	400	325	275	130	1550
50 x 10 x 3	725	550	400	300	275	225	200	175	130	2150
60 x 10 x 1	1000	1000	875	650	600	525	450	375	130	1000
60 x 10 x 2	1000	1000	725	525	500	425	375	300	130	1800
60 x 10 x 3	825	625	450	325	300	275	225	175	130	2500
63 x 10 x 1	1000	1000	900	675	600	550	450	375	130	1050
63 x 10 x 2	1000	1000	725	550	500	450	375	300	130	1850
63 x 10 x 3	850	650	450	350	325	275	225	200	130	2600
80 x 10 x 1	1000	1000	1000	750	675	600	500	425	130	1300
80 x 10 x 2	1000	1000	825	625	575	500	425	350	130	2300
80 x 10 x 3	1000	750	550	400	375	325	275	225	130	3 200
100 x 10 x 1	1000	1000	1000	825	750	675	575	475	130	1550
100 x 10 x 2	1000	1000	925	675	625	550	475	400	130	2750
100 x 10 x 3	1000	900	650	475	425	375	325	275	130	3250
125 x 10 x 1	1000	1000	1000	925	850	750	625	525	130	1900
125 x 10 x 2	1000	1000	1000	750	675	600	500	425	130	3350
125 x 10 x 3	1000	1000	750	550	525	450	375	325	130	4650
160 x 10 x 1	1000	1000	1000	1000	925	825	700	575	130	2350
160 x 10 x 2	1000	1000	1000	750	700	625	525	425	130	4150
160 x 10 x 3	1000	1000	900	675	625	550	475	375	130	5800
200 x 10 x 1	1000	1000	1000	1000	1000	900	750	625	130	2850
200 x 10 x 2	1000	1000	925	700	625	550	475	400	130	5050
200 x 10 x 3	1000	1000	725	525	500	425	375	300	130	7000

(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



sb_021_lb_1_x_cat

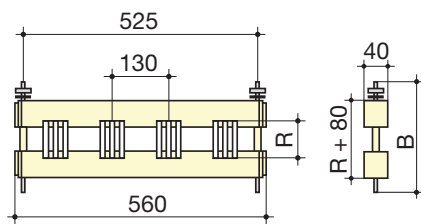
Adhering to the **maximum distances** between two supports ensures the busbar supports are able to withstand the given short circuit current values. At these values, deformation of the copper bars may occur. These deformations are permitted by standard IEC 60439-1 as long as they adhere to the insulation distances.



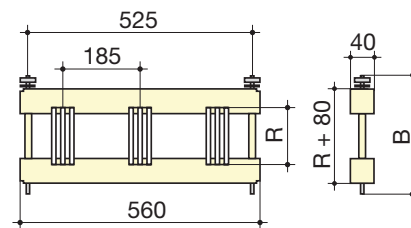
sb_162_a_1_x_cat

Mounting of one to three bars per pole

Dimensions



sb_157_d_1_x_cat



sb_146_d_1_x_cat

Fixed interphase:

- 3 poles: 185 mm
- 4 poles: 130 mm

Our advantages

- > The details which make a difference SB C 30 busbar supports have threaded holes which allow a protective screen to be attached.



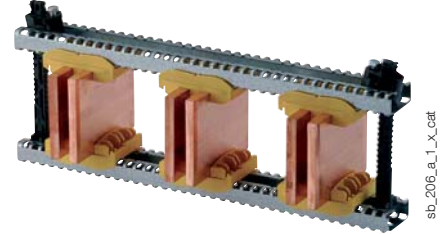
Busbar supports

Busbar

SB C ER Multipolar edgewise mounting busbar supports with adjustable interphase

References

Description of accessories	Thickness of the bar (mm)	No. of poles	Length	Quantity	To be ordered in multiples of	Reference
Slot for 5 mm bars	5	3		6 ⁽¹⁾	8	5025 5105
Slot for 5 mm bars	5	4		8 ⁽¹⁾	8	5025 5105
Slot for 10 mm bars	10	3		6 ⁽¹⁾	4	5025 5110
Slot for 10 mm bars	10	4		8 ⁽¹⁾	4	5025 5110
Rod kit (bar height 25 to 200 mm)				2 ⁽¹⁾	4	5025 5100
380 mm profile			380	2 ⁽¹⁾	4	5025 5124
480 mm profile			480	2 ⁽¹⁾	4	5025 5125
580 mm profile			580	2 ⁽¹⁾	4	5025 5126
780 mm profile			780	2 ⁽¹⁾	4	5025 5128
2 m profile			2000		4	5025 5120
Profile for Prisma cabinet ⁽²⁾			525	1 ⁽¹⁾	1	5025 5130



Order guide

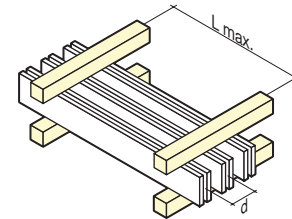
- With three poles, order: 6 x studs, 2 x rods, 2 x profiles.
- With four poles, order: 8 x studs, 2 x rods, 2 x profiles.

(1) Quantity necessary to make 1 busbar support

(2) Kit of 2 profiles and 4 square fixings.

Characteristics

peak I _{sc} rms I _{sc}	Max. L (distance between centres of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
	24 kA 12 kA	48 kA 23 kA	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA		
Bar x no.							
50 x 5 x 1	975	475	350	275	75	600	
50 x 5 x 2	900	450	325	250	75	1050	
50 x 5 x 3	1000	525	400	300	75	1450	
63 x 5 x 1	1000	550	425	325	75	700	
63 x 5 x 2	1000	525	400	300	75	1250	
63 x 5 x 3	1000	625	475	350	75	1800	
80 x 5 x 1	1000	625	475	375	75	900	
80 x 5 x 2	1000	625	475	375	75	1250	
80 x 5 x 3	1000	725	550	425	75	2200	
100 x 5 x 1	1000	725	550	425	75	1100	
100 x 5 x 2	1000	750	575	425	75	1900	
100 x 5 x 3	1000	875	650	450	75	2650	
125 x 5 x 1	1000	850	650	500	75	1300	
125 x 5 x 2	1000	900	675	500	75	2350	
125 x 5 x 3	1000	1000	800	500	75	3250	
50 x 10 x 1	1000	975	700	400	75	850	
50 x 10 x 2	1000	950	675	400	75	1550	
63 x 10 x 1	1000	1000	725	425	75	1050	
63 x 10 x 2	1000	1000	700	400	75	1850	
80 x 10 x 1	1000	1000	750	450	75	1300	
80 x 10 x 2	1000	1000	750	425	75	2300	
100 x 10 x 1	1000	1000	800	475	75	1550	
100 x 10 x 2	1000	1000	800	450	75	2750	
125 x 10 x 1	1000	1000	850	500	75	1900	
125 x 10 x 2	1000	1000	850	500	75	3350	



Adhering to the **maximum distances** between two supports ensures the busbar supports are able to withstand the given short circuit current values. At these values, deformation of the copper bars may occur. These deformations are permitted by standard IEC 60439-1 as long as they adhere to the insulation distances.

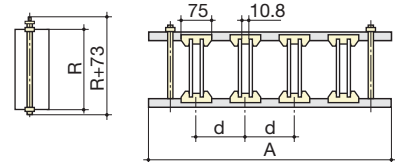
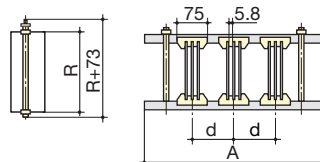
(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.

Dimensions

Mounting

- 1 to 3 bars, 5 mm thick, per pole.
- 1 or 2 bars, 10 mm thick, per pole.
- Interphase distance: min 75 mm and max 200 mm.
- Use 2 rods positioned symmetrically on the outside of the poles or between the outermost poles.

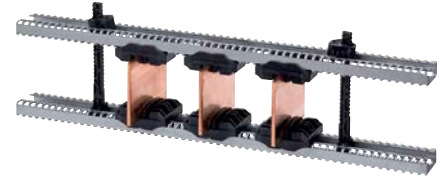
A (mm)	Enclosure (mm)
380	400
480	500
580	600
780	800



SB C ER Power Multipolar edgewise mounting busbar supports with adjustable interphase for high output

References

Description of accessories	Thickness of the bar (mm)	No. of poles	Length	Quantity	To be ordered in multiples of	Reference
Slot for 5 mm bars	5	3		6 ⁽¹⁾	8	5025 5205
Slot for 5 mm bars	5	4		8 ⁽¹⁾	8	5025 5205
Slot for 10 mm bars	10	3		6 ⁽¹⁾	4	5025 5210
Slot for 10 mm bars	10	4		8 ⁽¹⁾	4	5025 5210
Rod kit (bar height 25 to 200 mm)				2 ⁽¹⁾	4	5025 5100
380 mm profile			380	2 ⁽¹⁾	4	5025 5124
480 mm profile			480	2 ⁽¹⁾	4	5025 5125
580 mm profile			580	2 ⁽¹⁾	4	5025 5126
780 mm profile			780	2 ⁽¹⁾	4	5025 5128
2 m profile			2000		4	5025 5120
Profile for Prisma cabinet ⁽²⁾			525	1 ⁽¹⁾	1	5025 5130



Order guide

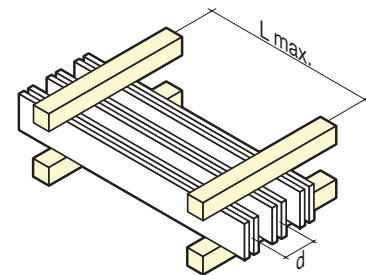
- With three poles, order: 6 x studs, 2 x rods, 2 x profiles.
- With four poles, order: 8 x studs, 2 x rods, 2 x profiles.

⁽¹⁾ Quantity necessary to make 1 busbar support

⁽²⁾ Kit of 2 profiles and 4 square fixings.

Characteristics

peak I _{sc} rms I _{sc}	Max. L (distance between centres of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
	82 kA 39 kA	114 kA 52 kA	152 kA 69 kA	165 kA 75 kA	187 kA 85 kA		
Bar x no.							
50 x 5 x 1	275					75	600
50 x 5 x 2	250	175	140	130	115	75	1050
50 x 5 x 3	300	200	165	150	135	75	1450
63 x 5 x 1	325	225				75	700
63 x 5 x 2	300	225	165	155	135	75	1250
63 x 5 x 3	350	250	175	175	160	75	1800
80 x 5 x 1	375	250	200			75	900
80 x 5 x 2	375	250	200	175	160	75	1550
80 x 5 x 3	425	300	225	200	175	75	2200
100 x 5 x 1	425	300	225	200	175	75	1100
100 x 5 x 2	425	300	225	200	175	75	1900
100 x 5 x 3	500	350	275	250	200	75	2650
125 x 5 x 1	500	350	250	250	200	75	1300
125 x 5 x 2	525	375	275	250	225	75	2350
125 x 5 x 3	600	425	325	275	225	75	3250
80 x 10 x 1	750	525	300	250	200	75	1300
80 x 10 x 2	775	525	300	250	175	75	2300
100 x 10 x 1	850	575	300	250	200	75	1550
100 x 10 x 2	900	550	300	250	200	75	2750
125 x 10 x 1	1000	600	325	275	225	75	1900
125 x 10 x 2	1000	600	325	275	225	75	3350
160 x 10 x 1	1000	675	375	325	250	75	2350
160 x 10 x 2	1000	675	375	325	250	75	4150



Adhering to the **maximum distances** between two supports ensures the busbar supports are able to withstand the given short circuit current values. At these values, deformation of the copper bars may occur. These deformations are permitted by standard IEC 60439-1 as long as they adhere to the insulation distances.

⁽¹⁾ Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.

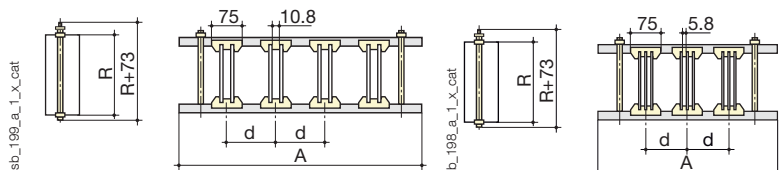
Other assembly configurations: please consult us.

Dimensions

Mounting

- 1 to 3 bars, 5 mm thick, per pole.
- 1 or 2 bars, 10 mm thick, per pole.
- Interphase distance: min 75 mm and max 200 mm.
- Use 2 rods positioned symmetrically on the outside of the poles or between the outermost poles.

A (mm)	Enclosure (mm)
380	400
480	500
580	600
780	800



Busbar supports

Busbar

SB 205 - SB 306 Unipolar flat mounting busbar support

References

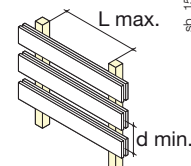
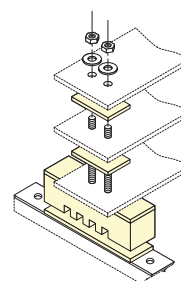
Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 205	1000	1 ... 3	100	6	5022 5110
SB 306	1000	1 ... 3	160	6	5023 6110



Characteristics

Support	Bar x no.	Max. L (distance between centres of supports in mm) for						d min. (mm)	Iz (A) ⁽¹⁾	
		peak I _{sc}	48 kA	63 kA	82 kA	114 kA	152 kA			165 kA
		rms I _{sc}	23 kA	30 kA	39 kA	52 kA	69 kA	75 kA		
SB 205	100 x 10 x 1	1000	1000	1000	1000	1000	1000	125	1550	
SB 205	100 x 10 x 2	1000	1000	1000	1000	1000	1000	125	2750	
SB 205	100 x 10 x 3	1000	1000	1000	1000	1000	1000	125	3850	
SB 306	160 x 10 x 1	1000	1000	1000	1000	1000	1000	175	2350	
SB 306	160 x 10 x 2	1000	1000	1000	1000	1000	1000	175	4150	
SB 306	160 x 10 x 3	1000	1000	1000	1000	1000	1000	175	5800	

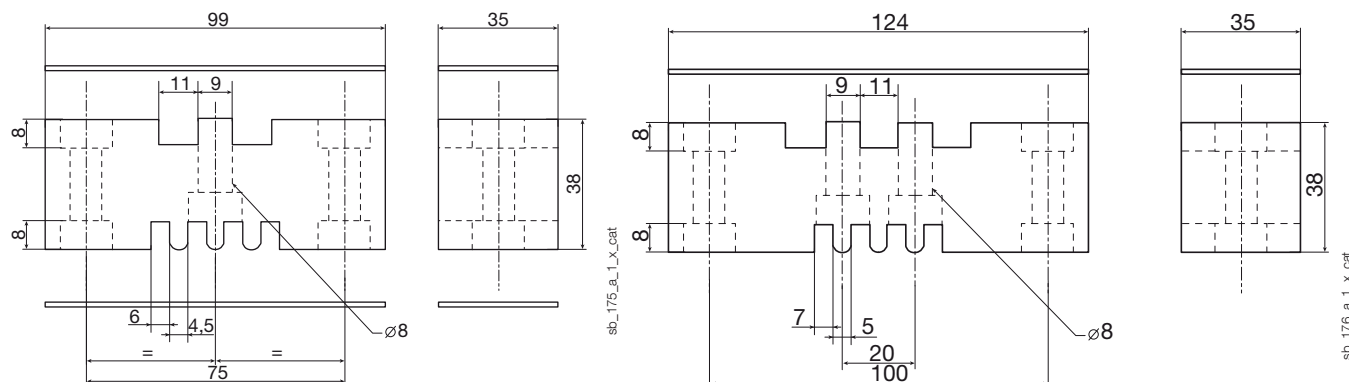
(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



Mounting

- SB 205: 1 to 3 bars of max. width 100 mm.
- SB 306: 1 to 3 bars of max. width 160 mm.

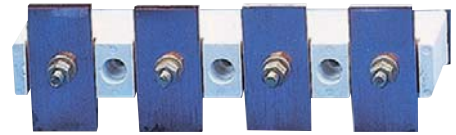
Dimensions



■ SB 7500 Multipolar flat mounting busbar supports with fixed interphase

References

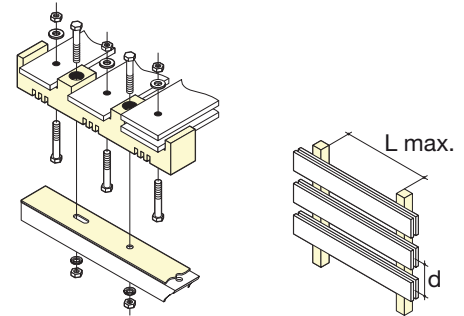
No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3	1000	40-50	1	5027 5310
4	1000	40-50	1	5027 5410



sb_136_a_3_cat

Characteristics

peak I_{sc}	Max. L (distance between centres of supports in mm) for						d (mm)	Iz (A)
	24 kA	48 kA	63 kA	82 kA	114 kA	152 kA		
rms I_{sc}	12 kA	23 kA	30 kA	39 kA	52 kA	69 kA		
Bar x no.								
50 x 5 x 1	1000	1000	950	725	525	450	75	600
50 x 5 x 2	1000	1000	1000	1000	975	850	75	1050

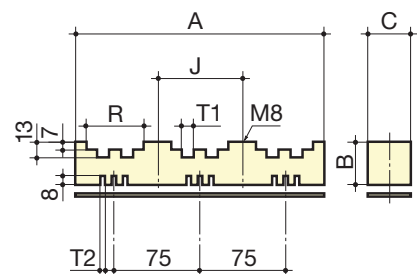


sb_153_b_1_x_cat

Mounting: SB 7500: 1 to 2 bars of max. width 50 mm per pole. Fixed interphase of 75 mm.

Dimensions

No. of poles	A	B	C	J	R	T ₁	T ₂
3	220	38	35	75	52.5	11	6
4	295	38	35	75	52.5	11	6



sb_149_a_1_x_cat

Busbar supports

Busbar

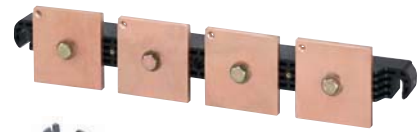
SB P 30 Multipolar flat mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3	1000	50-100	1	5023 0310
4	1000	50-80	1	5023 0410

Mounting bracket	To be ordered in multiples of	Reference
Description of accessories 2 mounting brackets for SB P 30	1	5024 9002

Bar fixing screws	To be ordered in multiples of	Reference
Description of accessories Headless screw for attaching 1 thickness of bar	25	5119 4601
Headless screw for attaching 2 thicknesses of bar	25	5119 4602
Headless screw for attaching 3 thicknesses of bar	25	5119 4603



sb_123_a_3_cat



sb_211_a_1_cat

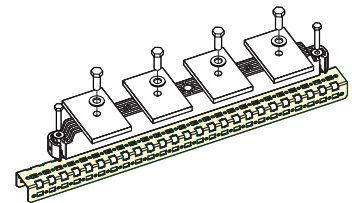


sb_210_a_1_cat

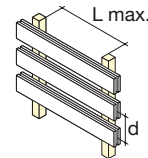
Characteristics

d = 123 mm

peak I _{sc} rms I _{sc} Bar x no.	Max. L (distance between centres of supports in mm) for								d (mm)	Iz (A)
	63 kA 30 kA	84 kA 40 kA	110 kA 50 kA	143 kA 65 kA	165 kA 75 kA	176 kA 80 kA	187 kA 85 kA	220 kA 100 kA		
50 x 5 x 1	1000	950	525	300	225	200	175	130	123	600
63 x 5 x 1	1000	925	525	300	225	200	175	130	123	700
80 x 5 x 1	1000	900	500	300	225	175	175	125	123	900
80 x 5 x 2	1000	900	500	300	225	175	175	125	123	1550
50 x 10 x 1	1000	950	525	300	225	200	175	130	123	850
50 x 10 x 2	1000	975	525	300	225	200	175	135	123	1550
63 x 10 x 1	1000	925	525	300	225	200	175	130	123	1050
63 x 10 x 2	1000	950	525	300	225	200	175	130	123	1850
80 x 10 x 1	1000	900	500	300	225	175	175	125	123	1300
80 x 10 x 2	1000	925	500	300	225	200	175	125	123	2 300
80 x 10 x 3	1000	950	525	300	225	200	175	130	123	3 200



sb_160_a_1_x_cat



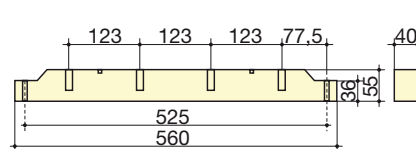
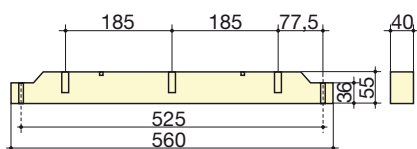
sb_200_a_1_x_cat

peak I _{sc} rms I _{sc} Bar x no.	Max. L (distance between centres of supports in mm) for								d (mm)	Iz (A)
	63 kA 30 kA	84 kA 40 kA	110 kA 50 kA	143 kA 65 kA	165 kA 75 kA	176 kA 80 kA	187 kA 85 kA	220 kA 100 kA		
50 x 5 x 1	1000	1000	800	475	350	300	275	200	185	
63 x 5 x 1	1000	1000	800	475	350	300	275	200	185	
80 x 5 x 1	1000	1000	800	475	350	300	275	200	185	
80 x 5 x 2	1000	1000	800	475	350	300	275	200	185	
100 x 5 x 1	1000	1000	775	450	325	300	250	175	185	1100
100 x 5 x 2	1000	1000	775	450	325	300	250	175	185	1900
100 x 5 x 3	1000	1000	775	450	350	300	250	175	185	2650
50 x 10 x 1	1000	1000	800	475	350	300	275	200	185	
50 x 10 x 2	1000	1000	800	475	350	300	275	200	185	
63 x 10 x 1	1000	1000	800	475	350	300	275	200	185	
63 x 10 x 2	1000	1000	800	475	350	300	275	200	185	
80 x 10 x 1	1000	1000	800	475	350	300	275	200	185	
80 x 10 x 2	1000	1000	800	475	350	300	275	200	185	
80 x 10 x 3	1000	1000	800	475	350	300	275	200	185	
100 x 10 x 1	1000	1000	775	450	325	300	250	175	185	1550
100 x 10 x 2	1000	1000	775	450	350	300	250	175	185	2750
100 x 10 x 3	1000	1000	775	450	350	300	275	175	185	3850

Mounting

- 3 poles: 1 to 3 bars of max. width 100 mm per pole, fixed interphase of 185 mm,
- 4 poles: 1 to 3 bars of max. width 80 mm per pole, fixed interphase of 123 mm.

Dimensions



sb_164_c_1_x_cat

■ Hexagonal insulators Unipolar flat mounting busbar support Female to female hexagonal insulator

References

Height H (mm)	Insert M	Depth D (mm)	Diameter E (mm)	Pack qty	Reference
20	M4	4	19	1	5031 2004
20	M6	4	19	1	5031 2006
25	M6	5	21	1	5031 2506
30	M6	6	33	1	5031 3006
30	M8	8	33	1	5031 3008
35	M6	8	33	1	5031 3506
35	M8	8	33	1	5031 3508
35	M10	8	33	1	5031 3510
40	M8	10	40	1	5031 4008
40	M10	10	40	1	5031 4010
45	M8	10	41	1	5031 4508
45	M10	10	41	1	5031 4510
50	M8	14	46	1	5031 5008
50	M10	14	46	1	5031 5010
50	M12	14	46	1	5031 5012
60	M10	14	50	1	5031 6010
65	M10	18	55	1	5031 6510
70	M12	25	55	1	5031 7012

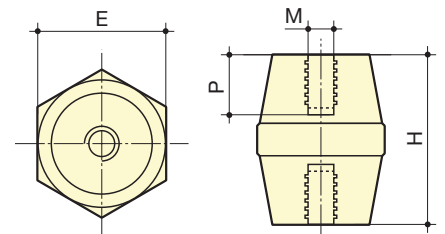


sb_104_a_2_cat

Characteristics

Height H (mm)	Insert M	Nominal voltage (V) AC/DC	Insulation voltage (VAC) 50 Hz 1 min	Mechanical characteristics (daN)			Max. tightening torque (Nm)
				Peak	Flexion	Tention	
20 ⁽¹⁾	M4	500	3000	5500	70	170	9
20	M6	500	3000	5500	100	190	8
25	M6	500	3000	5500	170	370	12
30	M6	1000	6000	11000	200	650	22
30	M8	1000	6000	11000	360	800	40
35	M6	1400	9000	16000	230	720	25
35	M8	1400	9000	16000	380	900	42
35	M10	1400	9000	16000	320	800	44
40	M8	2000	12000	21500	620	1200	50
40	M10	2000	12000	21500	620	1100	60
45	M8	2000	12000	21500	550	1200	55
45	M10	2000	12000	21500	550	1100	65
50	M8	2000	12000	21500	650	1800	60
50	M10	2000	12000	21500	650	1700	70
50	M12	2000	12000	21500	660	13000	130
60	M10	2400	12000	27000	560	1600	85
65	M10	2400	12000	27000	750	1600	90
70	M12	2400	12000	27000	750	1500	135

(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



sb_105_a_1_x_cat

Busbar supports

Busbar

Male to female high withstand insulator

References

Height H (mm)	Insert M	Depth D (mm)	Diameter E (mm)	Length W (mm)	Pack qty	Reference
16	M4	5	14	10	1	5038 1604
16	M5	5	14	10	1	5038 1605
25	M5	5	20	10	1	5038 2505
25	M6	5	20	10	1	5038 2506
35	M8	8	32	15	1	5038 3508
35	M10	8	32	30	1	5038 3510
50	M8	14	46	25	1	5038 5008
50	M10	14	46	30	1	5038 5010
60	M10	16	50	25	1	5038 6010



sb_106_a_2_cat

Male to male high withstand insulator

References

Height H (mm)	Insert M	Diameter E (mm)	Length W (mm)	Pack qty	Reference
16	M4	14	10	1	5039 1604
16	M5	14	10	1	5039 1605
25	M5	14	10	1	5039 2505
25	M6	20	10	1	5039 2506
35	M8	32	15	1	5039 3508
35	M10	32	30	1	5039 3510
50	M8	46	25	1	5039 5008
50	M10	46	30	1	5039 5010
60	M10	38	25	1	5039 6010

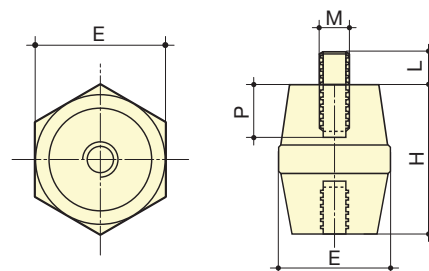


sb_107_a_2_cat

Hexagonal insulator male to female and male to male

Characteristics

Height H (mm)	Insert M	Nominal voltage (V) AC/DC	Insulation voltage		Mechanical characteristics (daN)		Max. tightening torque (Nm)
			(VAC) 50 Hz 1 min	Peak	Flexion	Tention	
16	M4	500	3000	5500	100	150	3
16	M5	500	3000	5500	100	150	6
25	M5	500	3000	11000	180	400	6
25	M6	500	3000	11000	180	400	12
35	M8	1400	9000	16000	380	900	42
35	M10	1400	9000	16000	320	800	44
50	M8	2000	12000	21500	650	1800	60
50	M10	2000	12000	21500	650	1700	70
60	M10	2400	12000	27000	560	1600	85



sb_088_b_1_x_cat

Headless screw

References

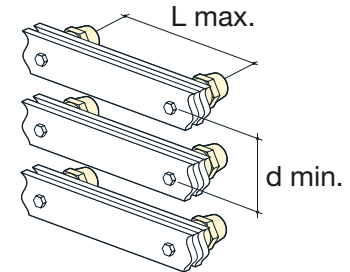
Length (mm)	Thread	To be ordered in multiples of	Reference
20	M6	20	5032 2006
20	M8	20	5032 2008
25	M6	20	5032 2506
25	M8	20	5032 2508
30	M6	20	5032 3006
30	M8	20	5032 3008
40	M8	20	5032 4008
40	M10	20	5032 4010
50	M12	20	5032 5012



sb_121_a_2_cat

Ensure the busbar is defined

- > The indicated short-circuit withstand values will apply if the maximum distances between two supports with hexagonal insulators are maintained. Values according to IEC 60439-1.



sb_164_a_1_x_cat

General characteristics

Height H (mm)	Insert M	peak I _{sc} rms I _{sc} Bar x no.	Max. L (distance between centres of supports in mm) for					d min. (mm)	I _z (A) ⁽¹⁾
			24 kA 12 kA	48 kA 23 kA	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA		
20	M4	15 x 5 x 1	400	100				45	220
20	M4	20 x 5 x 1	400	100				45	280
25	M6	15 x 5 x 1	550	135				45	220
25	M6	20 x 5 x 1	525	135				45	280
25	M6	25 x 5 x 1	575	145				50	330
30	M6	15 x 5 x 1	675	165				45	220
30	M6	20 x 5 x 1	650	165				45	280
30	M6	25 x 5 x 1	725	175	105			50	330
30	M8	15 x 5 x 1	850	250	155			45	220
30	M8	20 x 5 x 1	1000	250	155			45	280
30	M8	25 x 5 x 1	1000	275	170	100		50	330
35	M6	15 x 5 x 1	700	175	100			45	220
35	M6	20 x 5 x 1	675	170	100			45	280
35	M6	25 x 5 x 1	750	175	110			50	330
35	M8	15 x 5 x 1	850	275	160			45	220
35	M8	20 x 5 x 1	1000	275	160			45	280
35	M8	25 x 5 x 1	1000	300	175	105		50	330
35	M8	32 x 5 x 1	1000	325	175	110		55	410
35	M10	20 x 5 x 1	850	200	125			45	280
35	M10	25 x 5 x 1	950	225	135			50	330
35	M10	32 x 5 x 1	1000	250	150			55	410
40	M8	20 x 5 x 1	1000	325	175	110		45	280
40	M8	25 x 5 x 1	1000	350	200	125		50	330
40	M8	32 x 5 x 1	1000	375	225	135		55	410
40	M10	20 x 5 x 1	1000	325	175	110		45	280
40	M10	25 x 5 x 1	1000	350	200	125		50	330
40	M10	32 x 5 x 1	1000	375	225	135		55	410
45	M8	25 x 5 x 1	1000	425	250	150		50	330
45	M8	32 x 5 x 1	1000	475	275	160		55	410
45	M8	50 x 5 x 1	1000	625	350	200	110	75	600
45	M10	25 x 5 x 1	1000	425	250	145		50	330
45	M10	32 x 5 x 1	1000	450	250	160		55	410
45	M10	50 x 5 x 1	1000	600	350	200	110	75	600
50	M8	25 x 5 x 1	1000	450	250	155		50	330
50	M8	32 x 5 x 1	1000	475	275	170		55	410
50	M8	50 x 5 x 1	1000	650	375	225	115	75	600
50	M10	32 x 5 x 1	1000	525	300	175		55	410
50	M10	50 x 5 x 1	1000	700	400	225	125	75	600
60	M10	50 x 5 x 1	1000	700	400	225	125	75	600
65	M10	50 x 5 x 1	1000	775	450	250	135	75	600

(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.

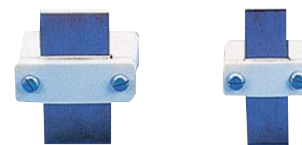
Busbar supports

Busbar

SB 1 - SB 2 Multipolar flat mounting busbar support

References

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 1	690	1	20-25	6	5021 0110
SB 2	690	1	32-40	6	5022 0110



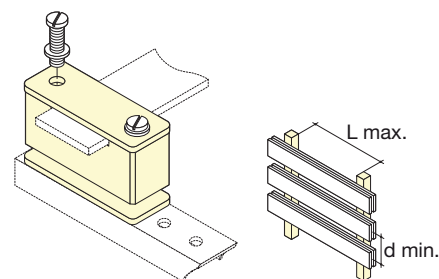
Order guide

SB 1: bar of max. width 25 mm
SB 2: bar of max. width 40 mm

Characteristics

Support	Bar x no.	peak I_{sc} rms I_{sc}	Max. L (distance between centres of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
			24 kA	48 kA	63 kA	82 kA	114 kA		
SB 1	20 x 3 x 1	650	325	250	175	135	50	210	
SB 1	20 x 5 x 1	850	425	325	250	175	50	280	
SB 1	25 x 5 x 1	1000	525	400	300	200	50	330	
SB 2	32 x 5 x 1	1000	750	575	450	300	70	410	
SB 2	40 x 5 x 1	1000	950	700	550	400	70	500	

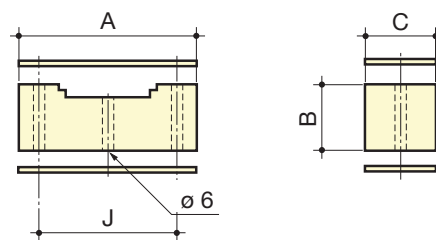
(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



sb_014_c_1_x_cat

Dimensions

Support	A	B	C	J
SB 1	50	23	20	34
SB 2	68	23	23.5	50



sb_014_c_1_x_cat

SB 3 Multipolar flat mounting busbar support

References

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 3 bare	690	1 ... 2	32-63	6	5023 0111
SB 3 pre-equipped ⁽¹⁾	690	1 ... 2	32-63	6	5023 0110

(1) SB3 bare with screws.



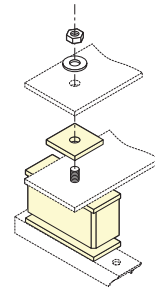
Order guide

SB 3: 1 to 2 bars of max. width 63 mm.

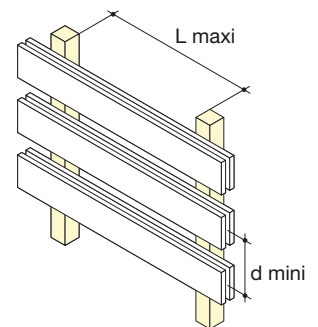
Characteristics

peak I_{sc}	Max. L (distance between centres of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
	24 kA	48 kA	63 kA	82 kA	114 kA		
rms I_{sc}	12 kA	23 kA	30 kA	39 kA	52 kA		
Bar x no.							
32 x 5 x 2	1000	1000	925	700	500	70	580
40 x 5 x 2	1000	1000	1000	1000	1000	70	700
50 x 5 x 2	1000	1000	1000	925	675	75	850
63 x 5 x 2	1000	1000	1000	1000	1000	85	1000

(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



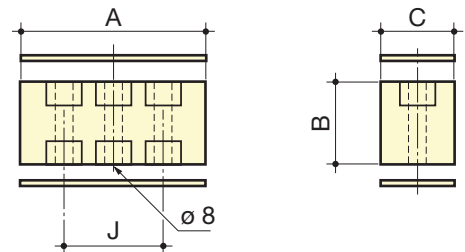
sb_008_a_1_x_cat



sb_023_b_1_f_cat

Dimensions

Support	A	B	C	J
SB 3 bare	65	32	28	36
SB 3 pre-equipped	65	32	28	36



sb_089_b_1_x_cat

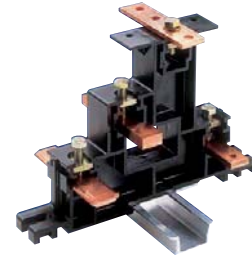
Busbar supports

Busbar

■ SBE 44 4 pole stair type supports

References

No. of poles	Pack qty	Reference
4	1	5028 0410
Description of accessories	Pack qty	Reference
270 mm long protection cover kit	1	5028 0411
420 mm long protection cover kit	1	5028 0412
620 mm long protection cover kit	1	5028 0413
Kit of 20 adaptation protection cover spacers	1	5028 0415

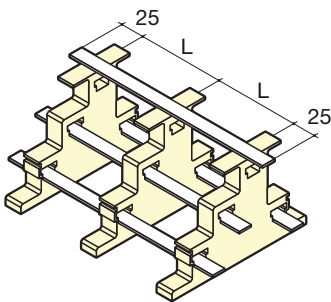


Characteristics

Support	Max. L (distance between centres of supports in mm) for peak I_{sc} rms I_{sc} Bar x no.	Max. L (distance between centres of supports in mm) for						I_z (A) ⁽¹⁾
		10 kA 6 kA	15 kA 9 kA	24 kA 12 kA	38 kA 19 kA	48 kA 23 kA	63 kA 30 kA	
Type 1	15 x 3 x 1	950	625	400	250	175		160
Type 1	15 x 5 x 1	1000	825	500	300	175		220
Type 1	15 x 6 x 1	1000	900	550	300	200		250
Type 1	15 x 8 x 1	1000	1000	650	300	200		290
Type 1	20 x 3 x 1	1000	825	525	300	175		210
Type 1	20 x 5 x 1	1000	1000	675	300	175		280
Type 1	20 x 6 x 1	1000	1000	750	300	175		310
Type 1	20 x 8 x 1	1000	1000	775	300	175		370
Type 1	32 x 5 x 1	1000	1000	675	250	170		410
Type 1	32 x 6 x 1	1000	1000	675	250	170		460
Type 2	15 x 3 x 1	950	625	400	250	200	150	160
Type 2	15 x 5 x 1	1000	825	500	325	250	175	220
Type 2	15 x 6 x 1	1000	900	550	350	275	200	250
Type 2	15 x 8 x 1	1000	1000	650	400	325	225	290
Type 2	20 x 3 x 1	1000	825	525	325	250	200	210
Type 2	20 x 5 x 1	1000	1000	675	425	325	225	280
Type 2	20 x 6 x 1	1000	1000	750	450	375	225	310
Type 2	20 x 8 x 1	1000	1000	850	525	375	225	370
Type 2	32 x 5 x 1	1000	1000	1000	525	325	175	410
Type 2	32 x 6 x 1	1000	1000	1000	525	325	175	460

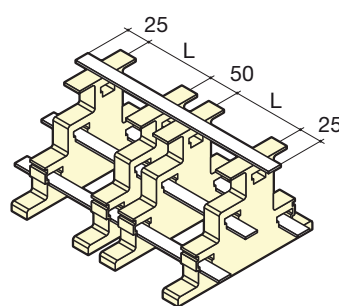
(1) Admissible nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us. **Note:** I_z is given for solid bars only.

Dimensions



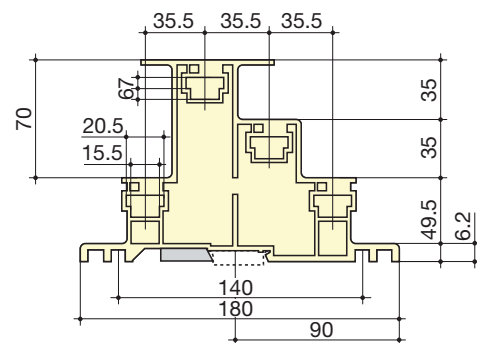
sb_041_Lb_1_x_cat

Type 1: Set of busbars including 3 (or more) equally spaced SB E 44 supports.



sb_047_a_1_x_cat

Type 2: Set of busbars including 3 (or more) SB E 44 supports with doubled intermediary supports.



sb_036_e_1_x_cat

Fixation by oblong holes: distance between two holes 150 to 170 mm.

SB P 10 Multipolar flat mounting busbar supports with fixed interphase

References

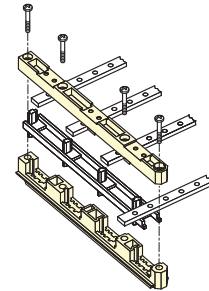
No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
4	690	12-30	1	5026 0460

SB P 10: 1 bar with a thickness of 5 or 10 mm, width 12, 20, 25 or 30 mm.



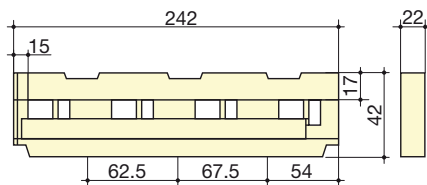
Characteristics

Bar x no.	Max. L (distance between centres of supports in mm) for							d min. (mm)	Iz (A)
	peak I _{sc}	10 kA rms I _{sc}	15 kA 6 kA	24 kA 9 kA	48 kA 12 kA	63 kA 23 kA	30 kA		
12 x 5 x 1		1000	475	175			60	180	
20 x 5 x 1		1000	1000	650	165		60	280	
25 x 5 x 1		1000	1000	650	160		60	338	
30 x 5 x 1		1000	1000	850	200	120	60	390	
25 x 10 x 1		1000	1000	1000	250	150	60	508	
30 x 10 x 1		1000	1000	1000	350	200	60	580	



sb_159_a_1_x_cat

Dimensions



sb_144_a_1_x_cat

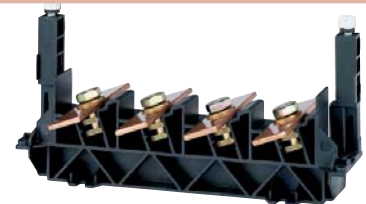
SB P 44 4-pole flat mounting busbar support with fixed interphase, for mounting tilted bars

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
4	1000	20-32	1	5026 0450

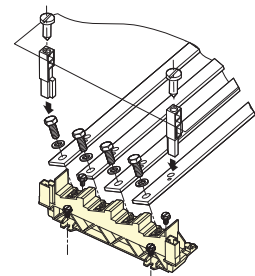
SB P 44: 1 bar with a thickness of 5 or 10 mm, width 20, 25, 30 or 32 mm.

Note: protection cover not supplied.



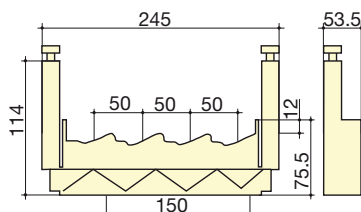
Characteristics

Bar x no.	Max. L (distance between centres of supports in mm) for							d min. (mm)	Iz (A)
	peak I _{sc}	10 kA rms I _{sc}	15 kA 9 kA	24 kA 12 kA	48 kA 23 kA	63 kA 30 kA	82 kA 39 kA		
20 x 5 x 1		1000	1000	800	350	200	125	50	280
25 x 5 x 1		1000	1000	1000	350	200	125	50	330
32 x 5 x 1		1000	1000	1000	350	200	120	50	390
25 x 10 x 1		1000	1000	1000	350	200	125	50	500
30 x 10 x 1		1000	1000	1000	350	200	120	50	580
32 x 10 x 1		1000	1000	1000	350	200	120	50	610



sb_165_b_1_x_cat

Dimensions



sb_147_b_1_x_cat



Power terminals

Distribution

Enclosures & accessories



The solution for

- Electrical distribution.



Conformity to standards

- IEC 60439-1
- DIN 46206



Function

SOCOMEK **power terminals** provide connections for power circuits. They consist of connection plates fixed onto insulating brackets.

Characteristics

General characteristics

- Tin-plated aluminium plates.
- High dielectric strength.
- High mechanical resistance.
- High resistance to damp heat (supplied "tropicalised").

Composition of the range

- 5 terminal models from 250 to 630 A, with 3 and 4 poles.
- 2 methods of connection:
 - by lugs,
 - by cable clamps.
- Accessories: Inter-phase screen, front cover to protect against unintentional contact.

Type 1

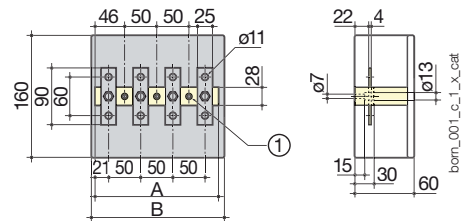
References

$I_{max}(A)$	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
250	lugs	lugs	3 P	142	151	4501 0003 ⁽¹⁾
250	lugs	lugs	4 P	192	201	4501 0004 ⁽¹⁾

⁽¹⁾ Terminals supplied without terminal shroud.

Accessories	Reference
Type	
Protective cover for 3 pole terminals	4501 1003
Protective cover for 4 pole terminals	4501 1004

Dimensions



1. M6 screws mounting.

Type 2

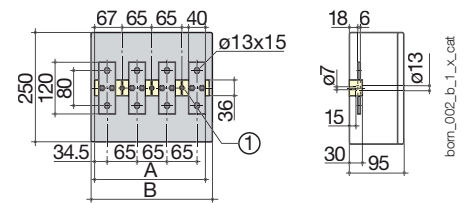
References

I _{max} (A)	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
630	lugs	lugs	3 P	197	206	4502 0003 ⁽¹⁾
630	lugs	lugs	4 P	262	271	4502 0004 ⁽¹⁾

(1) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0107

Dimensions



1. M6 screws mounting.

bom_002_b_1_x_cat

Type 3

References

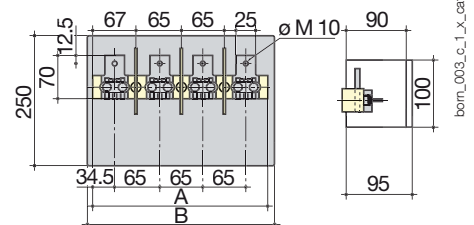
I _{max} (A)	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
400	lugs	cable clamps ⁽¹⁾	3 P	197	206	4503 0003 ⁽²⁾
400	lugs	cable clamps ⁽¹⁾	4 P	262	271	4503 0004 ⁽²⁾

(1) 185 mm² cable clamps included.

(2) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0106

Dimensions



bom_003_c_1_x_cat

Type 4

References

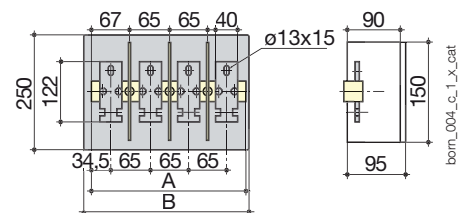
I _{max} (A)	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
500	lugs	cable clamps ⁽¹⁾	3 P	197	206	4504 0003 ⁽²⁾
500	lugs	cable clamps ⁽¹⁾	4 P	262	271	4504 0004 ⁽²⁾

(1) 240 mm² cable clamps non included.

(2) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0107

Dimensions



bom_004_c_1_x_cat

Type 5

References

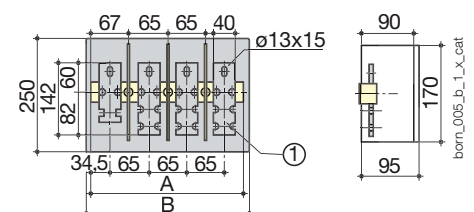
I _{max} (A)	Connections by	Connections by	No. of poles	A (mm)	B (mm)	Reference
630	lugs	cable clamps ⁽¹⁾	3 P	197	206	4505 0003 ⁽²⁾
630	lugs	cable clamps ⁽¹⁾	4 P	262	271	4505 0004 ⁽²⁾

(1) 300 mm² cable clamps non included.

(2) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0108

Dimensions



1. For 300 mm² cable clamps.

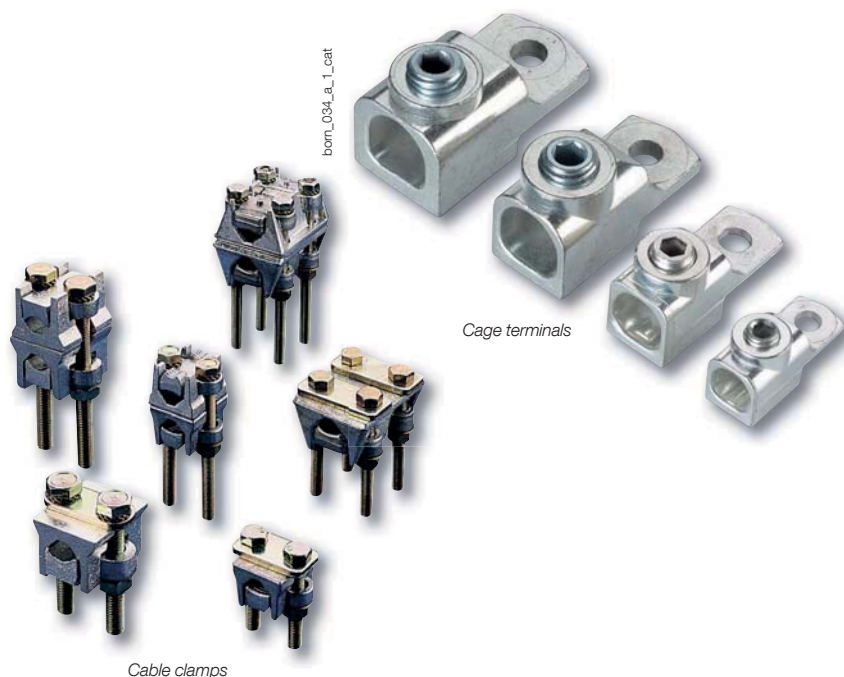
bom_005_b_1_x_cat



Cable clamps and cage terminals

Distribution

serie_001_a_1_cat



bom_034_a_1_cat

The solution for

- > Electrical distribution.



Conformity to standards

Cable clamps:

- > IEC 60439-1
- > DIN 46206



Cage terminals

- > IEC 60947-1 (if mounted to SOCOMEC devices)
- > NF C 63-060
- > NF C 63-062

Function

SOCOMEC **power cable clamps** ensure the connection of copper or aluminium cables onto plates or onto bars.

Available in aluminium or tin-plated brass, they provide increased mechanical resistance and high resistance to humidity (supplied "tropicalised").

SOCOMEC **cage terminals** are connection devices fixed onto the connection plates of SOCOMEC switches, changeover switches and fuse switches. They enable a direct terminal-free connection to the rigid copper and aluminium conductors and integration under the IP2 protective cover.

Characteristics

Cable clamps

- 3 cross-section ranges from 35 to 300 mm²
- 2 cable clamp models with bracket mounting: single-double.

Cage terminals

- Ratings: From 160 to 630 A.
- Number of poles: 3 and 4.
- Material: tin-plated aluminium.

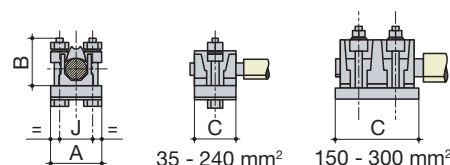
Single cable clamps

References

Tightening capacity (mm ²)	Ø maxi cabling (mm)	Corresponding power terminals	Reference
35 ... 185	17	Type 4	4500 0013
95 ... 240	20	Type 4	4500 0022
150 ... 300	25	Type 5	4500 0028

Tightening capacity (mm ²)	A	B	C	J
35 ... 185	42	48	35	26
95 ... 240	54	50	45	31.5
150 ... 300	53	50	60	33

Dimensions



35 - 240 mm²

150 - 300 mm²

access_038_a_1_x_cat

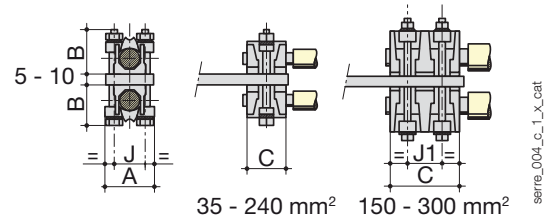
Double cable clamps

References

Tightening capacity (mm ²)	Ø maxi cabling (mm)	Corresponding power terminals	Reference
35 ... 185	17	Type 4	4500 0031
95 ... 240	20	Type 4	4500 0032
150 ... 300	25	Type 5	4500 0034

Dimensions

Tightening capacity (mm ²)	A	B	C	J	J ₁
35 ... 185	42	48	35	26	
95 ... 240	54	50	45	31.5	
150 ... 300	53	50	60	33	33



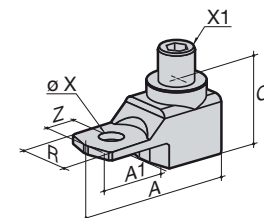
Single cage terminals

References

Tightening capacity (mm ²)	Rating Switch (A)	No. of poles	Tightening torque (Nm)	Flexible bar width (mm)	Reference
16 ... 95	160	3 P	14	13	5400 3016
16 ... 95	160	4 P	14	13	5400 4016
16 ... 185	250	3 P	25	18	5400 3025
16 ... 185	250	4 P	25	18	5400 4025
50 ... 240	400	3 P	45	20	5400 3040
50 ... 240	400	4 P	45	20	5400 4040
70 ... 300	630	3 P	45	24	5400 3063
70 ... 300	630	4 P	45	24	5400 4063

Dimensions

Rating of switch (A)	A	A ₁	C	E	R	T	ØX	X ₁	Z
160	47.5	22.5	25	12	20	3.5	8.5	M12	10
250	62	31.5	31.5	16.5	25	2.5	10.5	M16	14
400	71.5	32	38	9	32	5	10.5	M20	15
630	76.5	37	38	9	40	5	12.5	M20	15



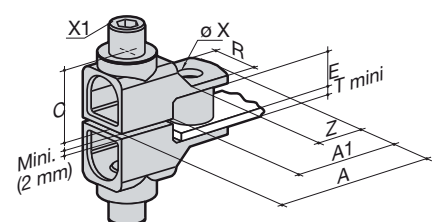
Double cage terminals

References

Tightening capacity (mm ²)	Rating Switch (A)	No. of poles	Tightening torque (Nm)	Flexible bar width (mm)	Reference
16 ... 95	160	3 P	14	13	5400 3216
16 ... 95	160	4 P	14	13	5400 4216
16 ... 185	250	3 P	25	18	5400 3225
16 ... 185	250	4 P	25	18	5400 4225
50 ... 240	400	3 P	45	20	5400 3240
50 ... 240	400	4 P	45	20	5400 4240
70 ... 300	630	3 P	45	24	5400 3263
70 ... 300	630	4 P	45	24	5400 4263

Dimensions

Rating of switch (A)	A	A ₁	C	E	R	T	ØX	X ₁	Z
160	47.5	22.5	25	12	20	3.5	8.5	M12	10
250	62	31.5	31.5	16.5	25	2.5	10.5	M16	14
400	71.5	32	38	9	32	5	10.5	M20	15
630	76.5	37	38	9	40	5	12.5	M20	15

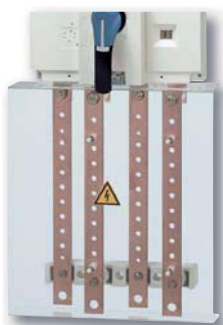




Distribution blocks

Distribution

repar_020_c_1_cat



Distribution blocks for SOCOMEC disconnection devices

repar_008_a_1_cat



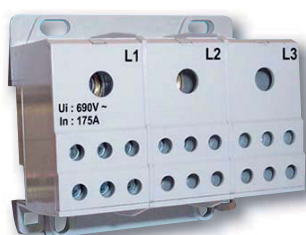
Unipolar distribution blocks

repar_042_a



Row distribution blocks

repar_028_a_1_cat



Multipolar distribution blocks

The solution for

- Electrical distribution.



Conformity to standards

- IEC 60439-1
- EN 60439-1
- NF C 20455



Function

SOCOME **distribution blocks** allow easy connection of conductors. They are installed downstream of a load break switch, a changeover switch or a fuse-combination switch.

Characteristics

General characteristics

- Insulation voltage:
 - ferrules terminal distribution block: 500 V,
 - modular row terminal distribution block: 690 V,
 - wire-terminal distribution block: 1000 V.
- Impulse voltage:
 - ferrules terminal distribution block: 6 kV,
 - modular row terminal distribution block: 6 kV,
 - wire-terminal distribution block: 8 kV.
- Self-extinguishing: 960 °C.

Composition of the range

- 7 ratings from 80 to 360 A in 1, 2, 3 and 4 poles.
- 2 connection modes:
 - direct or ferrules,
 - cable lugs.

Direct or cable connection

Bridge multipolar distribution block

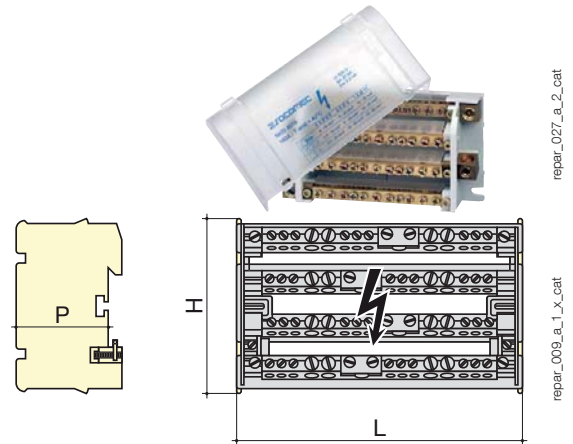
References

Rating (A)	No. of poles	No of feeders per section (mm ²)	Dimensions H x W x D (mm)	I _{cc} (kA rms) ⁽¹⁾	Reference
125	3/4 P	2x25 + 7x10	85 x 88 x 48	3	5420 4108
125	3/4 P	2x25 + 2x16 + 9x10	85 x 129 x 48	4.2	5420 4112
160	3/4 P	1x35 + 3x25 + 8x16 ⁽²⁾	90 x 160.5 x 50	6.2	5420 4016

(1) Short circuit withstand (rms value) 1 second.
 (2) Maximum section of flexible cable.

Dimensions

Rating (A)	H (mm)	W (mm)	D (mm)
125	98	74.5	45
175	80	71.5	42.5



Direct or cable connection distribution blocks which can be clipped onto a symmetric DIN rail.

Monoblock multipolar distribution block

References

Rating (A)	No. of poles	Dimensions H x W x D (mm)	Reference
125	4 P	98 x 74.5 x 45	5410 4112
175	3 P	80 x 71.5 x 42.5	5410 3017



Unipolar distribution blocks

References

Rating (A)	Switch mounting N (mm)	I _{cc} (kA rms)	Reference
80	56.5	1.9	5410 1008
125	65	4.4	5410 1012
175	60.5	11	5410 1017
250	86	21	5410 1025
400	86	21	5410 1040

Description of accessories	Reference
Connection for rating 250 A ⁽¹⁾	5410 0025
Connection for rating 400 A ⁽¹⁾	5410 0040

(1) Linking part enabling direct assembly on the connecting lugs of the switching device.

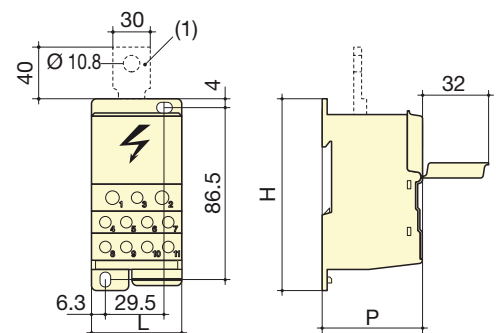
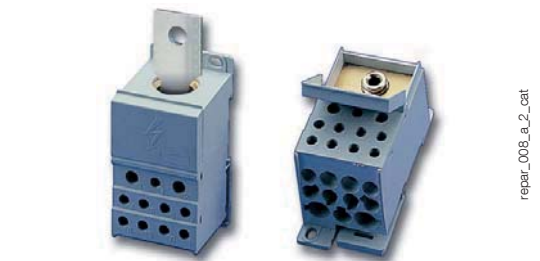
Dimensions

Rating (A)	Dimensions H x W x D (mm)	I _{cc} (kA rms) ⁽¹⁾
80	66 x 27 x 47	1.9
125	74.5 x 27 x 46.5	4.4
175	71 x 45 x 43.5	11
250	96 x 45 x 50	21
400	96 x 45 x 50	21

(1) Short circuit withstand (rms value) 1 second.

Connections

Rating (A)	Power supply section (mm ²)	No of phases per section (mm ²)
80	< 16	4 x 6 + 2 x 16
125	< 35	6 x 2.5 to 16
175	16 ... 70	10 x 2.5 to 16
250	35 ... 120	2 x 25 + 5 x 16 + 4 x 10
400	95 ... 185	2 x 25 + 5 x 16 + 4 x 10
125	Phase: 5 x 1 to 6 + 2 x 1.5 to 10 / Neutral: 6 x 1.5 to 10 + 4 x 1.5 to 6	
175	6 x 2.5 to 16	



Direct or cable connection distribution blocks, IP20 which can be clipped onto a symmetric DIN rail.

Earth bar

References

Mounting by	No of feeders per section (mm ²)	Material	W (mm)	To be ordered in multiples of	Reference
2 self M4	10 x 16 + 2 x 35	brass	120	10	5414 0120
2 self M6	41 x 16 + 2 x 35	brass	470	10	5414 0470



Distribution blocks

Distribution

Row distribution blocks

Row distribution block with IP20 connectors

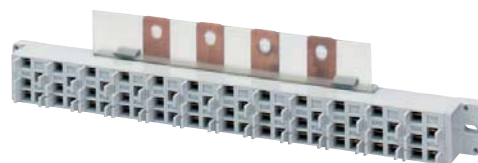
References

Rating (A)	Length	With connector leads ⁽¹⁾	Icc (kA rms)	Reference
250 ⁽²⁾	1 row	yes	10	5420 2426
250 ⁽²⁾	1 row	no	10	5421 2426

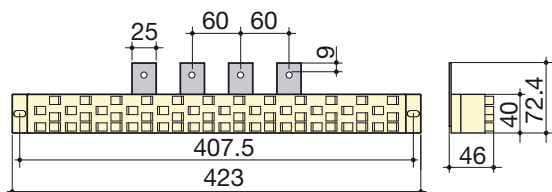
(1) Delivered with 6 mm² connector leads, L = 120 mm, 12 black connectors, 12 blue connectors.
 (2) Preferably the terminations will be distributed over the entire number of terminals.

Dimensions

Cables					
Rating (A)	Type	Length (mm)	Colour	To be ordered in multiples of	Reference
40	6 mm ² cable	120	Blue	4	5421 1006
40	6 mm ² cable	120	Black	10	5421 1016
40	6 mm ² cable	320	Blue	10	5421 1106
40	6 mm ² cable	320	Black	10	5421 1116
63	10 mm ² cable	320	Blue	10	5421 1101
63	10 mm ² cable	320	Black	10	5421 1111
40	2.5 mm ² connector			20	5421 0025
63	6 mm ² connector			20	5421 0125



repair_028_a_2_cat



repair_009_a_1_x_cat

Row distribution block with screws

References

Rating (A)	Dimensions H x W x D (mm)	No of		Reference
		Phase	Neutral	
80	50 x 24 modules x 40	3 x 8	2 x 8	5420 2408
80	50 x 36 modules x 40	3 x 12	2 x 12	5420 3608

Adapter for cable up to 35 mm²

Cross-section (mm ²)	To be ordered in multiples of	Reference
35	4	5420 0001



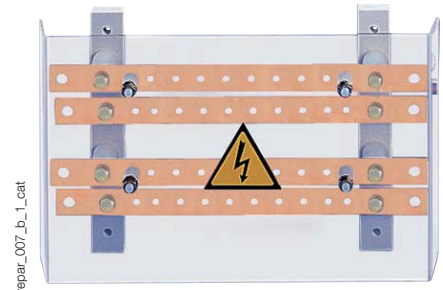
repair_042_a

Terminal connections

Multipolar distribution blocks

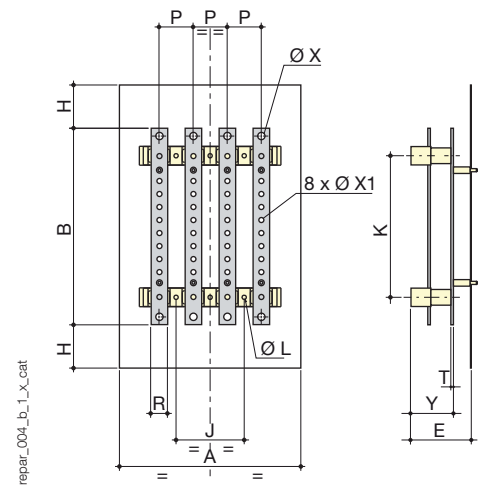
References

Rating (A)	No. of poles	Icc (kA rms)	No of feeders per section (mm ²)	Reference
160	3 P	10	2 x 95 + 8 x 25	5412 3016
160	4 P	10	2 x 95 + 8 x 25	5412 4016
250	3 P	15	2 x 150 + 8 x 50	5412 3025
250	4 P	15	2 x 150 + 8 x 50	5412 4025
400	3 P	21	2 x 240 + 8 x 95	5412 3040
400	4 P	21	2 x 240 + 8 x 95	5412 4040
630	3 P	21	2 x 300 + 8 x 150	5412 3063
630	4 P	21	2 x 300 + 8 x 150	5412 4063



Dimensions

Rating (A)	No. of poles	A	B	E	H	J	K	ØL	P	R	T	ØX	ØX1	Y
160	3 P	154	286	73	46.5	122	207	6.5	36	20	4	9	6	54
160	4 P	190	286	73	46.5	158	207	6.5	36	20	4	9	6	54
250	3 P	210	307	83	57.5	50	222	7	50	25	4	11	8	56
250	4 P	260	307	83	57.5	100	222	7	50	25	4	11	8	56
400	3 P	281	375	116	82.5	65	270	8	65	32	5	14.5	8.5	82
400	4 P	346	375	116	82.5	130	270	8	65	32	5	14.5	8.5	82
630	3 P	271	438	117	90.5	65	333	8	65	40	6	14.5	10.5	83
630	4 P	346	438	117	90.5	130	333	8	65	40	6	14.5	10.5	83



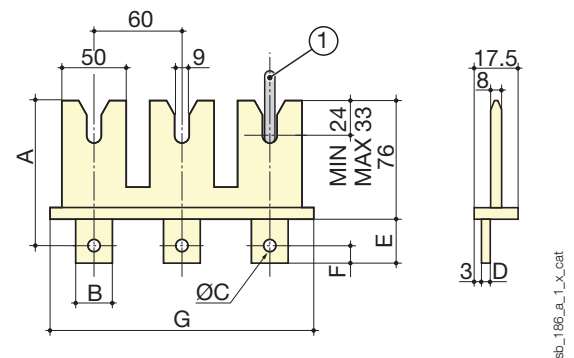
Terminal connections distribution blocks with front protection cover against direct contact.

Plug-in unit for 5 to 6.3 mm bars

References

Rating (A)	No. of poles	Reference
125/160	3 P	3699 3P16
125/160	4 P	3699 3P16
250/400	3 P	3699 3P39
250/400	4 P	3699 6P39
630/800	3 P	3699 3P80
630/800	4 P	3699 6P80

Rating (A)	No. of poles	A	B	C	D	E	F	G
125/160	3 P	99	20	M8	3	23	10	186
125/160	4 P	99	20	M8	3	23	10	248
250/400	3 P	101.5	25	M10	4	28	12.5	186
250/400	4 P	101.5	25	M10	4	28	12.5	248
630/800	3 P	101.5	25	M10	4	28	12.5	186
630/800	4 P	101.5	25	M10	4	28	12.5	248



1. Dropper busbar with a thickness of 5 to 6.3 mm.

Distribution blocks

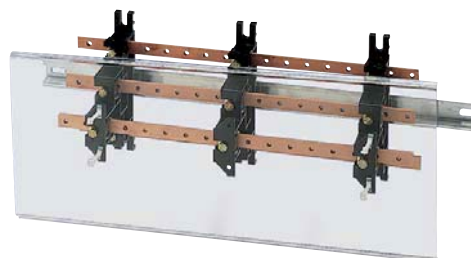
Distribution

Terminal connections (continued)

Stair type multipolar distribution blocks

References

Rating	L	No. of poles	Icc	No. of supports	Distribution block	
					Reference	Protection cover
160	270	4 P	25	2	5028 0421	5028 0411
160	420	4 P	17	2	5028 0451	5028 0412
160	620	4 P	20	3	5028 0471	5028 0413
250	270	4 P	30	2	5028 0423	5028 0411
250	420	4 P	22	2	5028 0453	5028 0412
250	620	4 P	18	3	5028 0473	5028 0413
400	270	4 P	24	2	5028 0425	5028 0411
400	420	4 P	21	2	5028 0455	5028 0412
400	620	4 P	13	3	5028 0475	5028 0413

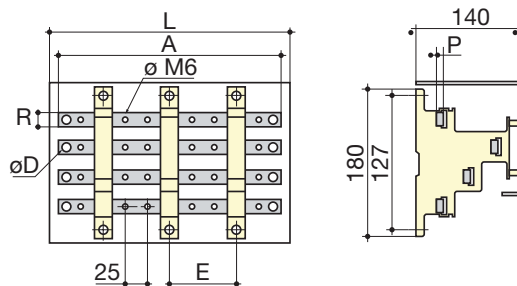


repair_012_b_1_cat

Dimensions

Type	Pack qty	Reference
Spacer for protection cover	1	5028 0415

Rating (A)	Nb of terminations	A	ØD	E	L	P	R
160	9	250	8	150	270	5	15
160	15	400	8	300	420	5	15
160	21	600	8	250	620	5	15
250	9	250	10	150	270	5	20
250	15	400	10	300	420	5	20
250	21	600	10	250	620	5	20
400	8	225	12	150	270	5	32
400	14	375	12	300	420	5	32
400	20	620	12	250	620	5	32



repair_040_a_1_x_cat

Stair type distribution blocks with threaded holes. Can be clipped onto a symmetric DIN rail.
Factory assembled and supplied without protection cover

Disconnectable solid neutral links

References

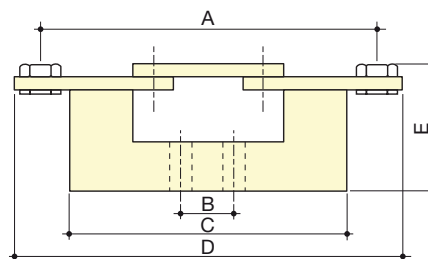
Rating (A)	Connection type	Reference
160	Terminal connections	NB16 0000
250	Terminal connections	NB16 0000
400	Terminal connections	NB40 0000
630	Terminal connections	NB63 0000



repair_060_a_2_cat

Dimensions

Rating (A)	A	B	C	D	E	Width max. (mm)
160	100	25	85	117	45	32
250	150	25	120	173	45	32
400	176	25	150	200	65	55
630	210	25	160	240	65	75

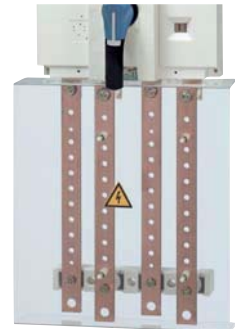


shunt_012_a_1_x_cat

SIRCO multipolar distribution blocks

References

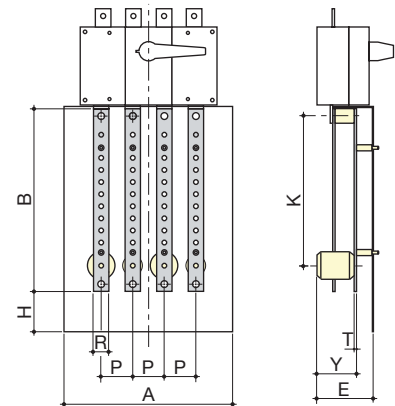
Rating (A)	No. of poles	Icc (kA rms)	No of feeders per section (mm ²)	Reference
160	3 P	10	1 x 95 + 8 x 25	5411 3016
160	4 P	10	1 x 95 + 8 x 25	5411 4016
250	3 P	15	1 x 150 + 8 x 50	5411 3025
250	4 P	15	1 x 150 + 8 x 50	5411 4025
400	3 P	21	1 x 240 + 8 x 95	5411 3040
400	4 P	21	1 x 240 + 8 x 95	5411 4040
630	3 P	21	1 x 300 + 8 x 150	5411 3063
630	4 P	21	1 x 300 + 8 x 150	5411 4063



repair_020_b_1_cat

Dimensions

Rating (A)	No. of poles	A	B	E	H	K	P	R	T	Y
160	3 P	154	286	73	46.5	261.5	36	20	4	54
160	4 P	190	286	73	46.5	261.4	36	20	4	54
250	3 P	210	307	83	57.5	279	50	25	4	56
250	4 P	260	307	83	57.5	279	50	25	4	56
400	3 P	281	375	116	82.5	340	65	32	5	82
400	4 P	346	375	116	82.5	340	65	32	5	82
630	3 P	271	438	117	90.5	410.5	65	40	6	83
630	4 P	346	438	117	90.5	410.5	65	40	6	83



repair_003_c_1_x_cat

Terminal connections distribution blocks with front protection cover against direct contact (breaking device not supplied).

Multipolar distribution blocks for FUSERBLOC and SIRCO VM2

References

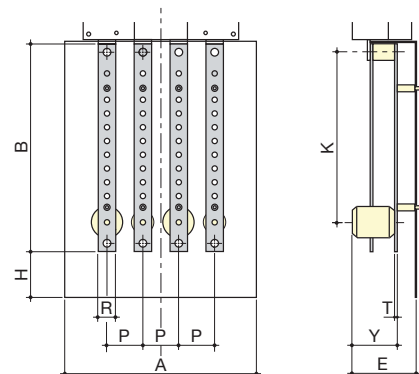
Rating (A)	Fuse size	No. of poles	Device	No of feeders per section (mm ²)	Reference
100/125/160	22x58/00	3 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 3016
100/125/160	22x58/00	4 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 4016
160	0	3 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 3017
160	0	4 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 4017
250	1	3 P	FUSERBLOC	11 x M8	5413 3025
250	1	4 P	FUSERBLOC	11 x M8	5413 4025
400	2	3 P	FUSERBLOC	11 x M8	5413 3040
400	2	4 P	FUSERBLOC	11 x M8	5413 4040
160/200		3 P	SIRCO VM2	10x16 + 2x35 + 3xM6	5413 3020
160/200		4 P	SIRCO VM2	10x16 + 2x35 + 3xM6	5413 4020



repair_013_a_2_cat

Dimensions

Rating (A)	No. of poles	Device	A	B	E	H	K	P	R	T	Y
100/125/160	3 P	FUSERBLOC	110	260	61	20	233	36	20	4	39
100/125/160	4 P	FUSERBLOC	145	260	61	20	233	36	20	4	39
160	3 P	FUSERBLOC	150	260	61	20	233	50	20	4	39
160	4 P	FUSERBLOC	200	260	61	20	233	50	20	4	39
250	3 P	FUSERBLOC	185	340	67	15	300	60	32	5	45
250	4 P	FUSERBLOC	245	340	67	15	300	60	32	5	45
400	3 P	FUSERBLOC	210	340	67	15	300	66	32	5	45
400	4 P	FUSERBLOC	275	340	67	15	300	66	32	5	45
160/200	3 P	SIRCO VM2	142	260	61	20	233	27.5	20	4	39
160/200	4 P	SIRCO VM2	142	260	61	20	233	27.5	20	4	39



repair_004_a_1_x_cat



Mounting rails and profiles

Mounting accessories

Enclosures
& accessories



elcha_039_a_1_cat

The solution for

> Any electrical device.



Conformity to standards

> EN 60715

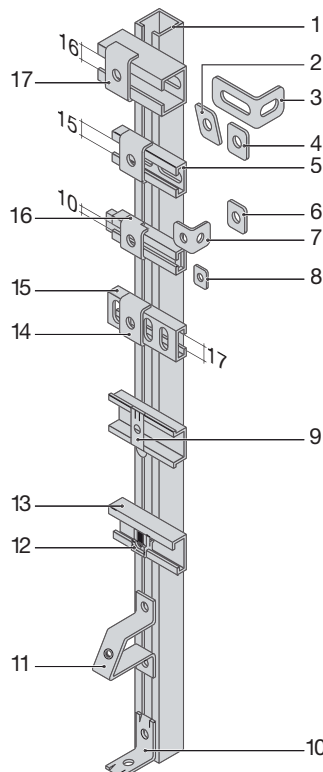
Function

SOCOMEK **frame parts** come in steel, 304 L stainless steel or aluminium (profiles and accessories) and allow the fixing of any electrical equipment.

Configurations

Composition of the range:

1. Profile C 20 x 14 - 30 x 15 - 35 x 35
2. Diamond shaped nut 33 x 11 - 34 x 20
3. Bracket 45 x 60 x 25
- 2 oblong holes: 35 x 9 ou 25 x 9
4. Rectangular nut 28 x 35
5. Profile C 30 x 15
6. Square nut 25 x 25
7. Bracket 25 x 25 x 19
8. Square nut 15.5 x 15.5
9. Fixomega
10. Bracket 36 x 36 x 23
11. Terminal block support
12. Fixocap
13. Asymmetrical profile
14. Straddle bracket 30 x 15
15. Cable support rail
16. Straddle bracket 20 x 14
17. Straddle bracket 35 x 35



elcha_003_c_1_x_cat

Profile C

References

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
20 x 14 x 1.5	8.2 x 40	50	Steel z-b ⁽¹⁾	3	30 m	5000 0120
30 x 15 x 1.5	8.2 x 40	50	Steel z-b ⁽¹⁾	3	30 m	5000 0121
35 x 35 x 2	8.2 x 40	50	Steel z-b ⁽¹⁾	2	12 m	5000 0132
35 x 35 x 2	8.2 x 40	50	Steel z-b ⁽¹⁾	3	18 m	5000 0122
30 x 15 x 1.5	6.3 x 18	50	Stainless steel	2	10 m	5000 1021
20 x 15 x 2	without		Aluminium	2	10 m	SA12 4202
20 x 15 x 2	without		Aluminium	3	15 m	SA13 4202
20 x 15 x 2	without		Aluminium	6	30 m	SA10 4202
29 x 19 x 2.5	without		Aluminium	2	10 m	SA12 4201
29 x 19 x 2.5	without		Aluminium	3	15 m	SA13 4201
29 x 19 x 2.5	without		Aluminium	6	30 m	SA10 4201

(1) White zinc-coated.

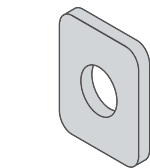


elcha_042_a_1_cat

Accessories

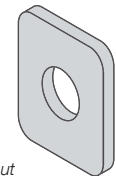
Screws

Type	Insert M	Dimensions H x W (mm)	For profiles	To be ordered in multiples of	Reference
Rhomboidal nut	M3	15.5 x 15.5	20 x 14	100	5000 0023
Rhomboidal nut	M4	15.5 x 15.5	20 x 14	100	5000 0024
Rhomboidal nut	M5	15.5 x 15.5	20 x 14	100	5000 0025
Rhomboidal nut	M6	15.5 x 15.5	20 x 14	100	5000 0026
Rhomboidal nut	M8	15.5 x 15.5	20 x 14	100	5000 0028
Rhomboidal nut	M8	25 x 25	30 x 15	100	5000 0029
Square nut	M8	35 x 28	35 x 35	100	5000 0037
Square nut	M18	35 x 28	35 x 35	100	5000 0039
Rhomboidal nut	M3	33 x 11	30 x 15	100	5000 0033
Rhomboidal nut	M4	33 x 11	30 x 15	100	5000 0034
Rhomboidal nut	M5	33 x 11	30 x 15	100	5000 0035
Rhomboidal nut	M6	34 x 20	35 x 35	100	5000 0036
Rhomboidal nut	M8	34 x 20	35 x 35	100	5000 0038
Straddle bracket	Ø 8.2		20 x 14	100	5000 0010
Straddle bracket	Ø 8.2		30 x 15	100	5000 0011
Straddle bracket	Ø 8.2		35 x 35	100	5000 0012



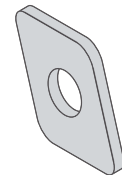
Rhomboidal nut

elcha_016_a_1_x_cat



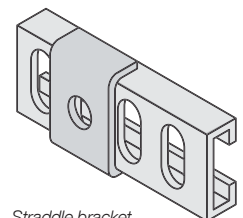
Square nut

elcha_017_a_1_x_cat



Rhomboidal nut

elcha_018_a_1_x_cat



Straddle bracket

elcha_020_a_1_x_cat

Foam

Type	l x e (mm)	To be ordered in multiples of	Reference
Roll of 60 meter foam ⁽¹⁾	20 x 12	1	5000 0057
Roll of 60 meter foam ⁽¹⁾	25 x 12	1	5000 0058

(1) Enables to maintain nuts for symmetrical profiles.



elcha_029_a_1_cat

Mounting rails and profiles

Mounting accessories

Asymmetrical DIN rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
35 x 7.5 x 1	Without		Steel z-b ⁽¹⁾	2	30 m	5000 0302
35 x 7.5 x 1	6.3 x 18	25	Steel z-b ⁽¹⁾	2	30 m	5000 0042
35 x 7.5 x 1	Without		Stainless steel	2	10 m	5000 1302

(1) White zinc-coated.



elcha_040_a_1_cat

Asymmetrical DIN rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
35 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	2	30 m	5000 0301
35 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	3	30 m	5000 0331
35 x 15 x 2.3	Without		Steel z-b ⁽¹⁾	2	20 m	5000 0017
35 x 15 x 2.3	Without		Steel z-b ⁽¹⁾	3	30 m	5000 0027
35 x 15 x 1.5	6.3 x 18	25	Steel z-b ⁽¹⁾	2	30 m	5000 0043
35 x 15 x 1.5	6.3 x 18	25	Steel z-b ⁽¹⁾	3	30 m	5000 0343
35 x 15 x 2.5	Without		Aluminium	2	12 m	SA12 4217
35 x 15 x 2.5	Without		Aluminium	3	18 m	SA13 4217
35 x 15 x 2.5	Without		Aluminium	6	36 m	SA10 4217

(1) White zinc-coated.



elcha_043_a_1_cat

Asymmetrical DIN rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
32 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	2	30 m	5000 0307
32 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	3	30 m	5000 0308
32 x 15 x 1.5	6.3 x 18	25	Steel z-b ⁽¹⁾	2	30 m	5000 0044
32 x 15.5 x 1.5	Without		Aluminium	2	8 m	SA12 4210
32 x 15.5 x 1.5	Without		Aluminium	3	12 m	SA13 4210
32 x 15.5 x 1.5	Without		Aluminium	6	24 m	SA10 4210

(1) White zinc-coated.



elcha_041_a_1_cat

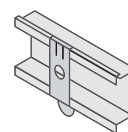
Accessories

Fixomega / Fixocap

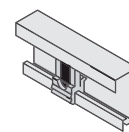
Type	Insert M	To be ordered in multiples of	Reference
Fixomega ⁽¹⁾	M4	100	5000 0041
Fixomega ⁽¹⁾	M5	100	5000 0051
Fixocap ⁽²⁾	m3/h	100	5800 0003
White Fixocap ⁽²⁾	M4 / M6	100	5800 0005
Black Fixocap ⁽²⁾	m3/h	100	5800 0004
Grey Fixocap ⁽²⁾	M4 / M6	100	5800 0006

(1) Clip-on nut for symmetrical profiles.

(2) Clip-on nut for asymmetrical profiles.



Fixomega



Fixocap

elcha_019_b_1_x_cat

Support for inclined mounting

Type	Number of holes	Ø hole (mm)	Insert M	To be ordered in multiples of	Reference
Support for inclined mounting	2	7	M5	10	5000 0100



elcha_022_a_1_x_cat

Cable support rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 15 x 1	8.2 x 14.5	16.7	Galvanised steel	3	15 m	5000 4325
50 x 12 x 1	8.2 x 14.5	16.7	Galvanised steel	2	20 m	5000 4326



elcha_033_a_1_cat

L profile

W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 30 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6401
30 x 50 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6501
30 x 30 x 2.5	8.5 x 45	55	Steel z-b ⁽¹⁾	2	10 m	5000 0003
40 x 40 x 2.5	8.5 x 45	55	Steel z-b ⁽¹⁾	2	10 m	5000 0004

(1) White zinc-coated.

U profile

W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
50 x 30 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6701
30 x 20 x 3	9	25	Aluminium	3	3 m	5254 6901

(1) White zinc-coated.

Z profile

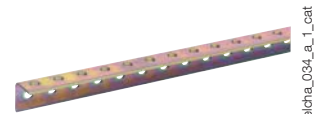
W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 30 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6601

(1) White zinc-coated.

Rising U

W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 50 x 2.5	8.2 x 45	55	Steel z-b ⁽¹⁾	2	8 m	5000 0005

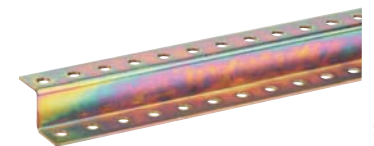
(1) White zinc-coated.



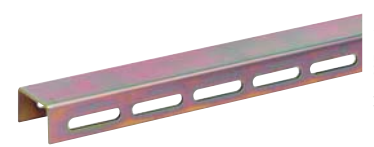
elcha_034_a_1_cat



elcha_035_a_1_cat



elcha_036_a_1_cat



elcha_037_a_1_cat

Accessories

Bracket

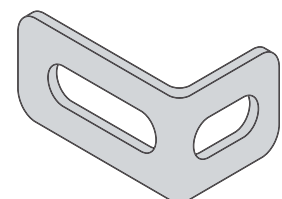
Use

For steel profile.

Characteristics

Bichromate zinc-coated steel.

H x W x D (mm)	Number of holes	Ø hole (mm)	Insert M	To be ordered in multiples of	Reference
25 x 25 x 19	2	7		25	5000 0045
25 x 25 x 19	1	6	M6	25	5000 0046
36 x 36 x 23	2	8		25	5000 0047
45 x 60 x 25	2	9x25 / 9x35		25	5254 6101
44 x 75 x 32	5	5 / 6		1 (Set of 6)	5119 5045



elcha_021_a_1_x_cat

Screws

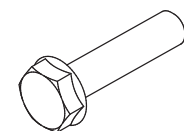
Use

For steel profile.

Characteristics

Bichromate zinc-coated steel.
Integrated washer

Thread	L (m)	Class	To be ordered in multiples of	Reference
M6	10	8.8	100	5000 0066
M8	12	8.8	100	5000 0068
M8	16	8.8	100	5000 0069



elcha_038_a_1_x_cat

Washer

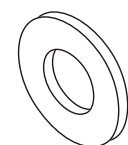
Use

For steel profile.

Characteristics

Bichromate zinc-coated steel.

Ø x e (mm)	Ø hole (mm)	To be ordered in multiples of	Reference
16 x 1.5	6.5	100	5000 0015
19 x 1.5	6.5	100	5000 0018
22 x 1.5	8.5	100	5000 0016



amc_035_a_1_x_cat

PVC border

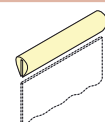
Use

PVC border for sheet metal.

Characteristics

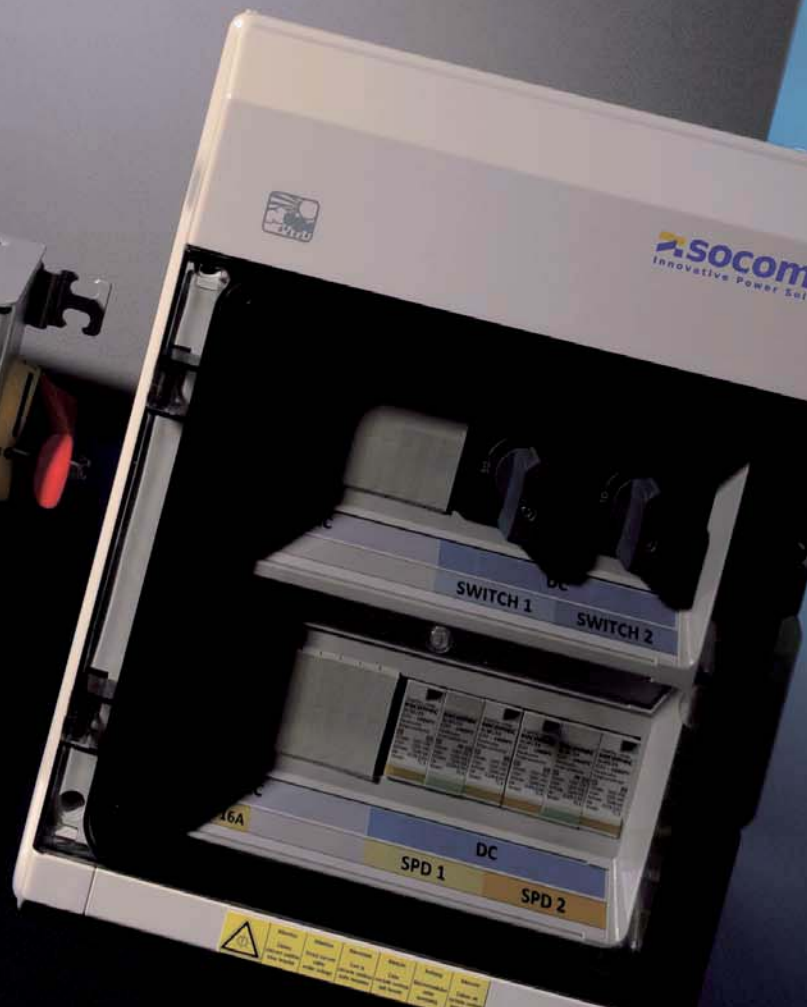
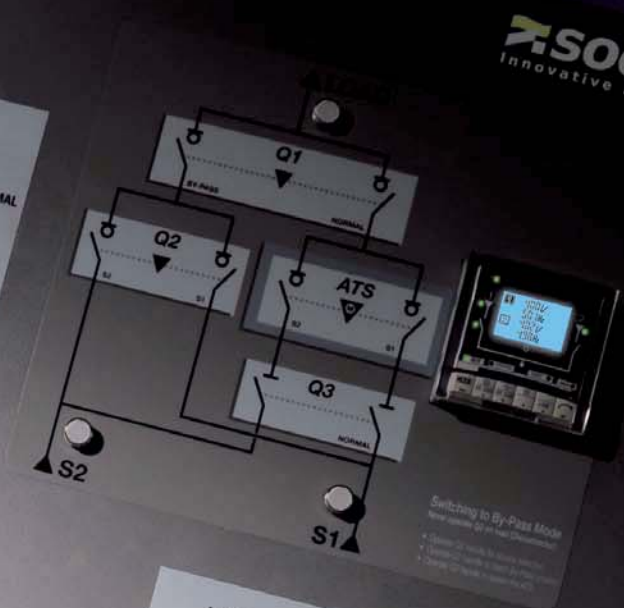
Colour: Light grey

Steel thickness (mm)	To be ordered in multiples of	Reference
2	25 m	7739 0025



amc_036_a_1_x_cat

By-Pass Double Line



Integrated products & solutions

Enclosures and cabinets equipped for your applications	p. 598
Safety enclosures.....	p. 608
Enclosed changeover switches.....	p. 622
Photovoltaic enclosures.....	p. 646

Enclosed switches

Switch-disconnectors

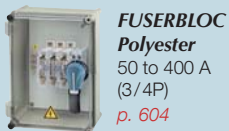


SIRCO Polyester
16 to 500 A
(3/4P)
p. 600



SIRCO Steel
250 to 1250 A
(3/4P)
p. 600

Fuse disconnect switches



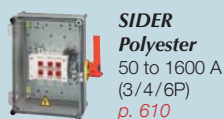
FUSERBLOC Polyester
50 to 400 A
(3/4P)
p. 604



FUSERBLOC Steel
25 to 800 A
(3/4P)
p. 604

Safety enclosures

Normal atmospheres



SIDER Polyester
50 to 1600 A
(3/4/6P)
p. 610



SIDER Steel
50 to 1600 A
(3/4/6P)
p. 610

Explosive atmospheres



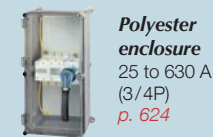
SIDER Steel - Dust
50 to 630 A
(3/4/6P)
p. 618



SIDER Steel - Gas
50 to 400 A
(3/4P)
p. 618

Enclosed changeover switches

Manual control

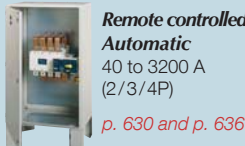


Polyester enclosure
25 to 630 A
(3/4P)
p. 624



Steel enclosure
63 to 3200 A
(3/4P)
p. 624

Motorised operation



Remote controlled / Automatic
40 to 3200 A
(2/3/4P)
p. 630 and p. 636

ATS BYPASS solution



40 to 3200 A
(3/4P)
p. 642

More about our products

Custom design and production of distribution switchboards p. 648



SOCOME C manufactures specific products in line with customers' specifications and technical requirements.

We will help you find the best solution for your application.

Please feel free to consult us.

Photovoltaic products

We will help you find the right solution for your application.



Please feel free to consult us.



Enclosures and cabinets equipped for your applications

Integrated products & solutions

A specialist in breaking, switching, protection, metering and measurement, SOCOMEC designs and manufactures **standard and customised integrated solutions**.

This dual expertise (products/solutions) enables us to offer you electrical equipment meeting the specific needs of your installations, with a **manufacturer's guarantee**.

The culmination of many years of experience, our **standard integrated solutions** ensure:

- **Quick and easy commissioning** based on the constraints of the installations,
- **Easy, error-free operation** in line with best industry practice.

They guarantee:

- **personal and equipment safety,**
- **continuity in operation,**
- **compliance with standards governing products, assemblies and installations.**

Did you know?

SOCOMEK has a department dedicated to the design and manufacture of special equipment. This department can assist you, at each stage of your project, with the following:

- drawing up of specifications,
- costing,
- scheduling,
- design and manufacture,
- qualification and certification,
- assistance with installation and commissioning,
- training.

To benefit from our expertise, contact your nearest SOCOMEC office.



Enclosed switches



SITE 301 A

Switching enclosures incorporate load break switches with or without fuse protection, which are developed, qualified and certified for electrical distribution networks in the industrial and service sectors. They enable on-load

disconnection, breaking and interlocking of the power supply for all types of load, and can also be used as general switches for equipment in a variety of applications.

Safety enclosures



SITE 558 A

Safety enclosures are designed for installation near a motor or a machine in order to **isolate it from the power supply voltage**. They comprise manually-controlled **load break switches** which can be **interlocked** in the OFF position with **visible and reliable indication** of the disconnection open position.

During maintenance or inspection operations, they guarantee the operator's **protection against the accidental startup of electrical machines**.

For use in explosive atmospheres (gas/dust), an ATEX version is available to prevent explosions during the device's opening and closing phases, which can generate electrical arcs.

Enclosures and cabinets equipped for your applications

Enclosed changeover switches



SITE 375 A

Enclosed changeover switches are used to guarantee the availability of electrical energy in critical installations (high-rise buildings, public access sites, hospitals, IT or telecommunications centres, airports, industry, etc.), by manually or automatically switching between a normal power supply source and a backup source (generator or second transformer) in the event of a fault on the former. (fig. 1)

For sites requiring power supply availability close to 100%, the **ATS Bypass** offers dual redundancy during normal operating, inspection or maintenance phases. Thanks to

the overlapping function of the Normal/Bypass power supply sources, the ATS Bypass enables error-free operation without any interruption in the continuity of supply to the load.

In an industrial environment, switches can be used for:

- Operation lockout via earthing (fig. 2),
- Load redundancy (e.g. between motors) (fig. 3).



SITE 629 A

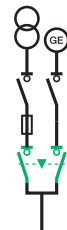


Fig. 1



Fig. 2



Fig. 3

Photovoltaic enclosures



SITE 517 A

Photovoltaic enclosures are designed to combine photovoltaic module strings and to provide protection against overcurrents or overvoltages, in order to connect them to solar inverters. Their Class II construction enables them to offer maximum protection for users against indirect contacts.

Available in three versions (residential, buildings and solar fields), the SOCOMEC range of photovoltaic enclosures meets a full range of requirements with **a manufacturer's guarantee**.



Local safety enclosures

Load break switches

enclosed SIRCO (M) from 16 to 1250 A



coff_337_a_1_cat

SIRCO M
in polycarbonate enclosure



coff_292_a_1_cat

SIRCO
in polyester enclosure



coff_295_a_1_cat

SIRCO in steel enclosure
with front operation

Function

SIRCO M and **SIRCO enclosures** incorporate three or four pole manually operated load break switches which make and break on load and provide isolation for any low voltage electrical circuit. The enclosure provides protection against contact with live parts as well as environmental factors such as dust, water and other hazards.

Advantages

Safety of operations

Door interlocking and positive break indication provide increased safety for the operator.

Inductive load breaking (AC23)

This enclosure range is provided with SIRCO M and SIRCO type load break switches which are adapted to highly inductive loads.

Complete range

The range offers a wide variety of variants depending on the number of poles, rating and enclosure type.

The solution for

- > OEM.
- > Industries.
- > Service sector buildings.
- > Power distribution.



Strong points

- > Safety of operations.
- > Inductive load breaking (AC23).
- > Complete range.

Conformity to standards

- > IEC 60947-3
- > IEC 60364
- > EN 60947-3
- > EN 61439
- > EN 60204-1
- > UL 508
(please consult us)



Available on request

- > Customised solutions upon request.

SIRCO M polycarbonate enclosure

Front operation



General characteristics

- Equipped with a 3 pole SIRCO M.
- 1 removable neutral terminal and 1 removable earth terminal.
- Possibility of adding 1 additional pole.
- Possibility of adding 1 M-type auxiliary contact module.
- Protection IP65.

References

Enclosed switches

Rating (A)	No. of pole	Handle colour	Enclosure colour	Reference
16	3 P	Black	Grey	2215 3300
16	3 P	Red	Yellow	2215 3400
20	3 P	Black	Grey	2215 3301
20	3 P	Red	Yellow	2215 3401
25	3 P	Black	Grey	2215 3302
25	3 P	Red	Yellow	2215 3402
32	3 P	Black	Grey	2215 3303
32	3 P	Red	Yellow	2215 3403
40	3 P	Black	Grey	2215 3304
40	3 P	Red	Yellow	2215 3404
63	3 P	Black	Grey	2215 3306
63	3 P	Red	Yellow	2215 3406
80	3 P	Black	Grey	2215 3308
80	3 P	Red	Yellow	2215 3408
100	3 P	Black	Grey	2215 3309 ⁽¹⁾
100	3 P	Red	Yellow	2215 3409 ⁽¹⁾

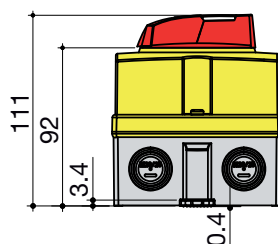
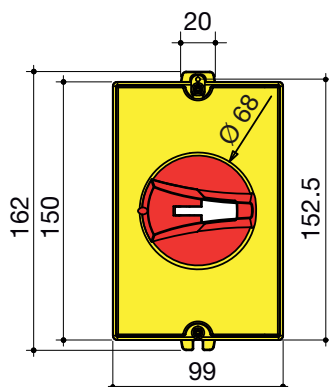
(1) No UL.

Empty enclosures

Rating (A)	No. of pole	Handle colour	Enclosure colour	Reference
16 ... 40	3 P	Black	Grey	2215 9305
16 ... 40	3 P	Red	Yellow	2215 9405
63 ... 80	3 P	Black	Grey	2215 9309
63 ... 80	3 P	Red	Yellow	2215 9409

Dimensions

SIRCO M 16 to 40 A

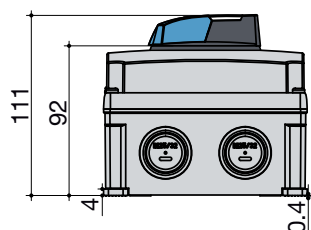
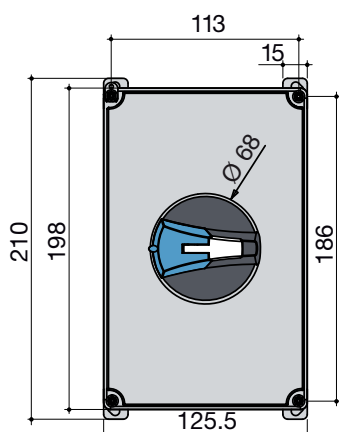


sircm_130_c_1_cat

For enclosure 162 x 99 mm

- 4 pre-drilled holes M16 (on the side).
- 4 pre-drilled holes M20 / M25 (top and bottom).
- 4 pre-drilled holes M20 (rear).

SIRCO M 63 to 100 A



sircm_131_b_1_cat

For enclosure 210 x 125.5 mm

- 4 pre-drilled holes M16 (on the side).
- 4 pre-drilled holes M25 / M32 (top and bottom).
- 2 pre-drilled holes M25 / M32 (rear).

Local safety enclosures

Load break switches

enclosed SIRCO (M) from 16 to 1250 A

SIRCO polyester enclosure

Front operation

coff_292_a_2_cat



References

Rating (A)	No. of poles	Top/Bottom Connection Reference ⁽¹⁾	Bottom/Bottom Connection Reference ⁽¹⁾
125	3 P	3115 3012	3125 3012
125	4 P	3115 4012	3125 4012
160	3 P	3115 3016	3125 3016
160	4 P	3115 4016	3125 4016
250	3 P	3115 3025	3125 3025
250	4 P	3115 4025	3125 4025
400	3 P	3115 3040	3125 3040
400	4 P	3115 4040	3125 4040
500	3 P	3115 3050	3125 3050
500	4 P	3115 4050	3125 4050

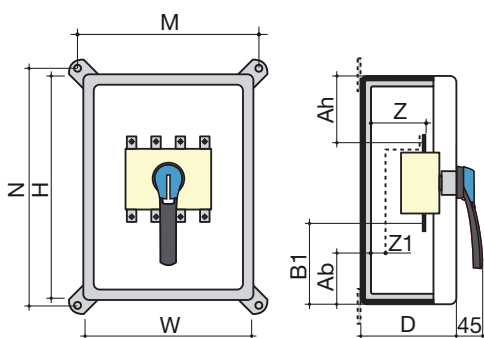
General characteristics

- Adapted to chemical attack, dust hazard, contamination hazard and atmospheric corrosion.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55.
- Colour: RAL 7030.
- Closing plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 fixing lugs supplied, not mounted
- Locking system: screw.

(1) Combined fuse version: Please consult us.

Dimensions

coff_114_d_1_gbl_cat



Rating (A)	H x W x D (mm)	Connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Top/Bottom connection			Bottom/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
125	360 x 270 x 171	50	271	361	33		120	126	5			
125	360 x 270 x 201	50	271	361	62	28				166	205	6
160	360 x 270 x 171	95	271	361	33		120	126	5			
160	360 x 270 x 201	95	271	361	62	28				166	205	6
250	540 x 360 x 171	150	361	541	35		200	210	8			
250	540 x 360 x 201	150	361	541	55	25				279	360	10
400	720 x 540 x 201	240	541	721	42		258	258	18	316	433	23
500	720 x 540 x 201	240	541	721	51	38	258	258	18	316	433	24

SIRCO steel enclosure with front operation

■ Front operation

coff_295_s_1_cat



General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7032.
- Cable gland plate: top and bottom.
- Material: XC steel, thickness 1.5 to 2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 holes in the back of the enclosure.
- Door: solid with hinges.
- Locking system: 3 mm double-bar key (key supplied).
- Miscellaneous: 2 earth connection points, disconnectable solid neutral link for 3+N, extension boxes for top and/or bottom connections available, IP20 incoming terminal shrouds.
- Please consult us.



Local safety enclosures

Fuse combination switches

enclosed FUSERBLOC from 25 to 800 A

Integrated products
& solutions



FUSERBLOC
in polyester enclosure



FUSERBLOC
in polyester enclosure



FUSERBLOC
in steel enclosure

The solution for

- > OEM.
- > Industries.
- > Data centres.
- > Power distribution.
- > Solar applications.



Strong points

- > Safety of operations.
- > Suitable for use in a variety of applications.

Conformity to standards

- > IEC 60947-3
- > IEC 60364
- > EN 60947-3
- > EN 61439
- > EN 60204-1



Available on request

- > Customised solutions upon request.
- > For BS88 versions please consult us.

Function

FUSERBLOC enclosures incorporate three or four pole manually operated fuse combination switches which make and break on load and provide isolation and protection against overcurrent for any low voltage electrical circuit. The enclosure provides protection against contact with live parts as well as environmental factors such as dust, water and other hazards.

Advantages

Safety of operation

Enclosed FUSERBLOC provide:

- Positive break indication and door interlocking.
- Short-circuit and overcurrent protection.
- Complete isolation of the fuse with double breaking per pole (top and bottom of fuse).
- Protection to personnel against contact with live parts.
- Protection against environmental factors.

Suitable for use in a variety of applications

FUSERBLOC can be fitted with different types of fuses (gG, aM, UR) with high breaking capacity, enabling them to be utilised in a variety of applications.

FUSERBLOC in polyester enclosure

■ Front operation

coff_319_a_2_x_cat



General characteristics

- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7030.
- Closing plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 fixing lugs supplied, not mounted.
- Locking system: screw.
- Fuses supplied separately; please see the fuse section of this catalogue, or consult us.

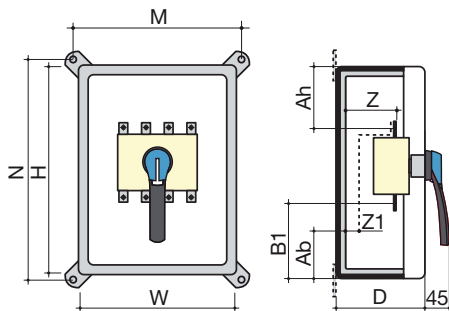
References

Rating (A)	Fuses NFC and DIN ⁽¹⁾	Top/Bottom connection Reference	Bottom/Bottom connection Reference
3 x 50	14 x 51	3117 3005	3117 3005
4 x 50	14 x 51	3117 4005	3117 4005
3 x 100	22 x 58	3117 3010	3127 3010
4 x 100	22 x 58	3117 4010	3127 4010
3 x 160	0	3117 3016	3127 3016
4 x 160	0	3117 4016	3127 4016
3 x 250	1	3117 3025	3127 3025
4 x 250	1	3117 4025	3127 4025
3 x 400	2	3117 3040	3127 3040
4 x 400	2	3117 4040	3127 4040

(1) Fuses supplied separately; please see the fuse section of this catalogue or consult us.

Dimensions

coff_114_d_1_gb_cat



Rating (A)	H x W x D (mm)	Connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Top/Bottom connection			Bottom/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
3 x 50 / 4 x 50	270 x 270 x 171	25	271	271	24		86	86	(1)	90	90	3
3 x 100 / 4 x 100	360 x 270 x 171	95	271	361	20		108	107	4	(1)	(1)	(1)
3 x 100 / 4 x 100	540 x 270 x 201	95	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
3 x 160	540 x 270 x 171	95	271	541	20		220	180	6			
3 x 160	540 x 270 x 201	95	271	541	60	25				220	320	8
4 x 160	540 x 360 x 171	95	361	541	20		220	180	7			
4 x 160	540 x 360 x 201	95	361	541	60	25				220	320	10
3 x 250 / 4 x 250 ⁽¹⁾												
3 x 400 / 4 x 400 ⁽¹⁾												

(1) Please consult us.

Local safety enclosures

Fuse combination switches

enclosed FUSERBLOC from 25 to 800 A

FUSERBLOC in polyester enclosure

Side operation

conf_320_a_1_cat



General characteristics

- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7030.
- Closing plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 fixing lugs supplied, not mounted.
- Locking system: screw.

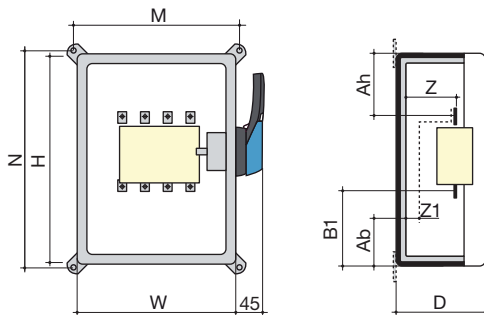
References

Rating (A)	Fuses NFC and DIN ⁽¹⁾	Top/Bottom connection Reference	Bottom/Bottom connection Reference
3 x 50	14 x 51	3167 3005	3167 3005
4 x 50	14 x 51	3167 4005	3167 4005
3 x 100	22 x 58	3167 3010	3167 3010
4 x 100	22 x 58	3167 4010	3167 4010
3 x 160	0	3167 3016	3177 3016
4 x 160	0	3167 4016	3177 4016
3 x 250	1	3167 3025	3177 3025
4 x 250	1	3167 4025	3177 4025
3 x 400	2	3167 3040	3177 3040
4 x 400	2	3167 4040	3177 4040

⁽¹⁾ Fuses supplied separately; please see the fuse section of this catalogue or consult us.

Dimensions

conf_119_f_1_gpb_cat



Rating (A)	H x W x D (mm)	Connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Top/Bottom connection			Bottom/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
3 x 50 / 4 x 50	270 x 270 x 171	25	271	271	24		84	88	4	84	88	4
3 x 100 / 4 x 100	360 x 270 x 171	95	271	361	20		108	108	5	108	108	5
3 x 160	540 x 270 x 171	95	271	541			260	140	6			
4 x 160	540 x 360 x 171	95	361	541	20		260	140	7			
3 x 160 / 4 x 160	540 x 360 x 201	95	361	541	52	24				200	289	8
3 x 250	720 x 360 x 201	240	361	721	20		328	228	15			
4 x 250	720 x 360 x 201	240	361	721	20		338	218	⁽¹⁾			
3 x 250 / 4 x 250	720 x 360 x 201	240	361	721	51	29				255	453	18
3 x 400 / 4 x 400	720 x 540 x 201	240	541	721	25		323	223	18			
3 x 400	720 x 540 x 201	240	541	721	25	40				450	403	23
4 x 400	754 x 750 x 312	240	801	618	25	40				436	484	⁽¹⁾

⁽¹⁾ Please consult us.

FUSERBLOC in steel enclosure

■ Front operation

coff_284_a_2_cat



General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: polyester powder RAL 7035.
- Closing plate: bottom (range ≤ 63 A), top and bottom (range > 100 A).
- Material: XC steel, thickness 1.5 or 2 mm.
- Coating: polyester powder.
- Wall mounting: 4 holes in the back of the enclosure.
- Solid door with hinges.
- Locking system: 3 mm double-bar key (key supplied).
- Miscellaneous: 2 earth connection points, disconnectable solid neutral link for 3P+N, extension boxes for top and/or bottom connections available, IP20 incoming terminal shrouds.

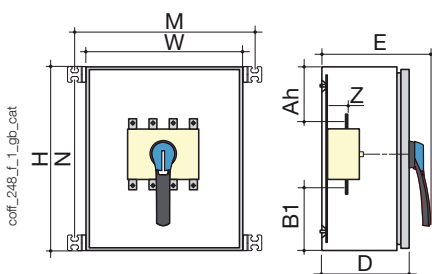
References

Rating (A)	Fuses NFC and DIN ⁽¹⁾	Top/Bottom connection Reference
3 x CD 25	10 x 38	3033 3002
4 x CD 25	10 x 38	3033 4002
3+N x CD 25	10 x 38	3033 5002
3 x CD 32	14 x 51	3033 3003
4 x CD 32	14 x 51	3033 4003
3+N x CD 32	14 x 51	3033 5003
3 x 63	00C	3033 3006
4 x 63	00C	3033 4006
3+N x 63	00C	3033 5006
3 x 100	22 x 58	3033 3010
4 x 100	22 x 58	3033 4010
3+N x 100	22 x 58	3033 5010
3 x 160	00	3033 3016
4 x 160	00	3033 4016
3+N x 160	00	3033 5016
3 x 250	1	3033 3025
4 x 250	1	3033 4025
3+N x 250	1	3033 5025
3 x 400	2	3033 3040
4 x 400	2	3033 4040
3+N x 400	2	3033 5040
3 x 630	3	3033 3063
4 x 630	3	3033 4063
3+N x 630	3	3033 5063
3 x 800	3	3033 3080
4 x 800	3	3033 4080
3+N x 800	3	3033 5080

(1) Fuses supplied separately; please see the fuse section of this catalogue or consult us.

Accessories

- For auxiliary contacts: (See page 203).
- Terminal shrouds (see page 203).



coff_248_f_1_gb_cat

Dimensions

Rating (A)	H x W x D (mm) ⁽¹⁾	Max. connection cross-section (mm ²)	E (mm)	M (mm)	N (mm)	Z (mm)	Top/Bottom connection		Weight (kg)
							Ah (mm)	B1 (mm)	
CD 25	300 x 300 x 150	16	208	348	259	28.5	115	87	(1)
CD 32	300 x 300 x 150	16	208	348	259	28.5	115	87	(1)
63	300 x 300 x 150	25	208	348	259	23.8	101.5	101.5	(1)
100	400 x 300 x 200	95	259	348	359	20	109.5	149.5	(1)
160	400 x 300 x 200	95	259	348	359	20	109.5	149.5	(1)
250	600 x 600 x 300	240	359	648	559	22	187	247	(1)
400	600 x 600 x 300	240	359	648	559	22	184	244	(1)
630	800 x 600 x 300	2 x 300	374	648	759	59	264	276	(1)
800	800 x 600 x 300	2 x 300	374	648	759	59	264	276	(1)

(1) Weight (kg): Please consult us.



Safety enclosures

Socomec safety enclosures are designed for installation near a motor or a machine in order to **isolate it from the power supply**.

All the safety enclosures are equipped with **SIDER load break switches** with front or side manual controls which are **lockable** in the open position, and with **visible, reliable indication** of the contacts' open position. They make and break under load conditions and provide safety isolation for any low voltage circuit.

During maintenance or inspection

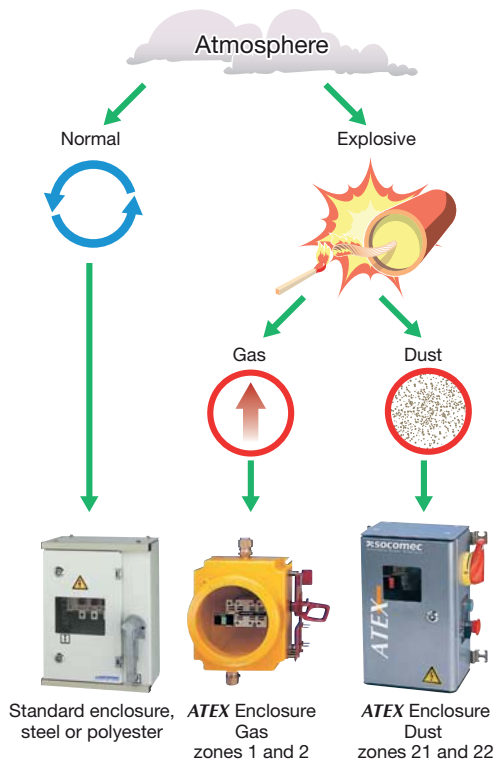
operations, the safety enclosures guarantee the operator's **protection against the accidental startup of electrical machines**.

For use in explosive atmospheres, **ATEX dust** (standard) and **ATEX gas** (to order) enclosures are available to prevent explosions caused by electrical arcs generated when opening or closing the circuits protected by the device.



Which ambient atmosphere?

The operating environment is an essential parameter when choosing an enclosure. Our range of enclosures offers you solutions for the most varied of atmospheres, including the most severe.

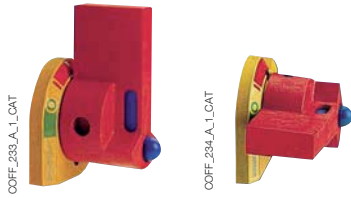


Environment	Steel enclosure	Polyester enclosure	Stainless steel enclosures ⁽¹⁾	ATEX enclosures
Chemical aggression		•	•	
Mechanical risks	•		•	•
Dust risks	•			
Contamination risks		•	•	
Atmospheric corrosion		•	•	
Risk of explosion				•

(1) Made to order

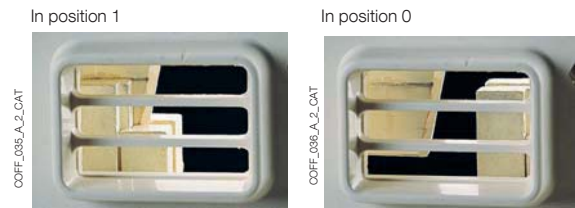
Safety functions

Positive break indication



Clear indication of the open or closed position of the switch via the handle and its easy-to-read marking.

Visible breaking



In accordance with NF C 15 – 100, "an isolating device is considered as having visible breaking if the separation of the contacts is directly visible." All the devices used in the safety enclosures have visible breaking.

Padlocking



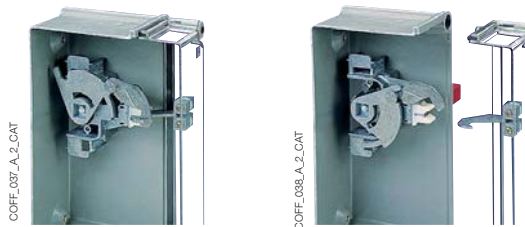
When working on the machine during the lockout phase, qualified personnel may perform triple handle padlocking in the open position. The ergonomic handle can accommodate up to three locks.

Mechanical flag indicator (optional)

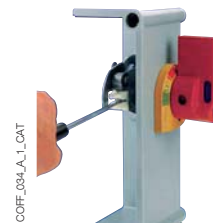


Flush with the viewing glass and integral with the movable bar, this gives clear, at-a-glance indication of contact position, providing easier visualisation of the visible breaking.

Double locking



In accordance with standard 60204-1, devices located outside a closed electrical service area must be equipped with the means to allow them to be secured in the OFF position (disconnected state). Qualified personnel may use the ergonomic handle to perform triple handle padlocking.



It is possible to close the breaking device when the enclosure door is open by using a tool to inhibit the double lock, thus allowing tests to be carried out by qualified staff.

Overview of our range

For non-hazardous operating environments

Polyester

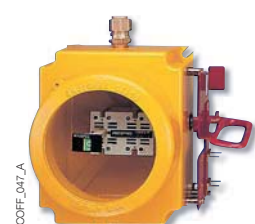


Steel



For hazardous operating environments

Steel

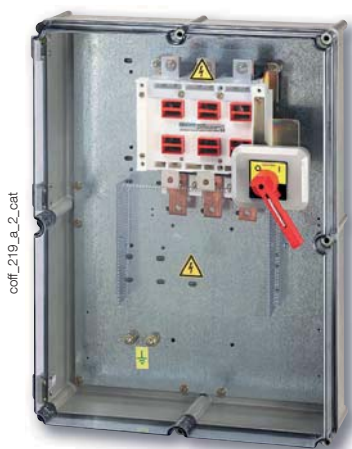




Safety enclosures

Normal atmospheres

Polyester enclosures from 50 to 1600 A



Polyester enclosure with front operation handle



Polyester enclosure with side operation handle

The solution for

- > Steel works.
- > Cement works.
- > Automotive.
- > Mining industries.
- > Food processing.
- > Chemical industry.



Strong points

- > Safety of operations.
- > Inductive load breaking (AC23).
- > Robust product.

Conformity to standards

- > IEC 60364
- > IEC 60947-3
- > IEC 60204-1
- > IEC 61439-2



Specific requests

- > SOCOMEC can offer customised solutions to meet your specific requirements. Contact your Socomec office for further information.

Function

Safety enclosures equipped with SOCOMEC switches provide emergency breaking, breaking for mechanical maintenance and safety isolation in the vicinity of any low voltage final circuit.

Advantages

Safety of operations

- Visible contacts and positive break indication with the possibility to add a mechanical indicator.
- Double locked door when the switch is in the ON position.
- Triple locking of the handle in the OFF position.

Inductive load breaking (AC23)

Safety enclosures are designed for use with inductive loads and are able to make and break on load (AC23).

Robust product

Products have been designed for severe industrial conditions with chemical, pollution or atmospheric corrosion risks (polyester enclosure: good resistance to chemicals, self-extinguishable at 960°C, etc.)

General characteristics

Breaking device:

All safety enclosures are equipped with SIDER load break switches which provide visible, reliable indication of the contacts open position. They make and break under load conditions and provide safety isolation for any low voltage circuit.

Enclosure:

Enclosures are made of glass fibre reinforced polyester and are of the following types:

- COMBIESTER from 50 to 500 A (RAL7035)
- MINIPOL from 630 to 800 A (RAL7035)

Covers on COMBIESTER enclosures are hinged and equipped with a screw locking system. Doors on MINIPOL enclosures can be locked using a 3 mm double bar key.

These enclosures have good resistance to chemical agents and are self-extinguishing at 960 °C.

These enclosures provide a protection degree of IP55. Wall mounting is achieved using 4 fixing lugs, supplied loose.

Visible breaking:

The contacts are visible through:

- The transparent cover of COMBIESTER enclosures.
- A door-mounted triplex glass window on MINIPOL enclosures.
- This enables the operator to confirm the position of the contacts either during a preventative check or before an operation.

Double locking:

This is ensured by a simple robust mechanism in connection with the control shaft. Activation with the door open remains possible by authorised personnel.

Operation handle:

Polyester safety enclosures are available with front or side operation handles. The handle is red and made of an insulating material (emergency breaking). The handle can be locked in the OFF position using three padlocks.

Connection:

Polyester safety enclosures are available in two versions:

- TB version (top entry and bottom cable exit)
- BB version (bottom cable entry/exit). Connection is achieved by running cables to the top for 50 A and 80 A ratings. For higher ratings, a copper bottom-bottom busbar enables easy connection of incoming cables.

Miscellaneous:

- An earthing bar for connection is available in the enclosure.
- Incoming protection screen.

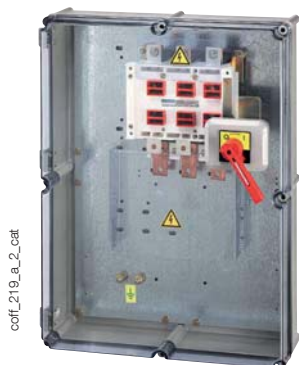
Safety enclosures

Normal atmospheres

Polyester enclosures from 50 to 1600 A

References

Front operation



coeff_219_a_2_cat

Side operation



coeff_163_b_1_cat

Rating (A)	No. of poles	Front operation ⁽¹⁾⁽²⁾	
		Top/Bottom connection Reference	Bottom/Bottom connection Reference
125	3 P	3215 3012	3225 3012
125	4 P	3215 4012	3225 4012
125	6 P	3215 6012	3225 6012
200	3 P	3215 3020	3225 3020
200	4 P	3215 4020	3225 4020
200	6 P	3215 6020	3225 6020
400	3 P	3215 3040	3225 3040
400	4 P	3215 4040	3225 4040
400	6 P	3215 6040	3225 6040
500	3 P	3215 3050	3225 3050
500	4 P	3215 4050	3225 4050
630	3 P	3215 3063	3225 3063
630	4 P	3215 4063	3225 4063
800	3 P	3215 3080	3225 3080
800	4 P	3215 4080	3225 4080
1250	3 P	3215 3120	3225 3120
1250	4 P	3215 4120	3225 4120
1600	3 P	3215 3160	3225 3160
1600	4 P	3215 4160	3225 4160

Rating (A)	No. of poles	Side operation ⁽¹⁾⁽²⁾	
		Top/Bottom connection Reference	Bottom/Bottom connection Reference
50	3 P	3265 3005	3265 3005
50	4 P	3265 4005	3265 4005
50	6 P	3265 6005	3265 6005
80	3 P	3265 3008	3265 3008
80	4 P	3265 4008	3265 4008
80	6 P	3265 6008	3265 6008
125	3 P	3265 3012	3275 3012
125	4 P	3265 4012	3275 4012
125	6 P	3265 6012	3275 6012
200	3 P	3265 3020	3275 3020
200	4 P	3265 4020	3275 4020
200	6 P	3265 6020	3275 6020
400	3 P	3265 3040	3275 3040
400	4 P	3265 4040	3275 4040
500	3 P	3265 3050	3275 3050
500	4 P	3265 4050	3275 4050
630	3 P	3265 3063	3275 3063
630	4 P	3265 4063	3275 4063
800	3 P	3265 3080	3275 3080
800	4 P	3265 4080	3275 4080
1250	3 P	3265 3120	3275 3120
1250	4 P	3265 4120	3275 4120
1600	3 P	3265 3160	3275 3160
1600	4 P	3265 4160	3275 4160

(1) For the mechanical indicator option, replace the second digit of the enclosure reference number with the letter V.
For example: 3V15 3012.

(2) Stainless steel enclosures, specific locking systems, terminal pre-wired/non pre-wired control auxiliary contacts, ventilation and humidity evacuation systems or cable glands are available upon request. Please consult us.

Accessories

Auxiliary contacts

Use

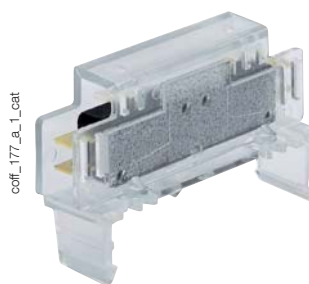
For pre-breaking and signalling of positions 0 and I of the load break switch.

Mounting

- On the double locking system.
- Possibility of factory mounting on enclosure (please provide enclosure reference when ordering).

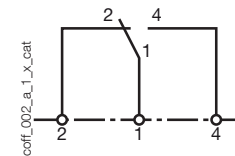
Contact(s)	A/C	Factory fitted A/C	Factory fitted low level auxiliary:
1 st NO/NC changeover A/C front operation \geq 125 A	2799 0001	2799 1001 ⁽¹⁾	
2 nd NO/NC changeover A/C front operation \geq 125 A	2799 0002	2799 1002 ⁽¹⁾	
2 NO/NC changeover A/C side operation	2999 0012	2999 1012	
2 NO/NC changeover A/C wired side operation	3290 6002	3290 6012 ⁽¹⁾	3290 6102 ⁽¹⁾

(1) Please provide the reference number of the enclosure to be equipped.



coeff_177_a_1_cat

1st NO/NC A/C for pre-break

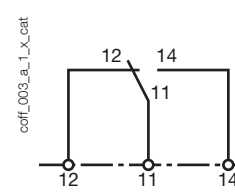


coeff_002_a_1_x_cat



coeff_178_a_1_cat

2nd NO / NC A/C for pre-break



coeff_003_a_1_x_cat

Key handle interlocking system

Use

Kit allowing a RONIS EL11AP or Serv Trayvou XOP10 lock to be fitted for a SIDER 50 to 1600 A, with side operation within a steel or polyester enclosure.

Type	Locking in position 0	Locking in position 1
Locking using RONIS EL 11AP lock (not included)	3290 7005	3290 7006 ⁽¹⁾
Locking using XOP10 lock (not included)	3290 7015	3290 7016 ⁽¹⁾
Lock RONISEL11AP	4409 8511	
Serv Trayvou XOP10 lock	4409 8601	

(1) Please provide the reference number of the enclosure to be equipped.



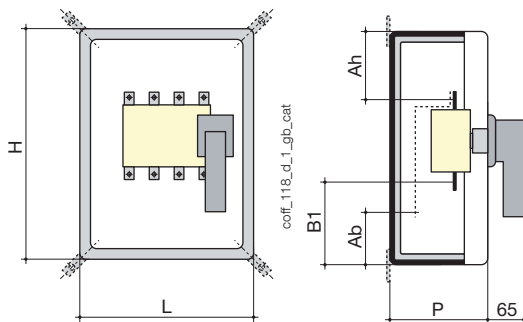
Rated operational currents I_e (A)

Rated voltage	Utilisation category	50 A	80 A	125 A	200 A	400 A	500 A	630 A	800 A	1250 A	1600 A
400 VAC	AC-21	50	80	125	200	400	500	630	800	1250	1600
400 VAC	AC-22	50	63	125	200	400	400	630	800	1250	1250
400 VAC	AC-23	50	63	125	200	400	400	630	630	1000	1000
690 VAC	AC-21	40	63	100	160	400	400	630	800	1000	1250
690 VAC	AC-22	25	40	63	100	200	200	315	315	400	400
690 VAC	AC-23		10	16		80	80	100	125	200	200

Motor power output (kW)	50 A	80 A	125 A	200 A	400 A	500 A	630 A	800 A	1250 A	1600 A
400 VAC without pre-break A/C	25	30	63	100	220	220	355	355	560	560
690 VAC without pre-break A/C		7.5	11		75	75	90	110	185	185
400 VAC without pre-break A/C	25	30	63	100	220	220	355	450	710	710
690 VAC without pre-break A/C	22	33	55	90	185	185	295	295	400	400

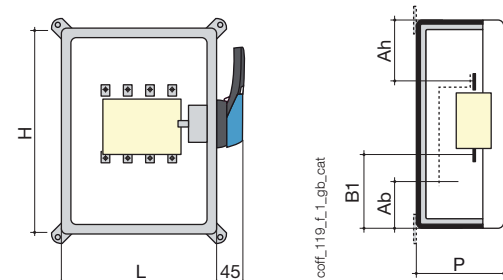
Dimensions

Front operation



Rating (A)	No. of poles	H x W x D (mm)	Connection cross-section (mm ²)	Top/Bottom connection			Bottom/Bottom connection		
				Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
125	3/4 P	360 x 270 x 171	50	135	110	6			
125	3/4 P	360 x 270 x 201	50				167	205	6
125	6 P	360 x 540 x 171	50	135	110	8	167	205	9
200	3 P	360 x 270 x 201	95				145	190	8
200	3 P	540 x 270 x 201	95	260	150	7			
200	4 P	360 x 360 x 201	95				145	190	8
200	4 P	540 x 360 x 201	95	257	153	9			
200	6 P	360 x 540 x 201	95	257	153	13	145	190	15
400	3/4 P	720 x 540 x 214	185	258	257	19	330	395	24
500	3/4 P	720 x 540 x 214	185	258	257	20	330	390	26
630	3/4 P	800 x 600 x 300	2 x 300	270	270	26	330	400	36
800	3/4 P	800 x 600 x 300	2 x 300	266	267	27	330	394	40
1250	3/4 P	Please consult us	4 x 185	365	365	42	515	594	60
1600	3/4 P	Please consult us	4 x 300	360	360	47	500	580	65

Side operation



Rating (A)	No. of poles	H x W x D (mm)	Connection cross-section (mm ²)	Top/Bottom connection			Bottom/Bottom connection		
				Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
50	3/4 P	270 x 180 x 171	16	84	116	3			3
50	6 P	270 x 360 x 201	16	84	116	5			5
80	3/4 P	270 x 180 x 171	35	73	106	3			3
80	6 P	270 x 360 x 201	35	73	106	5			5
125	3/4 P	360 x 270 x 171	50	135	110	6	167	205	6
125	6 P	360 x 540 x 171	50	135	110	9	167	205	9
200	3 P	360 x 270 x 171	95				145	190	7
200	3 P	540 x 270 x 171	95	260	150	8			
200	4 P	360 x 360 x 171	95				145	190	8
200	4 P	540 x 360 x 171	95	257	153	9			
200	6 P	540 x 540 x 171	95	260	150	12	145	190	11
400	3/4 P	720 x 540 x 201	185	300	215	19	370	437	24
500	3/4 P	720 x 540 x 201	185	300	215	21	230	432	26
630	3/4 P	800 x 600 x 300	2 x 300	270	270	26	390	438	36
800	3/4 P	800 x 600 x 300	2 x 300	266	267	27	370	434	40
1250	3/4 P	Please consult us	4 x 185	365	365	42	570	622	60
1600	3/4 P	Please consult us	4 x 300	360	360	47	550	608	65



Safety enclosures

Normal atmospheres

Steel enclosures from 50 to 1600 A



Steel enclosure with side operation handle



Steel enclosure with front operation handle

The solution for

- > Steel works.
- > Cement works.
- > Automotive.
- > Mining industries.
- > Agrofood industry.
- > Chemical industry.



Strong points

- > Safety of operations.
- > Inductive load breaking (AC23).
- > Robust product.

Conformity to standards

- > IEC 60364
- > IEC 60947-3
- > IEC 60204-1
- > IEC 61439-2



Specific requests

- > SOCOMEC can offer you customised solutions to meet your specific requirements. Contact your Socomec office for further information.

Function

Safety enclosures equipped with SOCOMEC switches provide emergency breaking, breaking for mechanical maintenance and safety isolation in the vicinity of any low voltage final circuit.

Advantages

Safety of operations

- Visible contacts and positive break indication with the possibility to add a mechanical indicator.
- Double locked door when switch is in the ON position.
- Triple locking of the handle in the OFF position.

Inductive load breaking (AC23)

Safety enclosures are designed for use with inductive loads and are able to make and break on load (AC23).

Robust product

Product has been designed for industrial environments with either mechanical risks or non-explosive dust risks (galvanised steel, thickness 2 mm, triplex glass, metal handle, etc.)

General characteristics

Breaking device:

All safety enclosures are equipped with SIDER load break switches and visible, reliable indication of the contacts open position. They make and break under load conditions and provide safety isolation for any low voltage circuit.

Enclosure:

- Enclosures are in 2-mm thick galvanised steel. They are assembled by welding and are deburred.
- The anti-corrosion protection is achieved using polyester powder which polymerises in the oven at 180°. Paint coating is 60 µm minimum and the colour is metallic grey. The tank and door colour is RAL9001 and the roof and/or gland plate colour is RAL7032.
- The chrome-plated zamak door is assembled on a 180° hinge and is locked using an 8 mm square key.
- Wall mounting is achieved using 4 fixing lugs, supplied loose. These enclosures provide an IP55 degree of protection.

Visible breaking:

The contacts are visible through a triplex window, located on the enclosure door. This enables the operator to confirm the position of the contacts either during a preventative check or before an operation.

Double locking:

It is ensured by a simple robust mechanism in connection with the control shaft. Activation with the door open remains possible by authorised personnel.

Operation handle:

Steel safety enclosures are available with front or side operation handles. The handle is made of zamak and has a natural finish. It is possible to order a red handle (emergency breaking) to be fitted in the factory or by the customer. The handle can be locked in the OFF position using three padlocks.

Connections:

Steel enclosures are available in two versions:

- HB version (top entry and bottom exit) equipped with two gland plates.
- BB version (all cables enter at the bottom) equipped with a roof at the top and a plate at the bottom. For the BB version, connection is achieved by running cables to the top for 50 A and 80 A ratings. For higher ratings, a copper bottom-bottom busbar enables easy connection of incoming cables.

Miscellaneous:

- An earthing bar for connection is available in the enclosure.
- Incoming protection screen.

Safety enclosures

Normal atmospheres

Steel enclosures from 50 to 1600 A

References

Front operation



coeff_156_b_1_cat

Side operation



coeff_156_a_3_cat

Rating (A)	No. of poles	Front operation ⁽¹⁾⁽²⁾	
		Top/Bottom connection Reference	Bottom/Bottom connection Reference
50	3 P	3211 3005	3221 3005
50	4 P	3211 4005	3221 4005
80	3 P	3211 3008	3221 3008
80	4 P	3211 4008	3221 4008
125	3 P	3211 3012	3221 3012
125	4 P	3211 4012	3221 4012
125	6 P	3211 6012	3221 6012
200	3 P	3211 3020	3221 3020
200	4 P	3211 4020	3221 4020
200	6 P	3211 6020	3221 6020
400	3 P	3211 3040	3221 3040
400	4 P	3211 4040	3221 4040
400	6 P	3211 6040	3221 6040
500	3 P	3211 3050	3221 3050
500	4 P	3211 4050	3221 4050
630	3 P	3211 3063	3221 3063
630	4 P	3211 4063	3221 4063
800	3 P	3211 3080	3221 3080
800	4 P	3211 4080	3221 4080
1250	3 P	3211 3120	3221 3120
1250	4 P	3211 4120	3221 4120
1600	3 P	3211 3160	3221 3160
1600	4 P	3211 4160	3221 4160

Rating (A)	No. of poles	Side operation ⁽¹⁾⁽²⁾	
		Top/Bottom connection Reference	Bottom/Bottom connection Reference
50	3 P	3261 3005	3271 3005
50	4 P	3261 4005	3271 4005
50	6 P	3261 6005	3271 6005
80	3 P	3261 3008	3271 3008
80	4 P	3261 4008	3271 4008
80	6 P	3261 6008	3271 6008
125	3 P	3261 3012	3271 3012
125	4 P	3261 4012	3271 4012
125	6 P	3261 6012	3271 6012
200	3 P	3261 3020	3271 3020
200	4 P	3261 4020	3271 4020
200	6 P	3261 6020	3271 6020
400	3 P	3261 3040	3271 3040
400	4 P	3261 4040	3271 4040
400	6 P	3261 6040	3271 6040
500	3 P	3261 3050	3271 3050
500	4 P	3261 4050	3271 4050
630	3 P	3261 3063	3271 3063
630	4 P	3261 4063	3271 4063
800	3 P	3261 3080	3271 3080
800	4 P	3261 4080	3271 4080
1250	3 P	3261 3120	3271 3120
1250	4 P	3261 4120	3271 4120
1600	3 P	3261 3160	3271 3160
1600	4 P	3261 4160	3271 4160

(1) For the mechanical indicator option, replace the second digit of the enclosure reference number with the letter V.
For example: 3V11 3005.

(2) Stainless steel enclosures, specific locking systems, terminal pre-wired/non pre-wired control auxiliary contacts, ventilation and humidity evacuation systems or cable glands are available upon request. Please consult us.

Accessories

Auxiliary contacts

Use

For pre-breaking and signalling of positions 0 and I of the load break switch.

Mounting

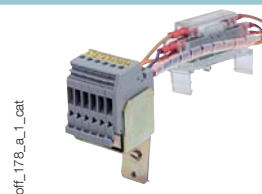
- On the double locking system.
- Possibility of factory mounting on enclosure (please provide enclosure reference when ordering).

Contact(s)	A/C	Factory fitted A/C	Factory fitted low level auxiliary:
2 NO/NC changeover A/C front or side operation	2999 0012	2999 1012 ⁽¹⁾	
2 NO/NC changeover A/C wired side operation	3290 6002	3290 6012 ⁽¹⁾	3290 6102 ⁽¹⁾

(1) Give the reference number of the enclosure to be equipped.

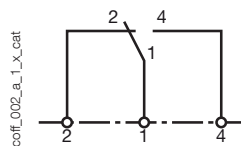


coeff_177_a_1_cat



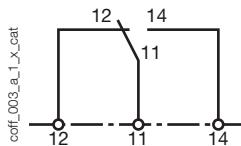
coeff_178_a_1_cat

1st NO/NC AC for pre-break



coeff_002_a_1_x_cat

2nd NO / NC AC for pre-break



coeff_003_a_1_x_cat

Key handle interlocking system

Use

Kit allowing a RONIS EL11AP or Serv Trayvou XOP10 lock to be fitted for a SIDER 50 to 1600 A, with side operation within a steel or polyester enclosure.

Type	Locking in position 0	Locking in position I
Locking using RONIS EL 11AP lock (not included)	3290 7005	3290 7006 ⁽¹⁾
Locking using XOP10 lock (not included)	3290 7015	3290 7016 ⁽¹⁾
Lock RONISEL11AP	4409 8511	
Serv Trayvou XOP10 lock	4409 8601	

(1) Please provide the reference number of the enclosure to be equipped.

Red handle

Use

Red steel handle for load break or emergency stop operation.

Rating (A)	Front operation	Side operation
50 ... 80	3211 0080 ⁽¹⁾	3261 0080 ⁽¹⁾
125 ... 500	3211 0500 ⁽¹⁾	3211 0500 ⁽¹⁾
630 ... 1600	3211 1250 ⁽¹⁾	3211 1250 ⁽¹⁾

(1) Please provide the reference number of the enclosure to be equipped.



coeff_181_a_1_cat

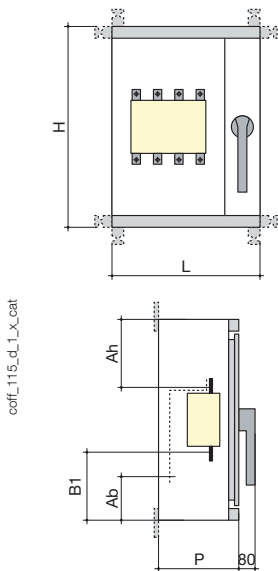
Rated operational currents I_e (A)

Rated voltage	Utilisation category	50 A	80 A	125 A	200 A	400 A	500 A	630 A	800 A	1250 A	1600 A
400 VAC	AC-21	50	80	125	200	400	500	630	800	1250	1600
400 VAC	AC-22	50	63	125	200	400	400	630	800	1250	1250
400 VAC	AC-23	50	63	125	200	400	400	630	630	1000	1000
690 VAC	AC-21	40	63	100	160	400	400	630	800	1000	1250
690 VAC	AC-22	25	40	63	100	200	200	315	315	400	400
690 VAC	AC-23		10	16		80	80	100	125	200	200

Motor power output (kW)	50 A	80 A	125 A	200 A	400 A	500 A	630 A	800 A	1250 A	1600 A
400 VAC without pre-break A/C	25	30	63	100	220	220	355	355	560	560
690 VAC without pre-break A/C		7.5	11		75	75	90	110	185	185
400 VAC without pre-break A/C	25	30	63	100	220	220	355	450	710	710
690 VAC without pre-break A/C	22	33	55	90	185	185	295	295	400	400

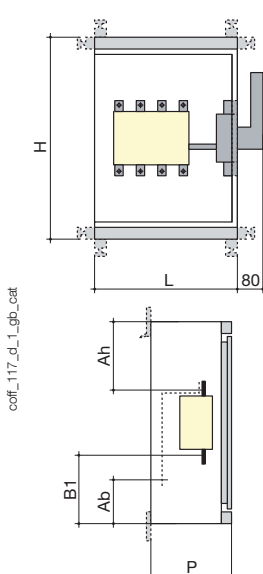
Dimensions

Front operation



Rating (A)	No. of poles	H x W x D (mm)	Connection cross-section (mm ²)	Top/Bottom connection			Bottom/Bottom connection		
				Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
50	3/4 P	300 x 250 x 130	16	70	160	9		155	9
80	3/4 P	300 x 250 x 130	35	70	105	10		135	10
125	3/4 P	400 x 300 x 200	50	130	135	15	130	185	16
125	6 P	600 x 500 x 200	50	195	195	18	180	235	21
200	3 P	500 x 300 x 200	95	150	200	17	215	275	18
200	4 P	500 x 400 x 200	95	150	200	17	215	275	18
200	6 P	600 x 500 x 200	95	225	230	22	315	375	24
400	3/4 P	700 x 500 x 250	185	220	245	33	240	305	37
400	6 P	800 x 700 x 400	185	300	300	45	340	405	60
500	3/4 P	700 x 500 x 250	185	215	240	34	240	300	39
630	3/4 P	900 x 500 x 300	2 x 300	380	500	47	320	525	84
800	3/4 P	1200 x 600 x 400	2 x 300	380	500	52	320	525	85
1250	3 P	1200 x 600 x 400	4 x 185	375	495	70			90
1250	4 P	1200 x 700 x 400	4 x 185	375	495	74			94
1600	3 P	1200 x 600 x 400	4 x 300	360	480	80			92
1600	4 P	1200 x 700 x 400	4 x 300	360	480	85			96

Side operation



Rating (A)	No. of poles	H x W x D (mm)	Connection cross-section (mm ²)	Top/Bottom connection			Bottom/Bottom connection		
				Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
50	3/4 P	300 x 200 x 150	16	120	130	9		160	9
50	6 P	300 x 400 x 200	16	120	130	10		160	10
80	3/4 P	300 x 200 x 150	35	100	110	8		140	9
80	6 P	300 x 400 x 200	35	100	110	10		140	10
125	3/4 P	400 x 300 x 200	50	155	130	16	190	225	17
125	6 P	400 x 400 x 200	50	190	190	17	240	275	21
200	3 P	400 x 300 x 200	95				180	220	21
200	3 P	400 x 300 x 200	95	185	185	18			
200	4 P	500 x 400 x 200	95	185	185	21	250	295	22
200	6 P	600 x 500 x 200	95	235	235	25	300	345	27
400	3/4 P	700 x 400 x 250	185	270	230	30	345	405	35
500	3/4 P	700 x 400 x 250	185	265	225	32	340	400	39
630	3/4 P	900 x 500 x 300	2 x 300	320	320	47	455	540	55
800	3/4 P	900 x 500 x 300	2 x 300	310	310	55	445	530	85
1250	3 P	1200 x 600 x 400	4 x 185	465	465	70	670	770	90
1250	4 P	1200 x 700 x 400	4 x 185	465	465	74	670	770	100
1600	3 P	1200 x 600 x 400	4 x 300	445	445	75	650	790	100
1600	4 P	1200 x 700 x 400	4 x 300	445	445	76	650	790	110



Safety enclosures

Explosive Atmosphere (ATEX)

ATEX enclosures from 50 to 630 A



ATEX enclosures from 50 to 630 A

The solution for

- > Steel works.
- > Cement works.
- > Mining industries.



Strong points

- > Safety of operations.
- > Inductive load breaking (AC23).
- > Robust design.
- > Protection degree IP65.

Conformity to standards

- > Directive 94/9/CE
- > IEC 60204-1
- > IEC 61439-2
- > IEC 60947-3
- > IEC 60364
- > NF C 15-100



Other regulations

- > Decree 29.07.92: Machine safety
- > Decree n° 88-1056 from 14.11.88: protection of workers
- > Decree n°96-1010 from 19.11.96
- > Decree 11.01.93: machine compliance



Specific requests

- > SOCOMEC can offer customised solutions to meet your specific requirements. Please contact your Socomec office for further information.

Function

SOCOMECA **ATEX enclosures** incorporate three or four pole manually operated SIDER (ND) load break switches which make and break on load, providing emergency breaking and maintenance isolation for any low voltage electrical circuit which is in an area where there is a **risk of explosion** due to dust.

Advantages

Safety of operations

- Visible contacts and positive break indication through the operating handle and a factory fitted mechanical flag indicator, provide guaranteed position indication of the contacts.
- Double locked door when switch is in the ON position.
- Triple locking of the handle in the OFF position.

Inductive load breaking (AC23)

ATEX enclosures are designed for use with inductive loads and are able to make and break on load (AC23).

Robust design

Product has been specifically designed for industrial environments with the risk of explosion due to dust (galvanised steel, thickness 2 mm, triplex glass, S-type handle metal padlocking lever...).

Protection degree IP65

Protection degree of ATEX enclosures is IP65.

General characteristics

Breaking device:

- All safety enclosures are equipped with load break switches that provide visible, reliable indication of the contacts open position.
- SIDER for 50 A, 80 A and 630 A ratings
- SIDER ND 80 A (6P) to 400 A ratings
- They make and break under load conditions and provide safety isolation for any low voltage circuit. They are factory fitted with a mechanical flag indicator (SIDER) which provides guaranteed position indication of the contacts.

Mechanical flag indicator:

- As far as I am aware this option is only possible with SIDER and not the SIDER ND. If we are utilising both switch types, and the ND cannot have a flag indicator, then we need to advise this. This is why I made the point to the right (mechanical flag indicator (SIDER)). Please just confirm this point.

Double locking:

- This function is achieved through a simple and robust mechanism using an extension shaft. Activation with the door open remains possible by authorised personnel.

Enclosure:

- Enclosures are made of a 2 mm thick galvanised steel. They are assembled by welded and deburred.
- The anti-corrosion protection is achieved using an epoxy polyester powder which polymerises in the oven at 180°. Paint coating is 60 µm minimum and colour is metallic gray.
- The chrome-plated zamak door is assembled on an invisible hinge and is locked using an 8 mm square key.
- Wall mounting is achieved using 4 fixing lugs (factory mounted).

Visible breaking:

- The contacts are visible through a triplex window, located on the enclosure door. This enables the operator to confirm the position of the contacts either during a preventative check or before an operation.

Operation handle:

- ATEX enclosures are provided with a red S-type operating handle. It is made of an insulating material and includes a metal padlocking lever. The handle can be locked in the OFF position using three padlocks.

Connection:

- Steel safety enclosures are available with bottom cable entry and exit.
- Enclosures are fitted with a top roof and a bottom closing plate in the bottom part.
- Connection is achieved by running cables to the top terminals for 50 A and 80 A ratings. For higher ratings, a copper bottom-bottom busbar enables easy connection of incoming cables.

Miscellaneous:

- Two earthing bars for connection are available in the enclosure.
- Fuse protection screen.

Safety enclosures

Explosive Atmosphere (ATEX)

ATEX enclosures from 50 to 630 A

References



Rating (A)	No. of poles	Bottom/bottom connection
		Reference
50	3 P	3V41 3005
50	4 P	3V41 4005
80	3 P	3V41 3008
80	4 P	3V41 4008
80	6 P	3V41 6008
125	3 P	3V51 3012
125	4 P	3V51 4012
160	6 P	3V51 6020
200	3 P	3V51 3020
200	4 P	3V51 4020
400	3 P	3V51 3040
400	4 P	3V51 4040
630	3 P	3V51 3063
630	4 P	3V51 4063

Accessories

ATEX cable glands

Black polyamide

Diameter (mm)	Min. cable diameter (mm)	Max. cable diameter (mm)	Cable gland Reference	Locknut Reference
12	3.5	6	3240 1012	3240 3012
16	5	8	3240 1016	3240 3016
16	6	10	3240 1017	
20	8	13	3240 1020	3240 3020
20	10	15	3240 1021	
25	13	19	3240 1025	3240 3025
32	18	25	3240 1032	3240 3032
40	24	32	3240 1040	3240 3040
50	29	38	3240 1050	3240 3050



coeff_283_a_1_cat

Crude brass

Diameter (mm)	Min. cable diameter (mm)	Max. cable diameter (mm)	Cable gland Reference	Locknut Reference
12	3	6.5	3240 2012	3240 4012
16	4.5	10	3240 2016	3240 4016
20	6	13	3240 2020	3240 4020
25	10	18	3240 2025	3240 4025
32	16	24.5	3240 2032	3240 4032
40	22	32	3240 2040	3240 4040

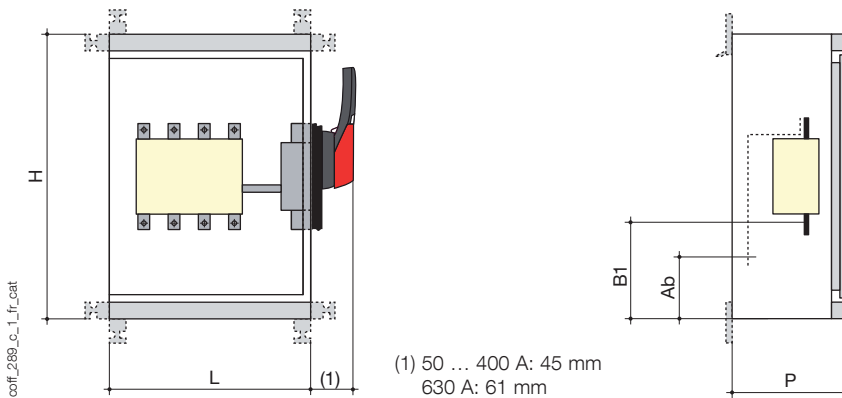


coeff_329_a_1_cat

Characteristics

Rated operational currents I_e (A)		50 A 3/4 P	80 A 3/4 P	80 A 6 P	125 A 3/4 P	160 A 6 P	200 A 3/4 P	400 A 3/4 P	630 A 3/4 P
Rated voltage	Utilisation category								
415 VAC	AC-21 A/B	50/50	63/63	/80	125/125	/160	200/200	/315	/500
415 VAC	AC-22 A/B	50/50	63/63	/80	125/125	/160	200/200	/315	/500
415 VAC	AC-23 A/B	25/25	40/40	/80	125/125	/160	200/200	/315	
Motor power output (kW)									
400/500 VAC without pre-break A/C		11/	18.5/15	40/	60/	80/	100/	160/	270/
400/500 VAC without pre-break A/C		25/	30/25	40/	60/	80/	100/	160/	

Dimensions



Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm ²)	Bottom/bottom connection		Weight (kg)
				Ab (mm)	B1 (mm)	
50	3/4 P	350 x 225 x 150	16	288	198	8.2
80	3/4 P	350 x 225 x 150	35	288	198	8.4
80	6 P	500 x 425 x 200	35	288	198	25
125	3/4 P	500 x 425 x 200	120	225		15
160	6 P	500 x 425 x 200	120	242	275	25
200	3/4 P	500 x 425 x 200	120	242	275	21.5
400	3/4 P	700 x 500 x 250	2 x 150	340	385	34.5
630	3/4 P	700 x 500 x 300	2 x 300	262	313	47



Enclosed changeover switches

The switching market is a **highly demanding market in terms of safety and quality.**

Changeover switches are essential devices used to guarantee a continuous power supply for critical installations (high-rise buildings, healthcare buildings, data centres, banks, etc.).

SOCOMECS expertise in switching technology enables it to optimise your electrical installations, thereby **guaranteeing continuous electrical power.**

To ensure optimal functional safety, all SOCOMEC enclosed changeover switches are compliant with standards **IEC 60947-3/ IEC 60947-6-1** and standard **IEC 61439** governing switchgear.

From the small 25 A manual changeover unit to the 3200 A ATS bypass unit, SOCOMEC offers a complete range covering all your needs.

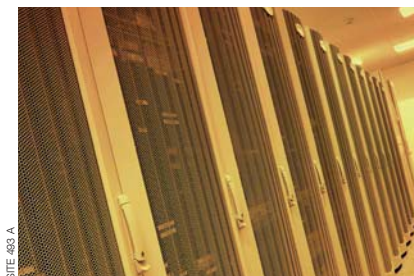
Glossary for IEC 60947-6-1

Terms:

- MTSE (Manual Transfer Switch Equipment).
- RTSE (Remote Transfer Switch Equipment).
- ATSE (Automatic Transfer Switch Equipment).

Changeover switches in the SOCOMEC range are PC-classified. The range is designed to establish and support short circuits.

Typical applications



SITE 409 A



SITE 409 A



SITE 409 A

Source transfer

Solution enabling manual or automatic switching between two sources, either transformer or generator (fig. 1).



Fig. 1

Earthing

Earthing of equipment such as motors or electrical lines whilst isolating them from their power supply in a fail-safe way (fig. 2).



Fig.2

Load switching

Switching of the power supply from one load to another in order to guarantee redundancy and balancing of the operating time for the two loads (fig. 3).



Fig. 3

Inversion of phases on motors

inversion of the succession of phases supplying a motor in order to modify the direction of rotation (fig. 4).



Fig.4

Overview of our range

Manual switching



Solution enabling switching, source inversion and breaking in complete safety on low voltage power circuits.

p. 624

Motorised and automatic switching



Motorised solution:

Source changeover switch controlled remotely by an external controller using pulse logic or maintained contact (contactor).

Automatic solution: Auto-controlled source changeover switch. This comprises a break switch, a motor component and a microprocessor control component.

p. 630

High-rise dedicated motorised switching



Solution meeting safety regulations governing the construction of High-Rise Buildings (HRB) and Public Access Sites (PAS).

Solution with technical approval by an accredited company.

p. 636

ATS Bypass motorised switching



Automatic switching solution enabling switching between two independent sources. Solution enabling the automatic changeover switch to be isolated and a bypass to be created (inspection operations) in complete safety and in a transparent way in terms of the load (no power disconnection).

p. 642



Enclosed changeover switches

Manual operation

MTSE* - Polyester enclosures from 25 to 630 A



coeff_339_a_1_cat

COMO C in polyester enclosure



coeff_299_a_1_cat

SIRCOVER in polyester enclosure

The solution for

- Safe supply of medium critical loads.



Strong points

- On load operation (AC22/AC23).
- Robust product.

Conformity to standards

- IEC 60947-6-1
- IEC 60364
- IEC 61439
- EN 60204-1



Function

Manually operated polyester enclosed changeover switches provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation. The enclosure provides protection against contact with live parts as well as environmental factors such as dust, water and other hazards.

Advantages

On load operation (AC22/AC23)

Manual changeover enclosures are designed for operation on load and are able to make and break mixed/inductive loads (utilisation categories AC22/AC23).

Robust product

Products have been designed for severe industrial conditions with chemical, pollution or atmospheric corrosion risks.

COMO C range

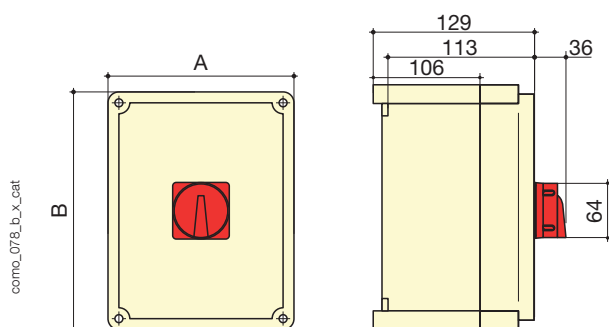
General characteristics

- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: Red/yellow handle
- Protection degree: IP65.
- Colour: RAL 7030.
- Material: glass fibre reinforced polyester.
- Product supplied as a kit, to be assembled.
- Locking system: screw.



coeff_339_a_2_cat

Dimensions



como_078_b_x_cat

References

Rating (A)	No. of poles	Switching type	A (mm)	B (mm)	Reference
25	3 P	I - II	135	135	4221 3C02
25	4 P	I - II	135	135	4221 4C02
25	3 P	I - 0 - II	135	135	4231 3C02
25	4 P	I - 0 - II	135	180	4231 4C02
25	3 P	I - I+II - II	135	135	4241 3C02
25	4 P	I - I+II - II	135	135	4241 4C02
40	3 P	I - II	135	135	4221 3C04
40	4 P	I - II	135	135	4221 4C04
40	3 P	I - 0 - II	135	135	4231 3C04
40	4 P	I - 0 - II	135	135	4231 4C04
40	3 P	I - I+II - II	135	135	4241 3C04
40	4 P	I - I+II - II	135	135	4241 4C04
63	3 P	I - II	135	180	4221 3C06
63	4 P	I - II	135	180	4221 4C06
63	3 P	I - 0 - II	135	180	4231 3C06
63	4 P	I - 0 - II	135	180	4231 4C06
63	3 P	I - I+II - II	135	180	4241 3C06
63	4 P	I - I+II - II	135	180	4241 4C06
80	3 P	I - II	135	180	4221 3C08
80	4 P	I - II	135	180	4221 4C08 ⁽¹⁾
80	3 P	I - 0 - II	135	180	4231 3C08
80	4 P	I - 0 - II	135	180	4231 4C08 ⁽¹⁾
80	3 P	I - I+II - II	135	180	4241 3C08
80	4 P	I - I+II - II	135	180	4241 4C08 ⁽¹⁾

(1) Derated to 70 A for 4 pole.

* MTSE: Manual Transfer Switch Equipment

SIRCOVER range

coff_299_a_1_cat



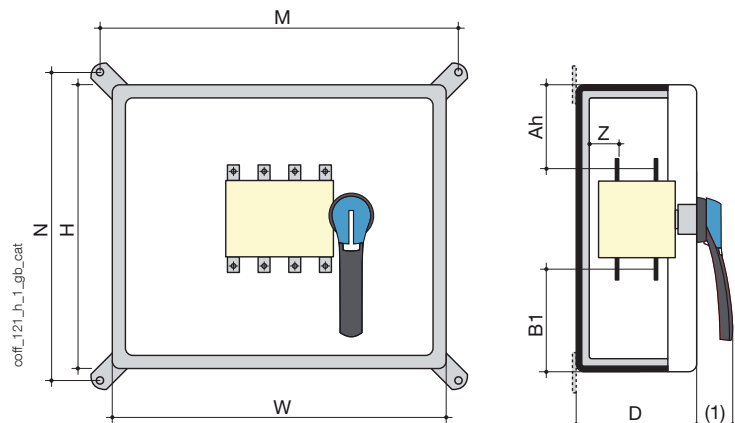
References

Rating (A)	No. of poles	Top/Bottom connection I - O - II Reference
125	3 P	4215 3012
125	4 P	4215 4012
160	3 P	4215 3016
160	4 P	4215 4016
250	3 P	4215 3025
250	4 P	4215 4025
400	3 P	4215 3040
400	4 P	4215 4040
630	3 P	4215 3063
630	4 P	4215 4063

General characteristics

- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: S type black handle, padlockable in position 0.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7030 (range < 400 A), RAL 9002 (range ≥ 400 A).
- Closing plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Locking system: square key (ratings < 400 A), 3 mm double bar key (ratings ≥ 400 A), key supplied.
- Miscellaneous: good resistance to creepage currents, high resistance to chemicals, self-extinguishable at 960°C, 2 bolted earth connection points.

Dimensions



(1) 125 ... 630 A: 45 mm

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Connection Top/Bottom		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3 P	540 x 270 x 233	50	272	542	28	210	210	9
125	4 P	540 x 360 x 233	50	362	542	28	210	210	10
160	3 P	540 x 270 x 233	95	272	542	28	210	210	9
160	4 P	540 x 360 x 233	95	362	542	28	210	210	10
250	3 P	540 x 360 x 233	150	362	542	29	205	205	11
250	4 P	540 x 360 x 233	150	362	542	29	205	205	12
400	3 P	800 x 600 x 300	240	620	796	29	330	330	30
400	4 P	800 x 600 x 300	240	620	796	29	330	330	31
630	3 P	800 x 600 x 300	2 x 300	620	796	45	297	297	38
630	4 P	800 x 600 x 300	2 x 300	620	796	45	297	297	40



Enclosed changeover switches

Manual operation

MTSE* and Bypass - Steel enclosures from 63 to 3200 A (3/4P)



SIRCO VM1 changeover switches in steel enclosure

coff_298_b_1_cat



SIRCOVER in steel enclosure

coff_298_b_1_cat

The solution for

- > Safe supply of medium critical loads.



Strong points

- > Visible double breaking (SIRCO VM1).
- > On load operation (AC22/AC23) - SIRCOVER.
- > Safety of operations.
- > Robust product.
- > Compact design.

Conformity to standards

- > IEC 60947-6-1
- > IEC 60364
- > IEC 61439
- > EN 60204-1



Specific requests

- > SOCOMEC can provide a wide range of specific requirements. Please consult us.

Function

Manually operated polyester enclosed changeover switches provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation. The enclosure provides protection against contact with live parts as well as environmental factors such as dust, water and other hazards.

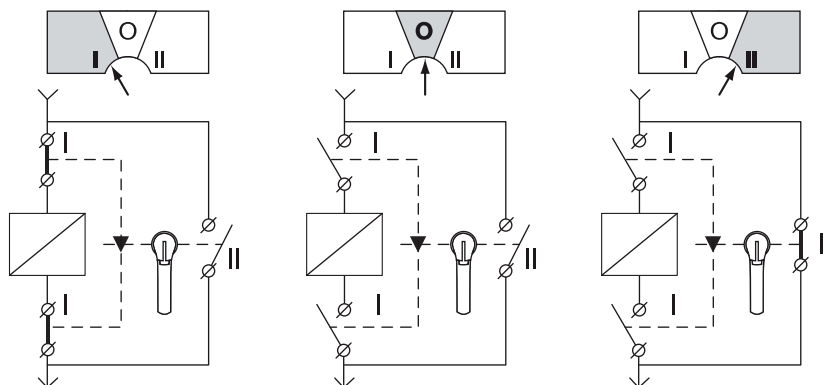
Advantages

- SIRCO VM1 and SIRCOVER are multipolar changeover switches, with positive break indication allowing safe interventions on the equipment.
- SIRCO VM1 enables visible double breaking.
- SIRCOVER are designed for operation on load and are able to make and break mixed/inductive loads (utilisation categories AC22/AC23).
- SIRCO VM1 and SIRCOVER are available in versions I, 0, II / I, I+II, II / Bypass (SIRCOVER only).

What you need to know

SIRCOVER Bypass products are a combination of three interlocked switches enabling the use with 3 + 6 poles or 4 + 8 poles.

They insulate by providing simultaneous safety isolation top and bottom and by passing loads or low voltage circuits mainly during maintenance operations



atys_570_a_1_x_cat

* MTSE: Manual Transfer Switch Equipment

SIRCO VM1 changeover switches in steel enclosure

■ Front operation



coff_283_b_1_cat

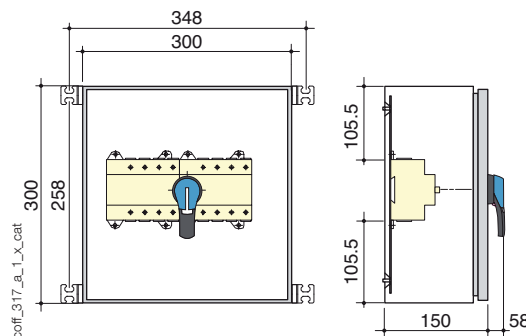
General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black handle padlockable.
- Protection degree: IP54 / IK 09.
- Colour: epoxy polyester powder RAL 7035.
- Cable gland plate: top and bottom.
- Material: XC steel, thickness 1.5 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Door: solid with hinges.
- Locking system: 3 mm double-bar key (key supplied).
- Miscellaneous: 2 earth connection points, double door locking.

References

Rating (A)	No. of poles	Top/Bottom connection Reference
63	3 P	4413 3006
63	4 P	4413 4006
80	3 P	4413 3008
80	4 P	4413 4008
100	3 P	4413 3010
100	4 P	4413 4010

Dimensions



coff_317_a_1_x_cat

Rating (A)	Max. connection section (mm ²)	Weight (kg)
3 x 63 / 4 x 63	50	9
3 x 80 / 4 x 80	50	10
3 x 100 / 4 x 100	50	16

Enclosed changeover switches

Manual operation

MTSE and Bypass - Steel enclosures from 63 to 3200 A (3/4P)

SIRCOVER in steel enclosure

■ Front operation

coeff_298_b_2_cat



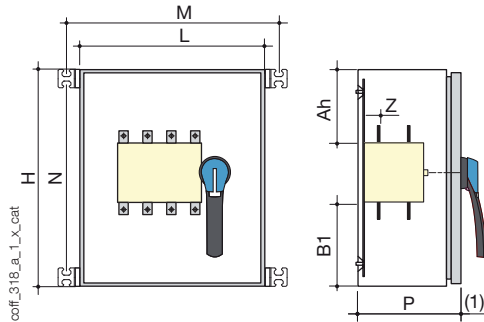
General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black handle padlockable in position 0.
- Protection degree: IP54 / IK 09.
- Colour: RAL 7035 (range < 630 A) , RAL 9001 for casing and door, other RAL 7035.
- Cable gland plate: top and bottom.
- Material: XC steel, thickness 1.5 mm.
- Coating: epoxy polyester powder (range < 630 A), polyester powder (range ≥ 630 A).
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Door: solid with hinges.
- Locking system: 3 mm double bar key (ratings < 630 A), 8 mm square key (ratings ≥ 630 A), key supplied.
- Miscellaneous: 2 earth connection points, double door locking.

References

Rating (A)	No. of poles	Top/Bottom connection	
		I - 0 - II Reference	I - I+II - II Reference
125	3 P	4212 3012	4116 3012
125	4 P	4212 4012	4116 4012
160	3 P	4212 3016	4116 3016
160	4 P	4212 4016	4116 4016
250	3 P	4212 3025	4116 3025
250	4 P	4212 4025	4116 4025
400	3 P	4212 3040	4116 3040
400	4 P	4212 4040	4116 4040
500	3 P	4212 3050	4116 3050
500	4 P	4212 4050	4116 4050
630	3 P	4212 3063	4116 3063
630	4 P	4212 4063	4116 4063
800	3 P	4212 3080	4116 3080
800	4 P	4212 4080	4116 4080
1250	3 P	4212 3120	4116 3120
1250	4 P	4212 4120	4116 4120
1600	3 P	4212 3160	4116 3160
1600	4 P	4212 4160	4116 4160

Dimensions



(1) 125 ... 630 A: 58 mm
800 ... 1600 A: 74 mm.

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Top/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3/4 P	500 x 400 x 250	50	448	458	28	190	190	23
160	3/4 P	500 x 400 x 250	95	448	458	28	190	190	23
250	3/4 P	500 x 400 x 250	150	448	458	29.3	185	185	23
400	3/4 P	800 x 600 x 300	240	758	552	29.3	330	330	45
500	3/4 P	800 x 600 x 300	240	648	658	45	298	298	55
630	3/4 P	800 x 600 x 300	2 x 300	648	658	45	290	290	55
800	3/4 P	1200 x 700 x 500	2 x 300	740	1152	24	465	465	78
1250	3/4 P	1200 x 700 x 500	4 x 185	740	1152	24	465	465	88
1600	3/4 P	1200 x 700 x 500	4 x 300	740	1152		470	470	94

SIRCOVER BYPASS in steel enclosure

Front operation

conf_298_b_2_cat



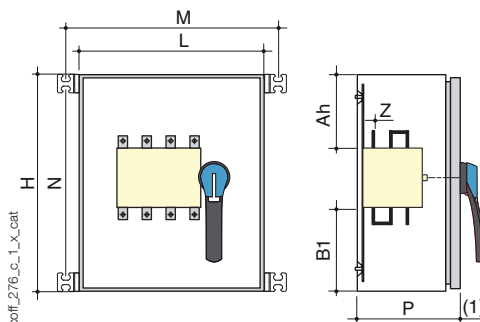
General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black handle padlockable in position 0.
- Protection degree: IP54 / IK 09.
- Colour: casing and door RAL 9001, locking plates RAL 7035
- Cable gland plate: top and bottom.
- Material: XC steel, 2 mm thick, EZ electrogalvanised steel 25/25.
- Coating: polyester powder.
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Door: solid with hinges.
- Locking system: 3 mm double bar key (ratings < 630 A), 8 mm square key (ratings 630 A), key supplied.
- Miscellaneous: 2 earth connection points, double door locking.

References

Rating (A)	No. of poles	Top/Bottom connection
		I - 0 - II Reference
125	3+6 P	4119 7012
125	4+8 P	4119 9012
160	3+6 P	4119 7016
160	4+8 P	4119 9016
250	3+6 P	4119 7025
250	4+8 P	4119 9025
400	3+6 P	4119 7040
400	4+8 P	4119 9040
500	3+6 P	4119 7050
500	4+8 P	4119 9050
630	3+6 P	4119 7063
630	4+8 P	4119 9063
800	3+6 P	4119 7080
800	4+8 P	4119 9080
1250	3+6 P	4119 7120
1250	4+8 P	4119 9120
1600	3+6 P	4119 7160
1600	4+8 P	4119 9160

Dimensions



(1) 125 ... 160 A: 58 mm
250 ... 630 A: 74 mm
800 ... 1600 A: 120 mm

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Top/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3+6 / 4+8 P	500 x 400 x 350	50	448	452	47	192	192	(1)
160	3+6 / 4+8 P	500 x 400 x 350	95	448	452	47	192	192	(1)
250	3+6 / 4+8 P	800 x 600 x 500	150	640	752	48	335	335	(1)
400	3+6 / 4+8 P	800 x 600 x 500	240	640	752	48	330	330	(1)
500	3+6 / 4+8 P	800 x 600 x 550	240	640	752	64	297	297	(1)
630	3+6 / 4+8 P	800 x 600 x 550	2 x 300	640	752	64	290	290	(1)
800	3/4 P	1200 x 700 x 500	2 x 300	740	1152	24	465	465	78
1250	3/4 P	1200 x 700 x 500	4 x 185	740	1152	24	465	465	88
1600	3/4 P	1200 x 700 x 500	4 x 300	740	1152	24	470	470	94

(1) Please consult us.



Enclosed changeover switches

Motorised operation

RTSE* - remote controlled from 40 to 3200 A



atysm_251_a_1_cat

Single-phase ATyS M 3s
in polycarbonate enclosure



coff_305_b_1_cat

Three-phase ATyS 3s
in steel enclosure

The solution for

- > High Rise Buildings.
- > Data centres.
- > Energy production.
- > Healthcare buildings.
- > Banking and Insurances.
- > Transportation (Airports, tunnels...).



Strong points

- > Dedicated solution.
- > A complete range of configurations.
- > Robust product.
- > Easy integration.

Conformity to standards

- > IEC 61439-2
- > IEC 60947-6-1
- > IEC 60947-3
- > BS 60947-6-1



Function

- RTSE in enclosures provide a remote controlled transfer between sources using an external controller in order to ensure the continuity of supply to critical applications.
- Manual operation is also possible with this solution.

- From 40 to 160 A, enclosures are equipped with ATyS M 3s (2P/4P), which are modular units enabling optimised integration.
- From 250 to 3200 A, enclosures are equipped with ATyS 3s/3e 4P with a back-to-back switch configuration, providing a more compact device and enabling easier connection.

Advantages

Dedicated solution

The integrated RTSE is a solution which has been designed and tested to provide a reliable, and safe solution that is easy to install and utilise.

A complete range of configurations

The RTSE range is available in polycarbonate and steel enclosures for transformer/transformer, transformer/genset or genset/genset applications.

* RTSE: Remote Transfer Switch Equipment.

What you need to know

On ATyS M 3s models

Single-phase interface



Three-phase interface



Power supply

ATyS M 3s is equipped with two independent 230 VAC power inputs (176-288 VAC), 50/60 Hz (45/65 Hz).

- These two power supplies can be connected individually one to switch I and the other to switch II:
 - Power supply I must be available to reach position I
 - Power supply II must be available to reach position II.
- The 0 position is a stable transition position.
- The use of a dual power supply (DPS), or an external supply module, provides full security of the 3 position commands with the availability of either supply. In this case, both the supply inputs must be connected in parallel in order for them both to be supplied from the output of the DPS.

Electrical control

- The switching operation can be driven by external volt-free contacts, which may come from an external control relay (ATyS C30 for example). The positions are stable in case of loss of supply. There are two types of control logic available:

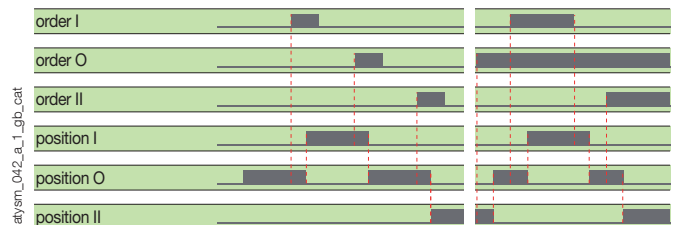
Impulse logic

- A switching command of at least 60 ms is necessary to initiate operation.
- The first command (order) received (I or II) has priority as long as it remains present.

Maintained logic

(contactor type)

- Order 0 must be maintained to activate contactor logic (313-317).
- If command I or II disappears, the device returns to zero position, if power supply is available.



On ATyS 3s and 3e models

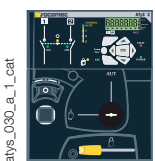
Operation

ATyS 3s



ATyS 3s is equipped with one 230 VAC power input (176-288 VAC), 50/60 Hz (45/65 Hz).

ATyS 3e



ATyS 3e is factory fitted with a Dual Power Supply (DPS) enabling transfer to all three positions when either of the two power supplies is present.

Electrical control

General

- The switching operation can be driven by an external volt-free contact, using a pulse or a maintained contact logic.
- On ATyS 3e, it is possible to inhibit the electrical control (volt-free contact closed between terminal n° 313 and 317).
- The first order received has priority as long as it remains. A zero command always has priority, except in the case of control inhibition.

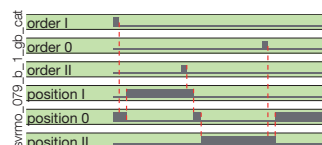
Impulse logic

- The switching command is a pulsed volt-free contact (100 ms minimum).
- When the order disappears, the product remains in position. The impulse can be of infinite duration without causing any disturbance.

Maintained logic

(contactor type)

- The transfer command is a maintained volt-free contact.
- If command I or II disappears, the device returns to zero position, if power supply is available.
- A zero command drives the device into position 0, irrespective of the status of the I and II commands.



Enclosed changeover switches

Motorised operation

RTSE - remote controlled from 40 to 3200 A

Single-phase ATyS M 3s in polycarbonate enclosure



atysm_201_a_1_cat

General characteristics

- From 40 to 160 A.
- Network 230 VAC [176-288 VAC] / 50 Hz/60 Hz [45 Hz-65 Hz].
- Protection degree: IP 55, IK08.
- Colour RAL 7035.
- Material: transparent cover, polycarbonate casing.
- Wall mounting: 4 holes on the rear of the enclosure.
- Flame resistant to 650°C.

References

Single-phase ATyS M 3s model (2P)

Rating (A)	Reference
40	1823 2004
63	1823 2006
80	1823 2008
100	1823 2010
125	1823 2012
160	1823 2016

Accessories

Customer fit

Description	Reference
Auxiliary contact ⁽¹⁾	1309 0001
Voltage sensing and power supply tap (2 per reference) ⁽¹⁾	1399 4006

⁽¹⁾ For more details please refer to the ATyS M section of this catalogue.



Auxiliary contact

Voltage tap



ATyS C30 control relay

ATyS C40 control relay

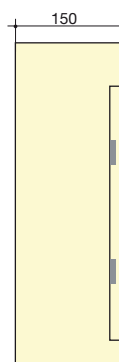
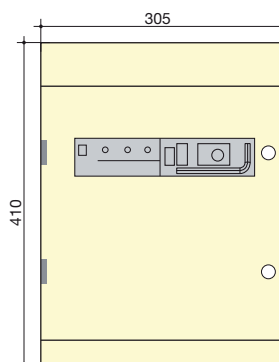
DPS

Factory fitted.

Description	Reference
ATyS C30 control relay ⁽¹⁾	1599 3030
ATyS C40 control relay ⁽¹⁾	1599 3040
Dual power supply ⁽¹⁾	1599 4001

⁽¹⁾ For more details please refer to the ATyS M section of this catalogue.

Dimensions



- Weight: 5.5 kg.
- Connection: recommended cable size (Cu): 25 to 70 mm² according to rating (maximum size of a cable: 70 mm²).

atysm_208_a_1_x_cat

Enclosed changeover switches

Motorised operation

RTSE - remote controlled from 40 to 3200 A

Three-phase ATyS M 3s in steel enclosure



General characteristics

- From 40 to 160 A.
- Network 230/400 VAC +/-20 % in standard
- For applications 4 poles / 3 poles optional.
- Integrated bridging bar.
- Protection degree: IP3X or IP54.
- Colour RAL 7035.
- Cable gland plates: Top and bottom.
- Material: steel, thickness 1.2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 wall mounting brackets supplied loose.
- Door: hinged, cut-out 327.4x47.6mm (IP3X).
- Locking system: 3 mm double-bar key (key supplied).

References

Three-phase ATyS M 3s model (4P)

Rating (A)	No. of poles	IP 3X Reference	IP 54 Reference
40	4 P	1823 4004	1823 4005
63	4 P	1823 4006	1823 4007
80	4 P	1823 4008	1823 4009
100	4 P	1823 4010	1823 4011
125	4 P	1823 4012	1823 4013
160	4 P	1823 4016	1823 4017

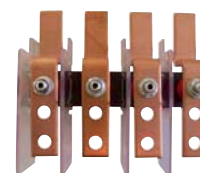
Accessories



Auxiliary contact



Voltage tap



Power connection terminals

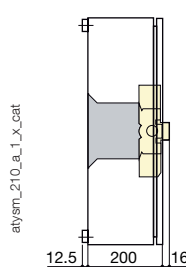
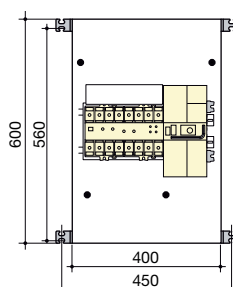
Customer fit

Description	Reference
Auxiliary contact ⁽¹⁾	1309 0001
Voltage sensing and power supply tap (2 per reference) ⁽¹⁾	1399 4006
Solid neutral kit ⁽²⁾	1309 9008
Kit IP54 (for IP3X enclosure conversion)	1399 4016
Power connection terminals ⁽¹⁾	1399 4017

⁽¹⁾ For more details please refer to the ATyS M section of this catalogue.

⁽²⁾ Solid neutral kit provides a maintained connection between both incoming and outgoing neutral terminals, thereby providing an unswitched neutral.

Dimensions



- Weight (without accessories): 15 kg.
- Connection (without power connection terminals): min. Cu 6 mm², max. 70 mm².

Enclosed changeover switches

Motorised operation

RTSE - remote controlled from 40 to 3200 A

Three-phase ATyS M 3s /3e in steel enclosure



General characteristics

- ATyS 3s from 125 to 1600 A.
- ATyS 3e for ratings 2000, 2500 and 3200A.
- Adapted to mechanical risk and dust hazard.
- Protection degree: IP54.
- Colour: RAL 7035.
- Cable gland plate: top and bottom.
- Connection of cables: Top or bottom from 125 to 250 A, bottom from 400 to 3200 A.
- The auxiliary contacts are wired to a terminal block.
- Material: XC steel, thickness 2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 wall mounting brackets supplied loose (rating \leq 400 A), floor standing feet (rating \geq 630 A).
- Door: solid with hinges
- Locking system: 3 mm double bar key (key supplied)

References

Standard device - 230 VAC

Rating (A)	No. of poles	Reference
125	4 P	1723 4012
160	4 P	1723 4016
250	4 P	1723 4025
400	4 P	1723 4040
630	4 P	1723 4063
800	4 P	1723 4080
1000	4 P	1723 4100
1250	4 P	1723 4120
1600	4 P	1723 4160
2000	4 P	1723 4200
2500	4 P	1723 4250
3200	4 P	1723 4320

Accessories

Factory fitted

Description	Reference
Dual power supply	1599 9001
2 nd auxiliary contact: from 125 to 630 A	1599 9002
2 nd auxiliary contact: from 800 to 1600 A	1599 9012
Autotransformer 400/230 VAC for three-phase networks without neutral	see ATyS pages
Terminal shrouds	see ATyS pages
3 position padlocking (I-O-II)	1599 9003

Customer fit

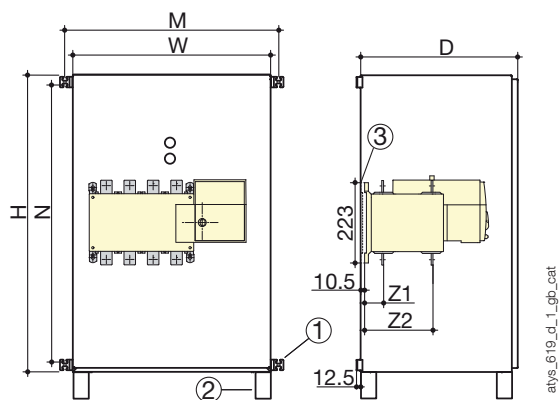
Description: Conducting neutral	Reference
125 ... 160 A	1599 1006
250 A	1599 1025
400 A	1599 1040
630 A	1599 1063
800 A	1599 1080
1000 A	1599 1100
1250 A	1599 1120
1600 A	1599 1160

Enclosed changeover switches

Motorised operation

RTSE - remote controlled from 40 to 3200 A

Dimensions



atys_619_d_1_gh_cat

- (1) Wall mounting brackets supplied up to 400 A.
- (2) Floor standing feet from 630 A
(increase the height (H) by 200 mm).
- (3) Riser.

Rating (A)	Recommended connection cross-section (mm ²)	H (mm)	W (mm)	D (mm)	M (mm)	N (mm)	Z1 (mm)	Z2 (mm)	Weight (kg)
125	50	650	400	300	448	608	38	134	25
160	70	650	400	300	448	608	38	134	25
250	120	1000	650	475	698	958	39.5	134.5	45
400	240	1000	650	475	698	958	39.5	134.5	50
630	2 x 185	1000	650	475			53	190	70
800	2 x 240	1200	800	660			66.5	253.5	135
1000	4 x 150	1200	800	660			66.5	253.5	140
1250	4 x 185	1600	1000	830			66.5	253.5	270
1600	4 x 240	1600	1000	830			67.5	253.5	375
2000	8 x 150	2000	1000	1000					400
2500	8 x 185	2000	1000	1000					400
3200	8 x 240	2000	1000	1000					400



Enclosed changeover switches

Automatic operation

ATSE* - Automatic equipment from 40 to 3200 A

conf_306_a_1_cat



Three-phase ATyS M 6e
in steel enclosure

conf_305_b_1_cat



Three-phase ATyS 6e
in steel enclosure

The solution for

- > High Rise Buildings.
- > Data centres.
- > Energy production.
- > Healthcare buildings.
- > Banking and Insurances.
- > Transportation (Airports, tunnels...).



Strong points

- > Dedicated solution.
- > A complete range of configurations.
- > Robust product.
- > Easy integration.

Conformity to standards

- > IEC 61439-2
- > IEC 60947-6-1
- > IEC 60947-3
- > BS 60947-6-1



Function

- **Automatic Transfer Switch Equipment (ATSE)** in enclosures provides an autonomous and complete management in the continuity of the power supply to critical loads.
- From 40 to 160 A, enclosures are equipped with ATyS M 6s (2P/4P - Simplified control system) or ATyS M 6e (4P - extended control system), which are modular units enabling optimised integration.
- From 250 to 3200 A, enclosures are equipped with ATyS 6e 4P (extended control system) with a back-to-back switch configuration, providing a more compact device and enabling easier connection.

Advantages

Dedicated solution

The integrated ATSE has been designed and tested to provide a reliable, safe and autonomous solution that is easy to install and commission.

A complete range of configurations

The ATSE range is available in polycarbonate or steel enclosures.

* ATSE: Automatic Transfer Switch Equipment.

What you need to know - ATSE model

ATyS M 6s and 6e models

Power supply

- ATyS M 6 products are self powered from incoming supplies: 230 VAC (176-288 VAC for the ATyS M 6s and 160-305 VAC for the ATyS M 6e), 50/60 Hz (45-65 Hz).
- For three-phase two versions are available:
 - 230 / 400 VAC with distributed neutral conductor: product is powered between phase and neutral,
 - 127 / 230 VAC with or without distributed neutral conductor: product is powered between 2 phases.
- For single-phase one version is available:
 - 230 VAC networks: product is powered between phase and neutral.
- The neutral conductor can be connected to the left or right side of each switch.
- Automatic detection of neutral position.

Configuration

ATyS M 6s

Single-phase interface



Three-phase interface



- Common points between the three-phase and single-phase versions:
 - 2 potentiometers (normal supply loss and return time delays)
 - 2 dip-switches (Pause for 2 seconds in position 0 during switching I<->II; Transformer/Transformer or Transformer/Genset application).
- 4 LEDs (Source availability indicators; "AUT" Automatic mode; Fault).
- 3 inputs for external control (Inhibition of the automatic mode; Remote test on load (Priority selection for Transformer/Transformer); Manual retransfer from the alternate supply to the normal supply).
- 1 NO bi-stable output relay for generator start /stop command (30 VDC / 2 A).
- 1 NC relay for product availability (250 VAC / 0.5 A).
- Specific to the three-phase ATyS M:
 - 2 additional potentiometers (Nominal voltage; Voltage/frequency thresholds)
 - 2 additional dip switches (50 or 60 Hz; network selection)
- Specific to the single-phase ATyS M:
 - PRG button: voltage and nominal frequency auto configuration.

ATyS M 6e

Three-phase interface



- Applications: Transformer/Genset, Transformer/Transformer, with or without priority.
- Display + keyboard (Device configuration; Displays supply measurements; Test and control mode access).
- LEDs (Product Power On; Source availability indicators; Position indication; "AUT" Automatic mode; TEST/CONTROL Mode; Fault).
- 3 configurable inputs.
- 3 configurable output relays.
- 1 configurable bi-stable output relay for generator start /stop command (30 VDC / 2 A).
- Connection of a remote interface ATyS D10 or D20.
- RS485 MODBUS communication (COM version).

On ATyS 6e models

Operation

ATyS 6e



ATyS 6e are equipped with 2 power inputs (same as ATyS 3e): one for supply from power source 1 and the other for supply from power source 2. They allow the device to be controlled electrically and automatically into any of the 3 positions when either of the 2 supply sources is present.

Characteristics

- Single phase or three phase control of networks I and II.
- Independent adjustable over/undervoltage and over/under frequency thresholds: +/- 20% of the nominal value.
- Adjustable hysteresis thresholds linked to the threshold values.
- Control of phase rotation.
- Measure (3U and frequency on network 1 and 2; Timer for ATyS Normal/Alternate cycle).
- Display + keyboard (adjustment of all threshold parameters; adjustment of MFT, DTT, OMF, MRT, OMR and CDT delays; real time display of measured electrical values; Test functions and position control functions;
- LEDs (Product Power On; Source availability indication; Position indication; "/AUT" mode; TEST/CONTROL mode and Fault).
- 1 configurable bi-stable output relay for generator start/stop command. (30 VDC, 5 A, AC1).
- 1 NO fault relay activated in case of changeover position ordered and not reached (30 VDC, 5A, AC1).

Enclosed changeover switches

Automatic operation

ATSE* - Automatic equipment from 40 to 3200 A

Single-phase ATyS M 6s in polycarbonate enclosure



atysm_251_a_1_cat

General characteristics

- From 40 to 160 A.
- Network 230 VAC [176-288 VAC] / 50 Hz/60 Hz [45 Hz-65 Hz].
- Protection degree: IP 55, IK08.
- Colour RAL 7035.
- Material: transparent cover, polycarbonate casing.
- Wall mounting: 4 holes on the rear of the enclosure.
- Flame resistant to 650°C.

References

Single-phase ATyS M 6s model (2P): 230 VAC network

Rating (A)	No. of poles	Reference
40	2 P	1854 2004
63	2 P	1854 2006
80	2 P	1854 2008
100	2 P	1854 2010
125	2 P	1854 2012
160	2 P	1854 2016

Accessories



Auxiliary contact

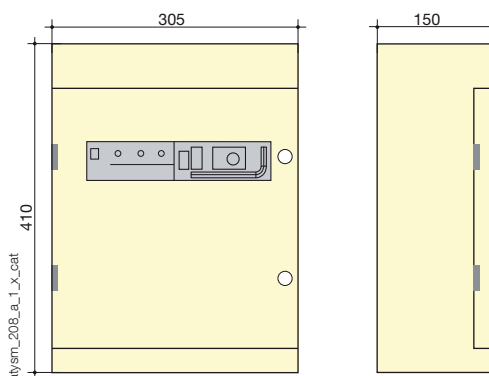
Voltage tap

Customer fit

Description	Reference
Auxiliary contact ⁽¹⁾	1309 0001
Voltage sensing and power supply tap (2 per reference) ⁽¹⁾	1399 4006
Sealable cover ⁽¹⁾	1359 2000

⁽¹⁾ For more details please refer to the ATyS M section of this catalogue.

Dimensions



atysm_208_a_1_x_cat

- Weight: 5.5 kg.
- Connection: recommended cable size (Cu): 25 to 70 mm² according to rating (maximum size of a cable: 70 mm²).

Enclosed changeover switches

Automatic operation

ATSE* - Automatic equipment from 40 to 3200 A

Three-phase ATyS M 6e /6s in steel enclosure



General characteristics

- From 40 to 160 A.
- Network 230/400 VAC +/-20 % as standard 50 Hz/60 Hz [45 Hz-65 Hz].
- Network 127/230 VAC on request for ATyS M 6s and ATyS M 6e 50 Hz/60 Hz [45 Hz-65 Hz].
- For 4 pole applications as standard and 3 pole applications as an option.
- Integrated bridging bar.
- Protection degree: IP3X or IP54.
- Colour RAL 7035.
- Cable gland plates: top and bottom.
- Materials: steel, thickness 1.2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 wall mounting brackets supplied - not mounted
- Door: hinged, cut-out 327.4x47.6mm (IP3X).
- Locking system: 3 mm double-bar key (key supplied).
- ATyS M 6e version includes RS485 MODBUS communication.

References

Three-phase ATyS M 6s model (4P): 230/400 VAC network

Rating (A)	No. of poles	IP 3X Reference ⁽¹⁾	IP 54 Reference ⁽¹⁾
40	4 P	1854 4004	1854 4005
63	4 P	1854 4006	1854 4007
80	4 P	1854 4008	1854 4009
100	4 P	1854 4010	1854 4011
125	4 P	1854 4012	1854 4013
160	4 P	1854 4016	1854 4017

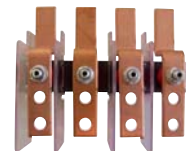
(1) Network 127/230 VAC, on request.

Three-phase ATyS M 6e model (4P): 230/400 VAC network

Rating (A)	No. of poles	IP 3X Reference ⁽¹⁾	IP 54 Reference ⁽¹⁾
40	4 P	1884 4004	1884 4005
63	4 P	1884 4006	1884 4007
80	4 P	1884 4008	1884 4009
100	4 P	1884 4010	1884 4011
125	4 P	1884 4012	1884 4013
160	4 P	1884 4016	1884 4017

(1) Network 127/230 VAC, on request.

Accessories



Power connection terminals

Customer fit

Description	Reference
Auxiliary contact ⁽³⁾	1309 0001
Voltage sensing and power supply tap (2 per reference) ⁽³⁾	1399 4006
Solid neutral kit ⁽⁴⁾	1309 9008
Sealable cover ⁽³⁾	1359 0000 ⁽⁴⁾
Kit IP54 (for IP3X enclosure conversion)	1399 4016
Power connection terminals ⁽³⁾	1399 4017 ⁽²⁾

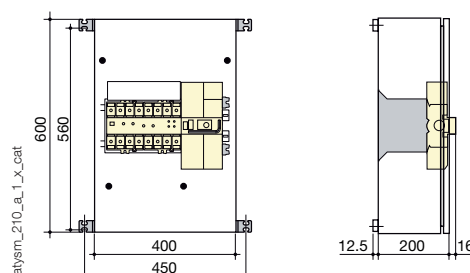
(1) For ATyS M 6s.

(2) For fully equipped product, order the reference 3 times.

(3) For more details please refer to the ATyS M section of this catalogue.

(4) Solid neutral kit provides a maintained connection between both incoming and outgoing neutral terminals, thereby providing an unswitched neutral.

Dimensions



- Weight (without accessories): 15 kg.
- Connection (without power connection terminals): min. Cu 6 mm², max. 70 mm².

Enclosed changeover switches

Automatic operation

ATSE* - Automatic equipment from 40 to 3200 A

Three-phase ATyS 6e in steel enclosure



coff_306_b_1_cat

General characteristics

- Adapted to mechanical risk and dust hazard.
- Protection degree: IP54.
- Colour: RAL 7035.
- Connection of cables: Top or bottom from 125 to 3200 A, bottom from 400 to 3200 A.
- The auxiliary contacts are wired to a terminal block.
- Material: XC steel, thickness 2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 wall mounting brackets supplied - not mounted (range ≤ 400 A), floor standing feet (range ≥ 630 A).
- Door: solid with hinges.
- Locking system: 3 mm double-bar key (key supplied).

References

Standard device - 230 VAC

Rating (A)	No. of poles	Reference
125	4 P	1763 4012
160	4 P	1763 4016
250	4 P	1763 4025
400	4 P	1763 4040
630	4 P	1763 4063
800	4 P	1763 4080
1000	4 P	1763 4100
1250	4 P	1763 4120
1600	4 P	1763 4160
2000	4 P	1763 4200
2500	4 P	1763 4250
3200	4 P	1763 4320

Accessories

Factory fitted

Description	Reference
2 nd auxiliary contact from 125 to 630 A	1599 9022
2 nd auxiliary contact from 800 to 1600 A	1599 9032
Autotransformer 400 / 230 VAC for three-phase networks without neutral	see ATyS pages
Terminal shrouds	see ATyS pages
3 position padlocking (I-0-II)	1599 9003

Customer fit

Description	Reference
Solid neutral 125 ... 160 A	1599 1006
Solid neutral 250 A	1599 1025
Solid neutral 400 A	1599 1040
Solid neutral 630 A	1599 1063
Solid neutral 800 A	1599 1080
Solid neutral 1000 A	1599 1100
Solid neutral 1250 A	1599 1120
Solid neutral 1600 A	1599 1160
ATyS D10	1599 2010
ATyS D20	1599 2020
RJ45 connecting cable	1599 2009 ⁽¹⁾
RS485 MODBUS communication module	1599 2000
2 inputs / 2 outputs module	1599 2001

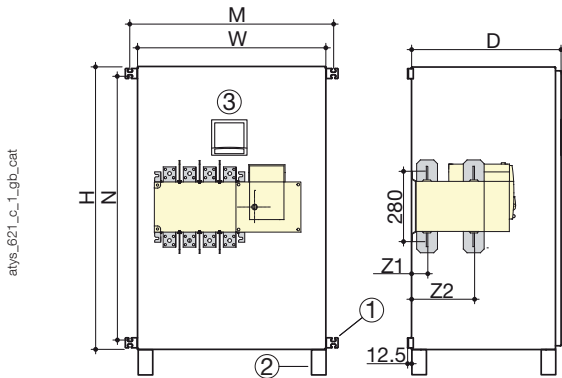
⁽¹⁾ Necessary to connect an ATyS D10 or D20.

Enclosed changeover switches

Automatic operation

ATSE* - Automatic equipment from 40 to 3200 A

Dimensions



- (1) Wall mounting brackets supplied up to 400 A.
 (2) Floor standing feet from 630 A (increase the height (H) by 200 mm).
 (3) Interfaces ATyS D10 or D20 (optional).

Rating (A)	Recommended connection cross-section (mm ²)	H (mm)	W (mm)	D (mm)	M (mm)	N (mm)	Z1 (mm)	Z2 (mm)	Weight (kg)
125	50	650	400	300	448	608	38	134	25
160	70	650	400	300	448	608	38	134	25
250	120	1000	650	475	698	958	39.5	134.5	45
400	240	1000	650	475	698	958	39.5	134.5	50
630	2 x 185	1000	650	475			53	190	70
800	2 x 240	1200	800	660			66.5	253.5	135
1000	4 x 150	1200	800	660			66.5	253.5	140
1250	4 x 185	1600	1000	830			66.5	253.5	270
1600	4 x 240	1600	1000	830			67.5	253.5	375
2000	8 x 150	2000	1000	1000					400
2500	8 x 185	2000	1000	1000					400
3200	8 x 240	2000	1000	1000					400



Enclosed changeover solutions

ATS no-break Bypass solution

ATSE* - Automatic equipment from 40 to 3200 A



tablo_036_a_1_cat



tablo_035_a_1_cat

The solution for

- > Data centres.
- > Power production.
- > Healthcare buildings.
- > High-rise buildings.
- > Banking and Insurance.
- > Transportation.



Strong points

- > No-break load transfer in Bypass mode.
- > Solution certified by a manufacturer.
- > Optional accessories available.

Conformity to standards

- > IEC 61439-2
- > IEC 60947-6-1
- > IEC 60947-3
- > BS 60947-6-1



Function

- Automatic transfer of two supply sources to ensure continuity of supply to critical loads such as sprinklers, elevators, water pumps...
- Guaranteed continuity of the power supply during maintenance and test operations.
- Complete isolation of the Automatic Transfer Switch ensuring maintenance safety.
- The association of an ATyS along with a remote interface ATyS D20, will enable an easy configuration, exploitation and visualisation of the data shown on the front of the equipment (timers settings, hysteresis, start/stop of the genset...).

General characteristics

- From 40 to 3200 A - 4 poles.
- 230/400 VAC +/- 20%, 50/60 Hz, self-supplied from incoming sources.
- Normal/Emergency logic control sequence.
- Voltage and frequency checking of networks I and II.
- Control of phase rotation.
- 1 configurable output relay for generator start/stop command.
- Position I, 0, II control by external dry contact.
- Manual emergency operation.
- Auxiliary contacts.
- MODBUS communication (factory fitted).
- AUTO / MANU selector.
- Equipment protection degree: IP41 as standard - Other IP upon request.
- Hinged door.
- Wall mounting brackets supplied up to 160 A.
- Floor standing feet from 250A to 3200 A.
- Plug-in ATS from 160 A.
- Phase identification.
- Mimic panel (3 LEDs; source availability (1 and 2) and load; 16 LED mimic panel optional).
- Integral protection against direct contact on each functional unit.
- Steel enclosure
- Colour: RAL 7035.

*ATSE: Automatic Transfer Switch Equipment

Enclosed changeover solutions

ATS no-break Bypass solution

ATSE - Automatic equipment from 40 to 3200 A

2 versions

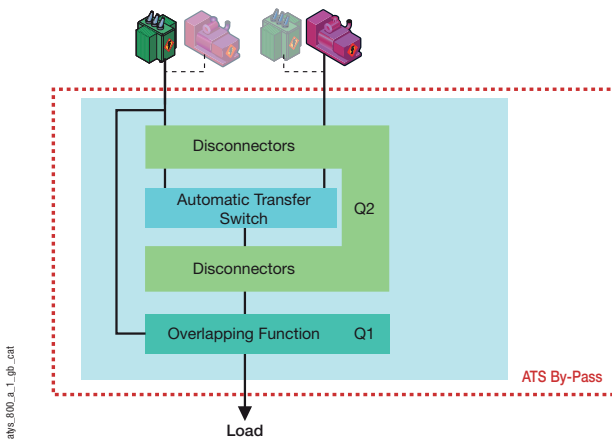
Single Line ATS Bypass

- It consists of 2 functions: an automatic changeover switch and a single Bypass line connected to the preferred supply source.

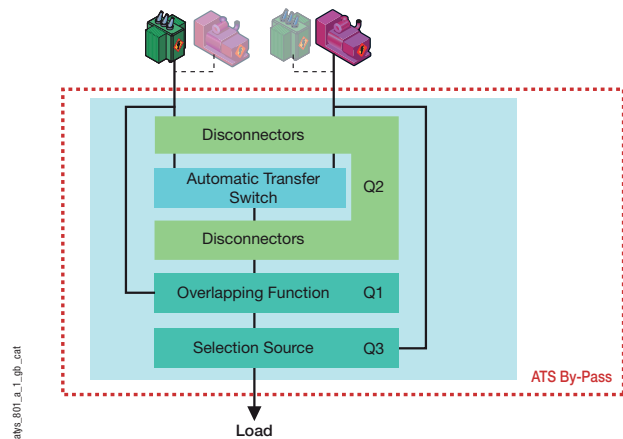
Double Line ATS Bypass

- It consists of 3 functions: an automatic changeover switch, an ATS Bypass and a facility for selecting between supply sources when in Bypass.

ATS Bypass - SINGLE LINE



ATS Bypass - DOUBLE LINE



Use

Normal Position:

- The load is supplied by the supply source defined as the preferred source. In case of primary source failure, the ATS automatically transfers the load to the alternate source when available.

Bypass position:

- ATS seamless transfer to the Bypass mode is achieved using the bypass line via Q1 to ensure continuity in the power supply to the load. Changeover switch Q2 is then open to provide complete isolation from the power supply sources and to ensure safe interventions.

Test Position:

- From the Bypass position, changeover switch Q2 can be closed to supply the ATS and achieve operational checks, without jeopardizing the supply to the load. Transfer to the normal position can then be achieved.

References

Standard product - 230 VAC for ATyS M 6e

Rating (A)	No. of poles	Single Line Reference ⁽¹⁾	Double Line Reference ⁽¹⁾
40	4 P	1785 4004	1786 4004
63	4 P	1785 4006	1786 4006
80	4 P	1785 4008	1786 4008
100	4 P	1785 4010	1786 4010
125	4 P	1785 4012	1786 4012

⁽¹⁾ Network 127/230 VAC, on request.

Standard product- 230 VAC for ATyS 6e

Rating (A)	No. of poles	Single Line Reference ⁽¹⁾	Double Line Reference ⁽¹⁾
160	4 P	1785 4016	1786 4016
250	4 P	1785 4025	1786 4025
400	4 P	1785 4040	1786 4040
630	4 P	1785 4063	1786 4063
800	4 P	1785 4080	1786 4080
1000	4 P	1785 4100	1786 4100
1250	4 P	1785 4120	1786 4120
1600	4 P	1785 4160	1786 4160
2000	4 P	1785 4200	1786 4200
2500	4 P	1785 4250	1786 4250
3200	4 P	1785 4320	1786 4320

⁽¹⁾ Network 277 VAC, on request.

Enclosed changeover solutions

ATS no-break Bypass solution

ATSE - Automatic equipment from 40 to 3200 A

Accessories

Customer fit

Description	Reference
2 inputs / 2 outputs module (ATyS 6e only)	1599 2001

Extension cabinet

Use

From 1250A to 3200 A, the standard enclosed ATS Bypass is supplied with connections to allow for Bottom/Bottom or Bottom/Top cable entry.

In order to facilitate the wiring, we propose the use of an extension cabinet, which can be mounted to the side of the standard ATS Bypass enclosure, when utilising all other types of connections (TT/TB/BT). The extension cabinet also enables any necessary future adaptation.



kdrys_504_a_2_cat

Padlockable handle in position 0	Reference
1250 ... 2000	1599 9004
2500 ... 3200	1599 9005

Protection against overvoltages

Use

In order to ensure protection against overvoltages of the equipment, type 1 and 2 surge protection is available.

For more information, please see pages 526 to 540.

Rating (A)	Reference
40 ... 125	1599 9016
250 ... 400	1599 9017
630 ... 3200	1599 9018



sgys_069_a_1_cat

Multifunction meter

Use

Multifunction meters are now available for the display and monitoring of all the electrical parameters.

For more information, please see pages 436 to 460.



dis_750_a_1_cat

Engine Exerciser

Use

The enclosed ATS Bypass can be supplied with a genset exerciser. (configure generator Start/Stop times, enable/disable routines, etc....).

Description	Reference
Engine Exerciser	1599 9006



access_276_a_1_cat

Tinned Busbars

Use

Tinned busbar option for severe environmental conditions.

Description	Reference
250	1599 9007
400	1599 9008
630	1599 9009
800	1599 9010
1000	1599 9011
1250 ... 1600	1599 9013
2000	1599 9014
2500 ... 3200	1599 9015

Enclosed changeover solutions

ATS no-break Bypass solution

ATSE - Automatic equipment from 40 to 3200 A

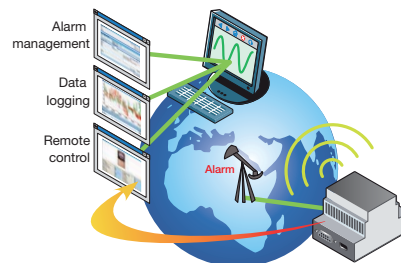
Remote ATS Bypass management using Ethernet

Use

A serial RS485 connection with MODBUS protocol is factory fitted.

An optional module can be integrated to enable communication through Ethernet for the following functions:

- Alarm management (SNMP protocol),
- Remote control,
- Data logging,
- Consultation through embedded website.



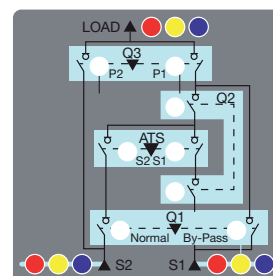
Description	Reference
Remote control module	4899 0400

Signalling

Use

To get a global overview of the system status, an optional 16 LED mimic panel is available (voltage availability per phase and device positions).

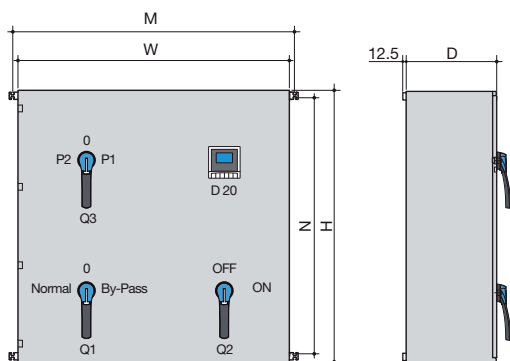
Description	Mimic panel	
	Single Line Reference	Double Line Reference
40 ... 3200	1599 9033	1599 9034



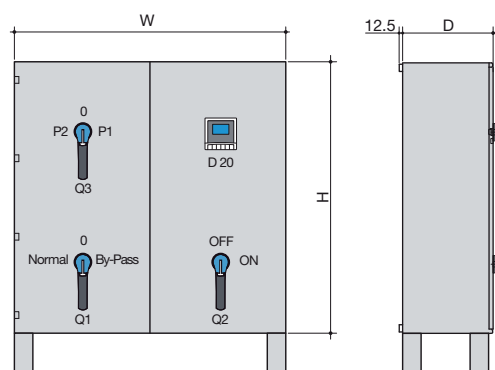
Dimensions

from 40 to 160 A

≥ 250 A



atys_749_c_1_gb_cat



atys_759_c_1_gb_cat

Wall mounting - Bottom

Rating (A)	Recommended connection cross-section (mm ²)	H (mm)	L (mm)	D (mm)	M (mm)	N (mm)	Weight (kg)
40	10	800	800	300	848	752	80
63	16	800	800	300	848	752	80
80	25	800	800	300	848	752	80
100	35	1000	800	300	848	752	80
125	50	1000	800	300	848	752	80
160	70	1000	800	400	848	752	160

Floor fixing - Bottom

Rating (A)	Recommended connection cross-section (mm ²)	H (mm)	L (mm)	D (mm)	Weight (kg)
250	70	1200 ⁽¹⁾	1000	550	180
400	240	1200 ⁽¹⁾	1000	550	200
630	2x185	1600 ⁽¹⁾	1200	600	600
800 ... 3200 ⁽²⁾					

(1) Add 100 mm mm for feet.

(2) Please consult us.

Connection (input / output)

- From 40 to 125A (B/B or T/B or T/T or B/T),
- From 160 to 400A (B/B or B/T),
- 630 A (B/B),
- ≥ 800A (Please consult us).



Photovoltaic enclosures

The photovoltaic market is a highly demanding one in terms of safety and quality. Within the space of a decade, it has gone from an experimental to an industrial stage, which requires professionalisation based on the standardization of components, their use and the rules for installation.

It is therefore imperative to call on the skills of a specialist to guarantee installations are as safe, durable and efficient as possible. Its expertise in photovoltaic technology enables SOCOMEC to demonstrate the application of its experience in the search for solutions to optimise electrical installations and combine this with environmental protection.

Did you know?

For further information, consult our "Photovoltaic Application Guide" which can be found on our site www.socomec.com

Types of installations

Photovoltaic applications are available in two types of installations:

- **Installations connected to the network**

These are designed to be synchronised with the national grid. The energy they produce can be used to supply a site and all or some of this energy can be re-injected into the national grid when the on-site energy demands are low. When local demand is greater than the energy produced by the PV installation, the local supply is then topped up by the national grid.

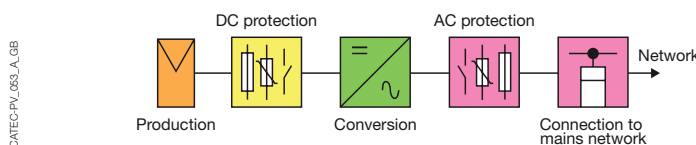
- **Isolated standalone installations**

These are designed to operate independently of the national grid. They can be combined with another energy source (wind, generators, etc.), to form a "hybrid photovoltaic" installation.

Main architectures

Centralised inverter installations

- This architecture is used mainly for domestic applications which have power levels below 10 kWc.
- A single fault risks the shutdown of production

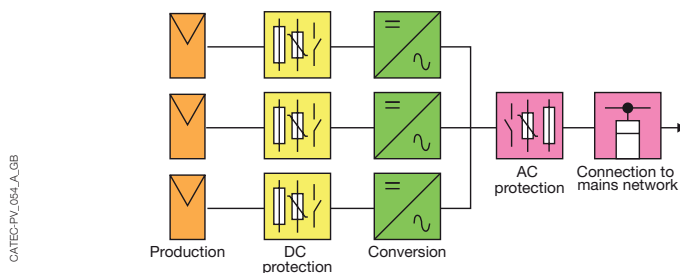


Multi-inverter installations

This architecture is designed for high-power industrial installations from a few hundred kWc to several MWc. If there is a fault or maintenance is required, the loss of production is limited to the machine in question.

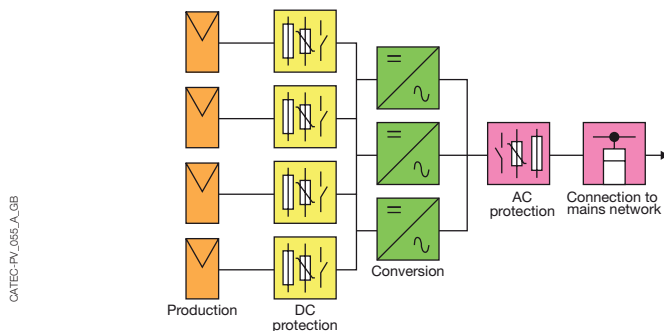
- **Individually managed multi-inverter installation**

This architecture is used to reduce the power of the PV inverters, splitting the PV generators and inverters over several lines.



- **Centrally managed multi-inverter installation**

Connecting PV generators in parallel to all the inverters allows a high level of flexibility in terms of maintenance and managing the operating time of the machines. Managing in this way also ensures the inverters are used at their optimum power, depending on the level of sunlight.

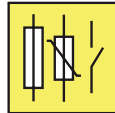


Main functions



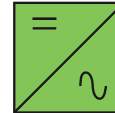
Photovoltaic generator

- PV panels.



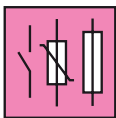
DC side, upstream of the inverter

- Switching and breaking.
- Short circuit and voltage surge (lightning) protection.
- Integration in double insulation (Class 2 components).



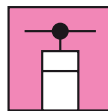
Inverter DC/AC converter

- Conversion of the DC current produced by the photovoltaic panels into AC current.
- Automatic disconnection (loss of insulation, mains power, etc.).



AC side, downstream of the inverter

- Switching and breaking.
- Short circuit and voltage surge (lightning) protection.
- Differential protection and control.



Network synchronisation

- Metering.
- Switching and breaking.
- HV/LV transformation depending on the installed power.

Overview of our range



site_088_a

Residential - RJB (Residential Junction Box)

- Surface area of photovoltaic panels (< 60 m²)
- DC voltage in open circuit (U_{oc}) (600 to 1000 VDC)
- Max power (P_{mpp}) (< 10 kW)

COFF-PV_088_A



© SMA solar technology 1135

Buildings - BJB (Building Junction Box)

- Surface area of photovoltaic panels (< 1500 m²)
- DC voltage in open circuit (U_{oc}) (800 to 1000 VDC)
- Max power (P_{mpp}) (< 250 kWc)

COFF-PV_088_A



site_317_a

Solar parks - FJB (Field Junction Box)

- Surface area of photovoltaic panels (< 500 m²)
- DC voltage in open circuit (U_{oc}) (800 to 1000 VDC)
- Max power (P_{mpp}) (hundreds of kWc to several MWc)

COFF_380_A_1_CAT





Customised design and solutions

Integrated products and solutions



In addition to the standard offer presented in this catalogue, **SOCOMEC** has a team dedicated to the design and manufacture of specific solutions.

We can offer you support at the various stages of your project:

- Analysis of specifications and needs.
- Definition of architectures and solutions.

Advantages

Multi-field expertise and complete business management

Support throughout the project by our business account managers, accompanied by specialist mechanical, electro-technical and logistics teams in order to study all of your needs.

An adapted response

Integration of customer needs and local constraints concerning each country and product:

- Customer standard or specific certifications & approvals (SNCF, EDF, etc.).
- Technical validation by an inspection body.
- Part number creation for specific ranges.
- Batch production.

- Design, manufacturing, validation, testing and certification of equipment.
- Commissioning assistance.
- Training in use and maintenance.

For any specific request, please contact your SOCOMEC branch.

Customised solutions

Possibility of adapting our enclosures and switching devices to provide the best solution to the needs of our customers.

Certified and qualified manufacturer solutions

Integrated solutions that comply with the installation and product standards in force:

- IEC 61439
- NF C 15-100
- NF C 15-211 (Hospitals)
- NF C 17-200 (Public lighting), etc.
- IEC 60364
- EN 60204

We can also perform specific tests in our COFRAC accredited laboratory.

The solution for

- > Any customer's specific application that is not available in our standard catalogue offer.



Strong points

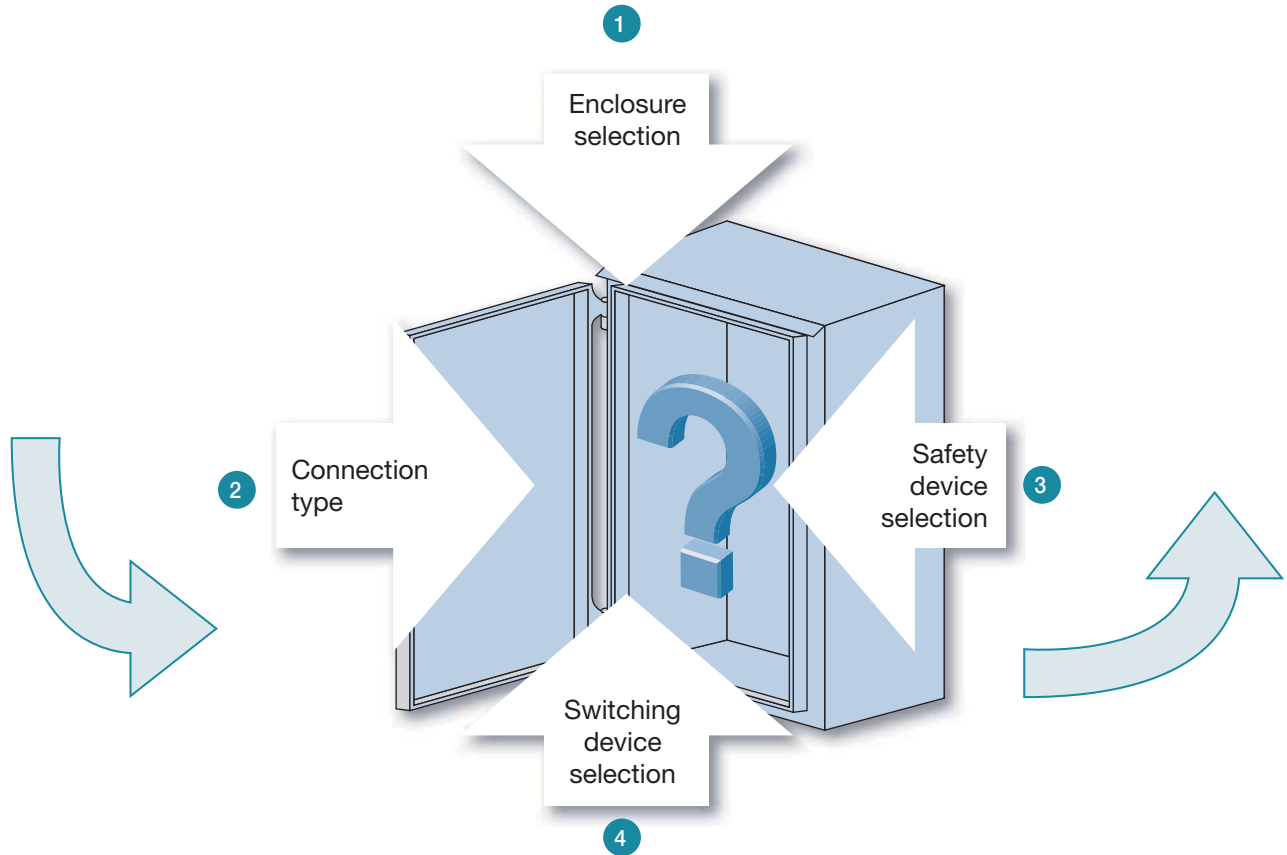
- > Multi-field expertise and complete business management.
- > An adapted response.
- > Customised solutions.
- > A certified and qualified manufacturer solution.

Approvals and certifications⁽¹⁾

- > Compliance to standards related to:
 - Products
 - Systems
 - Installation
- > Certificates issued upon request.

(1) Reference of products concerned upon request.

How do you determine the most appropriate equipment solution?



1 Select the enclosure in relation to its environment

Environment	Steel enclosure	Polyester enclosure	Stainless steel enclosure	ATEX enclosure
Chemical damage		•	•	
Mechanical risks	•	•	•	•
Risk of dust	•			•
Risk of contamination	•	•	•	•
Atmospheric corrosion		•	•	
Risk of explosion due to dust				•

2 Define mode of connection

- HH: Top cable input and output.
- HB: Top cable input and bottom cable output.
- BB: Bottom cable input and output.

3 Select the switching device

- Load break switches, fuse combination switches, changeover switches, etc.
- Rating of 16 to 5000 A.
- Number of poles: 3, 4, 6, 8 poles or X poles for a specific design.
- Types of operation handle: Direct or External; Front (centred or not) or Side.

4 Select the safety device

- Double locking
- Positive break indication or visible breaking.
- Mechanical indicator.
- Locking system and interlock devices.

More complex requirements?

> Draw up the specifications and technical characteristics describing the application and the electrical properties required, as well as your expectations in terms of equipment functions.
On this basis, SOCOMEC will define the best solution for your application.

Customised design and solutions

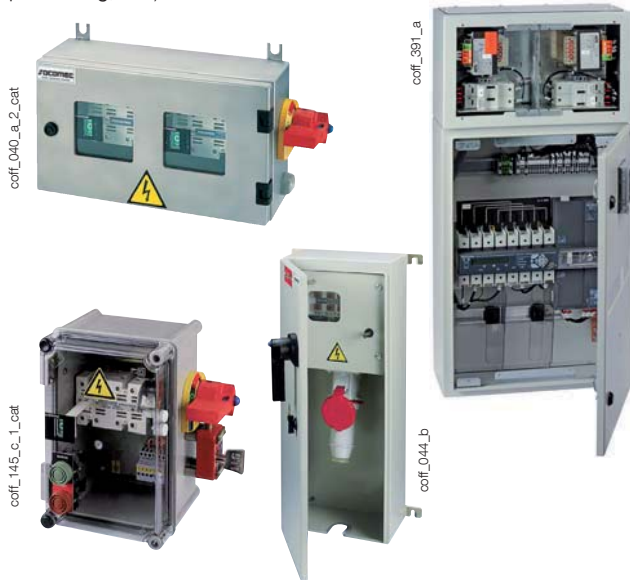
Integrated products and solutions

A few examples of specific designs

Adapted equipped enclosures

Switches, fuse protection, supply changeover switches integrated within an enclosure that may be accompanied by control auxiliary contacts, cable glands, measuring devices, communication systems, etc.

Various enclosure types are possible in order to adapt to all constraints and all industries (cement works, steel works, paper-making, food processing, etc.)



Urban environment

Anti-vandalism and communicating enclosures adapted to urban environments to manage public lighting or road signs. Proven and patented robustness providing protection for internal equipment and ensuring operational availability.



Port environment

Stainless steel enclosures adapted to marine environments to supply numerous sources to ships, boats and small crafts.



Rail application

Track enclosures for "rail" applications enabling the overhead contact lines to be earthed and transformers to be protected.



Hospital environment

A complete manufacturer's solution ensuring the availability of electrical energy to the operating theatres together with the management of various criticality levels. It is also possible to combine inverter and "fault finding" functions.



Photovoltaic application

Customised manufacture of junction units with or without controllers, as well as combining boxes or coupling enclosures.



ERDF type transformer station

Cabinets and enclosures for transformer stations (UA95, UA98, CERT TR/AR/TT/TC enclosures, current short-circuiting device, etc.) SOCOMEC is the original manufacturer and official supplier of RTE/ERDF (French Public Electricity Company).



Low voltage switchgear distribution panels, distribution cabinets

Long-term specialist integrator in low voltage distribution with support throughout the study process. Manufacture according to various format and service indices. Emphasis on fuse protection solutions with optional fault finding depending on the neutral systems used.



References list

References	Pages
111x xxxx	55, 57, 117, 118, 120
112x xxxx	330, 333
113x xxxx	117 to 120, 330, 333
114x xxxx	55, 57, 117 to 120
121x xxxx	47
122x xxxx	47
123x xxxx	47
124x xxxx	47
126x xxxx	46
127x xxxx	46
128x xxxx	46
1290 xxxx	46
1295 9001	46, 49
1299 00xx	46, 47, 49
1299 0121	49
1299 5001	46, 47, 49
1299 501x	46 to 48
1299 502x	47, 48
1299 503x	46 to 48
1299 60xx	46, 48
1299 80xx	46, 47, 49
1309 0001	368, 369, 632, 633, 638, 639
1309 001x	368, 369
1309 20xx	368, 369
1309 40xx	368, 369
1309 9006	370
1309 9007	370
1309 9008	633, 639
1309 9056	370
132x xxxx	368
1353 xxxx	368
1354 xxxx	368
1359 0000	368, 370, 639
1359 2000	368, 370, 638
136x xxxx	368
138x xxxx	368
1399 4006	35, 368, 369, 632, 633, 638, 639
1399 4016	633, 639
1399 4017	371, 633, 639
1400 1020	54 to 56, 58, 75, 76, 78, 117, 118, 121, 151, 152, 159, 160, 170, 171, 179, 200, 201, 227, 249, 250, 253, 330 to 332, 334, 351, 352, 360, 361
1400 1025	58
1400 1032	54 to 56, 58, 78, 117, 118, 121, 151, 152, 159, 160, 170, 171, 179, 190, 191, 194, 195, 200, 225, 227, 229, 249, 250, 253, 330 to 332, 334, 351, 352, 360, 361
1400 1040	151, 152, 159, 160, 170, 171, 179, 253, 351, 352
1400 1050	54, 55, 58, 75, 78, 117, 118, 121, 200
1400 1075	58
1400 1220	200, 201, 227, 228, 250, 253
1400 1232	191, 195, 200, 227 to 229, 250, 253
1400 1240	253
1400 1250	200
1400 15xx	58
1401 000x	59, 78, 90, 121, 152, 160, 171, 199, 232, 242, 253, 326, 333, 361
1401 001x	59, 78, 90, 121, 152, 160, 171, 199, 232, 242, 253, 326, 333, 361

References	Pages
1401 003x	59, 78, 152, 160, 171, 199, 242, 253, 333
1401 004x	59, 78, 152, 160, 171, 199, 242, 253, 333
1401 0520	200, 201, 249, 253
1401 0532	190, 194, 200, 249, 253
1401 0540	200, 249, 253
1401 06xx	32, 111, 112
1401 1520	54 to 56, 58, 78, 89, 90, 117 to 119, 121, 151, 152, 159, 160, 170, 171, 232, 239, 240, 242, 330 to 332, 334, 347, 351, 352, 360, 361
1401 1532	54 to 56, 58, 75, 78, 89, 90, 117 to 119, 121, 151, 152, 159, 160, 170, 171, 231, 232, 239, 240, 242, 330 to 332, 334, 347, 351, 352, 360, 361
1401 1540	54, 55, 58, 75, 78, 117 to 119, 121, 151, 152, 159, 160, 171, 347, 351, 352
1402 xxxx	325, 326
1403 00xx	325, 326
1403 1520	89, 90, 239, 241, 242
1403 2111	31
1403 2113	31, 321
1403 2114	31
1403 2813	31, 321
1403 2814	31
1404 052x	32, 321
1404 053x	32, 321
1404 0540	32
1404 1520	76, 78
1404 2111	31
1405 xxxx	249, 253
1407 xxxx	28, 32, 135, 137, 145, 146, 321
1409 xxxx	30, 32, 111, 112, 321
1411 2111	32, 111, 112, 190, 194, 198, 199, 225
1411 2113	190, 194, 325
1413 2111	32, 111, 112, 198
1413 2113	325
1413 2114	325
1413 2115	190, 194, 198
1413 2311	198
1413 28xx	325
1414 2111	32, 111, 112, 190, 194, 198, 199, 225
1414 2113	190, 194
1414 2115	190, 194, 198
1415 2111	32, 190, 194, 198, 225
1417 2111	198
1418 2111	32, 190, 194, 198, 225
1419 0000	33, 138, 146, 254
141A xxxx	32
141B xxxx	32
141D 2111	179, 249, 252
141D 2115	249, 252
141D 2911	199, 252
141D 2915	252
141E 2111	179, 252
141E 2115	252
141E 2911	199, 252
141E 2915	252
141F 2111	179, 249, 252
141G 2111	179, 252
141H 6111	249, 252
141H 6911	252
141I 6111	249, 252
141I 6911	252

References	Pages
1421 2111	54 to 57, 75, 77, 117, 118, 120, 190, 191, 194, 195, 198, 199, 225, 227, 229
1421 2113	190, 191, 194, 195, 330, 332, 333, 360
1423 2111	54, 55, 57, 75, 77, 117, 118, 120, 198
1423 2113	330, 332, 333, 360
1423 2114	331, 333
1423 2115	190, 191, 194, 195, 198
1423 2311	198
1423 2813	337, 363
1424 2111	54 to 57, 75, 77, 117, 118, 120, 190, 191, 194, 195, 198, 199, 225, 227, 229
1424 2113	190, 191, 194, 195
1424 2115	190, 191, 194, 195, 198
1425 2111	76, 77, 190, 191, 194, 195, 198, 225, 227, 229
1427 2111	76, 198
1428 2111	76, 77, 190, 191, 194, 195, 198, 225, 227, 229
1429 0000	33, 59, 77, 121, 153, 172, 200, 254, 334, 361
1429 70xx	199
142D 2111	151, 152, 159, 170, 171, 250, 252
142D 2113	351, 352
142D 2115	250, 252
142D 2813	351, 352
142D 2911	152, 159, 171, 199, 252
142D 2915	252
142E 2111	151, 152, 159, 170, 171, 252
142E 2113	352
142E 2115	252
142E 2813	352
142E 2911	152, 159, 171, 199, 252
142E 2915	252
142F 2111	151, 152, 159, 170, 171, 250, 252
142F 2113	352
142F 28xx	352
142G 2111	151, 152, 159, 170, 171, 252
142G 2113	352
142G 28xx	352
142H 6111	250, 252
142H 6911	252
142I 6111	250, 252
142I 6911	252
1431 3111	117 to 120
1431 35xx	89, 90, 231, 232, 239, 240, 242
1432 xxxx	89, 90, 231, 232, 239, 240, 242
1433 3111	117 to 120, 191, 195, 198, 227, 229
1433 3113	332, 333, 347, 360
1434 3111	117 to 120, 191, 195, 198, 227, 229
1435 xxxx	89, 90, 239, 241, 242
1436 xxxx	89, 90, 239, 241, 242
1437 3111	76, 77, 191, 195, 198, 227, 229
1437 7911	198, 228
1438 3111	76, 77, 191, 195, 198, 227, 229
143D 3111	151, 152, 159, 170, 171, 250, 252
143D 3113	351, 352
143D 3813	352
143D 3911	152, 159, 171, 199, 252

References	Pages
143E 3111	151, 152, 159, 170, 171, 252
143E 3113	352
143E 38xx	352
143E 3911	152, 159, 171, 199, 252
143F 3111	250, 252
143F 3113	352
143F 38xx	352
143G 3111	252
143G 3113	352
143G 38xx	352
1443 3111	54 to 57, 75, 77, 117 to 120, 191, 195, 198, 228, 229
1443 3113	330, 333
1443 3114	331, 333
1444 3111	54 to 57, 75, 77, 117 to 120, 195, 198, 228, 229
144D 3111	152, 159
144D 3113	352
144D 3813	351, 352
144D 3911	152, 159, 199
144E 3111	152, 159
144E 3113	352
144E 38xx	352
144E 3911	152, 159, 199
144F xxxx	352
144G xxxx	352
1453 8111	55, 57, 117 to 120
1453 8113	330, 333, 352
1454 8111	55, 57, 117 to 120
1454 8113	352
145F 8113	171
1461 5111	102
1463 5111	31, 102
1463 5113	31, 321
1464 5111	31, 102
1471 0111	31
1471 1111	28, 31
1473 0111	31
1473 0113	31, 321
1473 0114	31
1473 1111	28, 31, 135, 137, 146
1473 1113	28, 31, 137, 321
1473 1114	28, 31, 137
1474 0111	31
1474 1111	28, 31, 135, 137, 146
147A xxxx	28, 31
147B xxxx	28, 31
147D xxxx	135, 137, 145, 146
147E xxxx	135, 137, 145, 146
1481 1111	28, 31
1483 xxxx	28, 31, 135, 137, 146
1484 xxxx	28, 31, 135, 137, 146
148A xxxx	28, 31
148B xxxx	28, 31
148D xxxx	135, 137, 145, 146
148E xxxx	135, 137, 145, 146
1491 0111	30, 32, 111, 112
1493 0000	59, 77, 90, 121, 152, 160, 170, 199, 242, 253, 326, 333, 361
1493 0111	30, 32, 111, 112, 249, 252
1494 0111	30, 32, 111, 112, 252
1499 7701	64, 81, 93, 123, 205, 234, 245, 337, 347, 363
1499 7702	64, 81, 205, 245, 337, 347, 363
1499 7703	64, 81, 205
149A xxxx	30, 32
149B xxxx	30, 32
149D 0111	249, 252

References	Pages
149E 0111	252
1509 0001	391, 395
1509 1004	391, 396
1509 1006	132, 391, 396
1509 3012	56, 62, 330 to 332, 336, 383, 385, 387, 390, 392
1509 302x	56, 62, 123, 129, 131, 330 to 332, 336, 360, 363, 383, 385, 387, 390, 392
1509 306x	56, 62, 123, 129, 131, 330 to 332, 336, 360, 363, 383, 385, 387, 390, 392
1509 3080	56, 62, 123, 330 to 332, 336, 383, 385, 387, 390, 392
1509 3160	56, 62, 330 to 332, 336, 383, 385, 387, 390, 392
1509 3200	392
1509 4012	56, 62, 330 to 332, 336, 347, 383, 385, 387, 390, 392
1509 402x	56, 62, 123, 129, 131, 330 to 332, 336, 347, 360, 363, 383, 385, 387, 390, 392
1509 406x	56, 62, 123, 129, 131, 330 to 332, 336, 347, 360, 363, 383, 385, 387, 390, 392
1509 4080	56, 62, 123, 330 to 332, 336, 347, 383, 385, 387, 390, 392
1509 4160	56, 62, 330 to 332, 336, 383, 385, 387, 390, 392
1509 4200	55, 62, 392
1517 2111	32
152x xxxxx	395
153x xxxxx	391, 395
155x xxxxx	394
1599 0002	383, 385, 387, 390, 395
1599 0003	131, 383, 385, 387, 391, 395
1599 0004	383, 385, 387, 391, 395
1599 0032	383, 385, 387, 390, 395
1599 1xxx	634, 640
1599 2000	640
1599 2001	640
1599 2009	371, 391, 397, 640
1599 201x	368, 371, 640
1599 202x	368, 371, 640
1599 3030	405, 632
1599 3031	405
1599 3040	405, 632
1599 4001	370, 632
1599 4064	383, 385, 387, 390, 394
1599 4121	370
1599 5xxx	391, 394
1599 9001	634
1599 9002	634
1599 9003	634, 640
1599 9012	634
1599 902x	640
1599 903x	640
1609 3063	172, 351, 353
1609 3080	351, 353
1609 4063	172, 351, 353
1609 4080	351, 353
170A 060x	292
170A 061x	292
170A 062x	293
170A 063x	293
170A 6080	271
170H 0069	292 to 295
170H 0235	291, 293
170H 0236	290 to 293
170H 1007	271, 290, 291

References	Pages
170H 3004	271, 292, 293
170H 3006	271, 292 to 295
170L xxxxx	289
170M 0xxx	290
170M 1xxx	290
170M 2xxx	291
170M 31xx	292
170M 323x	294
170M 324x	294
170M 325x	292
170M 326x	292
170M 327x	292
170M 335x	292
170M 336x	292
170M 337x	292
170M 338x	294
170M 339x	294
170M 343x	294
170M 344x	294
170M 345x	292
170M 346x	292
170M 347x	292
170M 38xx	292
170M 41xx	292
170M 423x	294
170M 424x	294
170M 425x	292
170M 426x	292
170M 435x	292
170M 436x	292
170M 438x	294
170M 439x	294
170M 443x	294
170M 444x	294
170M 445x	292
170M 446x	292
170M 51xx	293
170M 523x	295
170M 524x	295
170M 5250	295
170M 5258	293
170M 5259	293
170M 526x	293
170M 535x	293
170M 536x	293
170M 538x	295
170M 539x	295
170M 543x	295
170M 544x	295
170M 545x	293
170M 546x	293
170M 58xx	293
170M 61xx	293
170M 623x	295
170M 624x	295
170M 6250	295
170M 6251	295
170M 6258	293
170M 6259	293
170M 626x	293
170M 627x	293
170M 633x	295
170M 634x	295
170M 635x	293
170M 636x	293
170M 64xx	293
170M 65xx	295
170M 68xx	293
170M 7xxx	291
170N xxxxx	289
172x xxxxx	634

References	Pages
176x xxxxx	640
1823 2xxx	632
1823 4xxx	633
182T 4xxx	472
182T 9xxx	496
1854 2xxx	638
1854 4xxx	639
188x xxxxx	639
191x xxxxx	181
1923 xxxxx	181
192J 8015	435
192M xxxxx	505
192S xxxxx	502
192T 0003	489, 491, 492
192T 0005	489, 492
192T 0006	491
192T 0007	491, 492
192T 002x	491
192T 0101	489
192T 0102	493, 496
192T 0103	489, 492
192T 0105	489, 491, 492
192T 0106	493
192T 05xx	489
192T 06xx	489
192T 07xx	504
192T 08xx	501
192T 09xx	501
192T 14xx	491
192T 19xx	499
192T 20xx	491
192T 21xx	492
192T 23xx	492
192T 24xx	492
192T 32xx	492
192T 33xx	498
192T 34xx	498
192T 40xx	492
192T 46xx	500
192T 47xx	500
192T 48xx	500
192T 5xxx	493
192T 6xxx	493
192T 7xxx	496
192T 80xx	496
192T 81xx	493
192T 93xx	496
192T 95xx	493
192T 96xx	493
192T 97xx	496
192U 0xxx	489
192U 22xx	491
192U 23xx	492
192U 4xxx	492
192U 6xxx	493
192U 8xxx	496
192U 9xxx	496
192X 0056	394
192Y 0015	489, 492
192Y 0025	489
192Y 0035	492
192Y 0045	493, 496
192Y 0115	489, 492
192Y 0125	489
192Y 0135	492
192Y 0145	493, 496
192Y 0155	489, 492
192Y 0165	489
192Y 0175	492
192Y 0185	493, 496
192Y 0215	489, 492

References	Pages
192Y 0225	489
192Y 0235	492
192Y 0245	493, 496
192Y 0255	489, 492
192Y 0265	489
192Y 0275	492
192Y 0285	493, 496
192Y 04xx	505
192Y 05xx	505
192Y 06xx	505
192Y 08xx	505
192Y 09xx	505
19Px xxxxx	129
2107 0515	103
2107 0516	100, 103
2107 052x	103
2107 053x	103
2119 0001	100, 104
2119 001x	100, 102
2119 1xxx	100, 102
2119 3xxx	100, 102
2129 0001	101, 104
2129 01xx	101, 102
213x xxxxx	101, 102
219x xxxxx	103
21PV 21xx	100, 108
21PV 22xx	101, 109
21PV 23xx	101, 109
21PV 3124	100
21PV 3184	100, 108
21PV 32xx	101, 109
21PV 33xx	101, 109
21PV 3421	108
21PV 3722	100, 108
21PV 38xx	101
21PV 39xx	101
21PV 4754	100, 108
21PV 48xx	101, 109
21PV 49xx	101, 109
21PV 5102	100, 108
21PV 52xx	101, 109
21PV 53xx	101, 109
21PV 6xxx	100, 108
2200 1000	28, 33, 135, 138
2200 1001	28, 33, 135, 138
2200 1002	28, 33, 135, 138
2200 1003	28, 33, 135, 136, 138
2200 1004	28, 33, 135, 138
2200 1006	28, 33, 135, 136, 138
2200 1008	28, 33, 135, 138
2200 1010	28, 33, 145, 147
2200 1011	28, 33
2200 300x	28, 29, 135
2200 3010	28, 29, 145
2200 3011	28, 29
2200 3012	30
2200 3016	30
2200 31xx	30
2200 4xxx	30
2200 500x	29, 33, 136, 138
2200 5011	29, 33, 145, 147
2200 5013	31
2200 503x	31
2200 900x	29, 33, 136, 138
2200 9011	29, 33, 145, 147
2201 1xxx	145, 147
2201 3xxx	145
2205 xxxxx	28, 29, 135
2209 0xxx	111, 113
2209 2xxx	111, 113
2209 3409	29

References list

References	Pages	References	Pages	References	Pages	References	Pages
2209 6009	34, 139	2698 408x	54, 55, 62, 123	2799 7003	64, 337	3615 3006	196
2209 6011	34	2698 412x	54, 55, 62, 123	2799 7007	81	3615 3010	196
2214 3503	136	2698 4199	123	2799 7012	54, 56, 57, 75, 77, 120, 159, 332, 333	3615 3011	196, 225
2215 xxxx	601	2698 4200	54, 55, 62	2799 7013	54, 56, 57, 75, 77, 120	3615 3012	196
222x xxxx	136	2699 003x	54, 55, 60, 122	2799 7042	55, 57, 330, 333, 352	3615 3015	197, 226
223x xxxx	321	2699 006x	56, 60, 122	2799 7043	55, 57	3615 3016	197, 226
2269 6009	34, 139	2699 0101	78	2799 7052	56, 57, 76, 77, 120, 331 to 333	3615 302x	197, 226
2269 6011	34	2699 0122	153	2799 7053	56, 57, 76, 77, 120	3615 303x	197, 226
2294 100x	29, 33, 135, 136, 138, 321	2699 0141	60, 122	2799 7062	159, 347	3615 6005	196, 225
2294 1011	29, 33, 145, 147, 321	2699 0142	60	2799 7070	76, 77	3615 6006	196
2294 300x	29, 33, 135, 136, 138, 321	2699 0143	122	2799 7072	54, 55, 57	3615 6010	196
2294 3016	29, 30, 33, 113, 145, 147, 321	2699 03xx	60, 122	2799 7074	117 to 120	3615 6011	196, 225
2294 4016	30, 33, 113, 368, 369	2699 1200	63, 335, 393	2799 713x	54, 57	3615 6012	196
2299 0xxx	29, 30, 34, 111, 113, 135, 136, 139, 145, 147, 321	2699 504x	54, 57, 179	2799 7145	56, 57, 159, 170, 171	3615 6015	197, 226
2299 30xx	321	2699 5053	54, 57, 120	2799 7147	347	3615 6016	197, 226
2299 3309	29, 35	2699 6008	64, 123	2799 7155	54, 55, 57	3615 602x	197, 226
2299 3409	35, 135, 139	2699 601x	64	27DC 3xxx	159	3615 603x	197, 226
2299 3609	29, 35	2699 602x	64	27DC 4xxx	159	3625 200x	192
2299 4xxx	321	2699 9xxx	64, 123	27DC 6xxx	170	3625 2010	192
2299 5012	28, 31, 135, 137	26Ax xxxx	55	27DC 8xxx	170	3625 2014	192
2299 5013	28	26PV 3xxx	117	27PV 3xxx	159	3625 2015	192
2299 5022	30, 31, 111, 112	26PV 4xxx	118	27PV 4xxx	159	3625 2016	192
2299 5032	28, 145, 146	26PV 6xxx	117, 119	27PV 6060	170	3625 2019	193
2299 5042	30, 31, 111, 112	26PV 8xxx	118, 119	2900 xxxx	75	3625 202x	193
2299 6009	34, 139	2700 3011	151	2905 xxxx	76	3625 203x	193
2299 6011	34	2700 3017	179	291x xxxx	75, 76	3625 300x	192
2299 9xxx	35	2700 302x	151	292x xxxx	75, 76	3625 3010	192
22Px xxxx	111	2700 304x	151	2998 000x	80, 89, 92, 231, 234, 239 to 241	3625 3014	192
2600 xxxx	54	2700 306x	151	2998 001x	60, 123	3625 3016	192
2601 xxxx	56	2700 308x	151	2998 002x	60, 123	3625 3019	193
2609 0025	117, 123, 129, 130, 362	2700 31xx	151	2998 003x	60	3625 302x	193
2609 0063	129, 130, 362	2700 4011	151	2998 3080	80	3625 303x	193
2609 0080	117, 119, 123	2700 4017	179	2998 3120	80, 89, 92, 231, 234	3625 600x	192
2609 1100	117 to 119, 123	2700 402x	151	2998 3180	231, 234	3625 6010	192
2609 1160	117, 118, 123	2700 404x	151	2998 4080	80	3625 6014	192
2609 1200	117 to 119, 123	2700 406x	151	2998 4120	80, 89, 92, 231, 234	3625 6015	192
2609 2025	118, 119, 129, 130, 362	2700 408x	151	2998 4180	231, 234	3625 6016	192
2609 2050	117, 123	2700 41xx	151	2999 0xxx	612, 616	3625 6019	193
2609 2063	129, 130, 362	2709 0021	159, 161, 170, 173	2999 1xxx	612, 616	3625 602x	193
2609 208x	118, 119, 123	2709 0025	159, 161	2999 8707	64	3625 603x	193
2609 4xxx	118, 119, 123	2709 0040	161, 173	30xx xxxx	607	3629 4012	192, 196, 198
261x xxxx	63, 335, 393	2709 0041	159, 161, 170, 173	3115 xxxx	602	3629 4013	198
262x xxxx	63, 335, 393	2709 0061	159, 170	3117 xxxx	605	3629 7900	192, 196, 198, 225
263x xxxx	63, 335, 393	2709 0062	161, 173	3125 xxxx	602	3629 7901	75 to 77, 192, 193, 196 to 198, 225, 226, 228
2694 3014	54, 56, 61, 179, 330 to 332, 336, 383, 385, 387, 390, 392	2709 0081	159, 161, 170, 173	3127 xxxx	605	3629 7903	192, 196, 205
2694 3021	54 to 56, 61, 122, 129, 131, 330 to 332, 336, 383, 385, 387, 390, 392	2709 0121	159, 161, 170	316x xxxx	606	3629 7910	198, 249, 250, 252
2694 3051	54 to 56, 61, 122, 129, 131, 330 to 332, 336, 360, 362, 383, 385, 387, 390, 392	272x xxxx	162, 172	3211 xxxx	616	3629 7913	81, 192, 193, 196, 197, 205
2694 4014	54, 56, 61, 179, 330 to 332, 336, 347, 383, 385, 387, 390, 392	2798 3xxx	151, 153, 161	3215 xxxx	612	3629 9xxx	201
2694 4021	54 to 56, 61, 122, 129, 131, 330 to 332, 336, 347, 383, 385, 387, 390, 392	2798 4xxx	151, 153, 161	3221 xxxx	616	363x xxxx	194, 196
2694 4051	54 to 56, 61, 122, 129, 131, 330 to 332, 336, 347, 360, 362, 383, 385, 387, 390, 392	2798 6120	172	3225 xxxx	612	364x xxxx	190, 192
2698 3012	54, 62	2798 80xx	151, 153, 161	324x xxxx	620	3650 xxxx	240
2698 302x	54, 55, 62, 123	2798 8120	172	3261 xxxx	616	3655 xxxx	241
2698 305x	54, 55, 62, 123	2798 8122	161	3265 xxxx	612	366x xxxx	239
2698 308x	54, 55, 62, 123	2799 0001	75, 78, 612	3271 xxxx	616	367x xxxx	194
2698 312x	54, 55, 62, 123	2799 0002	75, 78, 612	3275 xxxx	612	3680 300x	190
2698 3199	123	2799 0005	78	3290 6xxx	612, 616	3680 308x	228
2698 3200	54, 55, 62	2799 001x	76, 79	3290 7xxx	613, 616	3680 31xx	228
2698 4012	54, 62	2799 002x	151, 153, 161	350x xxxx	89	3680 4xxx	190
2698 402x	54, 55, 62, 123	2799 0111	79	352x xxxx	231	3680 6xxx	228
2698 405x	54, 55, 62, 123	2799 0121	153, 161	3615 2005	196, 225	369x xxxx	588
		2799 0122	161	3615 2006	196	36Jx xxxx	228
		2799 1xxx	612	3615 2010	196	371x xxxx	249
		2799 3015	54, 55, 58, 117 to 119, 121, 330, 332, 334	3615 2011	196, 225	3729 40xx	249, 252
		2799 3018	54 to 56, 58, 117 to 119, 121, 330, 332, 334	3615 2012	196	3729 4532	249, 251
		2799 3019	54, 55, 58, 117 to 119, 121, 330, 332, 334	3615 2015	197, 226	3729 7540	249 to 251
		2799 7002	64, 337	3615 2016	197, 226	3729 7544	250, 251
				3615 202x	197, 226	3729 755x	250, 251
				3615 203x	197, 226	3729 8xxx	255
				3615 3005	196, 225	3729 900x	251

References	Pages
3729 901x	255
3729 902x	255
3729 904x	255
3729 906x	255
3729 908x	255
3729 99xx	251
3799 6012	151
3799 8xxx	255
3799 9xxx	255
3811 2063	195, 197, 226, 227
3811 208x	195, 197
3811 21xx	195, 197
3811 3063	195, 197, 226, 227
3811 308x	195, 197
3811 31xx	195, 197
3811 6063	195, 197, 226, 227
3811 608x	195, 197
3811 61xx	195, 197
3819 1120	204
3821 xxxx	191, 193
3829 7923	205
3829 9120	204
3829 9308	191, 195, 201
3829 9310	190, 194, 201
3829 9312	191, 195, 201
3829 9320	190, 191, 195, 201
3829 9325	191, 195, 201
3829 933x	191, 195, 201
3831 2005	194, 225
3831 2006	194
3831 2010	194
3831 2011	194, 225
3831 2012	194
3831 2015	195, 227
3831 2016	195, 227
3831 202x	195, 227
3831 203x	195, 227
3831 3005	194, 225
3831 3006	194
3831 3010	194
3831 3011	194, 225
3831 3012	194
3831 3015	195, 227
3831 3016	195, 227
3831 302x	195, 227
3831 303x	195, 227
3831 6005	194, 225
3831 6006	194
3831 6010	194
3831 6011	194, 225
3831 6012	194
3831 6015	195, 227
3831 6016	195, 227
3831 602x	195, 227
3831 603x	195, 227
3841 200x	190
3841 2010	190
3841 2014	190
3841 2015	190
3841 2016	190
3841 2019	191
3841 202x	191
3841 203x	191
3841 300x	190
3841 3010	190
3841 3014	190
3841 3015	190
3841 3016	190
3841 3019	191
3841 302x	191
3841 303x	191

References	Pages
3841 600x	190
3841 6010	190
3841 6014	190
3841 6015	190
3841 6016	190
3841 6019	191
3841 602x	191
3841 603x	191
3850 xxxxx	250
3859 6011	250, 252
3861 2004	249
3861 2005	249
3861 2006	250
3861 201x	250
3861 202x	250
3861 203x	250
3861 3004	249
3861 3005	249
3861 3006	250
3861 301x	250
3861 302x	250
3861 303x	250
3861 6004	249
3861 6005	249
3861 6006	250
3861 601x	250
3861 602x	250
3861 603x	250
3870 300x	194
3870 3010	194
3870 3011	194
3870 3015	195
3870 3016	195
3870 302x	195
3870 303x	195
3870 600x	194
3870 6010	194
3870 6011	194
3870 6015	195
3870 6016	195
3870 602x	195
3870 603x	195
3880 300x	190
3880 3010	190
3880 3014	190
3880 3015	190
3880 3016	190
3880 3019	191
3880 302x	191
3880 303x	191
3880 600x	190
3880 6010	190
3880 6014	190
3880 6015	190
3880 6016	190
3880 6019	191
3880 602x	191
3880 603x	191
3890 2xxx	228, 229
3890 3xxx	228, 229
3890 8xxx	226, 227
3890 9xxx	226, 227
3894 xxxxx	204
3898 202x	250, 255
3898 203x	250, 255
3898 2080	191, 193, 195, 197, 203, 228, 229, 250, 255
3898 2120	191, 193, 195, 197, 203, 228, 229
3898 302x	250, 255
3898 303x	250, 255

References	Pages
3898 3080	191, 193, 195, 197, 203, 228, 229, 250, 255
3898 3120	191, 193, 195, 197, 203, 228, 229
3898 402x	250, 255
3898 403x	250, 255
3898 4080	191, 193, 195, 197, 203, 250, 255
3898 4120	191, 193, 195, 197, 203
3899 0400	200
3899 1xxx	204
3899 2xxx	229
3899 31xx	204
3899 33xx	204
3899 3U12	229
3899 6011	193, 197, 198, 226, 228
3899 7011	193, 197, 198, 228
3899 7911	193, 197
3899 8xxx	227
3899 9xxx	227
38U1 202x	229
38U1 203x	229
38U1 205x	228, 229
38U1 206x	228, 229
38U1 208x	228, 229
38U1 21xx	228, 229
38U1 302x	229
38U1 303x	229
38U1 305x	228, 229
38U1 306x	228, 229
38U1 308x	228, 229
38U1 31xx	228, 229
3954 2020	153, 161, 172, 255, 353
3954 2025	161, 172
3954 204x	153, 161, 172, 255, 353
3954 2060	153, 161, 172, 255
3954 302x	151, 153, 255, 353
3954 3040	151, 153, 255, 353
3954 3041	153, 255, 353
3954 3060	151, 153, 161, 172, 255, 353
3954 3120	151, 153, 353
3954 402x	151, 153, 255, 353
3954 4040	151, 153, 255, 353
3954 4041	153, 255, 353
3954 4060	151, 153, 255, 353
3954 4120	151, 153, 353
3990 1xxx	91, 233, 243
3990 2012	233, 243
3990 202x	91, 233, 243
3990 204x	91, 233, 243
3990 22xx	91, 233, 243
3990 2839	228, 229
3990 30xx	91, 233, 243
3990 31xx	91, 233, 243
3990 32xx	91, 233, 243
3990 33xx	91, 233, 243
3990 3839	228, 229
3990 4xxx	91, 233, 243
3990 7xxx	226, 227
3990 8xxx	226, 227
3990 9xxx	226, 227
3991 xxxxx	91, 233, 243
3992 xxxxx	233, 243
3993 xxxxx	91
3994 0xxx	204
3994 13xx	240, 241, 244
3994 14xx	240, 241, 244
3994 1901	204, 269
3994 1902	204, 244
3998 2016	190 to 197, 203, 269

References	Pages
3998 2025	191, 193, 195, 197, 203, 228, 229, 269
3998 3016	79, 190 to 197, 203, 269
3998 3025	79, 191, 193, 195, 197, 203, 228, 229, 269
3998 3040	89, 92, 239 to 241, 244
3998 3063	89, 92, 231, 234, 239 to 241, 244
3998 3120	239 to 241, 244
3998 4016	79, 190 to 197, 203, 269
3998 4025	79, 191, 193, 195, 197, 203, 269
3998 4040	89, 92, 239 to 241, 244
3998 4063	89, 92, 231, 234, 239 to 241, 244
3998 4120	239 to 241, 244
3999 0001	192, 196, 202
3999 0002	192, 196, 202
3999 0003	203
3999 0021	75, 76, 78, 79, 192, 193, 196, 197, 202, 225, 226, 228
3999 0022	75, 76, 78, 79, 192, 193, 196, 197, 202, 225, 226
3999 0031	89, 92, 231, 233, 239 to 241, 243
3999 0041	79, 203
3999 0042	79
3999 0043	79
3999 0044	79
3999 005x	89, 92, 231, 233, 239 to 241, 243
3999 0103	203
3999 011x	92, 233, 243
3999 014x	203
3999 02xx	203
3999 0600	194, 195, 202
3999 070x	30, 34, 75, 76, 78, 79, 111, 113, 151, 153, 190, 191, 193, 197, 202, 225 to 229, 249, 250, 254
3999 0710	194, 202, 254
3999 0720	151, 153
3999 2839	229
3999 31xx	91, 232, 244
3999 32xx	91, 232, 244
3999 34xx	91, 232, 244
3999 3839	229
3999 4110	91, 232, 244
3999 6012	89, 90, 239 to 242
3999 6013	89, 90, 242
3999 6107	93
3999 6117	234, 245
3999 6201	239, 240, 242
3999 6203	89, 90, 231, 232
3999 7007	93, 234
3999 701x	227
3999 702x	227
3999 703x	227
3999 80xx	227
3999 8104	93, 234, 245
3999 82xx	197, 203
3999 83xx	197, 203
3999 84xx	197, 203
3999 8906	196, 203
3999 8912	196, 197, 203
3999 9xxx	227
3999 Uxxx	254
3Vxx xxxxx	620
4100 7xxx	332
4100 90xx	332
4100 91xx	332

References list

References	Pages	References	Pages	References	Pages	References	Pages
4100 98xx	347	449x xxxx	325, 326	4850 3033	423	5023 01xx	579
4109 0019	330 to 332, 334, 383, 385, 387, 390, 392	4500 001x	584	4850 3034	423	5023 03xx	574
4109 0021	129, 130, 330 to 332, 335, 347, 360, 362	4500 002x	584	4850 3035	425	5023 04xx	574
4109 0025	330 to 332, 334, 362, 383, 385, 387, 390, 392	4500 003x	585	4850 3036	425	5023 6110	572
4109 003x	330 to 332, 334, 383, 385, 387, 390, 392	4500 01xx	583	4850 3037	425	5024 5xxx	568
4109 005x	330 to 332, 334, 383, 385, 387, 390, 392	4501 xxxxx	582	4850 3038	425	5024 6xxx	564
4109 0063	330 to 332, 334, 362, 383, 385, 387, 390, 392	4502 xxxxx	583	4850 4xxx	470	5024 7xxx	566
4109 008x	330 to 332, 334, 383, 385, 387, 390, 392	4503 xxxxx	583	4853 xxxxx	435	5024 8xxx	566
4109 012x	330 to 332, 334, 383, 385, 387, 390, 392	4504 xxxxx	583	4899 0011	447, 453, 459, 463	5024 9000	564, 566
4109 0160	330 to 332, 334, 383, 385, 390, 392	4505 xxxxx	583	4899 01xx	486	5024 9001	564, 566, 568
4109 02xx	335, 393	4510 xxxxx	557	4899 02xx	487	5024 9002	574
4109 03xx	335, 393	4511 xxxxx	557	4899 03xx	487	5024 9031	564
4109 1002	337, 347, 363	4512 xxxxx	557	4941 36xx	517	5024 9032	566
4109 1004	337	4513 xxxxx	557	4941 3723	517	5024 9033	568
4109 1006	337, 347, 363	4514 xxxxx	557	4941 3724	519	5024 9034	564
4109 160	387	4516 xxxxx	561	4941 3740	517	5024 9041	564
4109 2007	337	4518 xxxxx	559	4941 3741	519	5024 9042	566
4109 202x	360, 362	47xx xxxxx	524	4942 xxxxx	521	5024 9044	564
4109 206x	360, 362	4825 001x	439	4950 0xxx	525	5025 5100	570, 571
4109 4xxx	347	4825 0080	447	4950 6xxx	463, 524	5025 5105	570
4109 8507	64	4825 0082	447	4981 04xx	535	5025 511x	570
4116 xxxxx	628	4825 0088	447, 453, 459, 463	4981 05xx	533	5025 512x	570, 571
4119 xxxxx	629	4825 0089	447, 453, 459, 463	4981 10xx	529	5025 513x	570, 571
4150 xxxxx	351	4825 0090	390, 396, 453, 459	4981 15xx	531	5025 52xx	571
4158 xxxxx	172, 351, 353	4825 0092	390, 396, 453, 459, 463	4982 04xx	539	5026 xxxxx	581
4159 0021	161, 172, 353	4825 0093	390, 396, 453, 459	4982 0719	537	5027 xxxxx	573
4159 0022	161, 172, 351, 353	4825 0094	390, 396, 453, 459	4982 14xx	539	5028 0410	580
4159 2xxx	351, 353	4825 0097	453	4982 17xx	537	5028 0411	580, 589
4159 3xxx	351, 353	4825 01xx	443	4982 2xxx	527	5028 0412	580, 589
4159 4xxx	351, 353	4825 0200	447	4983 xxxxx	541	5028 0413	580, 589
4190 xxxxx	331	4825 0201	453	4985 xxxxx	545	5028 0415	580, 589
4199 3018	159, 160, 170, 171, 352	4825 0202	453	4986 xxxxx	545	5028 042x	589
4199 3019	160, 171, 352	4825 0203	390, 396, 453, 459, 463	4987 xxxxx	545	5028 045x	589
4199 4012	351, 352	4825 0204	390, 396, 453, 459, 463	499x xxxxx	504	5028 047x	589
4199 5012	56, 57, 331 to 333, 360	4825 0205	453	5000 000x	595	5031 xxxxx	575
4199 70xx	351	4825 0206	453, 459	5000 0010	593	5032 xxxxx	576
4199 7146	332, 333	4825 0207	459	5000 0011	593	5038 xxxxx	576
4199 7149	352	4825 0208	453, 459, 505	5000 0012	593	5039 xxxxx	576
41Ax xxxxx	330	4825 0209	453, 459, 505	5000 0015	595	5119 44xx	557
41Px xxxxx	360	4825 021x	463	5000 0016	595	5119 45xx	557
4212 xxxxx	628	4825 1xxx	453	5000 0017	594	5119 46xx	574
4215 xxxxx	625	4825 4xxx	471	5000 0018	595	5119 5xxx	595
4220 xxxxx	317	4826 xxxxx	481	5000 0023	593	52xx xxxxx	595
4221 xxxxx	624	4850 3000	423	5000 0024	593	5400 3016	62, 80, 192, 193, 196, 197, 205, 585
4230 xxxxx	317	4850 3001	423	5000 0025	593	5400 302x	62, 80, 93, 193, 197, 205, 245, 585
4231 xxxxx	624	4850 3002	423	5000 0026	593	5400 304x	62, 80, 93, 193, 197, 205, 245, 585
4240 xxxxx	317	4850 3003	425	5000 0027	594	5400 3063	62, 80, 93, 245, 585
4241 xxxxx	624	4850 3004	425	5000 0028	593	5400 32xx	585
4250 xxxxx	317	4850 3005	427	5000 0029	593	5400 4016	62, 80, 192, 193, 196, 197, 205, 585
4259 1xxx	317, 318	4850 3006	427	5000 003x	593	5400 402x	62, 80, 93, 193, 197, 205, 245, 585
4259 2xxx	317, 318	4850 3007	427	5000 0041	35, 594	5400 404x	62, 80, 93, 193, 197, 205, 245, 585
4259 3xxx	317, 318	4850 3008	429	5000 0042	594	5400 4063	62, 80, 93, 245, 585
4259 4xxx	317, 318	4850 3009	429	5000 0043	594	5410 xxxxx	586
4259 5xxx	317, 318	4850 3010	431	5000 0044	594	5411 3xxx	61, 590
4259 9xxx	317	4850 3011	431	5000 0045	595	5411 4016	590
429x xxxxx	317	4850 3012	427	5000 0046	595	5411 402x	61, 590
440x xxxxx	613, 616	4850 3013	427	5000 0047	595	5411 404x	61, 590
441x xxxxx	627	4850 3014	429	5000 0051	35, 594	5411 406x	61, 590
4430 xxxxx	325	4850 3015	429	5000 0057	593	5411 6016	61
4439 0001	325, 326	4850 3016	433	5000 0058	593	5412 xxxxx	588
4439 5xxx	325	4850 3017	429	5000 006x	595	5413 xxxxx	590
444x xxxxx	325	4850 3019	421	5000 0100	594	5414 xxxxx	586
		4850 3020	421	5000 012x	593	5420 0xxx	587
		4850 3025	427	5000 013x	593	5420 2xxx	587
		4850 3026	427	5000 03xx	594		
		4850 3027	429	5000 1021	593		
		4850 3028	429	5000 13xx	594		
		4850 3029	421	5000 4xxx	594		
		4850 3030	421	5021 xxxxx	578		
		4850 3031	423	5022 0xxx	578		
		4850 3032	423	5022 5110	572		

References	Pages
5420 3xxx	587
5420 4xxx	586
5421 xxxx	587
5601 0xxx	439, 443, 447, 453, 459, 463, 481
5601 5005	263
56Dx xxxx	305
56PV 0xxx	305
56PV 1xxx	305
56PV 9901	300
5701 0xxx	263
5701 9xxx	264
5702 0xxx	263
5702 5xxx	263
5702 9xxx	264
5703 0xxx	263
5703 5xxx	263
5703 9xxx	264
5704 xxxx	264
58xx xxxx	594
5Axx xxxx	275
5Fxx xxxx	275
6012 0000	279, 439, 443, 447, 453, 459, 463, 481
6012 0001	279
6012 0002	279
6012 0004	279
6012 0006	279
6012 0008	279
6012 001x	279
6012 002x	279
6012 003x	279
6013 xxxx	279
6019 0000	279, 282
6022 xxxx	279
6023 xxxx	279
6029 0000	201, 279, 282
6032 xxxx	279
6033 xxxx	279
6039 0000	201, 279, 282
605x xxxx	279

References	Pages
606x xxxx	279
60Px xxxx	300
63xx xxxx	269
6401 0011	282
642x xxxx	201, 280 to 282
643x xxxx	270
6441 0005	201, 280 to 282
6500 0001	267
6500 0002	267
6500 0003	267, 307
6500 0004	267
6500 0010	267
6500 0011	267
6500 0012	267, 307
6500 0013	267
6500 0014	267
6500 0020	267
6500 0021	267
6500 0022	267, 307
6500 0023	267
6500 0030	267
6500 0031	267, 307
6500 0032	267
6500 0033	267
6500 004x	268
6500 1010	267, 290
6500 103x	267
6500 11xx	267
6501 1010	267, 268, 291
6501 1011	267, 268, 292
6501 1012	267, 268, 293
6501 1013	267, 268, 293
6501 103x	267
6501 111x	267, 268
6501 113x	267
6510 xxxx	267
6511 1010	267
6511 1011	267, 307
6511 1012	267
6511 1013	267
6511 103x	267

References	Pages
65Px xxxx	300, 307
6600 xxxx	280
6601 xxxx	281
6692 xxxx	280
6693 xxxx	281
6702 xxxx	280
6703 xxxx	281
6712 xxxx	280
6713 xxxx	281
6722 xxxx	280
6723 xxxx	281
6732 xxxx	280
6733 xxxx	281
6746 xxxx	280
6747 xxxx	281
6852 xxxx	280
6853 xxxx	281
6862 xxxx	280
6863 xxxx	281
6872 xxxx	280
6873 xxxx	281
6882 xxxx	280
6883 xxxx	281
6896 xxxx	280
6897 xxxx	281
6A10 xxxx	273
6A1M xxxx	274
6A20 xxxx	273
6A2M xxxx	274
6A30 xxxx	273
6A3M xxxx	274
6A4x xxxx	273
6B1x xxxx	273
6B20 xxxx	273
6B2M xxxx	274
6B30 xxxx	273
6B3M 0400	274
6B40 xxxx	273
6B4M 0500	274
6C10 01xx	273
6C10 02xx	273

References	Pages
6C10 031x	273
6C10 035x	274
6C10 04xx	274
6C1M xxxx	274
6C2x xxxx	274
6C3x xxxx	274
6Dxx xxxx	274
6F10 xxxx	273
6F1M xxxx	274
6F20 xxxx	273
6F2M xxxx	274
73xx xxxx	270
7739 0025	595
7769 9999	205, 245
9503 xxxx	375
9505 xxxx	375
9506 xxxx	375
9509 4001	376
9509 4012	375, 376
951x xxxx	375
952x xxxx	383
953x xxxx	383
954x xxxx	385
955x xxxx	387
957x xxxx	390, 391
9594 xxxx	375, 376
9599 0xxx	397
9599 201x	397
9599 2020	391, 397
9599 4001	375
9599 4002	375, 376
9599 4003	375, 376
9599 4004	376
9599 4005	376
Nxxx xxxx	589
SA10 420x	593
SA10 421x	594
SA12 420x	593
SA12 421x	594
SA13 420x	593
SA13 421x	594

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