

UK General Catalogue

SOLUTIONS FOR CONTROL & POWER **2011 - 2012**



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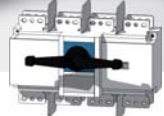
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"Welcome to your new SOCOMEC catalogue. To make it even easier, we have grouped all of our products into **nine major families**. Our flagship products are listed below. To find out all about our comprehensive ranges, let our 'helping hands' be your guide. Happy reading."



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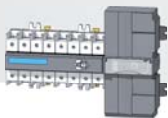
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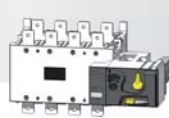
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A high-tech organization at your service

⇒ The company on your doorstep

We are wholly committed to providing you with the best response to your needs. This is why our commercial network is fully integrated and has a perfect understanding of your industrial situation. And depending on the case, each of the departments involved in your project will work directly with you. With SOCOMEC, you will always find the specialist contact you need right on your doorstep.

⇒ The right product for you

We offer you the widest and most varied range of switching and protection systems available: thanks to wide-ranging adaptation of standard references, our product families cover an extensive scope of applications. And since we use modular design as our basis, and offer a complete set of easy-to-fit accessories, you can benefit from numerous additional functions, at the best possible price.

⇒ Continuous innovation

Technological foresight is a sixth sense possessed by each of our departments. And thanks to our many technological partnerships, we are constantly enriching our expertise.

Therefore, it is no surprise that our extensive R&D resources allow us to bring your expectations to life every day.

Our innovations benefit your performance.



JANUS 2008
DE L'INDUSTRIE

⇒ "JANUS de l'industrie"

The range of Type-S handles was awarded the "JANUS de l'industrie" industrial design prize. Awarded by the French design institute, with the backing of the Ministry of Foreign Trade, this prestigious label recognised a range that has been very popular with our customers.



SITE 149 A



SITE 476 A



SITE 041 A

⇒ Meeting deadlines

Thanks to the real-time management of orders and deliveries that we carry out in close collaboration with our transporters, you can count on us to honour our commitments to the full.

⇒ Direct and friendly contact

Another area in which SOCOMEC lays claim to a personal "style": Personal commitment to you, openness and friendliness, solidarity within a shared project, desire to give a response which meets your needs; these convictions guide every man and woman in our teams.

⇒ Integrated production with shorter lead-times

As an independent manufacturer, SOCOMEC is in charge of all its strategic skills areas and offers the best progression in terms of flexibility.

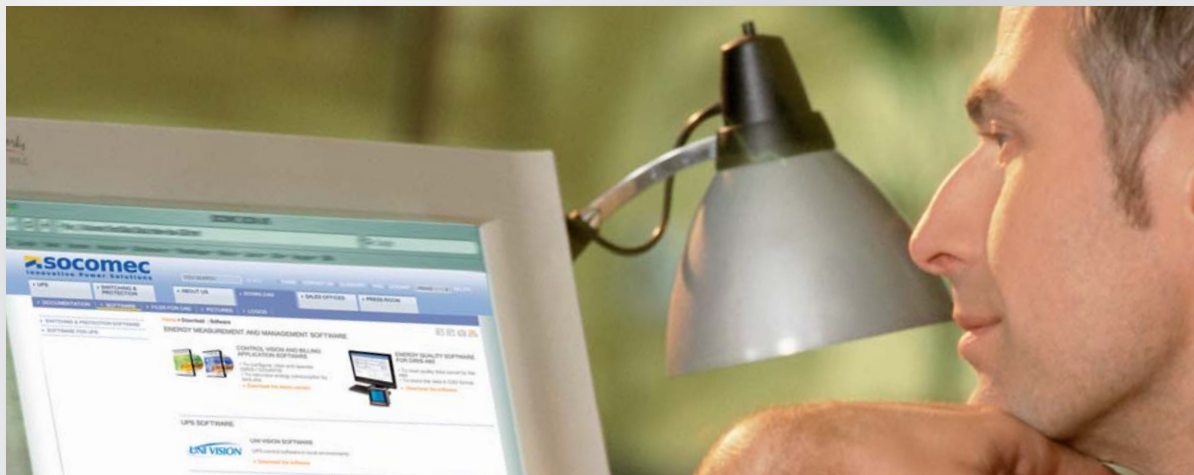
Thanks to our integrated production and industrial organisation into autonomous cells, you can benefit from impeccable manufacturing quality and perfectly controlled deadlines.

⇒ Your Guarantee of Satisfaction

An integrated ASEFA-LOVAG approved laboratory, numerous homologations and certifications testifying that our devices comply with international standards, quality recognised and proven on a daily basis, universality and adaptability to your specific configuration, this is what we offer to ensure your satisfaction.



CORPO 175A



SY.DIV.051.A.GB



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See the full presentation of the SOCOMEC group's applications, products and services on our website:
www.socomec.com

⇒ How to use a 2D code

1. Download 2D code reader from your smart phone, eg: QR code scanner pro, Mobiletag, ScanLife 2D code reader...
2. Launch the application from the Start menu of your mobile
3. Place the lens of your mobile's camera above or in front of the code and take a picture, or wait until the image is recognized (it depends on the reader)
4. A web page opens and provides access to the destination's page on the www.socomec.com website.

⇒ Access general information on the SOCOMEC group



FLCD_URL_002_A.GB

⇒ Download documentation



FLCD_URL_004_A.GB

All the brochures, catalogues and technical manuals.

⇒ Locate our sales offices



FLCD_URL_003_A.GB

Find your contacts all over the world.

⇒ Download dxf or stp diagrams



FLCD_URL_005_A.GB

Usable with Autocad or any other CAD software to allow products to be embedded in your electrical diagram.

⇒ Register on our exclusive DIRIS and ATyS spaces

For more detailed information on these 2 ranges.

⇒ Find out about our job offers

Come and share in the energy of an international group with great development potential.

⇒ Download photos

Available in different formats and free to use.

⇒ Download software

For quick and efficient use of our supervision software.

Adapted services

⇨ Pierre Siat test laboratory

Since 1965, SOCOMEC has had an integrated test laboratory at the heart of its production site. This laboratory is a member of ASEFA (Association de Stations d'Essais Française d'Appareils Électriques [French Association of Certified Testing Systems]) and is accredited by COFRAC (Comité Français d'Accréditation). Now, you can benefit from SOCOMEC's substantial expertise by having your own tests conducted within this specialist facility. Our team of dedicated professionals will assist you in carrying out tests for compliance with French, European or world standards.

Types of test: dielectric tests, thermal tests, mechanical endurance tests, systems tests, climatic tests, short circuit tests.



CORPO 163A

⇨ Metrology

Can you guarantee the quality of the measurements that you take during the development, manufacture or testing of your products? SOCOMEC is pleased to offer you our wealth of metrological expertise to verify and certify your measuring equipment.

⇨ Homologation and certification

Our laboratory is able to provide homologation certificates and declarations of conformity and performance on request.



APPLI 079 A

socomec
Innovative Power Solutions

Testing laboratory
rue de Westhouse
B.P. 10
67230 BENFELD
Tel. (33) 03 88 57 41 41
Fax (33) 03 88 57 42 20

DECLARATION DE PERFORMANCE N° DP 10110 CPR
Suivant spécifications :
CEI 60947-3 (2001-05)

MATERIEL ENSSAYÉ :

Désignation : Interrupteur sectionneur
Type : SIRCO M DC 40A
Référence : 22DC3004 + 22DC1004
Calibre : 40A
Constructeur : SOCOMEC S.A. 67230 BENFELD FRANCE

Caractéristiques assignées :
The above mentioned product satisfies to the following characteristics:

• Rated current (kA)	40	40	40	40	40
• Rated operational voltage DC (kV)	720 V	440 V	500 V	450 V	800 V
• Utilisation category	DC-21B	DC-21B	DC-21B	DC-21B	DC-21B
• Rated operational current (kA)	32A	32A	32A	25A	25A
• Number of poles	3	4	4	5	6

Pièces jointes : /
Date : 26 Août 2008
Le Responsable

[Signature]
David REY

[Signature]
Christophe Mathias

[Stamp: LABORATOIRE D'ESSAIS ELECTRIQUES PIERRE SIAT 67230 BENFELD FRANCE]

[Stamp: Le Responsable Essais, Certification]

Document n° de référence de 11 428 0216 - 1114 - homologation B 501 025 146 - pour 100 000 140 202016 - 1114 - homologation 1700 01
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PCD 03 010181

Anlage : 10 ans per SCP-LAB

Application Guide

INDUSTRIAL SWITCHING & PROTECTION SYSTEMS **2011**

U = RI

N

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FLCD_UFR_010_A_GB



L.V. distribution

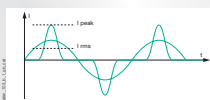
Mains quality (continued)

Harmonics (continued)

Current peak factor (fp)

With non-linear loads, current distortion can be expressed by peak factor:

$$fp = \frac{I_{peak}}{I_{rms}}$$



voltage distorted by harmonics

Examples of fp values:
 - resistive charge (pure sinusoidal wave): $\sqrt{2} = 1.414$
 - multimedia computer: 2 to 2.5
 - PC work station: 2.5 to 3
 - printers: 2 to 3
 These few peak factor values show that the current wave can differ greatly from a pure sinusoid.

Harmonic number

Harmonic frequencies are multiples of mains frequency (50 Hz). This multiple is called the harmonic number.
 Example: The 5th harmonic current has a frequency of $5 \times 50 \text{ Hz} = 250 \text{ Hz}$. The 1st harmonic current is called the "fundamental".

Mains harmonic currents

The current circulating in the network is the sum of pure sinusoidal current (called "fundamental") and a certain number of harmonic currents, depending on the load type.

Table A: mains harmonic currents.

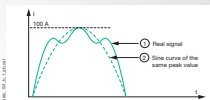
Source	Harmonic number																			
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Rectifiers	1 half wave	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	2 half waves	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3 half waves	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	6 half waves	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Gas discharge lamp	12 half waves	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Arc furnace	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Example: A gas discharge lamp only produces the 3rd, 5th, 7th, 9th, 11th, and 13th harmonic currents. Even-number harmonic currents (2, 4, 6 etc.) are absent.

Measuring device distortion

Ferromagnetic measuring devices (ammeters, voltmeters, etc.) are designed to measure sinusoidal parameters of a given frequency (generally 50 Hz). The same applies to digital devices other than sampling devices. These devices give false readings when the signal is subjected to harmonic distortion (see example below).

Only devices giving true rms values integrate signal distortions and hence give real rms values, e.g. the DFRS.



Measurement distortion

Example:
 signal I is distorted by the third harmonic. The rms value of a sine wave with the same peak value would be:
 $\frac{100 \text{ A}}{\sqrt{2}} = 70 \text{ A}$

Download documentation

Link to the download: http://www.socomec.com/application-guide-scp_en

Service & Technical Assistance: Your peace of mind assured

⇒ **Manufacturer's expertise**

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

⇒ **Optimum service guaranteed**

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 comprehensively managed

Monitoring of energy consumption within a production unit is one of your primary operational considerations. For this our consultant engineers implement SOCOMEC's range of market-leading energy measurement and management systems.

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.

Cost-effective electrical usage

The presence of a specialist enables you to reduce your reactive energy costs, limit your energy losses by Joule effect, cut end of line voltage drops or increase your available active power... A real return on investment.



CORPO 154A

↻ The security of a fully committed partner

Specially adapted skills

Our service team is formed of specialists in our fields, with hands-on experience and well-acquainted with the maintenance of industrial electrical systems. You get the benefits from a dual skills base: technical expertise relating to the products that have been installed and practical knowledge of your usage needs.

Reassuringly close at hand

Our geographical coverage means that we are close to every user, ensuring we can respond to any request and guarantee comprehensive assistance, from technical diagnostics before repair to implementing solutions specifically adapted to your installations.

Constantly attentive to your needs

True to our principles, we favour direct and friendly contact. Our repairs are targeted responses to one, single problem: your own. Our engineers are attentive to your needs to bring you the most appropriate technical support and advice so you can plan your investments with confidence.



CORPO 164A

↻ Adapted services

Commissioning

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

Engineering your installation

A broad range of features tailored to respond to the particular requirements and limitations of your electrical installation, and to help you deal with specific operational demands.

Training

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

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.

Engineering your project

From initial studies to operating your system, our team will guide you, ensuring full commitment.

Do not hesitate to contact our Socomec sales office to discuss a service package tailored to your requirements.



CORPO 155A

Equipment for public utility networks and substations

In compliance with the specifications from its customer EDF, SOCOMEC is designing switching and protection

systems specifically for transformer substations and public utility networks.



SITE 343 A

HVB generation station



SITE 140 A

➤ Power station



DP 022 A

CT short-circuiter



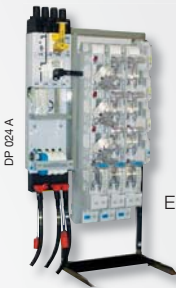
UA 001 A

Auxiliary services panel

➤ HVA/LV transformer substation and LV distribution substation

Feeder pillars

The "TIPI" public utility boards (specification EDF HN 63 S 61) are marketed in France by our subsidiary SOCOMEC GUERIN.



DP 024 A

EDF "TIPI" switchboard

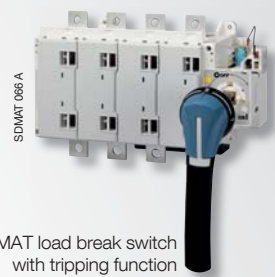


General load breaking



SIRCO 023 A

SIRCO load break switch with visualised breaking



SIDERMAT 066 A

SIDERMAT load break switch with tripping function

Load break switch, fuse holder current transformer and energy monitoring.



DP 033 A

DIN type switchboard (for TN earthing system distribution)

048 C RANGE

Circuit breaker: BT fuses



Energy management and control: DIRIS system

Equipment for healthcare buildings

The provision of electricity in healthcare buildings presents particular challenges: the availability of reliable electrical power is an absolute imperative driven by the need to guarantee the quality of patient care and the obligation to ensure their safety.

This requirement is now coupled with the need to improve the energy efficiency of premises for sustainable management of installations.



SITE 310 A



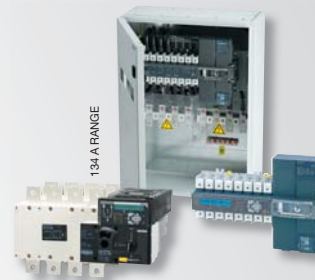
SITE 310 A



NHC 03-2008

Power supply redundancy with ATyS and ATyS M source changeover switches

Essential for guaranteeing the safety of electrical energy in critical sectors, source changeover enable automatic switching to a generator set or other network if the main supply circuit fails (normal/emergency switching).



134 A RANGE



APPLI 243 A

100% energy availability in operating areas with the IT medical power distribution unit

The IT medical cabinet ensures the high availability distribution of high quality power. It is a product of SOCOMEC's expertise in the fields of source switching, ISOM insulation monitoring and uninterruptible power supply. The IT medical cabinet meets comprehensive specifications:

- Compliance with, amongst others, the NFC 15-211 and CEI 60364-7-710 standards.
- Double input via an ATyS M source changeover switch, ensuring automatic control of switching between the two sources.

- Distribution including:
 - an ISOM insulation monitoring system
 - automatic fault locator.
- uninterruptible power distribution based on NeTYS range of UPS.



APPLI 243 A

Energy efficiency

The new DIRIS and COUNTIS ranges constitute a global response by SOCOMEC to the needs of installers, integrators and users in industry and the service sector. All these elements are easily interconnected, to enable exchange and processing of the available information, and to ensure efficient system monitoring. They comply with the new IEC 61557-12 standard relating to PMDs (Performance measuring & monitoring devices).



117 B RANGE

COUNTIS E range



132 A RANGE

DIRIS A range



124 A RANGE

DIRIS N range

Equipment for IT centres and buildings

In a very large number of buildings, the availability of reliable electrical power is an absolute imperative, with clear economic or security-related consequences.

This requirement is now coupled with the need to significantly improve the energy efficiency of premises for sustainable management of installations.



SITE 131 A



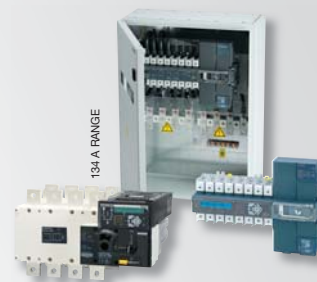
SITE 468 A



SITE 374 A

➤ Power supply redundancy with ATyS and ATyS M source changeover switches

Essential for guaranteeing the safety of electrical energy in critical sectors, source changeover enable automatic switching to a generating set or other network if the main supply circuit fails (normal/emergency switching).



134 A RANGE

➤ Energy efficiency

In service sector buildings, controlling the heating, ventilation, air conditioning and lighting, setting up a Building Management System (BMS) and, last but not least, correcting the power factor allow consumption to be reduced by up to 30%.

For the user, the most important thing is to know the consumption according to three criteria: the geographical location, the use (ventilation, lighting, etc.) and the type of energy.

For each stage: concrete, interconnectable solutions

The new DIRIS and COUNTIS ranges constitute a global response by SOCOMEC to the needs of installers, integrators and users in industry and the service sector. All these elements are easily interconnected, to enable exchange and processing of the available information, and to ensure efficient system monitoring. They comply with the new IEC 61557-12 standard relating to PMDs (Performance measuring & monitoring devices).

Measurement

COUNTIS E products meter power consumed by loads, thereby enabling control and allocation of consumption. They are MID certified and communicate via RS485.



117 B RANGE



COUNTIS E range

Management

Besides metering functions, the new multifunction DIRIS A power measurement units provide network monitoring and optimisation via alarm management and monitor electrical apparatus distribution and remote control parameters. They communicate via Ethernet and have temperature modules.

132 A RANGE



DIRIS A range

Analysis

Also covering the metering and monitoring functions, the DIRIS N guarantees an analysis of the quality of the energy provided, as per the criteria defined in the EN 50160 standard, and supplies a detailed analysis of the 'pollution' (harmonic, inter-harmonic, transients, flicker effects, etc.).

124 A RANGE



DIRIS N range

Communication

The CONTROL VISION software allows all the electrical readings taken to be displayed, and the power consumption of various workstations in a building or data centre to be read.

Equipment for Photovoltaic applications

Our expertise in the world of controlling and protecting electrical installations has quite naturally been expressed in both standard solutions and those adapted to photovoltaic applications. Whatever the type of architecture, we can offer breaking and

protection systems adapted to each application from 2kWc to tens of MWc. Our modular designs ensure installation is exceptionally easy, providing a wide range of functionalities.

↪ Main applications



Residential

Electric installations up to approximately 5 kW are affected by this application. It is composed of panels installed on house roofs which are mainly used for electric equipment.



Commercial

Electric installations up to approximately 250 kW are affected by this application. It is composed of panels installed on terrace roofs, skylights, glass sections or on building facades.



Solar parks

Electrical installations of several MW are affected by this application designed for the resale of the produced energy to distributors (EDF...). It is composed of solar panels installed in fields of several acres.

↪ Safe operations

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

For load breaking on a photovoltaic chain, generator set or UPS, DC side, only SIRCO PV devices can:

- isolate raised DC voltages
- break on load and in complete safety.

↪ Protection of installation

Fuses need to be installed to ensure protection of the panels against reverse currents or protection of the photovoltaic generator pipes. These fuses, which are type gPV, are able to interrupt weak DC fault currents. Depending on its location, the size of the photovoltaic generator may make it a considerable antenna in the event of a storm (destructive voltage surges). Setting up dedicated SURGYS PV surge arrestors will significantly lower this risk.

↪ Fault prevention

In a non-polarised installation, the ISOM AM480 PIC will allow any insulation fault to be monitored as a preventative measure.

In a polarised installation, the RESYS class B earth leakage relay will detect the fault thanks to its ability to measure DC homopolar currents.



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SIRCO M and MV	18
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SIRCO polyester enclosure with front operation	493
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Load break switches

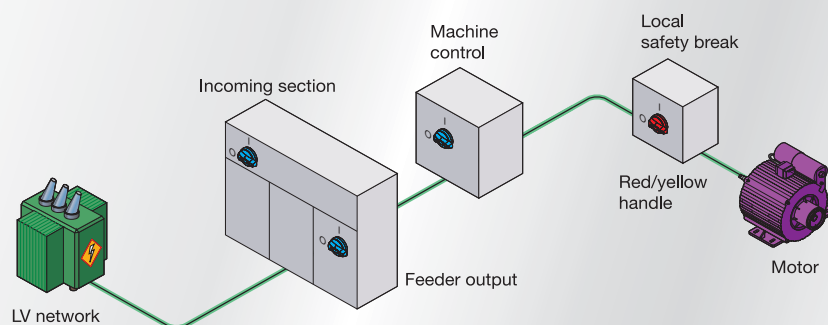


Load break switches for machine controller power distribution



Evolved 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 largest 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 of our products in our selection guide on the next page.**



We have developed numerous **special products**: switches with over rated 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 perfect solution in the next few pages.

The essential

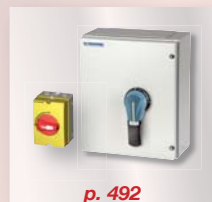
Load break switches for machine control



Load break switches for power distribution



Load break switches enclosed solutions



➔ **Discover our complete selection guide** (see next page)

➔ **Need a suggestion?**
We will help you find the best solution for your application.

➔ **A special requirement?**
SOCOMEC creates specific products. Please feel free to consult us.

Choosing the right load break switches

Depending on their rating, **SOCOME** load break switches can be used to control machines or power distribution. The selection guide gives an indication of general uses.

In addition to the rating, the other criteria in your selection include:

- fully **visible breaking***
- **tripping function****
- **motorised operation**

Please do not hesitate to contact us for suggestions or any special requirement.

* Fully visible breaking is used for low voltage metering and in applications where, for safety reasons, the break must be made fully visible in a more explicit way.

** Tripping function is used to remotely control the break in the event of an emergency break or automatic break relating to protection relays. It can also be used, when power is restored, to avoid erratic start-ups of machine equipment.



➔ Need an enclosed switch?

SOCOME offers you a range of local safety enclosures made from sheet metal or polyester.



See p. 492

Selection guide

➔ Load break switches for machine control



Manually operated switches



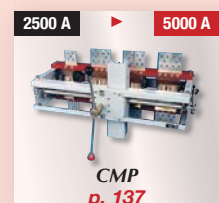
Tripping switches



➔ Load break switches for power distribution

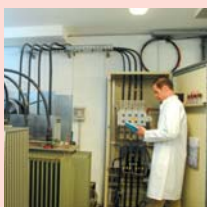
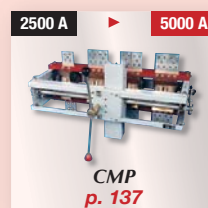


Manually operated switches

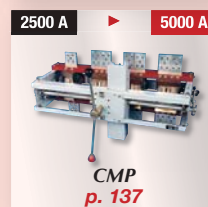
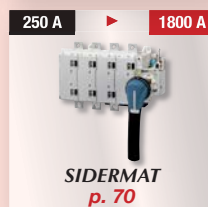




Fully visible breaking switches



Tripping switches



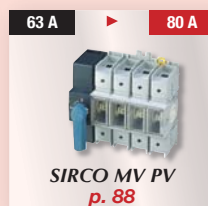
Motorised control switches



➔ Load break switches for **direct current (DC)** applications



Manual or motorised control switches



➔ **UL/CSA range**

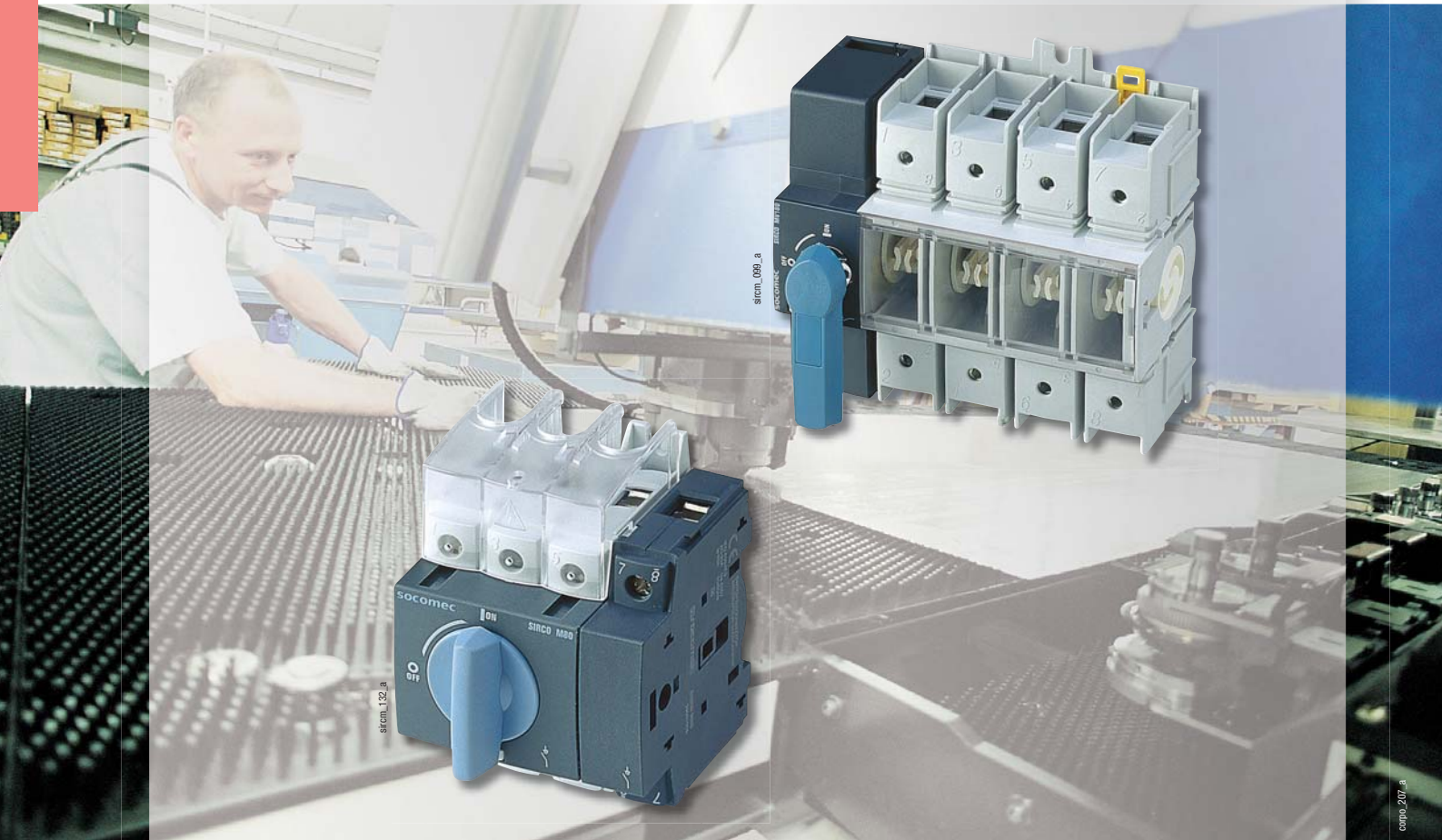
Load break switches and power distribution



➔ Load break switches for **special applications**

- with over rated neutral
- higher short-circuit performance
- multipolar switches
- for earthing
- for 1000 V networks
- special motorised switches





Load break switches from 16 to 160 A

⇒ Function

SIRCO M and **MV** are manually operated modifiable 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.

⇒ Specific characteristics

SIRCO M

- Fully visualised breaking.
- Contact point technology.
- For panel mounting device, use the "Door mounting kit" (see accessories).

SIRCO MV

- Visible double breaking based on contact carriers equipped with sliding contacts (type SIRCO, see page 38).
- Fully visualised breaking.

⇒ General characteristics

- Double break per phase.
- DIN rail mounting, panel or modular panel with 45 mm front cut out.
- IP20 devices and accessories.
- Severe load duty categories (AC-22 and AC-23).

⇒ Conformity to standards

- IEC 60947-3
- EN 60947-3
- IS13947-3
- Standard UL: see SIRCO M UL

⇒ Approvals and certifications⁽¹⁾

- KEMA
- RINA (Registre Naval Italien)

⁽¹⁾ Product reference on request.

⇒ Other products

- The changeover switches are composed of two 3 poles SIRCO M switches and conversion kit.
- They ensure switching, transfer of sources or transfer of two low voltage circuits on load as well as their safety disconnection.



➤ **What you need to know**

SIRCO M

- SIRCO M can be operated in different ways:



Complete switch body
toggle operation



Direct operation with
handle



External operation
front, left side or right side

- The SIRCO M is a **3 pole** device available from **16 to 125 A**, complete with an unswitched neutral or PE pole and type M auxiliary pre-break and signalling contacts. The basic 3 pole device is available in a polyester enclosure from 16 to 100 A (see page 492).

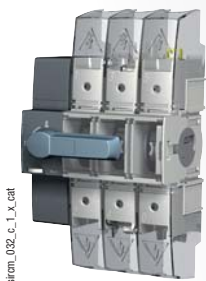
- From **16 to 80 A**, it is possible to mount the device on a door and transform a 3 pole switch into a **6 or 8 pole switch** or a **3 or 4 pole changeover switch**, by adding a conversion kit and a switched 4th pole.



Compact enclosure: see page 492

SIRCO MV

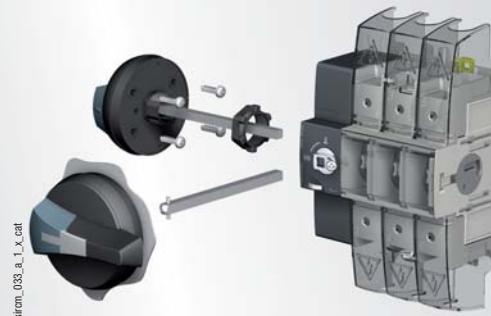
- 3 operations are available:



Direct operation



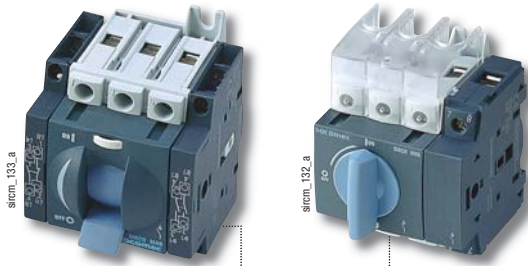
External **right side** operation



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 signalisation.

➔ SIRCO M and MV - References



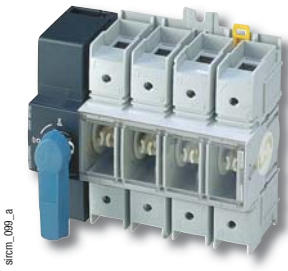
SIRCO M

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

Rating (A)	No. of poles	Complete switch body toggle operation	Switch body	Unswitched neutral pole	Unswitched protective earth module	Auxiliary contacts	Terminal shrouds	Conversion kit	Door mounting kit
16 A	3 P	2205 3000	2200 3000 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5005	1 P 2200 9005	M type 1 contact NO + NC 2299 0001 1 contact 2 NC 2299 0011	1 P 2294 1005 ⁽⁵⁾ 3 P 2294 3005 ⁽⁵⁾	Switch 6 / 8 P 2269 6009 ⁽⁶⁾ Changeover switches I - 0 - II 2209 6009 ⁽⁶⁾ Changeover switches I - I+II - II 2299 6009 ⁽⁶⁾	3/4 P Complete protection IP2X 2299 3309 ⁽⁷⁾⁽⁸⁾ Overall dimensions reduce 2299 3409 ⁽⁷⁾⁽⁸⁾
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⁾	1 P 2200 5009	1 P 2200 9009	1 P 2294 1009 ⁽⁵⁾ 3 P 2294 3009 ⁽⁵⁾			
63 A	3 P	2205 3006	2200 3006 ⁽¹⁾⁽²⁾⁽³⁾						
80 A	3 P	2205 3008	2200 3008 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5011	1 P 2200 9011	1 P 2294 1011 ⁽⁵⁾ 3 P 2294 3016 ⁽⁵⁾			
100 A	3 P		2200 3010 ⁽²⁾						
125 A	3 P		2200 3011 ⁽²⁾						

(1) For 8 pole device in direct operation, order 2 x 3 pole device + 2 main poles + conversion kit (for external operation, add the shaft + the handle).
 (2) Front and side operation.
 (3) For 6-pole device in direct operation, order 2 x 3-pole device + conversion kit (for external operation, add the shaft + the handle).

(4) Defeatable handle.
 (5) Top and bottom.
 (6) Delivered with a direct handle.
 (7) Available for SIRCO M only.
 (8) Delivered with a shaft.



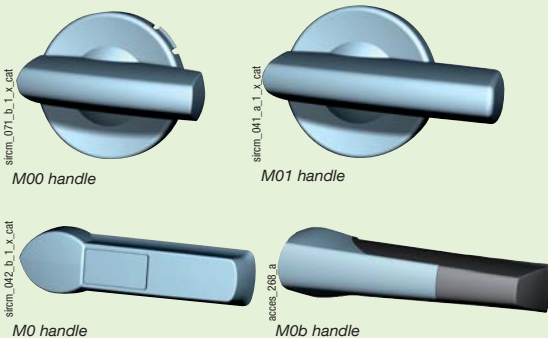
SIRCO MV

Rating (A)	No. of poles	Switch body	Direct handle	External front handle	External right side handle	External left side handle	Shaft extensions for external front and side	Auxiliary signal contact	Auxiliary contacts for pre-break	Terminal shrouds	Voltage sensing and power supply kit	
100 A	3 P	2200 3110	Blue 2299 5042 ⁽¹⁾ Blue 2299 5022	S0 type I - 0 Black IP55 1491 0111 ⁽²⁾ Black IP65 1493 0111 ⁽²⁾	S0 type I - 0 Black IP55 1491 0111 ⁽²⁾ Red/Yellow IP65 1494 0111 ⁽²⁾	S0 type I - 0 Black IP65 149A 9111 Red/Yellow IP65 149B 9111	S0 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	M type 1 contact NO + NC 2299 0001 1 contact 2 NC 2299 0011	U type NC contact 3999 0701 1 contact NO 3999 0702	3 P 2294 3016 ⁽³⁾ 4 P 2294 4016 ⁽³⁾	2 pieces 1399 4006	
	4 P	2200 4110		Red/Yellow IP65 1494 0111 ⁽²⁾	S1 type I - 0 Black IP55 1415 2111 Red/Yellow IP65 1418 2111	S1 type I - 0 Black IP65 141A 2111 Red/Yellow IP65 141B 2111	S1 type 200 mm 1401 0620 320 mm 1401 0632 400 mm 1401 0640					
125 A	3 P	2200 3012			S1 type 0 I - 0 Black IP55 1411 2111 ⁽²⁾ Red/Yellow IP65 1414 2111 ⁽²⁾							
	4 P	2200 4012										
160 A	3 P	2200 3016										
	4 P	2200 4016										

(1) Standard.
(2) Defeatable handle.
(3) Top and bottom.

➤ Accessories

Direct operation handle



For SIRCO M

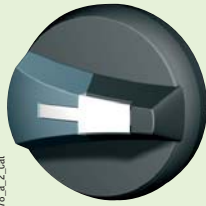
Rating (A)	Handle colour	Handle	Reference
16 ... 80	Blue	M00 type	2299 5012
16 ... 80	Red	M00 type	2299 5013
100 ... 125	Blue	M01 type	2299 5032

For SIRCO MV

Rating (A)	Handle colour	Handle	Reference
100 ... 160	Blue	M0B type	2299 5042 ⁽¹⁾
100 ... 160	Blue	M0 type	2299 5022

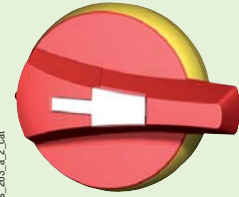
(1) Standard.

External handle operation - SIRCO M



access_278_a_2_cat

S00 handle



access_283_a_2_cat

S0 handle

Front and right side operation I - 0

Rating (A)	Handle		External IP	Reference
	colour	Handle		
16 ... 80	Black	S00 type	IP55	1471 1111
16 ... 80	Black	S00 type	IP65	1473 1111
16 ... 80	Red/Yellow	S00 type	IP65	1474 1111
100 ... 125	Black	S0 type	IP55	1481 1111 ⁽¹⁾
100 ... 125	Black	S0 type	IP65	1483 1111 ⁽¹⁾
100 ... 125	Red/Yellow	S0 type	IP65	1484 1111 ⁽¹⁾

(1) Defeatable handle.

Left side operation I - 0

Rating (A)	Handle		External IP	Reference
	colour	Handle		
16 ... 80	Black	S00 type	IP65	147A 5111
16 ... 80	Red/Yellow	S00 type	IP65	147B 5111
100 ... 125	Black	S0 type	IP65	148A 5111
100 ... 125	Red/Yellow	S0 type	IP65	148B 5111

Front operation for changeover switches I - 0 - II

Rating (A)	Handle		External IP	Reference
	colour	Handle		
16 ... 80	Black	S00 type	IP65	1473 1113

Front operation for changeover switches I - I+II - II

Rating (A)	Handle		External IP	Reference
	colour	Handle		
16 ... 80	Black	S00 type	IP65	1473 1114

External handle operation - SIRCO MV



access_279_a_2_cat

S0 handle



access_284_a_2_cat

S1 handle

S0 type handle - Front and right side operation I - 0

Rating (A)	Handle colour	External IP	Reference
100 ... 160	Black	IP55	1491 0111 ⁽¹⁾
100 ... 160	Black	IP65	1493 0111 ⁽¹⁾
100 ... 160	Red/Yellow	IP65	1494 0111 ⁽¹⁾

(1) Defeatable handle.

S0 type handle - Left side operation I - 0

Rating (A)	Handle colour	External IP	Reference
100 ... 160	Black	IP65	149A 9111 ⁽¹⁾
100 ... 160	Red/Yellow	IP65	149B 9111 ⁽¹⁾

(1) Defeatable handle.

S1 type handle - Front operation I - 0

Rating (A)	Handle colour	External IP	Reference
100 ... 160	Black	IP55	1411 2111 ⁽¹⁾
100 ... 160	Black	IP65	1413 2111 ⁽¹⁾
100 ... 160	Red/Yellow	IP65	1414 2111 ⁽¹⁾

(1) Defeatable handle.

S1 type handle - Right side operation I - 0

Rating (A)	Handle colour	External IP	Reference
100 ... 160	Black	IP55	1415 2111
100 ... 160	Black	IP65	1417 2111
100 ... 160	Red/Yellow	IP65	1418 2111

S1 type handle - Left side operation I - 0

Rating (A)	Handle colour	External IP	Reference
100 ... 160	Black	IP65	141A 2111
100 ... 160	Red/Yellow	IP65	141B 2111

Shaft for external handle



Use

Standard lengths:

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

Other lengths: 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, shaft extensions for front operation only.

For SIRCO M

Rating (A)	Handle	Shaft length (mm)	Reference
16 ... 125	S00 type	150 mm	1407 0515
16 ... 125	S00 type	200 mm	1407 0520
16 ... 125	S00 type	320 mm	1407 0532

For SIRCO MV

Rating (A)	Handle	Shaft length (mm)	Reference
100 ... 160	S0 type	150 mm	1409 0615
100 ... 160	S0 type	200 mm	1409 0620
100 ... 160	S0 type	320 mm	1409 0632
100 ... 160	S1 type	200 mm	1401 0620
100 ... 160	S1 type	320 mm	1401 0632
100 ... 160	S1 type	400 mm	1401 0640

Shaft guide for external operation

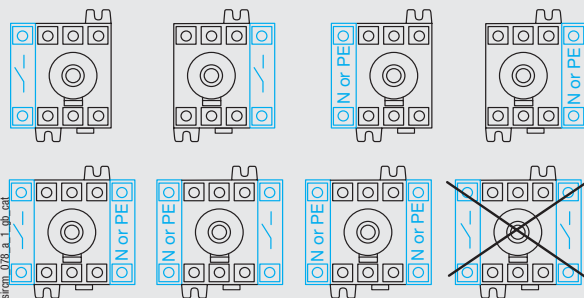


Use

To guide the extension shaft into the external handle.
This accessory enables handle to engage extension shaft with a misalignment of up to 15 mm.
Required for a shaft length over 320 mm.

Description	Handle type	Reference
Shaft guide	S00 and S0	1419 0000
Shaft guide	S1	1429 0000

Additional pole for SIRCO M



Additional pole configuration

4° pole

Use

Adds one or two poles and transforms:

- 3 pole load break switches into a 4 pole,
- 6 pole load break switches into a 8 pole,
- 3 pole changeover switches into a 4 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
80	1 P	switched	2200 1008
100	1 P	switched	2200 1010
125	1 P	switched	2200 1011

Neutral pole

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.

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

Protective earth module

Use

Adds 1 protective earth module pole to the switch-disconnector.

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

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 3 or 4 pole for SIRCO MV.
An opening on each terminal cover makes it possible to insert a probe to measure temperature.

For SIRCO M

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

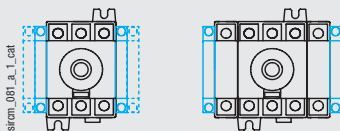
(1) Reference composed of 2 pieces.

For SIRCO MV

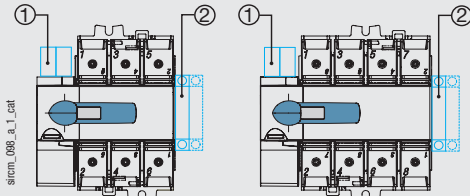
Rating (A)	No. of poles	Position	Reference
100 ... 160	3 P	top / bottom	2294 3016
100 ... 160	4 P	top / bottom	2294 4016

Auxiliary contacts

M type



Auxiliary contacts configurations for SIRCO M



Auxiliary contacts configurations for SIRCO MV

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

U type



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.

For SIRCO M

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

For SIRCO MV

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

Characteristics

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

Use

Pre-break and signalisation by NO or NC auxiliary contact.
Maximum 2 auxiliary contacts.
For use only with SIRCO MV switches.

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

Conversion kit



Conversion kit for 6/8 pole load break switches



Escutcheon for 3/4-pole changeover switches (I - 0 - II) or (I - I+II - II)



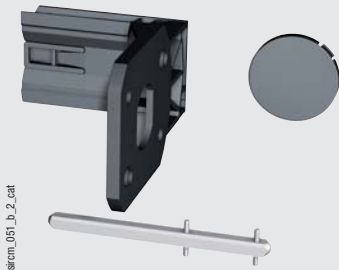
Use

It must be ordered at the same time as the handle for external control.
This accessory enables the assembly of two 3 pole switches and additional poles in order to achieve:
- 6 or 8-pole SIRCO M load break switches,
- 3 or 4-pole SIRCOVER M changeover switches.

SIRCOVER M changeover switches ensure switching, transfer of sources (I - 0 - II) or transfer of two low voltage circuits on load (I - I+II - II), with the continuity of power supply.

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

Door mounting kit



slrm_051_d_2_cat

Use

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

The external handle is quick and easy to install due to an internal locking nut mounted on the inside of the enclosure. 2 kits are available:
- one for complete protection IP2X
- one with overall dimensions reduced.

For SIRCO M

Rating (A)	No. of poles	Description	Reference
16 ... 80	3/4 P	Complete protection IP2X	2299 3309
16 ... 80	3/4 P	Overall dimensions reduce	2299 3409

Cap for side operation mounting



slrm_126_a_2_cat

Use

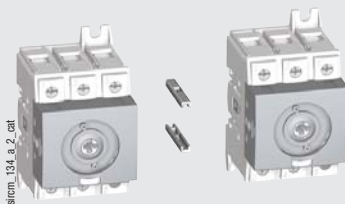
Accessory for capping the front face of the **SIRCO M** when utilising in side operation, 20 units per pack.

This piece can be snapped on the switch body directly.

For SIRCO M

Rating (A)	Pack	Reference
16 ... 80	20 pieces	2299 9409

6/8 pole joining accessory



slrm_134_a_2_cat

Use

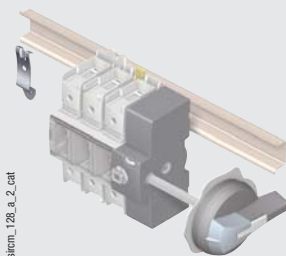
40 units per pack, they allow the joining of two 3 pole switches (+ additional pole) in order to form a 6 or 8 pole switch for external side operation.

For multi-pole switches, please consult us.

For SIRCO M

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

DIN rail locking clip



slrm_128_a_2_cat

Use

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

For SIRCO MV

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

Voltage sensing and power supply tap



slrm_026_a_1_cat

Use

It allows connection of 2 x $\leq 1.5 \text{ mm}^2$ voltage sensing or power cables.

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	Load duty 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-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-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-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

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	9	11	15	18.5	30	37	45	55
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	9	11	15	18.5	30	37	45	55
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	11	15	15	15	30	37	45	55

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽³⁾	50	50	50	50	50	50	50	25	25
Associated fuse rating (A) ⁽³⁾	16	20	25	32	40	63	80	100	125

Short-circuit capacity (U_n 415 VAC)

Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)	2.5	2.5	2.5	2.5	2.5	3	3	5	5
Rated peak withstand current (kA peak) ⁽³⁾	6	6	6	6	6	9	9	12	12

Connection

Minimum Cu cable section (mm ²)	1.5	1.5	1.5	1.5	1.5	2.5	2.5	10	10
Maximum Cu cable 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		

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 (Nm)	0.8	0.8	0.8	0.8	0.8	1	1		
Weight of a 3 pole device (kg)	0.16	0.16	0.16	0.16	0.16	0.26	0.26	0.7	0.7

(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 $U_n = 400$ 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	Load duty category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
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-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

Reactive power (kvar)			
At 400 VAC (kvar) ⁽²⁾	45	55	75

Operational power in AC-23 (kW)			
At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽²⁾	45	55	75
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽²⁾	45	55	75
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽²⁾	45	75	75

Fuse protected short-circuit withstand (kA rms prospective)			
Prospective short-circuit (kA rms) ⁽³⁾	100	65	50
Associated fuse rating (A) ⁽³⁾	100	125	160

Short-circuit capacity (U_n 415 VAC)			
Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)	7	7	7
Rated peak withstand current (kA peak) ⁽³⁾	12	12	12

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

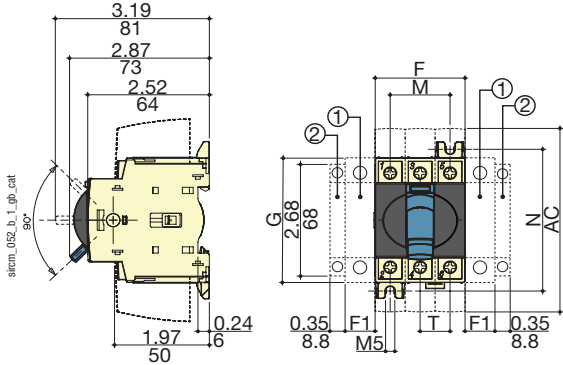
Mechanical characteristics			
Durability (number of operating cycles)	50 000	50 000	50 000
Operating effort (Nm)	4	4	4
Weight of a 3 pole device (kg)	0.7	0.7	0.7
Weight of a 4 pole device (kg)	0.9	0.9	0.9

(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 $U_n = 400$ VAC.

SIRCO M

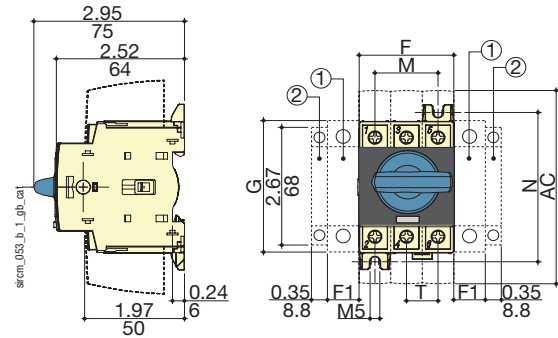
SIRCO M 16 to 80 A

Toggle operation



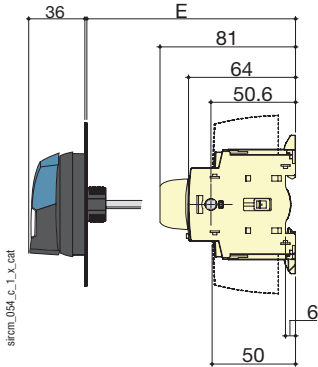
1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 4 additional blocks

Direct operation with handle

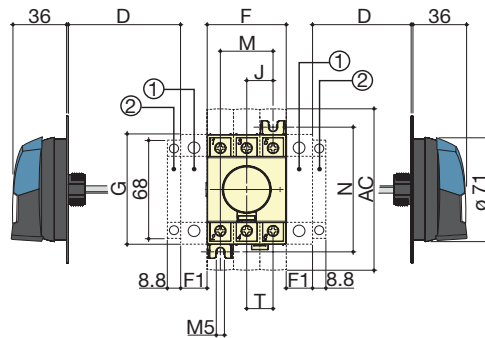


1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 4 additional blocks

External front operation



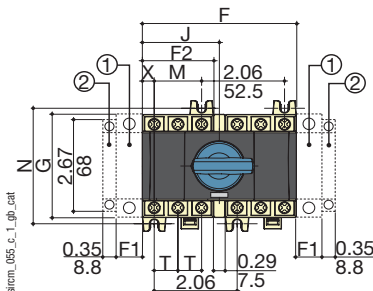
External side operation



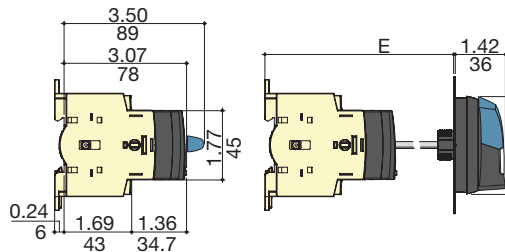
1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 4 additional blocks

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	

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

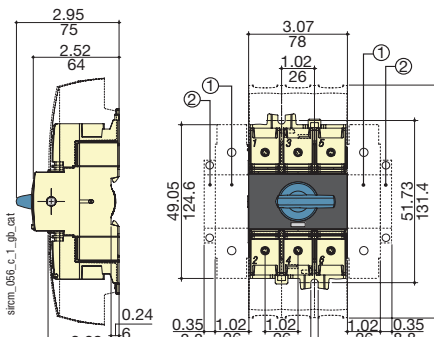


1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.
Note: max 4 additional blocks

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

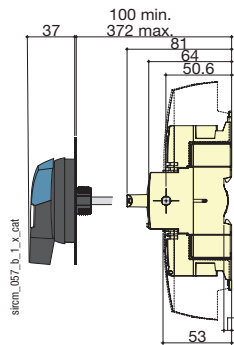
SIRCO M 100 to 125 A

Direct operation with handle



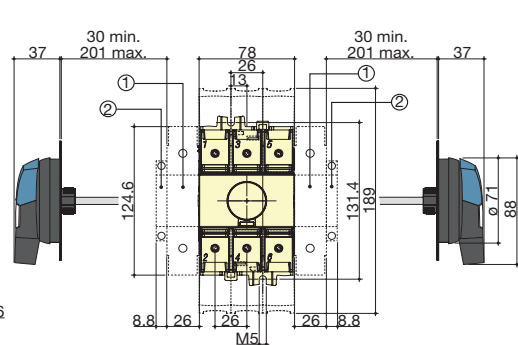
1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
 2. Position for 1 auxiliary contact only.
- Note: max 4 additional blocks**

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 only.
- Note: max 4 additional blocks**

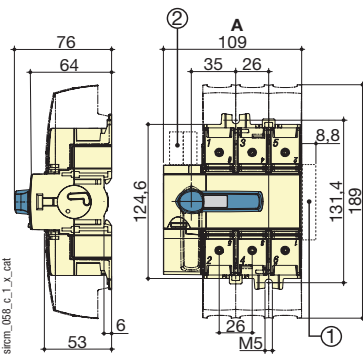
External side operation



SIRCO MV

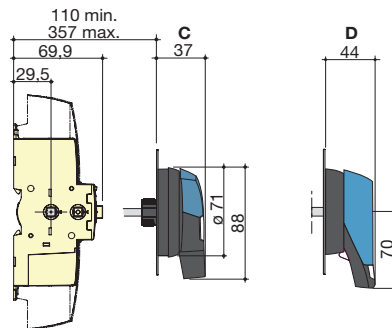
SIRCO MV 100 to 160 A

Direct front operation



- A. 3 pole
- B. 4 pole

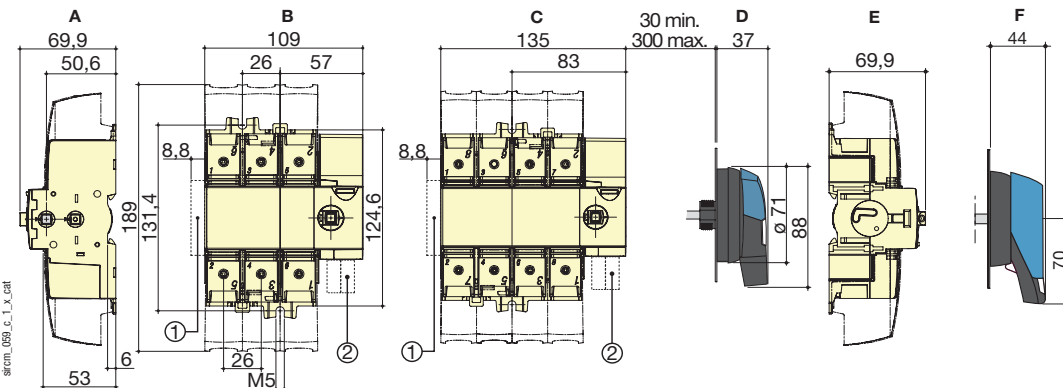
External front operation



- C. S0 type handle
- D. S1 type handle

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

External side operation



- A. Right side operation
- B. 3 pole
- C. 4 pole

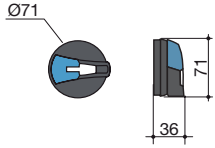
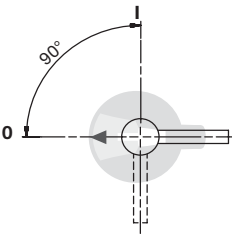
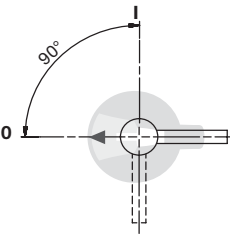
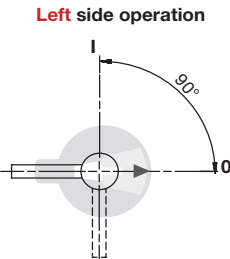
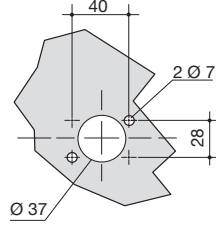
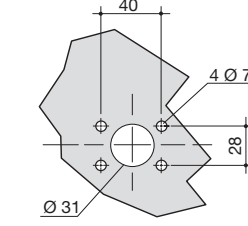
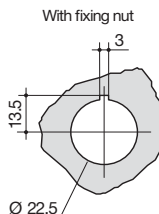
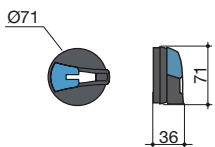
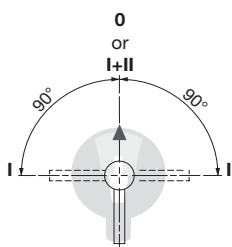
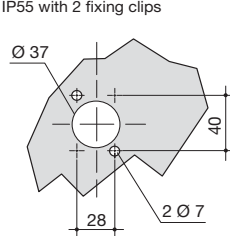
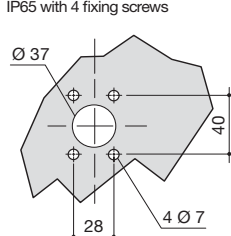
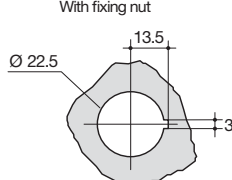
- D. S0 type handle
- E. Left side operation
- F. S1 type handle

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

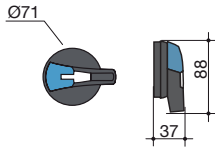
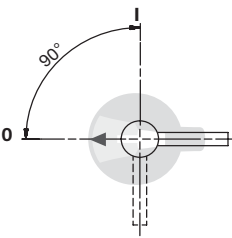
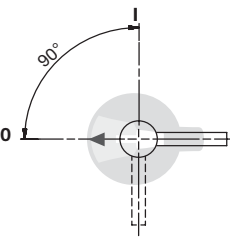
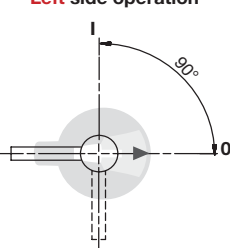
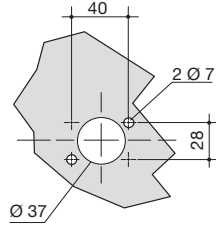
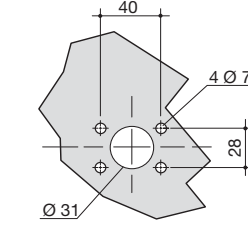
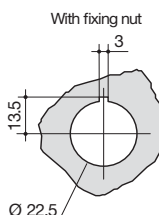
⇒ Dimensions for external handles

SIRCO M

SIRCO M 16 to 80 A

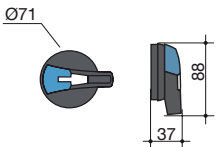
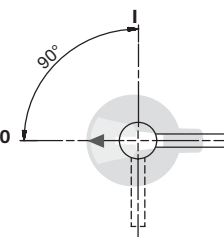
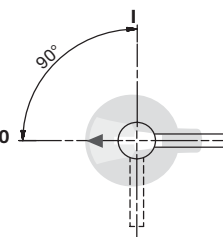
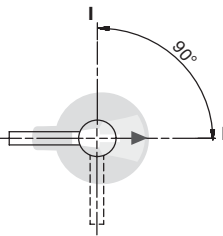
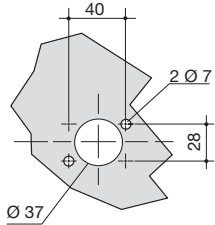
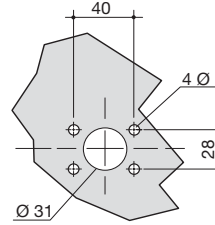
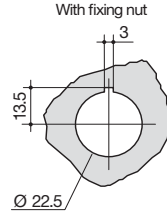
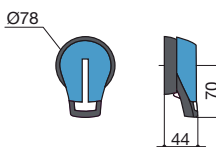
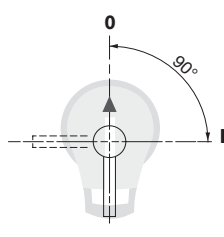
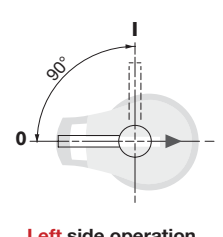
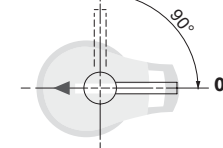
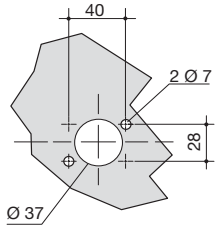
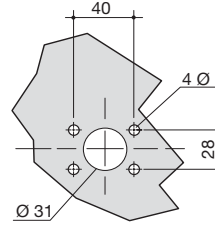
Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S00 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips  IP65 with 4 fixing screws  With fixing nut 	
Typ S00 Changeover switches I 0 II and I - I+II - II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

SIRCO M 100 to 125 A

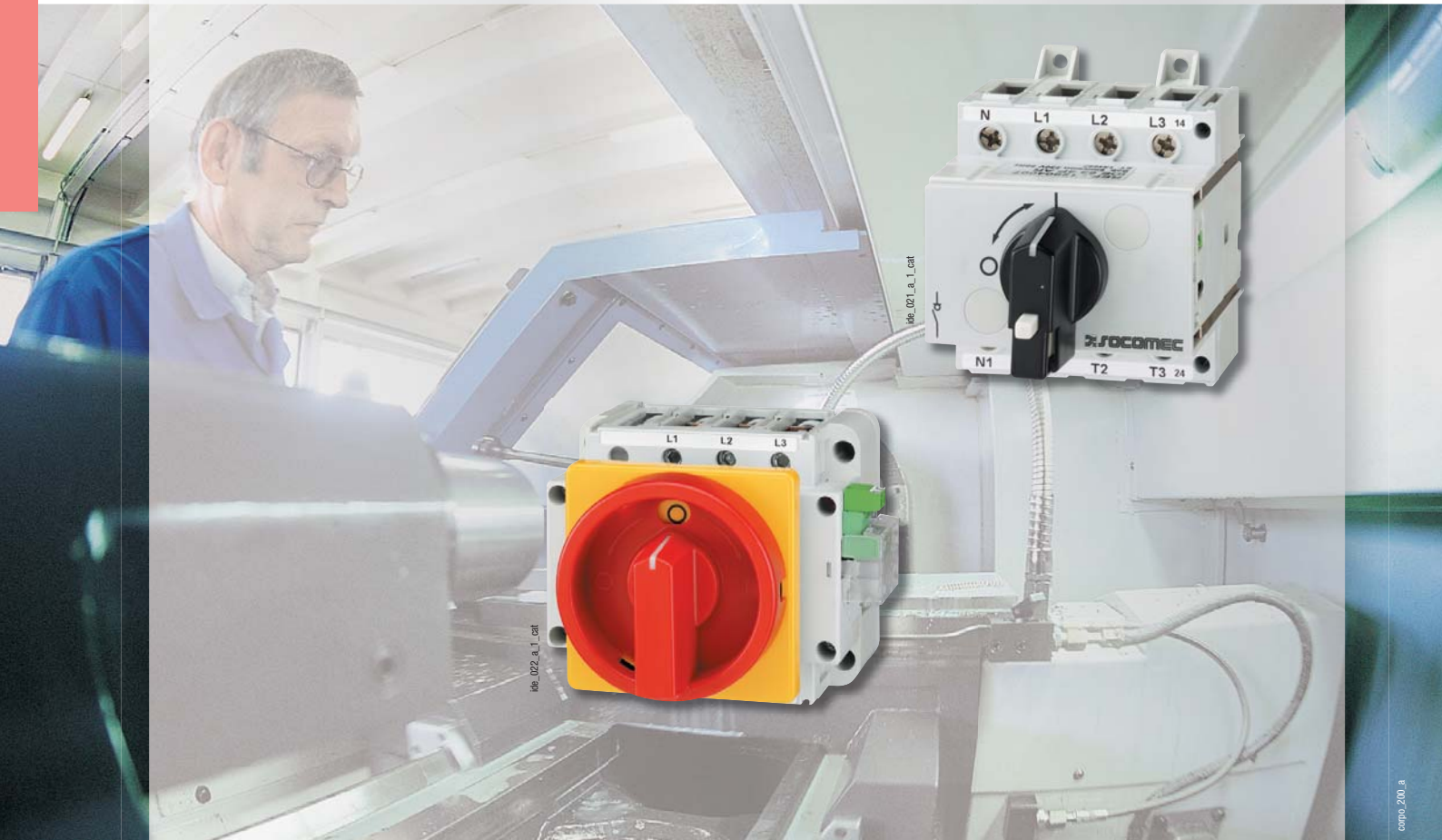
Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S0 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips  IP65 with 4 fixing screws  With fixing nut 	

SIRCO MV

SIRCO MV 100 to 160 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
<p>S0 type Load break switches</p>  <p>Ø71 88 37</p>	<p>Front operation Direction of operation</p>  <p>90° 0</p>	<p>Right side operation</p>  <p>90° 0</p> <p>Left side operation</p>  <p>90° I</p>	<p>Door drilling</p> <p>IP55 with 2 fixing clips</p>  <p>40 2 Ø 7 28 Ø 37</p> <p>IP65 with 4 fixing screws</p>  <p>40 4 Ø 7 28 Ø 31</p> <p>With fixing nut</p>  <p>3 13.5 Ø 22.5</p>	
<p>S1 type Load break switches</p>  <p>Ø78 70 44</p>	<p>Front operation Direction of operation</p>  <p>90° 0</p>	<p>Right side operation</p>  <p>90° 0</p> <p>Left side operation</p>  <p>90° 0</p>	<p>Door drilling</p> <p>IP55 with 2 fixing clips</p>  <p>40 2 Ø 7 28 Ø 37</p> <p>IP65 with 4 fixing screws</p>  <p>40 4 Ø 7 28 Ø 31</p>	

sircov179_a_1_gd_cat



Remotely trippable switch from 32 to 160 A

⇒ Function

IDE are manually operated multipolar load break switches which can be tripped remotely. They make and break under load conditions and provide safety isolation for any low voltage electric circuit, particularly for compliance with the machine directive: **protection against automatic restart after isolation and re-establishment of the mains voltage (EN 60204.1 § 7.5).**

⇒ General characteristics

Customized design of IDE switches provides the following advantages:

- operating safety:
 - remote control by tripping coils,
 - fully visualised breaking,
 - IP20 protection with terminal shrouds (accessory).
- ease of positioning:
 - device originally equipped with an early break auxiliary contact to simplify the wiring,
 - front or rear mounting, in direct or external operation.

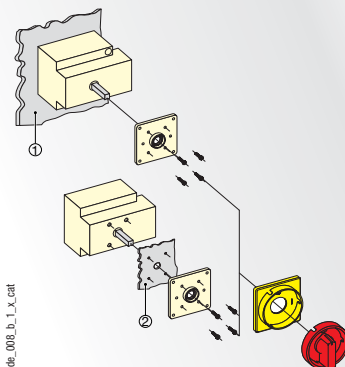
⇒ Conformity to standards

- IEC 60947-3
- EN 60947-3
- EN 60204-1 § 7.5
- VDE 0660-107
- VDE 0113-1

➤ **What you need to know**

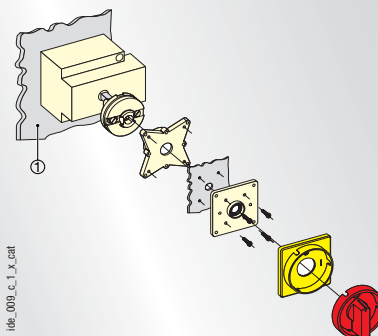
- The IDEs are available in **direct** and **disconnectable external** operation versions.
 Can be equipped with 3 or 4 pole and are available with two types of mounting:
 - rear mounting on **plate** or on **DIN rail**, direct operation or disconnectable external operation,
 - **door** or **panel** mounting.

Direct operation



1. Base mounted
2. Door mounted

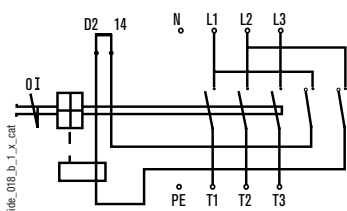
Disconnectable external control



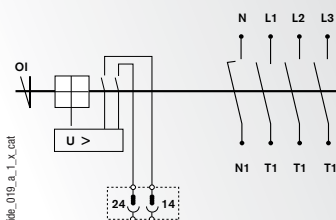
1. Base mounted

- 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 if the network malfunctions and is then re-established.
- Factory mounted, IDE includes an **internal cabling**.
 Coil is supplied between:
 - L1 and N for device 230 VAC,
 - L1 and L2 for device 400 VAC.
 For an IDE 32 A, an actuator relay can be incorporated between D2 and 14 (other wiring on request).

IDE 32 A



Internal cabling IDE 40 to 160 A



⇒ IDE - References



Base mounted

Rating (A)	No. of poles	Switch body Undervoltage coil	Switch body shunt trip coil	Direct handle	External operation 200 mm	Auxiliary contact position	Terminal covers top/bottom (2 sets)	Empty enclosure
32 A	3 P	1260 3003 ⁽¹⁾		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 ⁽²⁾
	3 P	1270 3003 ⁽³⁾						
	4 P							
	4 P							
40 A	3 P	1260 3004 ⁽⁴⁾⁽¹⁾	1280 3004 ⁽⁴⁾⁽¹⁾	Black IP65 1299 6142 ⁽⁵⁾ Red/Yellow IP65 1299 6143 ⁽⁵⁾	Black IP65 1299 6032 Red/Yellow IP65 1299 6033	1 contact NO+NC 1299 0031	3/4 P 1299 8007	consult us
	3 P	1270 3004 ⁽⁴⁾⁽³⁾	1290 3004 ⁽⁴⁾⁽³⁾					
	4 P	1260 4004 ⁽⁴⁾⁽¹⁾	1280 4004 ⁽⁴⁾⁽¹⁾					
	4 P	1270 4004 ⁽⁴⁾⁽³⁾	1290 4004 ⁽⁴⁾⁽³⁾					
63 A	3 P	1260 3007 ⁽⁴⁾⁽¹⁾	1280 3007 ⁽⁴⁾⁽¹⁾	Black IP65 1299 6142 ⁽⁵⁾ Red/Yellow IP65 1299 6143 ⁽⁵⁾	Black IP65 1299 6032 Red/Yellow IP65 1299 6033	1 contact NO+NC 1299 0031	3/4 P 1299 8007	consult us
	3 P	1270 3007 ⁽⁴⁾⁽³⁾	1290 3007 ⁽⁴⁾⁽³⁾					
	4 P	1260 4007 ⁽⁴⁾⁽¹⁾	1280 4007 ⁽⁴⁾⁽¹⁾					
	4 P	1270 4007 ⁽⁴⁾⁽³⁾	1290 4007 ⁽⁴⁾⁽³⁾					
125 A	3 P	1260 3013 ⁽¹⁾	1280 3013 ⁽¹⁾	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	consult us
	3 P	1270 3013 ⁽³⁾	1290 3013 ⁽³⁾					
	4 P	1260 4013 ⁽¹⁾	1280 4013 ⁽¹⁾					
	4 P	1270 4013 ⁽³⁾	1290 4013 ⁽³⁾					
160 A	3 P	1260 3016 ⁽¹⁾	1280 3016 ⁽¹⁾	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	consult us
	3 P	1270 3016 ⁽³⁾	1290 3016 ⁽³⁾					
	4 P	1260 4016 ⁽¹⁾	1280 4016 ⁽¹⁾					
	4 P	1270 4016 ⁽³⁾	1290 4016 ⁽³⁾					

(1) 230 VAC.

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

(3) 400 VAC.

(4) Modular device.

(5) Modular handle.

⇒ 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.

Rear-mounted empty enclosure for IDE with direct operation

Use

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

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

ide_022_a_1_cst



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⁾		Black IP65 1299 5012 Red/Yellow IP65 1299 5013	1 contact NO+NC 1299 5001	3/4 P 1299 8003
	3 P	1220 3003 ⁽²⁾				
	4 P					
	4 P					
40 A	3 P	1210 3004 ⁽¹⁾	1230 3004 ⁽¹⁾	Black IP65 1299 5022 Red/Yellow IP65 1299 5023	1 contact NO+NC 1299 0031	3/4 P 1299 8007
	3 P	1220 3004 ⁽²⁾	1240 3004 ⁽²⁾			
	4 P	1210 4004 ⁽¹⁾	1230 4004 ⁽¹⁾			
	4 P	1220 4004 ⁽²⁾	1240 4004 ⁽²⁾			
63 A	3 P	1210 3007 ⁽¹⁾	1230 3007 ⁽¹⁾	Black IP65 1299 5022 Red/Yellow IP65 1299 5023	1 contact NO+NC 1299 0031	3/4 P 1299 8007
	3 P	1220 3007 ⁽²⁾	1240 3007 ⁽²⁾			
	4 P	1210 4007 ⁽¹⁾	1230 4007 ⁽¹⁾			
	4 P	1220 4007 ⁽²⁾	1240 4007 ⁽²⁾			
125 A	3 P	1210 3013 ⁽¹⁾	1230 3013 ⁽¹⁾	Black IP65 1299 5032 Red/Yellow IP65 1299 5033	1 contact NO+NC 1299 0021	3/4 P 1299 8013
	3 P	1220 3013 ⁽²⁾	1240 3013 ⁽²⁾			
	4 P	1210 4013 ⁽¹⁾	1230 4013 ⁽¹⁾			
	4 P	1220 4013 ⁽²⁾	1240 4013 ⁽²⁾			
160 A	3 P	1210 3016 ⁽¹⁾	1230 3016 ⁽¹⁾	Black IP65 1299 5032 Red/Yellow IP65 1299 5033	1 contact NO+NC 1299 0021	3/4 P 1299 8013
	3 P	1220 3016 ⁽²⁾	1240 3016 ⁽²⁾			
	4 P	1210 4016 ⁽¹⁾	1230 4016 ⁽¹⁾			
	4 P	1220 4016 ⁽²⁾	1240 4016 ⁽²⁾			

(1) 230 VAC.
 (2) 400 VAC.

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

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.

Position auxiliary contact



Use

Position 0 and I signalling NO+NC auxiliary contact

Connection to the control circuit

Per terminal.

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

Characteristics

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

External operation for rear mounting device

Use

Standard lengths: 200 mm.
Other lengths: 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

⇒ **Characteristics according to IEC 60947-3**

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

Rated operational currents I_e (A)

Rated voltage	Load duty category	A ⁽¹⁾	A ⁽¹⁾	A ⁽¹⁾	A ⁽¹⁾	A ⁽¹⁾
400 VAC	AC-21	32	40	63	125	160
400 VAC	AC-23	14	40	63	125	160
400 VAC	AC-3	14	30	44	100	100
690 VAC ⁽²⁾	AC-21 A	32	40	63	125	160

Motor power output (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽³⁾⁽¹⁾	7.5	22	30	63	80
At 400 VAC without pre-break in AC-3 (kW) ⁽³⁾⁽¹⁾	7.5	15	22	55	55

Short-circuit capacity

Rated short-time withstand current 1 s. I_{cw} (kA eff.)	1	1.5	1.5	2.5	2.5
Closing capacity on short-circuit (kA peak) ⁽⁴⁾	3	5.2	5.2	6.6	6.6

Connection

Minimum Cu cable section (mm ²)	1	2.5	2.5	6	6
Maximum Cu cable section (mm ²)	4	10	10	70	70

Mechanical characteristics

Durability (number of operating cycles)	100 000	60 000	60 000	30 000	30 000
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(1) Category with index A = frequent operation.

(2) With terminal shrouds or phase barrier.

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

(4) For a rated operational voltage $U_o = 400$ VAC.

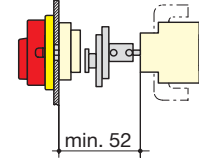
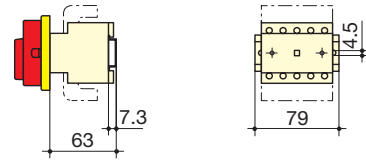
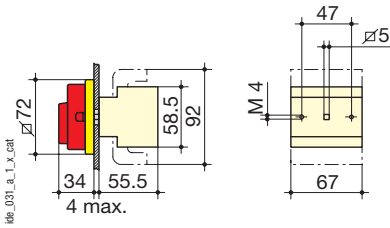
➤ **Dimensions**

IDE 32 A

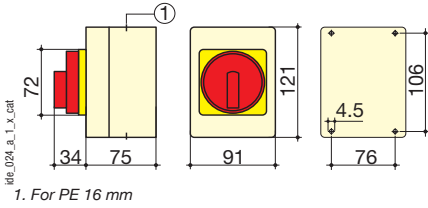
Direct operation with front door or panel

Direct operation with back DIN rail mounting

Door interlocked external front operation with DIN rail mounting



Enclosure for IDE 32 A

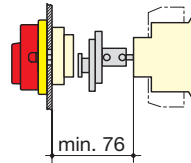
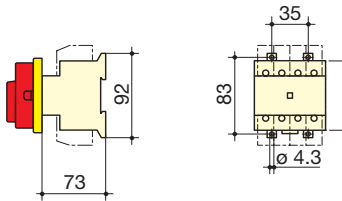
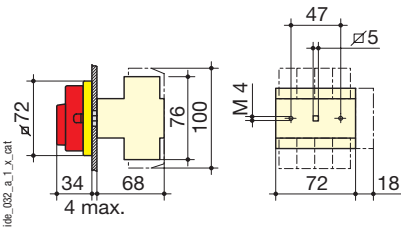


IDE 40 to 63 A

Direct operation with front door or panel

Direct operation with DIN rail or back plate base mounting

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

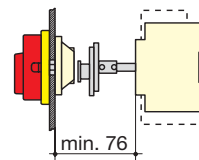
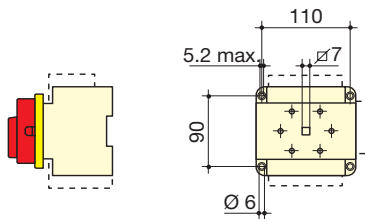
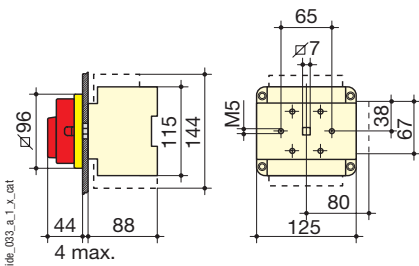


IDE 125 to 160 A

Direct operation with front door or panel

Direct operation with DIN rail or back plate base mounting

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





Load break switch with fully visualised breaking from 125 to 5 000 A

➤ Function

SIRCO switches are manually operated or motorised multipolar load break switches. They make and break under load conditions and provide safety isolation for any low voltage circuit.

➤ General characteristics

- Fully visualised breaking.
- High thermal and dynamic withstand.
- Severe utilisation categories (AC-22 and AC-23).
- Good electrical and mechanical endurance.
- High resistance to humidity (supplied "tropicalised").

➤ Available on request

- Early break auxiliaries.
- SIRCO 9 and 12 poles up to 1600 A.
- 3 pole + neutral.
- Early break advanced neutral for networks charged with harmonics.
- Conducting neutral.
- Neutral earthing stud.

➤ Conformity to standards

- IEC 60947-3
- EN 60947-3
- VDE 0660-107 (1992)
- NBN EN 60947-3
- BS EN 60947-3
- Standards UL: see SIRCO UL

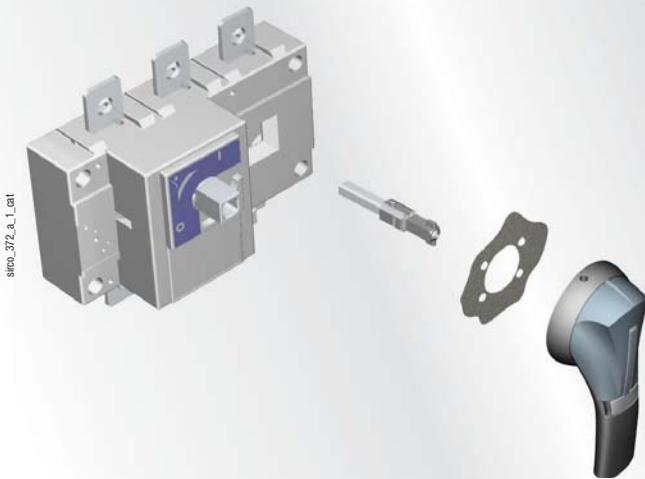
➤ Approvals and certifications⁽¹⁾

- CEPEC (Belgium)
- FI (Finland)
- ASEFA
- KEMA
- CCA
- GOST (Russia)
- BBJ Poland (Attestation of verification)
- PSA E03.15.605.G
- RENAULT EB03.15.613
- RINA (Registre Naval Italien)

⁽¹⁾ Product reference on request.

➔ **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. Can be ordered in 6 or 8 pole from 125 to 1600 A. The switch can be enclosed in a polyester or sheet metal enclosure from 125 to 1250 A.

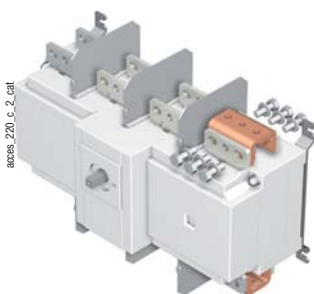


- **External right side** operation, SIRCO is available in 3 and 4-pole versions from 125 to 1800 A.

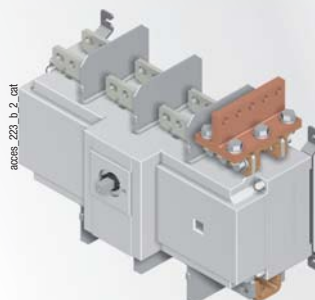


- For rating 2000, 2500 and 3200A, a **connection kit for copper bars** allows the connection between the 2 connection terminals of one pole.

Flat connection
 Top or bottom



Edgewise connection
 Top or bottom



➔ SIRCO - References



Front operation - 3 & 4 pole

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contacts	Terminal shrouds	Terminal screens
125 A	3 P	2600 3014 ⁽¹⁾	Black 2699 5042 ⁽²⁾ Red 2699 5043				3 P 2694 3014 4 P 2694 4014	3 P 2698 3012 ⁽³⁾ 4 P 2698 4012 ⁽³⁾
	4 P	2600 4014 ⁽¹⁾						
160 A	3 P	2600 3017 ⁽¹⁾					3 P 2694 3021 4 P 2694 4021	3 P 2698 3020 ⁽³⁾ 4 P 2698 4020 ⁽³⁾
	4 P	2600 4017 ⁽¹⁾						
200 A	3 P	2600 3021					3 P 2694 3021 4 P 2694 4021	3 P 2698 3020 ⁽³⁾ 4 P 2698 4020 ⁽³⁾
	4 P	2600 4021						
250 A	3 P	2600 3026 ⁽¹⁾		Type S2 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 ⁽¹⁾						
315 A	3 P	2600 3032	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 ⁽¹⁾					3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4041 ⁽¹⁾						
500 A	3 P	2600 3051 ⁽¹⁾					3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4051 ⁽¹⁾						
630 A	3 P	2600 3064 ⁽¹⁾					3 P 2694 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾
	4 P	2600 4064 ⁽¹⁾						
800 A	3 P	2600 3081 ⁽¹⁾				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 ⁽¹⁾						
1 000 A	3 P	2600 3099 ⁽¹⁾					3 P 2698 3080 ⁽³⁾ 4 P 2698 4080 ⁽³⁾	
	4 P	2600 4099 ⁽¹⁾						
CD 1 250 A	3 P	2600 3119		Type S4 Black IP65 1443 3111 ⁽²⁾ Red/Yellow 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						
1 250 A	3 P	2600 3121 ⁽¹⁾	Black 2799 7012 ⁽²⁾ Red 2799 7013				3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4121 ⁽¹⁾						
1 600 A	3 P	2600 3161					3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4161						
1 800 A	3 P	2600 3181					3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4181						
2 000 A	3 P	2600 3200					3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4200						
2 500 A	3 P	2600 3250		Black IP65 2799 7136 ⁽²⁾ Red IP65 2799 7134	200 mm 2799 3015 320 mm 2799 3018 ⁽²⁾		3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4250						
3 200 A	3 P	2600 3320					3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾	
	4 P	2600 4320						
4 000 A	3 P	2600 3401	Black 2799 7072 ⁽²⁾	Black IP65 2799 7155 ⁽²⁾		1 st /2 nd contact NO/NC included	consult us	
	4 P	2600 4401						
5 000 A	3 P	2600 3500					consult us	
	4 P	2600 4500						

(1) Available enclosed (see page 493 "Enclosed load break switches").

(2) Standard.

(3) Top/bottom.



Front operation - 6 & 8 pole

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contacts	Terminal shrouds	Terminal screens		
125 A	6 P	2601 6013	Black 4199 5012 ⁽¹⁾	Type S2 Black IP55 1421 2111 ⁽¹⁾ Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾	1 st contact NO/NC 2699 0061 2 nd contact NO/NC 2699 0062	6 P	6 P		
	8 P	2601 8013					2694 3014 ⁽²⁾⁽³⁾	1509 3012 ⁽⁴⁾		
160 A	6 P	2601 6016					Type S4 Black IP65 1443 3111 ⁽¹⁾ Red/Yellow IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	8 P	8 P
	8 P	2601 8016							2694 4014 ⁽²⁾⁽³⁾	1509 4012 ⁽⁴⁾
250 A	6 P	2601 6025	Black 2799 7052 ⁽¹⁾ Red 2799 7053	2694 3021 ⁽²⁾⁽³⁾	2694 4021 ⁽²⁾⁽³⁾		6 P	6 P		
	8 P	2601 8025					1509 3025 ⁽⁴⁾	1509 4025 ⁽⁴⁾		
400 A	6 P	2601 6040	Black 2799 7012 ⁽¹⁾ Red 2799 7013	Black IP65 2799 7145	320 mm 2799 3018		6 P	6 P		
	8 P	2601 8040					2694 3051 ⁽²⁾⁽³⁾	1509 3063 ⁽⁴⁾		
630 A	6 P	2601 6063	Black 2799 7012 ⁽¹⁾ Red 2799 7013	Black IP65 2799 7145	320 mm 2799 3018		8 P	8 P		
	8 P	2601 8063					2694 4051 ⁽²⁾⁽³⁾	1509 4063 ⁽⁴⁾		
800 A	6 P	2601 6080	Black 2799 7012 ⁽¹⁾ Red 2799 7013	Black IP65 2799 7145	320 mm 2799 3018	1509 3160 ⁽⁵⁾	6 P 1509 3080 ⁽⁵⁾ 8 P 1509 4080 ⁽⁵⁾			
	8 P	2601 8080								
1 000 A	6 P	2601 6100	Black 2799 7012 ⁽¹⁾ Red 2799 7013	Black IP65 2799 7145	320 mm 2799 3018	1509 4160 ⁽⁵⁾	6 P 1509 3080 ⁽⁵⁾ 8 P 1509 4080 ⁽⁵⁾			
	8 P	2601 8100								
1 250 A	6 P	2601 6120	Black 2799 7012 ⁽¹⁾ Red 2799 7013	Black IP65 2799 7145	320 mm 2799 3018	1509 4160 ⁽⁵⁾	6 P 1509 3080 ⁽⁵⁾ 8 P 1509 4080 ⁽⁵⁾			
	8 P	2601 8120								
1 600 A	6 P	2601 6160	Black 2799 7012 ⁽¹⁾ Red 2799 7013	Black IP65 2799 7145	320 mm 2799 3018	1509 4160 ⁽⁵⁾	6 P 1509 3080 ⁽⁵⁾ 8 P 1509 4080 ⁽⁵⁾			
	8 P	2601 8160								

(1) Standard.

(2) Top/bottom.

(3) Select 2 sets for front or rear.

(4) 2 pieces: one for top side and another for bottom side.

(5) Top or bottom.



External right side operation

Rating (A)	No. of poles	Switch body	External handle	Shaft for external handle	Auxiliary contacts	Terminal shrouds	Terminal screens
125 A	3 P	2605 3014	Type S2 Black IP55 1425 2111 ⁽¹⁾ Black IP65 1427 2111 Red/Yellow IP65 1428 2111	200 mm 1400 1020 250 mm 1400 1025 320 mm 1400 1032 ⁽¹⁾	1 st contact NO/NC 2699 0031 2 nd contact NO/NC 2699 0032	3 P	3 P
	4 P	2605 4014				2694 3014 ⁽²⁾	2698 3012 ⁽²⁾
160 A	3 P	2605 3017				2694 4014 ⁽²⁾	2698 4012 ⁽²⁾
	4 P	2605 4017					
200 A	3 P	2605 3021				2694 3021 ⁽²⁾	2698 3020 ⁽²⁾
	4 P	2605 4021					
250 A	3 P	2605 3026				2694 4021 ⁽²⁾	2698 4020 ⁽²⁾
	4 P	2605 4026					
315 A	3 P	2605 3032				2694 4051 ⁽²⁾	2698 4050 ⁽²⁾
	4 P	2605 4032					
400 A	3 P	2605 3041				2694 3051 ⁽²⁾	2698 3050 ⁽²⁾
	4 P	2605 4041					
500 A	3 P	2605 3051				2694 4051 ⁽²⁾	2698 4050 ⁽²⁾
	4 P	2605 4051					
630 A	3 P	2605 3064				2694 4051 ⁽²⁾	2698 4050 ⁽²⁾
	4 P	2605 4064					
800 A	3 P	2605 3081	2694 4051 ⁽²⁾	2698 4050 ⁽²⁾			
	4 P	2605 4081					
CD 1 250 A	3 P	2605 3119	2694 4051 ⁽²⁾	2698 4080 ⁽²⁾			
	4 P	2605 4119					
1 800 A	3 P	2605 3181	2694 4051 ⁽²⁾	2698 3120 ⁽²⁾			
	4 P	2605 4181			2698 4120 ⁽²⁾		

(1) Standard.
(2) Top/bottom.

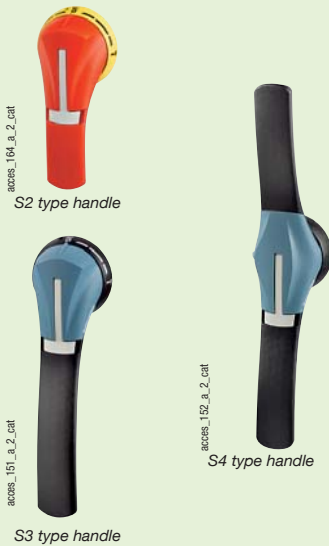
➤ Accessories

Direct operation handle



Rating (A)	No. of poles	Handle colour	Reference
125 ... 160	3/4 P	Black	2699 5042
125 ... 160	6/8 P	Black	4199 5012
125 ... 160	3/4 P	Red	2699 5043
200 ... 630	3/4 P	Black	2699 5052
200 ... 630	3/4 P	Red	2699 5053
250 ... 630	6/8 P	Black	2799 7052
250 ... 630	6/8 P	Red	2799 7053
800 ... 3 200	3/4 P	Black	2799 7012
800 ... 3 200	3/4 P	Red	2799 7013
800 ... 1 600	6/8 P	Black	2799 7012
800 ... 1 600	6/8 P	Red	2799 7013
4 000 ... 5 000	3/4 P	Black	2799 7072

External operation handle



Front operation

Rating (A)	No. of poles	Handle	Handle colour	External IP ⁽¹⁾	Reference
125 ... 630	3/4 P	S2 type	Black	IP55	1421 2111
125 ... 630	3/4 P	S2 type	Black	IP65	1423 2111
125 ... 630	3/4 P	S2 type	Red/Yellow	IP65	1424 2111
125 ... 160	6/8 P	S2 type	Black	IP55	1421 2111
125 ... 160	6/8 P	S2 type	Black	IP65	1423 2111
125 ... 160	6/8 P	S2 type	Red/Yellow	IP65	1424 2111
250 ... 630	6/8 P	S4 type	Black	IP65	1443 3111
250 ... 630	6/8 P	S4 type	Red/Yellow	IP65	1434 3111
800 ... 1600	6/8 P		Black	IP65	2799 7145
800 ... 1 800	3/4 P	S4 type	Black	IP65	1443 3111
800 ... 1 800	3/4 P	S4 type	Red/Yellow	IP65	1444 3111
2 000 ... 3200	3/4 P		Black	IP65	2799 7136 ⁽²⁾
2 000 ... 3 200	3/4 P		Red	IP65	2799 7134
4 000 ... 5 000	3/4 P		Black	IP65	2799 7155 ⁽²⁾

(1) IP: Degree of protection according to standard IEC 60529.
 (2) Standard.

External right side operation

Rating (A)	No. of poles	Handle	Handle colour	External IP ⁽¹⁾	Reference
125 ... 630	3/4 P	S2 type	Black	IP55	1425 2111 ⁽²⁾
125 ... 630	3/4 P	S2 type	Black	IP65	1427 2111
125 ... 630	3/4 P	S2 type	Red/Yellow	IP65	1428 2111
800 ... 1 800	3/4 P	S3 type	Black	IP65	1437 3111 ⁽²⁾
800 ... 1 800	3/4 P	S3 type	Red/Yellow	IP65	1438 3111

(1) IP: Degree of protection according to standard IEC 60529.
 (2) Standard.

Use

The door interlocked external operation handle includes one padlockable handle, one escutcheon and must be utilised with an extension shaft.

Alternative S type handle cover colors



Use

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

S type handle adapter



aces_187_a_1_cat

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.

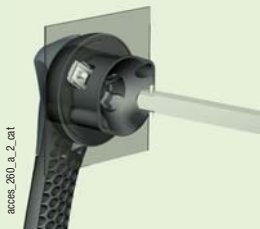
Dimensions

Adds 12 mm to the depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	10	IP65	1493 0000

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

Shaft guide for external operation



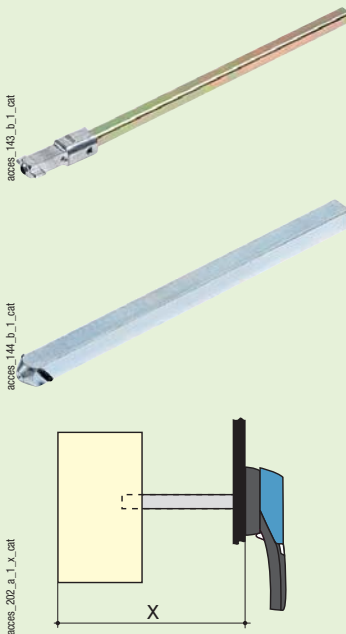
aces_260_a_2_cat

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 length over 320 mm.

Description	Reference
Shaft guide	1429 0000

Shaft for external handle



aces_143_b_1_cat

aces_144_b_1_cat

aces_202_a_1_x_cat

For 3/4 pole

Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
125 ... 160	125 ... 250	200 mm	1400 1020
125 ... 160	125 ... 300	250 mm	1400 1025
125 ... 160	125 ... 370	320 mm	1400 1032
125 ... 160	125 ... 550	500 mm	1400 1050
125 ... 160	125 ... 850	750 mm	1400 1075
200 ... 250	135 ... 265	200 mm	1400 1020
200 ... 250	135 ... 315	250 mm	1400 1025
200 ... 250	135 ... 385	320 mm	1400 1032
200 ... 250	135 ... 565	500 mm	1400 1050
200 ... 250	135 ... 880	750 mm	1400 1075
315... 630	165 ... 295	200 mm	1400 1020
315... 630	165 ... 345	250 mm	1400 1025
315... 630	165 ... 415	320 mm	1400 1032
315... 630	165 ... 595	500 mm	1400 1050
315... 630	165 ... 940	750 mm	1400 1075
800 ... 1800	221 ... 343	200 mm	1401 1520
800 ... 1 800	221 ... 463	320 mm	1401 1532
800 ... 1 800	221 ... 543	400 mm	1401 1540
2000 ... 3 200	415 ... 570	200 mm	2799 3015
2000 ... 3 200	415 ... 690	320 mm	2799 3018
2000 ... 3 200	415 ... 820	450 mm	2799 3019
4 000 ... 5 000	550 ... 680	200 mm	2799 3015
4 000 ... 5 000	651 ... 921	320 mm	2799 3018

For 6/8 pole

Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
125 ... 160	270 ... 436	200 mm	1400 1020
125 ... 160	270 ... 556	320 mm	1400 1032
250 ... 630	221 ... 308	200 mm	1401 1520
250 ... 630	221 ... 428	320 mm	1401 1532
250 ... 630	221 ... 508	400 mm	1401 1540
800 ... 1600	651 ... 921	320 mm	2799 3018

Use

Standard lengths:

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

Other lengths: consult us.

Door mounting kit

Use
 Kit enables door mounting for the SIRCO.

For 3/4 pole direct front operation

Rating (A)	No. of poles	Reference
125 ... 160	3 P	2699 3312
125 ... 160	4 P	2699 4312
200 ... 250	3 P	2699 3420
200 ... 250	4 P	2699 4420

Auxiliary contacts



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 AC: IP2 with front and side operation.

Connection to the control circuit
 By 6.35 mm fast-on terminal.

Electrical characteristics
 30 000 operations.

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 ... 4 000	NO/NC	16	16	4	12	3	2.5	2.5	1	2.5	1.2	0.2
125 ... 3 200	NO + NC	16	16	4	16	3	16	5	1	2.5	1.2	0.2

References

NO/NC contact for 3/4 pole

Rating (A)	Position AC	Reference
125 ... 3 200	1 st	2699 0031
125 ... 3 200	2 nd	2699 0032
4 000 ... 5 000	1 st /2 nd	included

NO/NC contact for 6/8 pole

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

NO+NC contact for 3/4 pole

Rating (A)	Position AC	Reference
125 ... 3 200	1 st	2699 0141
125 ... 3 200	2 nd	2699 0142

Low level NO/NC contact for 3/4 pole

Rating (A)	Position AC	Reference
100 ... 3 200	1 st	2699 0301
100 ... 3 200	2 nd	2699 0302

Terminal shrouds

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

Advantage
 Perforations allowing remote thermographic inspection without removal.
 The terminal shrouds also provide phase separation for SIRCOs from 125 to 630 A.

For 3/4 pole ⁽¹⁾

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

(1) 2 sets required to shroud top and bottom terminals on 3/4 pole switch.

(2) Reference composed of 3 pieces.

(3) Reference composed of 4 pieces.

For 6/8 pole ⁽¹⁾

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

(1) 4 sets required to shroud top and bottom terminals on 6/8 pole switch.



Shrouded distribution block



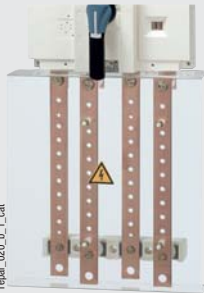
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Use

Easy connection of several cables, can be clipped onto a symmetric DIN rail.

Rating (A)	No. of poles	No. of connections by section (mm ²)	Reference
125	3/4 P	2x25 + 7x10	5420 4108
125	3/4 P	2x25 + 2x16 + 9x10	5420 4112
160	3/4 P	13x25 + 8x16 + x10	5420 4016

Bottom distribution kit



repar_020_b_1_cat

Use

Easy connection of several cables, downstream mounting of the SIRCO.

Rating (A)	No. of poles	No. of connections by section (mm ²)	Reference
125 ... 160	3 P	1 x 95 + 8 x 25	5411 3016
125 ... 160	4 P	1 x 95 + 8 x 25	5411 4016
200 ... 250	3 P	1 x 150 + 8 x 50	5411 3025
200 ... 250	4 P	1 x 150 + 8 x 50	5411 4025
315 ... 400	3 P	1 x 240 + 8 x 95	5411 3040
315 ... 400	4 P	1 x 240 + 8 x 95	5411 4040
500 ... 630	3 P	1 x 300 + 8 x 150	5411 3063
500 ... 630	4 P	1 x 300 + 8 x 150	5411 4063

Terminal screens

Use

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



access_079_a_1_cat

For 3/4 pole

Rating (A)	No. of poles	Position	Reference
125 ... 160	3 P	top / bottom	2698 3012
125 ... 160	4 P	top / bottom	2698 4012
200 ... 250	3 P	top / bottom	2698 3020
200 ... 250	4 P	top / bottom	2698 4020
315 ... 630	3 P	top / bottom	2698 3050
315 ... 630	4 P	top / bottom	2698 4050
800 ... CD 1 250	3 P	top / bottom	2698 3080
800 ... CD 1 250	4 P	top / bottom	2698 4080
1 250 ... 1 800	3 P	top / bottom	2698 3120
1 250 ... 1 800	4 P	top / bottom	2698 4120
2 000 ... 3200	3 P	top / bottom	2698 3200
2 000 ... 3200	4 P	top / bottom	2698 4200
4 000 ... 5 000	3/4 P	top / bottom	consult us

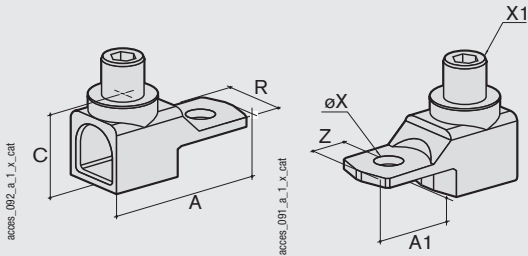
For 6/8 pole

Rating (A)	No. of poles	Position	Pack	Reference
125 ... 160	6 P	top / bottom	1	1509 3012
125 ... 160	8 P	top / bottom	1	1509 4012
250	6 P	top / bottom	1	1509 3025
250	8 P	top / bottom	1	1509 4025
400 ... 630	6 P	top / bottom	2	1509 3063
400 ... 630	8 P	top / bottom	2	1509 4063
800 ... 1 250	6 P	top / bottom	2	1509 3080
800 ... 1 250	8 P	top / bottom	2	1509 4080
1 600	6 P	top / bottom	2	1509 3160
1 600	8 P	top / bottom	2	1509 4160

Cage terminals

Use

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



References

Rating (A)	No. of poles	Reference
125 ... 160	3 P	5400 3016
125 ... 160	4 P	5400 4016
200 ... 250	3 P	5400 3025
200 ... 250	4 P	5400 4025
315 ... 400	3 P	5400 3040
315 ... 400	4 P	5400 4040
500 ... 630	3 P	5400 3063
500 ... 630	4 P	5400 4063

Connections

Rating (A)	Section flexible cable (mm ²)	Section rigid cable (mm ²)	Width flexible bar (mm)	Stripped over (mm)
125 ... 160	16 ... 95	16 ... 95	13	22
200 ... 250	16 ... 185	16 ... 185	18	27
315 ... 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
125 ... 160	47.5	22.5	25	20	8.5	M12	10
200 ... 250	62	31.5	31.5	25	10.5	M16	14
315 ... 400	71.5	32	38	32	10.5	M20	15
500 ... 630	76.5	37	38	40	12.5	M20	15

Copper bars connection kits

Fig. 1

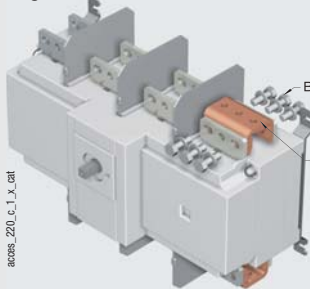
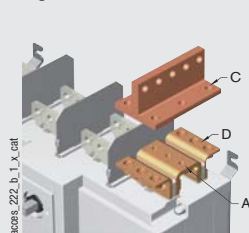


Fig.2



Use

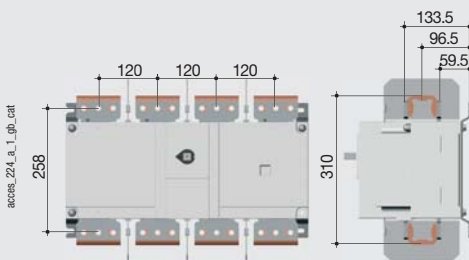
To allow connection between the two power terminals from a same pole for 2000 to 3200 A ratings (Fig. 1 and Fig 2).

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

Bolt sets must be ordered separately.

Technical notice for these specific accessories is downloadable from www.socomec.com.

Fig. 1

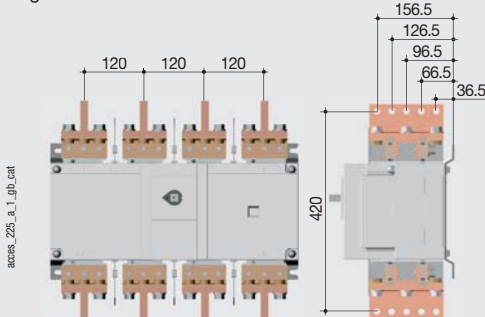


Top or bottom flat connection - Fig. 1

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2 000 ... 2 500	Connection - part A	1	2619 1200
2 000 ... 2 500	Bolt set - part B	1	2699 1200
3 200	Connection - part A		included
3 200	Bolt set - part B	1	2699 1200

(1) Example for 3 pole device equipped upstream only; order 3 times the indicated quantities.

Fig.2



Top or bottom edgewise connection - Fig. 2

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2 000 ... 2 500	Connection - part A	1	2619 1200
2 000 ... 2 500	T piece - part C	1	2629 1200 ⁽²⁾
2 000 ... 2 500	Right angle - part D	1	2639 1200 ⁽²⁾
3 200	Connection - part A		included
3 200	T piece - part C	1	2629 1200
3 200	Right angle - part D	1	2639 1200

(1) Example for 3 pole device equipped upstream only; order 3 times the indicated quantities.

(2) Bolt set is provided with the accessories.

Inter phase barrier



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Use

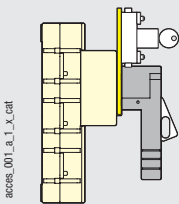
Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

The terminal shrouds also provide phase separation for SIRCOs from 125 to 630 A.

Rating (A)	No. of poles	Reference
125 ... 160	3 P	2998 0033
125 ... 160	4 P	2998 0034
200 ... 250	3 P	2998 0023
200 ... 250	4 P	2998 0024
315 ... 630	3 P	2998 0013
315 ... 630	4 P	2998 0014
800 ... 3 200	3/4 P	included
4 000 ... 5 000	3/4 P	included

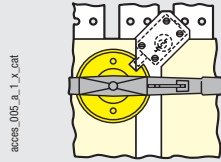
Handle key interlocking accessories

Fig. 1



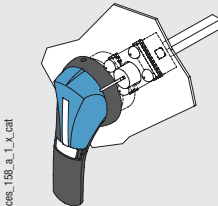
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Fig.2



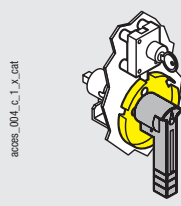
access_005_a_1_x_cat

Fig. 3



access_198_a_1_x_cat

Fig. 5



access_004_c_1_x_cat

Use

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

- using a lock (not supplied) and the factory integrated padlocking function of the handle. From 125 to 1800 A, the padlock on the external front operation handle also locks the door,
- using padlock (not supplied): see diagrams opposite,
- using undervoltage coil: the SIRCO can only be closed if the coil is live.

For 6/8 pole: consult us.

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 ... 1 800	3/4 P	external front	3	1499 7701
800 ... 3200	3/4 P	front direct	2	2699 6027
4 000 ... 5 000	3/4 P	external front	4	2799 7002

(1) Front operation handle included.

Locking using CASTELL lock (not supplied)

Rating (A)	No. of poles	Operation	Lock type	Figure	Reference
125 ... 160	6/8 P	external front	K	2	4109 8507
125 ... 1 800	3/4 P	external front	FS	3	1499 7703
125 ... 1 800	3/4 P	external front	K	3	1499 7702
250 ... 630	6/8 P	external front	K	2	2999 8707
800 ... 1600	6/8 P	external front	K	2	2799 7003
2000 ... 4000	3/4 P	external front	K	2	2799 7003

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 ... 3 200	3/4 P	front direct	2699 9315 ⁽¹⁾

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

Other specific accessories



bu03_04_01

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

➔ Characteristics according to IEC 60947-3

125 to 800 A

Thermal current I_{th} (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	1 000	1 000	1 000	1 000	1 000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	12	12	12	12	12

Rated operational currents I_e (A)										
Rated voltage	Load duty 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⁾
400 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
400 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
400 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
500 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
500 VAC	AC-22 A / AC-22 B	125/125	125/125	200/200	250/250	315/315	400/400	400/400	500/500	800/800
500 VAC	AC-23 A / AC-23 B	100/100	100/100	160/200	200/250	315/315	315/315	315/315	315/315	630/800
690 VAC ⁽²⁾	AC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630	800/800
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	160/200	200/250	315/315	400/400	400/400	500/500	800/800
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	125/125	125/160	125/160	250/315	250/315	250/315	315/315	800/800
690 VAC ⁽²⁾	AC-23 A / AC-23 B	63/80	63/80	80/100	100/125	160/200	160/200	160/200	160/200	200/250
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	125/125 ⁽³⁾	160/160 ⁽³⁾	160/200 ⁽³⁾	200/200 ⁽³⁾	315/315 ⁽³⁾	400/400 ⁽³⁾	400/500 ⁽³⁾	500/500 ⁽³⁾	800/800 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	125/125 ⁽³⁾	125/125 ⁽³⁾	160/160 ⁽³⁾	200/200 ⁽³⁾	315/315 ⁽³⁾	400/400 ⁽³⁾	400/400 ⁽³⁾	500/500 ⁽³⁾	800/800 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	125/125 ⁽⁴⁾	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	200/200 ⁽⁴⁾	315/315 ⁽⁴⁾	400/400 ⁽⁴⁾	400/400 ⁽⁴⁾	500/500 ⁽⁴⁾	800/800 ⁽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	125/125 ⁽³⁾	125/125 ⁽³⁾	160/200 ⁽³⁾	200/200 ⁽³⁾	315/315 ⁽³⁾	400/400 ⁽³⁾	400/400 ⁽³⁾	500/500 ⁽³⁾	800/800 ⁽⁴⁾
500 VDC	DC-22 A / DC-22 B	125/125 ⁽⁴⁾	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	200/200 ⁽⁴⁾	315/315 ⁽⁴⁾	315/400 ⁽⁴⁾	315/400 ⁽⁴⁾	500/500 ⁽⁴⁾	800/800 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	125/125 ⁽⁴⁾	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	200/200 ⁽⁴⁾	315/315 ⁽⁴⁾	315/400 ⁽⁴⁾	315/400 ⁽⁴⁾	500/500 ⁽⁴⁾	800/800 ⁽⁴⁾

Operational power in AC-23 (kW)										
At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	63/63	80/80	100/100	132/132	160/160	220/220	280/280	280/280	450/450	
At 500 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	63/63	63/63	110/140	140/160	220/220	220/220	220/220	220/220	450/560	
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	55/75	55/75	75/90	90/110	150/185	150/185	150/185	150/185	185/220	

Reactive power (kvar)										
At 400 VAC (kvar) ⁽⁵⁾	55	75	90	115	145	185	230	290	365	

Fuse protected short-circuit withstand (kA rms prospective)										
Prospective short-circuit (kA rms) ⁽⁶⁾	100	100	80	50	100	100	100	70	50	
Associated fuse rating (A) ⁽⁶⁾	125	160	200	250	315	400	500	630	800	

Short-circuit capacity										
Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)	15	15	17	17	25	25	25	25	50	
Rated peak withstand current (kA peak) ⁽⁶⁾	20	20	30	30	45	45	45	45	55	

Connection										
Min. connection wire range	35	50	70	95	150	185	240	2 x 150	2 x 185	
Minimum Cu busbar section (mm ²)								2 x 30 x 5	2 x 40 x 5	
Maximum Cu cable 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 (Nm)	9	9	20	20	20	20	20	20		

Mechanical characteristics										
Durability (number of operating cycles)	10 000	10 000	10 000	10 000	5 000	5 000	5 000	5 000	3 000	
Operating effort (Nm)	6.5	6.5	10	10	14.5	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 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.

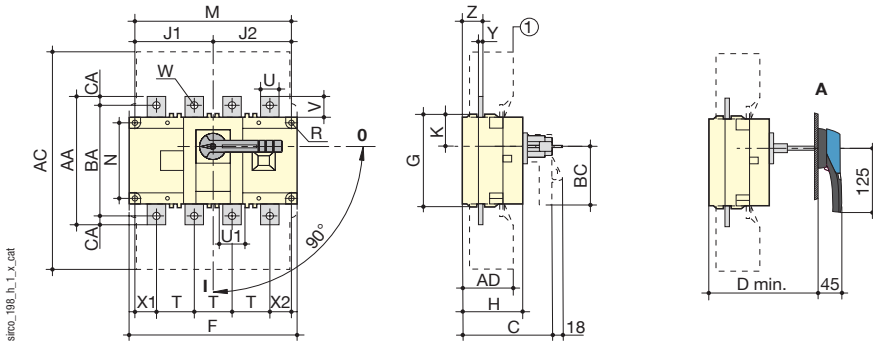
➔ **Dimensions**

Front operation

SIRCO 125 to 630 A

Direct front operation

External front operation



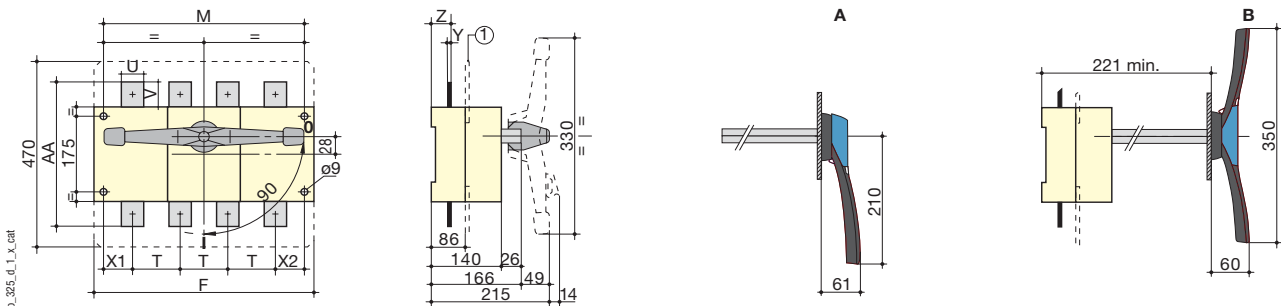
1. Terminal shrouds
A. S2 type handle

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.	J2	K	BC	M 3p.	M 4p.	N	R	T	U	U1	V	W	X1 3p.	X1 4p.	X2	Y	Z	AA	BA	AC
125	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
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	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	25	25.5	30	11	33	33	27	3.5	22.5	160	130	15
250	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	25	25.5	30	11	33	33	27	3.5	22.5	160	130	15
315	160	165	401	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	32	45.5	37.5	11	42.5	37.5	37.5	5	36	235	205	15
400	160	165	401	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	32	45.5	37.5	11	42.5	37.5	37.5	5	36	235	205	15
500	160	165	401	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	32	45.5	37.5	13	42.5	37.5	37.5	5	36	235	205	15
630	160	165	400	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	45	45.5	50	13	42.5	37.5	37.5	5	36	260	220	20

SIRCO 800 to 1800 A

Direct front operation

External front operation



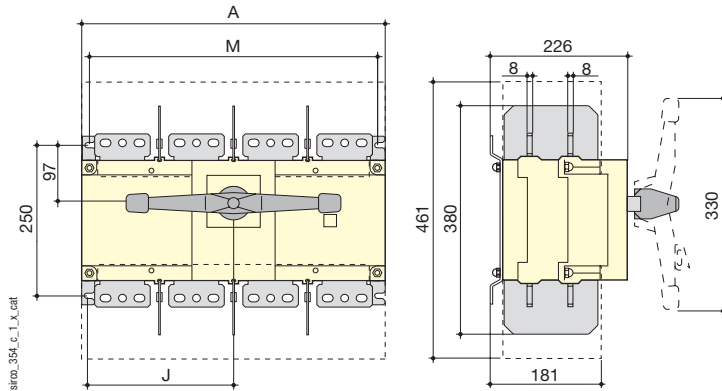
1. Terminal screens
A. Handle single lever S3 type
B. Handle double lever S4 type

Rating (A)	Switch body		Switch mounting		Connection							
	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	Y	X1	X2	Z	AA
800	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321
1 000	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321
CD 1 250	280	360	255	335	80	60	65	7	47.5	47.5	46.5	330
1 250	372	492	347	467	120	90	44	8	53.5	53.5	47.5	288
1 600	372	492	347	467	120	90	44	8	53.5	53.5	47.5	288
1 800	372	492	347	467	120	90	44	8	53.5	53.5	47.5	288

Front operation (continued)

SIRCO 2 000 to 3200 A

Direct front operation

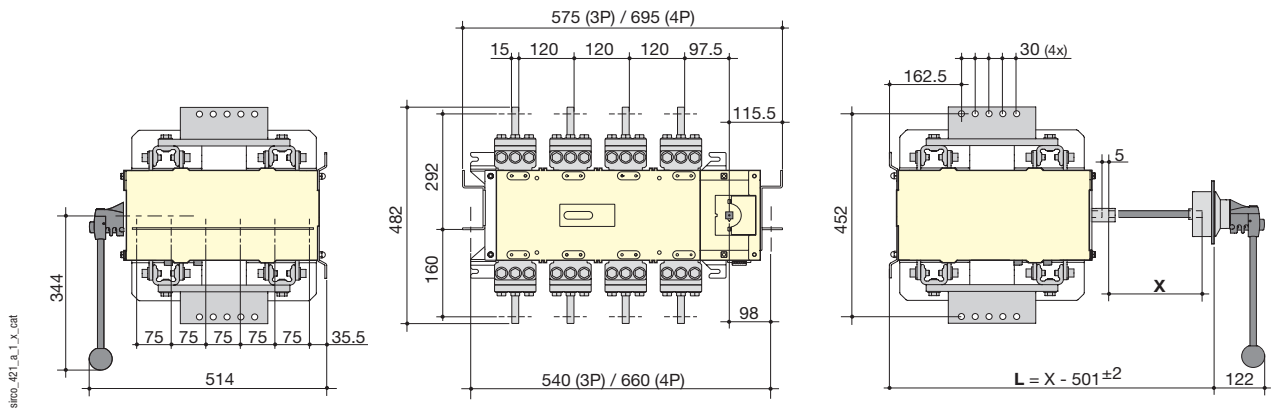


Rating (A)	Overall dimensions		Switch body		Switch mounting	
	A 3p.	A 4p.	J 3p.	J 4p.	M 3p.	M 4p.
2 000	372	492	173.5	233.5	347	467
2 500	372	492	173.5	233.5	347	467
3 200	372	492	173.5	233.5	347	467

SIRCO 4 000 to 5000 A

Direct front operation

External front operation

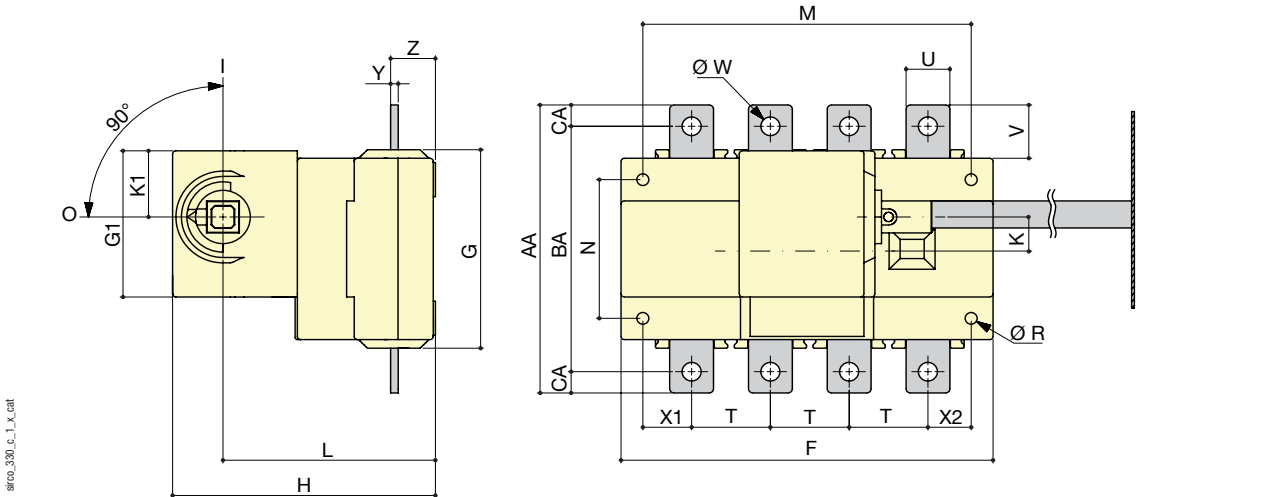


Rating (A)	Overall dimensions		Switch body		Switch mounting	
	A 3p.	A 4p.	F 3p.	F 4p.	M 3p.	M 4p.
4 000...5000	684	804	470	590	347	467

Side operation

SIRCO 125 to 630 A

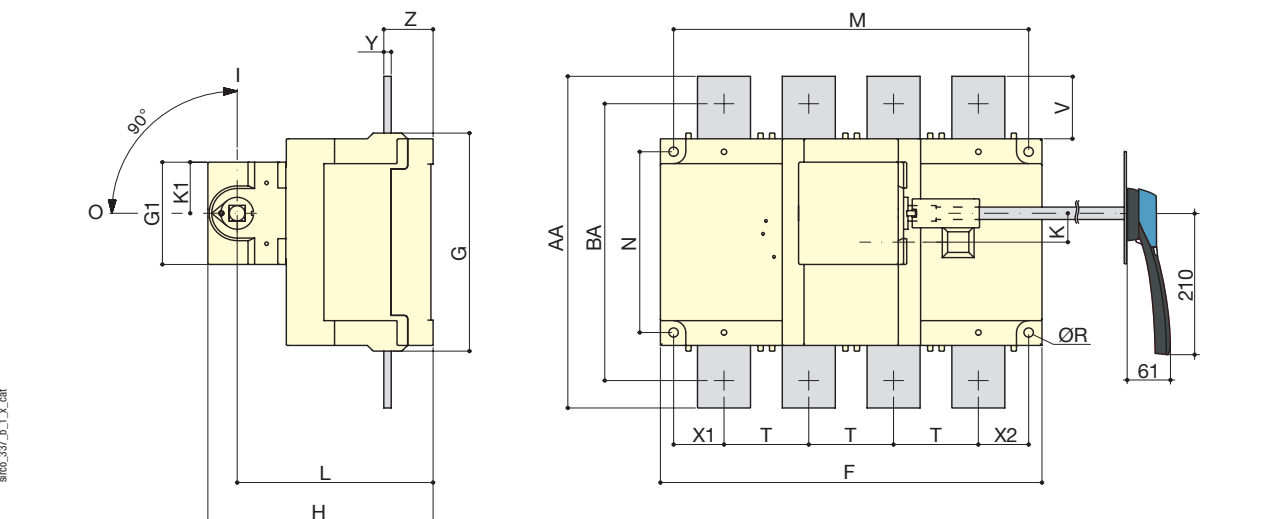
External right side operation



Rating (A)	Switch body				Switch mounting				Connection															
	F 3p.	F 4p.	G	G1	H	K	K1	L	M 3p.	M 4p.	N	R	T	U	V	W	X1 3p.	X1 4p.	X2	Y	Z	AA	BA	AC
125	140	170	93	69	120	15	31	97	120	150	65	5.5	36	20	25	9	28	22	20	3.5	20.5	135	115	10
160	140	170	93	69	120	15	31	97	120	150	65	5.5	36	20	25	9	28	22	20	3.5	20.5	135	115	10
200	180	230	108	69	130	20	31	108	160	210	80	5.5	50	25	30	11	33	33	27	3.5	22.5	160	130	15
250	180	230	108	69	130	20	31	160	210	80	5.5	50	25	30	11	33	33	27	3.5	22.5	160	130	15	
315	230	290	170	69	165	29	31	142	210	270	140	7	65	32	37.5	11	42.5	37.5	37.5	5	36	235	205	15
400	230	290	170	69	165	29	31	142	210	270	140	7	65	32	37.5	11	42.5	37.5	37.5	5	36	235	205	15
500	230	290	170	69	165	29	31	142	210	270	140	7	65	32	37.5	13	42.5	37.5	37.5	5	36	235	205	15
630	230	290	170	69	165	29	31	142	210	270	140	7	65	45	50	13	42.5	37.5	37.5	5	36	260	220	20

SIRCO 800 to 1800 A

External right side operation



Rating (A)	Switch body				Switch mounting				Connection													
	F 3p.	F 4p.	G	G1	H	K	K1	L	M 3p.	M 4p.	N	R	T	V	X1	X2	Y	Z	AA	BA		
800	280	360	211	99	213	28	50	185	255	335	175	9	80	60.5	47.5	47.5	7	46.5	321	268		
CD 1 250	280	360	211	99	213	28	50	185	255	335	175	9	80	65	47.5	47.5	7	46.5	330			
1 800	372	492	211	99	213	28	50	185	347	467	175	9	120	44	53.5	53.5	8	47.5	288	258		

➤ Dimensions for external handles

SIRCO 125 to 630 A

Handle type	Direction of operation	Door drilling	
<p>S2 type</p>	<p>Front operation</p> <p>Direction of operation</p>	<p>With lock RONIS EL11AP</p>	<p>With lock CASTELL K</p>

sirco_426_a_1_gp_cat

Handle type	Direction of operation	Door drilling	
<p>S2 type</p>	<p>Side operation</p> <p>Right side operation</p>	<p>With lock RONIS EL11AP</p>	<p>With lock CASTELL K</p>

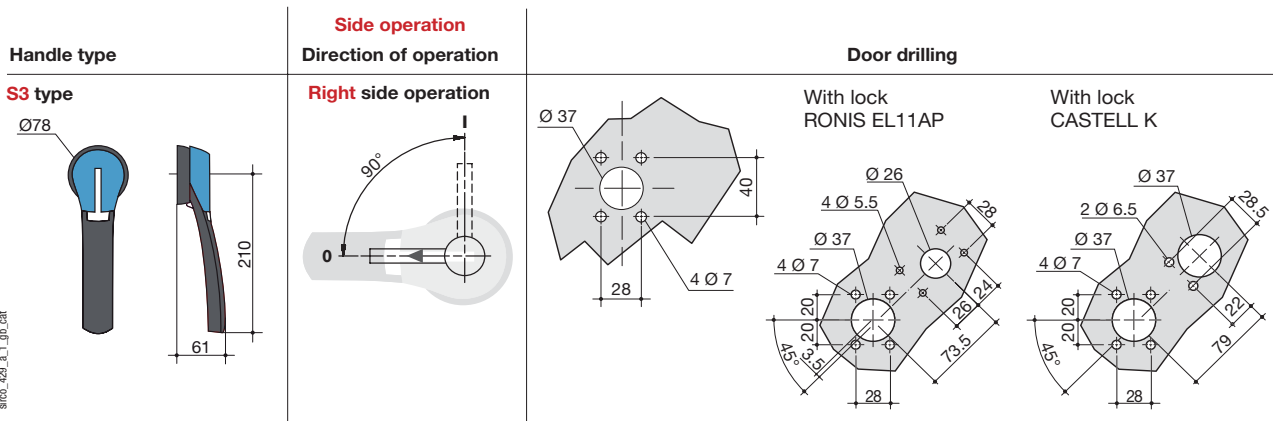
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SIRCO 800 to 1800 A

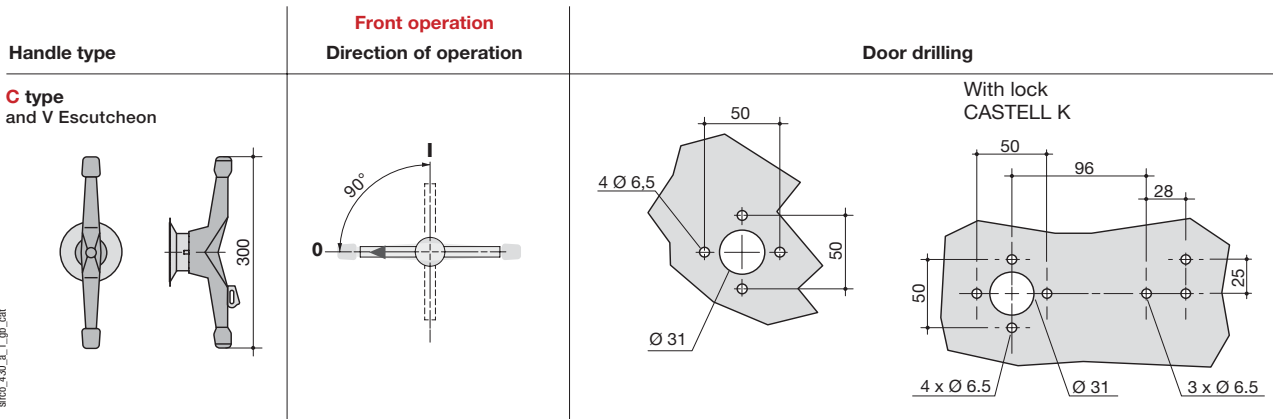
Handle type	Direction of operation	Door drilling	
<p>S4 type</p>	<p>Front operation</p> <p>Direction of operation</p>	<p>With lock RONIS EL11AP</p>	<p>With lock CASTELL K</p>

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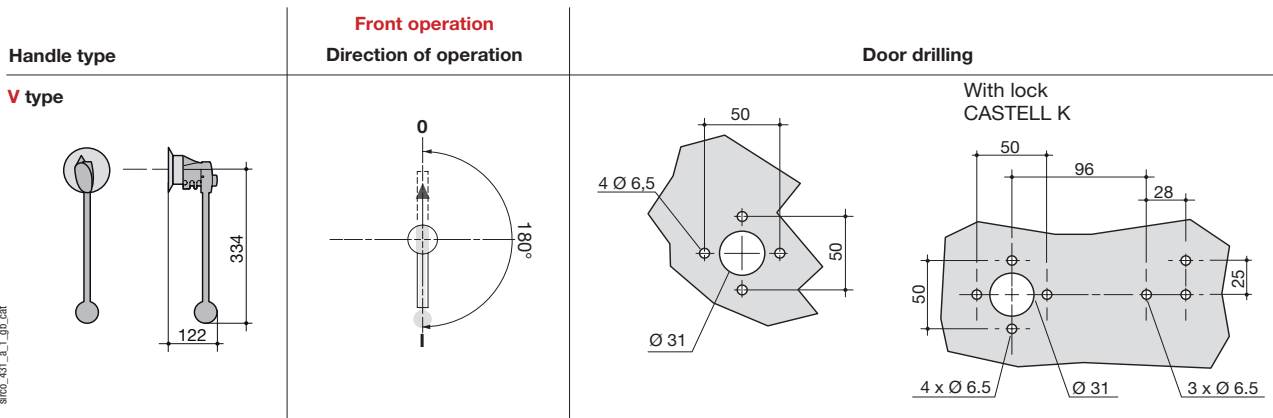
SIRCO 800 to 1800 A



SIRCO 2 000 to 3200 A

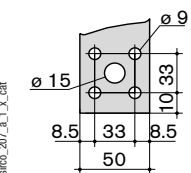


SIRCO 4 000 to 5000 A

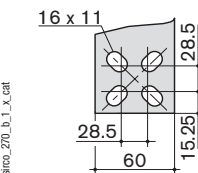


➔ **Connection terminals**

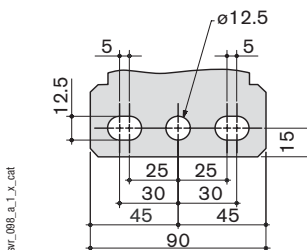
SIRCO 800 to 1000 A



SIRCO CD 1 250 A



SIRCO 1 250 to 3200 A





Load break switches with visible breaking from 125 to 1600 A

➔ Function

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

➔ General characteristics

- Fully visible breaking.
- Visible double breaking.

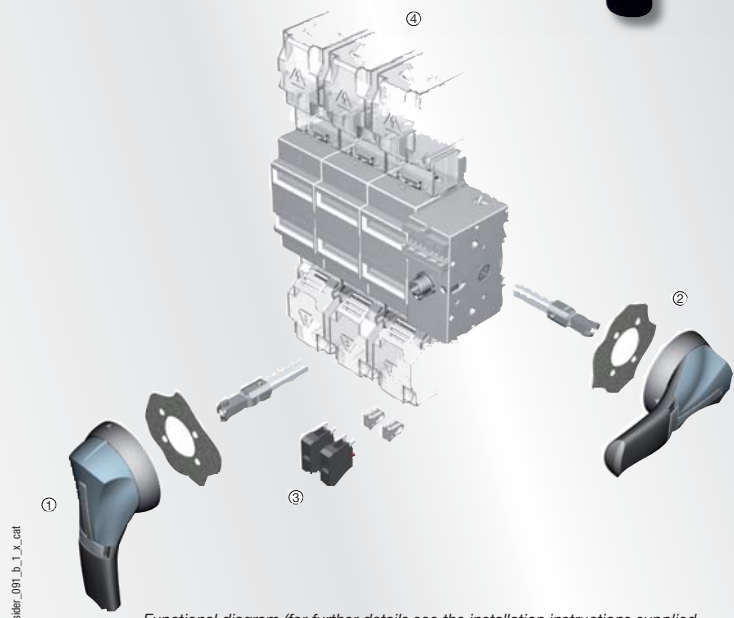
➔ Conformity to standards

- IEC 60947-3
- EN 60947-3
- VDE 0660-107 (1992)
- NBN EN 60947-3
- BS EN 60947-3

➔ Approvals and certifications⁽¹⁾

- PSA E03.15.605.G
- RENAULT EB03.15.613
- UKR (Ukraine)
- GOST (Russia)

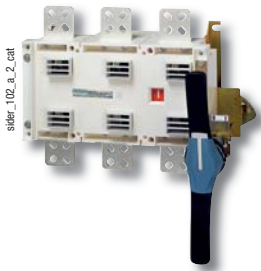
⁽¹⁾ Product reference on request.



Functional diagram (for further details see the installation instructions supplied with every device).

1. External front operation
2. External side operation
3. 2x2 configurable U type ACs, for pre-break and signalling or TEST.
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 contacts
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 inverter NO/NC 2799 0001 ⁽²⁾ 2 nd contact NO/NC 2799 0002 ⁽²⁾
	4 P	2900 4063	2900 4063				
800 A	3 P	2900 3080	2900 3080				
	4 P	2900 4080	2900 4080				
1 250 A	3 P	2900 3120	2900 3120				
	4 P	2900 4120	2900 4120				
1 600 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.



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 contacts
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 1401 1520 ⁽¹⁾	1 st contact NO/NC 2799 0011 ⁽²⁾ 2 nd contact NO/NC 2799 0012 ⁽²⁾
	4 P	2905 4063	2905 4063				
800 A	3 P	2905 3080	2905 3080				
	4 P	2905 4080	2905 4080				
1 250 A	3 P	2905 3120	2905 3120				
	4 P	2905 4120	2905 4120				
1 600 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 ... 1 600	Black	2799 7012 ⁽¹⁾
630 ... 1 600	Red	2799 7013

(1) Standard.

For side operation

Rating (A)	Handle colour	Reference
ND 125 ... ND 500	Black	3629 7901
630 ... 1 600	Black	2799 7052
630 ... 1 600	Red	2799 7053

Direct side escutcheon for operation

Rating (A)	External IP	Reference
630 ... 1 600	IP54	2799 7070

External operation handle



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 ... 1 600	Black	S4 type	IP65	1443 3111 ⁽²⁾
630 ... 1 600	Red	S4 type	IP65	1444 3111

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

(2) Standard.

For right side operation

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
ND 125 ... ND 500	S2 type	Black	IP55	1425 2111
ND 125 ... ND 500	S2 type	Red	IP65	1428 2111
630 ... 1 600	S3 type	Black	IP65	1437 3111
630 ... 1 600	S3 type	Red	IP65	1438 3111

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

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 length 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	10	IP65	1493 0000

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

Alternative S type handle cover colors

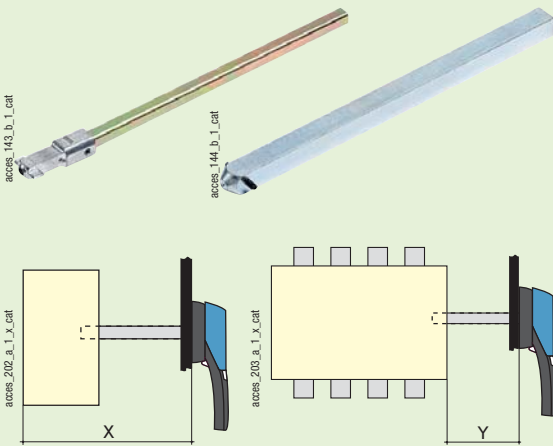


Use

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

Shaft for external handle



Use

Standard lengths:

- 80 mm,
- 200 mm,
- 320 mm,
- 400 mm,
- 500 mm.

Other lengths: 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 ... 1 600	295 ... 555	200 mm	15 x 12	1401 1520
630 ... 1 600	295 ... 675	320 mm	15 x 12	1401 1532
630 ... 1 600	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 ... 1 600	98 ... 258	200 mm	15 x 12	1401 1520

Auxiliary contacts for pre-break and signalling - Front operation



NO/NC contact

Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 st	3999 0021 ⁽¹⁾
ND 125 ... ND 500	2	3999 0022 ⁽¹⁾
630 ... 1 600	1 st	2799 0001
630 ... 1 600	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 direct operation.

NO contact

Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0702 ⁽¹⁾

⁽¹⁾ For direct operation.

NO+NC contact

Rating (A)	Position AC	Reference
630 ... 1 600	1	2799 0005

Low level NO/NC auxiliary contacts

Rating (A)	Position AC	Reference
630 ... 1 600	1	2699 0101

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I ₀ (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
ND 125 ... ND 500	inverter 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 ... 1 600	inverter NO/NC	16	12	8	14	6
630 ... 1 600	NO + NC	15	10	6	15	12

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

By 6.35 mm fast-on terminal.

Characteristics

NO/NC AC: IP2.

Electrical characteristics

30 000 operations.

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 AC: IP2.

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 ... 1 600	1 st	2799 0011
630 ... 1 600	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 ... 1 600	1	2799 0111

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I ₀ (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
ND 125 ... ND 500	inverter 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 ... 1 600	inverter NO/NC	16	12	8	14	6

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



Use

Position 0 and I signalling 1 to 4 NO+NC auxiliary contacts.

Electrical principle

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

Connection to the control circuit
By terminals with max. section 10 mm².

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 ₀ (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.

Advantage

Perforations allowing remote thermographic inspection without removal.

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.

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 / bottom	2998 3080
630 ... 800	4 P	top / bottom	2998 4080
1 250 ... 1 600	3 P	top / bottom	2998 3120
1 250 ... 1 600	4 P	top / bottom	2998 4120

Cage terminals



Use

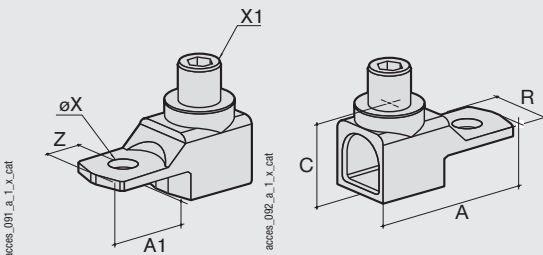
Connection of bare copper cables onto the terminals (without lugs).

Connections

Rating (A)	Section flexible cable (mm ²)	Section rigid cable (mm ²)	Width flexible bar (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

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 ... 1 600	3 P	2998 0003
630 ... 1 600	4 P	2998 0004

Handle key interlocking accessories

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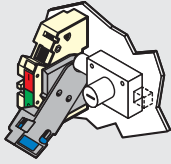


Fig. 1

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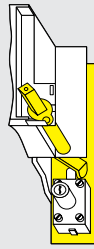


Fig. 2

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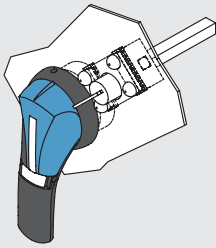


Fig. 3

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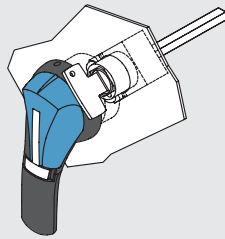


Fig. 4

Use

Locking in position 0 of front or side operation handle:

- using RONIS EL11AP lock in direct front or 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).

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Figure	Reference
ND 125 ... ND 500	Front direct	1	3629 7913 ⁽¹⁾
630 ... 1 600	Front direct	2	2799 7007 ⁽²⁾
ND 125 ... 1 600	External front	3	1499 7701
ND 125 ... ND 500	Direct right side	1	3629 7913 ⁽¹⁾
ND 125 ... 1 600	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

Other specific accessories

bd_03_04_01



- Mechanical coupling device for making switches with "n" poles of the same or different ratings.
- Mechanical interlocking device.
- Mechanical plates and escutcheon for standard systems.

⇨ **SIDER - Characteristics according to IEC 60947-3**

ND 125 to ND 500 A

Thermal current I_{th} (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	Load duty category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A / AC-21 B	125/125	200/200	250/250	315/315	400/400	500/500
400 VAC	AC-22 A / AC-22 B	125/125	200/200	250/250	315/315	400/400	500/500
400 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	315/315	315/315
500 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	250/250	315/315	315/315
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		
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250		
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250		
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200		
440 VDC	DC-20 A / DC-20 B	125/125	200/200	250/250	315/315		
440 VDC	DC-21 A / DC-21 B	125/125 ⁽³⁾	160/160 ⁽³⁾	250/250 ⁽³⁾	250/250 ⁽³⁾		
440 VDC	DC-22 A / DC-22 B	125/125 ⁽³⁾	160/160 ⁽³⁾	250/250 ⁽³⁾	250/250 ⁽³⁾		
440 VDC	DC-23 A / DC-23 B	125/125 ⁽³⁾	125/125 ⁽³⁾	200/200 ⁽³⁾	200/200 ⁽³⁾		
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 ⁽³⁾	160/160 ⁽³⁾	250/250 ⁽³⁾	250/250 ⁽³⁾	315/315 ⁽³⁾	315/315 ⁽³⁾
500 VDC	DC-22 A / DC-22 B	125/125 ⁽³⁾	160/160 ⁽³⁾	250/250 ⁽³⁾	250/250 ⁽³⁾	315/315 ⁽³⁾	315/315 ⁽³⁾
500 VDC	DC-23 A / DC-23 B	125/125 ⁽³⁾	125/125 ⁽³⁾	200/200 ⁽³⁾	200/200 ⁽³⁾	200/315 ⁽³⁾	200/315 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁴⁾	63/63	110/110	140/140	160/160	220/220	295/295
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁴⁾	85/85	110/110	160/160	160/160	220/220	220/220
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁴⁾	110/110	150/150	220/220	220/220	295/295	295/295

Reactive power (kvar)

At 400 VAC (kvar) ⁽⁴⁾	55	90	115	145	185	230
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	100	35	100	60	50	30
Associated fuse rating (A) ⁽⁵⁾	125	200	250	315	400	500

Short-circuit capacity

Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)	15	15	17	17	17	17
Rated peak withstand current (kA peak) ⁽⁵⁾	20	20	32.5	32.5	40	40

Connection

Min. connection wire range						
Minimum Cu busbar section (mm ²)						
Maximum Cu cable 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) 4-pole device with 2 pole in series by 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 $U_n = 400$ VAC.

(6) Increased endurance: please consult us.

630 to 1600 A

Thermal current I_{th} (40°C)	630 A	800 A	1 250 A	1 600 A
Rated insulation voltage U_i (V)	1 000	1 000	1 000	1 000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12

Rated operational currents I_e (A)						
Rated voltage	Load duty category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A / AC-21 B	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
400 VAC	AC-22 A / AC-22 B	630/630	800/800	1 250/1 250	1 250/1 250	1 250/1 250
400 VAC	AC-23 A / AC-23 B	630/630	630/800	1 000/1 000	1 000/1 000	1 000/1 000
500 VAC	AC-20 A / AC-20 B	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
500 VAC	AC-21 A / AC-21 B	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1 000/1 000	1 000/1 000	1 000/1 000
500 VAC	AC-23 A / AC-23 B	500/500	500/500	800/800	800/800	800/800
690 VAC ⁽²⁾	AC-20 A / AC-20 B	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
690 VAC ⁽²⁾	AC-21 A / AC-21 B	630/630	800/800	1 000/1 000	1 250/1 250	1 250/1 250
690 VAC ⁽²⁾	AC-22 A / AC-22 B	315/315	315/315	400/400	400/400	400/400
690 VAC ⁽²⁾	AC-23 A / AC-23 B	100/100	125/125	200/200	200/200	200/200
220 VDC	DC-20 A / DC-20 B	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
220 VDC	DC-21 A / DC-21 B	630/630	800/800	1 000/1 000	1 250/1 250	1 250/1 250
220 VDC	DC-22 A / DC-22 B	630/630	800/800	800/800	800/800	800/800
220 VDC	DC-23 A / DC-23 B	630/630	800/800	800/800	800/800	800/800
440 VDC	DC-20 A / DC-20 B	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
440 VDC	DC-21 A / DC-21 B	500/500	630/630		1 000/1 000	1 000/1 000
440 VDC	DC-22 A / DC-22 B	630/630 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾
440 VDC	DC-23 A / DC-23 B	630/630 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾
500 VDC	DC-20 A / DC-20 B	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
500 VDC	DC-21 A / DC-21 B	500/500	630/630	800/800 ⁽³⁾	1 000/1 000	1 000/1 000
500 VDC	DC-22 A / DC-22 B	630/630 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾
500 VDC	DC-23 A / DC-23 B	630/630 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾	800/800 ⁽³⁾

Operational power in AC-23 (kW)				
At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁴⁾	355/355	355/355	560/560	560/560
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁴⁾	355/355	355/355	560/560	560/560
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁴⁾	90/90	110/110	185/185	185/185

Reactive power (kvar)				
At 400 VAC (kvar) ⁽⁴⁾	290	365	575	

Fuse protected short-circuit withstand (kA rms prospective)				
Prospective short-circuit (kA rms) ⁽⁵⁾	100	70	100	120
Associated fuse rating (A) ⁽⁵⁾	630	800	1 250	2 x 800

Short-circuit capacity				
Rated short-time withstand current 0.3 s. I_{sw} (kA eff.)	50	50	100	100
Rated peak withstand current (kA peak) ⁽⁵⁾	55	55	100	110

Connection				
Min. connection wire range	2 x 150	2 x 185		
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
Maximum Cu busbar width (mm)	63	63	100	100
Tightening torque min (Nm)	20		20	40

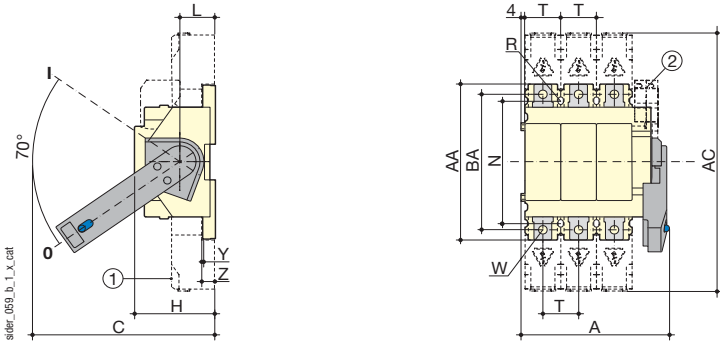
Mechanical characteristics				
Durability (number of operating cycles) ⁽⁶⁾	5 000	4 000	4 000	3 000
Operating effort (Nm)	45	45	45	60
Weight of a 3 pole device (kg)	8	8.5	11	16.5
Weight of a 4 pole device (kg)	9.5	10	14	20.5

- (1) Category with index A = frequent operation - Category with index B = infrequent operation.
 (2) With terminal shrouds or phase barrier.
 (3) 4-pole device with 2 pole in series by 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 $U_n = 400$ VAC.
 (6) Increased endurance: please consult us.

Front operation

SIDER ND 125 to ND 500 A

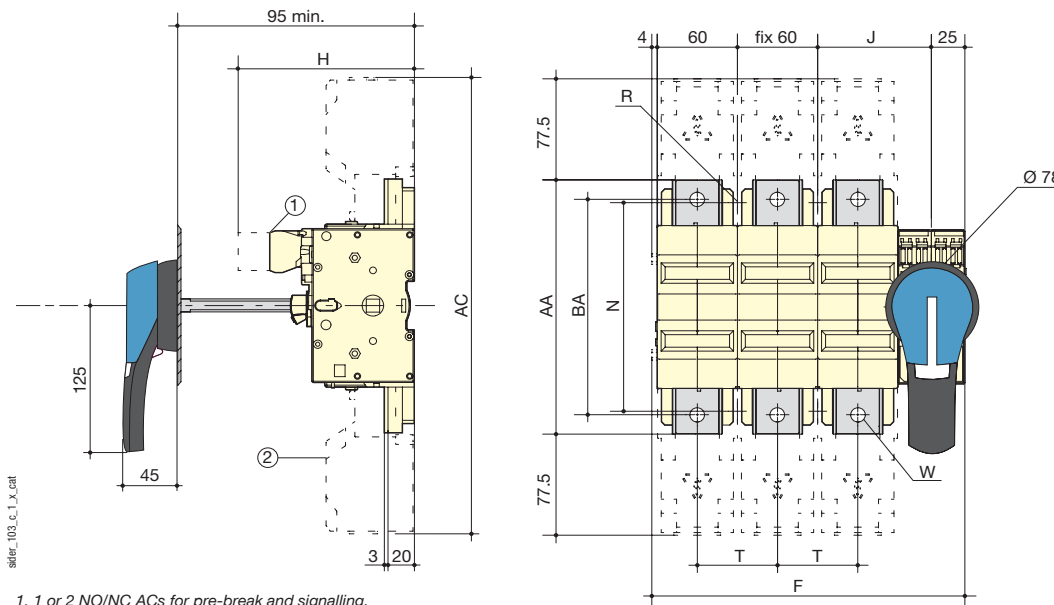
Direct operation



- 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



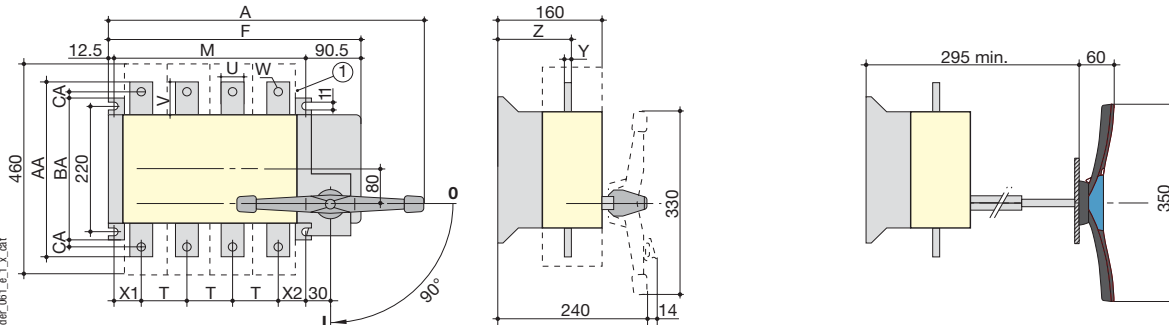
- 1. 1 or 2 NO/NC ACs for pre-break and signalling.
- 2. Terminal shrouds

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

SIDER 630 to 1600 A

Direct front operation

External front operation



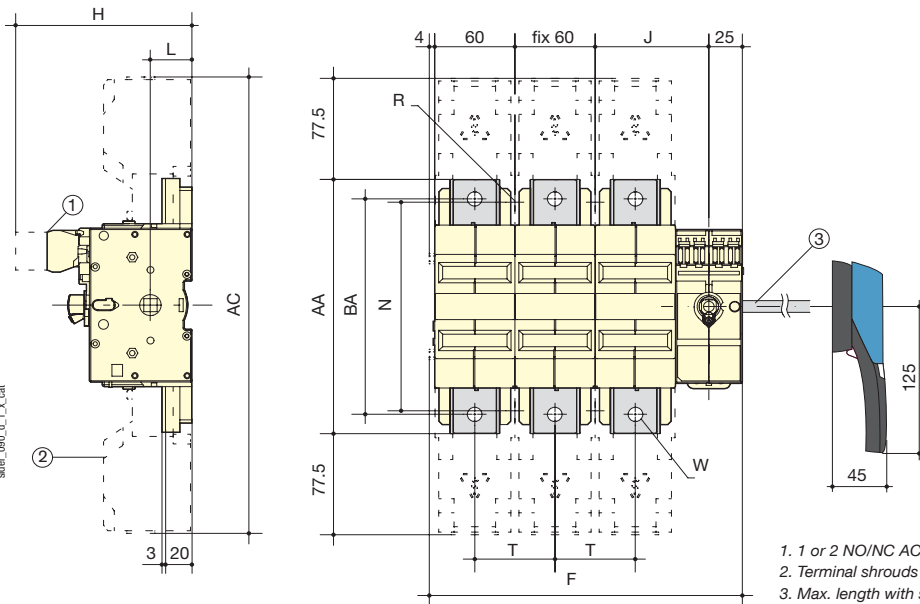
1. Terminal screens

Rating (A)	Overall dimensions		Switch body		Switch mounting		Connection				X1	X2	Y	Z	AA	BA	AC
	A 3p.	A 4p.	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	W							
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		
1 250	555	675	450	560	347	457	120	63	65		46.5	60.5	7	107	330		
1 600	555	675	450	560	347	457	120	80	80		46.5	60.5	15	111	360		

Side operation

SIDER ND 125 to ND 500 A

External side operation



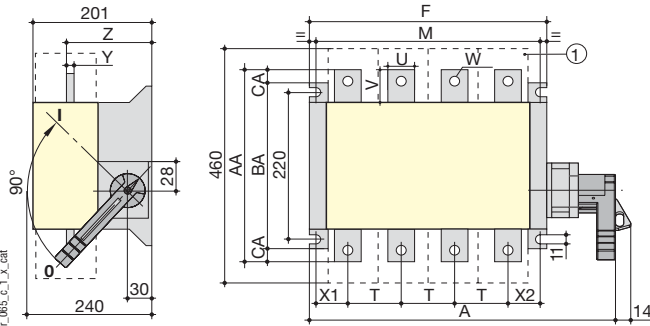
- 1 or 2 NO/NC ACs for pre-break and signalling.
- Terminal shrouds
- Max. length with shaft extension: 230 mm

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

Side operation (continued)

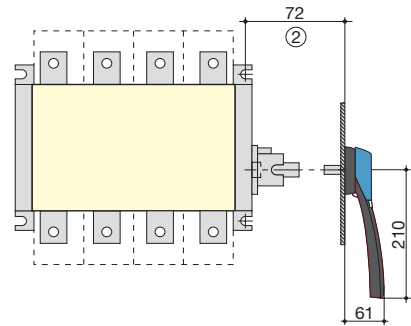
SIDER 630 to 1600 A

Direct side operation



1. Terminals protection screen
2. Max length with shaft extension: 111 mm

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	387	467	280	360	255	335	80	40	50	13	42.5	52.5	6	147	300	260	20
800	387	467	280	360	255	335	80	50	60		47.5	47.5	6	147	320		
1 250	479	599	372	492	347	467	120	63	65		46.5	60.5	7	148	330		
1 600	479	599	372	492	347	467	120	80	80		46.5	60.5	15	152	360		

⇨ Dimensions for external handles

SIDER ND 125 to ND 500 A

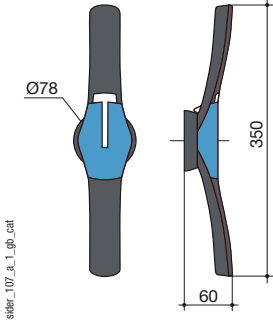
Handle type	Front operation		Door drilling	
	Direction of operation		With lock RONIS EL11AP	With lock CASTELL K
S2 type				
S2 type				
S3 type		Right side operation		
S3 type				

➤ Dimensions for external handles (continued)

SIDER 630 to 1600 A

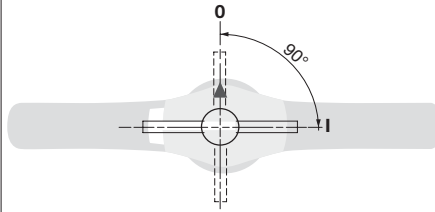
Handle type

S4 type

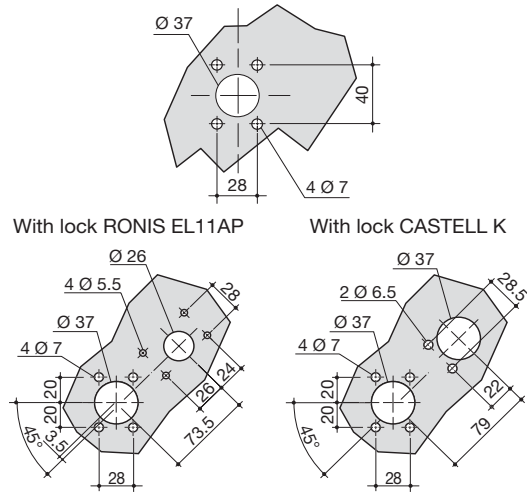


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Front operation
Direction of operation

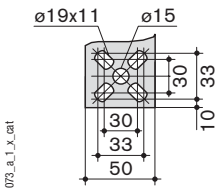


Door drilling



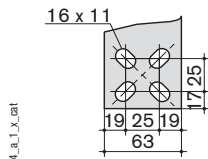
➤ **Connection terminals**

SIDER 800 A



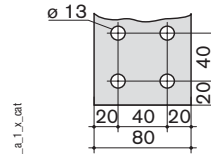
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SIDER 1 250 A

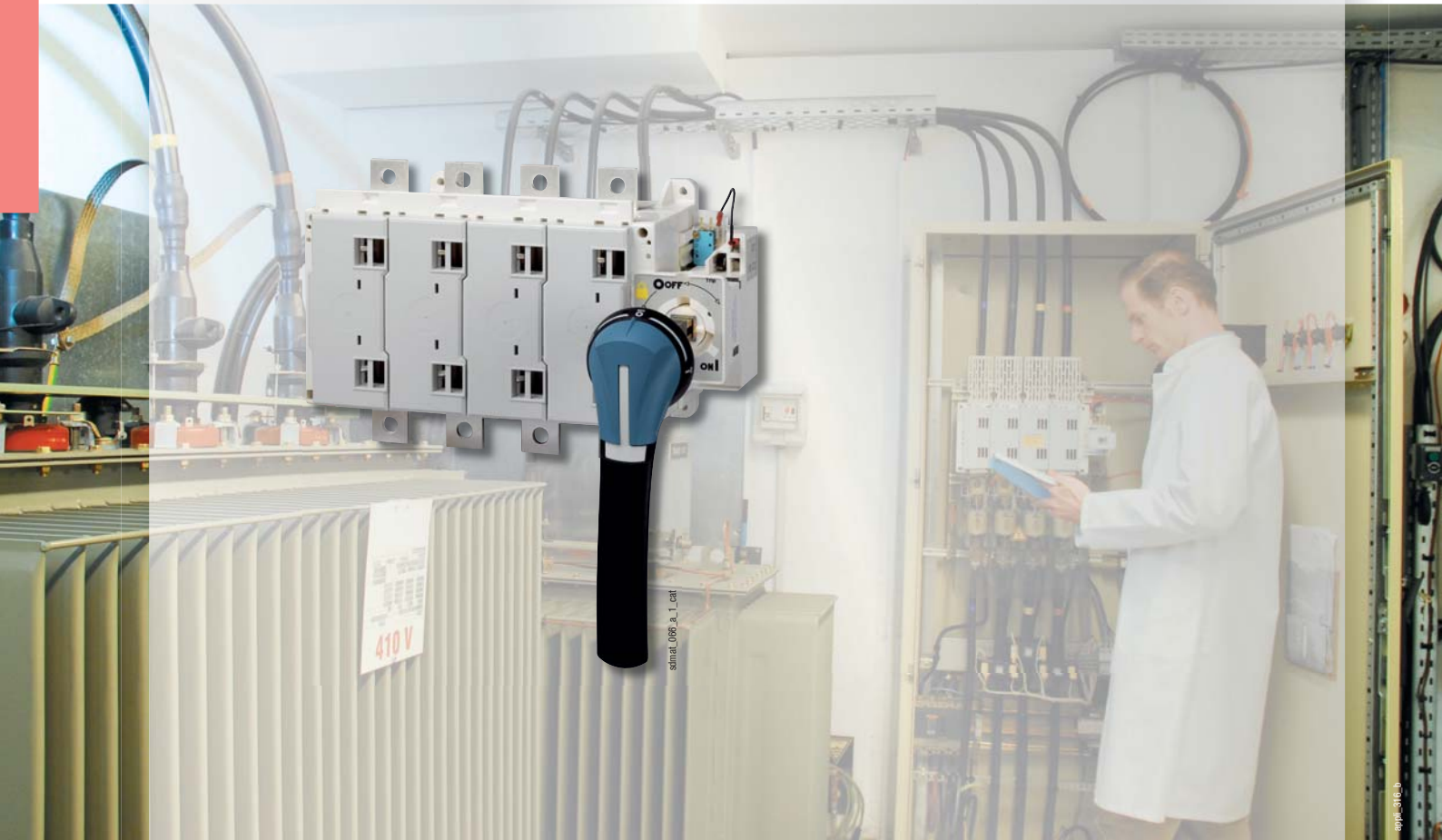


sider_074_a_1_x_cat

SIDER 1 600 A



sider_075_a_1_x_cat



Visible breaking and tripping load break switch from 250 to 1800 A

➤ Function

SIDERMAT are manually operated tri- or tetrapolar load break switches which can be tripped remotely.

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 by combination with toroids and differential relays,
- protection against overloads by combination with CT and thermal relays,
- protection against short circuits with fuses (see page 196 "SIDERMAT combination").

➤ General characteristics

- Remote breaking by voltage release device.
- Visible double breaking.
- Can be triggered by complementary protection modules.

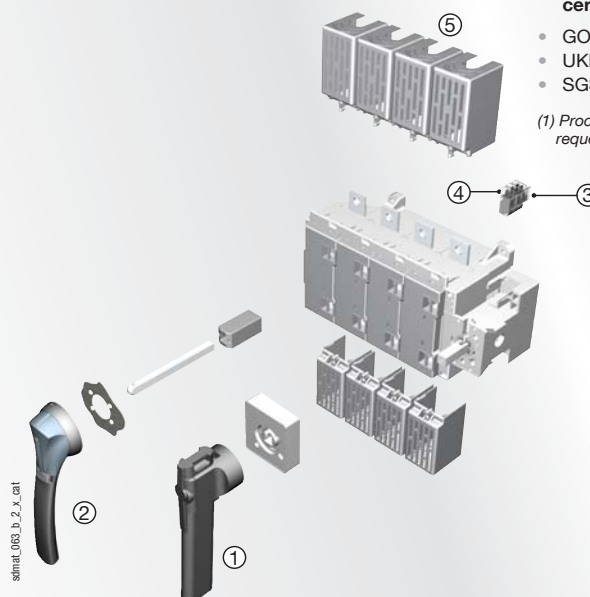
➤ Conformity to standards

- IEC 60947-3
- EN 60947-3
- VDE 0660-107 (1992)
- NBN EN 60947-3
- BS EN 60947-3

➤ Approvals and certifications⁽¹⁾

- GOST (Russia)
- UKR (Ukraine)
- SGS (Saudi Arabia)

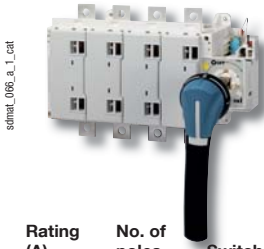
(1) Product reference on request.



Overview (for further details, please see the installation instructions supplied with each device).

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	Type S3 Black IP55 1431 3511 ⁽¹⁾ Type S3 Red/yellow IP55 1432 3511	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						3 P 3998 3063 ⁽²⁾ 4 P 3998 4063 ⁽²⁾		
	4 P	3500 4081								
1 250 A	3 P	3500 3121						3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾		
	4 P	3500 4121								
1 600 A	3 P	3500 3161						3 P 2998 0003 4 P 2998 0004		
	4 P	3500 4161								
1 800 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	Type S3 Black IP55 1435 3511 ⁽¹⁾ Type S3 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 3998 3040 ⁽²⁾ 4 P 3998 4040 ⁽²⁾			
	4 P	3505 4026									
400 A	3 P	3505 3041									3 P 3998 3063 ⁽²⁾ 4 P 3998 4063 ⁽²⁾
	4 P	3505 4041									
630 A	3 P	3505 3064									
	4 P	3505 4064									
800 A	3 P	3505 3081						3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾			
	4 P	3505 4081									
1 250 A	3 P	3505 3121						3 P 2998 0003 4 P 2998 0004			
	4 P	3505 4121									
1 600 A	3 P	3505 3161						included			
	4 P	3505 4161									
1 800 A	3 P	3505 3180									
	4 P	3505 4180									

(1) Standard.
(2) Top/bottom.

↳ SIDERMAT - Accessories

External operation handle



S3 type handle

For front operation

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
250 ... 1 800	S3 type	Black	IP55	1431 3511 ⁽²⁾
250 ... 1 800	S3 type	Red/Yellow	IP55	1432 3511

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

(2) Standard.

For side operation

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
250 ... 1 800	S3 type	Black	IP55	1435 3511 ⁽²⁾
250 ... 1 800	S3 type	Red	IP55	1436 3511

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

(2) Standard.

Direct operation handle



For front operation

Rating (A)	Handle colour	Reference
250 ... 1 800	Black	3999 6203
250 ... 1 800	Red	consult us

For side operation

Rating (A)	Handle colour	Reference
250 ... 1 800	Black	3999 6012
250 ... 1 800	Red	3999 6013

Alternative S type handle cover colors



Use

For Handle single lever S3 type.

Other colours: consult us.

Colour	To be ordered by multiple	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 also be utilised as a spacer to increase the distance between the panel door and the handle lever.

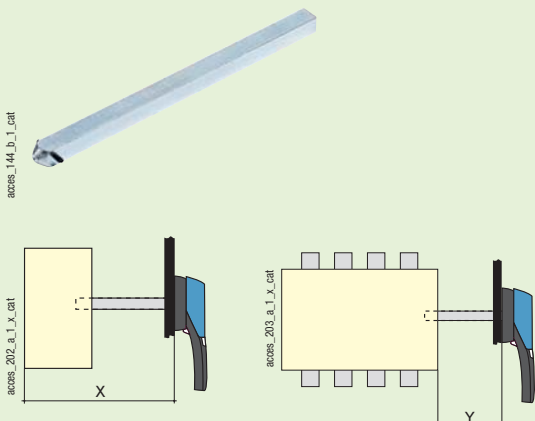
Dimensions

Adds 12 mm to the depth.

Handle colour	To be ordered by multiple	External IP ⁽¹⁾	Reference
Black	10	IP65	1493 0000

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

Shaft for external handle



Use

Standard lengths:

- 200 mm,
- 320 mm.

Other lengths: 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⁾
1 250 ... 1 800	291 ... 455	200 mm	1401 1520
1 250 ... 1 800	291 ... 575	320 mm	1401 1532 ⁽¹⁾

(1) Standard.

For side operation

Rating (A)	Dimension Y (mm)	Shaft length (mm)	Reference
250 ... 1 800	110 ... 279	200 mm	1403 1520

Alternative tripping coils



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:

- 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 + 39913110.

References

Shunt trip coil

Voltage	Replacement tripping coil	Original coil ⁽¹⁾
	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
24 VDC	3990 2024	3991 2024
48 VDC	3990 2048	3991 2048
220 VDC	3990 2220	
12 VDC		3991 2012
110 / 200 VDC		3991 2220

Undervoltage trip coil

Voltage	Replacement tripping coil	Original coil ⁽¹⁾
	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

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

Delayed undervoltage trip coil

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

Characteristics

Shunt trip coil

	24	48	110	230	400
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

	24	48	110	230	400
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

	12	24	48	110	220
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

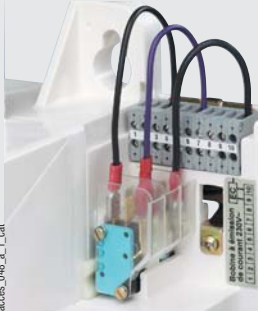
Current-reducing resistor for undervoltage trip coil

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

Auxiliary contacts



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: IP2.

Electrical characteristics

30 000 operations.

References

NO/NC position contact		
Rating (A)	Position AC	Reference
250 ... 1 800	1 st	3999 0051
250 ... 1 800	2 nd	3999 0052

NO/NC low level position contact		
Rating (A)	Position AC	Reference
250 ... 1 800	1 st	3999 0111
250 ... 1 800	2 nd	3999 0112

NO/NC contact, signalling coil tripping		
Rating (A)	Position AC	Reference
250 ... 1 800	1	3999 0031

Characteristics

NO/NC position contact

Rating (A)	Current nominal (A)	Operating current I ₀ (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1 800	16	12	8	14	6

NO/NC changeover contact, signalling coil tripping

Rating (A)	Current nominal (A)	Operating current I ₀ (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1 800	16	12	8	12	2

Terminal shrouds



Use

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

Perforations allowing remote thermographic inspection without removal.

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

Terminal screens

Use

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

Rating (A)	No. of poles	Position	Reference
1 250 ... 1 800	3 P	top / bottom	2998 3120
1 250 ... 1 800	4 P	top / bottom	2998 4120

Inter phase barrier



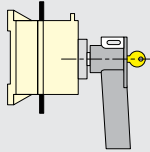
Use

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

Rating (A)	No. of poles	Reference
1 250 ... 1 600	3 P	2998 0003
1 250 ... 1 600	4 P	2998 0004
1 800	3/4 P	included

Handle key interlocking accessories

aces_010_b_1_x_cat



Lock RONIS 1104A

Use

Locking in position 0 of front or side operation handle:

- using a padlock (not supplied) and factory integrated padlocking function of 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).

Locking using RONIS EL11AP lock 1104 (supplied)

Rating (A)	Operation	Reference
250 ... 1 800	direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
250 ... 630	direct	3999 6107
800 ... 1 800	direct	3999 7007

Locking using RONIS EL11AP lock (not supplied)

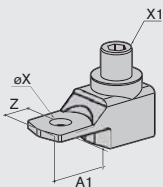
Rating (A)	Operation	Reference
250 ... 1 800	external	1499 7701

Cage terminals

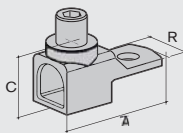
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aces_091_a_1_x_cat



aces_092_a_1_x_cat



Use

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

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

Connections

Rating (A)	Section flexible cable (mm ²)	Section rigid cable (mm ²)	Width flexible bar (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

Other specific accessories

bc_05_04_01



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

➔ **SIDERMAT - Characteristics according to IEC 60947-3**

250 to 1 800 A

Thermal current I_{th} (40°C)	250 A	400 A	630 A	800 A	1 250 A	1 600 A	1 800 A
Rated insulation voltage U_i (V)	1 000	1 000	1 000	1 000	1 000	1 000	1 000
Rated impulse withstand voltage U_{imp} (kV)	8	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Load duty 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	1 250/1 250	1 600/1 600	1 600/1 800
400 VAC	AC-23 A / AC-23 B	250/250	400/400	630/630	630/630	1 250/1 250	1 600/1 600	1 600/1 600
500 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
500 VAC	AC-23 A / AC-23 B	200/250	315/400	500/630	630/630	1 000/1 000	1 250/1 250	1 250/1 250
690 VAC ⁽²⁾	AC-21 A / AC-21 B	250/250	400/400	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
690 VAC ⁽²⁾	AC-22 A / AC-22 B	250/250	400/400	500/630	630/800	1 000/1 000	1 250/1 250	1 250/1 250
690 VAC ⁽²⁾	AC-23 A / AC-23 B	200/250	315/400	400/500	500/500	800/800	1 000/1 000	1 000/1 000
400 VDC	DC-20 A / DC-20 B	250/250	400/400	630/630	800/800	1 250/1 250	1 600/1 600	1 800/1 800
400 VDC	DC-21 A / DC-21 B	250/250	400/400	630/630	800/800	1 250/1 250	1 600/1 600	1 600/1 600
400 VDC	DC-22 A / DC-22 B	250/250	400/400 ⁽³⁾	630/630 ⁽³⁾	800/800 ⁽³⁾	1 250/1 250 ⁽⁴⁾	1 600/1 600 ⁽⁴⁾	1 600/1 600 ⁽⁴⁾
400 VDC	DC-23 A / DC-23 B	200/250	315/400 ⁽³⁾	500/630 ⁽³⁾	630/800 ⁽³⁾	1 250/1 250 ⁽⁴⁾	1 250/1 250 ⁽⁴⁾	1 250/1 250 ⁽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	1 250	2 x 800	2 x 900

Short-circuit capacity

Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)	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 section (mm ²)	95	185	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)	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)	8 000	8 000	5 000	5 000	5 000	3 000	3 000
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 pole in series by polarity.

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

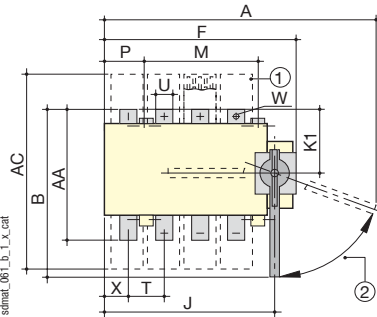
(6) For a rated operational voltage $U_e = 400$ VAC.

➔ **Dimensions**

Front operation

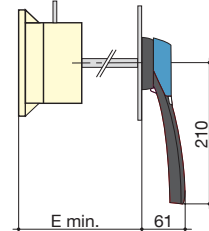
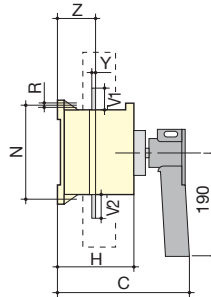
SIDERMAT 250 to 800 A

Direct front operation



1. Terminal shrouds
2. Reset fuse 70°

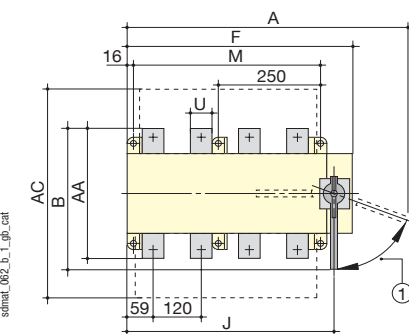
External front operation



Rating (A)	Overall dimensions					Terminal shrouds AC	Switch body					Switch mounting				Connection											
	A 3p.	A 4p.	B	C	E min		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

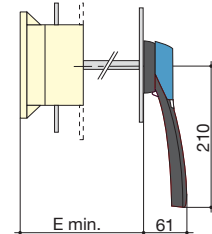
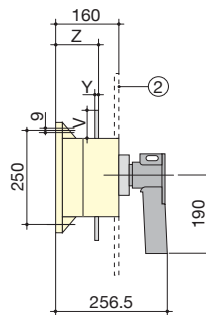
SIDERMAT 1 250 to 800 A

Direct front operation



1. Reset fuse 70°
2. Terminals protection screen

External front operation

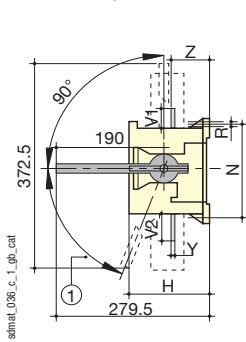


Rating (A)	Overall dimensions				Terminal shrouds AC	Switch body				Switch mounting		Connection				
	A 3p.	A 4p.	B	E min		F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.	U	V	Y	Z	AA
1 250	582	702	355	291	480	437	557	400	520	345	465	63	65	7	106	330
1 600	582	702	370	291	479	437	557	400	520	345	465	80	80	15	110	360
1 800	582	702	370	291	479	437	557	400	520	345	465	100	80	15	110	360

Side operation

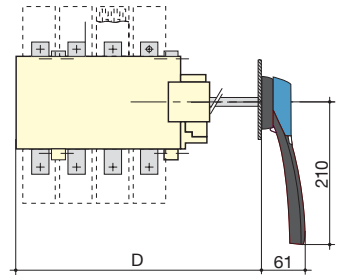
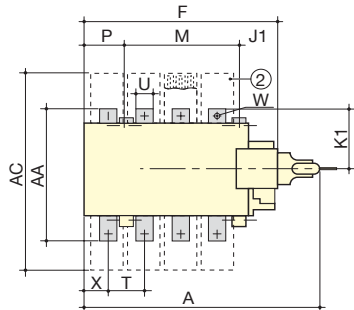
SIDERMAT 250 to 800 A

Direct side operation



1. Reset fuse 70°
2. Terminal shrouds

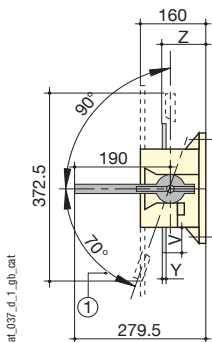
External side operation



Rating (A)	Overall dimensions				Terminal shrouds AC	Switch body				Switch mounting				Connection										
	A 3p.	A 4p.	D 3p.	D 4p.		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

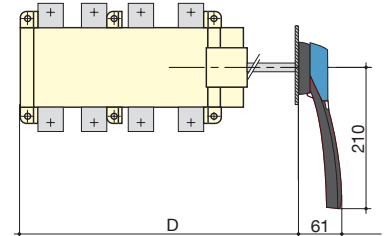
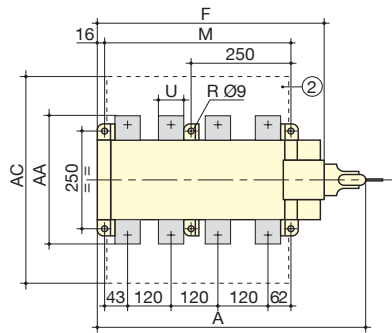
SIDERMAT 1 250 to 1 800 A

Direct side operation



1. Reset fuse 70°
2. Terminals protection screen

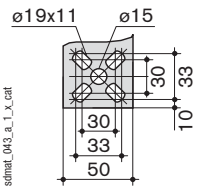
External side operation



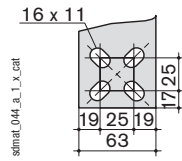
Rating (A)	Overall dimensions				Terminal shrouds AC	Switch body		Switch mounting		Connection				
	A 3p.	A 4p.	D 3p.	D 4p.		F 3p.	F 4p.	M 3p.	M 4p.	U	V	Y	Z	AA
1 250	522	641	504	624	480	437	557	345	465	63	65	7	106	330
1 600	522	641	504	624	479	437	557	345	465	80	80	15	110	360
1 800	522	641	504	624	479	437	557	345	465	100	80	15	110	360

➔ **Connection terminals**

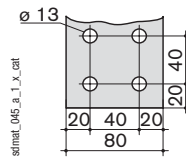
SIDERMAT 800 A



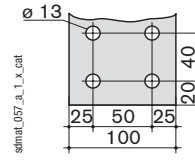
SIDERMAT 1 250 A



SIDERMAT 1 600 A

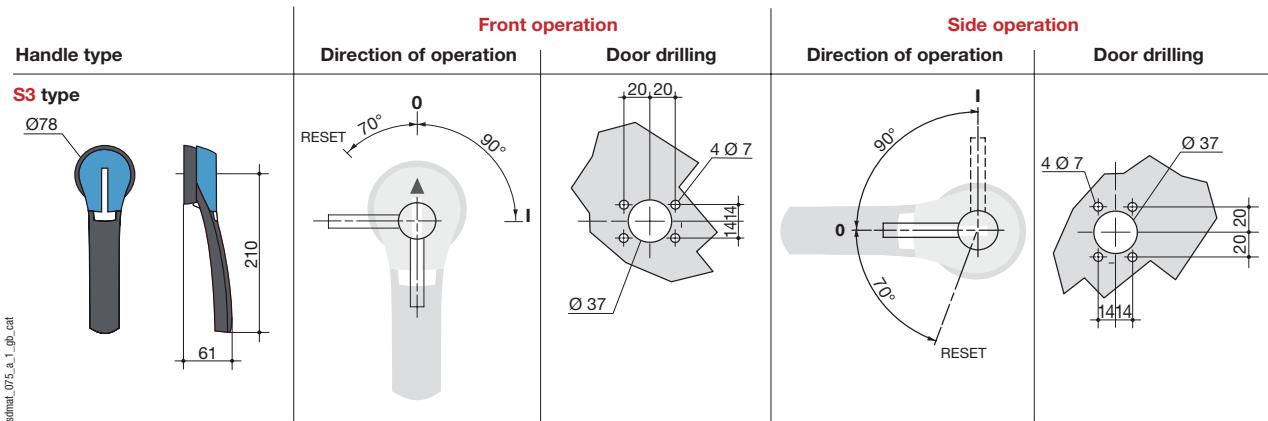


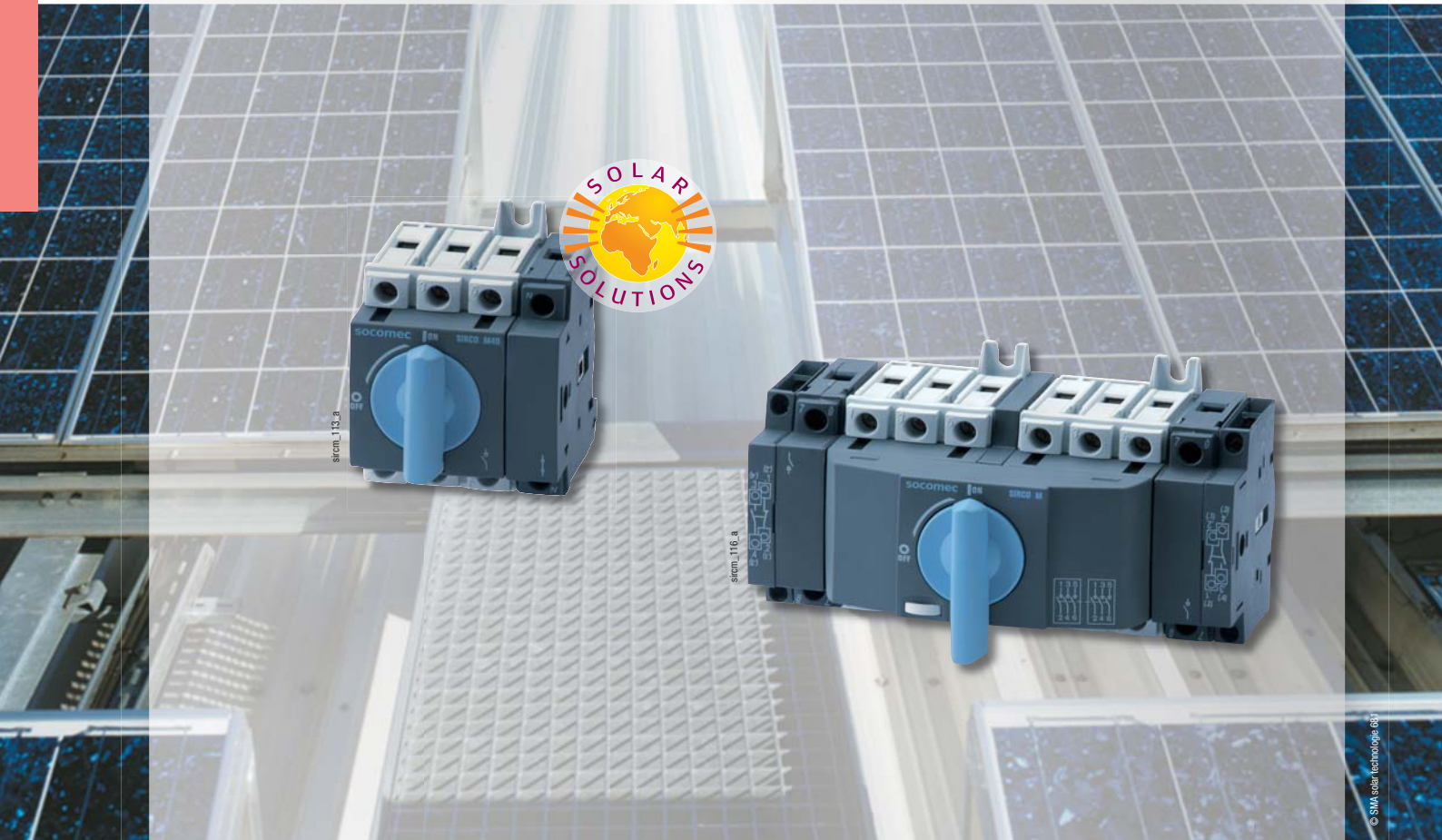
SIDERMAT 1 800 A



➔ **Dimensions for external handles**

SIDERMAT 250 to 1800 A





500 V d.c., 600 V d.c. and 800 V d.c. Photovoltaic Switch 25 to 40 A

➤ Function

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

➤ Customised solutions

- SIRCO M PV 9 and 12 poles.
- SIRCO M PV and SIRCO M for simultaneous break of AC / DC circuits.
- SIRCO M PV mixed ratings.

➤ General characteristics

- Modular and flexible device.
- Fully visualised breaking.
- Double break per phase.
- Contact point technology.
- DIN rail mounting, panel or modular panel with 45 mm front cut out.

➤ Conformity to standards

- IEC 60947-3
- EN 60947-3
- IEC 60364-4-410
(They provide safety disconnection and protection against overcurrents)
- IEC 60364-7-712
(Buildings electrical installations - Part 7-712: rules for special locations - Solar photovoltaic power supplies (PV))

➤ Available on request

- Other rating: consult us
- Enclosed multipolar switches: consult us

➤ **What you need to know**

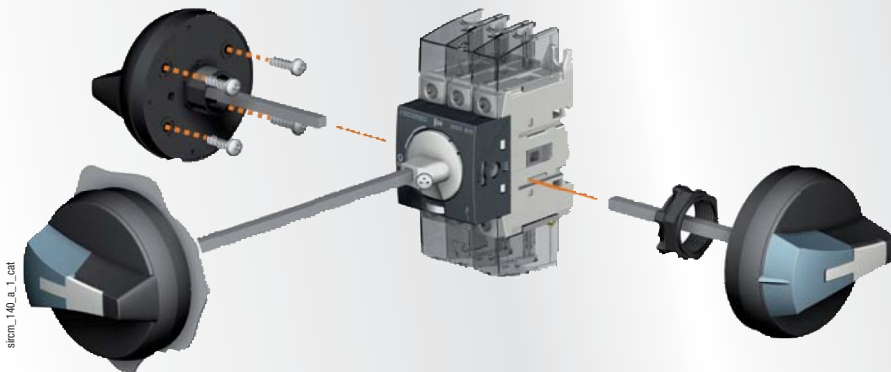
Direct operation



External side operation for multipolar configuration



External operation



- 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 its safety features. 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.



➤ **Think about it...**



You can combine overcurrent protection (see page 402) with protection against transient overvoltages due to lightning (see page 414).

• **Need an enclosed switch ?**

No problem with our specific product department. SOCOMEC also manufactures solutions for all your requirements. For further information, please contact us.

➤ References

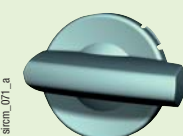
SIRCO M PV

Voltage (V d.c.)	Rating (A)	No. of poles	Switch body	Direct handle	External front and right side handle	External left side handle	Shaft for external front and side operation	Auxiliary contacts	Door mounting kit
500	32 A	4 P	22PV 4004	Blue 2299 5012 ⁽¹⁾ Red 2299 5013 ⁽¹⁾	Type S00 Black IP55 1471 1111 ⁽²⁾	Type S00 Black IP65 147A 5111 Type S00 Red/yellow IP65 147B 5111	150 mm 1407 0515 200 mm 1407 0520 320 mm 1407 0532	M type 1 contact NO + NC 2299 0001 M type 1 contact 2 NC 2299 0011	Overall dimensions reduce 2299 3409 ⁽¹⁾⁽³⁾ Complete protection IP2X 2299 3309 ⁽¹⁾⁽³⁾
	40 A	4 P	22PV 4008		Type S00 Black IP65 1473 1111 ⁽²⁾				
600	25 A	6 P	22PV 6004 ⁽⁴⁾		Type S00 Red/yellow IP65 1474 1111 ⁽²⁾				
	40 A	6 P	22PV 6008 ⁽⁴⁾						
800	25 A	8 P	22PV 8004 ⁽⁴⁾						
	40 A	8 P	22PV 8008 ⁽⁴⁾						

(1) For 4 pole switches
 (2) Defeatable handle.
 (3) Supplied with a shaft.
 (4) Direct handle supplied as standard.

➤ Accessories

Direct operation handle



M00 handle


Use
Direct handle for SIRCO M PV 4 poles 500 V d.c.

For SIRCO M PV - 4 poles

Rating (A)	Handle colour	Handle	Reference
32 ... 40	Blue	M00 type	2299 5012 ⁽¹⁾⁽²⁾
32 ... 40	Red	M00 type	2299 5013 ⁽²⁾

(1) Direct handle supplied as standard for 6 and 8 pole equipment.
 (2) For 4 pole switches

External operation handle



S00 handle

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 the use of 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 interlocking function with the use of a tool (authorized persons only). The interlocking function is restored when the door is re-closed.

Front and right side operation I - 0


Rating (A)	Handle colour	Handle	External IP	Reference
25 ... 40	Black	S00 type	IP55	1471 1111 ⁽¹⁾
25 ... 40	Black	S00 type	IP65	1473 1111 ⁽¹⁾
25 ... 40	Red/Yellow	S00 type	IP65	1474 1111 ⁽¹⁾

(1) Defeatable handle.

Left side operation I - 0

Rating (A)	Handle colour	Handle	External IP	Reference
25 ... 40	Black	S00 type	IP65	147A 5111
25 ... 40	Red/Yellow	S00 type	IP65	147B 5111

Shaft for external handle



Use
Standard lengths:
 - 150 mm,
 - 200 mm,
 - 320 mm.
 Other lengths: consult us.

For 3/4 pole switches: shaft extensions for external front and side handle.
 For 6/8 pole front operated switches: shaft extensions for external front handle only.
 For 6/8 pole side operated switches: shaft extensions for external side handle only.

For SIRCO M PV

Rating (A)	Shaft length (mm)	Reference
25 ... 40	150 mm	1407 0515
25 ... 40	200 mm	1407 0520
25 ... 40	320 mm	1407 0532

Terminal shrouds



stem_040_a_1_cat

Use

Top and bottom protection against direct contact with the terminals or connection parts. 2 units per pack. 1 or 3 pole are available.

Advantage

Perforations enabling remote thermographic inspection without dismantling.

For fitting a complete device

4 poles: please order one reference of 3 pole and one reference of 1 pole terminal shrouds.
6 poles: please order 2 references of 3 pole terminal shrouds.
8 poles: please order 2 references of each terminal shrouds (1 pole and 3 poles).

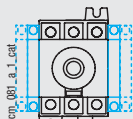
For SIRCO M PV

Rating (A)	No. of poles	Position	Reference
25 ... 32	1 P	top and bottom	2294 1005
25 ... 32	3 P	top and bottom	2294 3005
40	1 P	top and bottom	2294 1009
40	3 P	top and bottom	2294 3009

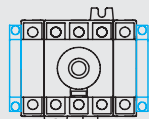
M type auxiliary contacts



stem_075_b_2_cat



Auxiliary contacts configurations for SIRCO MPV



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 blocks).

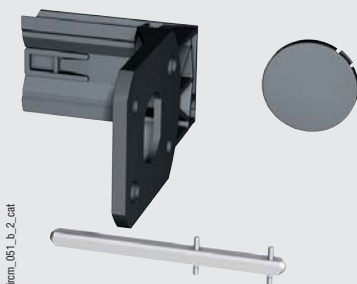
Characteristics

NO+NC auxiliary contacts: IP2 with front operation.

For SIRCO M PV

Rating (A)	Number of AC	Type of AC	Reference
25 ... 40	1 AC	NO + NC	2299 0001
25 ... 40	1 AC	2 NC	2299 0011

Door mounting kit



stem_061_b_2_cat

Kit with reduced overall dimensions.

Use

This kit enables direct mounting of the SIRCO M PV 4 poles switch, on the door front panel, on the right or left side panels.

Moreover, the connection clamps of the switch are always accessible.

The external handle is quick and easy to install due to an internal locking nut mounted on the inside of the enclosure.

2 kits are available:

- one for complete protection IP2X,
- one with overall dimensions reduced.

For SIRCO M PV

Rating (A)	No. of poles	Description	Reference
25 ... 40	3/4 P	Overall dimensions reduce	2299 3409 ⁽¹⁾⁽²⁾
25 ... 40	3/4 P	Complete protection IP2X	2299 3309 ⁽¹⁾

(1) Delivered with a shaft.

(2) Standard.

Cap for side operation mounting



stem_126_a_2_cat

Use

Accessory for capping the front face of the SIRCO M PV when utilising in door mounting or side operation, 20 units per pack.

This piece can be snapped on the switch body directly.

For SIRCO M PV

Rating (A)	Pack	Reference
25 ... 40	20 pieces	2299 9409

➤ **SIRCO M PV enclosure**

SIRCO M PV polycarbonate enclosure



Connecting enclosure of photovoltaic generators

➤ **General characteristics**

- Equipped with a 4 pole SIRCO M PV
- 1 removable neutral terminal and 1 removable earth terminal.
- IP65 protection
- Possibility of adding M type auxiliary contact module.

SIRCO M PV 32 A

- M16 pre-drilled holes (side).
- M20/M25 pre-drilled holes (upstream/downstream).
- M20 pre-drilled holes (rear).

SIRCO M PV 40 A

- M16 pre-drilled holes (side).
- M25/M32 pre-drilled holes (upstream/downstream).
- M25/M32 pre-drilled holes (rear).

➤ **References**

Empty enclosures

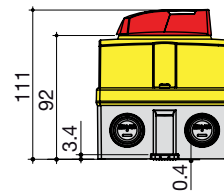
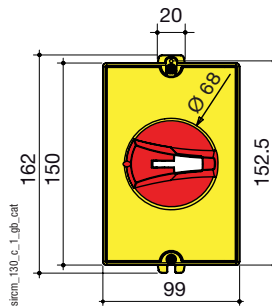
Rated operational voltage Ue (V d.c.)	Rating (A)	No. of pole	Handle colour	Enclosure colour	Reference
500	32	4 P	Black	Grey	2215 9305
500	32	4 P	Red	Yellow	2215 9405
500	40	4 P	Black	Grey	2215 9309
500	40	4 P	Red	Yellow	2215 9409

Enclosed switches

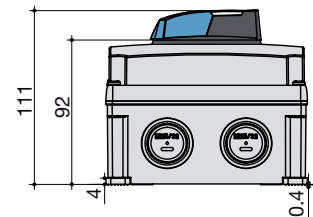
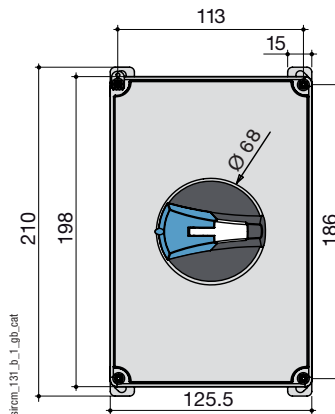
Rated operational voltage Ue (V d.c.)	Rating (A)	No. of pole	Handle colour	Enclosure colour	Reference
500	32	4 P	Black	Grey	22PV 4304
500	32	4 P	Red	Yellow	22PV 4404
500	40	4 P	Black	Grey	22PV 4308
500	40	4 P	Red	Yellow	22PV 4408

➤ **Dimensions**

Enclosed SIRCO M PV 32 A



Enclosed SIRCO M PV 40 A



➔ **Characteristics according to IEC 60947-3**

SIRCO M PV 25 to 40 A

Rated current I (A)	25 A	32 A	40 A
Rated insulation voltage U_i (V)	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8

Rated operational currents Ie (A)

Rated voltage	No. of poles	Number of pole in series per polarity	(A)	(A)	(A)
500 V d.c.	4 P	2 P + and 2 P -		32	40
600 V d.c.	6 P	3 P + and 3 P -	25		40
800 V d.c.	8 P	4 P + and 4 P -	25		40

Short-circuit capacity

Rated short-time withstand current 0.3 s. I_{cw} (kA eff) ⁽¹⁾	2.5	2.5	3
Rated peak withstand current (kA peak) ⁽¹⁾	6	6	9

Connection

Minimum Cu cable section (mm ²)	1.5	1.5	2.5
Maximum Cu cable section (mm ²)	16	16	35
Tightening torque min/max (Nm)	2 / 2.5	2 / 2.2	3.5 / 3.85

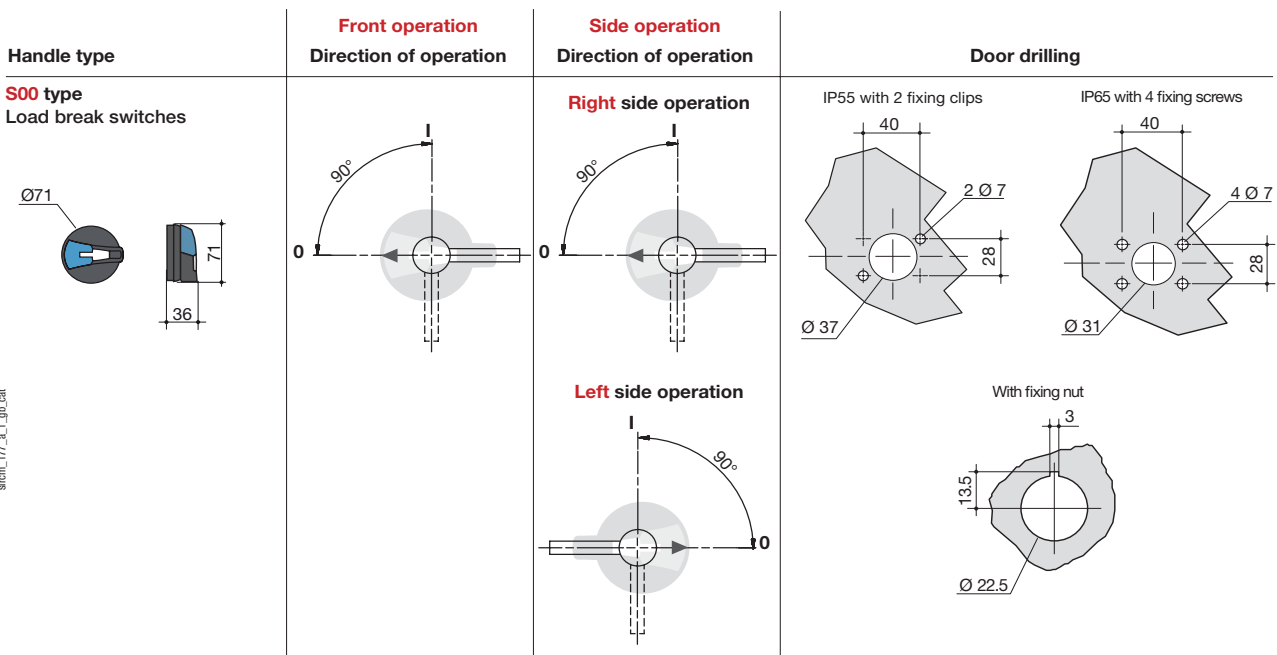
Mechanical characteristics

Durability (number of operating cycles)	100 000	100 000	100 000
Operating effort (Nm)	0.8	0.8	1
Weight of 4 p (kg)	0.225	0.225	0.350
Weight of 6 P (kg)	0.405	0.405	0.585
Weight of 8 P (kg)	0.510	0.510	0.755

(1) For a rated operational voltage $U_o = 400$ V a.c.

➔ **Dimensions for external handles**

SIRCO M PV 25 to 40 A

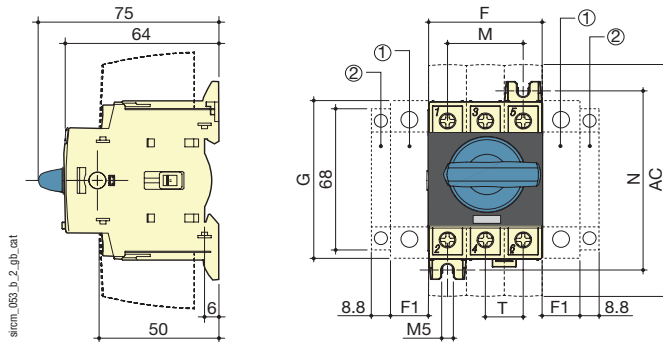


sircm_177_a_1_sgb_cat

➤ Dimensions

SIRCO M PV 25 to 40 A

Direct operation with handle



1. Location for: 1 main pole (maximum 1 per switch) or auxiliary contact.
2. Position for 1 auxiliary contact only.

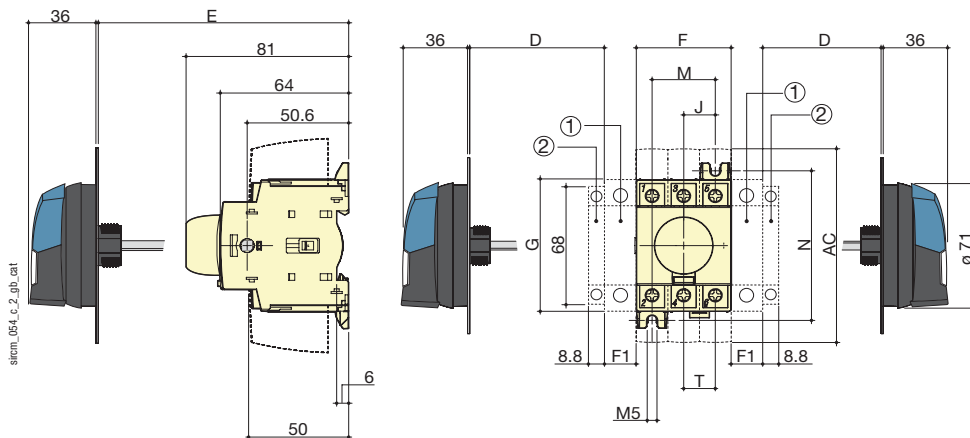
Note: Max 4 additional blocks.

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	
25	30	235	100	372	110	45	15	68	15	30	75	15	
32	30	235	100	372	110	45	15	68	15	30	75	15	
40	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5	

SIRCO M PV 25 to 40 A

External front operation

External side operation



1. Location for: 1 main pole (maximum 1 per switch) or auxiliary contact.
2. Position for 1 auxiliary contact only.

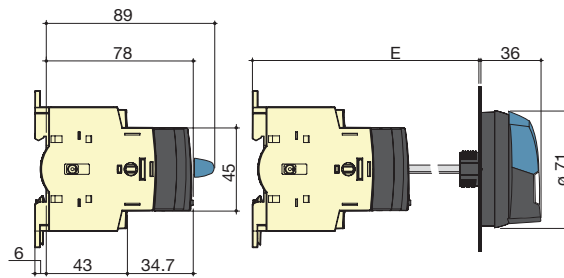
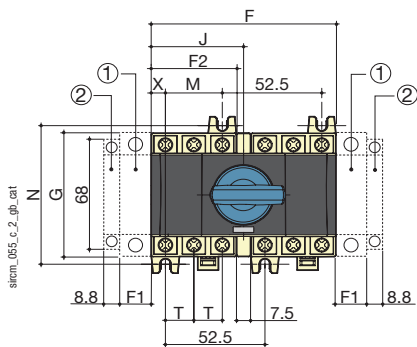
Note: Max 4 additional blocks.

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	
25	30	235	100	372	110	45	15	68	15	30	75	15	
32	30	235	100	372	110	45	15	68	15	30	75	15	
40	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5	

SIRCO M PV 25 to 40 A

Direct front operation for 6/8-pole load break switches

External front operation for 6/8-pole load break switches



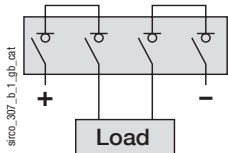
1. Location for: 1 main pole (maximum 1 per switch) or auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Max 4 additional blocks.

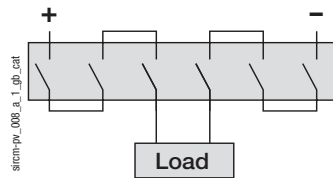
Rating (A)	Overall dimensions		Switch body				Switch mounting		Connection	
	E min	E max	F	F1	G	J	M	N	T	X
25	105	372	97.5	15	68	48.75	30	75	15	7.5
32	105	372	97.5	15	68	48.75	30	75	15	7.5
40	105	372	105	17.5	76	52.5	35	85	17.5	8.75

➤ Pole in series connection diagram⁽¹⁾

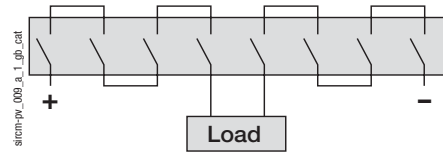
4 pole - bottom / bottom



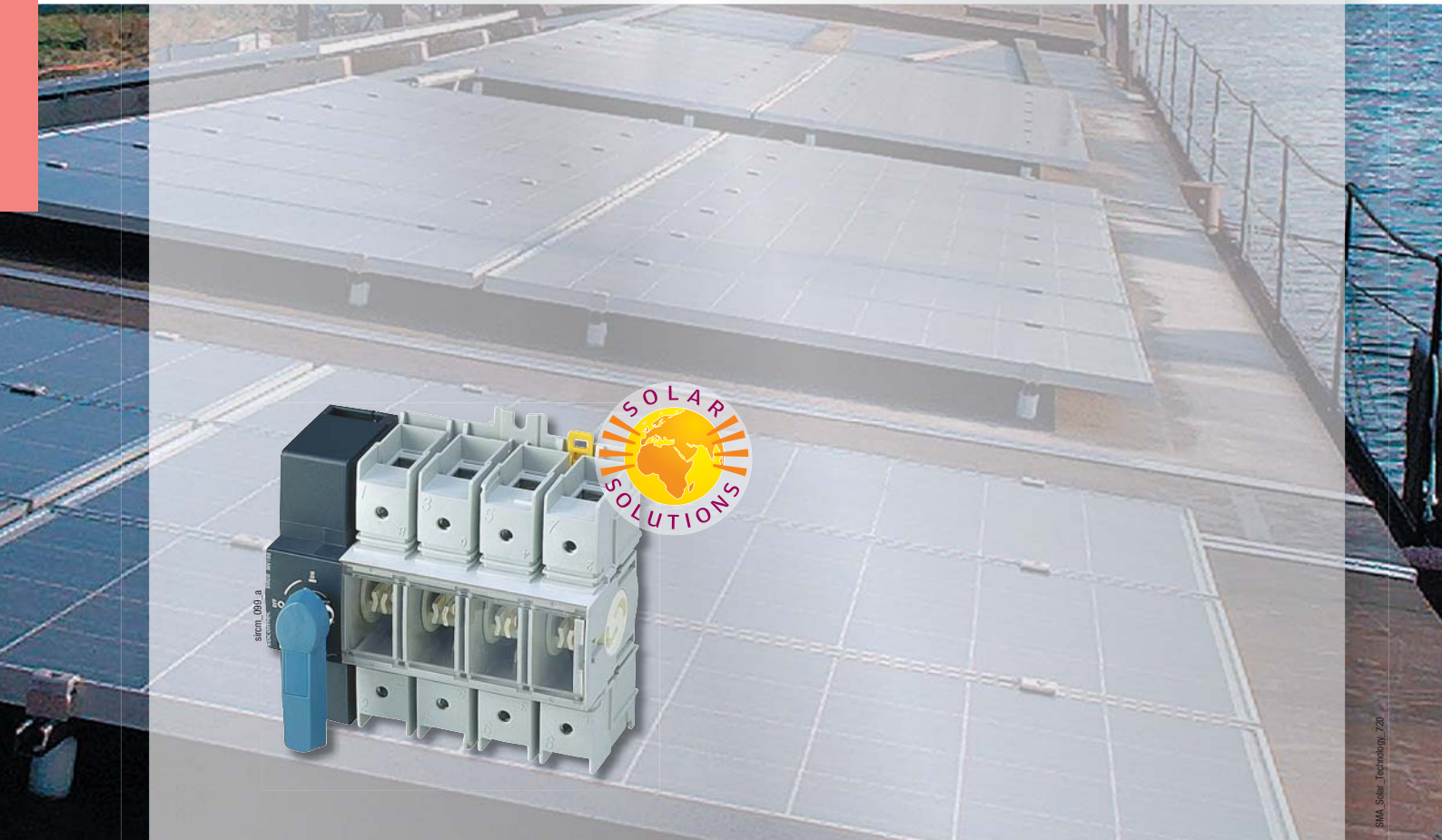
6 pole - top / bottom



8 pole - bottom / bottom



⁽¹⁾ Other connections: refer to mounting instructions.



600 V d.c. and 800 V d.c. Photovoltaic Switch 63 to 80 A

➤ Function

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

➤ General characteristics

- Modular device.
- Fully visualised breaking.
- Backplate or DIN rail mounting with 45 mm cut-out up to 80 A.
- Up to 800 V d.c.
- IP20 devices and accessories.

➤ Conformity to standards

- IEC 60947-3
- EN 60947-3
- VDE 0660-107 (1992)
- IEC 60364-4-410 (They provide safety disconnection and protection against overcurrents)
- IEC 60364-7-712 (Buildings electrical installations - Part 7-712: rules for special locations - Solar photovoltaic power supplies (PV))

➤ Available on request

- Other rating: consult us.
- Enclosed devices: consult us.

➔ References

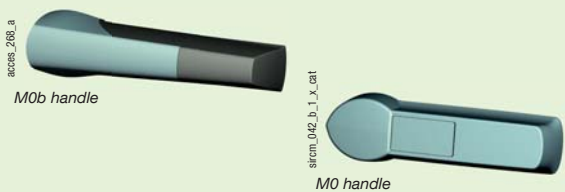
Front and side operation

Voltage (V d.c.)	Rating (A)	No. of poles	Switch body	Direct handle	External front handle	External right side handle	External left side handle	Shaft for external front and side handle	Auxiliary contacts	Bridging bar
600	63 A	3 P	22PV 3106	M0b Blue 2299 5042 ⁽¹⁾	S0 type Black IP55 1491 0111 ⁽¹⁾⁽²⁾ Black IP65 1493 0111 ⁽²⁾ Red/Yellow IP65 1494 0111 ⁽²⁾	S0 type Black IP55 1491 0111 Black IP65 1493 0111 Red/Yellow IP65 1494 0111	S0 type Black IP65 149A 9111 Red/Yellow IP65 149B 9111	S0 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	1 contact NO + NC 2299 0001 ⁽³⁾ 1 contact 2 NC 2299 0011 ⁽³⁾	2 pieces 2209 0016
	80 A	3 P	22PV 3108							
800	63 A	4 P	22PV 4106	M0 Blue 2299 5022	S1 type Black IP55 1411 2111 ⁽²⁾ Black IP65 1413 2111 ⁽²⁾ Red/Yellow IP65 1414 2111 ⁽²⁾	S1 type Black IP55 1415 2111 Black IP65 1417 2111 Red/Yellow IP65 1418 2111	S1 type Black IP65 141A 2111 Red/Yellow IP65 141B 2111	S1 type 200 mm 1401 0620 320 mm 1401 0632 400 mm 1401 0640	1 contact NC 3999 0701 1 contact NO 3999 0702	2 pieces 2209 2016
	80 A	4 P	22PV 4108							

(1) Standard.
(2) Defeatable handle.
(3) Signalling contact only.

➔ Accessories

Direct operation handle



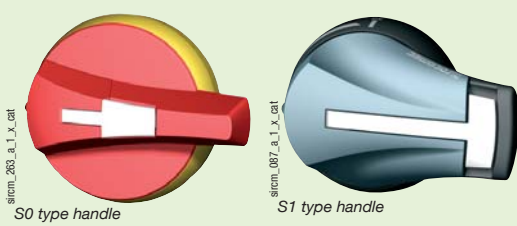
M0b handle
M0 handle

Direct handle type M0b		
Rating (A)	Handle colour	Reference
63 ... 80	Blue	2299 5042 ⁽¹⁾

Type M0 direct reduced handle		
Rating (A)	Handle colour	Reference
63 ... 80	Blue	2299 5022

(1) Standard.

External operation handle



S0 type handle
S1 type handle

S0 type handle - Front and right side operation I - 0

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
63 ... 80	S0 type	Black	IP55	1491 0111 ⁽²⁾
63 ... 80	S0 type	Black	IP65	1493 0111 ⁽²⁾
63 ... 80	S0 type	Red/Yellow	IP65	1494 0111 ⁽²⁾

S0 type handle - Left side operation I - 0

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
63 ... 80	S0 type	Black	IP65	149A 9111
63 ... 80	S0 type	Red/Yellow	IP65	149B 9111

S1 type handle - Front operation I - 0

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
63 ... 80	S1 type	Black	IP55	1411 2111 ⁽²⁾
63 ... 80	S1 type	Black	IP65	1413 2111 ⁽²⁾
63 ... 80	S1 type	Red/Yellow	IP65	1414 2111 ⁽²⁾

S1 type handle - Right side operation I - 0

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
63 ... 80	S1 type	Black	IP55	1415 2111
63 ... 80	S1 type	Black	IP65	1417 2111
63 ... 80	S1 type	Red/Yellow	IP65	1418 2111

S1 type handle - Left side operation I - 0

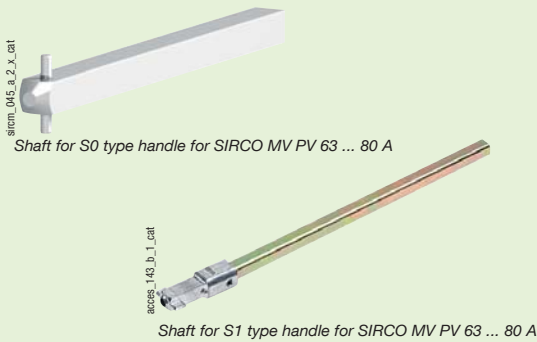
Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
63 ... 80	S1 type	Black	IP65	141A 2111
63 ... 80	S1 type	Red/Yellow	IP65	141B 2111

(1) IP: Degree of protection according to standard IEC 60529.
(2) Defeatable handle.

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 the use of 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 interlocking function with the use of a tool (authorized persons only). The interlocking function is restored when the door is closed back.

Shaft for external handle



Use

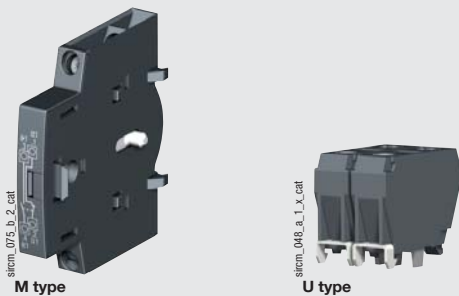
Standard lengths:
 - 150 mm
 - 200 mm
 - 320 mm
 - 400 mm

Other lengths: consult us.

For SIRCO MV PV

Rating (A)	Handle type	Shaft length (mm)	Reference
63 ... 80	S0 type	150 mm	1409 0615
63 ... 80	S0 type	200 mm	1409 0620
63 ... 80	S0 type	320 mm	1409 0632
63 ... 80	S1 type	200 mm	1401 0620
63 ... 80	S1 type	320 mm	1401 0632
63 ... 80	S1 type	400 mm	1401 0640

Auxiliary contacts



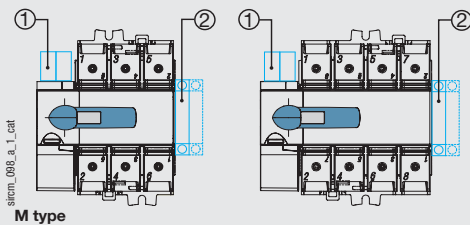
Use

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.
 Max 4 auxiliary contacts (2 modules).

U type

Pre-break and signalisation by NO or NC auxiliary contact can be mounted on the device.
 Max 2 auxiliary contacts.



Auxiliary contacts configurations for SIRCO MV PV
 1. Maximum 2 "U" type auxiliary contacts
 2. Maximum 4 "M" type auxiliary contacts

M type

Rating (A)	Contact(s)	Contact type	Reference
63 ... 80	1 AC	NO + NC	2299 0001 ⁽¹⁾
63 ... 80	1 AC	2 NC	2299 0011 ⁽¹⁾

(1) Signalling contact only.

U type

Rating (A)	Contact(s)	Contact type	Reference
63 ... 80	1 AC	NC	3999 0701
63 ... 80	1 AC	NO	3999 0702

Terminal shrouds

Use

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

Advantage

Perforations allowing remote thermographic inspection without removal.
 The terminal shrouds also provide phase separation.

For SIRCO MV PV

Rating (A)	No. of poles	Position	Reference
63 ... 80	3 P	top and bottom	2294 3016
63 ... 80	4 P	top and bottom	2294 4016

Bridging bars to connect poles in series

Use

The bridging bars will make easy the connection of the poles in series, allowing the following configurations:

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

Connection diagrams, see "Poles in series connection diagram", page 93.

Rating (A)	Pack	Reference
63 ... 80	1 piece	2209 0016
63 ... 80	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), insulating materials
- Specific colors (enclosure paint, handle)
- Specific dimensions
- Specific connections: classe II quick connectors.

For any request of customised products, please consult us.

➤ Characteristics according to IEC 60947-3

63 to 80 A

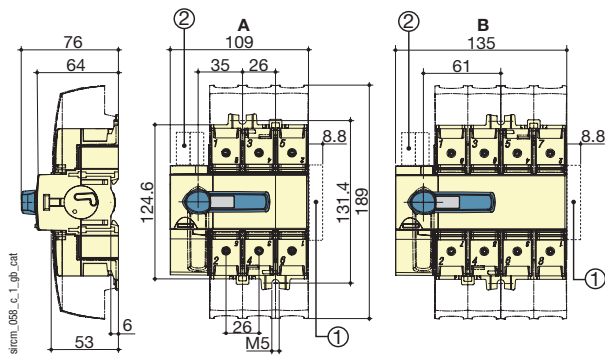
Thermal current I_{th} (40°C)		63 A	80 A
Rated insulation voltage U_i (V)		1 000	1 000
Rated impulse withstand voltage U_{imp} (kV)		8	8
Rated operational currents I_e (A)			
Rated voltage	No. of poles	Number of pole in series per polarity	(A)
600 V d.c.	3 P	2 P + and 1 P -	63
800 V d.c.	4 P	2 P + and 2 P -	63
			80
			80
Short-circuit capacity			
Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)		7	7
Rated peak withstand current (kA peak) ⁽¹⁾		12	12
Connection			
Maximum Cu cable section (mm ²)		70	70
Tightening torque min (Nm)		4	4
Tightening torque max (Nm)		5	5
Mechanical characteristics			
Operating effort (Nm)		4	4
Weight of a 3 poles device (kg)		0.7	0.7
Weight of a 4 poles device (kg)		0.9	0.9

(1) For a rated operational voltage $U_n = 400$ V a.c.

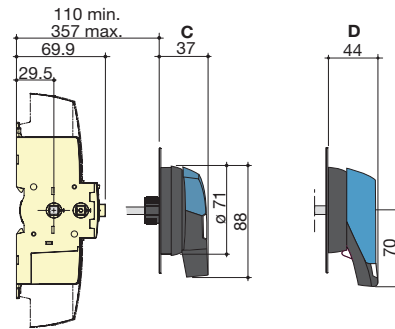
➤ Dimensions

SIRCO MV PV 63 to 80 A

Direct front operation



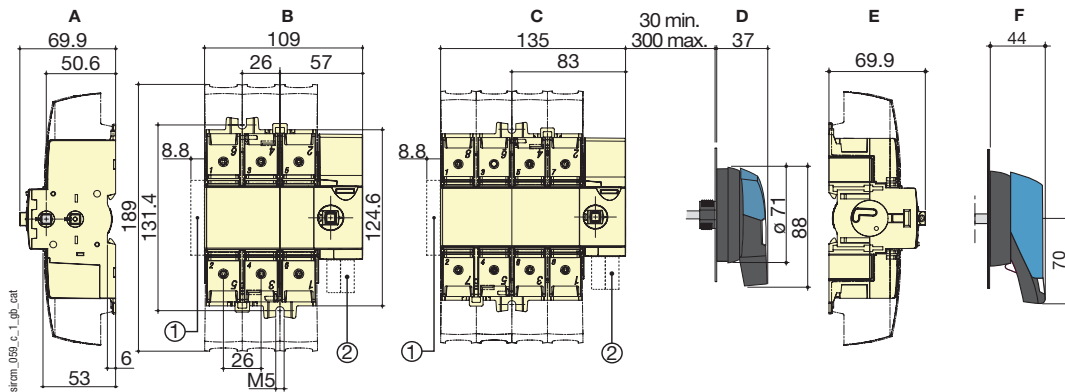
External front operation



- 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

External side operation

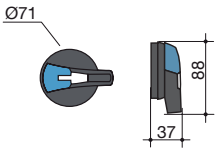
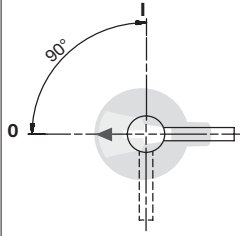
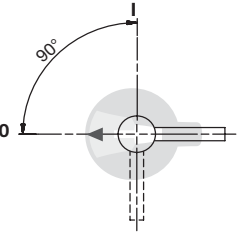
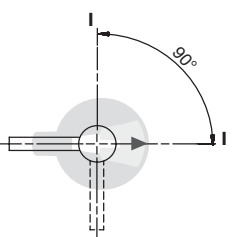
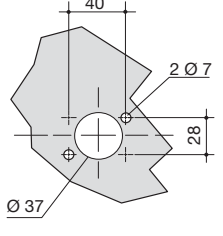
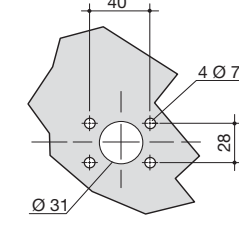
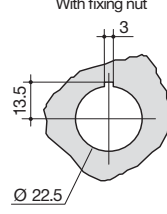
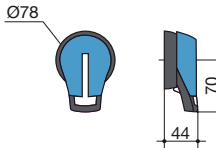
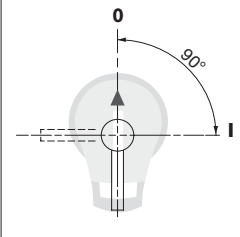
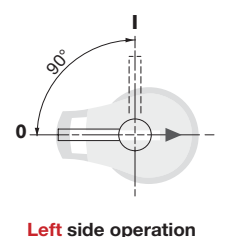
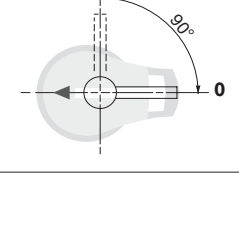
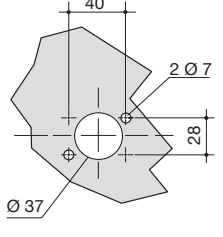
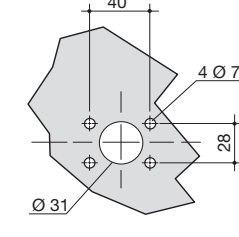


- A. Right side operation
- B. 3 poles
- C. 4 poles
- D. S0 type handle
- E. Left side operation
- F. S1 type handle

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

➔ **Dimensions for external handles**

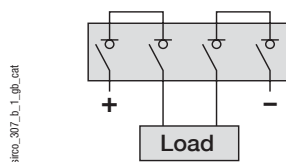
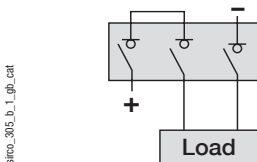
SIRCO MV PV 63 to 80 A

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 
S1 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips 	IP65 with 4 fixing screws 

➔ **Pole in series connection diagrams⁽¹⁾**

3 poles - bottom / top

4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions.



750 V d.c. and 1000 V d.c. Photovoltaic Switch 100 to 800 A

⇒ 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 of photovoltaic applications.

⇒ General characteristics

- Patented switching technology.
- Fully visualised breaking.
- DIN rail or panel mounting.
- Up to 1000 V d.c.

⇒ Available on request

- Other rating: consult us.
- Enclosed devices: consult us.

⇒ Conformity to standards

- IEC 60947-3
- EN 60947-3
- VDE 0660-107 (1992)
- IEC 60364-4-410 (They provide safety disconnection and protection against overcurrents)
- IEC 60364-7-712 (Buildings electrical installations - Part 7-712: rules for special locations - Solar photovoltaic power supplies (PV))

➔ **References**


Front operation

Voltage (V d.c.)	Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contacts	Bridging bars
750	100 A	3 P	26PV 3010	Black 2699 5052 ⁽¹⁾ Red 2699 5053	Type S2 Black IP55 1421 2111 ⁽¹⁾ Type S2 Black IP65 1423 2111 Type S2 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾ 500 mm 1400 1050	1 st contact NO/NC 2699 0031 2 nd contact NO/NC 2699 0032	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	100 A	4 P	26PV 4010	Black 2699 5052 ⁽¹⁾ Red 2699 5053	Type S2 Black IP55 1421 2111 ⁽¹⁾ Type S2 Black IP65 1423 2111 Type S2 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾ 500 mm 1400 1050	1 st contact NO/NC 2699 0031 2 nd contact NO/NC 2699 0032	2609 0025
	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					

(1) Standard.

➔ **Accessories**

Direct handle




Direct handle

Rating (A)	Handle colour	Reference ⁽¹⁾
100 ... 800	Black	2699 5052 ⁽²⁾
100 ... 800	Red	2699 5053

(1) IP: Degree of protection according to standard IEC 60529.
(2) Standard.

External handle



S2 type handle

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 interlocking function using a tool (authorized persons only).
The interlocking function is restored when the door is closed back.

Front operation

Rating (A)	Handle	Handle colour	External IP ⁽¹⁾	Reference
100 ... 800	S2 type	Black	IP55	1421 2111 ⁽²⁾
100 ... 800	S2 type	Black	IP65	1423 2111
100 ... 800	S2 type	Red	IP65	1424 2111

(1) IP: Degree of protection according to standard IEC60529 standard.
(2) Standard.

Shaft guide for external operation



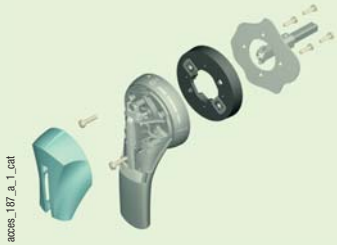
Shaft guide

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 length over 320 mm.

Description	Reference ⁽¹⁾
Shaft guide	1429 0000

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

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 color	External IP ⁽¹⁾	To be ordered per batch of	Reference ⁽¹⁾
Black	IP65	10	1493 0000

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

Alternative S type handle cover colors



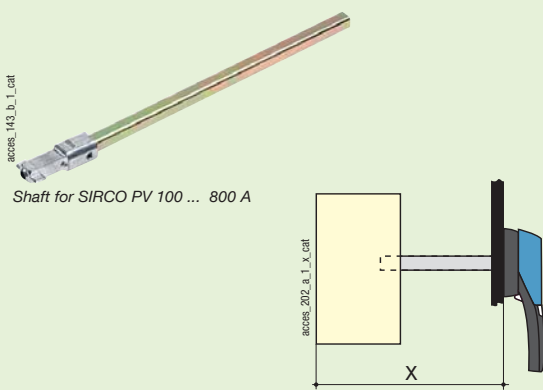
Use

For single lever handles type S1, S2. Other colors: consult us.

Handle color	To be ordered per batch of	Handle	Reference ⁽¹⁾
Light grey	50	Type S1, S2	1401 0001
Dark grey	50	Type S1, S2	1401 0011

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

Shaft for external operation



Use

Standard lengths:

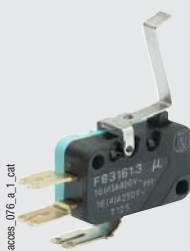
- 200 mm
- 250 mm
- 320 mm
- 500 mm
- 750 mm

Other lengths: consult us.

For 3/4 poles

Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
100 ... 800	135 ... 265	200 mm	1400 1020
100 ... 800	135 ... 315	250 mm	1400 1025
100 ... 800	135 ... 385	320 mm	1400 1032
100 ... 800	135 ... 565	500 mm	1400 1050
100 ... 800	135 ... 880	750 mm	1400 1075

Auxiliary contacts



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 AC: IP2 with front operation.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

References

NO/NC contact for 3/4 poles

Rating (A)	Position AC	Reference
100 ... 800	1 st	2699 0031
100 ... 800	2 nd	2699 0032

NO+NC contact for 3/4 poles

Rating (A)	Position AC	Reference
100 ... 800	1 st	2699 0141
100 ... 800	2 nd	2699 0142

Low level NO/NC contact for 3/4 poles

Rating (A)	Position AC	Reference
100 ... 800	1 st	2699 0301
100 ... 800	2 nd	2699 0302

Characteristics according to IEC 60947-5-1

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (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
100 ... 800	NO/NC	16	16	4	12	3	2.5	2.5	1	2.5	1.2	0.2
100 ... 800	NO + NC	16	16	4	16	3	16	5	1	2.5	1.2	0.2

Door mounting kit

Use

This kit allows easy door mounting for the SIRCO PV range.

For 3/4 poles direct front operation

Rating (A)	No. of poles	Reference
100 ... 500	3 P	2699 3420
100 ... 500	4 P	2699 4420

Terminal shrouds



Use

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

Advantage

Perforations allowing remote thermographic inspection without removal.
The terminal shrouds also provide phase separation for SIRCOs PV from 100 to 800 A.

For 3/4 poles

Rating (A)	No. of poles	Position	Reference
100 ... 500	3 P	top / bottom	2694 3021
100 ... 500	4 P	top / bottom	2694 4021
630 ... 800	3 P	top / bottom	2694 3051
630 ... 800	4 P	top / bottom	2694 4051

Terminal screens



Use

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

For 3/4 poles

Rating (A)	No. of poles	Position	Reference
100 ... 500	3 P	top / bottom	2698 3020
100 ... 500	4 P	top / bottom	2698 4020
630 ... 800	3 P	top / bottom	2698 3050
630 ... 800	4 P	top / bottom	2698 4050

Inter phase barrier



Use

Safety isolation between the terminals.
For 100 to 800 A Photovoltaic SIRCO, the inter phase barriers allow insulation between poles connected in series.

Rating (A)	No. of poles	Reference
100 ... 500	3 P	2998 0023
100 ... 500	4 P	2998 0024
630 ... 800	3 P	2998 0013
630 ... 800	4 P	2998 0014

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:

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

Connection diagrams, see "Poles in series connection diagram", page 99.

Rating (A)	Pack	Number of poles of the device in series	Reference
125 ... 315	1 piece ⁽¹⁾	2	2609 0025
125 ... 315	2 pieces ⁽²⁾	4	2609 2025
400 ... 500	2 pieces ⁽¹⁾	2	2609 2050
400 ... 500	4 pieces ⁽²⁾	4	2609 4050
630 ... 800	1 piece ⁽¹⁾	2	2609 0080
630 ... 800	2 pieces ⁽²⁾	4	2609 2080

(1) Connection in series of 2 poles of the device
(2) Connection in series of 4 poles of the device

Handle key interlocking accessories

Fig. 1

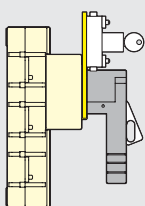
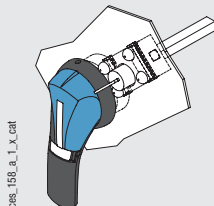


Fig. 3



Use

Locking in position 0 of the front operation handle prior to any intervention on the photovoltaic installation:

- using a padlock (not supplied) and the factory integrated padlocking function of the handle. From 100 to 800 A, the padlock on the external front operation handle will also lock the door,
- using padlock (not supplied): see diagrams opposite,
- using undervoltage coil: the SIRCO PV can only be switched in position "OFF" when the coil is supplied.

Locking using **RONIS EL11AP** lock (not supplied)

Rating (A)	No. of poles	Operation	Figure	Reference
100 ... 800	3/4 P	direct front	1	2699 6008 ⁽¹⁾
100 ... 800	3/4 P	external front	3	1499 7701

(1) Front operation handle included.

Locking using **230 V a.c. undervoltage coil** (other voltages: please consult us)

Rating (A)	No. of poles	Operation	Reference
100 ... 800	3/4 P	external front	2699 9063 ⁽¹⁾

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

Customised solutions



When they are not being mounted into larger panels, load break switches, changeover switches or fuse combination switches are generally delivered in their own enclosure. Close to the installation, they guarantee:

- Disconnection under PV load between inverters and PV generators (necessary according to 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 PV load break switches
- Enclosed PV fuse combination switches
- Enclosed PV changeover switches
- Complete integrated equipments.

Available on request:

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

For any request of customised products, please consult us.

Other specific accessories



- Mechanical coupling system to get multipolar switches of the same or different ratings.
- Mechanical interlocking device.

⇒ **Characteristics according to IEC 60947-3**

100 to 800 A

Thermal current I_{th} (40°C)	100 A	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A	800 A
Rated insulation voltage U_i (V)	1 200	1 200	1 200	1 200	1 200	1 200	1 200	1 200	1 200	1 200
Rated impulse withstand voltage U_{imp} (kV)	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12 ⁽¹⁾	12	12

Rated operational currents I_e (A)

Rated voltage	No. of poles	Number of pole in series per polarity										
			(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
750 V d.c.	3 P	2 P + and 1 P -	100	125	160	200	250	315	400	500	630	800
1 000 V d.c.	4 P	2 P + and 2 P -	100	125	160	200	250	315	400	500	630	800

Overload capacity

Rated short-time withstand current 0.3 s. I_{cw} (kA eff) ⁽²⁾	17	17	17	17	17	17	17	17	17	25	25
Rated peak withstand current (kA peak) ⁽²⁾	30	30	30	30	30	30	30	30	30	45	45

Connection

Maximum Cu cable section (mm ²)	50	50	95	95	120	185	240	2 x 150	2 x 185	2 x 240
Maximum Cu busbar width (mm)	32	32	32	32	32	32	32	32	40	50
Tightening torque min (Nm)	20	20	20	20	20	20	20	20	40	40
Tightening torque max (Nm)	26	26	26	26	26	26	26	26	45	45

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	5 000	5 000	5 000	5 000
Operating effort (Nm)	10	10	10	10	10	10	10	10	14.5	14.5
Weight of a 3 pole device (kg)	2	2	2	2	2	2	2	2	3.5	3.5
Weight of a 4 pole device (kg)	2	2	2	2	2	2	2	2	4	4

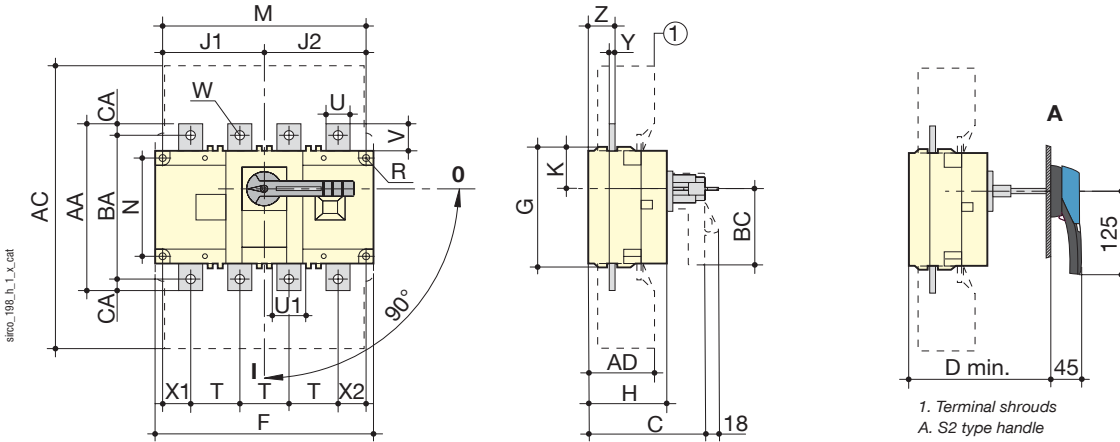
(1) The delivered spacers have to be installed.
 (2) For a rated operational voltage $U_n = 400$ V a.c.

➤ **Dimensions**

SIRCO PV 100 to 800 A

Direct front operation

External front operation

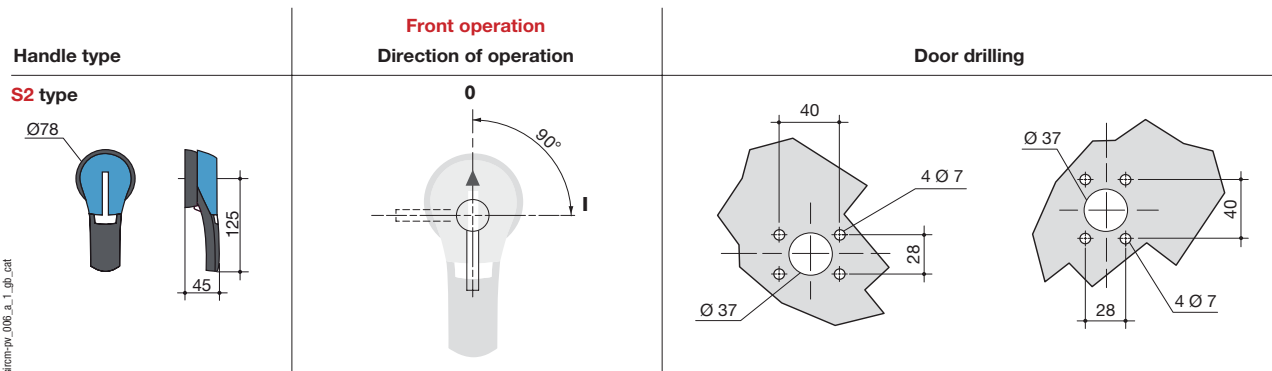


Rating (A)	Overall dimensions		Terminal shrouds		Switch body				Switch mounting				Connection																	
	C	D min	AC	AD	F 3p.	F 4p.	G	H	J1 3p.	J1 4p.	J2	K	BC	M 3p.	M 4p.	N	R	T	U	U1	V	W	X1 3p.	X1 4p.	X2	Y	Z	AA	BA	AC
100	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	25	25.5	30	11	33	33	27	3.5	22.5	160	130	15
125	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	25	25.5	30	11	33	33	27	3.5	22.5	160	130	15
160	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	25	25.5	30	11	33	33	27	3.5	22.5	160	130	15
200	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	25	25.5	30	11	33	33	27	3.5	22.5	160	130	15
250	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	25	25.5	30	11	33	33	27	3.5	22.5	160	130	15
315	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	35	25.5	30	11	33	33	27	3.5	22.5	160	130	15
400	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	35	25.5	30	11	33	33	27	3.5	22.5	160	130	15
500	125	135	280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	35	25.5	30	11	33	33	27	3.5	22.5	160	130	15
630	160	165	400	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	45	45.5	50	13	42.5	37.5	37.5	5	36	260	220	20
800	160	165	400	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	45	45.5	50	13	42.5	37.5	37.5	5	36	260	220	20

➤ **Dimensions for external handles**

SIRCO PV 100 to 800 A

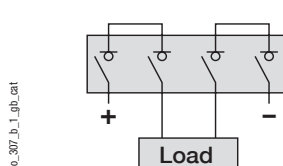
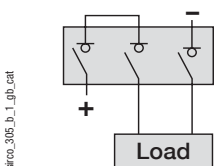
Dimensions for external handles



➤ **Poles in series connection diagram⁽¹⁾**

3 poles - bottom / top

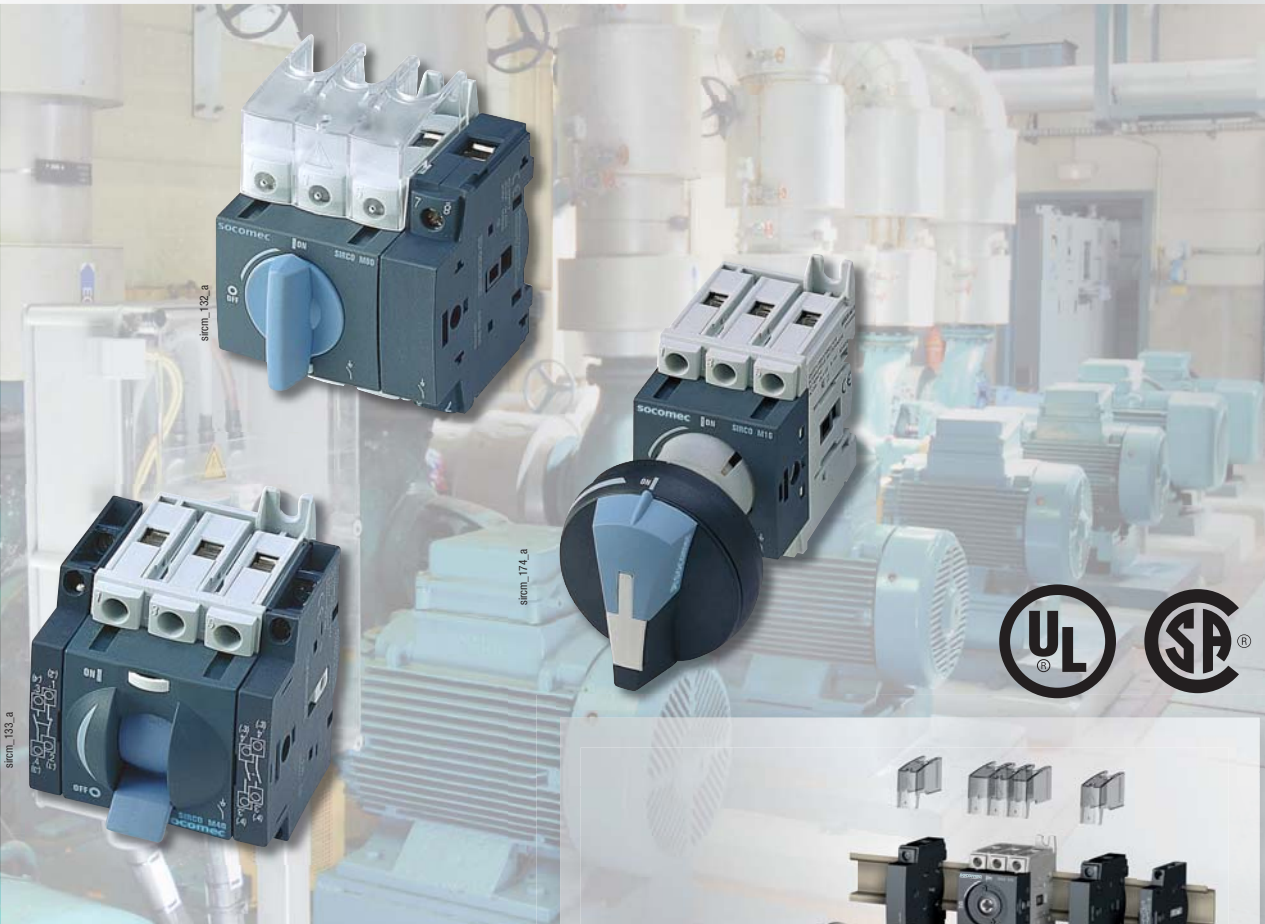
4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions.

SIRCO M UL508

Load break switches standards UL and CSA



16 to 80 A

Function

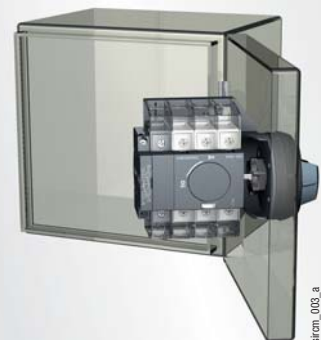
SIRCO M UL/CSA non fusible disconnect switches are compact modulare and modular switches. They make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine and control circuits.

General characteristics

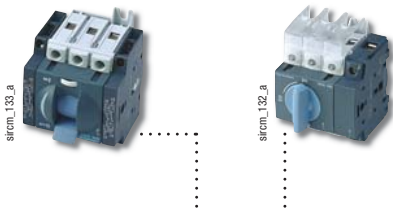
- Direct or external operation
- Compact footprint
- DIN rail or base mount
- Wide range of accessories
- Up to 8 pole or 4 pole MTS

Conformity to standards

- UL 508 listed, Guide NLRV, File E173959
- CSA C22.2§14, class 3211-05, File 112964
- IEC 60947-3



References



UL508 manual motor controller
 "Suitable as motor disconnect"

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 Red/Yellow 3R, 12 ⁽¹⁾ 1474 1111 Black 4, 4X ⁽¹⁾ 147D 1111 Red/Yellow 4, 4X ⁽¹⁾ 147E 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		1 P 2200 1001					
25 A	3 P	2205 3002	2200 3002		1 P 2200 1002					
32 A	3 P	2205 3003	2200 3003		1 P 2200 1003					
40 A	3 P	2205 3004	2200 3004		1 P 2200 1004					
63 A	3 P	2205 3006	2200 3006		1 P 2200 1006					
80 A	3 P	2205 3008	2200 3008		1P 2200 1008					
					1 P 2294 1009 ⁽³⁾ 3 P 2294 3009 ⁽³⁾					

(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.

UL508 non-metallic polycarbonate 4, 4X enclosed SIRCO M



Function

Enclosed **SIRCO M** switches allow safe control and safe disconnect on of any motor application.

Conformity to standards

- UL508, Guide NLRV, file E173959
- CSA C22.2#14, Class 3211-05, file 702154
- IEC 60947-3

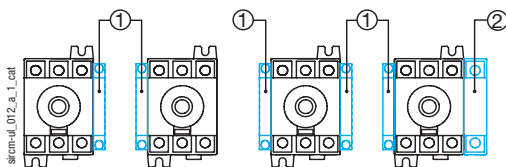
General characteristics

- 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.

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 P 2200 9005	M type 1 AC NO + NC 2299 0001	1 P 2294 1005⁽¹⁾
	3 P	2224 3503	Size 2					3 P 2294 3005⁽¹⁾
63 A	3 P	2224 3506	Size 2	1 P 2200 1006	1 P 2200 5009	1 P 2200 9009	1 AC 2 NC 2299 0011	1 P 2294 1009⁽¹⁾ 3 P 2294 3009⁽¹⁾

(1) Top and bottom.

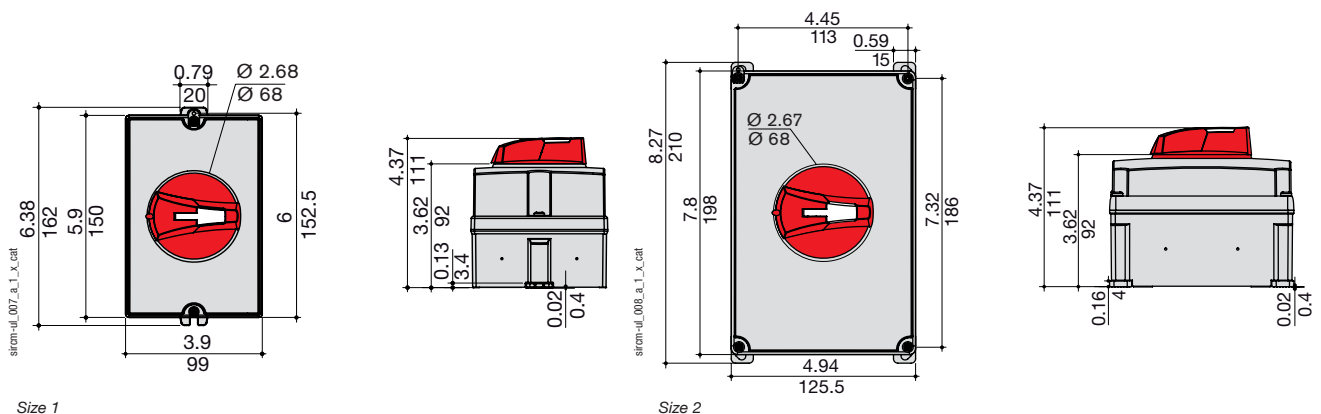
Configuration



Configuration of the auxiliary contacts for enclosed SIRCO M.

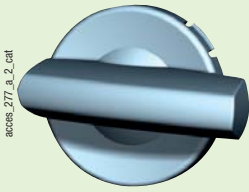
1. M type auxiliary contacts.
2. Additional pole.

Dimensions (in / mm)



➤ Accessories

Direct handle



access_277_a_2_cat

Rating (A)	Handle colour	Handle	Reference
16 ... 80	Blue	M00 type	2299 5012

External handle



access_264_a_2_cat

S00 handle



access_279_a_2_cat

S0 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 (authorized persons only). The interlocking function is restored when the door is closed back. The handle is padlockable with 3 padlocks.

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



stem_046_a_2_x_cat

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.

For 3/4 pole

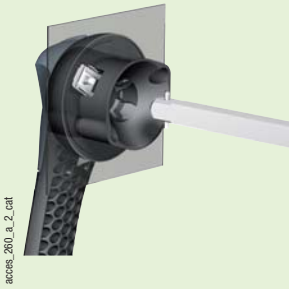
Rating (A)	Handle	Length (inches)	Length (mm)	Reference
16 ... 80	S00 type	5.9 in	150 mm	1407 0515
16 ... 80	S00 type	7.9 in	200 mm	1407 0520
16 ... 80	S00 type	12.6 in	320 mm	1407 0532

For 6/8 poles

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 - Accessories (continued)

Shaft guide for external handle



aces_2610_a_2_cat

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

Additional pole for SIRCO M



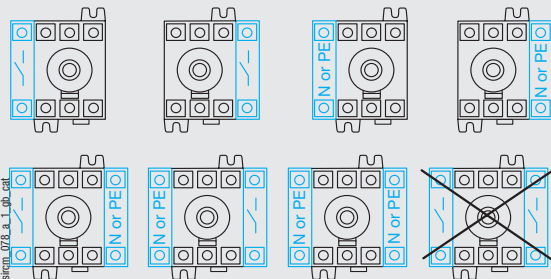
stem_072_b_1_x_cat

4th pole

Use

Transforms:
 - 3 pole SIRCO M load break switches into a 4 pole,
 - 3 pole SIRCOVER M changeover switches into a 4 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
80	1 P	switched	2200 1008



stem_078_a_1_gp_cat

Solid neutral pole

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.

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

Earth module

Use

Adds 1 protective earth module pole to the switch-disconnector.

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

Terminal shrouds



stem_049_a_1_cat

Use

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

1 or 3 pole are available.

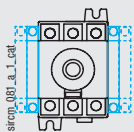
Perforation on each terminal cover enables remote thermographic inspection without dismantling.

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

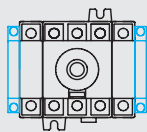
M type Auxiliary Contacts



sircm_075_b_2_cat



sircm_080_a_1_cat



Auxiliary contacts configurations for SIRCO M

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

Conversion kit



sircm_089_c_2_cat

Conversion kit for 6 or 8 pole load break switches



sircm_087_b_2_x_cat

Conversion kit for 3 and 4-pole changeover switches (I - 0 - II) or (I - I+II - II)

Use

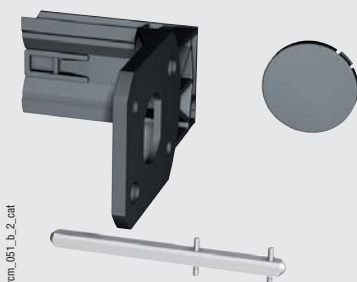
These accessories enable the assembly of 2 switches in order to achieve:
 - 6 or 8 pole switches
 - 3 or 4 pole open or close transition changeover switches.



sircm_086_b_1_cat

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

Door mounting kit



sircm_051_b_2_cat

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

➔ **SIRCO M UL508 - Characteristics according to UL508/CSA22.2#14 suitable as motor disconnect**

16 to 80 A

General use rating	16	20	25	32	40	63	80
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

16 to 80 A

General use rating	16	20	25	32	40	63	80
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_o (A)

Rated voltage	Load duty 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-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_o 415 VAC)

Rated short-time withstand current 0.3 s. I_{ow} (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.

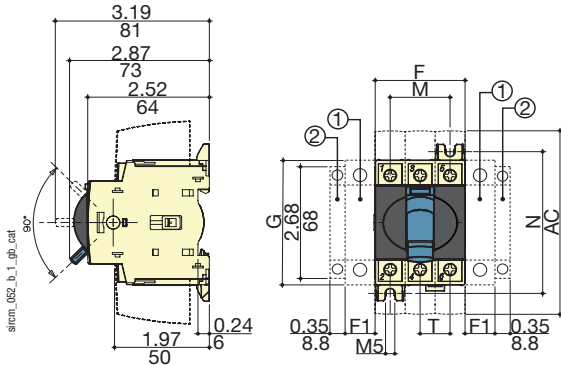
(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operating voltage $U_o = 400$ VAC.

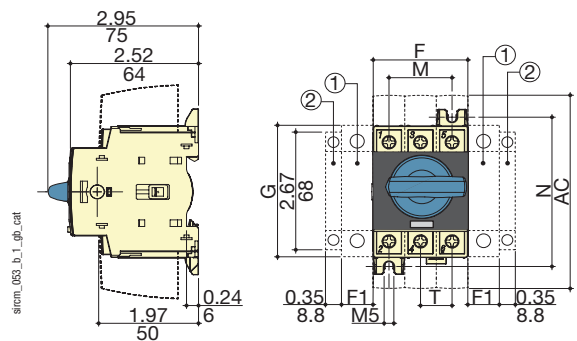
➔ SIRCO M UL508 - Dimensions (in / mm)

16 to 80 A

Toggle operation



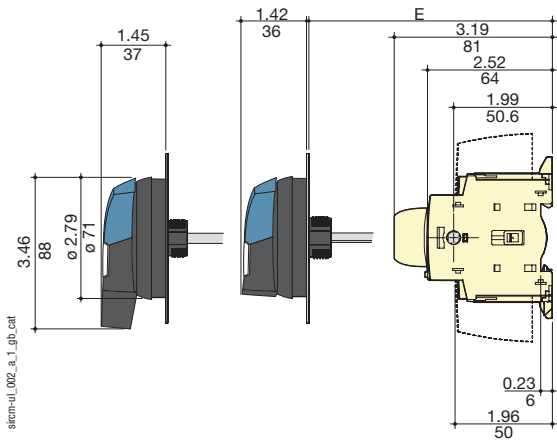
Direct operation with handle



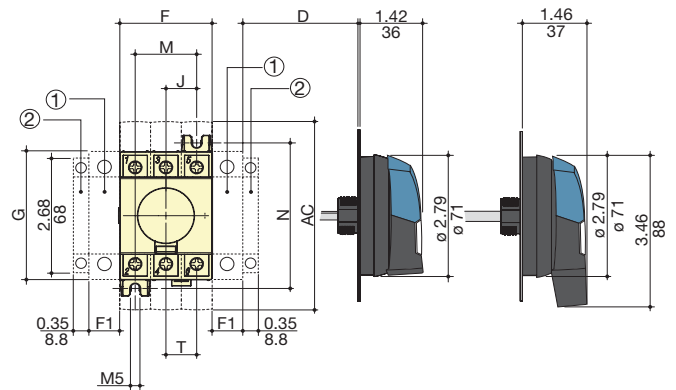
1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

External front handle



External side handle

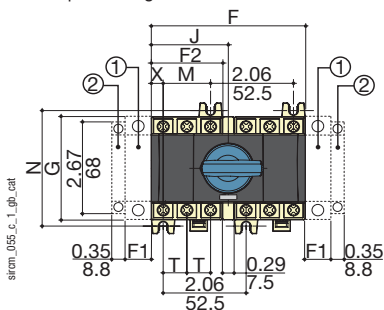


1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

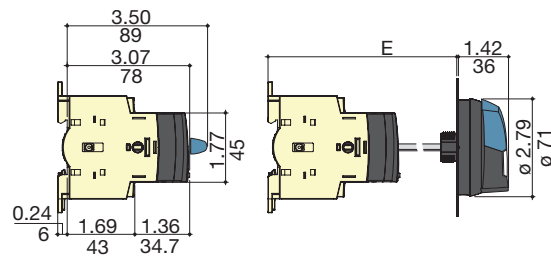
Note: Maximum of 4 additional blocks.

Rating (A)	Units	Overall dimensions				Terminal shrouds AC	Switch body				Switch mounting		Connection T
		D min	D max	E min	E max		F	F1	G	J	M	N	
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	2.06	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)

16 to 80 A

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>

sircm-ul_015_a_1_gp_cat

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
<p>S00 / S0 type</p>			<p>With 4 fixing screws</p>

sircm-ul_014_a_1_gp_cat

Handle type	Front operation Direction of operation	Door drilling
<p>Typ S00 Changeover switches</p>		<p>With 4 fixing screws</p> <p>With fixing nut</p>

sircm_013_a_1_gp_cat



30 to 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

- Touch safe.
- DIN rail or back plate mounted.
- Direct or external handle.

➤ Specific characteristics

- Contact point technology.

➤ Conformity to standards

- UL98, Guide WHTY, file E201138
- CSA 22.2#4, Class 4651-02, file 112964
- IEC 60947-3

➤ References

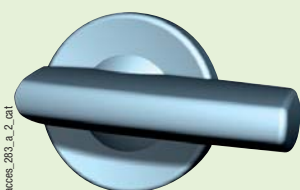
UL98 Non Fusible Disconnect switches

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 Red/Yellow 4, 4X 147E 1111	150 mm 5.9 in 1407 0515	1 P 2201 1003			M type 1 AC NO + NC 2299 0001 M type 1 AC 2 NC 2299 0011	1 P 2294 1011 ⁽²⁾ 3 P 2294 3016 ⁽²⁾
60 A	3 P	2201 3006		S0 type I - 0 Black 4, 4X 148D 1111 Red/Yellow 4, 4X 148E 1111	200 mm 7.9 in 1407 0520	1 P 2201 1006	1 P 2200 5011	1 P 2200 9011		
100 A	3 P	2200 3010			320 mm 12.6 in 1407 0532 ⁽¹⁾	1 P 2200 1010				

(1) Shaft guide reference 14190000, is required for shaft length over 15.7 inches (400 mm).
 (2) Top and bottom.

➔ SIRCO M UL98 - Accessories

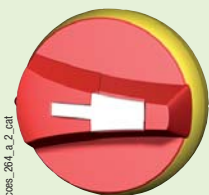
Direct handle



M01 handle

Rating (A)	Colour	Handle	Reference
30 ... 100	Blue	M01 type	2299 5032

External handle



S00 handle



S0 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 (authorized persons only). The interlocking function is restored when the door is re-closed. The handle is padlockable with 3 padlocks.

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

Shafts for external handle



sirom_045_s_2_x_cat

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

Shaft guide for external handle



access_260_s_2_cat

Use

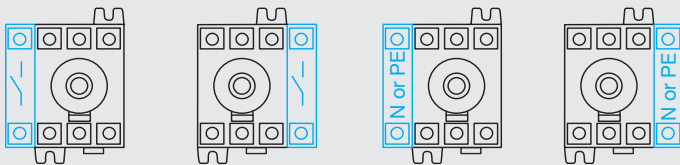
This accessory makes shaft introduction easier with up to 15 mm misalignment. Required for a shaft length from 320 mm.

Handle type	Reference
S0	1419 0000

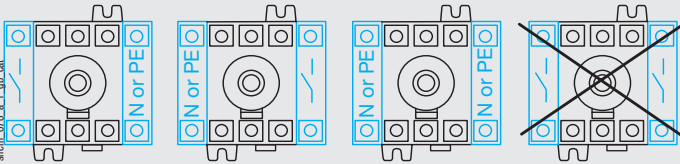
Additional pole for SIRCO M



siem_072_b_1_x_cat



siem_078_a_1_ub_cat



4th pole

Use

Adding one or two additional poles transforms a load break switch from 3 poles to 4 poles.

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

Solid neutral pole

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.

Rating (A)	No. of poles	Type	Reference
30 ... 100	1 P	unswitched	2200 5011

Earth module

Use

Adds 1 earth module pole to the switch-disconnector.

Rating (A)	No. of poles	Type	Reference
30 ... 100	1 P	unswitched	2200 9011

Terminal shrouds



siem_049_a_1_cat

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

M type auxiliary contacts

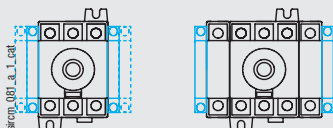


siem_075_b_2_cat

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.



siem_081_a_1_cat

Auxiliary contacts configurations for SIRCO M

Rating (A)	Nb de CA	AC type	Reference
30 ... 100	1 AC	NO + NC	2299 0001
30 ... 100	1 AC	2 NC	2299 0011

➤ **SIRCO M UL98 - Characteristics according to UL98/CSA22.2#4**

30 to 100 A

General use rating	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)	30 A	60 A	100 A	
Thermal current I_{th} (40°C)	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_o (A)				
Load duty category	Rated voltage	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_o 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.

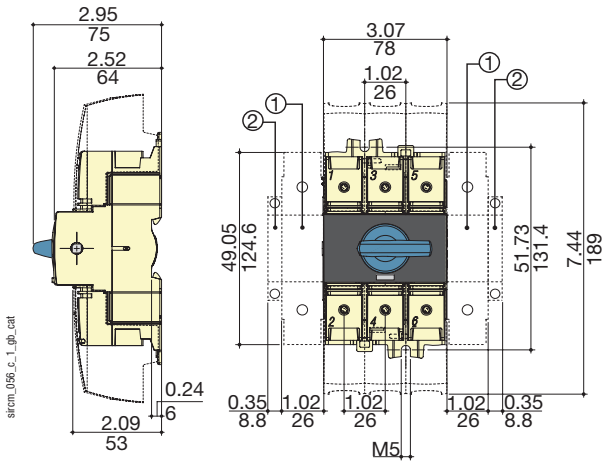
(3) The power value is given for information only, the current values vary from one manufacturer to another.

(4) For a rated operating voltage $U_o = 400$ VAC.

➔ **Dimensions (in / mm)**

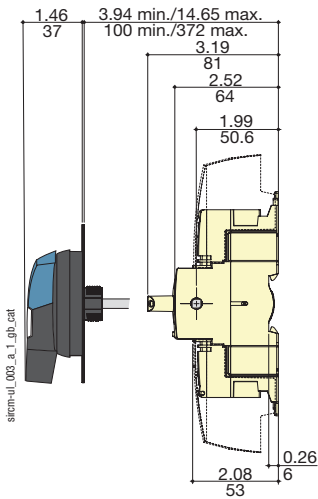
30 to 100 A

Direct handle

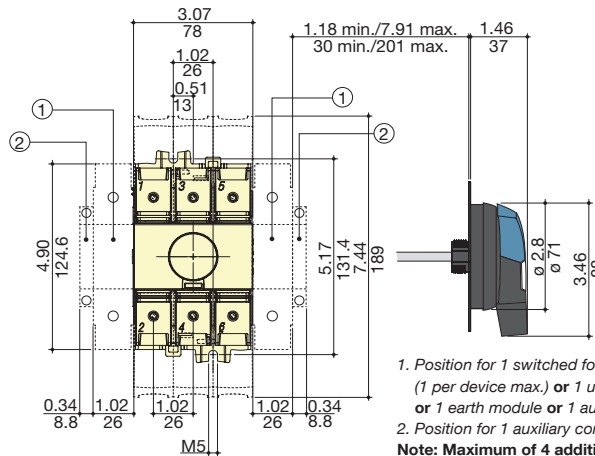


1. Position for 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 earth module or 1 auxiliary contact.
 2. Position for 1 auxiliary contact only.
- Note: Maximum of 4 additional blocks.**

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.**

➔ **External handles dimensions (in / mm)**

30 to 100 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
<p>S00 / S0 type</p>			<p>With 4 fixing screws</p> <p>With fixing nut</p>



100 to 1200 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

- Fully visualised disconnection.
- High thermal and dynamic withstand.
- Severe utilisation categories.
- High electrical and mechanical endurance.

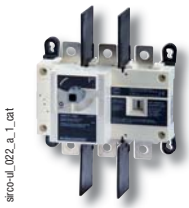
➔ Conformity to standards

- UL98, Guide WHTY, file E201138
- CSA Pending 22.2#4, Class 4652-04, file 703166
- IEC 60947-3

➔ Customized solutions (please consult us):

- Visible contacts from 30A to 400A.
- NFPA79 on non fusible disconnects.

➤ **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 2798 8021 ⁽³⁾ 4 P 2798 4021 ⁽⁴⁾	3 P 3954 3020 ⁽⁴⁾ 4 P 3954 4020 ⁽⁴⁾																																																								
	4 P	2700 4011							200 A	3 P	2700 3021	142G 2111 ⁽¹⁾ Black 1, 3R, 12 4, 4X	320 mm 12.6 inches 1400 1032	400 mm 15.7 inches 1400 1040	3 P 2798 3041 ⁽²⁾ 3 P 2798 8041 ⁽³⁾ 4 P 2798 4041 ⁽⁴⁾	3 P 3954 3040 ⁽⁴⁾ 4 P 3954 4040 ⁽⁴⁾	4 P	2700 4021	400 A	3 P	2700 3041	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⁾ 4 P 2798 4060 ⁽⁴⁾	3 P 3954 3060 4 P 3954 4060	4 P	2700 4041	600 A	3 P	2700 3060	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4060	800 A	3 P	2700 3080	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4080	1000 A	3 P	2700 3100	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4100	1200 A	3 P	2700 3120	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532
200 A	3 P	2700 3021		142G 2111 ⁽¹⁾ Black 1, 3R, 12 4, 4X	320 mm 12.6 inches 1400 1032		400 mm 15.7 inches 1400 1040	3 P 2798 3041 ⁽²⁾ 3 P 2798 8041 ⁽³⁾ 4 P 2798 4041 ⁽⁴⁾		3 P 3954 3040 ⁽⁴⁾ 4 P 3954 4040 ⁽⁴⁾																																																						
	4 P	2700 4021							400 A		3 P	2700 3041	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⁾ 4 P 2798 4060 ⁽⁴⁾	3 P 3954 3060 4 P 3954 4060	4 P	2700 4041	600 A		3 P	2700 3060		143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4060	800 A	3 P	2700 3080	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4080	1000 A	3 P	2700 3100	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4100	1200 A	3 P	2700 3120	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4120		
400 A	3 P	2700 3041		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⁾ 4 P 2798 4060 ⁽⁴⁾	3 P 3954 3060 4 P 3954 4060																																																					
	4 P	2700 4041							600 A			3 P		2700 3060	143E 3111 ⁽¹⁾ 4, 4X		320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P		2700 4060	800 A		3 P	2700 3080	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4080	1000 A	3 P	2700 3100	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4100	1200 A	3 P	2700 3120	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4120										
600 A	3 P	2700 3060			143E 3111 ⁽¹⁾ 4, 4X		320 mm 12.6 Inches 1401 1532			400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120																																																				
	4 P	2700 4060							800 A					3 P	2700 3080		143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120		4 P	2700 4080		1000 A	3 P	2700 3100	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4100	1200 A	3 P	2700 3120	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4120																			
800 A	3 P	2700 3080			143E 3111 ⁽¹⁾ 4, 4X		320 mm 12.6 Inches 1401 1532			400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120																																																				
	4 P	2700 4080							1000 A					3 P	2700 3100		143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120		4 P	2700 4100		1200 A	3 P	2700 3120	143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4120																													
1000 A	3 P	2700 3100	143E 3111 ⁽¹⁾ 4, 4X		320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾			3 P 3954 3120 4 P 3954 4120																																																						
	4 P	2700 4100							1200 A		3 P	2700 3120		143E 3111 ⁽¹⁾ 4, 4X	320 mm 12.6 Inches 1401 1532		400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾	3 P 3954 3120 4 P 3954 4120	4 P	2700 4120																																											
1200 A	3 P	2700 3120	143E 3111 ⁽¹⁾ 4, 4X		320 mm 12.6 Inches 1401 1532	400 mm 15.7 Inches 1401 1540	3 P 2798 3120 ⁽⁴⁾ 4 P 2798 4120 ⁽⁴⁾			3 P 3954 3120 4 P 3954 4120																																																						
	4 P	2700 4120																																																														

- (1) Defeatable handle.
 (2) Top.
 (3) Bottom.
 (4) Top or bottom.
 (5) Max. 4 ACs.


➤ **Accessories**

Direct handle



access_135_a_2_catt

H type handle



access_114_a_1_catt

B type handle

Rating (A)	Colour	Handle	Reference
100 ... 400	Black	B type	2699 5052
600 ... 1200	Black	H type	3799 6012

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 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 (authorized persons only). The interlocking function is restored when the door is re-closed.

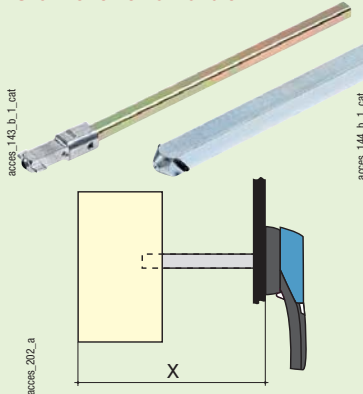
Front handle I - 0

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

Shaft for external handle



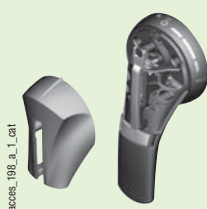
Use

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

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

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

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

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

Low level 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.

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.

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 6120
800 ... 1200	4x (#2 - 600MCM)	2	8	Cu / Al	3954 8120

➤ **SIRCO UL98 - Characteristics according to UL98/CSA22.2#4**

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	#2	2x #2	4x #2	4x #2	4x #2
Max. connection section / AWG	300MCM	300MCM	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**

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_o (A)

Rated voltage	Load duty 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_o 415 VAC)

Rated short-circuit making capacity I_{cm} (kA peak) ⁽⁴⁾	17,6	32	48	48	75	48	75
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(1) Category with index A = frequent operation.

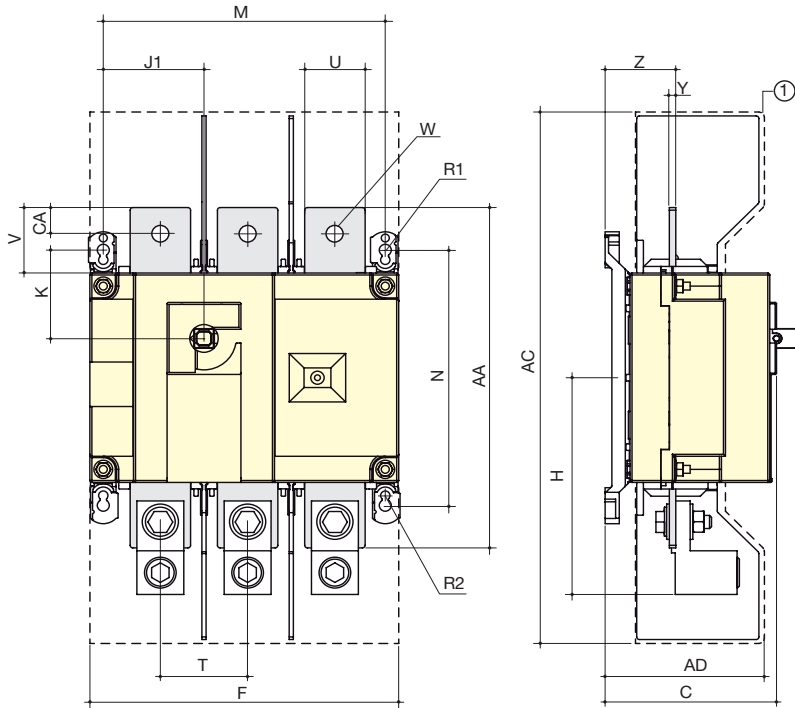
(2) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.

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

(4) For a rated operating voltage $U_o = 400$ VAC.

➔ **Dimensions (in / mm)**

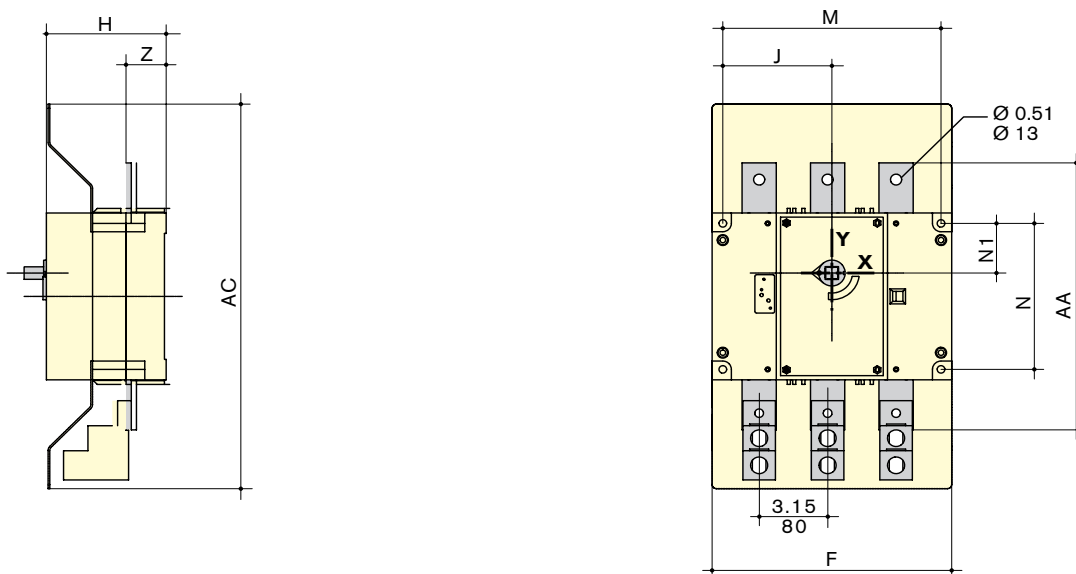
100 to 400 A



1. Terminal shrouds

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	AC
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

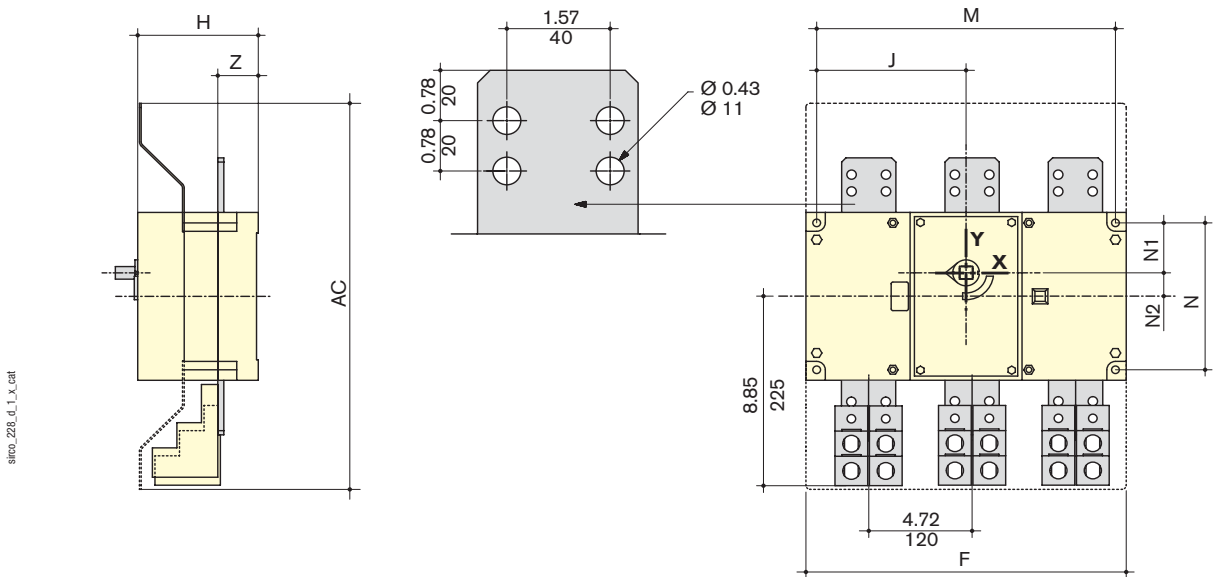
600 A



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 - Dimensions (continued)

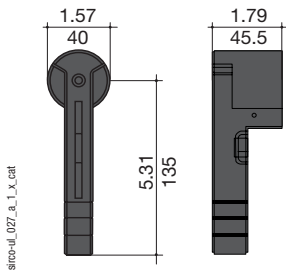
800 to 1200 A



Rating (A)	Unit	Terminal shrouds AC	Switch body					Switch mounting				Connection	
			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	1.10	1.85
	mm	460	372	492	140	173.5	233.5	347	467	175	59.5	330	47

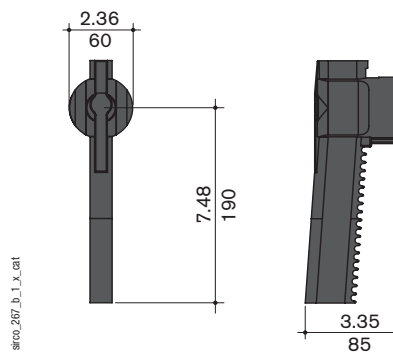
100 to 400 A

Front direct handle



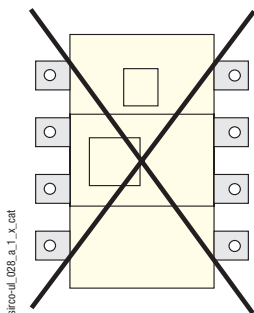
600 to 1200 A

Front direct handle



➔ Mounting orientation

3/4 pole

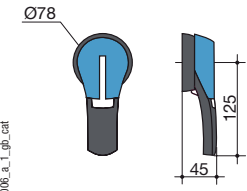


➤ External handles dimensions (in / mm)

100 to 400 A

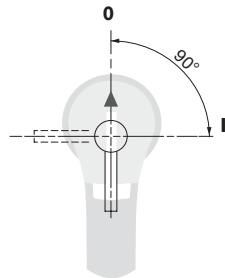
Handle type

S2 type

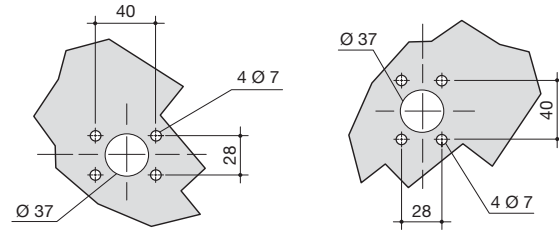


sircm-pv_006_a_1_gp_cat

Front operation
 Direction of operation



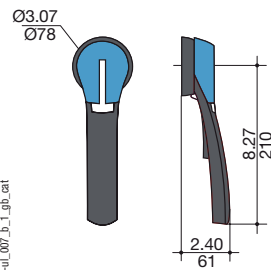
Door drilling



600 to 1200 A

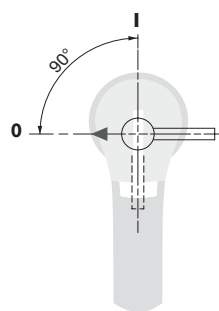
Handle type

S3 type

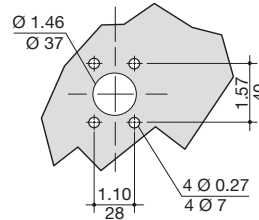


sircm-ul_007_b_1_gp_cat

Front operation
 Direction of operation



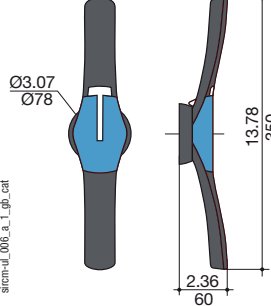
Door drilling



600 to 1200 A

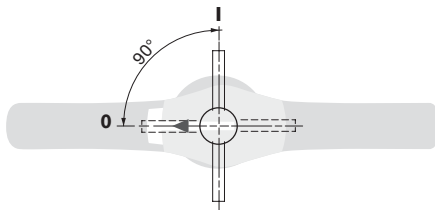
Handle type

S4 type

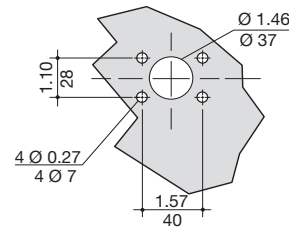


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Front operation
 Direction of operation

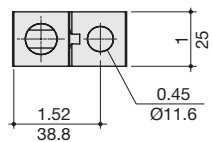


Door drilling

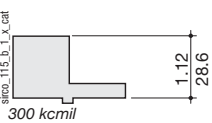


➤ Terminal lugs (in / mm)

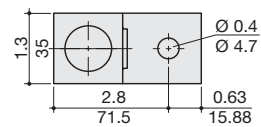
100 to 200 A



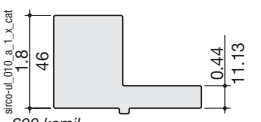
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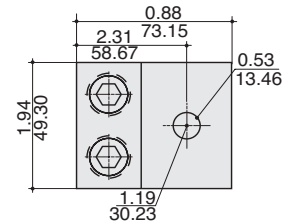
400 A



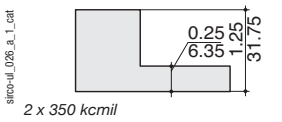
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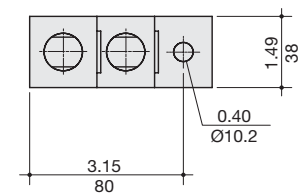
400 A



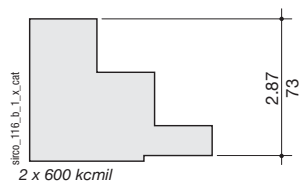
sircp-ul_026_a_1_cat



600 to 1200 A



sircp_116_b_1_x_cat





100 to 1200 A (600 A x 2) 600VDC UL98 General use

➤ Function

SIRCO DC non fusible disconnect switches are heavy duty switches that break and make 600VDC photovoltaic circuits on and off load, they are suitable for use in accordance with NEC Art. 690 Photovoltaic Installations.

These switches are extremely durable and are tested and approved for use in the most demanding applications.

They are available in 3, 4, and 6, 8 poles for dual-input configurations, in order to suit all your requirements.

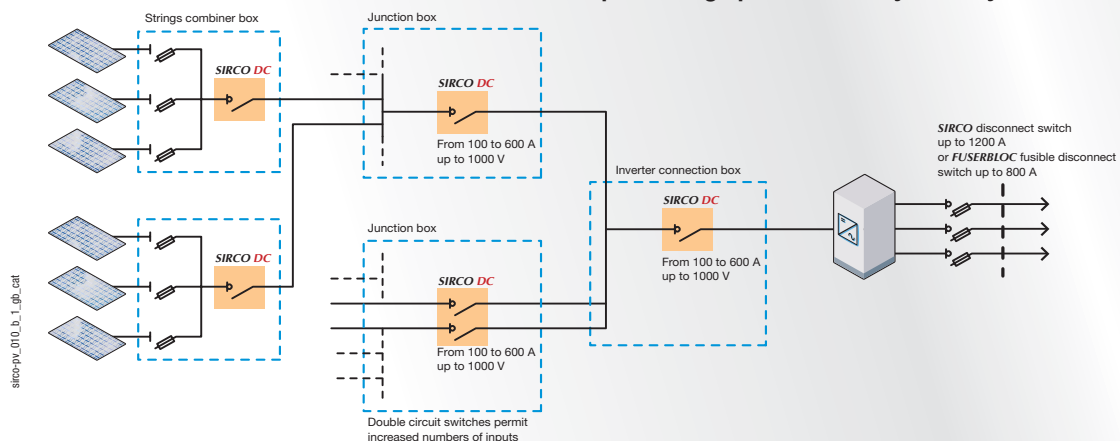
➤ General characteristics

- Patented switching technology.
- Up to 600 V d.c. according to UL98/CSA C22.2#4.
- Up to 1000 V d.c. according to IEC 60947-3.
- Suitable for use in accordance with NEC Art. 690.

➤ Conformity to standards

- UL98, Guide WHTY, file E201138
- CSA Pending C22.2#4, Class 4651-02, file 112964
- NEC Art. 690
- IEC 60947-3

Simplified large photovoltaic system layout



➔ References



UL98 - 3 & 4 pole switches

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contacts	Terminals protection screen	Lug terminals	Jumpers for poles in serie connection							
100 A	3 P	27DC 3011	Black 2699 5052	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 320 mm 12.6 inches 1400 1032 400 mm 15.7 inches 1400 1040 ⁽²⁾	C type 1 st Contact NO+NC 2799 0021 C type 2 nd Contact NO+NC 2799 0022	3 P 2798 3021 ⁽³⁾ 3 P 2798 8021 ⁽⁴⁾ 4 P 2798 4021 ⁽⁵⁾	3 P 3954 3020 ⁽⁶⁾ 4 P 3954 4020 ⁽⁶⁾	2 pieces 2709 2021 3 pieces 2709 3021							
	4 P	27DC 4011														
200 A	3 P	27DC 3021														
	4 P	27DC 4021														
400 A	3 P	27DC 3041														
	4 P	27DC 4041														
600 A	3 P	27DC 3060								Black 2699 7012	S4 type Black 4, 4X 144D 3111 ⁽¹⁾ Red/Yellow 4, 4X 144E 3111 ⁽¹⁾	200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532 400 mm 15.7 inches 1401 1540 ⁽²⁾	Contact holder 3999 0720 ⁽⁶⁾ Contact NO 3999 0701 Contact NC 3999 0702	3 P 2798 3061 ⁽⁵⁾ 4 P 2798 4061 ⁽⁵⁾	3 P 3954 3060 ⁽⁶⁾ 4 P 3954 4060 ⁽⁶⁾	2 pieces 2709 2061 3 pieces 2709 3061
	4 P	27DC 4060														

(1) Defeatable handle.

(2) Shaft guide reference 1429 0000, is required for shaft length over 15.7 inches (400mm).

(3) Top.

(4) Bottom.

(5) Top or bottom.

(6) Max. 4 ACs.



UL98 - 6 & 8 pole switches

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contacts	Terminals protection screen	Terminal lugs kits	Jumpers for connecting poles in series
400 A	6 P	27DC 6041	Black 2799 5012	S3 type Black 4, 4X 143D 3111 ⁽¹⁾ Red/Yellow 4, 4X 143E 3111 ⁽¹⁾	200 mm 7.9 inches 1401 1520	1 st Contact NO+NC 4159 0021	6 P 4158 3041 ⁽³⁾⁽⁴⁾	3 P 3954 3040 ⁽³⁾	2 pieces 2709 2041
	8 P	27DC 8041			320 mm 12.6 inches 1401 1532 ⁽²⁾		8 P 4158 4041 ⁽³⁾⁽⁴⁾	4 P 3954 4040 ⁽³⁾	3 pieces 2709 3041
600 A	6 P	27DC 6060	Black 4199 7012 4199 7062	V1 type Black NEMA 1 2799 7145	320 mm 12.6 inches 4199 3018	1 NO/NC as standard	6 P 1609 3063 ⁽³⁾	3 P 3954 3060 ⁽³⁾	2 pieces 2709 2061
	8 P	27DC 8060					8 P 1609 4063 ⁽³⁾	4 P 3954 4060 ⁽³⁾	3 pieces 2709 3061

(1) Defeatable handle.

(2) Shaft guide reference 1429 0000, is required for shaft length over 15.7 inches (400mm).

(3) Top or bottom.

(4) Order 2 sets for front and rear poles.



➔ Zoom

A 6 or 8 pole switch allows the connection of two independent solar string circuits to its inputs, the output can be paralleled in order to concentrate currents up to 1200A 600VDC general use.

On and Off on-load disconnection are operated with one handle.

➤ Accessories

External handle



Front handle I - 0, 3/4 poles

Rating (A)	Handle	Colour	Nema type	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	S4 type	Black	4, 4X	144D 3111 ⁽¹⁾
600	S4 type	Red/Yellow	4, 4X	144E 3111 ⁽¹⁾

(1) Defeatable handle.

Front handle I - 0, 6/8 poles

Rating (A)	Handle	Colour	Nema type	Reference
400	S3 type	Black	4, 4X	143D 3111 ⁽¹⁾
400	S3 type	Red/Yellow	4, 4X	143E 3111 ⁽¹⁾

(1) Defeatable handle.

Front handle I - 0 heavy duty⁽²⁾, 3/4 poles

Rating (A)	Handle	Colour	Nema type	Reference
100 ... 400	S2 type	Black	4, 4X	142D 2911 ⁽¹⁾
100 ... 400	S2 type	Red/Yellow	4, 4X	142E 2911 ⁽¹⁾

(1) Defeatable handle.

(2) With metallic padlocking lever.

Front handle I - 0 heavy duty⁽²⁾, 6/8 poles

Rating (A)	Handle	Colour	Nema type	Reference
400	S3 type	Black	4, 4X	143D 3911 ⁽¹⁾
400	S3 type	Red/Yellow	4, 4X	143E 3911 ⁽¹⁾
600	V1 type	Black	1	2799 7145

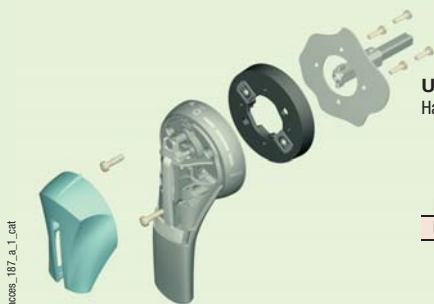
(1) Defeatable handle.

(2) With metallic padlocking lever.

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, and when the switch is padlocked in the "OFF" position (S2, S3 and S4 type handles only). Opening the door when the switch is in the "ON" position is possible by defeating the interlocking with the use of a tool (authorized persons only). The interlocking function is restored when the door is re-closed.

S type handle raiser

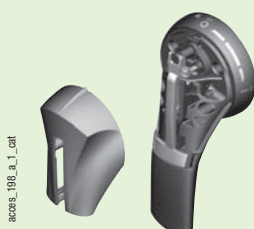


Use
Handle raiser.

Dimensions
Adds 12 mm to the depth.

Handle colour	Nema type	Pack qty	Reference
Black	1, 3R, 12	10	1493 0000

Alternative colours S type handle cover

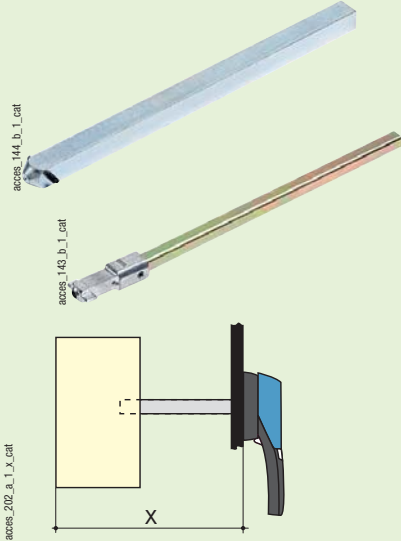


Use
For handle S2, S3 and S4.

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

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 3/4 pole

Rating (A)	Dimension X (inches)	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 ... 18.30	135 ... 465	S2 type	15.7	400	1400 1040
600	8.70 ... 13.50	221 ... 343	S4 type	7.9	200	1401 1520
600	8.70 ... 18.23	221 ... 463	S4 type	12.6	320	1401 1532
600	8.70 ... 21.38	221 ... 543	S4 type	15.7	400	1401 1540

For 6/8 pole

Rating (A)	Dimension X (inches)	Dimension X (mm)	Handle	Length (inches)	Length (mm)	Reference
400	11.73 ... 15.16	298 ... 385	S3 type	7.9	200	1401 1520
400	11.73 ... 19.88	298 ... 505	S3 type	12.6	320	1401 1532
400	11.73 ... 23.03	298 ... 585	S3 type	15.7	400	1401 1540
600	16.73 ... 22.72	425 ... 577	V type	12.6	320	4199 3018
600	16.73 ... 25.81	425 ... 657	V type	15.7	400	4199 3019

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

Description	Reference
Shaft guide for S1 to S3 handles	1429 0000
Shaft guide for S0 handle	1419 0000

Auxiliary contacts



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)	No. of AC	Type	Reference
100 ... 600	1 st contact	C type	2799 0021
100 ... 600	2 nd contact	C type	2799 0022

NO/NC contact for 6/8 and 4 pole

Rating (A)	No. of AC	Type	Reference
400		C type	4159 0021

Low level NO/NC contact for 3/4 pole

Rating (A)	No. of AC	Type	Reference
100 ... 600	1 st contact	C type	2799 0121
100 ... 600	2 nd contact	C type	2799 0122

Low level NO/NC contact for 6/8 pole

Rating (A)	No. of AC	Type	Reference
400	1 st contact		4159 0022

Terminal screens

Use

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



For 3/4 pole

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	top / bottom	2798 3061
600	4 P	top / bottom	2798 4061

For 6/8 pole

Rating (A)	No. of poles	Position	Reference
400	6 P	top / bottom	4158 3041 ⁽¹⁾
400	8 P	top / bottom	4158 4041 ⁽¹⁾
600	6 P	top / bottom	1609 3063
600	4 P	top / bottom	1609 4063

⁽¹⁾ Order 2 sets for front and rear poles.

Terminals lugs



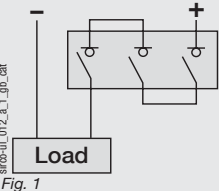
Use

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

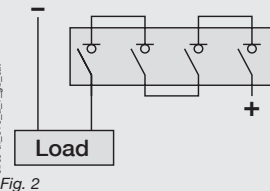
Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
100 ... 200	6 - 300MCM	1	2	Cu / Al	3954 2020
100 ... 200	6 - 300MCM	1	3	Cu / Al	3954 3020
100 ... 200	6 - 300MCM	1	4	Cu / Al	3954 4020
400	2 - 600MCM	1	2	Cu / Al	3954 2040
400	2 - 600MCM	1	3	Cu / Al	3954 3040
400	2 - 600MCM	1	4	Cu / Al	3954 4040
400 ... 600	2X (#6 - 350MCM)	2	2	Cu / Al	3954 2041
400 ... 600	2X (#6 - 350MCM)	2	3	Cu / Al	3954 3041
400 ... 600	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

Jumpers for connection poles in series

siro-ul-012_a_1_gh_cat



siro-ul-013_a_1_gh_cat



Use

The jumpers will make easy the connection of the poles in series, allowing the following configurations⁽¹⁾:

Connection diagrams.

(1) Other connections: refer to mounting instructions.

Rating (A)	No. of poles in series	Kit of	Figure	Reference
100 ... 200	3	2 pieces	1	2709 2021
100 ... 200	4	3 pieces	2	2709 3021
400	3	2 pieces	1	2709 2041
400	4	3 pieces	2	2709 3041
600	3	2 pieces	1	2709 2061
600	4	3 pieces	2	2709 3061

➔ **SIRCO DC - Characteristics according to UL98/CSA22.2#4**

100 to 600 A

General use rating with 200% overload extra test

Rated voltage	No of poles in series	100 A	200 A	400 A	600 A
600 V d.c.	3 P				

Overload capacity

Prospective short-circuit current (kA rms)	20	20	20	20
Type of fuse	A70P100	A70P200	LDC	A6D600R
Fuse rating (A)	100	200	400	600

Connection

Min. connection section/ AWG	#6	#6	2x #6 / #2	2x #2
Max. connection section/ AWG	300 kcmil	300 kcmil	2x 350 / 600 kcmil	2x 600 kcmil

Mechanical characteristics

Endurance (number of operating cycles)	10000	10000	6000	6000
Operating torque (lbs.in/Nm)	88.5/10	88.5/10	128.3/14.5	327.5/37

Auxiliary contacts

Electrical characteristics	A300	A300	A300	A300
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➔ **Characteristics according to IEC 60947-3**

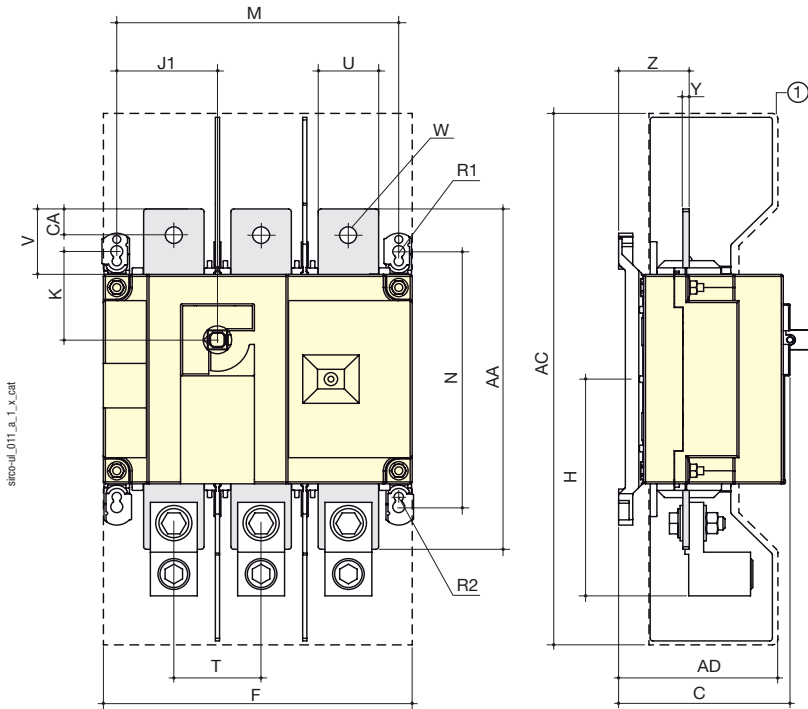
	160 A	250 A	630 A	800 A
Thermal current I _m (40°C)				
Rated insulation voltage U _i (V)	1200	1200	1200	1200
Rated impulse withstand voltage U _{imp} (kV)	12	12	12	12

Rated operational currents I_a (A), DC-22 B

Rated voltage	In series	(A)	(A)	(A)	(A)
750 V d.c.	3 P	160	250	630	
750 V d.c.	4 P				800
1 000 V d.c.	4 P	160	250	630	

➔ SIRCO DC UL98 - Dimensions (in / mm)

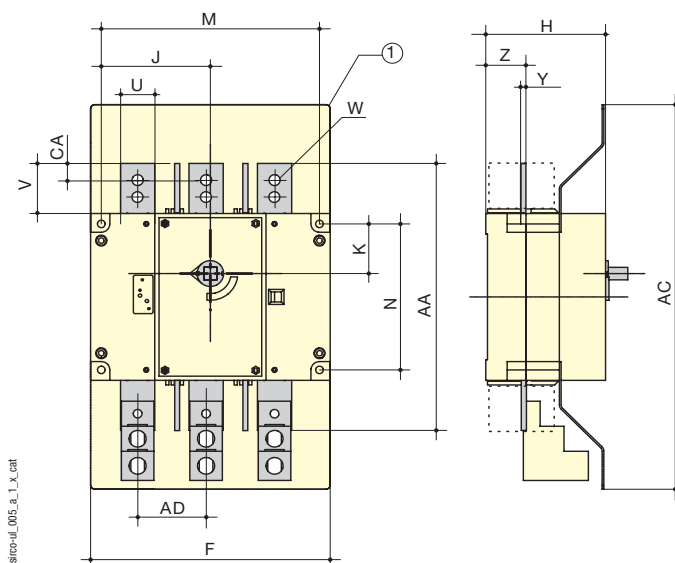
100 to 400 A - 3/4 poles



1. Terminal shrouds

Rating (A)	Unit	Overall dimensions		Terminal shrouds		Switch body					Switch mounting				Connection terminal								
		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 ... 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
100 ... 200	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

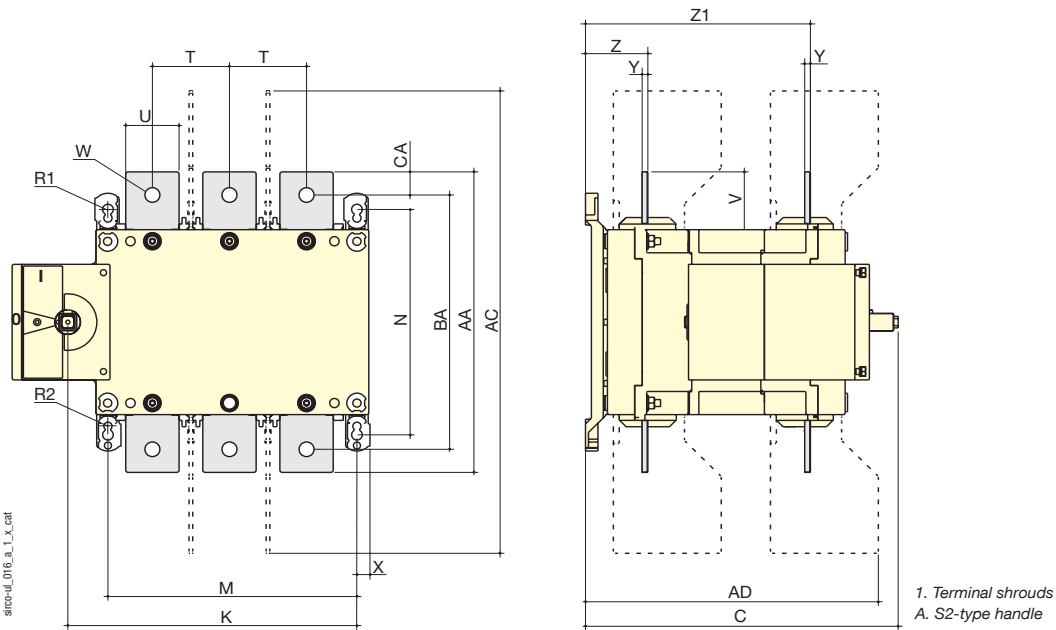
600 A - 3/4 poles



1. Terminals protection screen

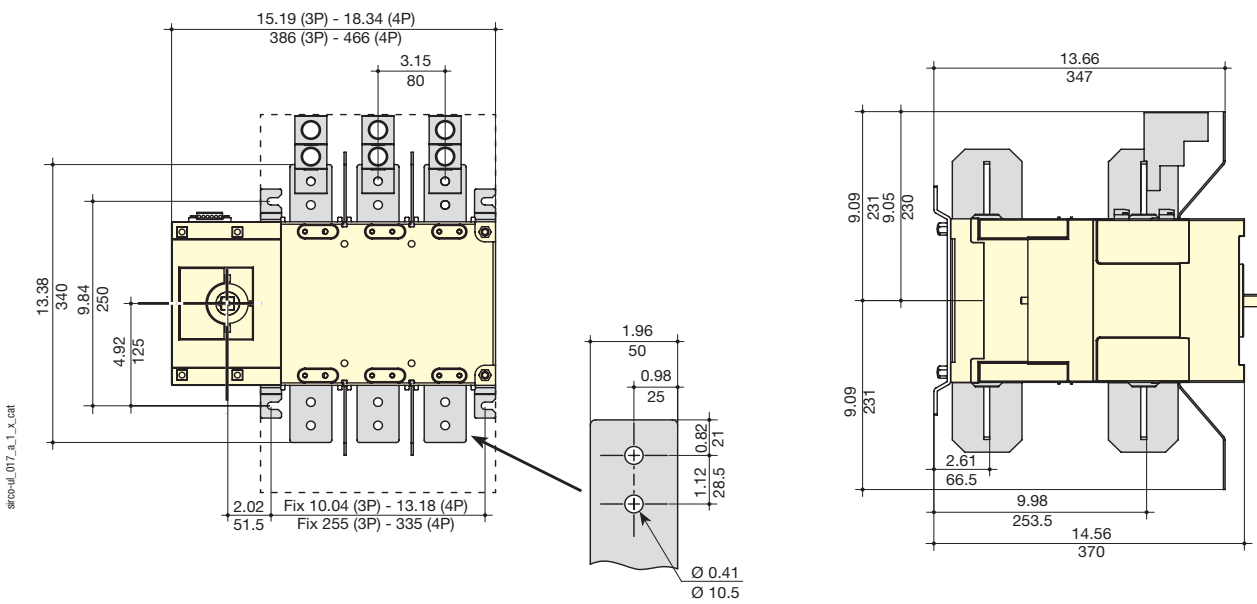
Rating (A)	Unit	Terminal shrouds		Switch body			Switch mounting				Connection terminal								
		AC	H	F 3p.	F 4p.	K	J 3p.	J 4p.	M 3p.	M 4p.	N	U	V	Y	W	Z	AA	CA	AD
600	in	18.12	5.5	11.02	14.17	2.34	5	6.59	10.04	13.19	6.88	1.97	2.38	0.28	0.41	1.83	12.64	0.82	3.15
600	mm	460	140	280	360	59.5	127.5	167.5	255	335	175	50	60.5	7	10.5	46.5	321	20.9	80

400 A - 6/8 poles



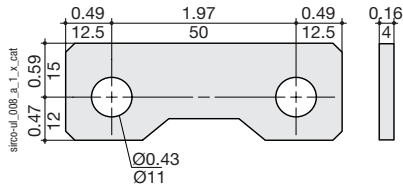
Rating (A)	Unit	Overall dimensions C	Terminal shrouds		Switch body		Switch mounting		Connection terminal													
			AC	AD	K 3p.	K 4p.	M 3p.	M 4p.	N	R1	R2	T	U	V	W	X	Y	Z	Z1	AA	BA	CA
400	in	10.39	15.75	9.72	9.61	11.97	8.27	10.63	7.68	0.35	0.27	2.56	1.77	1.97	0.50	0.43	0.20	2.07	7.48	10.24	8.66	0.79
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 - 6/8 poles

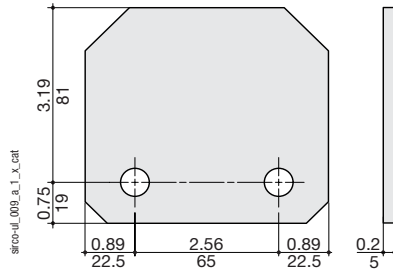


➔ SIRCO DC UL98 - Jumpers (in / mm)

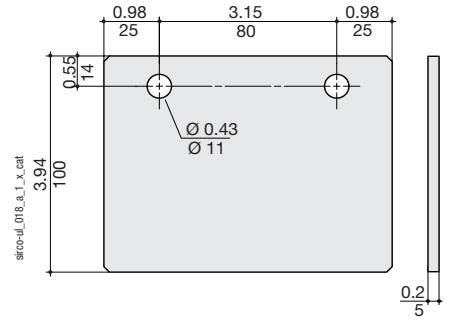
100 to 200 A



400 A

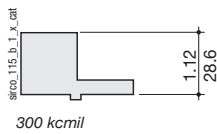
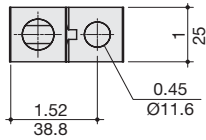


600 A



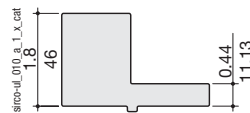
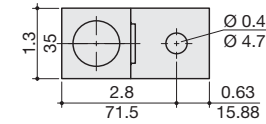
➔ Terminal Lugs (in / mm)

100 to 200 A



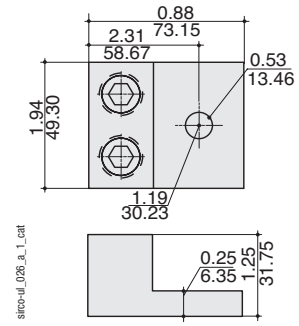
300 kcmil

400 A



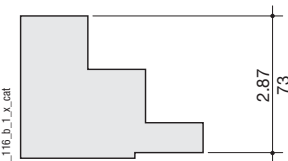
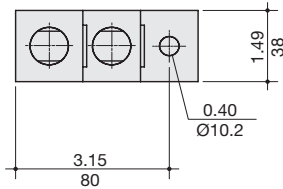
600 kcmil

400 A



2 x 350 kcmil

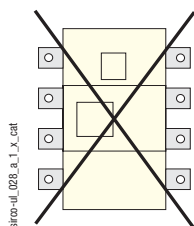
600 A



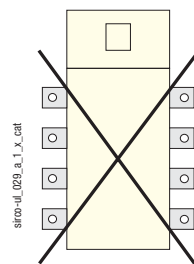
2x 600 kcmil

➔ Mounting orientation

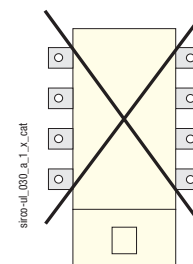
3/4 pole



6/8 pole - 100 to 400 A

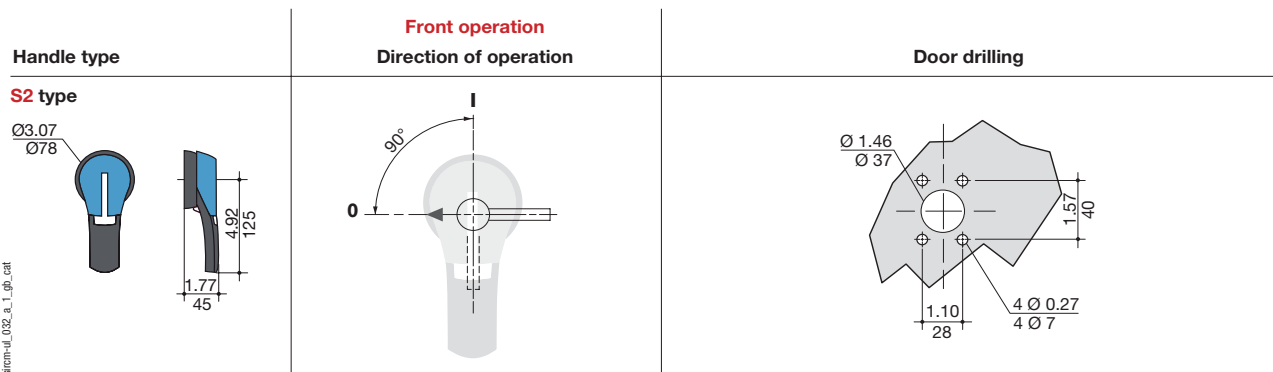


6/8 pole - 600 A

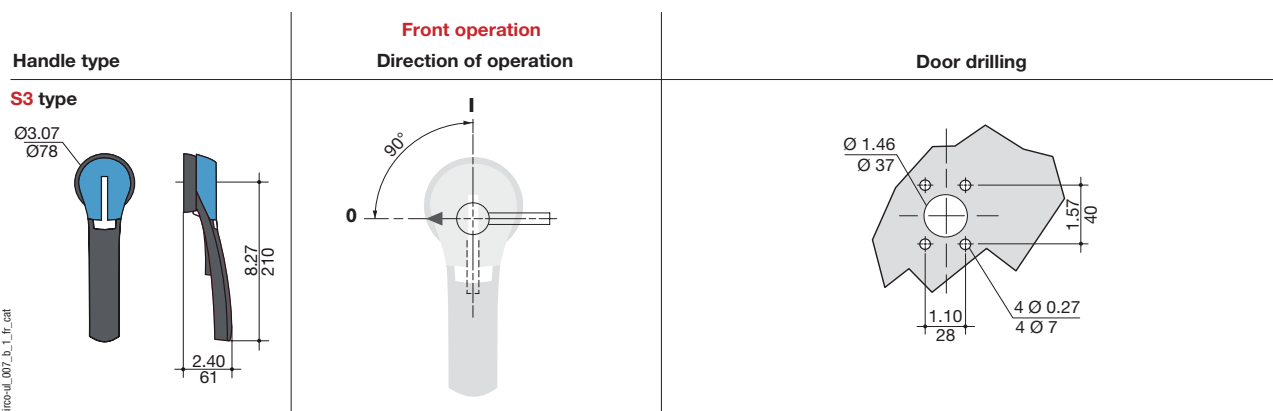


➤ External handles dimensions (in / mm)

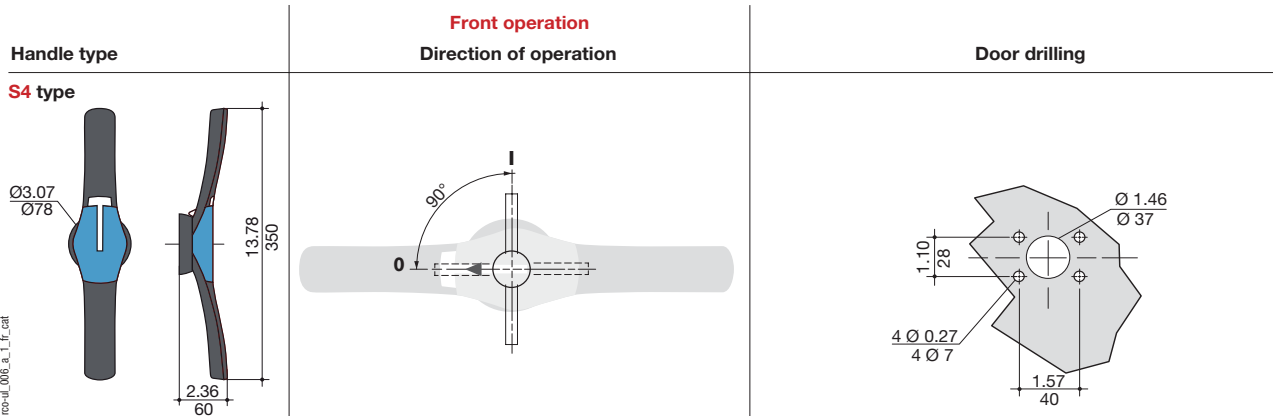
100 to 400 A - 3/4 poles



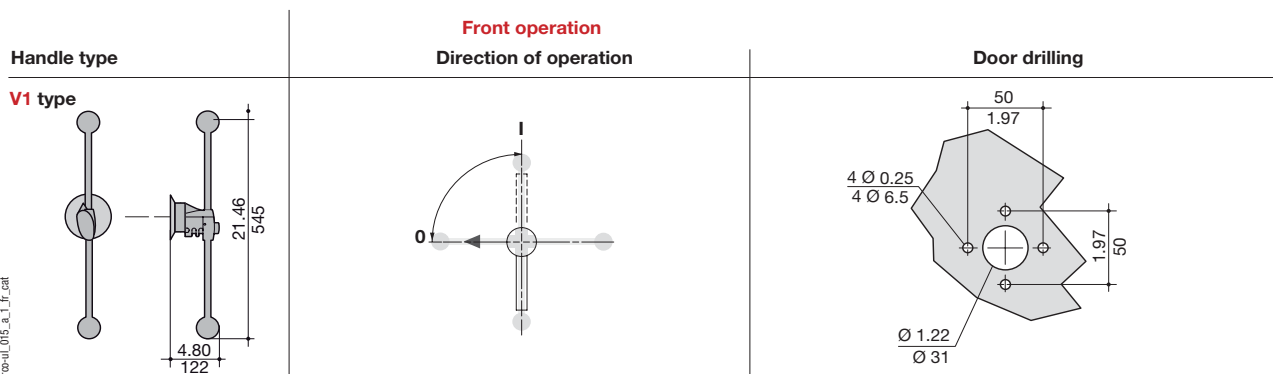
400 A - 6/8 poles



600 A - 3/4 poles and 6/8 poles



600 A - 6/8 poles





TVSS (Transient Voltage Surge Suppressor) Surge Switch

Function

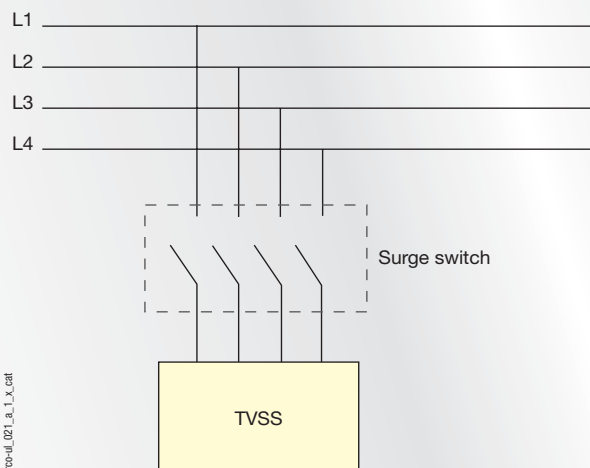
The **TVSS Surge Switch** is an extremely compact, high performance, manually operated, non-fused switch. It is specifically designed to withstand the high surge current of 200kA with an $8 \times 20 \mu\text{s}$ waveform seen in today's transient voltage Surge Protective Device (SPD) applications. Socomec Surge Switch uses a unique contact design that actually clamp contacts tighter during a surge.

General characteristics

- 200kA 8/20 μs shockwave withstand.
- Rated 100A 600VAC UL508 general use.
- High electrical and mechanical endurance.

Conformity to standards

- UL508, Guide NRNT, File E224992
- IEC 60947-3



sifco-ul_021_a_1_x_cat

Front operation - 3/4 pole switches

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Terminal shrouds
8/20 μ s 200KA 600VAC	3P	2700 3017	Black 2699 5042	S1 type Black 141F 2111 S1 type Red/Yellow 141G 2111	200 mm 1400 1020 320 mm 1400 1032	3 P 2694 3014⁽¹⁾
	4P	2700 4017	Red 2699 5043	S1 type Black 141D 2111 S1 type Red/Yellow 141E 2111	400 mm 1400 1040	4 P 2694 4014⁽¹⁾

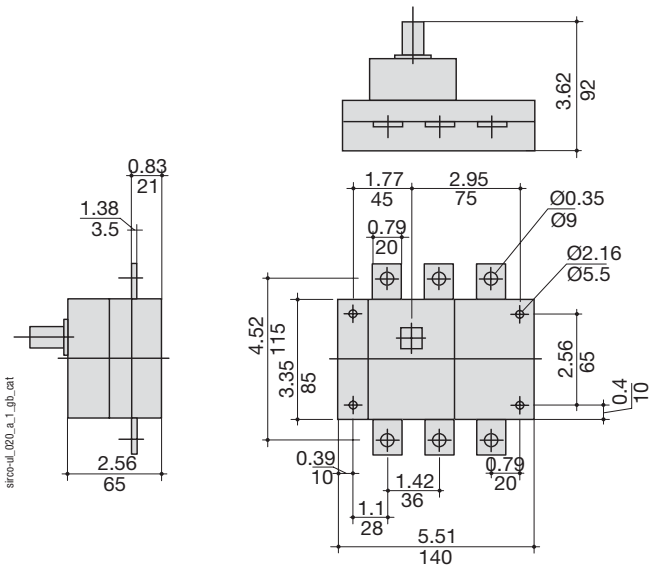
(1) Top or bottom.

↪ UL characteristics

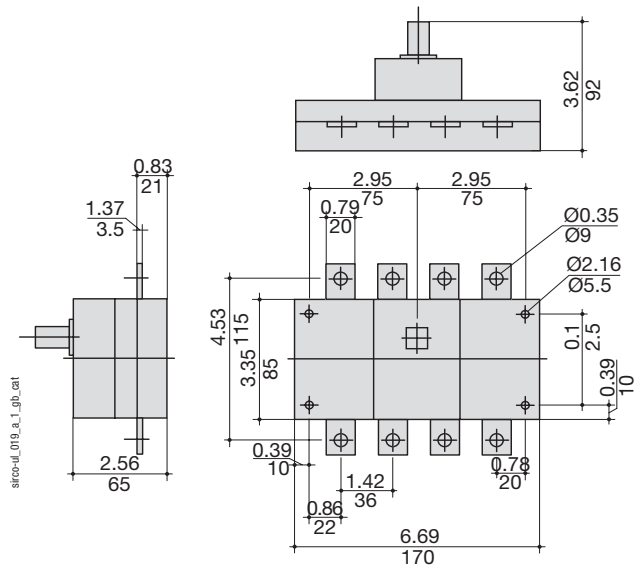
UL 508 100A 600VAC GENERAL USE

↪ Dimensions (in / mm)

TVSS 200 kA - 3 pole



TVSS 200 kA - 4 pole



Load Break Switches for *specific applications*

Despite already having in stock 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, but this list does not include them all. Please, feel free to consult us.

➔ Conformity to standards

- IEC 60947-3
- BS EN 60947-3
- EN 60947-3
- NBN EN 60947-3
- VDE 0660-107 (1992)

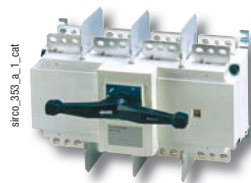
SIRCO range with over rated neutral



SIRCO 3 x 250 A with neutral at 400 A.

The use of power electronics is becoming more frequent. Chopper rectifiers and current inverters distort the signal by reinjecting the 3rd order harmonics which are added to each other on the neutral. Available from 125 to 1800 A.

SIRCO HW short-circuit performance



- 80 kA eff. 1 s.
- 110 kA eff. 0.1 s.
- 240 kA peak.

Multipolar SIRCO



12 pole SIRCO.

SOCOMEK can provide switches up to 16 poles.

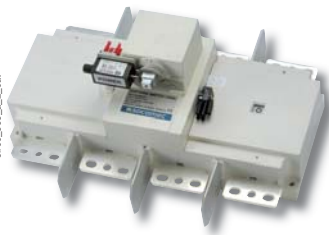
Specific range for 1000 V network



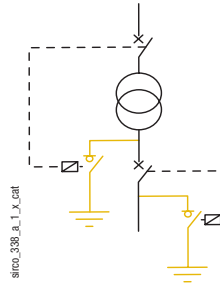
AC-22 / AC-23 characteristics.

SIRCO for earthing

sirco_3183_a_2_cat



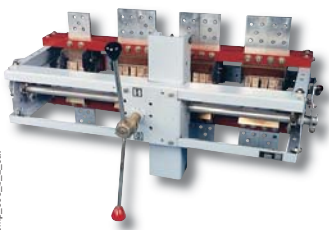
- From 800 to 1800 A.
- 50 kA eff. 1 s.
- Special S4 type handle.
- Undervoltage coil interlocking.



sirco_3381_a_1_x_cat

CMP

cmp_0018_b_2_cat



Function

CMP are manually operated high power load-break switches from 2500 to 5000 A with optional remote tripping.

Available on request

- X poles.
- Tripping coil.

General characteristics

- Safety isolation by fully visible breaking.
- High thermal and dynamic withstand.
- Easy to use for large flat busbars.

Motorised SIRCO based on an ATyS motorised switch

sirco_343_a_1_cat



Function

Remote controlled, they ensure making and breaking on load and security breaking of any low voltage electrical circuit.

References

Rating (A)		125	160	250
No. of poles	Power supply voltage	Reference	Reference	Reference
3 P	230 VAC	1915 3012 ⁽¹⁾	1915 3016 ⁽¹⁾	1915 3025 ⁽¹⁾
4 P	230 VAC	1915 4012 ⁽¹⁾	1915 4016 ⁽¹⁾	1915 4025 ⁽¹⁾

⁽¹⁾ Other voltages 12, 24 VDC: consult us.

Rating (A)		400	630	800
No. of poles	Power supply voltage	Reference	Reference	Reference
3 P	230 VAC	1915 3040 ⁽¹⁾	1915 3063 ⁽¹⁾	1915 3080 ⁽¹⁾
4 P	230 VAC	1915 4040 ⁽¹⁾	1915 4063 ⁽¹⁾	1915 4080 ⁽¹⁾

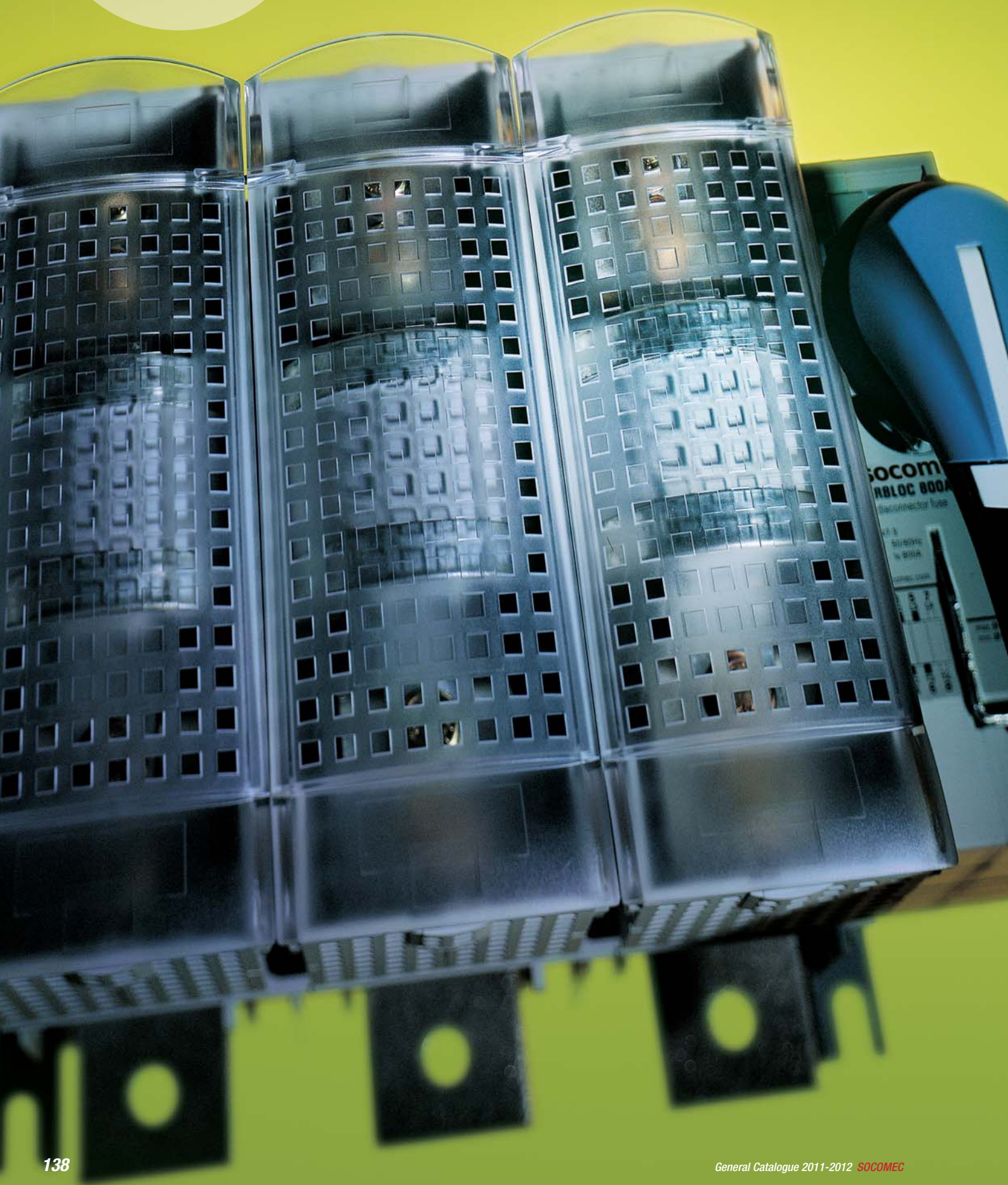
⁽¹⁾ Other voltages 12, 24 VDC: consult us.

Rating (A)		1 000	1 250	1 600
No. of poles	Power supply voltage	Reference	Reference	Reference
3 P	230 VAC	1915 3100 ⁽¹⁾	1915 3120 ⁽¹⁾	1915 3160 ⁽¹⁾
4 P	230 VAC	1915 4100 ⁽¹⁾	1915 4120 ⁽¹⁾	1915 4160 ⁽¹⁾

⁽¹⁾ Other voltages 12, 24 VDC: consult us.



Fuse protection



Fuses, fuse holders and fuse combination switches



Fuse protection offers lots of benefits compared to the circuit breaker in a large number of industrial applications. With over 80 years' experience, SOCOMEC offers a range of switches and components useful for building a complete fuse protection solution.

➔ Do you want...

- **better understanding** of fuse protection?

See our information on the next page

- **design** an LV installation and its fuse protection?

Discover our *INSTALFUSE*® v2 software.

Please consult us

➔ And to **help you choose the right** device:

See our selection guide on the next page

➔ **Are your requirements outside of the standard offering?** Do not hesitate to contact us so we can discuss the **adaptation** of one of our devices together.

➔ **SOCOME**C also offers you a large range of devices for guaranteeing **electrical protection** (differential protection, protection against voltage surges, current protection).

See our section on "Electronic protection"

The essential

**Manually operated
fuse combination switches**



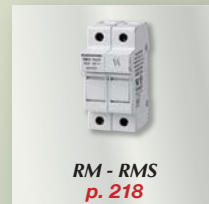
FUSERBLOC
p. 142

with tripping function



FUSOMAT
p. 184

**Modular fuse
disconnects**



RM - RMS
p. 218

**Fuses
BS88**



gG - aM fuses
p. 230

**Fuses
NFC and DIN**



gG - aM fuses
p. 236

Plug-in



FUSERBLOC Plug-in
Consult us

➔ Discover our **complete selection guide**
(see next page)

➔ **Need a suggestion?**

We will help you find the best solution for your application.

➔ **Standards BS, UL and CSA**
(see next page)

New

Better understanding of fuse protection

Fuse combination 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**

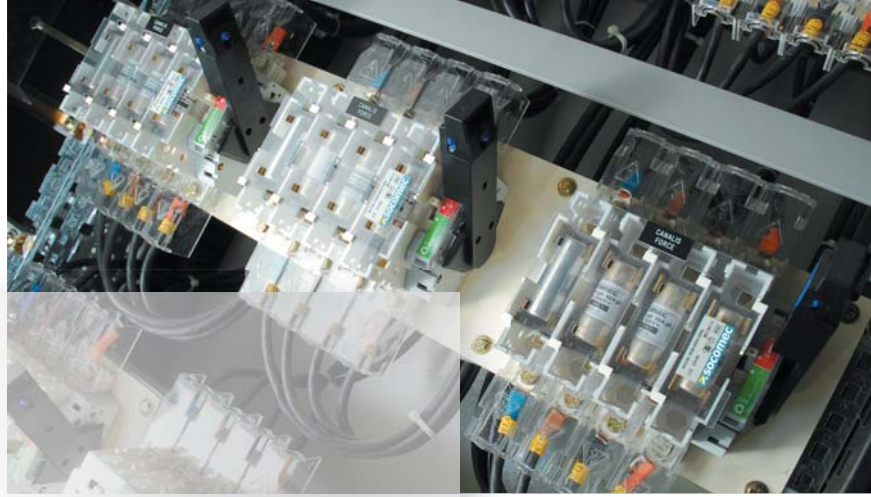
The thermal and mechanical effects generated during a short circuit can be considerable. Since a fuse can cut-out short circuit much faster than a circuit breaker, it offers a greater limitation of the mechanical effect on your switchboard and wires (see fig. 1).

- **High breaking capacity**

Starting 1A, gG and aM 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 selectivity**

Fuses allow total selectivity, 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).



- **The 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**

Fuse combination 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 combination 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 efficiently protect the semiconductors used in electronic equipment (variable speed drives, etc.) against short circuits.

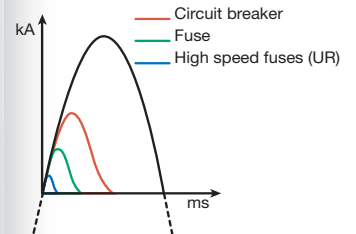


Fig. 1: Limitation of the current

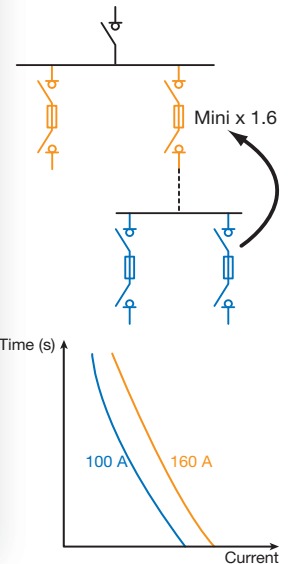


Fig. 2: Example of total selectivity

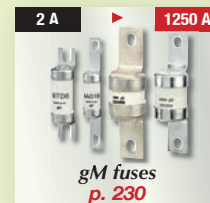
Selection guide

➔ BS88 fuses

Distribution protection



Motor protection



➔ How to calculate fuse protection?

The **INSTALFUSE® v2** software carries out sizing calculations for low-voltage electrical installations and their fuse protection. Please consult us.

➔ NFC and DIN fuses

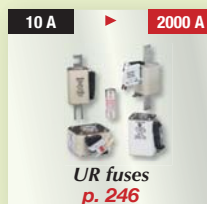
Distribution protection



Motor protection



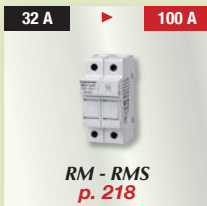
Semiconductor protection



Photovoltaic



➔ Modular fuse disconnects and Fuse bases



➔ Photovoltaic applications

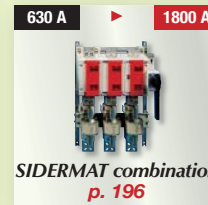
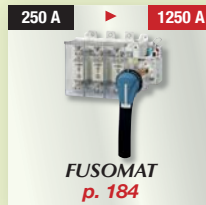
SOCOMEK provides solutions based on fuse disconnects or fuse combination switches. please consult us.

➔ BS88, NFC and DIN fuse combination switches



Protection of transformer outputs

Visible breaking and tripping

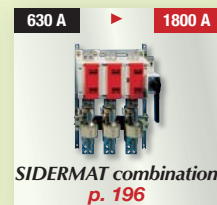
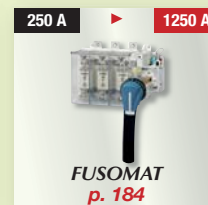


Protection of feeders

Manual control



Visible breaking and tripping

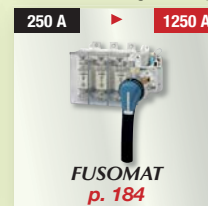


Protection of section incomers

Manual control



Visible breaking and tripping



Protection of motor circuits

Manual control



➔ Need an enclosed switch?

SOCOMEK offers you a range of pre-equipped enclosures in steel or in polyester.



See p. 482



Semiconductor protection

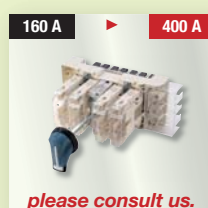
Manual control



➔ 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 160A to 400A (DIN and BS fuses).



➔ UL/CSA range

Fuse combination switches to standard UL 98:

- standard positions 0 and 1
- standard positions 0 and 1 and Test

UL fuses: please consult us.





20 to 1250 A Manual operation

⇒ Function

FUSERBLOC are manually operated multipolar fuse combination switches. They break or switch off on load and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

⇒ General characteristics

- Fully visualised breaking.
- Double break by phase (top and bottom of fuse).
- Protection against overcurrent by fuse circuit-breakers (gG, aM, UR, BS88) with high breaking capacity (100 kA eff.).
- IP20 protection with terminal shrouds front panel.
- Compact.
- TEST position for testing control circuits without power using U type auxiliary contacts. In TEST position, the enclosure door can be opened.

⇒ Available on request

- **FUSERBLOC with rear top or bottom connections:** consult us.
- **Multipolar FUSERBLOC** providing various coupling possibilities (for example: FUSERBLOC 3 x 400 A + 3 x 50 A with front or side operation).
- **FUSERBLOC UL and CSA** for the North American markets (see page 204).
- **FUSERBLOC with centred operation:** consult us.
- **FUSERBLOC for solar applications:** 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
- IS 14947-3
- Standards UL: see FUSERBLOC UL

⇒ Approvals and certifications⁽¹⁾

- KEMA
- LOVAG
- CCC
- GOST (Russia)
- CEBEC (Belgium)
- FI (Finland)
- CCA
- UKR (Ukraine)

⁽¹⁾ Product reference on request.



fuser_597_a

Multipolar FUSERBLOC



fuser_592_a

Centred operation

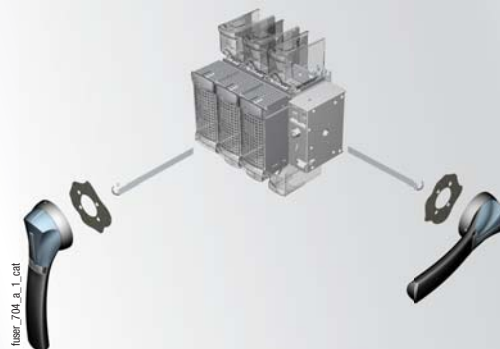
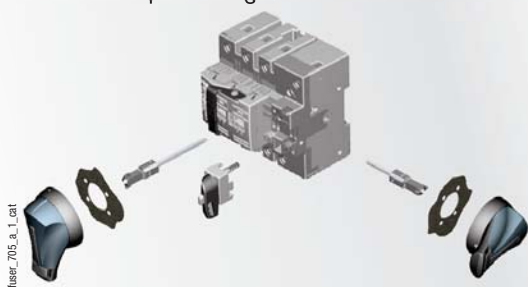


fuser_301_a

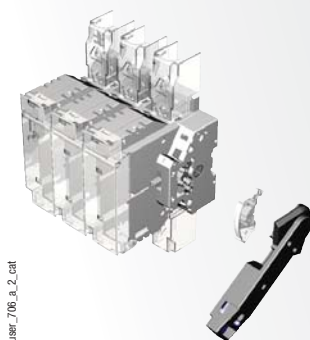
FUSERBLOC for solar applications

➔ **What you need to know**

- Along with the rating, FUSERBLOC is selected according to the fuse type and functional specifications. SOCOMEC FUSERBLOC can be equipped with **NFC, DIN** or **BS88 fuses**.
- The INSTALFUSE® v2 software carries out sizing calculations for low-voltage electrical installations and their fuse protection.
- 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 630 to 1250 A, the FUSERBLOC unit allows **direct** and **external front** or **right side operation** in 2, 3 or 4 poles.



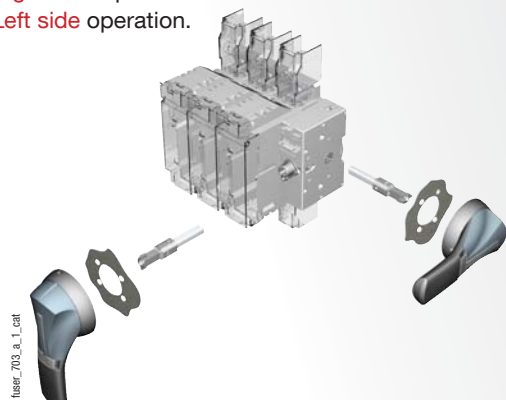
- From 32 to 400 A, the FUSERBLOC is available in 2, 3 or 4 poles with **direct side operation**.



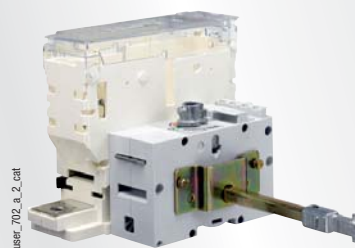
- FUSERBLOC is available in 3 and 4-pole versions within 2 types of enclosures:
 - **Steel enclosure** for **front** operation from 25 to 800 A, (NFC and DIN)
 - **Polyester enclosure** with **front and side operation** from 50 to 400 A (NFC and DIN).
 - For BS88 steel enclosed FUSERBLOC please consult us.



- 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.



➔ FUSERBLOC - References



BS 88 - External front and side operation 20 to 160 A

Rating (A) Fuse size Frame size	Number of poles	Reference Switch I-O	Reference Changeover Switch I-O-II	External front handle I-O	TEST External front handle I-O TEST	External right side handle I-O	Changeover external front handle I-O-II	Shaft extensions for handle	Terminal shrouds ⁽³⁾	Additional contact holder for U type AC	Integrated solid neutral link
20 A A1 0	3 P	3641 3000	3680 3000					320 mm 1401 0532		3999 0710⁽²⁾	
	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	Black S1 type IP65	Black S1 type IP55	Black S1 type IP55				
	3 P + switched neutral	3641 4001	3680 4001								
	3 P + solid neutral	3641 5001									
32 A A1 11	2 P	3841 2003		1414 2111	1414 2115	1415 2111⁽¹⁾	1411 2113⁽¹⁾		Standard		
	3 P	3841 3003	3880 3003								
	4 P	3841 6003	3880 6003								
63 A A2-A3 12	2 P	3841 2006									
	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		3999 0600⁽²⁾	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	Black S2 type IP65	Black S2 type IP55	Black S2 type IP55				
	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	Red/Yellow S2 type IP65	Red/Yellow S2 type IP65	Red/Yellow S2 type IP65				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 support (the support is for 4 additional auxiliary contacts).

(3) Top/bottom.

(4) For fuse size A4: max diameter 31 mm.

fuserr_05f4_a_2_catt



BS 88 - External front and side operation 200 to 1250 A

Rating (A) Fuse size Frame size	Number of poles	Reference Switch I-O	Reference Changeover Switch I-O-II	External front handle I-O	TEST External front handle I-O TEST	External right side handle I-O	Changeover external front handle I-O-II	Shaft extensions for handle	Terminal shrouds ⁽³⁾	Additional contact holder for U type AC	Integrated solid neutral link
CD 200 A A3-A4⁽⁵⁾ 13 A	2 P	3841 2019							2 P 3998 2016		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								3999 0600⁽⁴⁾	3829 9325
	3 P	3841 3021	3880 3021	Black S2 type IP55	Black S2 type IP65	Black S2 type IP55	Black S2 type IP55				
	4 P	3841 6021	3880 6021								
250 A B1-B2-B3 15	2 P	3841 2024		1421 2111⁽¹⁾	1423 2115⁽¹⁾	1425 2111⁽¹⁾	1421 2113⁽¹⁾	320 mm 1400 1032			
	3 P	3841 3024	3880 3024	Red/Yellow S2 type IP65	Red/Yellow S2 type IP65	Red/Yellow S2 type IP65	Red/Yellow S2 type IP65		2 P 3998 2025		
	4 P	3841 6024	3880 6024						3 P 3998 3025		
315 A B1-B2-B3 16	2 P	3841 2032		1424 2111	1424 2115	1428 2111	1424 2113		4 P 3998 4025		3829 9339
	3 P	3841 3032	3880 3032								
	4 P	3841 6032	3880 6032								
400 A B1-B2- B3-B4 16	2 P	3841 2039									
	3 P	3841 3039	3880 3039								
	4 P	3841 6039	3880 6039								
630 A C1-C2 17	2 P	3821 2063		Black S3 type IP65							3829 9308
	3 P	3821 3063		1433 3111⁽¹⁾		Black S3 type IP65		2 P 3898 2080			
	4 P	3821 6063		Red/Yellow S3 type IP65		1437 3111⁽¹⁾		3 P 3898 3080			
800 A C1-C2-C3 17	2 P	3821 2080						320 mm 1400 1232	4 P 3898 4080		
	3 P	3821 3080		1434 3111		Red/Yellow S3 type IP65					
	4 P	3821 6080									
1250 A D1 18	2 P	3821 2120		Black S4 type IP65		1438 3111			3898 2120		3829 9312
	3 P	3821 3120							3898 3120		
	4 P	3821 6120		1443 3111⁽¹⁾					3898 4120		

- (1) Standard.
 (2) 4 auxiliary contacts as standard without support (the support is for 4 additional auxiliary contacts).
 (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



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					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	Black 3629 7901					
	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	Black 3629 7901		2 contacts NO/NC A type 3999 0022 ⁽¹⁾	2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3 P 5400 3016 4 P 5400 4016	3629 7913
	3 P	3625 3014	consult us						
	4 P	3625 6014	consult us						
160 A A4 4	2 P	3625 2015	consult us	Black 3629 7901					
	3 P	3625 3015	consult us						
	4 P	3625 6015	consult us						
160 A B1-B2 4	2 P	3625 2016	consult us	Black 3629 7901					
	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.

fusser_230_a_1_cat



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 3998 3016 4 P 3998 4016	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.

fusser_416_a_1_cat



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⁾ 1 contact NO U type 3999 0702 ⁽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						
	3 P	3821 3080	3821 3080						
	4 P	3821 6080	3821 6080						
1250 A D1 18	2 P	3821 2120	3821 2120	Black 3899 7011			3898 2120		
	3 P	3821 3120	3821 3120				3898 3120		
	4 P	3821 6120	3821 6120				3898 4120		

(1) Max. number of U type auxiliary contact is 8.

(2) Lock not included.

(3) Top/bottom.



NFC and DIN

External front and right side operation
25 to 125 A

Rating (A) / Fuse / Frame size	No. of poles	Switch I-O-TEST	Changeover switch I-O-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 + switch 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			320 mm 1401 0532	U type 1 contact 3999 0710				
	3 P + switch neutral	3631 4003	3670 4003	1411 2111	1413 2115								
	3 P + solid neutral	3631 5003		Red/Yellow IP65 1414 2111	Red/Yellow IP65 1414 2115								
32 A 14 x 51 0	3 P	3631 3004 ⁽¹⁾	3670 3004										
	3 P + switch neutral	3631 4004 ⁽¹⁾	3670 4004										
	3 P + solid neutral	3631 5004 ⁽¹⁾											
50 A 14 x 51 11	2 P	3831 2005		S1 type	S1 type								
	3 P	3831 3005 ⁽¹⁾	3870 3005	Black IP65 1411 2111	Black IP65 1413 2115								
	4 P	3831 6005 ⁽¹⁾	3870 6005										
63 A 00C 12	2 P	3831 2006		Red/Yellow IP65 1414 2111	Red/Yellow IP65 1414 2115								
	3 P	3831 3006 ⁽¹⁾	3870 3006										
	4 P	3831 6006 ⁽¹⁾	3870 6006										
100 A 22 x 58 13	2 P	3831 2010		S2 type	S2 type			320 mm 1400 1032 ⁽²⁾	U type 1 contact 3999 0600				
	3 P	3831 3010 ⁽¹⁾	3870 3010										
	4 P	3831 6010 ⁽¹⁾	3870 6010										
125 A 22 x 58 13	2 P	3831 2011		Black IP65	Black IP55								
	3 P	3831 3011	3870 3010	1421 2111	1423 2115							1425 2111	1421 2113
	4 P	3831 6011	3870 6010	Red/Yellow IP65 1424 2111	Red/Yellow IP65 1424 2115							Red/Yellow IP65 1428 2111	Red/Yellow IP65 1424 2113
125 A 00 13	2 P	3831 2012											
	3 P	3831 3012	3870 3011										
	4 P	3831 6012	3870 6011										

(1) Available enclosed (see page 494 "Enclosed fuse switches").

(2) Top/bottom.

(3) Maximum 4 contacts.

fuser_548_a_1_cat



NFC and DIN

External front and right side operation

160 to 1250 A

Rating (A) / Fuse / Frame size	No. of poles	Switch I-O	Changeover switch I-O-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	3829 9320
	3 P	3831 3015	3870 3015					3998 2016			
	4 P	3831 6015	3870 6015					3998 3016 3998 4016			
160 A 0 14	2 P	3831 2016		Type S2	Type S2	Type S2	Type S2	320 mm 1400 1032	1 contact 3999 0600 ⁽³⁾	2 P	3829 9325
	3 P	3831 3016 ⁽¹⁾	3870 3016	Black IP55 1421 2111	Black IP65 1423 2115	Black IP55 1425 2111	Black IP55 1425 2113			3998 2025 3998 3016 3998 4016	
	4 P	3831 6016 ⁽¹⁾	3870 6016								
250 A 1 15	2 P	3831 2024						320 mm 1400 1032	U type	2 P	3829 9325
	3 P	3831 3024 ⁽¹⁾	3870 3024	Red/Yellow IP65 1424 2111	Red/Yellow IP65 1424 2115	Red/Yellow IP65 1428 2111	Red/Yellow IP65 1428 2113			3998 2025 3998 3025 3998 4025	
	4 P	3831 6024 ⁽¹⁾	3870 6024								
400 A 2 16	2 P	3831 2039						320 mm 1400 1032	1 contact 3999 0600 ⁽⁴⁾	2 P	3829 9339
	3 P	3831 3039 ⁽¹⁾	3870 3039							3998 3025 3998 4025	
	4 P	3831 6039 ⁽¹⁾	3870 6039								
630 A 3 17	2 P	3811 2063		Type S3				320 mm 1400 1232		2 P	3829 9308
	3 P	3811 3063 ⁽¹⁾		Black IP65 1433 3111						3898 2080 3898 3080 3898 4080	
	4 P	3811 6063 ⁽¹⁾									
800 A 3 17	2 P	3811 2080				Type S3		320 mm 1400 1232		2 P	3829 9312
	3 P	3811 3080		Red/Yellow IP65 1434 3111		Black IP65 1437 3111				3898 2120 3898 3120 3898 4120	
	4 P	3811 6080									
800 A 4 18	2 P	3811 2081		Type S4				320 mm 1400 1232		2 P	3829 9312
	3 P	3811 3081		Black IP65 1443 3111		Red/Yellow IP65 1438 3111				3898 2120 3898 3120 3898 4120	
	4 P	3811 6081									
1250 A 4 18	2 P	3811 2120						320 mm 1400 1232		2 P	3829 9312
	3 P	3811 3120		Red/Yellow IP65 1444 3111						3898 2120 3898 3120 3898 4120	
	4 P	3811 6120									

(1) Available enclosed (see page 494 "Enclosed fuse switches").

(2) Top/bottom.

(3) Maximum 4 contacts.

(4) Maximum 8 contacts.

fuser_039_a_1_cat



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 ley 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 + switch neutral		3631 4002						
	3 P + solid neutral		3631 5002						
CD 32 A 10 x 38 0	3 P		3631 3003						
	3 P + switch neutral		3631 4003						
	3 P + solid neutral		3631 5003						
32 A 14 x 51 0	3 P		3631 3004						
	3 P + switch neutral		3631 4004						
	3 P + solid neutral		3631 5004						
50 A 14 x 51 1	2 P	3615 2005	Consult us						
	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						
	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 ley interlocking accessories ⁽⁵⁾		
160 A 00 3	2 P	3615 2015	Consult us	Black 3629 7901 ⁽⁴⁾⁽¹⁾	A type 1 contact NO/NC 3999 0021 ⁽²⁾	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 5400 4016	3999 8216
	4 P	3615 6015	Consult us			4 P 3998 4016 ⁽³⁾					3999 8316
160 A 0 4	2 P	3615 2016	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 4 P 5400 4025	3999 8225			
	3 P	3615 3016	Consult us					3 P 3998 3025 ⁽³⁾		3999 8325	
	4 P	3615 6016	Consult us					4 P 3998 4025 ⁽³⁾		3999 8425	
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 4 P 5400 4025	3999 8225			
	3 P	3615 3024	Consult us					3 P 3998 3025 ⁽³⁾		3999 8325	
	4 P	3615 6024	Consult us					4 P 3998 4025 ⁽³⁾		3999 8425	
400 A 2 6	2 P	3615 2039	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 4 P 5400 4025	3999 8240			
	3 P	3615 3039	Consult us					3 P 3998 3025 ⁽³⁾	3999 8340		
	4 P	3615 6039	Consult us					4 P 3998 4025 ⁽³⁾	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⁾	Black 3899 7911	U type	2 P 3898 2080 ⁽³⁾	
	3 P	3811 3063					3 P 3898 3080 ⁽³⁾
	4 P	3811 6063					
800 A 3 17	2 P	3811 2080	Black 3899 6011 ⁽¹⁾⁽²⁾	Black 3899 7911	1 contact NC 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⁾	Black 3899 7911	1 contact NO 3999 0702 ⁽⁴⁾	2 P 3898 2120 ⁽³⁾	
	3 P	3811 3081					
	4 P	3811 6081					
1250 A 4 18	2 P	3811 2120	Black 3899 7011 ⁽¹⁾⁽²⁾	Black 3899 7911	1 contact NO 3999 0702 ⁽⁴⁾	3 P 3898 3120 ⁽³⁾	
	3 P	3811 3120					
	4 P	3811 6120					

(1) Direct front operation.

(2) Standard.

(3) Top/bottom.

(4) Maximum 8 contacts.

FUSERBLOC - Accessories

Direct 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: Degree of protection according to standard IEC 60529.

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: Degree of protection according to standard IEC 60529.

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: Degree of protection according to standard IEC 60529.

External front handle with metal tab



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: Degree of protection according to standard IEC 60529.

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	10	IP65	1493 0000

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

Alternative S-type handle cover colours

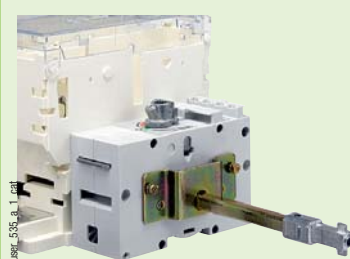


Use

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

Handle colour	To be ordered in multiples of	Handle	Reference
Light grey	50	Type S1, S2, S3	1401 0001
Dark grey	50	Type S1, S2, S3	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041

Flat mounting kit



Use

The flat mounting kit provides a compact solution ideally suited to withdrawable applications.

Rating (A)	Frame size	Type	Reference
CD 20 ... CD 32	0	Kit + Shaft 200 mm	1429 7709
32 ... 400	11 ... 16	Kit + Shaft 200 mm	1429 7710

Handle for flat mounting kit



Padlockable handle in position 0

Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Reference
CD 20 ... 63	0/11/12	S1	Black	IP55	1411 2111 ⁽²⁾
CD 20 ... 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: Degree of protection according to standard IEC 60529.

(2) Defeatable handle in position I.

Front operation shaft support accessory



hsnr_088_a_2_cat

Use

This support maintains shaft position for extension shafts greater than 320 mm in length.

Rating (A)	Frame size	Reference
32 ... 400	11 ... 16	3899 0400

Shaft guide for external operation



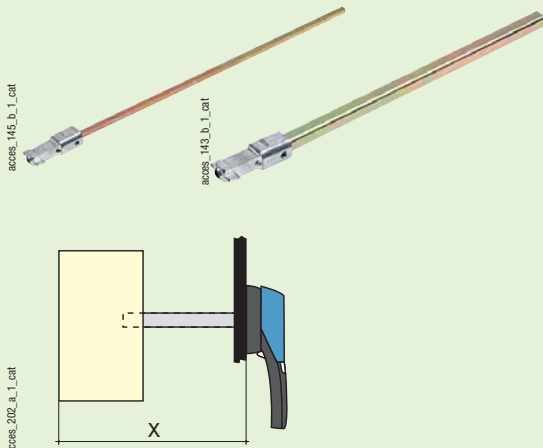
access_280_a_2_cat

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 length over 320 mm.

Description	Reference
Shaft guide	1429 0000

Shaft for external front



access_145_b_1_cat

access_143_b_1_cat

access_202_a_1_cat

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 accessory "guide cone for external control".
(2) Use the accessory "shaft extension support for external front control".

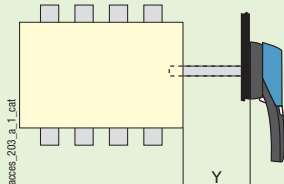
Dimension X (mm) for FUSERBLOC BS88

Shaft extension length (mm)	Rating (A)	CD 20 ... CD 32	32	63 ... 160	CD160 ... CD200	160 ... 200	250 ... 315	630 ... 800	1250
	Fuse size	A1	A1	A2-A3/A4	A3-A4	B1-B2	B1-B2-B3	C1-C2-C3	D1
	Frame size	0	11	12/13/14	13 A	14/15	15/16	17	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 extension length (mm)	Rating (A)	CD 25 ... CD 32	50	63	100 ... 160	160	250 ... 400	630 ... 800	800 ... 1250
	Fuse size	10x38/14x51	14x51	00C	22x58/00	0	1/2	3	4
	Frame size	0	11	12	13	14	15/16	17	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 for external side



access_202_a_1_cat

Use

Standard lengths, 200 mm.

Rating (A)	Frame size	Handle type	Dimension Y (mm)	Shaft length (mm)	Reference
CD 20 ... CD 32	0	S	36 ... 159	200	1401 0520
32 ... 400	11 ... 16	S	36 ... 172	200	1400 1020
630 ... 1250	17/18	S	15 ... 150	200	1400 1220

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)	Switch body 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

Solid neutral module



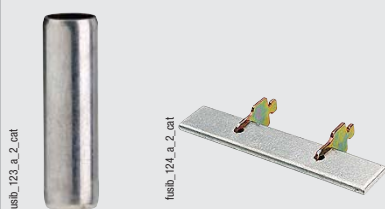
BS88 for external front operation

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

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

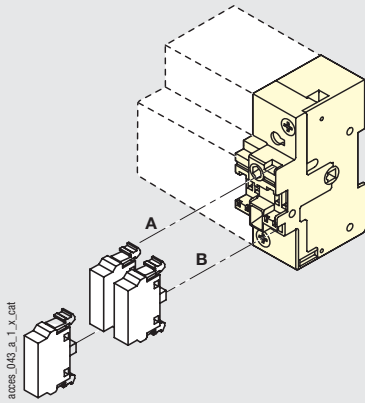
NFC and DIN switches

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

U type auxiliary contacts



access_098_a_1_cat



access_043_a_1_x_cat

Use

Compact universal type auxiliaries can be configured to be operated on both, standard and TEST position switches from CD 20 to 1250 A. Each slot can accommodate up to 2 interlocked ACs.

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

NO auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ... 1250	0 ... 18	1	3999 0701

NC auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ... 1250	0 ... 18	1	3999 0702

Contact holder for auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference ⁽²⁾
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

(2) 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 _t (A)			
	250 VAC	400 VAC	24 VDC	48 VDC
CD 20 ... 1250	AC-15	AC-15	DC-13	DC-13
	3	1.8	2.8	1.4

A type auxiliary contacts



access_046_a_1_cat

access_047_a_2_cat

Use

Pre-break and position 0 and I signalling by 1 or 2 NO /NC auxiliary contacts. For low level use, specific auxiliary contacts: 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 0001
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 conjunction with integrated solid neutral.

Characteristics

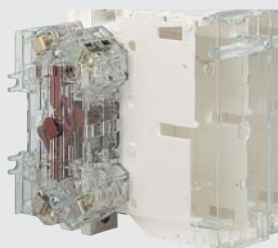
Rating (A)	Current nominal (A)	Operating current _t (A)			
		250 VAC	400 VAC	24 VDC	48 VDC
CD 20 ... 400	16	AC-13	AC-13	DC-13	DC-13
		4	2	12	2

S and ST type auxiliary contacts

access_051_a_2_cat



access_003_a_1_cat



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. section 10 mm².

Mechanical characteristics

30 000 operations.

References

S type auxiliary contacts I-0 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		Reference
		type	Description	
32 ... 400	11 ... 16	NC+NO	TEST + ON	3999 0141
32 ... 400	11 ... 16	2 O	TEST + ON	3999 0241

Drive shaft kit for auxiliary contact operation.

Type of AC	Operation type	Reference
S type	Standard	3999 0003
ST type	TEST	3999 0103

Characteristics

Rating (A)	Current nominal (A)	Operating current I ₀ (A)	
		250 VAC AC-13	400 VAC AC-13
32 ... 1250	20	10	8

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 25 ... 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 IP 20 protection (at front) against direct contact with terminals or connection parts. 2 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

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
By 6.35 mm fast-on terminal.

Mechanical characteristics
30 000 operations.

References

NO/ NC type auxiliary contacts for 2 pole

Rating (A)	Frame size	Fuse	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 ... 400	15/16	1-2	1 st	3994 0225
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	Fuse	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 ... 400	15/16	1-2	1 st	3994 0325
630	17	3	1 st	3894 1306
800 ... 1250	18	4	1 st	3894 1312
50 ... 1250	11 ... 18		2 nd	3994 1901

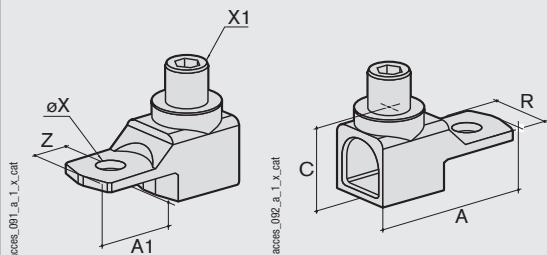
NO/ NC type auxiliary contacts for 4 pole or 3 pole + neutral

Rating (A)	Frame size	Fuse	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 ... 400	15/16	1-2	1 st	3994 0425
630	17	3	1 st	3894 1406
800 ... 1250	18	4	1 st	3894 1412
50 ... 1250	11 ... 18		2 nd	3994 1901

Characteristics

Rating (A)	Current nominal (A)	Operating current, (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

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
200 ... 250	15	3 P	5400 3025
200 ... 250	15	4 P	5400 4025
315 ... 400	16	3 P	5400 3040
315 ... 400	16	4 P	5400 4040

Connections

Rating (A)	Section flexible cable (mm ²)	Section rigid cable (mm ²)	Width flexible bar (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

Handle key interlocking accessories

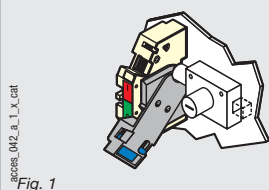


Fig. 1

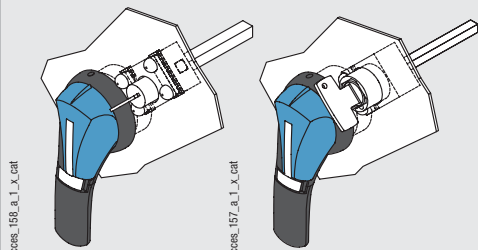


Fig. 2

Fig. 3

Use

Locking in position 0 of the direct, front or right side operation:

- using padlock (not supplied) in direct operation:
 - integrated into the handle of 20 to 400 A,
 - integrated into the frame of 630 to 1250 A.
- using key interlocking (not supplied) in external operation (see below).

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 **CASTELL K** lock (not supplied)

Rating (A)	Frame size	Operation	Figure n°	Reference
CD 20 ... 1250	0 ... 18	external front	3	1499 7702

Locking using **CASTELL FS** 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 included)

Rating (A)	Frame size	Operation	Reference
CD 20 ... 1250	0 ... 18	external front	1499 7702

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

➔ FUSERBLOC - 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	Load duty 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 ⁽³⁾	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	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 section (mm ²)	2.5	2.5	2.5	2.5	6	6	10	25
Maximum Cu cable 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 $U_n = 400$ 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	13a	14	14	13a	15
Rated insulation voltage U_i (V)	750	750	750	750	750	750	800	750
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Load duty 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					6A4 0160	6B20 0160	6B20 0200	6B20 0200
SOCOMECS BS88				6A40 0160	6A4M 0160	6B1M 0200	6B2M 0315	6B2M 0315
SOCOMECS DIN	6032 0125	6692 0125	6692 0160		6702 0160			
SOCOMECS DIN	6033 0125	6693 0125	6693 0160		6703 0160			
BUSSMANN				DE0 160	DE0 160	DD 160	DD 200	DD 200
BUSSMANN				CE0 100M160	DE0 100M200	CD 100M200	DD 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				OCF 100M160	TCP 100M201	TC 100M200	TF 200M315	TF 200M315

Connection

Minimum Cu cable section (mm ²)	35	35	35	35	50	50	95	95
Maximum Cu cable section (mm ²)	95	95	95	95	95	95	240	240
Maximum busbar width (mm)	20	20	20	20	20	20	32	32
Tightening torque min (Nm)	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	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)	1.5	1.5	1.8	1.8	1.8	1.8	3.2	3.2
Weight of 4 P switch (kg)	2	2	2.3	2.3	2.3	2.3	4.5	4.5
Weight of 1 P extra (kg)	0.5	0.5	0.5	0.5	0.5	0.5	1.3	1.3
Frame pitch (mm)	36	36	36	50	50	50	60	60

(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.

* 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).

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	Load duty 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⁾	315/400	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⁾	250/315	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 section (mm ²)	95	185	185	2 x 150	2 x 185		
Maximum Cu cable 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 $U_c = 400$ VAC.

(7) Fuse 800 A, 690 Vac does not exist, tests conducted with bars.

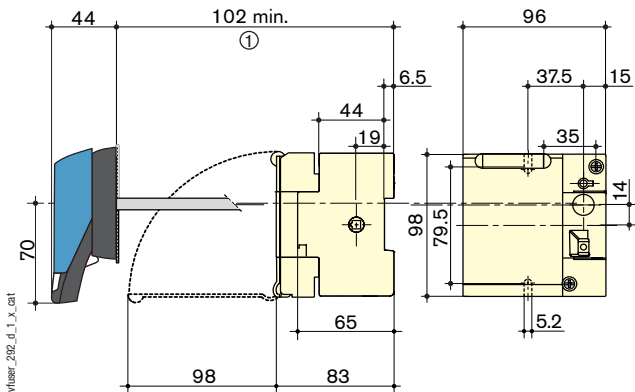
** Please ensure that fuse let through current does not exceed short-circuit capacity of the switch (kA peak).

➔ **FUSERBLOC - Dimensions**

External operation

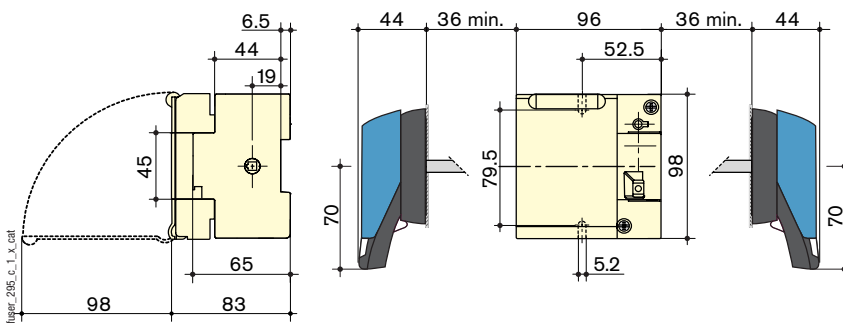
BS88 - FUSERBLOC CD 20 to CD 32 A in size A1

External front operation

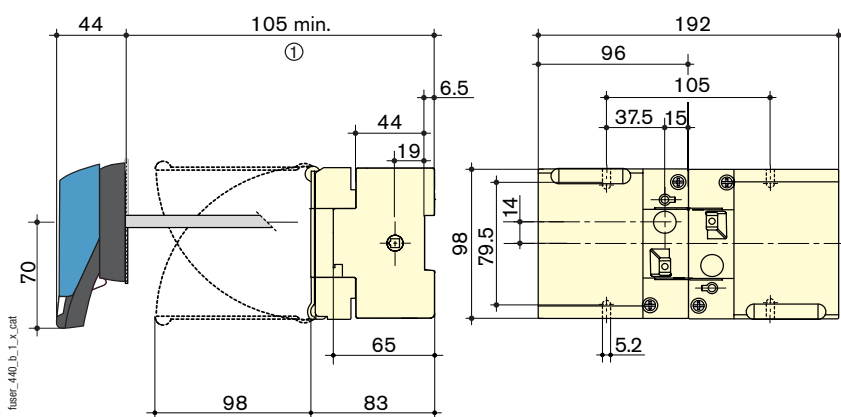


1. With 1 U type AC: 130 mm
With 2 U type AC: 155 mm.

External side operation



External front operation fuse combination changeover

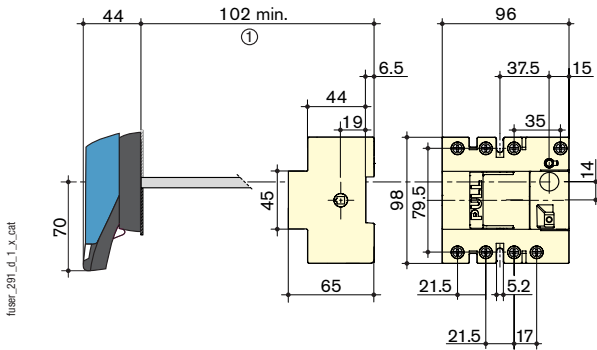


1. With 1 U type AC: 130 mm
With 2 U type AC: 155 mm.

External operation

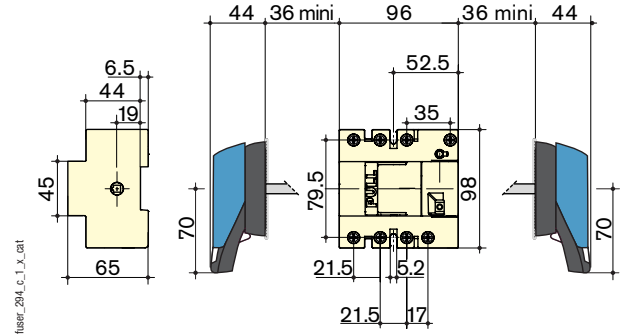
NFC and DIN - FUSERBLOC 25 to 32 A in size 10 x 38

External front operation



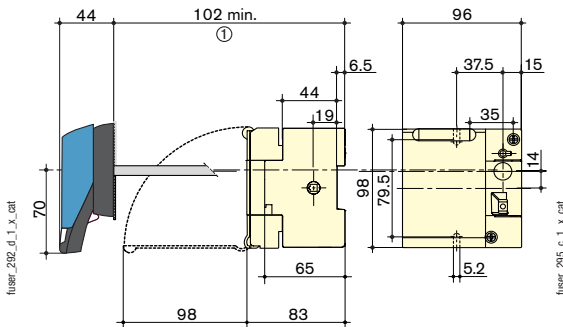
1. With 1 U type AC: 130 mm.
With 2 U type AC: 155 mm.

External side operation



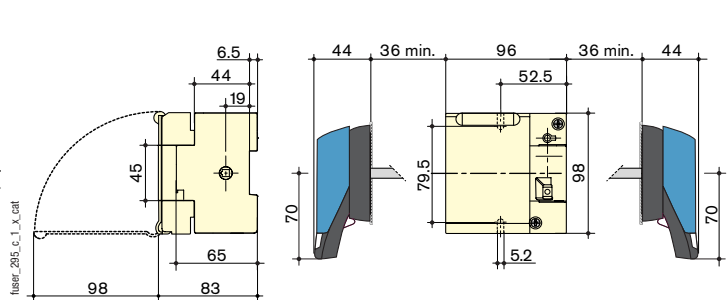
NFC and DIN - FUSERBLOC 32 A in size 14 x 51

External front operation



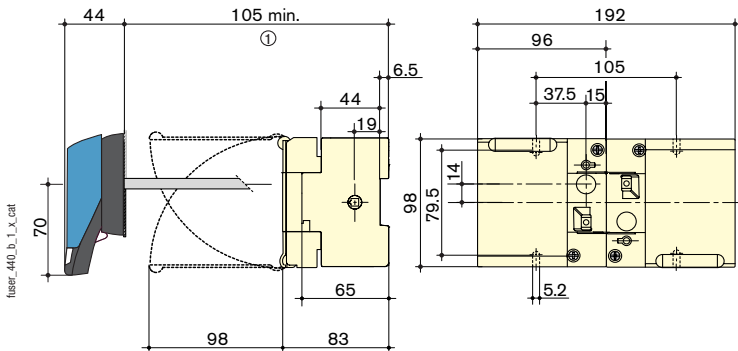
1. With 1 U type AC: 130 mm.
With 2 U type AC: 155 mm.

External side operation



NFC and DIN - FUSERBLOC 25 to 32 A in size 10 x 38 and 14 x 51

External front operation fuse combination changeover

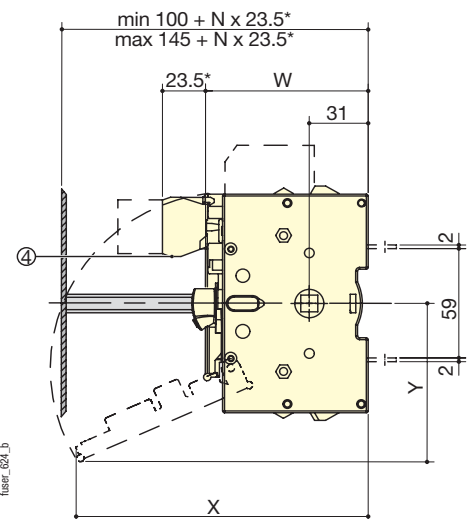
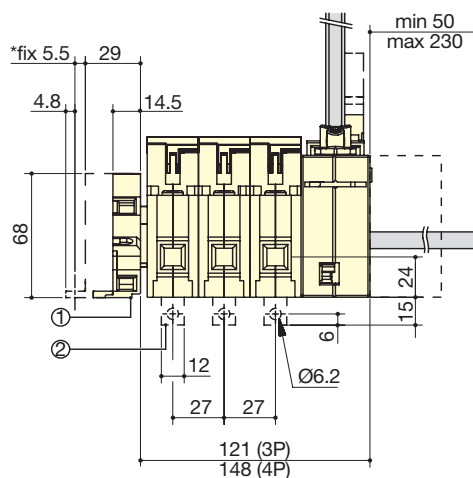


1. With 1 U type AC: 130 mm.
With 2 U type AC: 155 mm.

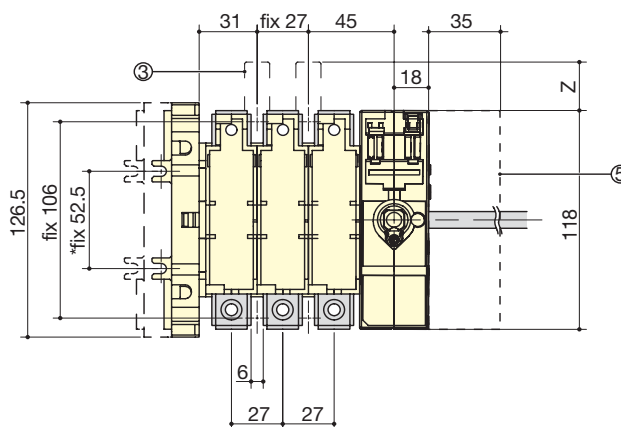
External front or right side operation

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 handles

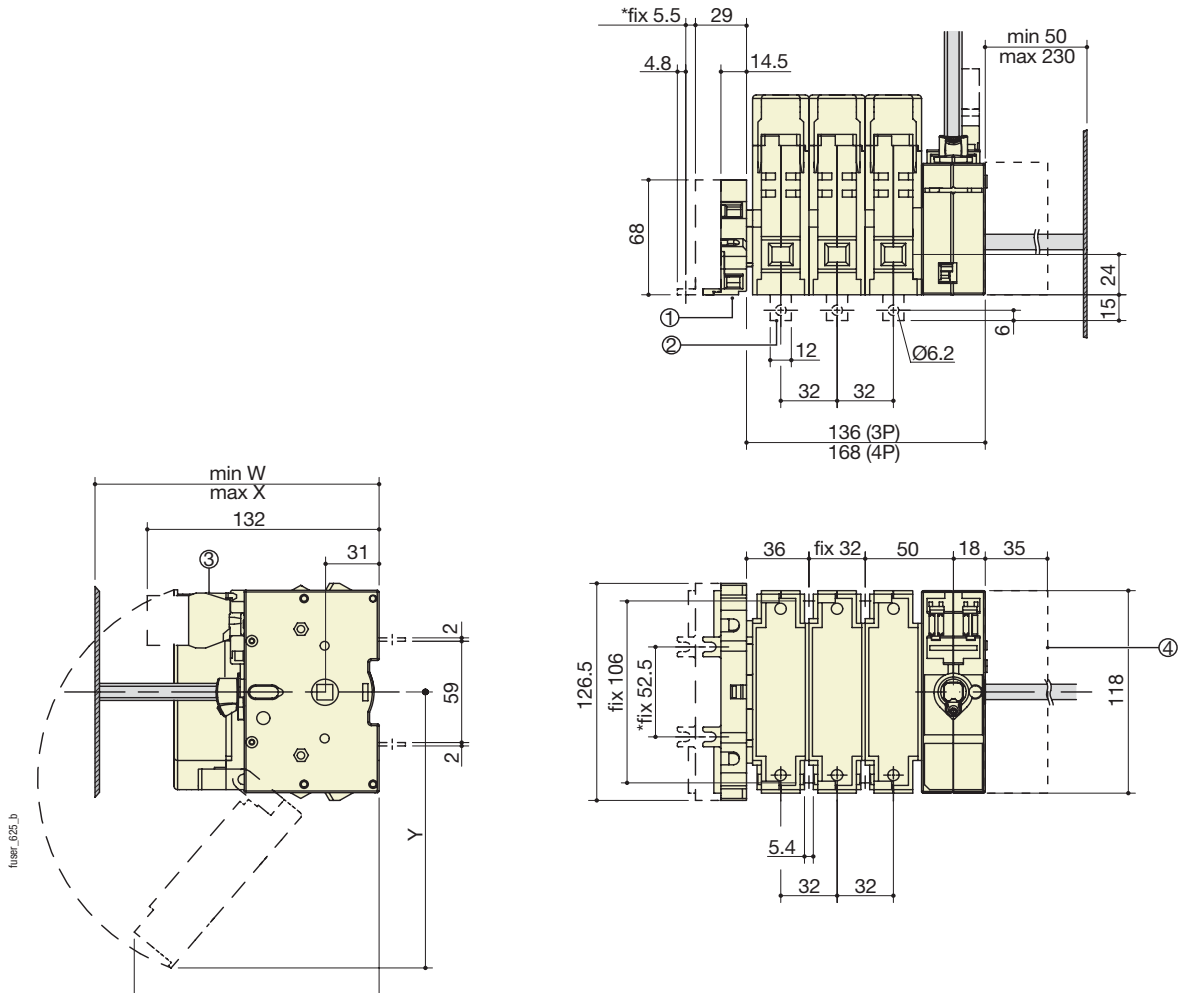
BS88 - FUSERBLOC 32 to 63 A
NFC and DIN - FUSERBLOC 25 to 63 A

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S1 type Box size 0 				

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

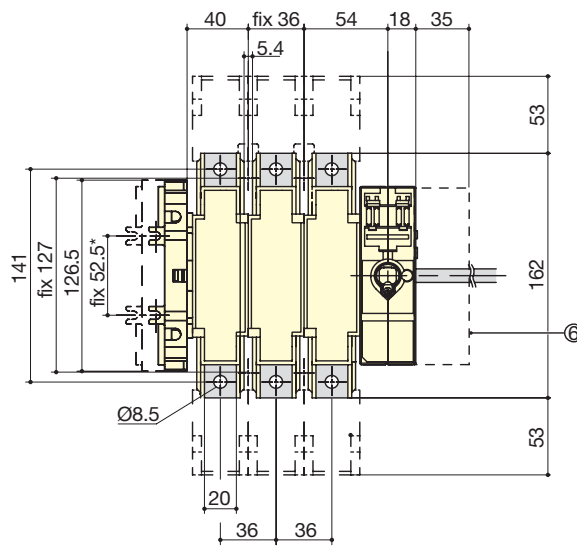
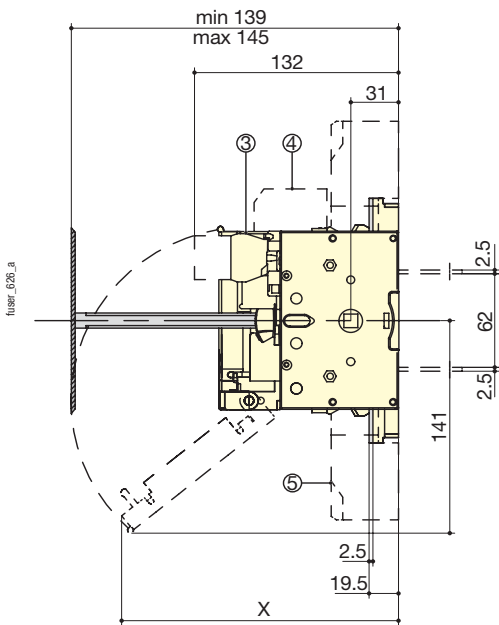
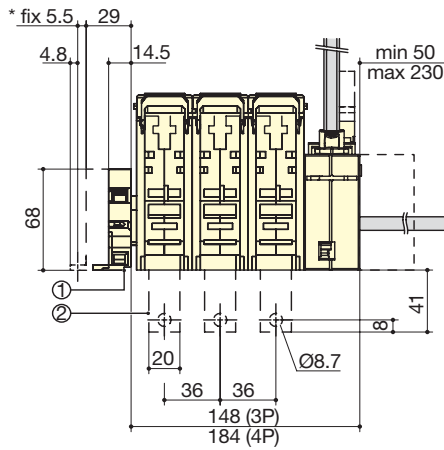


* to use if pre-break auxiliary contact number > 4
 W : 124 + N x 23.5 for BS88 ; 139 for NFC and DIN
 X : 145 + N x 23.5 for BS88 ; 145 for NFC and DIN
 Y : 159 only for DIN
 Z : 145 only for DIN

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**

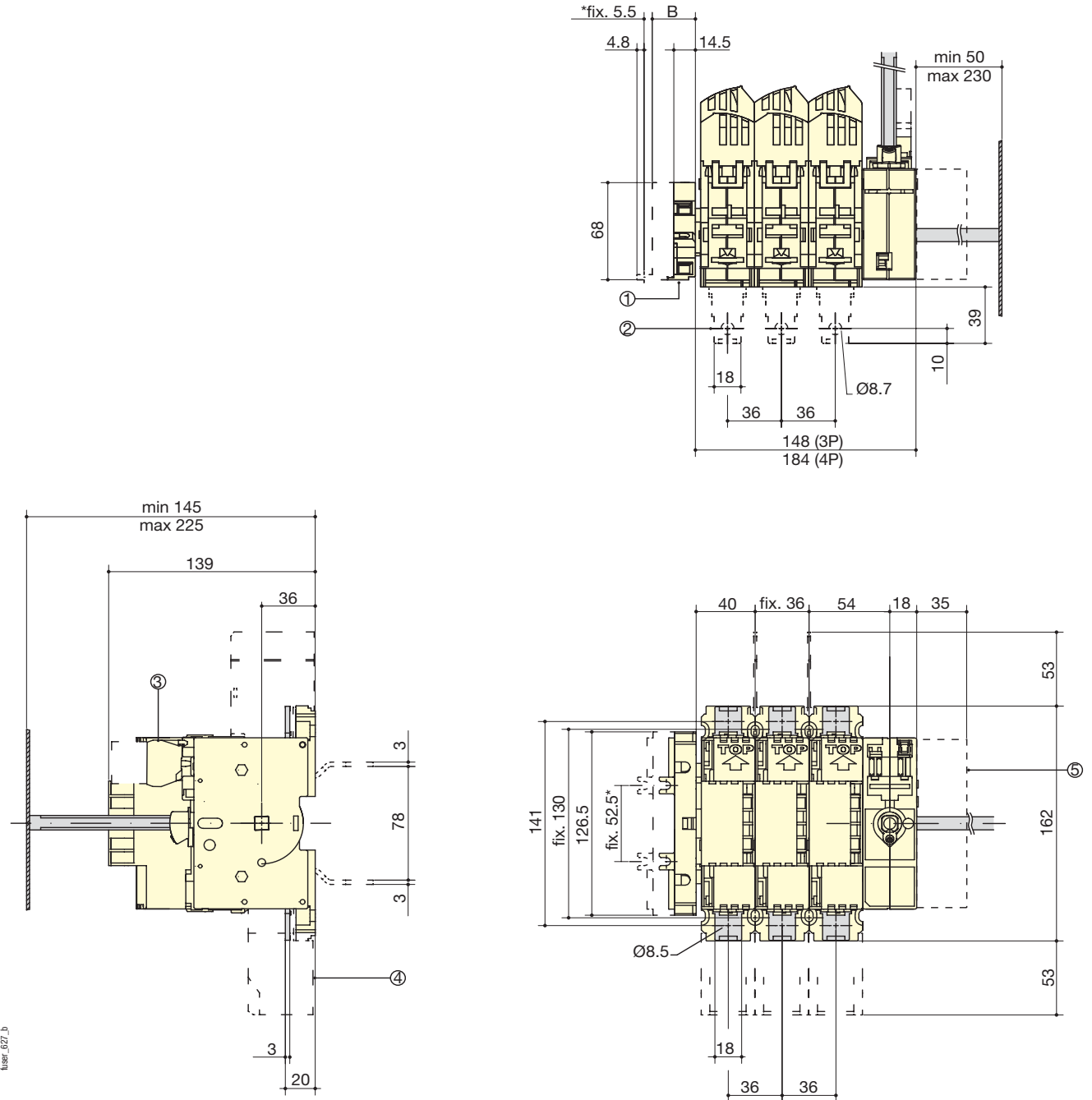


* to use if pre-break auxiliary contact number > 4
X : 179 for BS88 / NFC and DIN 100 to 125 A
189 for NFC and DIN 125 to 160 A

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

External front or right side operation

BS88 - FUSERBLOC CD 160 to CD 200 A in fuse size A3-A4 (A4 max Ø 31 mm)

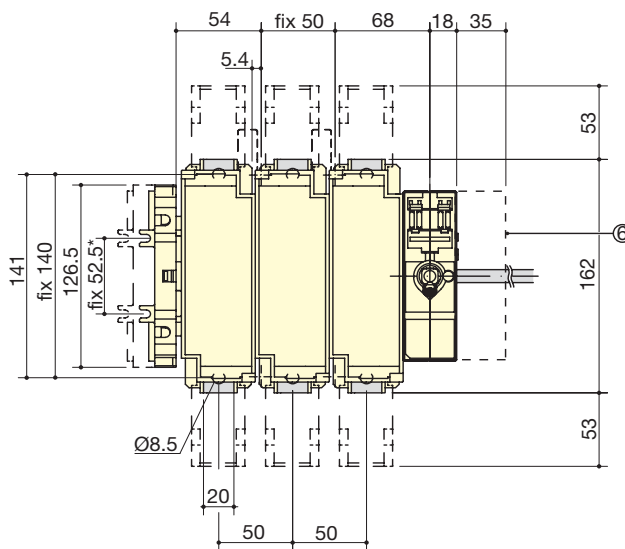
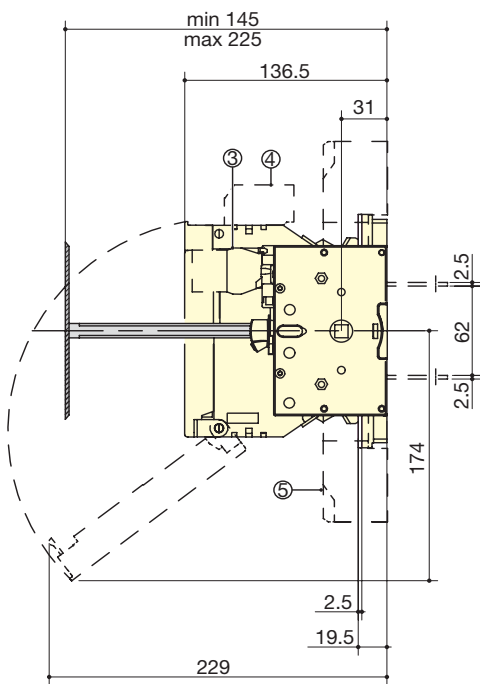
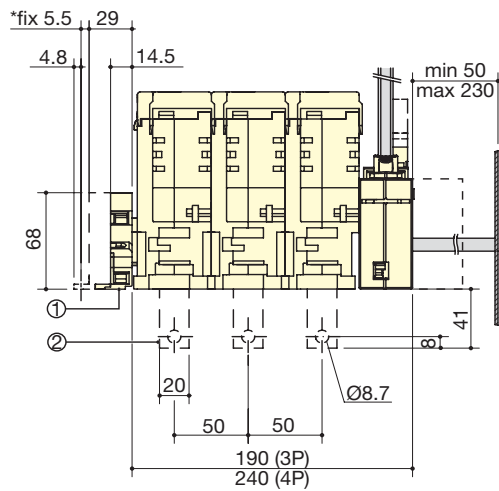


* to use if pre-break auxiliary contact number > 4
 1. S type auxiliary contact NO + NC to use if block number > 4
 2. Rear connection (option)

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



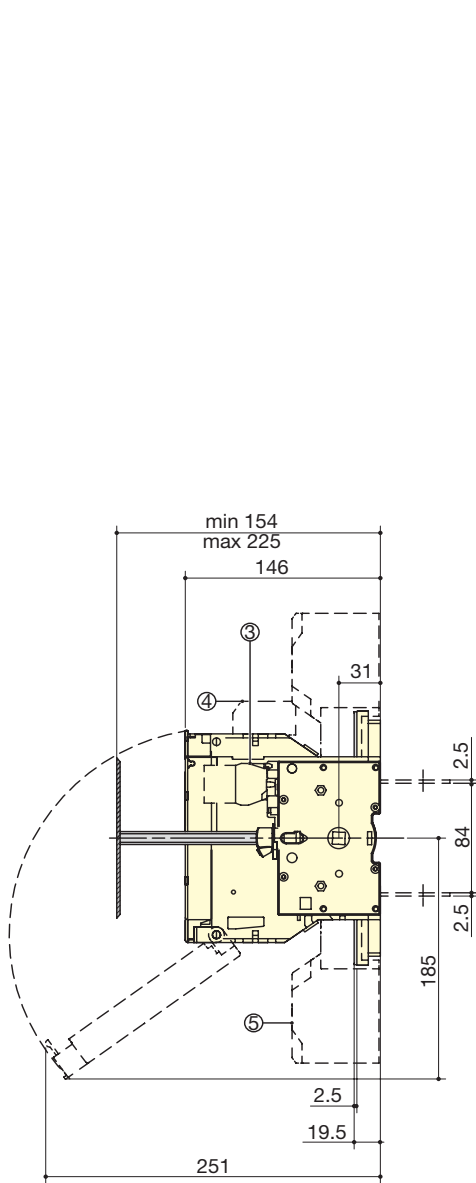
- * to use if pre-break auxiliary contact number > 4
 1. S type auxiliary contact NO + NC to use if block number > 4
 2. Rear connection (option)
 3. 1 to 4 pre-break auxiliary contact for signalisation

4. 1 or 2 pre-break auxiliary contact (fuse blown indication)
 5. Terminal shrouds
 6. Additional contact holder for U type AC

External front or right side operation

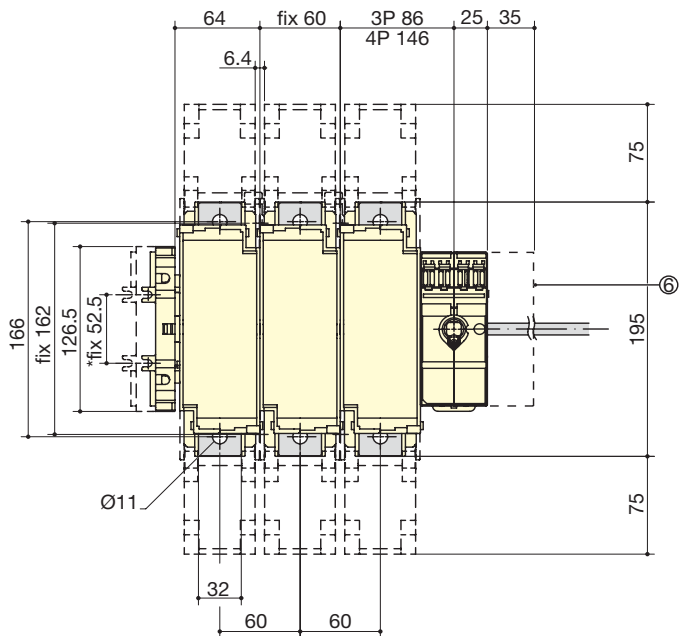
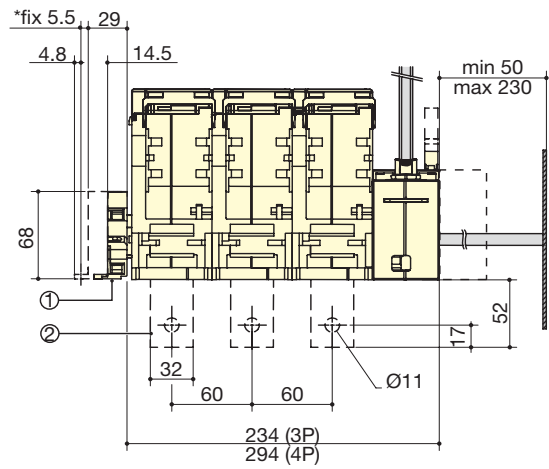
BS88 - FUSERBLOC 200 A in fuse size B1-B2
FUSERBLOC 250 A in fuse size B1-B2-B3

NFC and DIN - FUSERBLOC 250 A in fuse size 1



fuser_020_b

- * 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

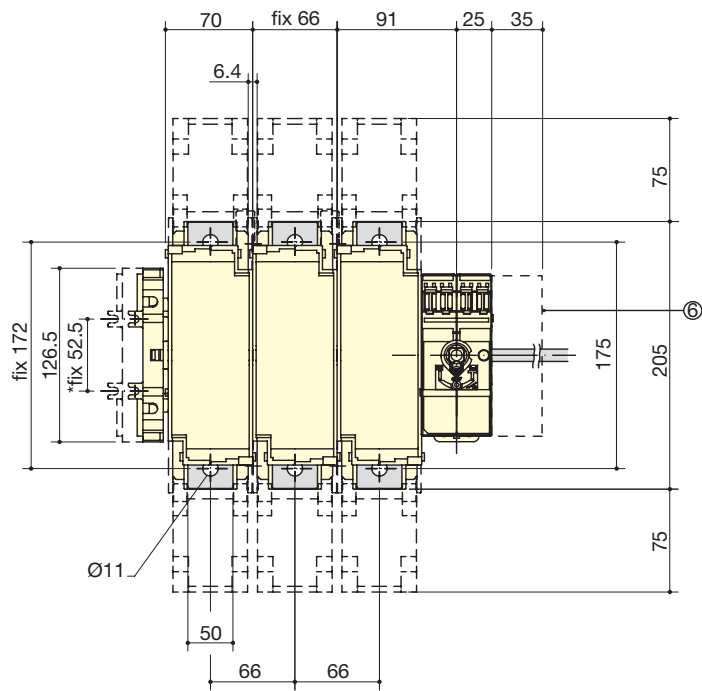
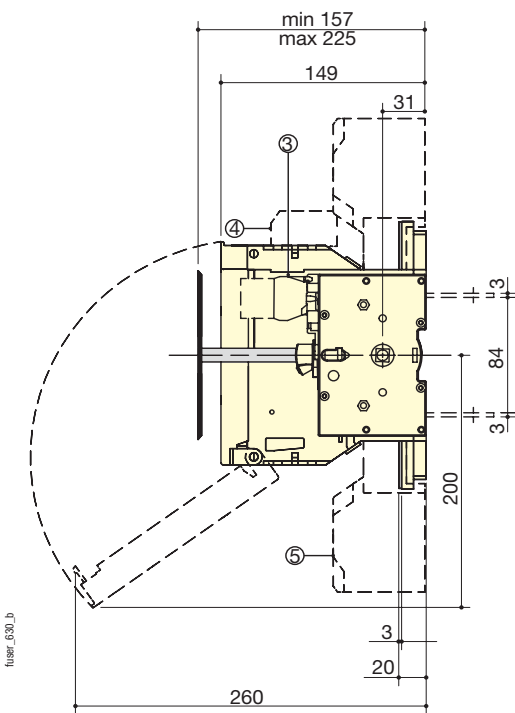
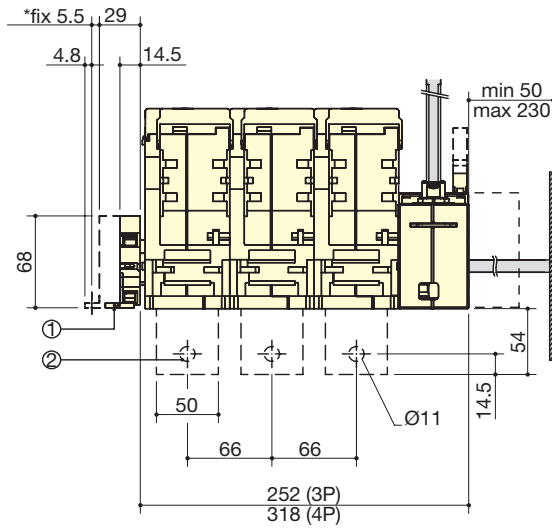


4. 1 or 2 pre-break auxiliary contact (fuse blown indication)
5. Terminal shrouds
6. Additional contact holder for U type AC

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
 4. 1 or 2 pre-break auxiliary contact (fuse blown indication)
 5. Terminal shrouds
 6. Additional contact holder for U type AC



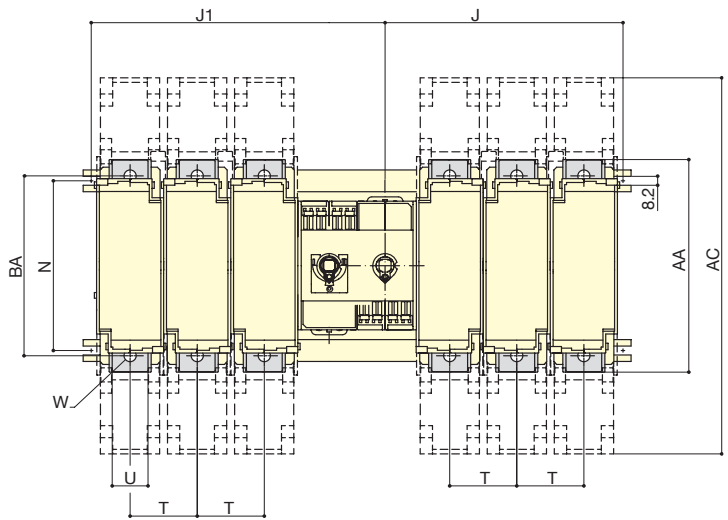
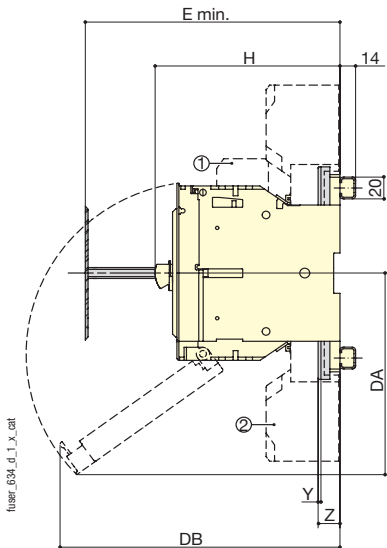
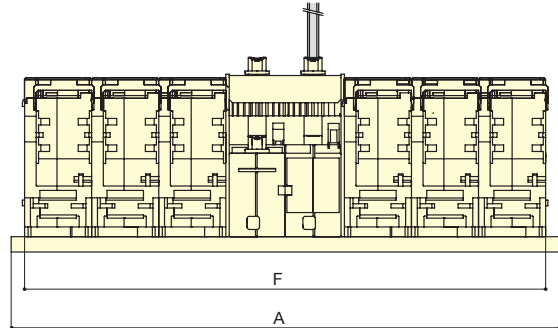
➤ Dimensions for external handles

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 				

BS88 - External front operation fuse combination changeover

FUSERBLOC 32 to 400 A



- A. S1 handle: 32 and 63 A
- B. S2 handle: 100 to 400 A
- C. Door drilling

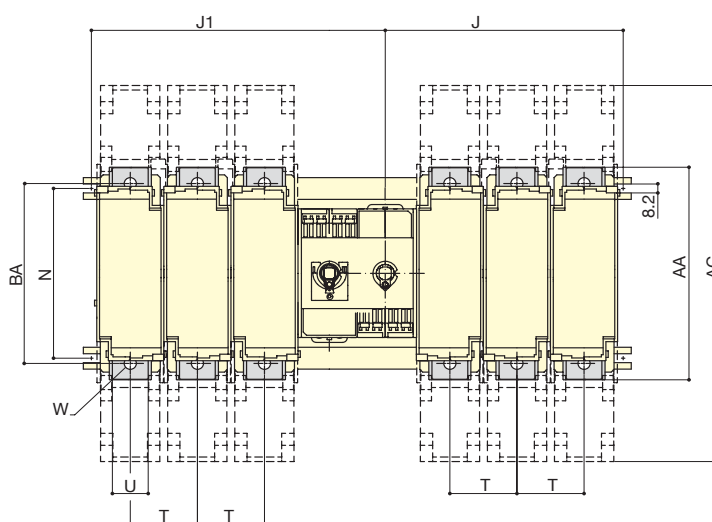
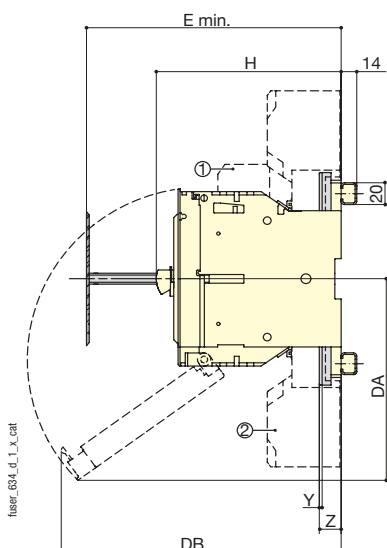
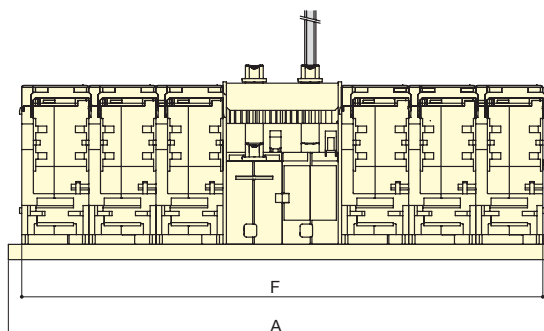
- 1. Fuse blown indication not available for BS88
- 2. Terminal shrouds

Rating (A)	Fuse size	Frame size	Dimensions				Terminal shrouds AC	Switch body				Switch mounting		Connection					AA	BA							
			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			
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 ⁽²⁾	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	13a	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	13a	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

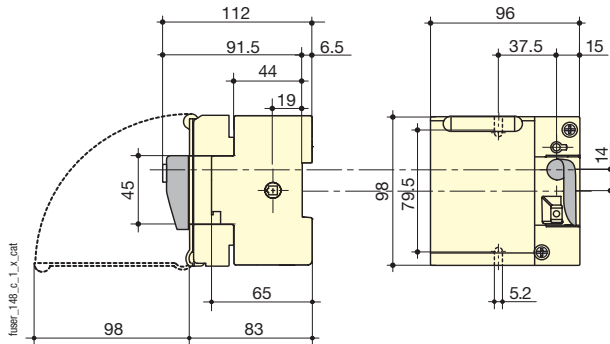
- 1. Fuse blown indication not available for BS88
- 2. Terminal shrouds

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	

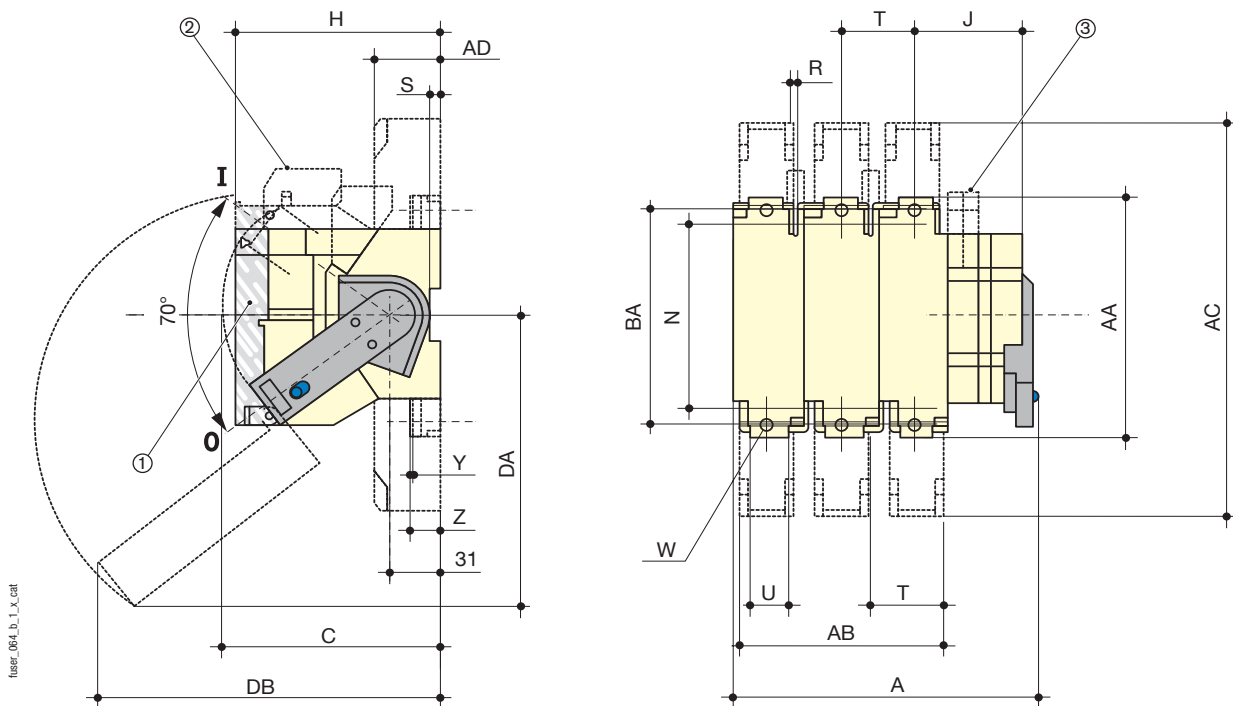
(1) 1 AC: +23.5 / 2 AC: +47
(2) 132 with 2 AC

BS88 - Direct operation

FUSERBLOC CD 20 to CD 32 A in frame size 0 / fuse size A1



FUSERBLOC 32 to 400 A

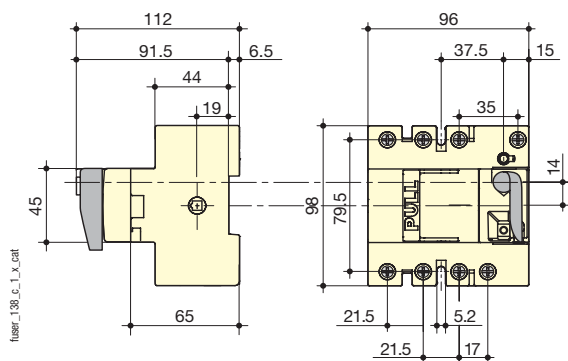


1. Protection screen lockable in position I
2. 1 or 2 fuse blown indication.
3. 1 or 2 A type ACs

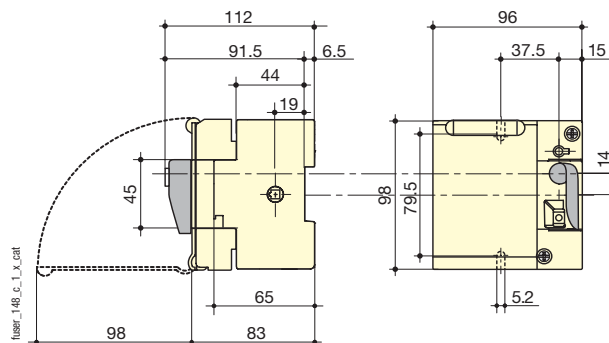
Rating (A)	Fuse size	Frame size	Dimensions			Terminal shrouds				Switch body				Switch mounting			Connection						
			A 3p.	A 4p.	C	AB 3p.	AB 4p.	AC	AD	H	J	DA	DB	N	R	S	T	U	W	Y	Z	AA	BA
32	A1	1	133	165	134					116.5	36	159	145	106	5.4	6.5	27					118	
63	A2-A3	2	133	165	134					116.5	36	159	145	106	5.4	6.5	32					118	
100	A4	3	150	186	173	108	144	268	44	116	38			127	5.4		36	20	8.5	2.5	19.5	162	141
CD 160	A3-A4	3a	152	188	173	108	144	268	44	139	38			130	5.4		36	20	8.5	3	19.5	162	141
160	A4	4	150	186	173	108	144	268	44	116	38			127	5.4		50	20	8.5	2.5	19.5	162	141
160	B1-B2	4	192	242	173	136	172	268	44	123	45			140	5.4		50	20	8.5	2.5	19.5	162	141
CD 200	A3-A4	3a	152	188	173	108	144	268	44	139	38			130	5.4		36	20	8.5	3	19.5	162	141
200	B1-B2	5	192	242	173	136	172	345	44	123	45			140	5.4		60	20	8.5	2.5	19.5	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	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	195	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

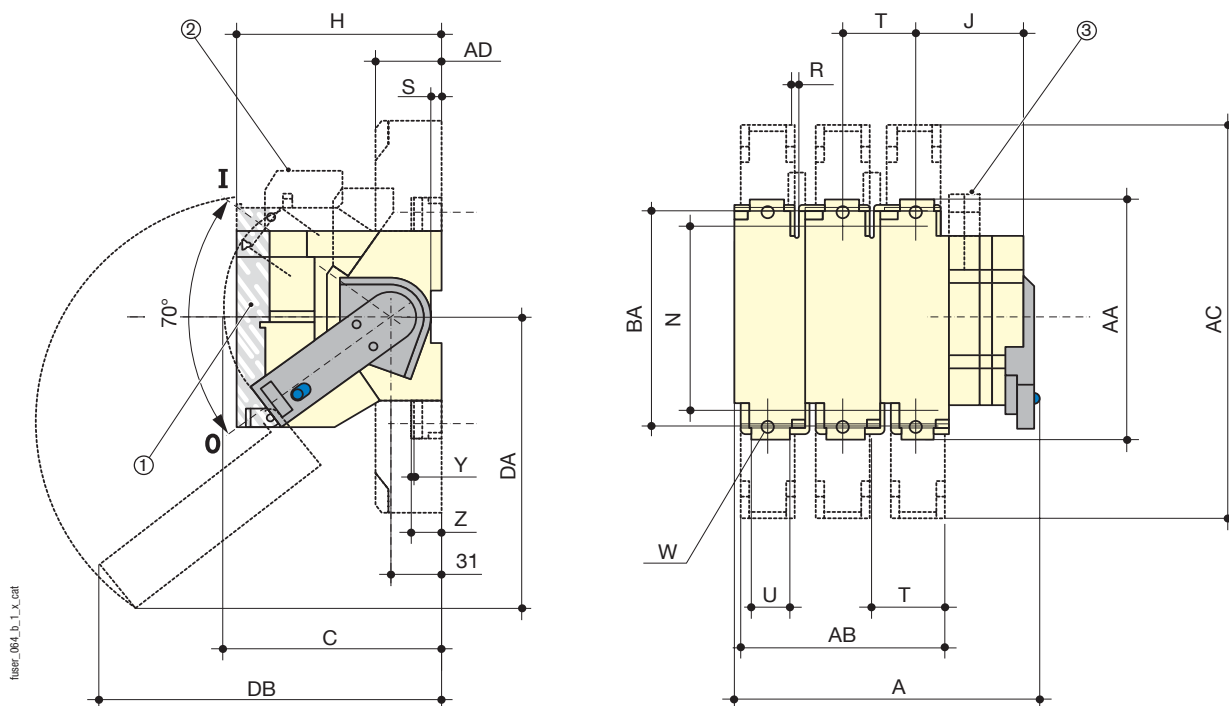
FUSERBLOC 25 to 32 A in frame size 0 / fuse size 10 x 38



FUSERBLOC 32 A in frame size 0 / fuse size 14 x 51



FUSERBLOC 50 to 400 A

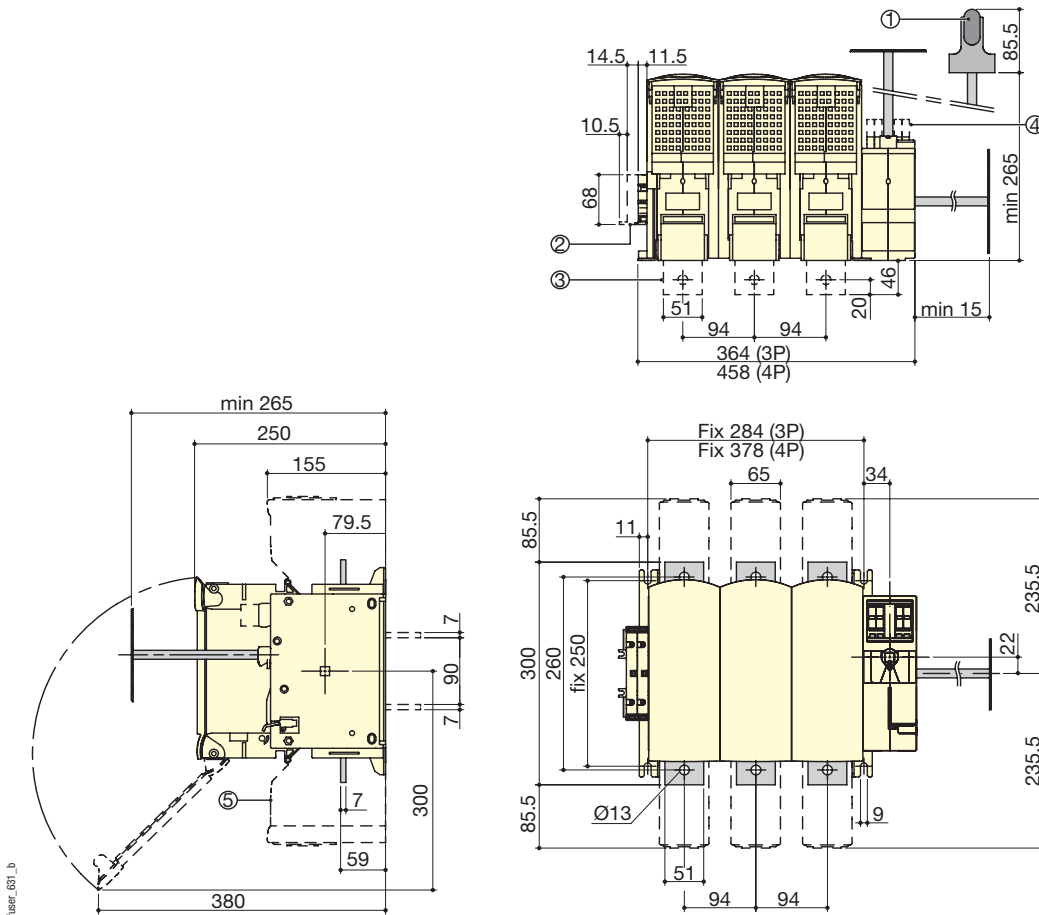


1. Protection screen lockable in position I
2. 1 or 2 fuse blown indication.
3. 1 or 2 A type ACs

Rating (A)	Fuse size	Frame size	Overall dimensions			Terminal shrouds			Switch body				Switch mounting			Connection								
			A 3p.	A 4p.	C	AB 3p.	AB 4p.	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	

Direct and external front or right side operation

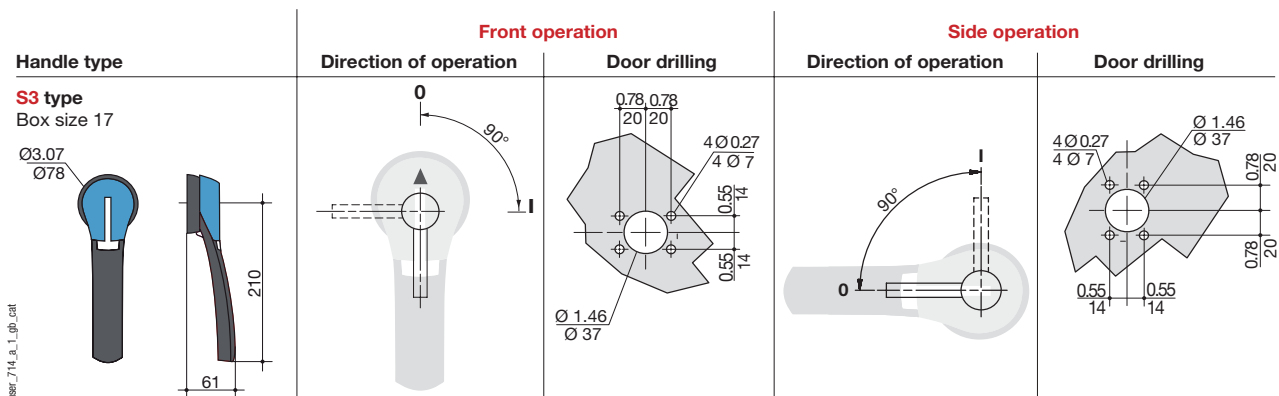
BS88 - FUSERBLOC 630 A in fuse size C1-C2
 FUSERBLOC 800 A in fuse size C1-C2-C3
 NFC and DIN - FUSERBLOC 630 to 800 A in fuse size 3



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

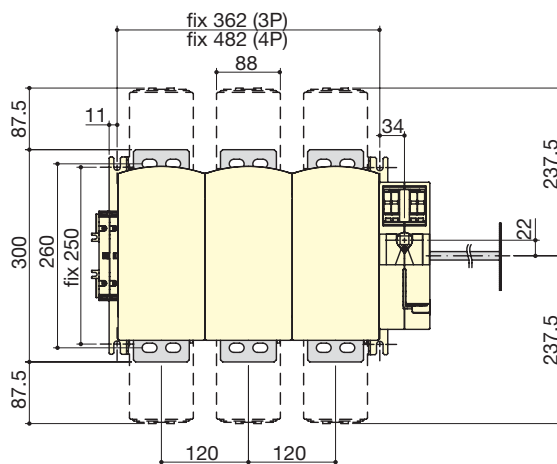
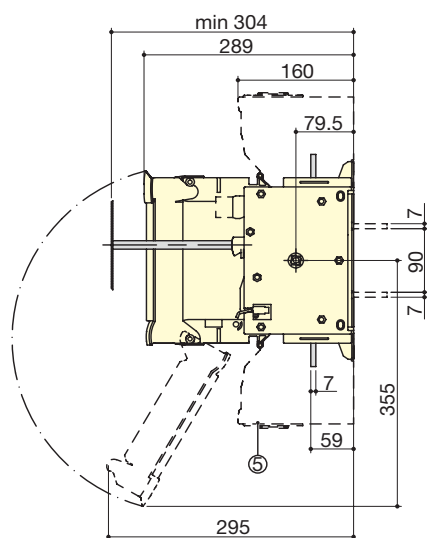
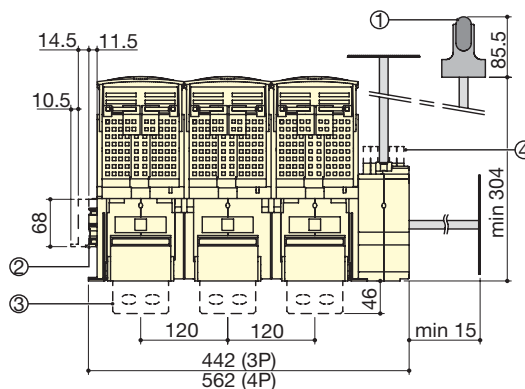
➤ Dimensions for external handles

FUSERBLOC 630 to 800 A



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

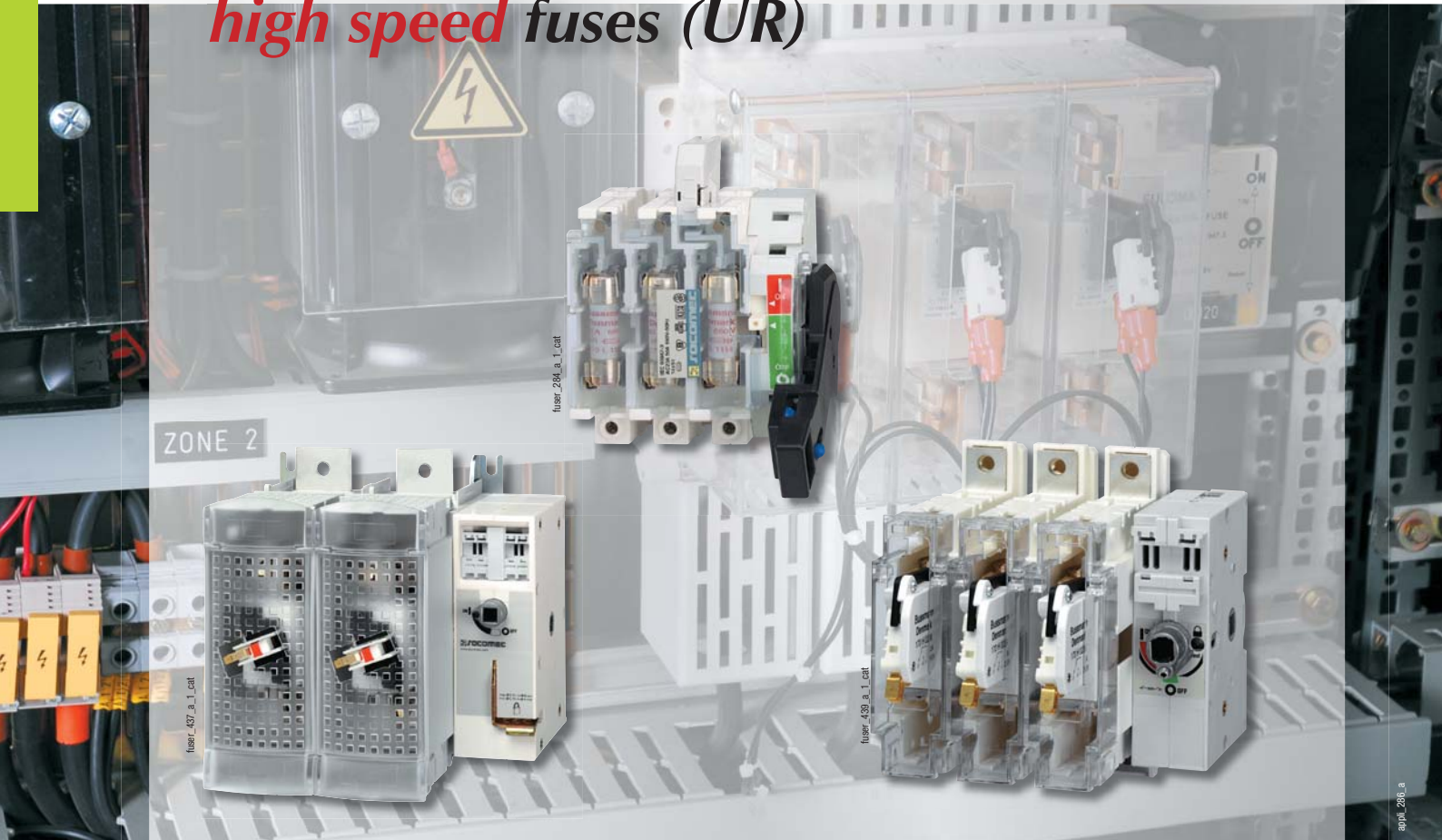


FUSERBLOC 800 to 1250 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
<p>S3 type Box size 18 Ø78</p>			
<p>S4 type Ø78</p>			

FUSERBLOC and high speed fuses (UR)

Fuse combination switches



High speed fuses (UR) protect power semi-conductors and DC circuits

⇒ Function

FUSERBLOC fuse combination switches combined with high speed fuses (UR) provide optimal breaking and making on load, safety isolation and protection of power semi-conductor circuits.

⇒ Comments

- These associations were determined following tests performed in our laboratory. Correct functioning of the FUSERBLOC unit and UR fuses is only guaranteed when these combinations are respected.
- For FUSERBLOC V, we recommend using threaded bolted tag fuses (type BK/50) in preference to knife-edge fuses (DIN 43620), so as to improve the power dissipation of the fuses.
- Contact us for any other combinations (1250 V UR fuses, notched fuses with 80 mm distance between centres, other sizes, etc.)
- For remote tripping devices: consult us.
- To determine the UR fuses required, see page 247 "High speed fuses (UR)"

FUSERBLOC for 690 VAC UR cylindrical fuses

Characteristics

FUSERBLOC 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 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 right side operation

Rating (A) Fuse Frame size	No. of poles	Switch body	Direct handle	Auxiliary contact Pre-break and position AC
50 A / 14 x 51 1	2 P	3615 2005	Black 3629 7900	1 contact NO/NC 3999 0021
	3 P	3615 3005		
	4 P	3615 6005		
125 A / 22 x 58 3	2 P	3615 2011	Black 3629 7901	2 contacts NO/NC 3999 0022
	3 P	3615 3011		
	4 P	3615 6011		



External front or right side operation

Rating (A) Fuse Frame size	No. of poles	Switch body	External front handle	External side handle	Shaft extensions 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 page 142 "FUSERBLOC"

FUSERBLOC for DIN 43620 UR knife-edge fuses

↳ Characteristics

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 160 A for fuse size 0

Fuse rating (A)	16	20	25	32	40	50	63	80	100	125	160	200
Max. I for the FUSERBLOC (A)	16	20	25	32	32	37	44	51	92	105	121	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 right side operation

Rating (A) Fuse 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 with fuse blown microswitch.

FUSERBLOC for DIN 43620 UR knife-edge fuses



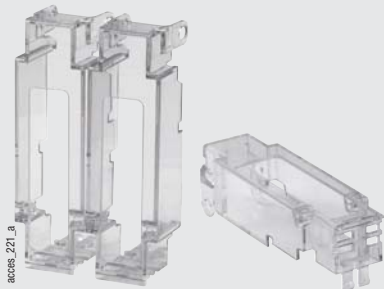
External front or right side operation

Rating (A) Fuse Frame size	No. of poles	Switch body	External front handle	External side handle	Shaft extensions for external handle	NO/NC Pre-break and position AC	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 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 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	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	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	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 8063 ⁽¹⁾										
	4 P	3811 6063				3890 9063 ⁽¹⁾										

(1) Terminal shrouds for FUSERBLOC fitted with fuse blown microswitch.

⇒ FUSERBLOC accessories 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)	Fuses ⁽¹⁾	No. of poles	Options ⁽²⁾ References	Accessories ⁽³⁾ 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 page 246 "Fuses UR 10 to 2000 A".

(2) If ordered at the same time as the standard device (factory fitted).

(3) If ordered later.

Other accessories: see page 142 "FUSERBLOC"

FUSERBLOC for UR fuses type BK/50

↪ Characteristics

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 BK 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) / Fuses	No. of poles	Switch body only ⁽¹⁾	Direct handle	External handle	Shaft extensions for external handle	Fuse protection covers	Auxiliary contact pre-break and position	Terminal shrouds
800 A / 2	3 P	3680 3081	Consult us	Black IP55 1443 3111 ⁽²⁾ Red/Yellow IP65 1444 3111	200 mm 1400 1220 320 mm 1400 1232	Consult us	Consult us	Consult us
	4 P	3680 6081						
1250 A / 3	3 P	3680 3121						
	4 P	3680 6121						

(1) Please consult us.

(2) Standard.

FUSERBLOC for UR fuses type K/110

↪ Characteristics

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	1400	1500	1600	1800	2000
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 consult us.

(1) For UR fuses type K/110 1250 VAC, please consult us.

↪ References

Direct right side operation

Rating (A) / Fuses	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 with fuse blown microswitch.

FUSERBLOC for UR fuses type K/110

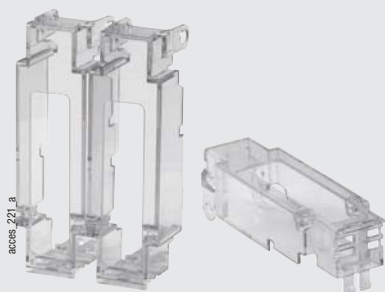
External front or right side operation

Rating (A) / Fuses	No. of poles	Switch body	External front handle	External side handle	Shaft extensions for external handle	Fuse protection covers	NO/NC Pre-break and position AC	Terminal shrouds
250 A / 1*	2 P	38U1 2024	Type S2 Black IP55 1421 2111	Type S2 Black IP55 1425 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	Type S2 Red/Yellow IP65 1424 2111	Type S2 Red/Yellow IP65 1428 2111				
	3 P	38U1 3039						
500 A / 2	2 P	38U1 2050	Type S3 Black IP65 1433 3111	Type S3 Black IP65		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	Type S3 Red/Yellow IP65 1434 3111	Type S3 Black IP65				
	3 P	38U1 3063						
800 A / 3	2 P	38U1 2080	Type S3 Red/Yellow IP65 1438 3111	Type S3 Red/Yellow IP65	320 mm 1400 1232			
	3 P	38U1 3080						
1250 A / 3	2 P	38U1 2120	Type S4 Black IP65 1443 3111	Type S4 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 with fuse blown microswitch.

➔ FUSERBLOC accessories for K/110 type UR 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.

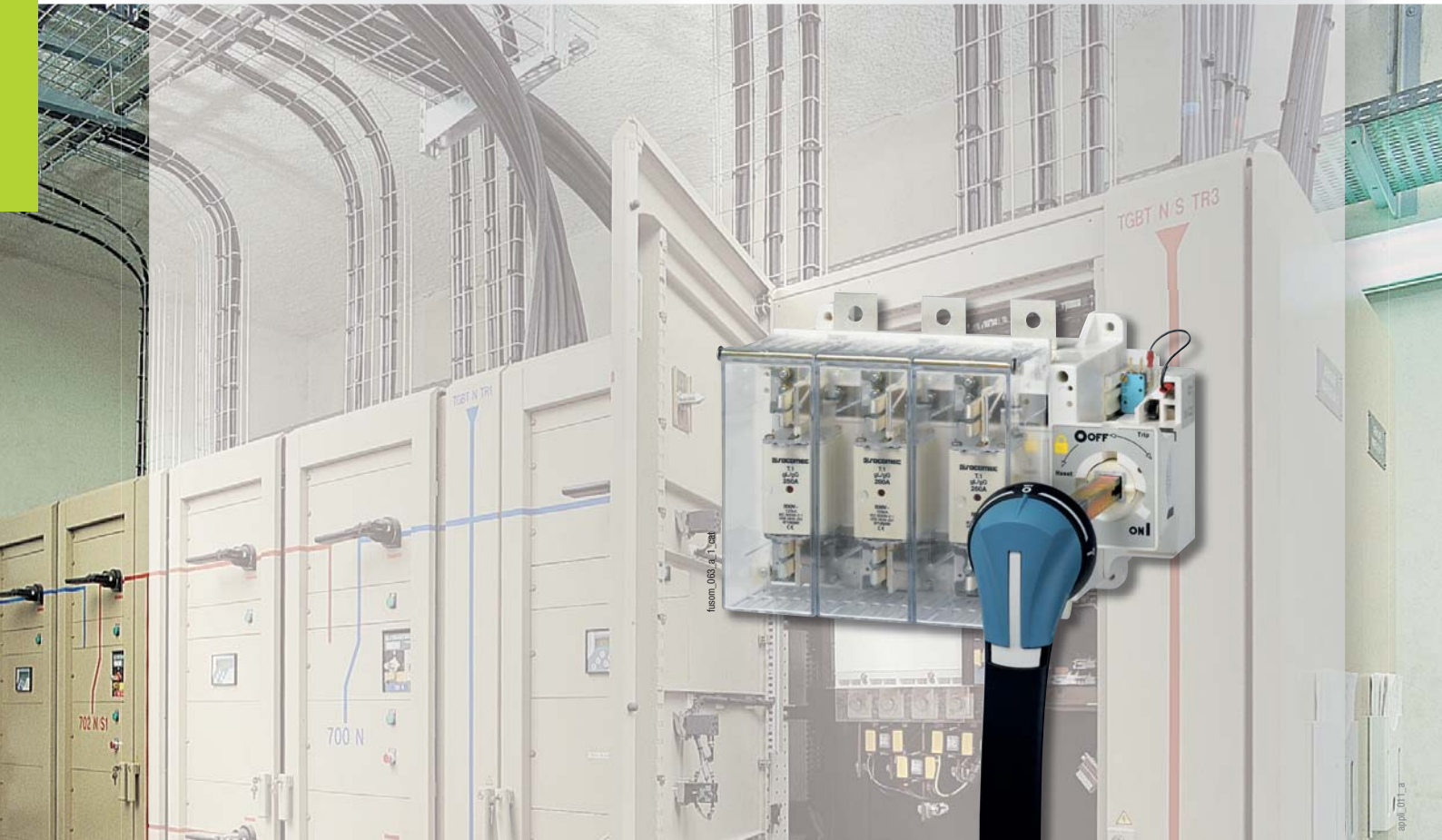
Rating (A)	Fuses ⁽³⁾	No. of poles	Option ⁽¹⁾	Accessories ⁽²⁾
			Reference	Reference
250 ... 400	1* / 1	2 P	3990 2839	3999 2839
250 ... 400	1* / 1	3 P	3990 3839	3999 3839
500 ... 800	2 / 3	2 P		3899 2U63
500 ... 800	2 / 3	3 P	3890 3U63	3899 3U63
1250	3	2 P	3890 2U12	3899 2U12
1250	3	3 P	3890 3U12	3899 3U12
500 ... 800	2 / 3	2 P	3890 2U63	

(1) If ordered at the same time as the standard device.

(2) If ordered later.

(3) For the fuses: see page 246 "Fuses UR 10 to 2000 A".

Other accessories: see page 142 "FUSERBLOC"



Visible load break and tripping fuse switches from 250 to 1250 A

➤ 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.

➤ Conformity to standards

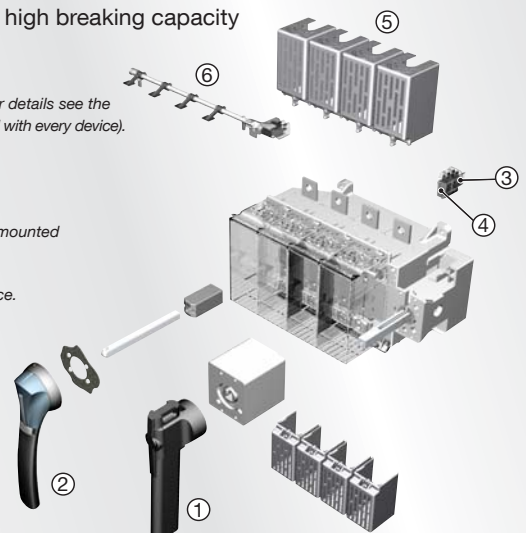
- IEC 60947-3
- EN 60947-3
- VDE 0660-107
- NBN EN 60947-3
- BS 88

➤ General characteristics

- Remote breaking by voltage release device.
- Fully visualised breaking.
- Double breaking by phase (top - bottom of the fuse) up to 630 A (NFC/DIN) and 800 A (BS88).
- Visible breaking up to 630 A (NFC/DIN) and 800 A (BS88).
- Protection against overcurrents by fuse links (gG, aM) with high breaking capacity (100 kA eff.).

Functional diagram (for further details see the installation instructions supplied with every device).

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.



➔ 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	S3 type	Front operation 200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾	1 st contact NO/NC 3999 0051	1 contact NO/NC 3999 0031	3 P 3998 3040		
	4 P	3660 6026	3665 6026						4 P 3998 4040		
400 A B1-B2- B3-B4	3 P	3660 3041	3665 3041	Side operation Black 3999 6012	Front operation Black IP55 1431 3511 ⁽²⁾ Red IP55 1432 3511	Side operation 200 mm 1403 1520	2 nd contact NO/NC 3999 0052		3 P 3998 3063		
	4 P	3660 6041	3665 6041						4 P 3998 4063		
630 A C1-C2	3 P	3660 3064	3665 3064	Front operation Black 3999 6012	Side operation Black IP55 1435 3511 ⁽²⁾ Red IP55 1436 3511					3 P 3998 3120 4 P 3998 4120	3 P 2998 0003 4 P 2998 0004
	4 P	3660 6064	3665 6064								
800 A C1-C2- C3	3 P	3660 3080	3665 3080	Side operation Black 3999 6012							
	4 P	3660 6080	3665 6080								
1250 A D1	3 P	3660 3121	3665 3121								
	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 - 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										Black 3999 6012 ⁽¹⁾	Type S3 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⁾	Type S3 Red/yellow IP55 1432 3511	320 mm 1401 1532 ⁽¹⁾	2 nd contact NO/NC 3999 0052		3 P 3994 1312	3 P 3998 3120 ⁽³⁾	3 P 2998 0003										
	4 P	3650 6121																																				
1250 A / 4	3 P	3650 3121																												Black 3999 6012 ⁽¹⁾	Type S3 Red/yellow IP55 1432 3511	320 mm 1401 1532 ⁽¹⁾	2 nd contact NO/NC 3999 0052		4 P 3994 1406	4 P 3998 4063 ⁽²⁾	4 P 2998 0004	
	4 P	3650 6121																																				

(1) Standard.

(2) Top/bottom.

(3) Bottom terminals protection screen as standard.

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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⁾	Type S3 Black IP55 1435 3511⁽¹⁾ Type S3 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										4 P 3994 1404	4 P 3998 4040⁽²⁾																											
400 A / 2	3 P	3655 3041						Black 3999 6012⁽¹⁾	Type S3 Black IP55 1435 3511⁽¹⁾ Type S3 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																	4 P 3994 1404	4 P 3998 4040⁽²⁾																				
630 A / 3	3 P	3655 3064													Black 3999 6012⁽¹⁾	Type S3 Black IP55 1435 3511⁽¹⁾ Type S3 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 1306	3 P 3998 3063⁽²⁾																	
	4 P	3655 6064																								3 P 3994 1406	3 P 3998 4063⁽²⁾													
800 A / 4	3 P	3655 3080																				Black 3999 6012⁽¹⁾	Type S3 Black IP55 1435 3511⁽¹⁾ Type S3 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																																3 P 3994 1412	3 P 3998 4120⁽³⁾	4 P 2998 0004				
1250 A / 4	3 P	3655 3121																											Black 3999 6012⁽¹⁾	Type S3 Black IP55 1435 3511⁽¹⁾ Type S3 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.

➔ 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

External handle



S3 type 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

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.

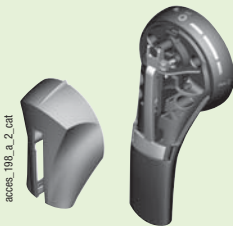
Dimensions

Adds 12 mm to the depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	10	IP65	1493 0000

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

Alternative S-type handle cover colours



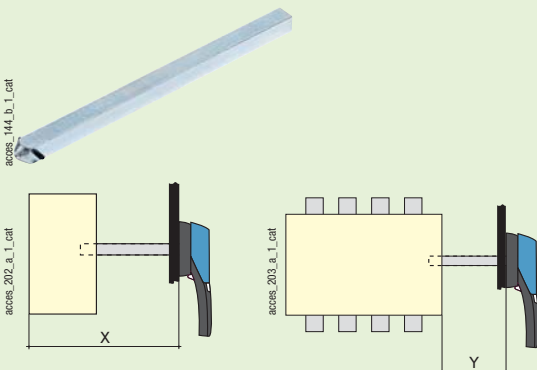
Use

For single lever S3 type handles.

Other colours: consult us.

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

Shaft for external handle



Use

Standard lengths:
- 200 mm
- 320 mm.

Other lengths: 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

Auxiliary contacts

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.



access_048_a_1_cat

References

NO/NC position AC

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

Characteristics

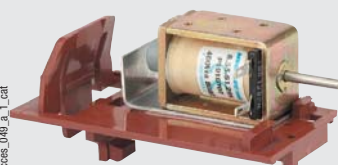
NO/NC position contact

Rating (A)	Current nominal (A)	Operating current I ₀ (A)			
		250 VAC	400 VAC	24 VDC	48 VDC
250 ... 1250	16	AC-13	AC-13	DC-13	DC-13

NO/NC contact, signalling coil tripping

Rating (A)	Current nominal (A)	Operating current I ₀ (A)			
		250 VAC	400 VAC	24 VDC	48 VDC
250 ... 1250	16	AC-13	AC-13	DC-13	DC-13

Alternative tripping coils



access_048_a_1_cat

Shunt trip coil



access_050_a_1_cat

Undervoltage trip 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 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:

- 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

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
24 VDC	3990 2024	3991 2024
48 VDC	3990 2048	3991 2048
220 VDC	3990 2220	
12 VDC		3991 2012
110 / 200 VDC		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

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

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

DIN Fuse blown indication

Use

For DIN fuse cartridges 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.

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

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

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.

Terminal screens



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

Inter phase barrier



Use

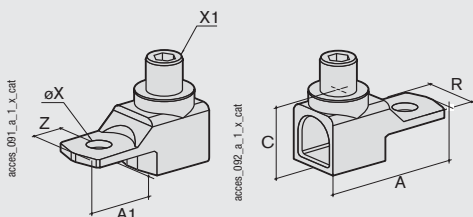
Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

Rating (A)	No. of poles	Reference
800 ... 1250	3 P	2998 0003
800 ... 1250	4 P	2998 0004

Cage terminals



access_063_a_1_cat



access_061_a_1_x_cat

access_062_a_1_x_cat

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

Connections

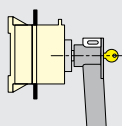
Rating (A)	Section flexible cable (mm ²)	Section rigid cable (mm ²)	Width flexible bar (mm)	Stripped over (mm)
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34
500 ... 630	70 ... 300	70 ... 300	24	34

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

access_010_b_1_x_cat



Lock RONIS 1104 A

Use

Locking in position 0 of front or side 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 CASTELL K (not supplied)
- locking using RONIS EL11AP (not supplied).

Locking using RONIS EL 1104 A lock (supplied)

Rating (A)	Operation	Reference
250 ... 1250	front direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
250 ... 1250	External	1499 7701

Locking using CASTELL lock (not supplied)

Rating (A)	Operation	Reference
250 ... 1250	External	1499 7702

Label holder



access_044_b_1_cat

Use

Recognisable self-adhesive label allowing identification of the devices.

Dimensions

W x H (mm)	To be ordered by multiple	Reference
18 x 13	50	7769 9999

Other specific accessories

bd_03_04_01



Use

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

➔ FUSOMAT - Characteristics according to IEC 60947-3

250 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	Load duty 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

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

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 $U_n = 400$ VAC.

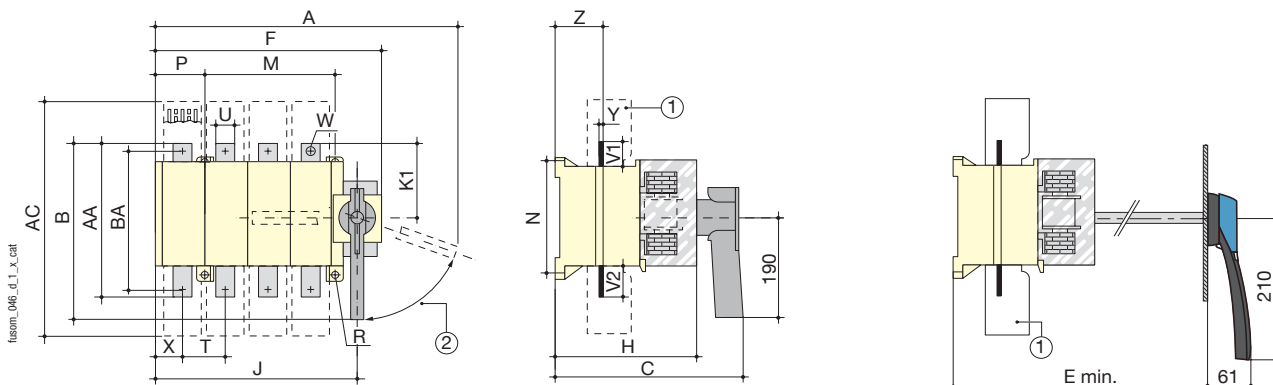
➔ **Dimensions**

Front operation

BS88 - FUSOMAT 250 to 800 A
NFC and DIN - FUSOMAT 250 to 630 A

Direct front operation

External front operation



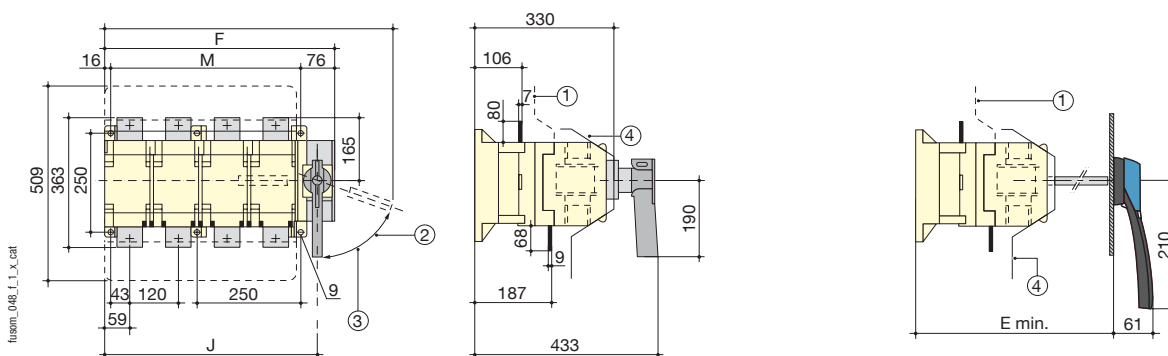
1. Terminal shrouds.
2. Reset 70°.

Rating (A)	Dimensions					Terminal shrouds AC	Switch body			Switch mounting				Connection														
	A 3p.	A 4p.	B	C	E		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	BA
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

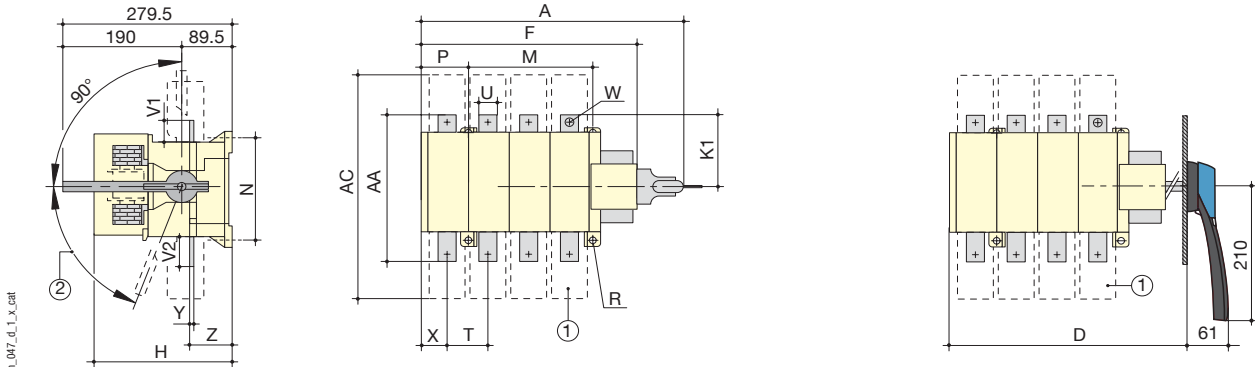
(1) NFC and DIN only.

Side operation

BS88 / NFC and DIN - FUSOMAT 250 to 630 A

Direct side operation

External side operation



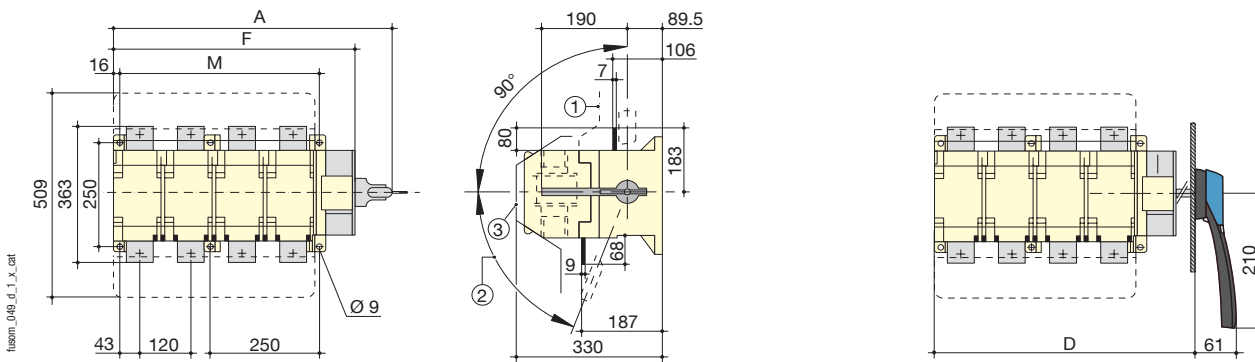
1. Terminal shrouds.
2. Reset 70°.

Rating (A)	Overall dimensions				Terminal shrouds AC	Switch body				Switch mounting				Connection										
	A 3p.	A 4p.	D 3p.	D 4p.		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	221	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238
400	365	425	357	417	388	285	345	221	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238
630	421.5	501.5	413	493	470	345.5	425.5	268	150	250	250	20	100	9	80	50	50	50	13	36	65	7	72	300

BS88 / NFC and DIN - FUSOMAT 800 to 1250 A

Direct side operation

External side operation

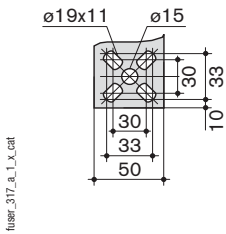


1. Top terminal screens
2. Reset 70°.
3. Front terminal screens

Rating (A)	Overall dimensions				Switch body		Switch mounting	
	A 3p.	A 4p.	D 3p.	D 4p.	F 3p.	F 4p.	M 3p.	M 4p.
800	522	641	504	624	437	557	345	465
1250	522	641	504	624	437	557	345	465

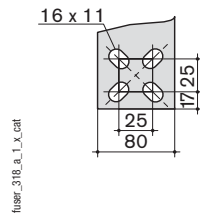
➔ Connection terminals

FUSOMAT 800 A



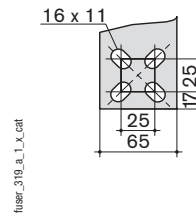
FUSOMAT 1250 A

A connection terminals
FUSOMAT 1250 A - Top



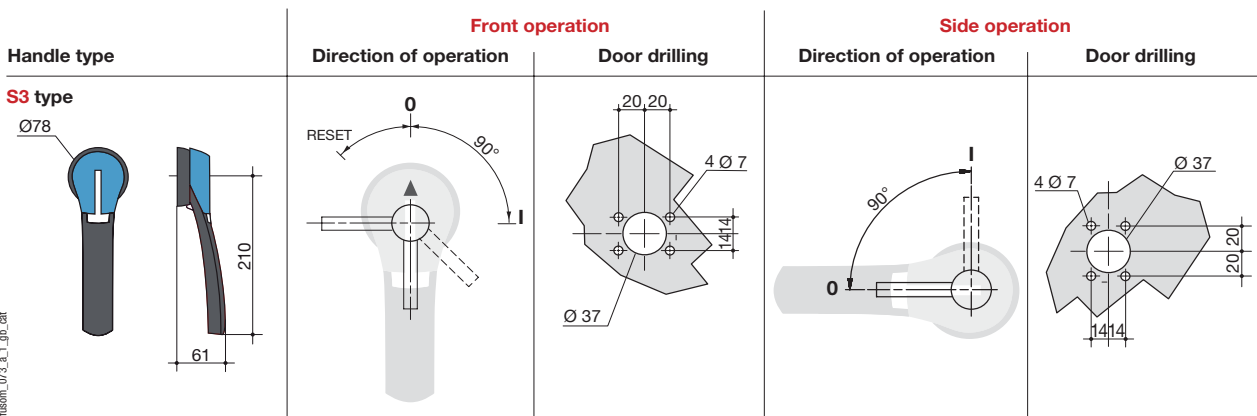
FUSOMAT 1250 A

A connection terminals
FUSOMAT 1250 A - bottom A



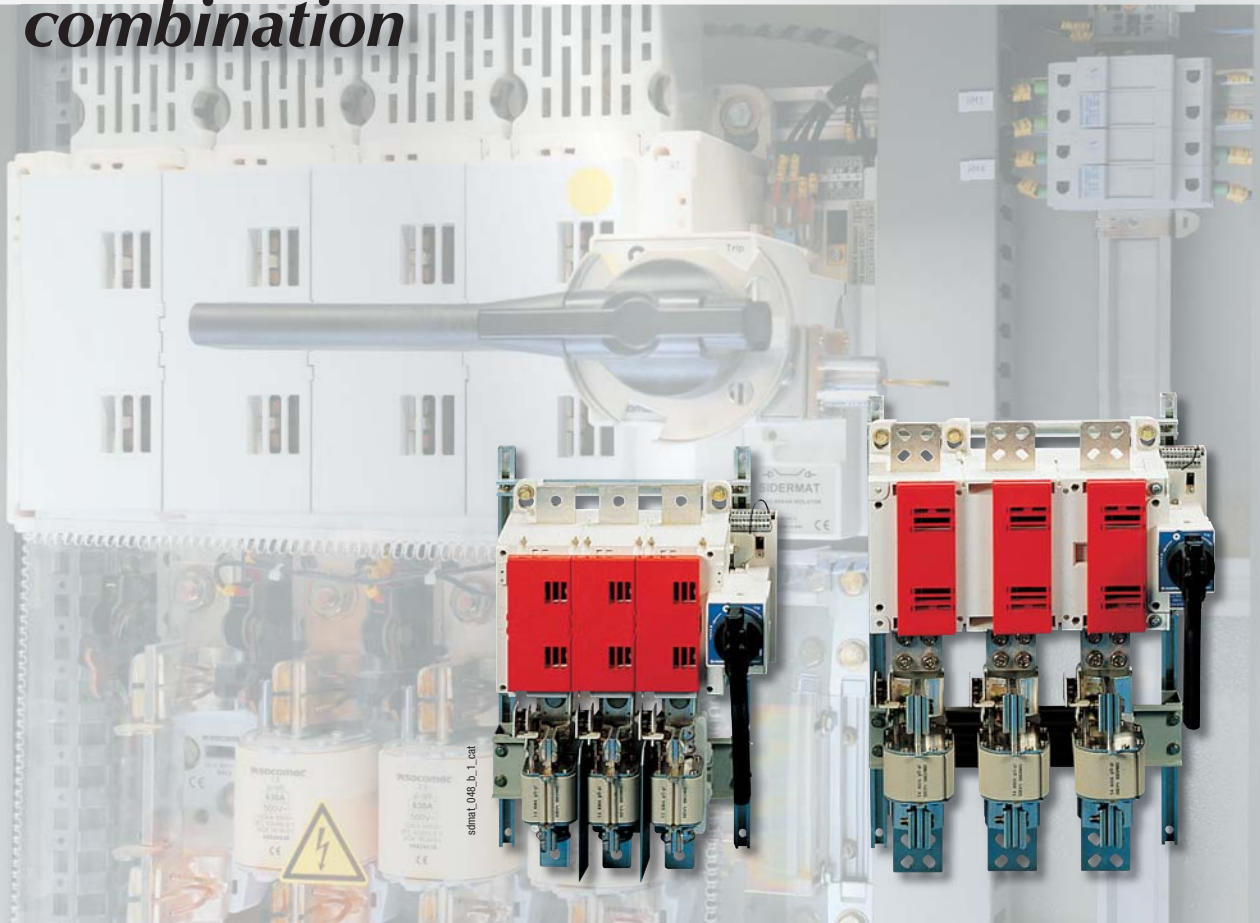
➔ Dimensions for external handles

FUSOMAT 250 to 1250 A



SIDERMAT combination

Fuse combination switches



Visible breaking and tripping fuse switches from 630 to 1800 A

➤ 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. They can automatically switch on a power circuit in combination with:

- fuse blown indication,
- thermal relay,
- differential relay,
- protective relays DIRIS,
- other protective devices.

➤ General characteristics

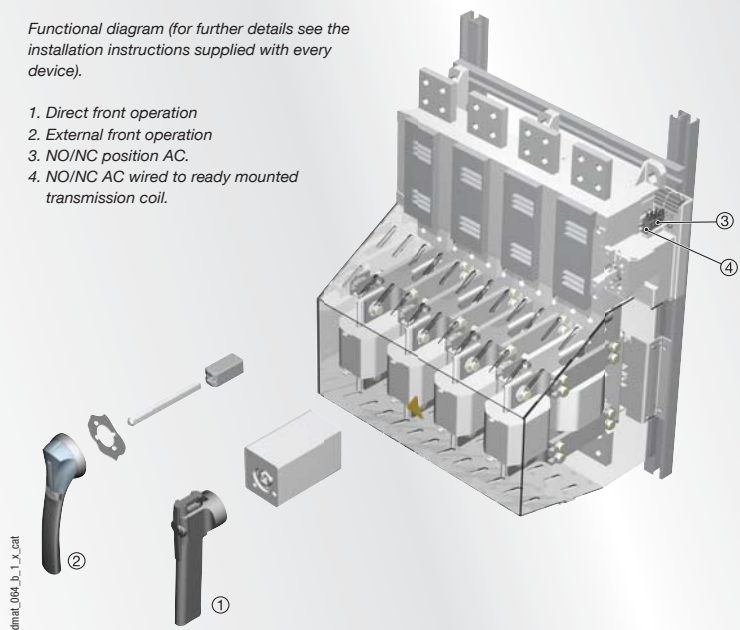
- Remote breaking by voltage release device.
- Fully visualised breaking.
- Visible double breaking.
- Protection against overcurrents by fuse links (gG, aM) with high breaking capacity (100 kA eff.).
- Device supplied without fuses.

➤ Conformity to standards

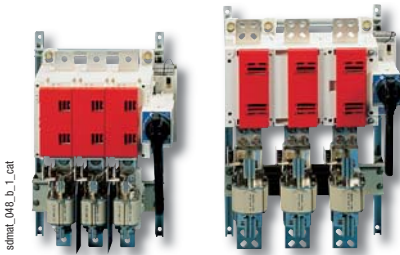
- IEC 60947-3
- EN 60947-3
- BS EN 60947-3
- NBN EN 60947-3
- IEC 60269-1
- IS 14947-3
- DIN EN 60269-1
- NF EN 60269-1
- IEC 60269-2
- VDE 0636-1
- VDE 0660-107

Functional diagram (for further details see the installation instructions supplied with every device).

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



➔ 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⁾	Type S3 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⁾			Type S3 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⁾	Type S3 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⁾	Type S3 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⁾	Type S3 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 1 250 A".

* Two size 4 DIN fuses in parallel per pole.

⇨ SIDERMAT combination - Accessories

Direct front operation handle

access_196_a_2_cat



Rating (A)	Handle colour	Reference
630 ... 1800	Black	3999 6203
630 ... 1800	Red	consult us

External front operation handle

S3 type handle

access_151_a_2_cat



access_166_a_2_cat



Rating (A)	Handle colour	External IP	Reference
630 ... 1800	Black	IP55	1431 3511
630 ... 1800	Red	IP55	1432 3511

Alternative S-type handle cover colours

access_198_a_2_cat



Use

For single lever S3 type handles.
Other colours: consult us.

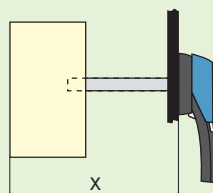
Colour	To be ordered by multiple	Reference
Light grey	50	1401 0001
Dark grey	50	1401 0011

Shaft for external handle

access_144_b_1_cat



access_202_a_1_x_cat



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

Current-reducing resistor for undervoltage trip coil

Use

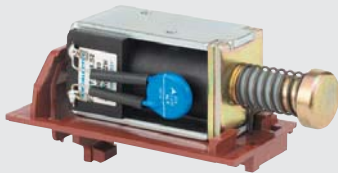
Reduces, by limiting the current, the effects on the undervoltage coils used in continuous processes or processes exposed to high ambient temperatures.

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

Alternative tripping coils

undervoltage trip coil

access_050_a_1_cat



shunt trip coil.

access_049_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.

Coils Characteristics: see page 70 "SIDERMAT"

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

Auxiliary contacts



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.

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

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

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



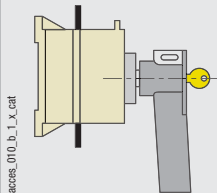
Use

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

Handle key interlocking accessories

Lock RONIS 1104A



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 ... 1 250	front direct	3999 7007
1 600 ... 1 800	front direct	3999 6117
630 ... 1 800	external front	1499 7701

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 1 800 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	Load duty 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 ⁽⁵⁾		290	365	575		

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	

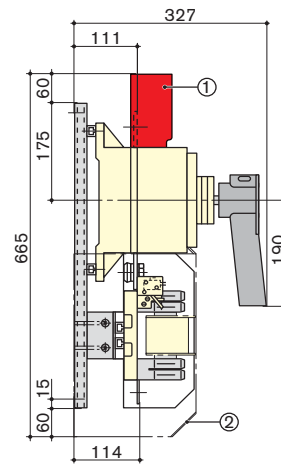
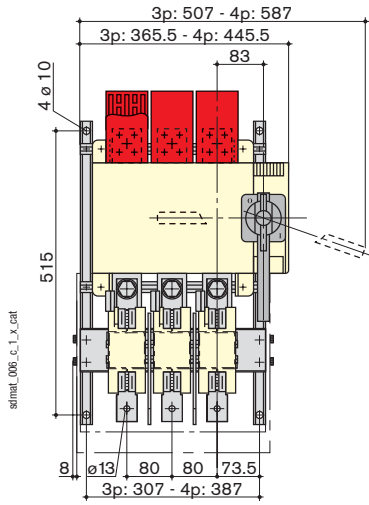
Mechanical characteristics						
Durability (number of operating cycles)		5000	5000	5000	3000	3000
Weight of 3 P switch (kg)		20	25	27	54	59
Weight of 4 P switch (kg)		24	30	32	70	75

- (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.

➔ **Dimensions**

SIDERMAT combination 630 A

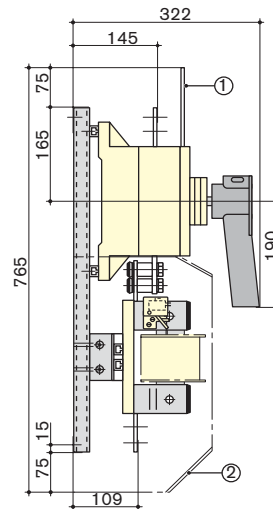
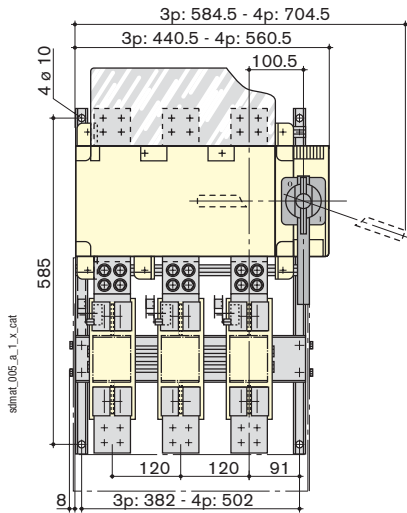
Direct front operation



- 1. Terminal shrouds top.
- 2. Terminal screens bottom

SIDERMAT combination 800 to 1 250 A

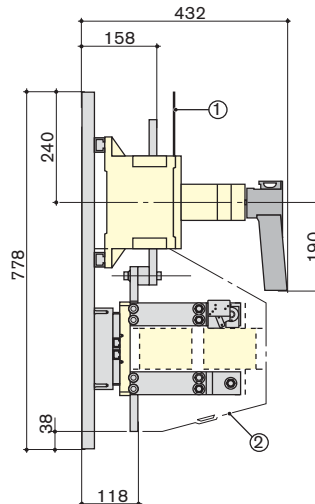
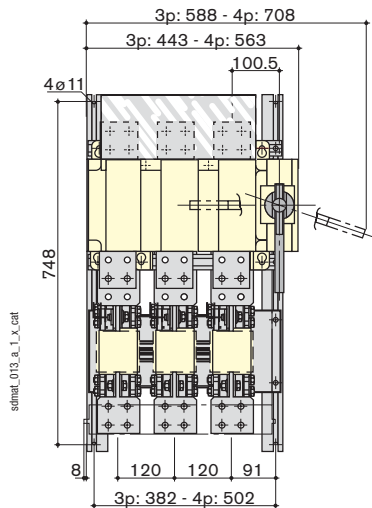
Direct front operation



- 1. Terminal screens top
- 2. Terminal screens bottom

SIDERMAT combination 1 600 A

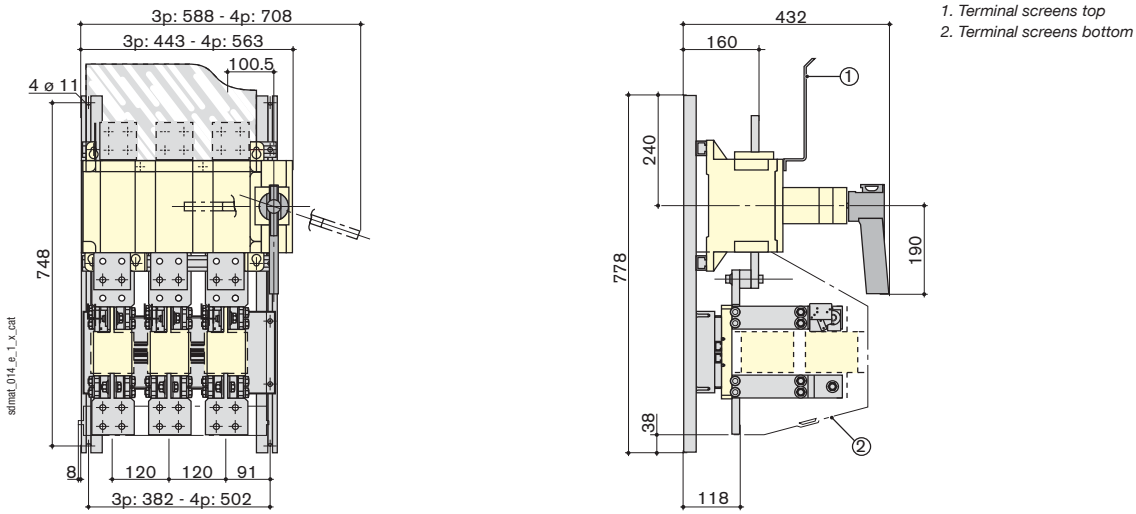
Direct front operation



- 1. Terminal screens top
- 2. Terminal screens bottom

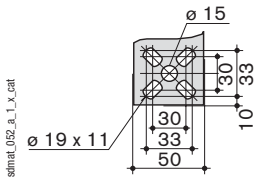
SIDERMAT combination 1 800 A

Direct front operation

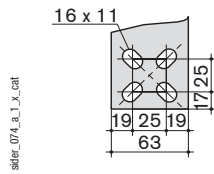


➔ **Connection terminals**

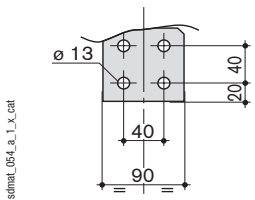
SIDERMAT combination 630 A



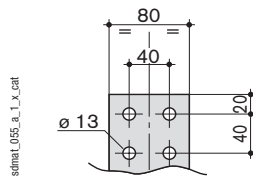
SIDERMAT combination 800 to 1250 A



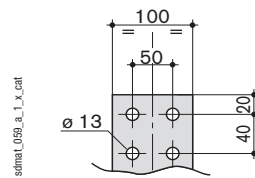
SIDERMAT combination 1600 to 1800 A bottom

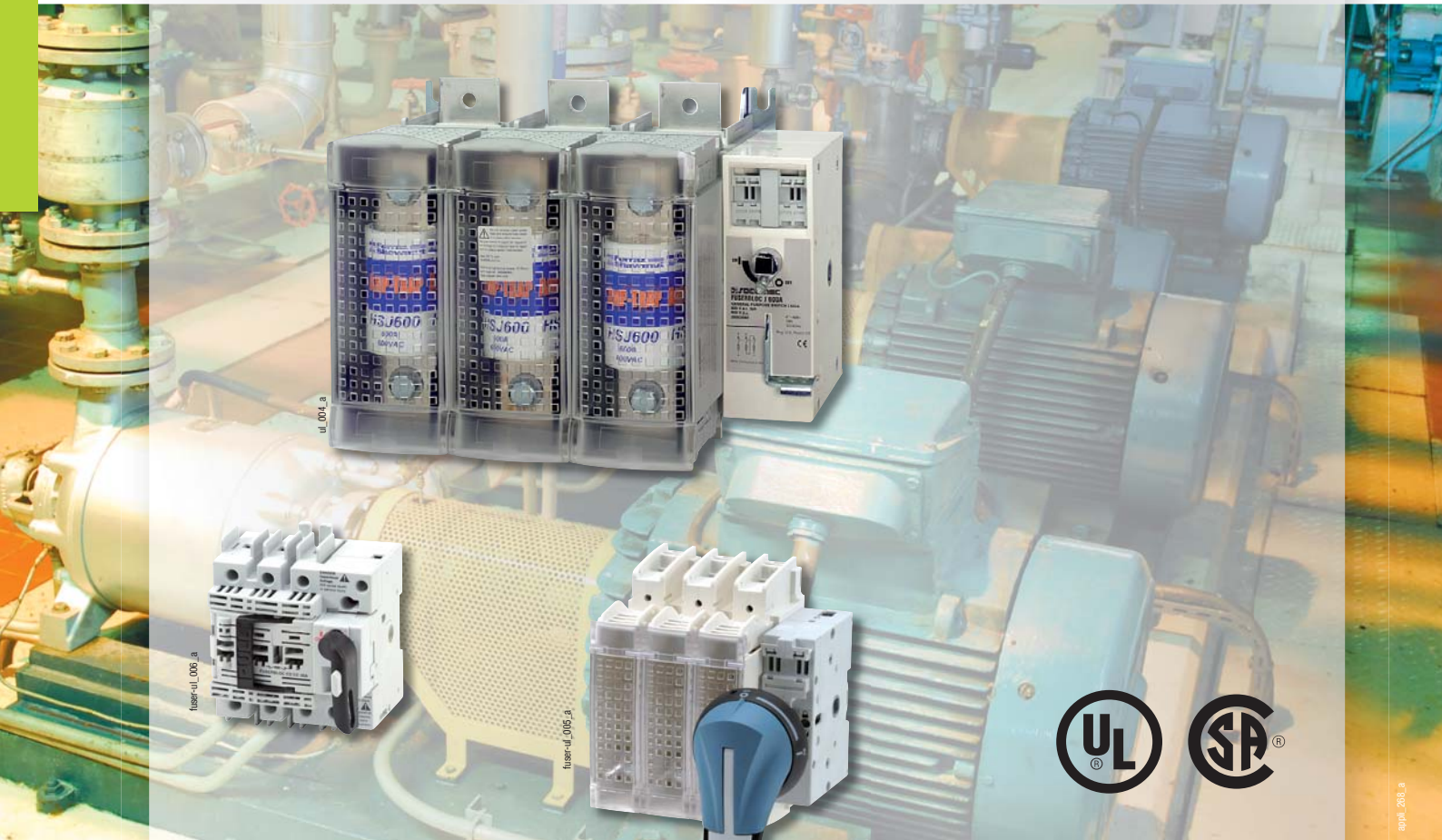


SIDERMAT combination 1600 A top



SIDERMAT combination 1800 A top





30 to 800 A

➤ Function

FUSERBLOC 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.

➤ General characteristics

- On load make and break power circuit applications.
- Double break by phase.
- Up to 200 kA Short Circuit rating.
- Touch safe covers.
- Compact Footprints.
- Front or side operation.
- Flange operation.
- NFPA 79 compliant kits.
- Voltage sensing terminals.

➤ Conformity to standards

- 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 2)
- CSA22.2 #4, Class 4651-02, file 112964 (Frame sizes 3 to 8)
- IEC 60947-3

➤ Customized solutions⁽¹⁾

- Different gear box position
- Fuse blown detection

(1) Please consult us.

➤ **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						
		3 P + switched neutral	3710 4003							
		3 P + solid neutral	3710 5003							
CD 30 A J 2		3 P	3710 3004	3729 4014	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	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	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		Defeatable 141D 2111 I - 0 - Test 4, 4X Defeatable 141D 2115		320 mm 12.6 inches 1400 1032			
		3 P	3861 3005							
		4 P	3861 6005							



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 S2 type Black I - 0 4, 4X Defeatable 142D 2111 S2 type Black I - 0 - Test 4, 4X Defeatable 142D 2115	S2 type Black I - 0 4, 4X 142H 6111 S2 type Red / yellow I - 0 4, 4X 142I 6111	S1 type 200 mm 7.9 inches 1400 1020 S1 type 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							
	4 P	3861 6038							
600 A J 8	2 P	3850 2060	Black 3859 6011	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 S3 type 320 mm 12.6 inches 1400 1232	3729 7552		2 P 3898 2080 3 P 3898 3080 4 P 3898 4080	
	3 P	3850 3060							
	4 P	3850 6060							
800 A L 8	2 P	3850 2080							
	3 P	3850 3080							
	4 P	3850 6080							

(1) No door interlocking.

➔ FUSERBLOC UL - NFPA79 accessories

Flange handle for flange operation

sfro_246_a_1_cat



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.

Cable operator

sfro_247_a_1_cat



ul_042_b_1

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 lenght (inches)	Cable lenght (mm)	Reference
36	900	3729 9992
60	1500	3729 9993
120	3000	3729 9994

Rod operator

ul_043_a



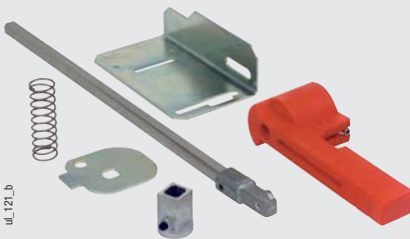
Use

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 ... 200A		
For enclosure depth (inches)	For enclosure depth (mm)	Reference
8 ... 24	203 ... 613	3729 9904

NFPA79 "Through the door" kit

ul_121_b



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

➤ FUBERBLOC UL - Accessories

Direct handle



Fig. 1

aces_147_a_2_cat



Fig. 2

aces_261_a

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⁽¹⁾
600 ... 800	Black	J / L	2	3859 6011

(1) Non UL.

External handle



S0 type handle

aces_263_a_2_cat



S1 type handle

aces_149_a_2_cat



S2 type handle

aces_164_a_2_cat



S3 type handle

aces_151_a_1_cat

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 (authorized persons only).

The interlocking function is restored when the door is re-closed.

Front operation

Rating (A)	Frame size	Handle	Nema type	Test	Handle colour	Standard	Heavy duty
						Reference	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	Heavy duty
						Reference	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

access_187_a_1_cat



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 12mm.

Handle colour	Pack qty	External degree of protection (IP)	Reference
Black	10	IP65	1493 0000

Alternative colour S-type handle cover

access_198_a_1_cat



Use

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

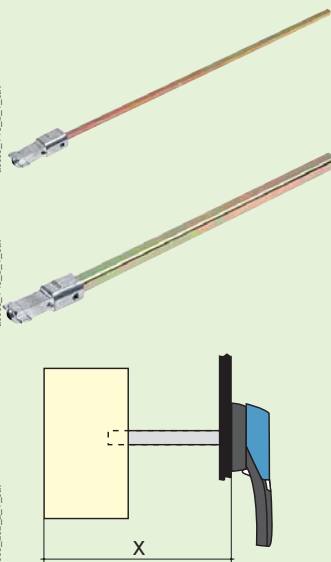
Handle colour	Pack qty	Handle	Reference
Light grey	50	S2, S3 type	1401 0001
Dark grey	50	S2, S3 type	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041

Shaft for external handle

access_145_b_1_cat

access_143_b_1_cat

access_202_a_1_cat



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

Shaft guide for external handle



access_200_a_2_cat

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

Shaft guide for S1 to S3 handles
Shaft guide for S0 handle

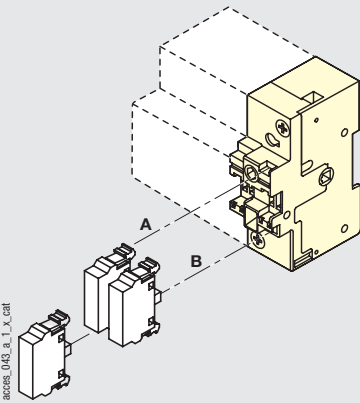
Reference

1429 0000
1419 0000

U type Auxiliary Contacts



access_056_a_1_cat



access_043_a_1_x_cat

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.

References

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

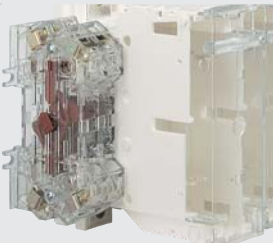
Contact holder for additional auxiliary contacts

Rating (A)	fuses	Reference
CD 30	CC	3999 0710
CD 30	J	3999 0710

S type auxiliary contacts



access_051_a_1_cat



access_003_a_1_cat

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.

References

NO+NC auxiliary contacts

Rating (A)	Number of contacts	Reference
30 ... 800	1	3999 U041
30 ... 800	2	3999 U042

Terminal shrouds

fuser-314_a_1_cat



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.

Terminals lugs

ul_002_a



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

Solid links

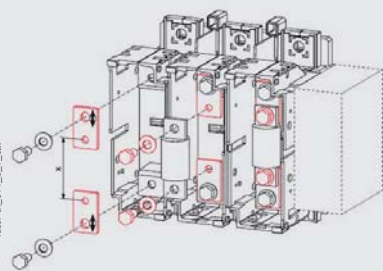
fuser-ul_013_a_1_cat



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

Class T fuse adapter

fuser-ul_014_a_1_cat



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

➔ FUSERBLOC UL - 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
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Connection

Min. connection section/ (mm ²) ⁽²⁾	#14	#14	#10	#10	#12	#12	#6	#2 or 2x#6	2 x #2	2 x #2
Max. connection section/ (mm ²) ⁽²⁾	#10	#10	#6	#6	#1	#1	300MCM	600MCM or 2 x 350MCM	2 x 600MCM	2 x 600MCM

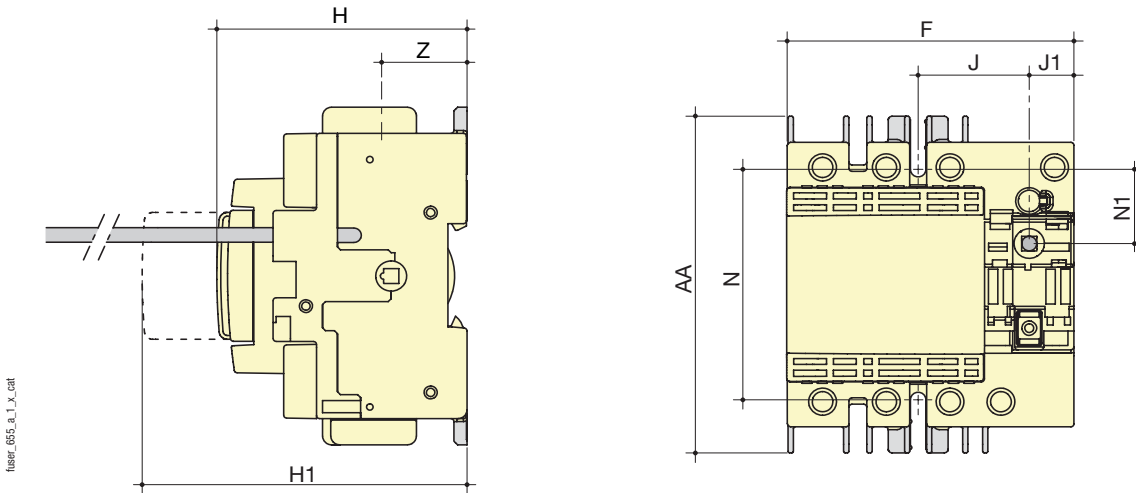
(1) 2 pole in series.

(2) 3 pole in series.

(3) UL 489/CSA22.2 #5.

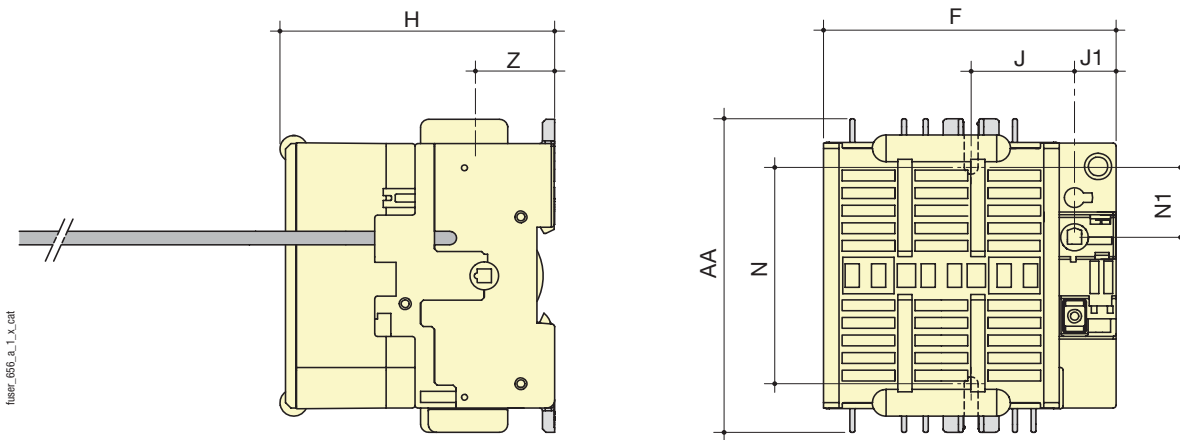
➔ Dimensions (in / mm)

FUSERBLOC CD 30 A / CC - Frame size 1



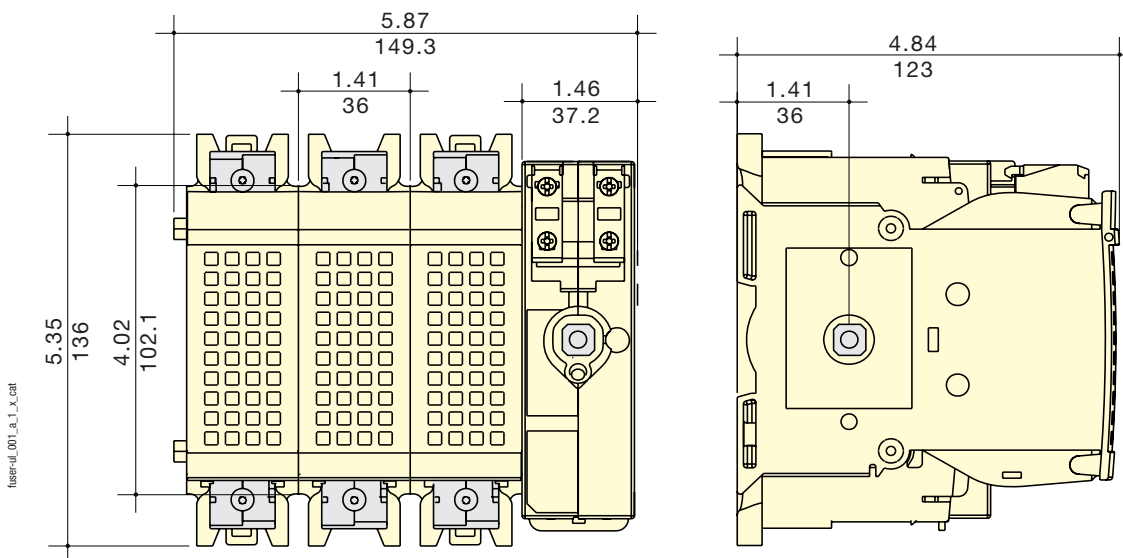
Rating (A) / Fuse	Unit	Switch body					Switch mounting		Connection	
		F	H	H1	J	J1	N	N1	AA	Z
CD 30 A / CC	in	3.78	3.28	5.19	1.47	0.59	3.13	1	4.56	1.12
	mm	96	83.5	132	37.5	15	79.5	25.5	116	28.5

FUSERBLOC CD 30 A / J - Frame size 2



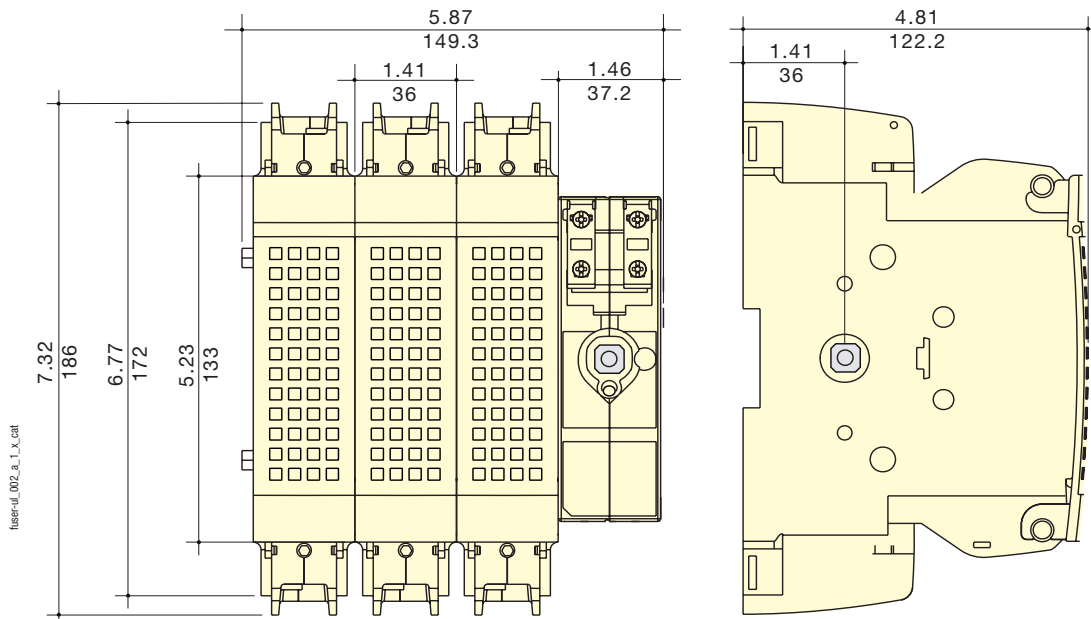
Rating (A) / Fuse	Unit	Switch body				Switch mounting		Connection	
		F	H	J	J1	N	N1	AA	Z
CD 30 A / J	in	4.13	3.89	1.47	0.59	3.30	1	4.56	1.12
	mm	105	99	37.5	15	84	25.5	116	28.5

FUSERBLOC 30 to 60 A / J - Frame size 4



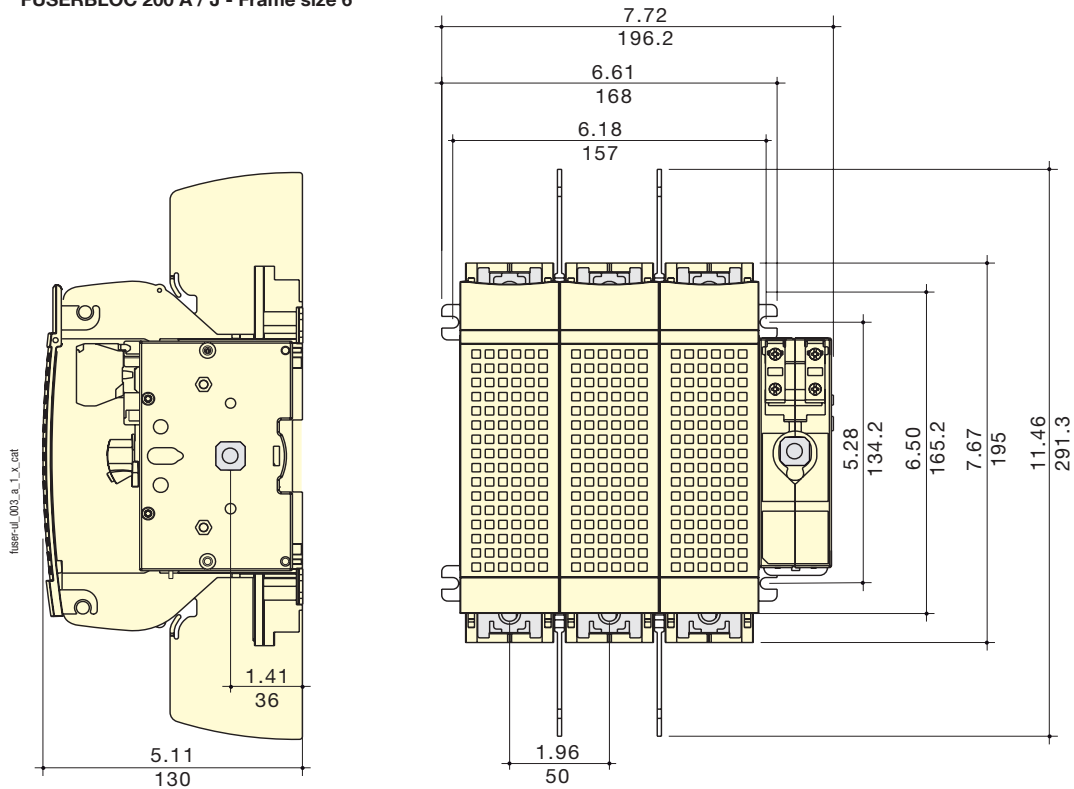
Note for width:
 For 2 pole device decrease overall width by 1.41"/36mm.
 For 4 pole device increase overall width by 1.41"/36mm.

FUSERBLOC 60 to 100 A / J - Frame size 5



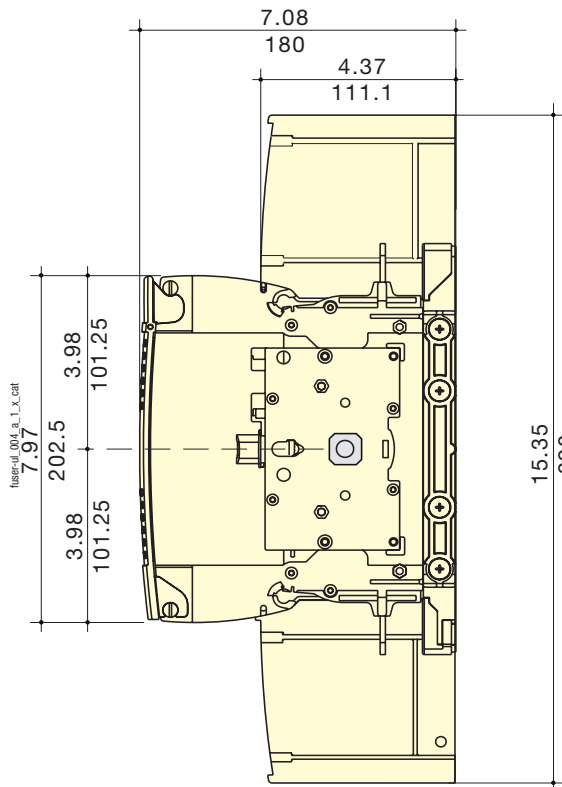
Note for width:
 For 2 pole device decrease overall width by 1.41»/36mm.
 For 4 pole device increase overall width by 1.41»/36mm.

FUSERBLOC 200 A / J - Frame size 6



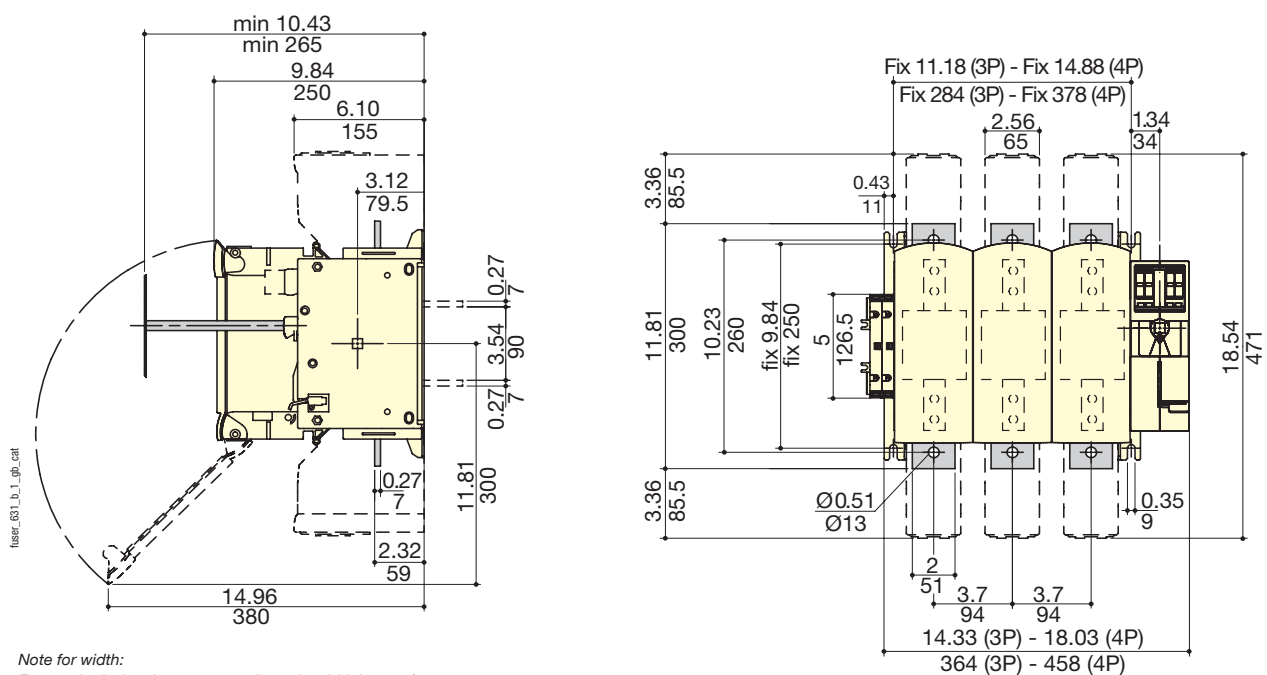
Note for width:
 For 2 pole device decrease overall width by 1.96»/50mm.
 For 4 pole device increase overall width by 1.96»/50mm.

FUSERBLOC 400 A / J - Frame size 7



Note for width:
 For 2 pole device decrease overall 3 pole width by 2.59»/66mm.

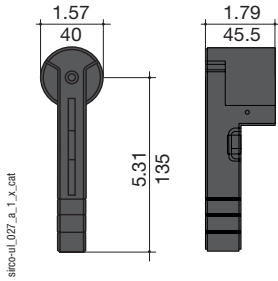
FUSERBLOC 600 to 800 A / J - Frame size 8



Note for width:
 For 2 pole device decrease overall 3 pole width by 3.7»/94mm.

FUSERBLOC 30 to 400 A

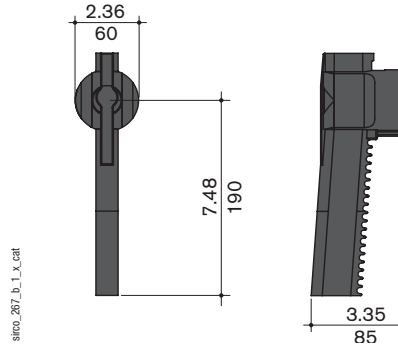
Front direct handle



siroco-ul_027_a_1_x_cat

FUSERBLOC 600 to 800 A

Front direct handle



siroco_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

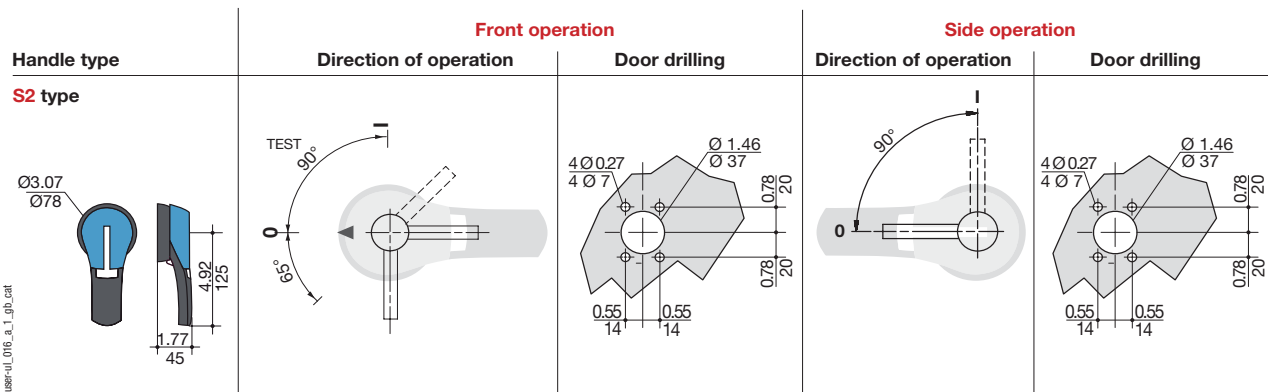
FUSERBLOC CD 30 to 60 A - Frames 1 / 2 / 4

Handle type	Front operation Direction of operation	Door drilling	Side operation ⁽¹⁾ Direction of operation	Door drilling
S1 type 				

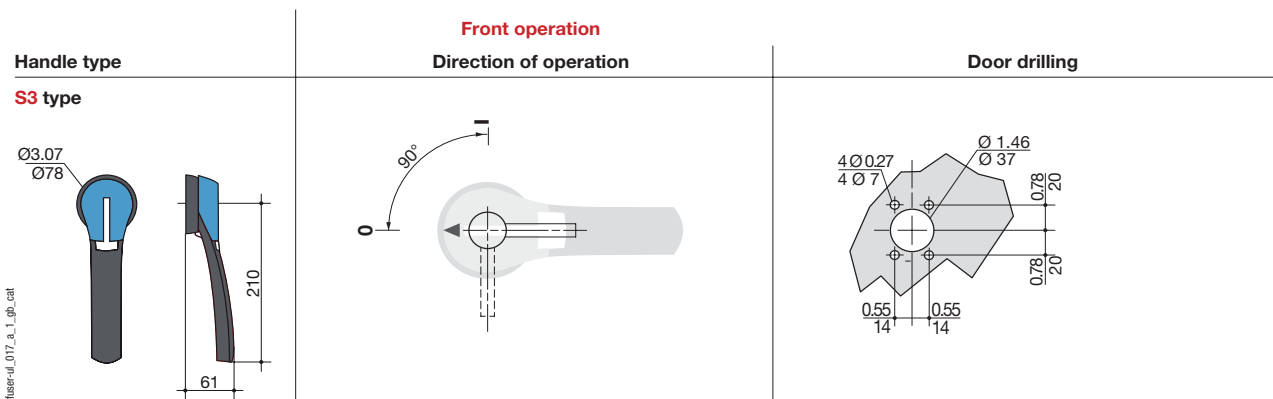
(1) Not for frames 1 and 2.

➤ External handle dimensions (in / mm)

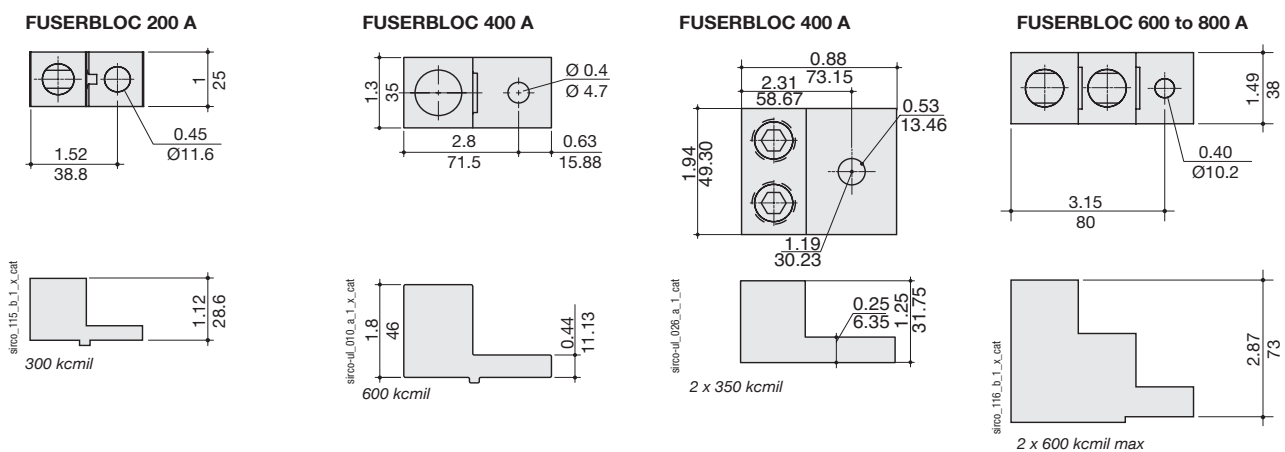
FUSERBLOC 60 to 400 A - Frames 5 / 6 / 7



FUSERBLOC 600 and 800 A - Frame 8



➤ Terminal lugs (in / mm)





For cylindrical fuses and high speed fuses (UR) 32 to 100 A

⇒ Function

RM and **RMS** are modular fuse disconnect switches for cylindrical fuses. They provide safety disconnection and protection against overcurrents 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 fuse blown indication auxiliary contact.

⇒ General characteristics

- Omnipolar and simultaneous breaking
- High dielectric strength.
- Modular DIN 45 mm cut-out.

⇒ Photovoltaic applications

Consult us.

⇒ Conformity to standards

- IEC 60269-2-1
- IEC 60269-1
- IEC 60269-2
- IS 14947-3
- NF EN 60269-1
- NF C 63-210
- NF C 63211
- VDE 0636-10
- DIN 43620

For RM 32 A (1P, 1P+N, 2P, 3P, 3P+N):

- CAN/CSA C22-2 0n0-M91 (R2001)
- CSA C22-2 n°39-M1987
- CSA C22-2 n°65-93
- UL listed, File E307648

⇒ Approvals and certifications

- Please consult us

➔ References



RM - Device without signalisation

Basic device
 Fuse size

No. of poles	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
1 P	12	5601 0015	6	5602 5001	6	5603 5001
1 P + N (1 module)	12	5601 5005				
1 P + N (2 modules)	6	5601 0017	3	5602 5005	3	5603 5005
2 P	6	5601 0020	3	5602 5002	3	5603 5002
3 P	4	5601 0018	2	5602 5003	2	5603 5003
3 P + N	3	5601 0019	1	5602 5004	1	5603 5004
4 P			1	5602 5006	1	5603 5006
N	12	5601 0016	6	5602 5000	6	5603 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	5602 5011	6	5603 5011
2 P with 2 AC	3	5602 5012	3	5603 5012
3 P with 1 AC	2	5602 5013	2	5603 5013
3 P with 1 AC N			1	5603 5014
3 P + N with 1 AC	1	5602 5014		
4 P with 2 AC			1	5603 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 - Accessories

Auxiliary contacts

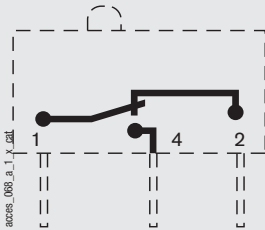
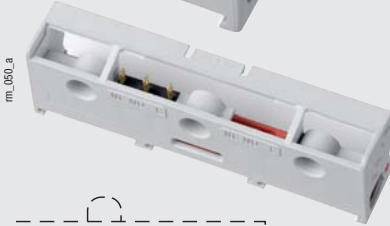


Use

- Pre-break, presence and fuse blown for RMS 50 and 100:
1 or 2 NO/NC auxiliary contacts
- Pre-break, presence and fuse blown for RMS 50
2 NO/NC auxiliary contacts.

Connection

By 6.35 mm fast-on terminal.



References

NO/NC contact for RMS

Rating (A)	Contact(s)	Reference
50	1 P with 1 AC	5602 9901
50	3 P with 1 AC	5602 9903
50	3 P with 2 AC	5602 9030
100	1 P with 1 AC	5603 9901
100	3 P with 1 AC	5603 9903
100	3 P with 2 AC	5603 9030

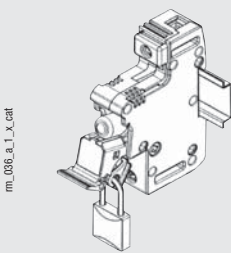
Two level NO/NC contact for RMS

Rating (A)	Contact(s)	Reference
50	1 P with 1 AC	5602 9911
50	3 P with 1 AC	5602 9913
100	1 P with 1 AC	5603 9911
100	3 P with 1 AC	5603 9913

Characteristics

Rating (A)	Contact type	Operating current I _a (A) 250 VAC AC-13
50 ... 100	NO/NC contact	5
50 ... 100	Two level NO/NC contacts	0.1

Handle key interlocking accessories



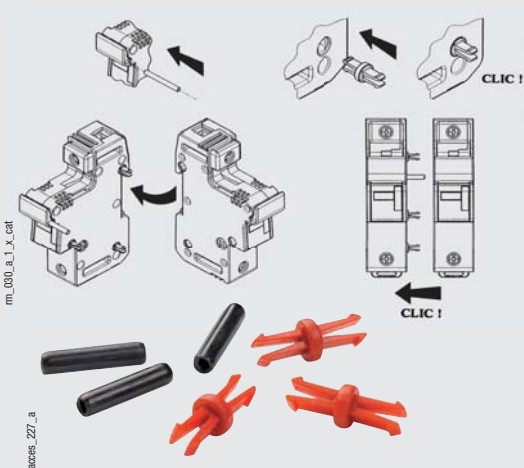
Use

Padlocking of the handle (padlock not supplied).
For padlocking when disconnected (OFF).

For RM and RMS

Rating (A)	Reference
50 ... 100	included

Coupling system



Coupling system for RM

Rating (A)	Reference
32	5604 0003 ⁽¹⁾⁽²⁾
50	5602 9020 ⁽¹⁾⁽²⁾
100	5603 9020 ⁽¹⁾⁽²⁾

(1) 1 coupling device allows to link 2 RM/RMS.
(2) 1 reference = 1 pack of 10 coupling 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 (kA rms prospective)			
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

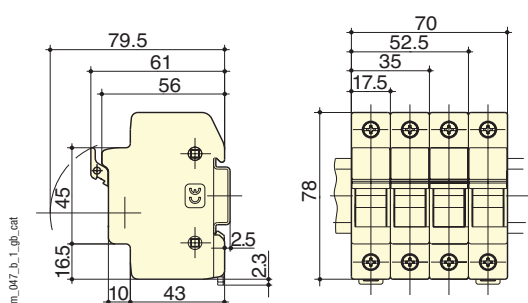
Connection			
Minimum Cu cable section (mm ²)	4	2.5	2.5
Maximum Cu cable section (mm ²)	25 ⁽³⁾ / 16 ⁽⁴⁾	35 ⁽³⁾ / 25 ⁽⁴⁾	50 ⁽³⁾ / 35 ⁽⁴⁾
Maximum Cu cable section (mm ²) ⁽²⁾	16 ⁽³⁾ / 10 ⁽⁴⁾		

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

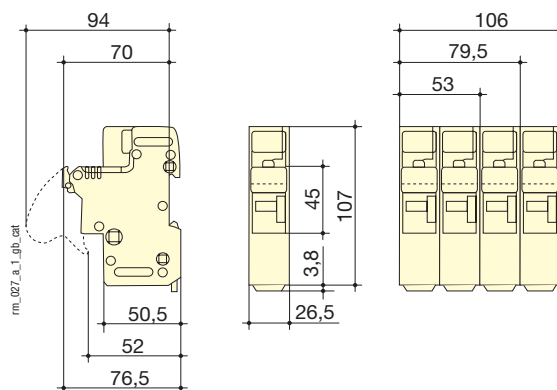
(1) For a rated operational voltage $U_n = 400$ VAC.
 (2) Connection for RM32 1pole + N (1 module).
 (3) Rigid cable.
 (4) Flexible cable.

➤ Dimensions

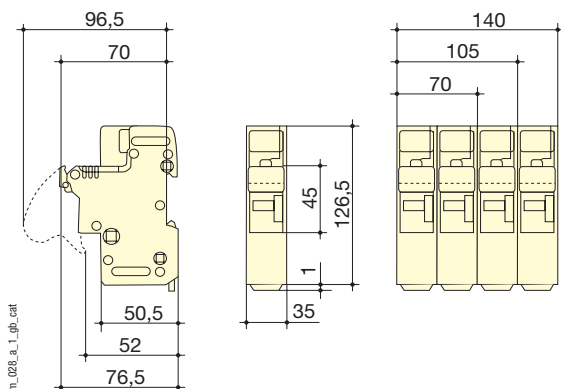
RM 32 A



Single and multipolar RM / RMS 50 A



Single and multipolar RM / RMS 100 A





Modular fuse disconnect 10 x 38 for PV applications

➤ Functions

RM PV are unipolar or bipolar modular fuse disconnects without signalisation specially design for PV 10x38 cylindrical fuses. They provide safety disconnection and protection against overcurrents in any low d.c. voltage photovoltaic applications.

➤ General characteristics

- Rated voltage of 1000 V d.c.
- Omnipolar and simultaneous breaking.
- High dielectric strength.
- Modular DIN 45 mm cut-out.
- Self-extinguishing thermoplastic material.
- High capacity connection.

➤ Conformity to standards

- IEC 60947-3
- IEC 60269-2-1
- IEC 60269-1
- IEC 60269-2
- IS 14947-3
- NF EN 60269-1
- NF C 63-210
- NF C 63211
- VDE 0636-10
- DIN 43620

➤ Approvals and certifications⁽¹⁾

(1) Please consult us.

➤ References



RM - Device without signalisation

No. of pole	To be ordered in multiple of	References
1 P	12	56DC 0015
2 P	6	56DC 0020

32 A
10 x 38

➤ Accessories

Coupling system

Use
To link multiple single pole RM together

Coupling system for RM

Rating (A)	References
32	5604 0003 ⁽¹⁾⁽²⁾

(1) 1 coupling device allows to link 2 RM/RMS.
(2) 1 reference = 1 pack of 10 coupling devices.

➤ Characteristics according to IEC 60947-3

Thermal current I_{th} (20 °C)	32 A
Fuse size	10 x 38
Rated insulation voltage U_i (V)	1000

Fuse rating (A)	
Fuse rating (A)	4 to 20

Fuse protected short-circuit withstand	
Prospective short-circuit (kA rms) ⁽¹⁾	1.25 I_n

Thermal current derating factors for N pole side by side	
N = 1 ... 3	1
N = 4 ... 6	0.8
N = 7 ... 9	0.7
N ≥ 10	0.6

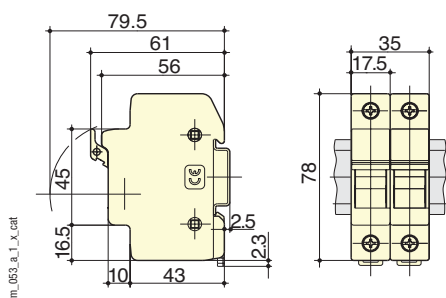
Connection	
Minimum Cu cable section (mm ²)	4
Maximum Cu cable section (mm ²)	25 ⁽²⁾ / 16 ⁽³⁾

Mechanical characteristics	
Weight for 1P (kg)	0.1

For PV fuses, see page 256.

(1) For a rated operational voltage $U_n = 400$ V a.c. - (2) Flexible cable. - (3) Rigid cable.

➤ Dimensions





For NH and high speed (UR) fuses 160 to 2500 A

➤ **Function**

SOCOMECS **fuse bases** provide fixed, unipolar or multipolar support for knife edge fuses.

➤ **General characteristics**

- High dielectric strength.

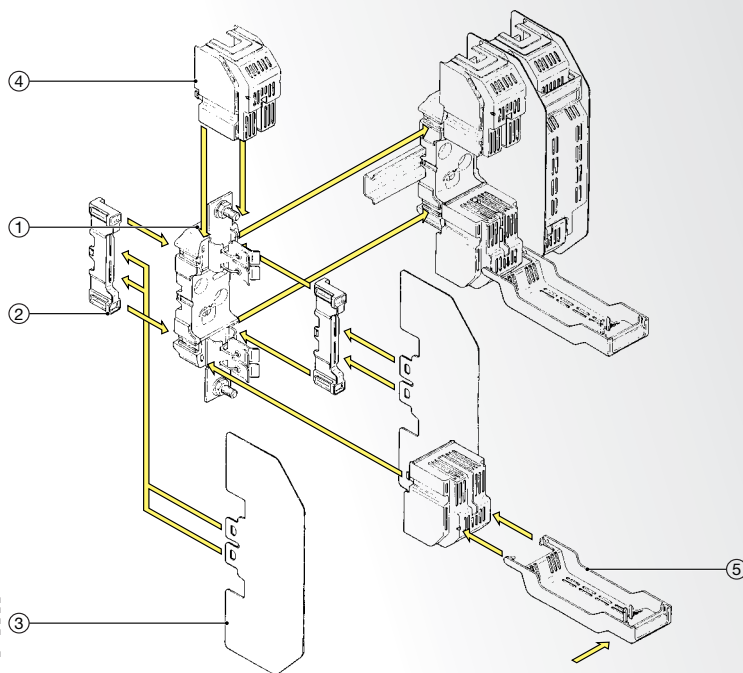
➤ **Conformity to standards**

- IEC 60269-1
- IEC 60269-2
- IEC 60269-2-1
- NF EN 60269-1
- NF C 63211
- VDE 0636-10
- DIN 43620

➤ **Approvals and certifications⁽¹⁾**

- Bureau Veritas
- Lloyd's Register of Shipping

(1) Product reference on request.



1. Fuse bases
2. Connecting block:
 - block for assembling unipolar bases T00, T0, T1, T2 and T3,
 - screen support for phases T00, T0, 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).

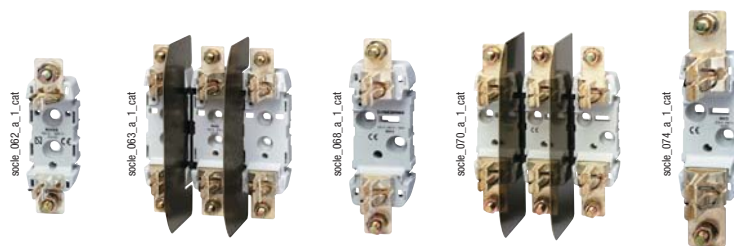
IP20 kit:

- 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.

Fuse bases for fuses with or without a striker from 160 to 630 A (U = 690 V)

➤ References

Back plate mounted device



Rating		160 A	160 A	250 A	400 A	630 A
Fuse size		00	0	1	2	3
No. of poles	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

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

No. of poles	Reference	Reference	Reference	Reference	Reference
1 P ⁽¹⁾	6510 1010	6511 1010	6511 1011	6511 1012	6511 1013
3 P ⁽²⁾	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.

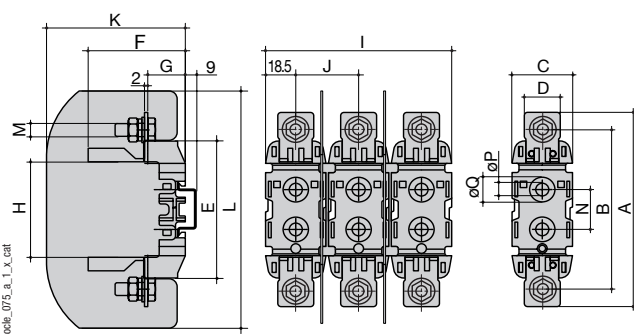
(2) IP20 three-pole kit consisting of 2 connecting blocks for the ends, 2 phase separation shields for the ends, 6 terminal shrouds and 3 fuse covers.

Accessories

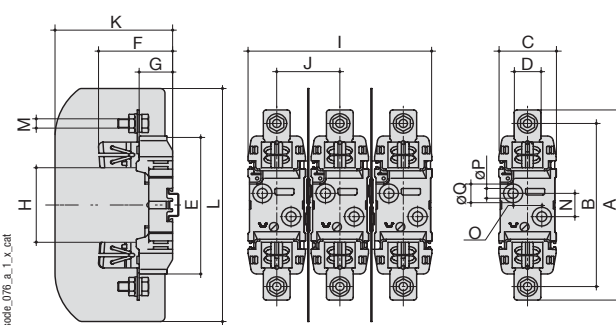
Description of accessories	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
Connecting block - set of 1 piece	2	6500 0033	6500 0030	6500 0031	6500 0031	6500 0032
Phase separation shield - set of 1 piece	2	6500 0001	6500 0002	6500 0003	6500 0003	6500 0004
Terminal shrouds - 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

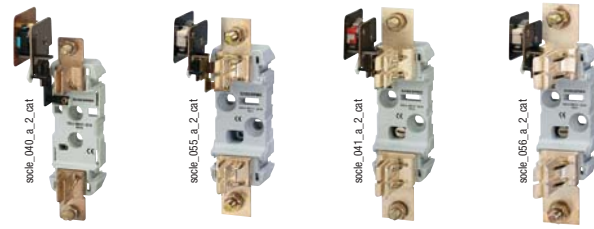


Rating (A)	Fuse size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
160	00	122	100	37	22	86	59.5	23		114	38.5	85		M8	25		8	
160	0	170	150	47	24	122	63	29	74	144	48.5	91.5	185	8	25		7.5	15
250	1	200	175	60	28	148	77.5	35	80	192	66	123	250	10	25	30	10.5	20.5
400	2	225	200	60	32	148	88	35	80	192	66	123	250	12	25	30	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

Unipolar fuse bases for fuses with a striker from 160 to 630 A (U = 690 V)

➤ References

Back plate mounted device without AC



Rating Fuse size	160 A 0	250 A 1	400 A 2	630 A 3
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

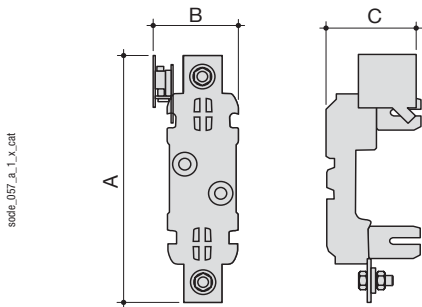
Characteristics

NO/NC contact

Nominal current I _n (A) 250 VAC	16	16	16	16
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➤ Dimensions

Fuse base 160 to 630 A size 0, 1, 2 and 3



Rating (A)	Fuse size	A	B	C
160	0	193	65.5	90
250	1	215	76	98
400	2	227	76	102
630	3	235	76	102

Multipolar fuse bases for fuses with a striker from 160 to 400 A (U = 690 V)

References

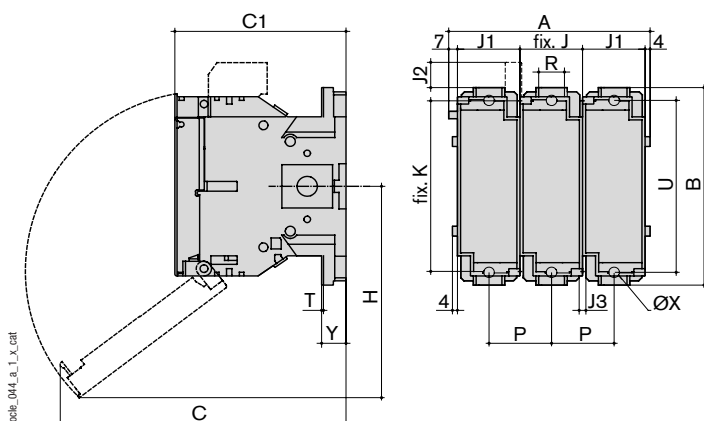
Back plate mounted device with presence and fuse blown signalling AC (DDMM)



Rating Fuse size	160 A 0	250 A 1	400 A 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.	B	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 for fuses with or without a striker from 1000 to 2500 A (U = 690 V)

References

Device without presence and fuse blown signalling (DDMM)

Rating Fuse size	1 000 A 4	1 250 A 4	2 500 A 2 x 4	2 500 A 2 x 4 (S)	2 500 A 6
No. of poles	Reference	Reference	Reference	Reference	Reference
1 P	6431 0004	6431 0005	6431 0006		6431 0007 ⁽¹⁾

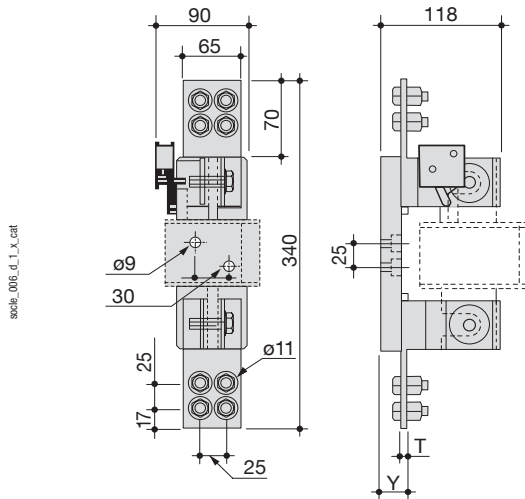
(1) Without solid link.

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	

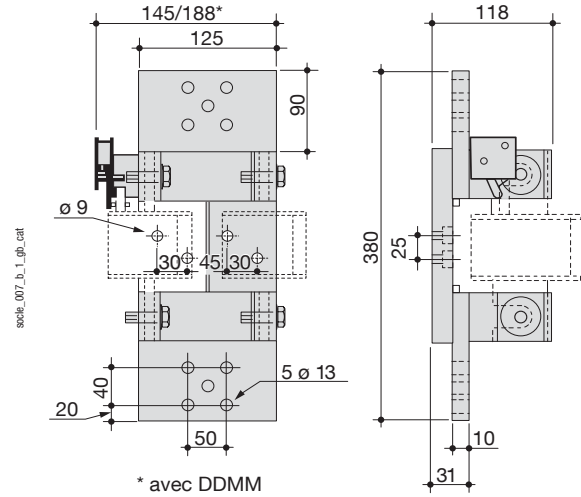
Dimensions

Fuse base 1 000 to 2500 A size 4

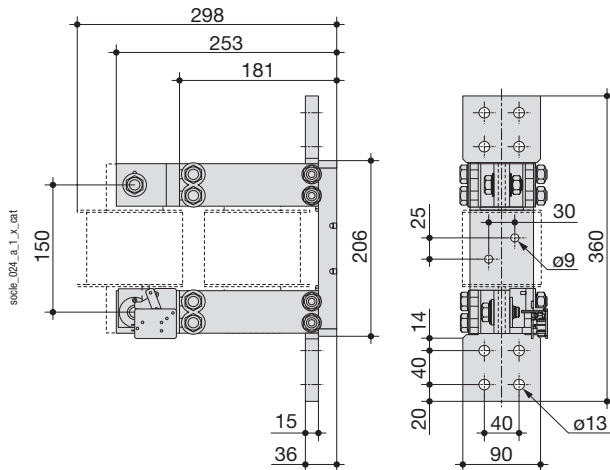


Rating (A)	Y (mm)	T (mm)
1 000	25	4
1 250	30	9

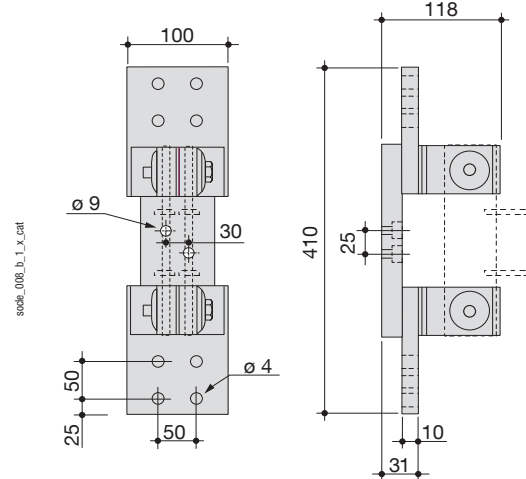
Fuse base 2 500 A, size 2 x 4



Fuse base 2 500 A, size 2 x 4 (S)



Fuse base 2 500 A, size 6 (for neutral)



Unipolar fuse bases for UR fuses

References

L shape bracket 00/80 (distance between centres 80)		690 VAC	1 000 VAC	1 400 VAC
Thermal current I_{th} (40°C)	Type of fuse	Reference	Reference	Reference
200	00 bolted connection	170A 6080		
400	00 bolted connection		170 H 1007	

Knife-edge fuses /80 (distance between centres 80)		Reference	Reference	Reference
Thermal current I_{th} (40°C)	Type of fuse	Reference	Reference	Reference
1250 ⁽¹⁾	from 1* to 3		170 H 3004	

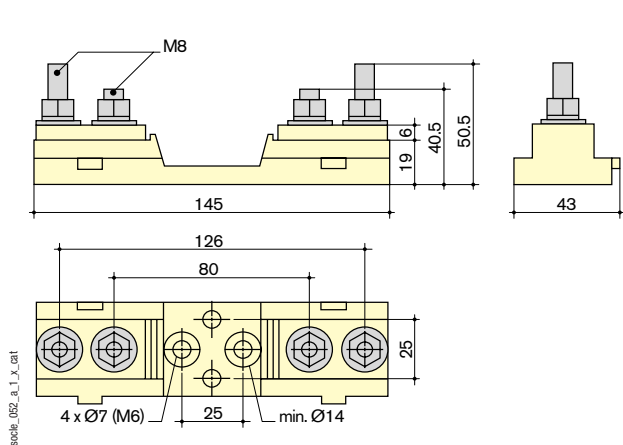
(1) For current > 1250 A, please consult us.

Knife-edge fuses /110 (distance between centres 110)		Reference	Reference	Reference
Thermal current I_{th} (40°C)	Type of fuse	Reference	Reference	Reference
1 250 ⁽¹⁾	from 1* to 3			170 H 3006

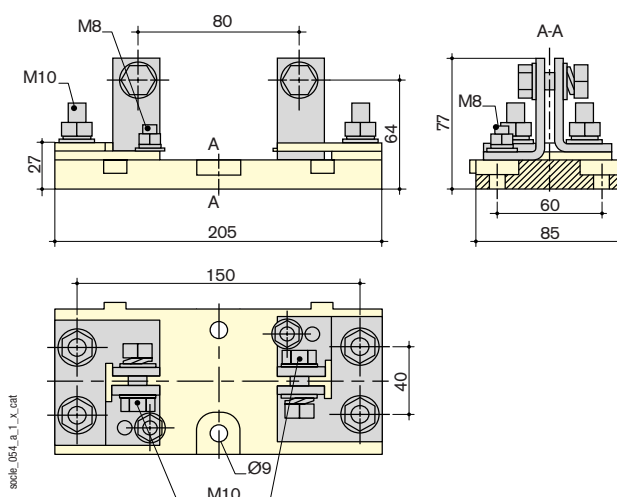
(1) For current > 1250 A, please consult us.

Dimensions

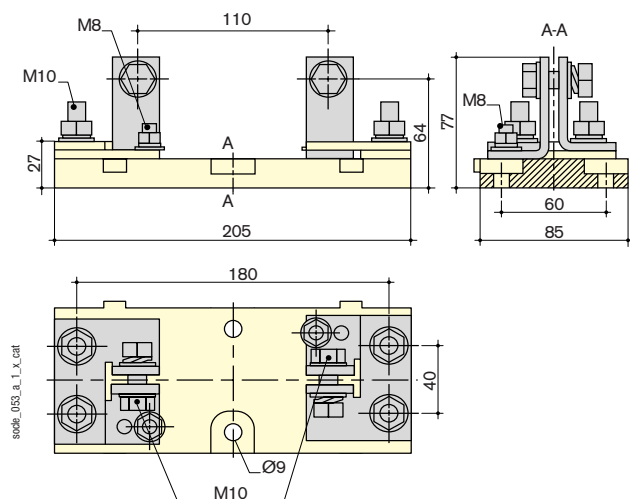
Bracket 00/80 - 200 A - 1 000 VAC - Ref.: 170H 1007



knife-edge /80 - 1 250 A - 1 000 VAC - Ref. : 170H 3004



knife-edge /110 - 1 250 A - 1 400 VAC - Ref. : 170H 3006





From 2 to 1250 A

➤ Function

SOCOMEK **industrial fuses** protect installations and people against overcurrents for any low voltage electrical circuit.

➤ General characteristics

Performance

- High breaking capacity
120 kA at 500 V, 80 kA at 690 V.
- High short-circuit limitation capacity.
- Simple, reliable discrimination.

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.

➤ Conformity to standards






- 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






➤ 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.

Distribution industrial fuselinks (type gG)






References

											
Rating (A)	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	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)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	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)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	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	

Distribution industrial fuselinks (type gG)

➤ References




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	Voltage (VAC)
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)

➤ References



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	Voltage (VAC)
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)	A3 ⁽²⁾ OS / OSD		A4 ⁽²⁾ TCP / CEO		A4 ⁽²⁾ TFP / DEO		B1 ⁽³⁾ TC / CD		
		Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	
100M125			550	6A3M 0125	415	6A4M 0125			550	6B1M 0125
100M160			550	6A3M 0160	415	6A4M 0160			550	6B1M 0160
100M200					415	6A4M 0200			550	6B1M 0200
200M250							415	6A4M 0250		
200M315							415	6A4M 0315		



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	Voltage (VAC)	
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.

BS88 industrial fuselinks - Accessories

Fuse holders for offset blade type fuselinks



Voltage: 550 VAC.

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	63ENSFWS	5	5F20 1063
63	F2	550	white	front/rear	63ENSFBSW	5	5F20 1163
63	F2	550	white	rear/rear	63ENSBSW	5	5F20 1263

Accessories

Rating (A)	Size	Output connection	Type	Pack qty	Reference
32	F1	busbar connecting systems	32BCSNN	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



Voltage: 660 VAC.
Output connection: front / front.

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

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

Distribution industrial fuselinks (type gG)

Characteristics

Fuse cut off current

	F1 NS / NSD	F2 ES / ESD	A1 NIT / NITD	A2 TIA / AAO	A3 TIS / BAO	A3 OS / OSD	A4 TCP / CEO
Rating (A)	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	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

	A4 TFP / DEO	B1 TBC / AD	B1 TBC / BD	B1 TC / CD	B2 TF / DD	C1 TKF / ED	B3 TKF / ED
Rating (A)	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	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

	B4 TMF / ED	C1 TM / EF	C2 TTM / FF	C3 TLM / GF	D1 TLU / GH	D1 TXU / GH
Rating (A)	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	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)

➤ Characteristics

Fuse cut off current

	F1 NS / NSD	F2	A1 NIT / NITD	A2 TIA / AAO	A3 TIS / BAO	A3 OS / OSD	A4 TCP / CEO
Rating (A)	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	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

	A4 TFP / DEO	B1 TC / CD	B2 TF / DD	B3	B4 TMF / ED	C1 TM / EF
Rating (A)	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	50 / 80 kA	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



From 0.16 to 1250 A

Function

SOCOMEc industrial fuses protect installations and people from overcurrents for any low voltage electrical circuit.

Advantages

Performance

- High breaking capacity - 120 kA at 400/500 V, 80 kA at 690 V.
- High short-circuit limitation capacity.
- Simple, reliable discrimination.

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.

Conformity to standards

- IEC 60269-1
- DIN EN 60269-1
- NF EN 60269-1
- IEC 60269-2
- NF EN 60269-2

Approvals and certifications⁽¹⁾

⁽¹⁾ Please consult us.

Available on request

- EDF application: T2 fuses, in accordance with standard HN 63 - S20.
- British Standard (BS) fuses for UK markets.
- UL and CSA fuses for North-American markets.
- T00 and T4 fuses for 690 VAC.

References

Cylindrical fuses (NF)

Fuses type gG (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

Fuses type aM (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

Knife-edge fuses (NH)

Type fuselinks gG



fselb_114_b_2_cat

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



fselb_110_a_2_cat

Rating (A)	2 without striker (in multiples of 3)		2 with striker (in multiples of 3)		3 without striker (offered individually)		3 with striker (offered individually)		4 without striker (offered individually)		4 with striker (offered individually)	
	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

aM type fuselinks



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 (offered individually)		3 with striker (offered individually)		4 without striker (offered individually)		4 with striker (offered individually)	
	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

➔ NFC and DIN industrial fuselinks - Accessories

Solid cylindrical link

fileb_123_a_1_cat



Use

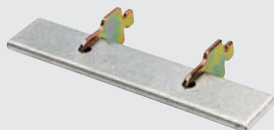
Solid link to be used in conjunction with the neutral pole of cylindrical fused disconnecting switches.

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

Solid links

fileb_124_a_1_cat



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

Fuse insertion/extraction tool

fileb_122_a_1_cat



Use

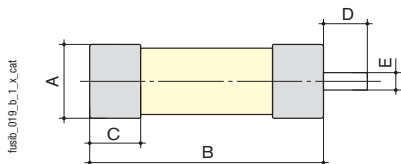
For inserting and extracting knife-edge fuses, sizes 000 to 4.

Type	Reference
Operating handle	6401 0011

➔ Dimensions

Cylindrical fuses (NF)

Without striker - with striker

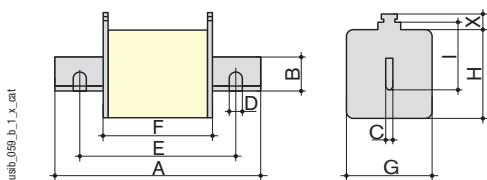


Standard dimensions (mm) as per IEC 60269-2-1

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)

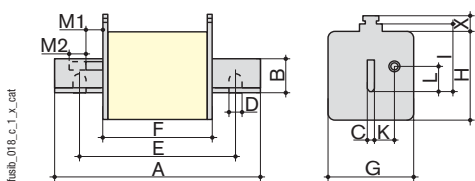
without striker



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

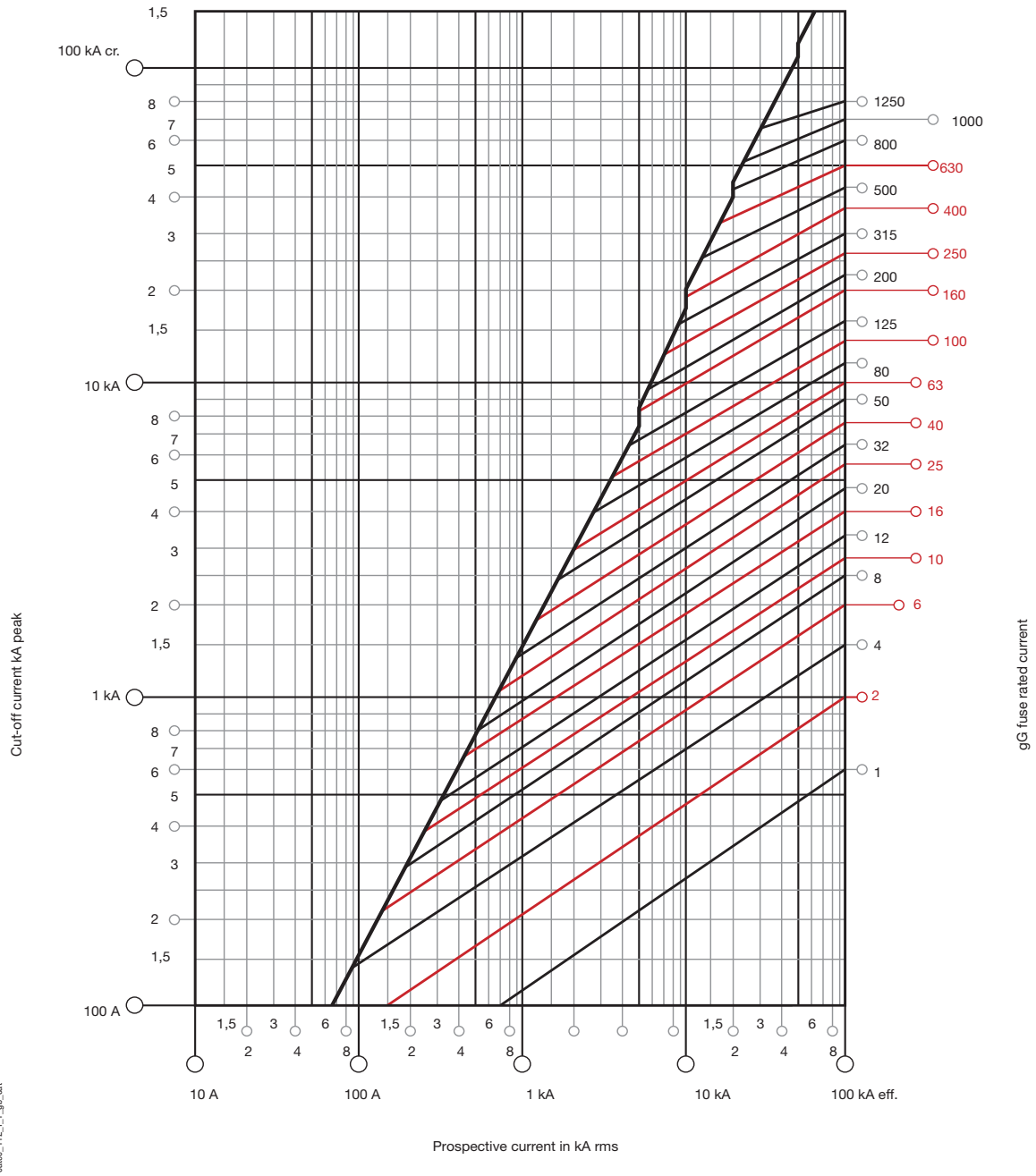


Standard dimensions (mm) as per IEC 60269-2-1

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

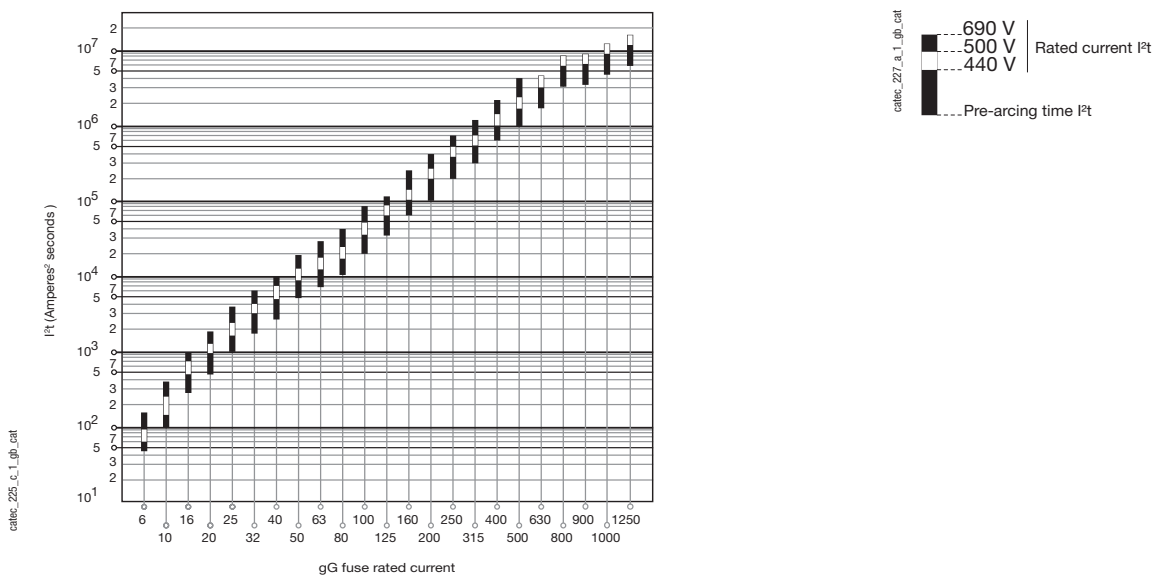
➤ NFC and DIN industrial fuselinks - Curves characteristic of NF and NH gG type fuses

Cut-off current diagram

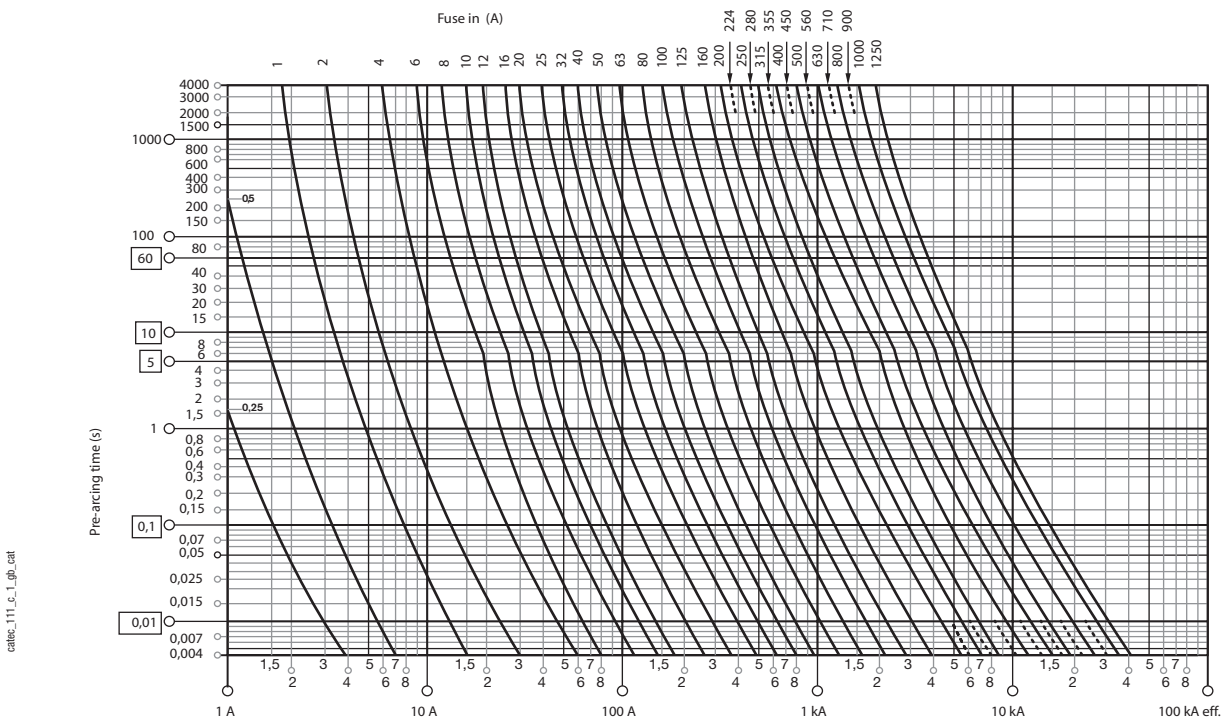


cathec_112_L1_gb_cat

Diagram of thermal constraint limitation



Time/current operation characteristics



➤ NFC and DIN industrial fuselinks - Curves characteristic of NF and NH aM type fuses

Cut-off current diagram

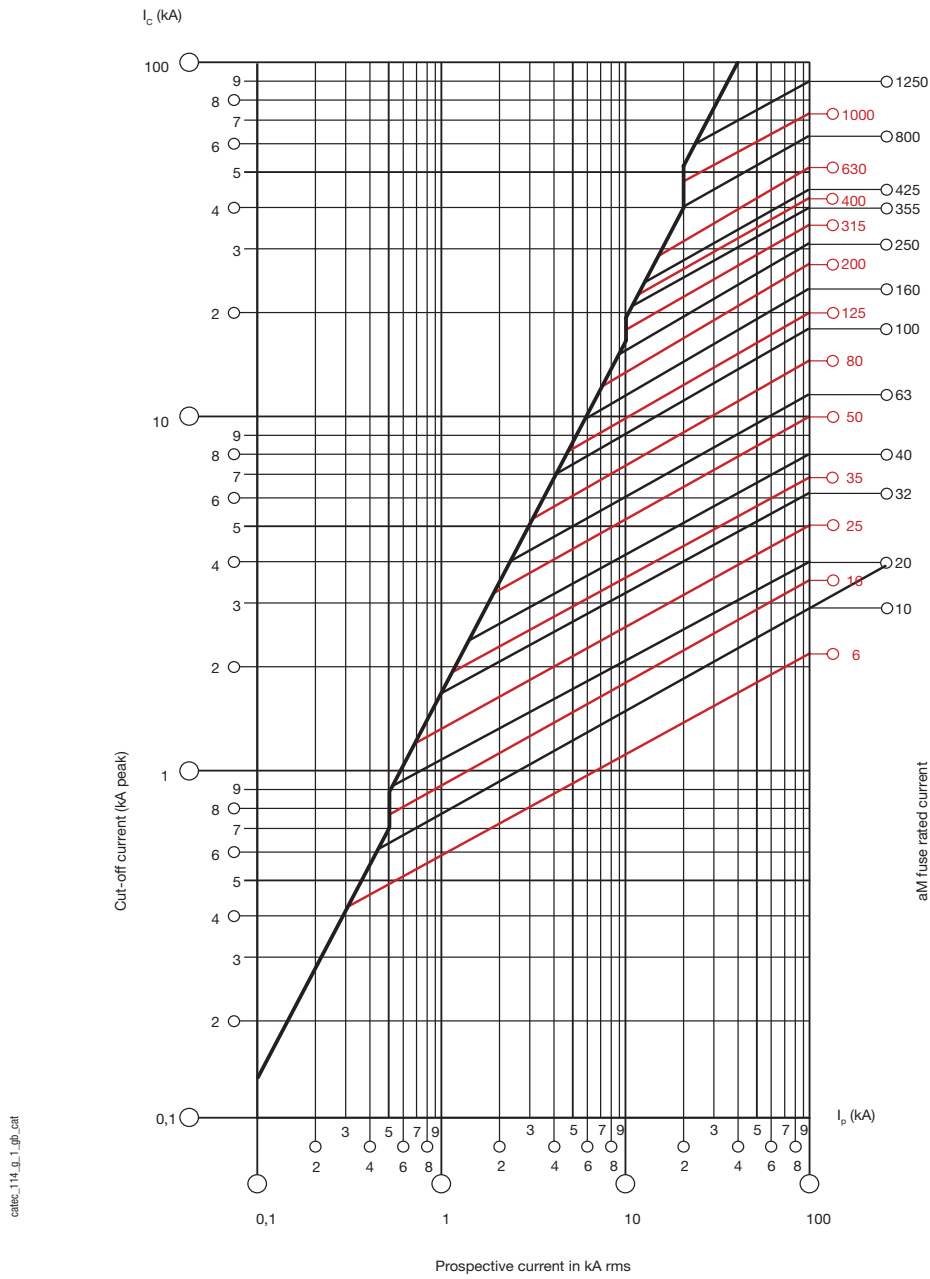
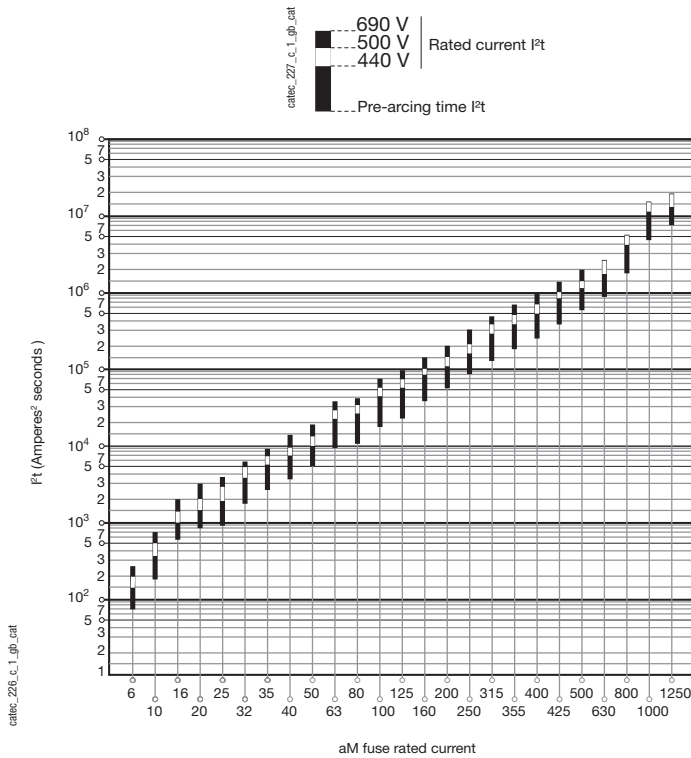


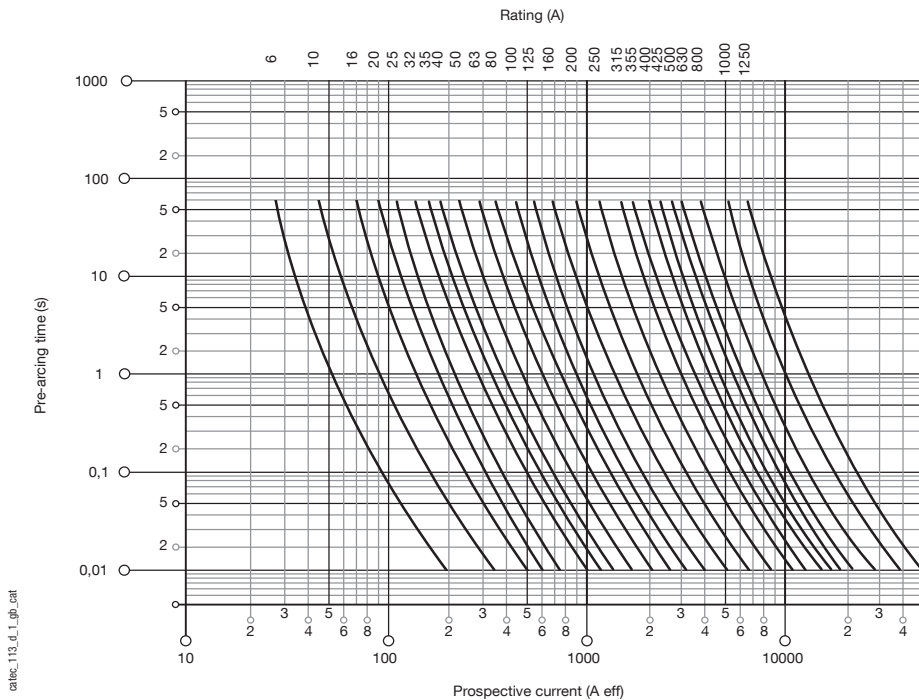
Diagram of thermal constraint limitation

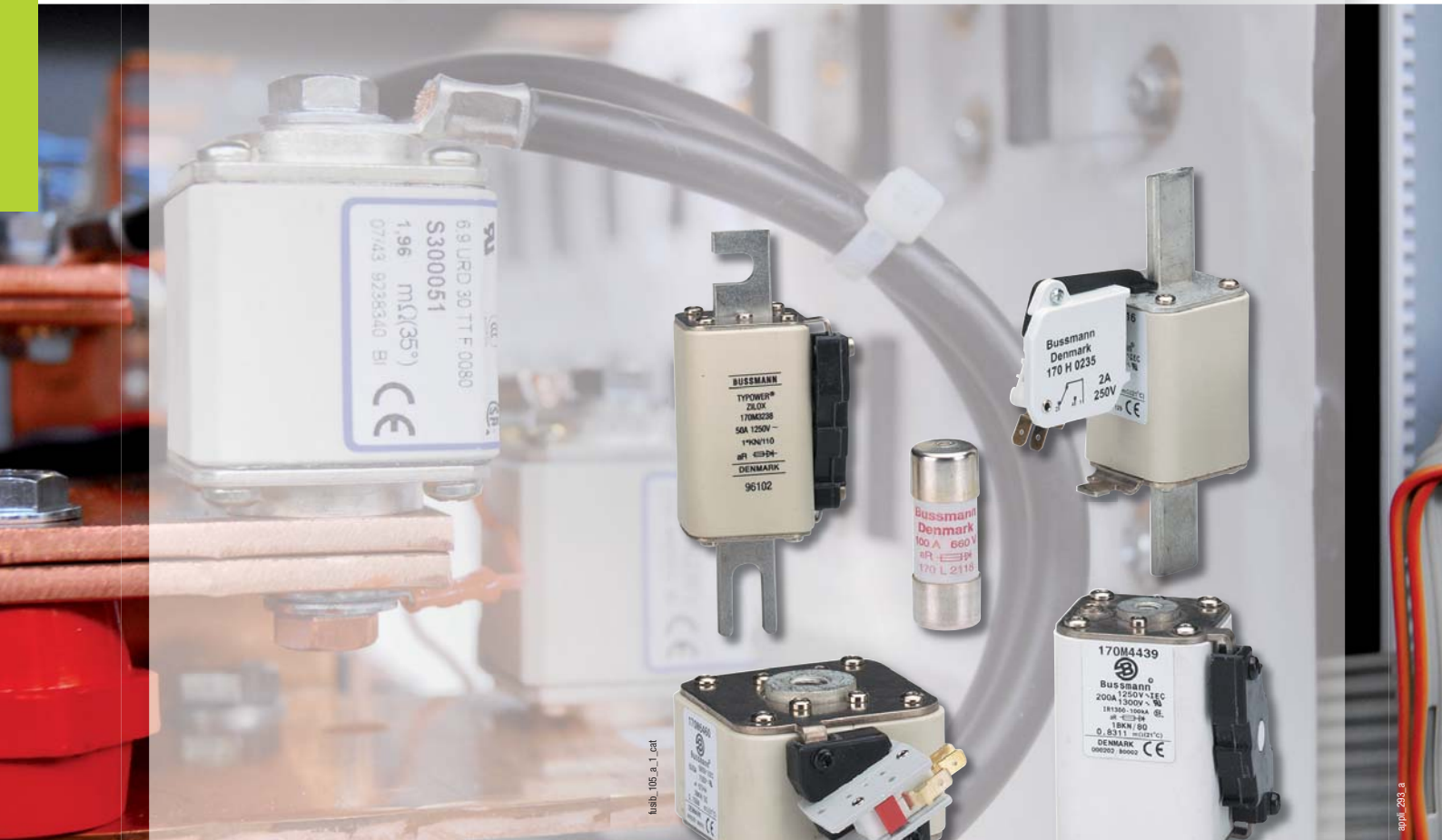


Power dissipation without striker (W)

Rated operational currents I_n (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





From 10 to 2000 A

⇒ Function

High speed fuses (UR)

protect power semi-conductors and DC circuits.

⇒ General characteristics

- Very high breaking capacity: 300 kA
- Very high thermal and mechanical stress limitation.
- High resistance to cyclic loads.
- An auxiliary contact can be adapted for fuse blown indication.(DDMM).
- Following tests performed in its laboratory, SOCOMEC recommends FUSERBLOC or bases designed for UR fuses.

⇒ Conformity to standards

- IEC 60269-1
- NF EN 60269-1
- IEC 60269-4
- NF EN 60269-4
- DIN EN 60269-4

⇒ Approvals and certifications⁽¹⁾

- UL "recognized"
- CSA

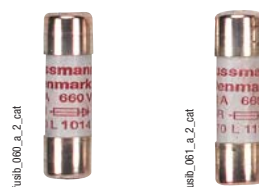
⁽¹⁾ Product reference on request.

⇒ Available on request

- gR DIN 43620 fuses - Sizes 00 - 3.

 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 142)	FUSERBLOC	FUSERBLOC
Fuse holder recommended (see page 218)	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 142)	FUSERBLOC	FUSERBLOC
Fuse holder recommended (see page 218)	RM 100	RMS 100

690 VAC UR fuses - Size 0000



**DIN 43653
Brackets⁽¹⁾⁽²⁾**

**F/65
Brackets⁽¹⁾⁽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	Reference	Reference
10	3.8	25.5	3.5	gR	170M 0158	170M 0258
16	8.5	56.5	4.5	gR	170M 0159	170M 0259
20	15	105	5	gR	170M 0160	170M 0260
25	23.5	160	8	gR	170M 0161	170M 0261
32	43.5	290	9	gR	170M 0162	170M 0262
40	77.5	515	11	gR	170M 0163	170M 0263
50	135	915	12	aR	170M 0164	170M 0264
63	260	1 750	13	aR	170M 0165	170M 0265
80	485	3 250	17	aR	170M 0166	170M 0266
100	860	5 700	18	aR	170M 0167	170M 0267

(1) UL / CSA.

(2) Without striker.

(3) With striker.

Description of accessories	Reference	Reference
Fuse base recommended	170 H 1007	(1)

(1) Direct mounting on busbar.

690 VAC UR fuses - Size 000



**T/80
Brackets⁽¹⁾**

**F/70
Brackets⁽¹⁾⁽²⁾**

**DIN 43620
Knife-edge⁽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	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	1 450	16	gR	170M 1415	170M 1515	170M 1565
80	380	2 550	19	aR	170M 1416	170M 1516	170M 1566
100	695	4 650	24	aR	170M 1417	170M 1517	170M 1567
125	1 200	8 500	28	aR	170M 1418	170M 1518	170M 1568
160	2 300	16 000	32	aR	170M 1419	170M 1519	170M 1569
200	4 200	28 000	37	aR	170M 1420	170M 1520	170M 1570
250	7 750	51 500	42	aR	170M 1421	170M 1521	170M 1571
315	12 000	80 500	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	170 H 0236		170 H 0236
Fuse base recommended	170 H 1007	(1)	6500 1010 ⁽²⁾
Fuse combination switch recommended (see page 142)			FUSERBLOC

(1) Direct mounting on busbar.

(2) Single-pole base 160 A Size 00 (see page 224).

690 VAC UR fuses - Size 00

T/80
BracketsBT/60
Threaded
bolted tag

I_n rms value (A)	Pre-arcing I^2t when cold (A ² s)	Operating I^2t at 660 V rms (A ² s)	Losses at I_n (W)	Protection	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	1 200	12	gR	170M 2662	170M 2762
80	310	2 100	15	gR	170M 2663	170M 2763
100	620	4 150	20	aR	170M 2664 ⁽¹⁾	170M 2764
125	1 000	6 950	25	aR	170M 2665 ⁽¹⁾	170M 2765
160	1 900	13 000	30	aR	170M 2666 ⁽¹⁾	170M 2766
200	3 400	23 000	35	aR	170M 2667 ⁽¹⁾	170M 2767
250	6 250	42 000	45	aR	170M 2668 ⁽¹⁾	170M 2768
315	10 000	68 500	55	aR	170M 2669 ⁽¹⁾	170M 2769
350	13 500	91 500	60	aR	170M 2670 ⁽¹⁾	170M 2770
400	18 000	125 000	70	aR	170M 2671 ⁽¹⁾	170M 2771

(1) UL.

Description of accessories	Reference	Reference
Fuse blown auxiliary contact	170 H 0235	170 H 0235
Fuse base recommended	170 H 1007	(1)

(1) Direct mounting on busbar.

690 VAC UR fuses - size 0

DIN 43620
Knife-edge

I_n rms value (A)	Pre-arcing I^2t when cold (A ² s)	Operating I^2t at 660 V rms (A ² s)	Losses at I_n (W)	Protection	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	1 250	18	aR	170M 7915
100	360	2 450	21	aR	170M 7916
125	550	3 700	26	aR	170M 7917
160	1 100	7 500	30	aR	170M 7918
200	2 200	15 000	35	aR	170M 7919

Description of accessories	Reference
Fuse blown auxiliary contact	170 H 0236
Fuse base recommended	6501 1010 ⁽¹⁾
Fuse combination switch recommended (see page 142)	FUSERBLOC

(1) Single-pole base 160 A Size 0 (see page 224).

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 690 V rms (A ² s)	Losses at I _n (W)	Protection	Reference	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	1 250	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	1 100	7 500	30	aR	170M 3114 ⁽¹⁾	170M 3264 ⁽¹⁾	170M 3364 ⁽¹⁾	170M 3464 ⁽¹⁾	
200	2 200	15 000	35	aR	170M 3115 ⁽¹⁾	170M 3265 ⁽¹⁾	170M 3365 ⁽¹⁾	170M 3465 ⁽¹⁾	
250	4 200	28 500	40	aR	170M 3116 ⁽¹⁾	170M 3266 ⁽¹⁾	170M 3366 ⁽¹⁾	170M 3466 ⁽¹⁾	
315	7 000	46 500	50	aR	170M 3117 ⁽¹⁾	170M 3267 ⁽¹⁾	170M 3367 ⁽¹⁾	170M 3467 ⁽¹⁾	
350	10 000	68 500	55	aR	170M 3118 ⁽¹⁾	170M 3268 ⁽¹⁾	170M 3368 ⁽¹⁾	170M 3468 ⁽¹⁾	
400	15 000	105 000	60	aR	170M 3119 ⁽¹⁾	170M 3269 ⁽¹⁾	170M 3369 ⁽¹⁾	170M 3469 ⁽¹⁾	
450	21 000	140 000	65	aR	170M 3120 ⁽¹⁾	170M 3270 ⁽¹⁾	170M 3370 ⁽¹⁾	170M 3470 ⁽¹⁾	
500	27 000	180 000	70	aR	170M 3121 ⁽¹⁾	170M 3271 ⁽¹⁾	170M 3371 ⁽¹⁾	170M 3471 ⁽¹⁾	
550	34 000	230 000	75	aR	170M 3122 ⁽¹⁾	170M 3272 ⁽¹⁾		170M 3472 ⁽¹⁾	
630	48 500	325 000	80	aR	170M 3123 ⁽¹⁾	170M 3273 ⁽¹⁾		170M 3473 ⁽¹⁾	

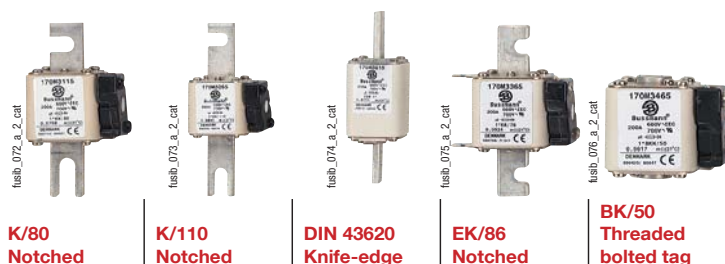
(1) UL / CSA.

Description of accessories	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069	170H 0069
Fuse base recommended	170 H 3004	170 H 3006	Consult us	(2)
Fuse combination switch recommended (see page 142)		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	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	21 000	55	aR	170M 4109 ⁽²⁾	170M 4259 ⁽²⁾		170M 4359 ⁽²⁾	170M 4459 ⁽²⁾
250	4 350	31 000	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.

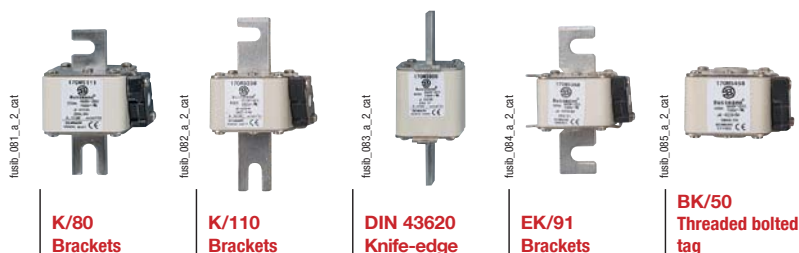
Description of accessories	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170 H 0069	170 H 0069	170 H 0236	170 H 0069	170 H 0069
Fuse base recommended	170 H 3004	170 H 3006	6501 1011 ⁽¹⁾	Consult us	(3)
Fuse combination switch recommended (see page 142)		FUSERBLOC	FUSERBLOC		

(1) Single-pole base 250 A Size 1 (see page 224).

(2) I_{max} = 250 A.

(3) Direct mounting on busbar.

690 VAC UR fuses - Size 2



I_n rms value (A)	Pre-arcing I^2t when cold (A ² s)	Operating I^2t at 660 V rms (A ² s)	Losses at I_n (W)	Protection	Référence	Référence	Référence	Référence	Référence
200	1200	8200	50	aR			170M 5804 ⁽¹⁾		
250	2450	16500	55	aR			170M 5805 ⁽¹⁾		
315	4950	33000	60	aR			170M 5806 ⁽¹⁾		
350	7000	46500	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⁾
1 000	180 000	1 250 000	115	aR	170M 5116 ⁽²⁾	170M 5266 ⁽²⁾		170M 5366 ⁽²⁾	170M 5466 ⁽²⁾
1 100	245 000	1 600 000	120	aR	170M 5117 ⁽²⁾	170M 5267 ⁽²⁾			170M 5467 ⁽²⁾
1 250	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

(2) UL / CSA.

Description of accessories	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170 H 0069	170 H 0069	170 H 0235	170 H 0069	170 H 0069
Fuse base recommended	170 H 3004	170 H 3006	6501 1012 ⁽¹⁾	Consult us	
Fuse combination switch recommended (see page 142)		FUSERBLOC	FUSERBLOC		FUSERBLOC

(1) Single-pole base 400 A Size 2 (see page 224).

(2) $I_{max} = 400$ A.

(3) Direct mounting on busbar.

690 VAC UR fuses - Size 3



I_n rms value (A)	Pre-arcing I^2t when cold (A ² s)	Operating I^2t at 660 V rms (A ² s)	Losses at I_n (W)	Protection	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
1 000	140 000	945 000	125	aR	170M 6114	170M 6264	170M 6814	170M 6364	170M 6464
1 100	190 000	1 300 000	130	aR	170M 6115	170M 6265		170M 6365	170M 6465
1 250	290 000	1 950 000	140	aR	170M 6116	170M 6266		170M 6366	170M 6466
1 400	370 000	2 450 000	155	aR	170M 6117	170M 6267		170M 6367	170M 6467
1 500	460 000	3 100 000	160	aR	170M 6118	170M 6268		170M 6368	170M 6468
1 600	580 000	3 900 000	160	aR	170M 6119	170M 6269			170M 6469
1 800	880 000	5 250 000	165	aR	170M 6120 ⁽³⁾	170M 6270 ⁽³⁾			170M 6470 ⁽³⁾
2 000	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	170 H 0069	170 H 0069	170 H 0236	170 H 0069	170 H 0069
Fuse base recommended	170 H 3004	170 H 3006	6501 1013 ⁽¹⁾	170A 0632 ⁽²⁾	
Fuse combination switch recommended (see page 142)		FUSERBLOC	FUSERBLOC		FUSERBLOC

(1) Single-pole base 630 A Size 3 (see page 224).

(2) $I_{max} = 710$ A.

(3) Direct mounting on busbar.

1250 VAC UR fuses - Size 1*



**K/110
Bracketed⁽¹⁾**



**BK/75
Threaded bolted
tag⁽¹⁾**

**BK/80
Threaded bolted
tag⁽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	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	170 H 0069	170 H 0069	170 H 0069
Fuse base recommended	170 H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC UR fuses - Size 1



**K/110
Bracketed⁽¹⁾**



**BK/75
Threaded bolted
tag⁽¹⁾**



**BK/80
Threaded bolted
tag⁽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	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	170 H 0069	170 H 0069	170 H 0069
Fuse base recommended	170 H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC UR fuses - Size 2

K/110
Brackets⁽¹⁾BK/75
Threaded bolted
tag⁽¹⁾BK/80
Threaded bolted
tag⁽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	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 ⁽²⁾
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	170 H 0069	170 H 0069	170 H 0069
Fuse base recommended	170 H 3006	⁽¹⁾	⁽¹⁾

(1) Direct mounting on busbar.

1250 VAC UR fuses - Size 3

K/110
Brackets⁽¹⁾BK/75
Threaded bolted
tag⁽¹⁾BK/80
Threaded bolted
tag⁽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	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 ⁽²⁾
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	170 H 0069	170 H 0069	170 H 0069
Fuse base recommended	170 H 3006	⁽¹⁾	⁽¹⁾

(1) Direct mounting on busbar.

➔ High speed fuses (UR) - Accessories

Fuse blown auxiliary contact



Connection
6.3 x 0.8 mm fast-on connection.

Electronics principle
A NO/NC auxiliary contacts detects that the fuse has blown.

References: see pages 248 to 253.

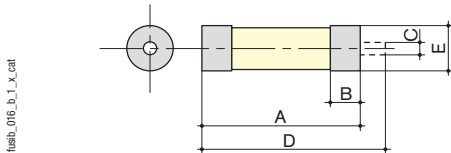
Electrical characteristics

Voltage (VAC)	Nominal current (A)
250	2

➔ Dimensions

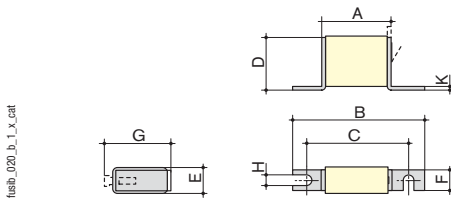
690 VAC UR fuses

14 x 51 and 22 x 58



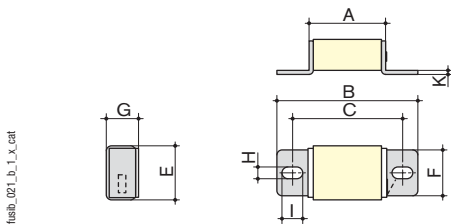
Size	A	B	C	D	E
14 x 51	51	11	4	59	∅ 14.3
22 x 58	58	15	4	66	∅ 22.2

DIN 43653 and T/80



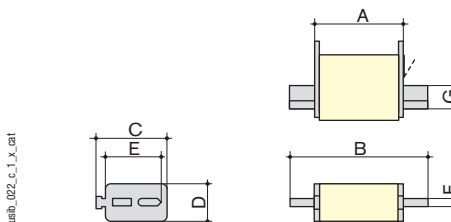
Size	A	B	C	D	E	F	G	H	K
0000	54	100	78	19	18	17		8	1.5
000	54	100	78	40	21	20	51	8	2
00	54	100	78	51	30	28	67	10	2

F/65 and F/70



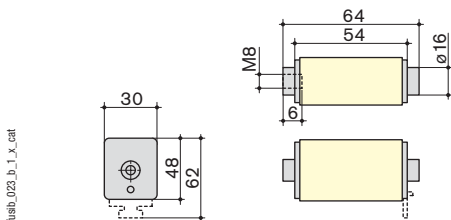
Size	A	B	C	E	F	G	H	I	K
0000	54	78	65	18	13	19	7	10	1.5
00	54	95	70	36	32	23	9	10	2

DIN 43620



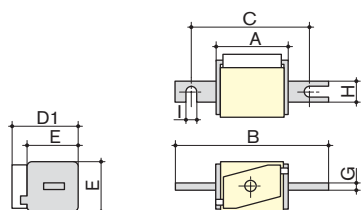
Size	A	B	C	D	E	F	G
000	54	79	48	21	35	6	15
0	68	125	60	35	35	6	15
1*	71	135	58	45	40	6	20
2	72	150	71	55	48	6	26
3	72	150	88	76	60	6	33

BT/60



K/80 and K/110

fush_024_b_1_x_cat



K/80

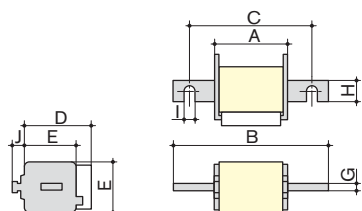
Size	A	B	C	D1	E	G	H	I
1*	50	104	78	59	45	6	22	11
1	50	108	78	69	53	6	25	11
2	50	108	78	77	61	6	25	11
3	51	109	78	92	76	6	30	11

K/110

Size	A	B	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

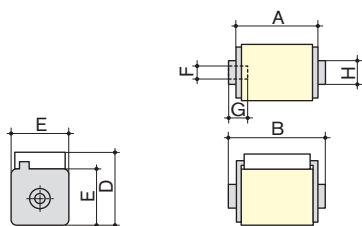
fush_029_b_1_x_cat



Size	A	B	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

fush_030_b_1_x_cat



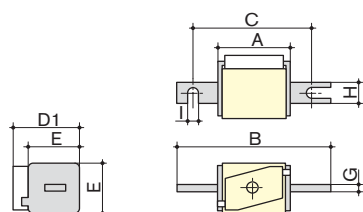
Size	A	B	D	E	F	G	H
1*	50	51	59	45	M8	5	Ø 17
1	50	51	59	53	M8	8	Ø 20
2	50	51 ⁽¹⁾	77	61	M10	10	Ø 24
3	51	53 ⁽²⁾	92	76	M12	10	Ø 30

(1) B = 65 mm for ratings 1 100 to 1 250 A.
 (2) B = 65 mm for ratings 1 600 to 2 000 A.

1250 VAC UR fuses

K/110

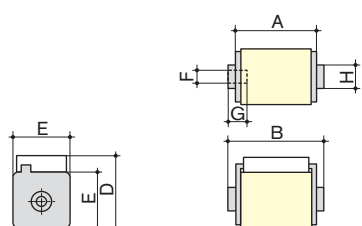
fush_103_a_1_x_cat



Size	A	B	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

fush_104_a_1_x_cat



BK/75

Size	A	B	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	B	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



PV fuses 10 x 38 gR 1000 V d.c. for photovoltaic applications

↻ **Function**

SOCOME PV fuses protect the installation against the inverse over-currents which could occur in the photovoltaic installation.

↻ **Advantages**

Performance

- High breaking capacity at 1000 V d.c.
- The working range adjusted for small over-currents specific to PV installations.
- Simple, reliable discrimination.

Reliability

- Fuses are simple and totally sealed products which guarantee a long-term protection without any maintenance.

Safety

- The energy released during a short-circuit is contained within the sealed fuse cartridge.

↻ **Conformity to standards**

- IEC 60269-1
- IEC 60269-2
- IEC 60269-6
- NF EN 60269-1
- VDE 0636-10

↻ **Approvals and certifications⁽¹⁾**

(1) Please consult us.



manne_4602_a

⇒ What you need to know

Used Characteristics

- I_{SC} : short circuit current of the PV string
- $I_{SC\ MAX}$: short circuit current of the PV 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 PV strings in parallel connection
- U_e : 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). The protection is obligatory if $N_c \leq 1 + (I_{RM} / I_{SC})$

How to protect

The overload protection is to be applied at each of the two polarities, regardless of whether the d.c. installation is earthed or not.

⇒ How to choose the fuse protection

Voltage

$$U_e > U_{OC\ MAX}$$

In the absence of complementary information use $U_{OC\ MAX} = 1.4 U_{OC}$.

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

$$I_n < I_{RM}$$

➤ References

PV 1000 V d.c. fuses - Size 10 x 38 mm

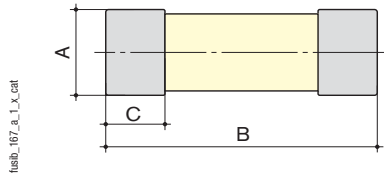


PV Fuses
(Pack of 10)

Rated current I (A)	Rated voltage U (V d.c.)	Dissipated power at I _n (W)	Dissipated power at 0.8 I _n (W)	Breaking capacity	I ² t prearc (A ² s)	I ² t at 1000 V d.c.	To be ordered	Reference
1	1000	0.76	0.43	30 kA	0.35	1.3	10	60PV 0001
2	1000	1.54	0.84	30 kA	1.78	6.5	10	60PV 0002
3	1000	1.35	0.74	30 kA	9	33	10	60PV 0003
4	1000	1.84	1.08	30 kA	3	11	10	60PV 0004
6	1000	2.50	1.40	30 kA	8.5	32	10	60PV 0006
8	1000	2.57	1.47	30 kA	25	93	10	60PV 0008
10	1000	2.58	1.51	30 kA	11	52	10	60PV 0010
12	1000	2.61	1.42	30 kA	25	116	10	60PV 0012
15	1000	2.44	1.08	30 kA	25	116	10	60PV 0015
16	1000	2.70	1.56	30 kA	33	152	10	60PV 0016
20	1000	2.99	1.75	30 kA	85	390	10	60PV 0020

➤ Standard dimensions (mm) as per IEC 60269-2

10 x 38 mm gPV
without striker



Size	Striker	A	B	C
10 x 38	Without	10.3	38	10.5

Ambient temperature derating factor

$$I_{nf} = I_{scgen} / K_t$$

I_{nf} - PV fuse rated current.

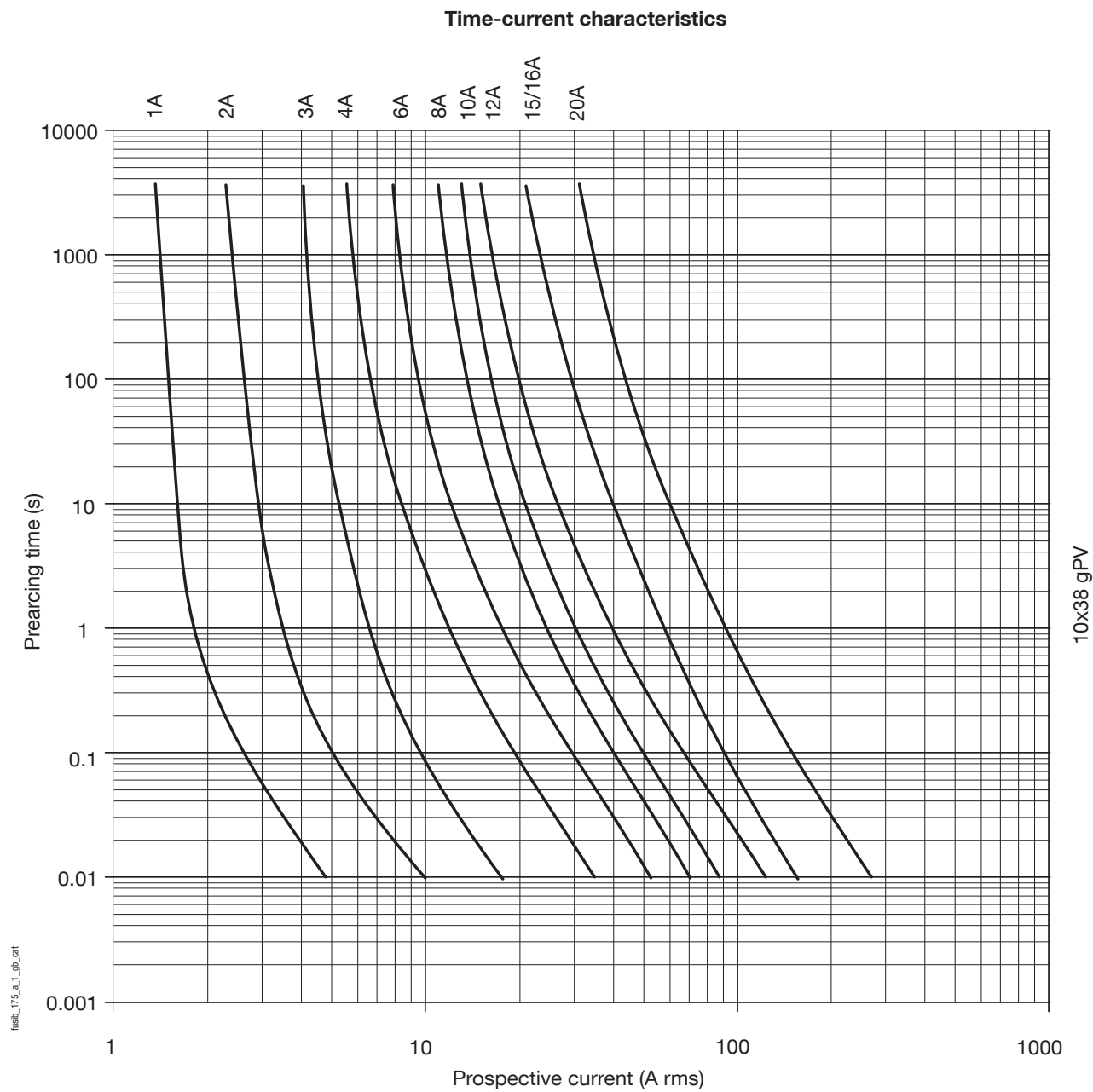
I_{scgen} - PV generator short circuit current under STC.

K_t - derating factor.

Max ambient temperature (°C)	K_t derating factor
40	0.92
45	0.90
50	0.87
55	0.85
60	0.82
65	0.79
70	0.76
75	0.72
80	0.69

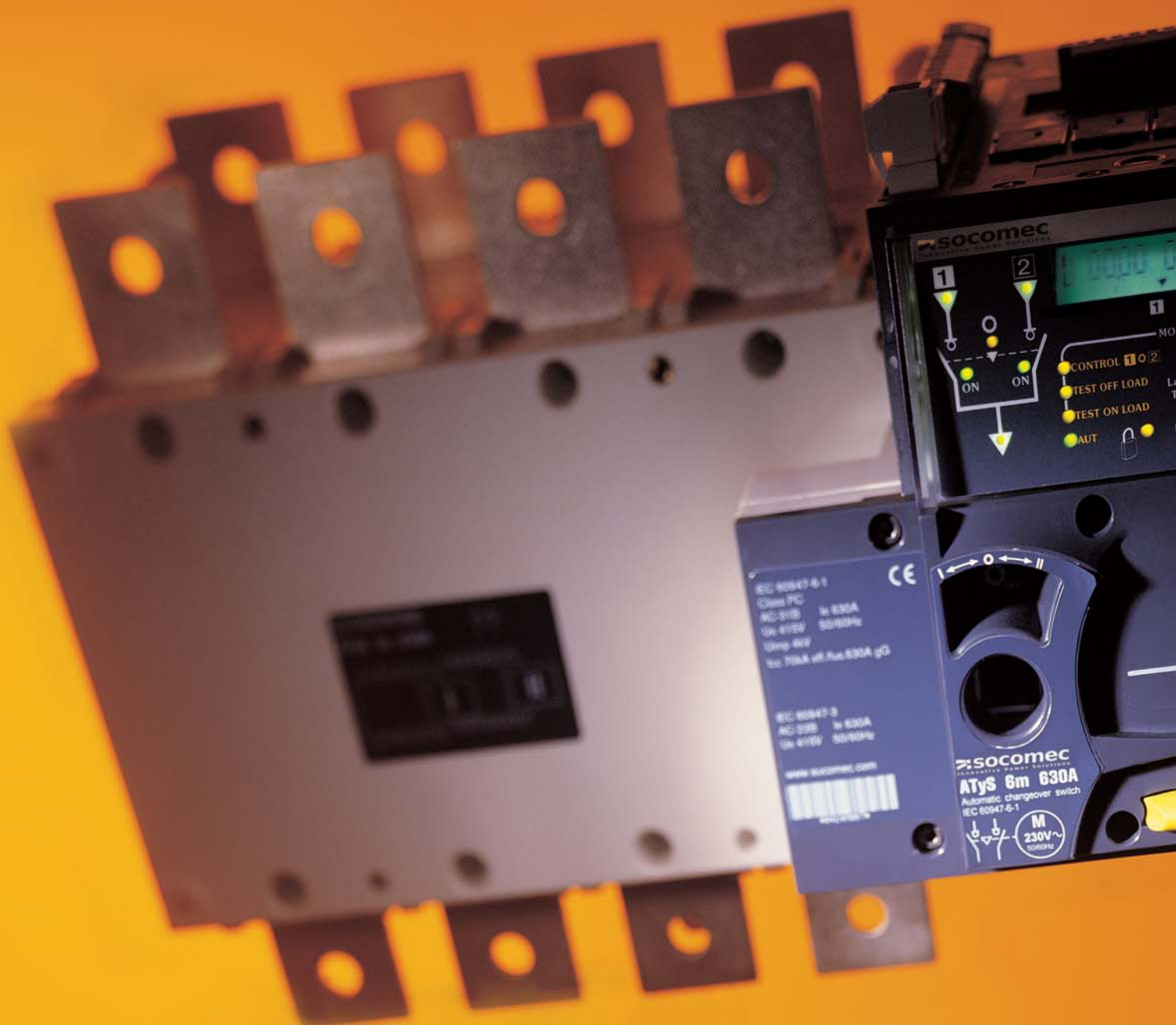
Time/current operation characteristics for PV fuses

PV 10 x 38 mm



fusib_175_a_1_gpv_cat

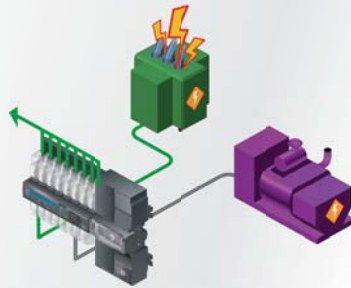
Changeover switches



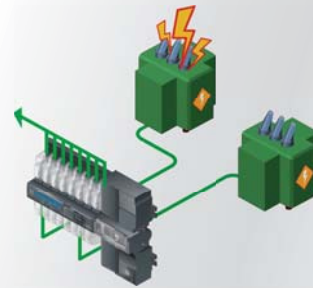
Switches, controller and monitoring software

Providing an unrivalled benchmark in source switching, SOCOMEC is continuously innovating to ensure ever more efficient ways to guarantee the continuity of distribution and, therefore, the rate of availability of your energy.

From the 'small' COMO C manual changeover switch to the ATyS 6 automatic changeover switch, the range of switches covers, as standard, a large proportion of needs.



ATyS M changeover switch for Normal/Backup use with a generating set



ATyS M changeover switch for Normal/Backup use with two networks

All these switches are also available enclosed.

Discover all of our products in our selection guide on the next pages.

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, etc). Please do not hesitate to contact us for more details.

Trust the experts with all your applications - even the most critical!

The essential

Manual changeover

63 A ▶ 125 A



SIRCO VM1
p. 270

125 A ▶ 3200 A



SIRCOVER
p. 274

Motorised changeover / Automatic Transfer Switches (ATS)

40 A ▶ 160 A



ATyS M 6
p. 302

125 A ▶ 3200 A



ATyS 3
p. 310

Enclosed changeover switches

63 A ▶ 3200 A



p. 496

New

40 A ▶ 160 A



ATyS M mono
p. 302

40 A ▶ 160 A



Assembled SIRCO M
changeover p. 268

➔ Discover our complete selection guide (see next page)

➔ Need a suggestion? We will help you find the best solution for your application.

➔ A special requirement? SOCOMEC makes specific products. Please feel free to consult us.

Choosing the right changeover switch



SOCOMEK changeover switches can be used not just for Normal/Backup operation, but also for managing the switching of loads or the connection of equipment to earth.

In addition to the rating and the related electrical breaking specifications, the selection criteria are:

- type of **control**,
- **visible breaking**,
- **installation constraints** inside the enclosure.

Please do not hesitate to contact us for suggestions or any specific requirement: We adapt our products to your specific requirements.

➤ Products for **all switching applications** from 25 A to 3200 A

- **Applications with 2 interlocked switches**

Source transfer: manual or automatic switching (ATS) between two sources, either transformer or generating set (*fig. 1*).



Fig. 1



Fig. 2

Earthing of equipment such as motors or electrical lines reserved for signalling, whilst isolating them from their power supply in a fail-safe way (*fig. 2*).



Fig. 3



Fig. 4

Inversion of loads: switching of the power supply from one load to another load in order to ensure that they both age at an equal rate (*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*).

- **Application with 3 interlocked switches**

UPS 'BY-PASS': isolation then bypassing of a secure UPS type power supply using 3 interlocked breaker switches assembled very close together (*fig. 5*).

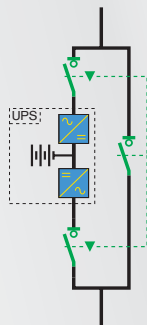


Fig. 5

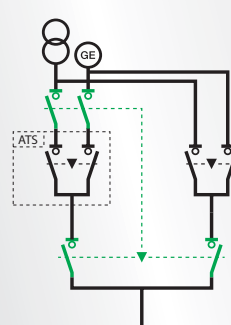


Fig. 6

- **Application with 4 interlocked switches**

Solution 'ATS BY-PASS': upstream and downstream disconnection of an ATS function (automatic switching) while guaranteeing the continuity of the distribution via a 'BY-PASS' branch. Carried out using a single operating handle, this operation allows the ATS function to be separated for maintenance, in complete safety.

Linked to a switching function, the bypass branch means it is still possible to select the sources in the event of a failure of one of them (*fig. 6*).

Selection guide

Manual Changeover

Manually controlled multipolar switches



BY-PASS switches for better maintenance of the installation

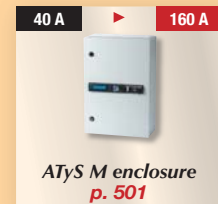
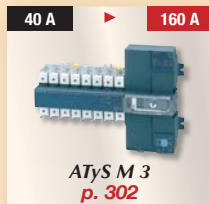


Need an enclosed switch?

See our complete range in the section on "Built-in products"

Motorised Changeover

Modular frame



Back to back frame



N.B.: Automatic changeover switches designed especially in accordance with IEC 60947-6 will exclusively comply with the switching of sources on security installations as defined by NFC 15100 § 5-56 standard (emergency lighting, smoke control, high-rise buildings, etc.)

UL range



Universal ATS controller

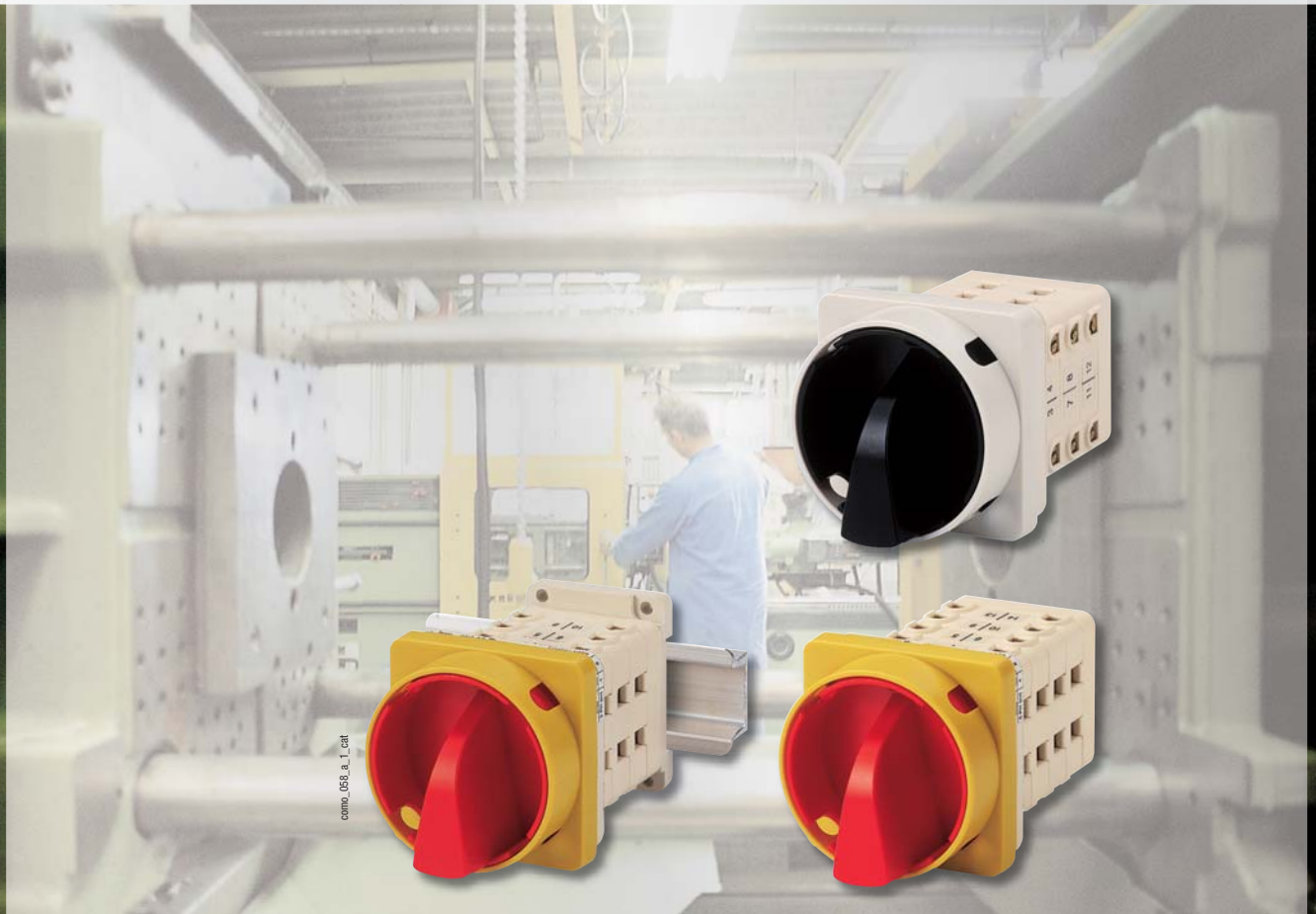
Automatic control of different switching technologies: circuit breakers, contactors, switches.



Monitoring software

ATyS VISION displays the parameters for the ATyS changeover switches and allows them to be remotely configured.





Machine Changeover 25 to 100A

➤ Function

COMO C are manual multipolar changeover switches. They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

➤ General characteristics

- Fully visualised breaking.
- Fully integrated bridging bars.

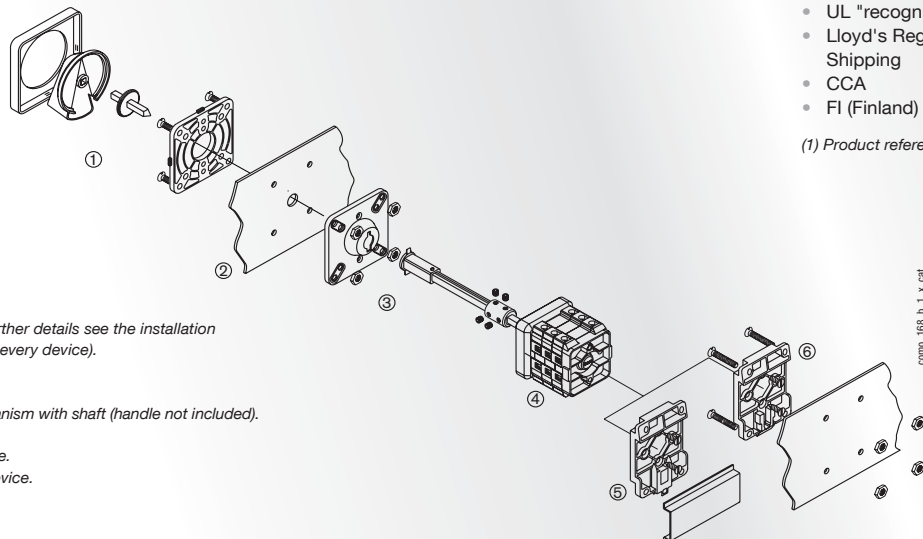
➤ Conformity to standards

- IEC 60947-3
- IS 14947-3
- EN 60947-3
- VDE 0660-107 (1992)

➤ Approvals and certifications⁽¹⁾

- BBJ Poland (Attestation of verification)
- UL "recognized"
- Lloyd's Register of Shipping
- CCA
- FI (Finland)

(1) Product reference on request.



Functional diagram (for further details see the installation instructions supplied with every device).

1. IP54 handle.
2. Enclosure door.
3. Door interlocking mechanism with shaft (handle not included).
4. Switch body.
5. DIN rail mounting device.
6. Back plate mounting device.

References



como_106_a_1_cat

Rating (A)	No. of poles	Switching type	Switch body	Padlockable handle IP54	IP54 non-padlockable white handle	Shaft and escutcheon for external handle	Mounting kit	IP65 gasket
25 A	3 P	I - II	4220 3002 ⁽¹⁾	Black/Grey 4259 1042	I - II 4259 2022	200 mm 4259 5042	DIN rail mounted 4259 9001	4299 5001 ⁽²⁾
	4 P	I - II	4220 4002 ⁽¹⁾					
	3 P	I - 0 - II	4230 3002 ⁽¹⁾					
	4 P	I - 0 - II	4230 4002 ⁽¹⁾					
	3 P	I - I+II - II	4240 3002 ⁽¹⁾					
	4 P	I - I+II - II	4240 4002 ⁽¹⁾					
	3 + 6 P	BY-PASS I - 0 - II	4250 3002					
	4 + 8 P	BY-PASS I - 0 - II	4250 4002					
40 A	3 P	I - II	4220 3004 ⁽¹⁾	Red/Yellow 4259 1043	I - II 4259 2042	200 mm 4259 5042	Board mounted 4259 9040	4299 5001 ⁽²⁾
	4 P	I - II	4220 4004 ⁽¹⁾					
	3 P	I - 0 - II	4230 3004 ⁽¹⁾					
	4 P	I - 0 - II	4230 4004 ⁽¹⁾					
	3 P	I - I+II - II	4240 3004 ⁽¹⁾					
	4 P	I - I+II - II	4240 4004 ⁽¹⁾					
	3 + 6 P	BY-PASS I - 0 - II	4250 3004					
	4 + 8 P	BY-PASS I - 0 - II	4250 4004					
63 A	3 P	I - II	4220 3006 ⁽¹⁾	Black/Grey 4259 1082	I - II 4259 2082	200 mm 4259 5082	DIN rail mounted 4259 9001	4299 5002 ⁽²⁾
	4 P	I - II	4220 4006 ⁽¹⁾					
	3 P	I - 0 - II	4230 3006 ⁽¹⁾					
	4 P	I - 0 - II	4230 4006 ⁽¹⁾					
	3 P	I - I+II - II	4240 3006 ⁽¹⁾					
	4 P	I - I+II - II	4240 4006 ⁽¹⁾					
	3 + 6 P	BY-PASS I - 0 - II	4250 3006					
	4 + 8 P	BY-PASS I - 0 - II	4250 4006					
80 A	3 P	I - II	4220 3008 ⁽¹⁾	Red/Yellow 4259 1083	I - 0 - II and BY-PASS 4259 3082	200 mm 4259 5082	Board mounted 4259 9080	4299 5002 ⁽²⁾
	4 P	I - II	4220 4008 ⁽¹⁾					
	3 P	I - 0 - II	4230 3008 ⁽¹⁾					
	4 P	I - 0 - II	4230 4008 ⁽¹⁾					
	3 P	I - I+II - II	4240 3008 ⁽¹⁾					
	4 P	I - I+II - II	4240 4008 ⁽¹⁾					
	3 + 6 P	BY-PASS I - 0 - II	4250 3008					
	4 + 8 P	BY-PASS I - 0 - II	4250 4008					
100 A	3 P	I - II	4220 3010	Black/Grey 4259 1082	I - II 4259 2082	200 mm 4259 5082	DIN rail mounted 4259 9001	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	BY-PASS I - 0 - II	4250 3010					
	4 + 8 P	BY-PASS I - 0 - II	4250 4010					

(1) Available enclosed (see pages 496 "Enclosed changeover switches").
(2) IP65: Degree of protection according to standard IEC 60529.

➤ COMO C - Accessories

IP54 handle



Padlockable handle

Rating (A)	Handle color	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 BY-PASS	4259 3022
25	I - I+II - II	4259 4022
40	I - II	4259 2042
40	I - 0 - II and BY-PASS	4259 3042
40	I - I+II - II	4259 4042
63 ... 100	I - II	4259 2082
63 ... 100	I - 0 - II and BY-PASS	4259 3082
63 ... 100	I - I+II - II	4259 4082

Shaft and escutcheon for external handle



Use

Standard lengths: 200 mm.

Other lengths: 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

	25 A	40 A	63 A	80 A	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_o (A)		A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
Rated voltage	Load duty category					
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 AC ⁽¹⁾⁽²⁾	9/9	15/15	22/22	30/30	32/32

Reactive power (kvar)					
At 400 VAC ⁽²⁾	14	18	28	37	

Fuse protected short-circuit withstand (kA rms prospective)					
Prospective short-circuit current (kA rms) ⁽³⁾	6	6	8	8	8
Associated fuse rating (A) ⁽³⁾	25	40	63	80	100

Overload capacity					
Short-circuit making capacity (kA peak) ⁽³⁾	2	2,6	5,8	5,8	6,5

Connection					
Minimum Cu cable section (mm ²)	2,5	6	10	16	16
Maximum Cu cable section (mm ²)	6	16	50	50	50
Tightening torque min (Nm)	2	2	4	4	4

Mechanical characteristics					
Endurance (number of operating cycles) ⁽⁴⁾	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.

(4) Increased endurance: please consult us.

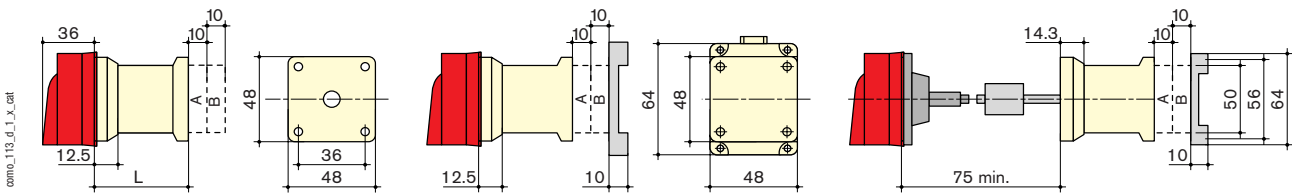
➔ Dimensions

COMO C 25 A

Direct operation front mounting

Direct operation rear mounting

Door interlocked external operation rear mounting



A. 1st auxiliary contact
B. 2nd auxiliary contact

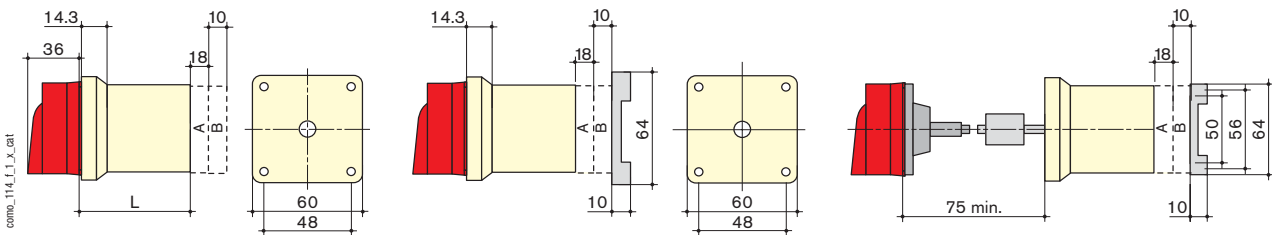
Switching type	L 3p.	L 4p.
I - II	50.5	60.5
I - 0 - II	50.5	60.5
I - I+II - II	50.5	60.5
BY-PASS I - 0 - II	70.5	80.5

COMO C 40 A

Direct operation front mounting

Direct operation rear mounting

Door interlocked external operation rear mounting



A. 1st auxiliary contact
B. 2nd auxiliary contact

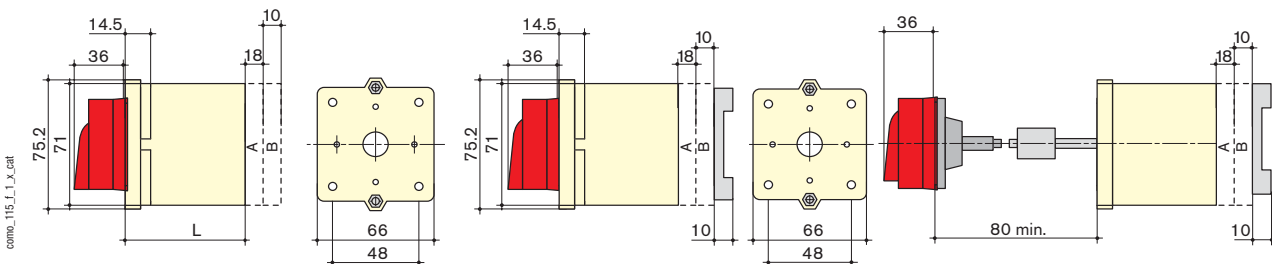
Switching type	L 3p.	L 4p.
I - II	60.3	72.3
I - 0 - II	60.3	72.3
I - I+II - II	60.3	72.3
BY-PASS I - 0 - II	84.3	96.3

COMO C 63 to 100 A

Direct operation front mounting

Direct operation rear mounting

Door interlocked external operation rear mounting



A. 1st auxiliary contact
B. 2nd auxiliary contact

Switching type	L 3p.	L 4p.
I - II	82	99.5
I - 0 - II	82	99.5
I - I+II - II	82	99.5
BY-PASS I - 0 - II	117	134.5

Changeover Switches

Manual Changeover Switches

SIRCO M



⇒ What you need to know

- The changeover switches SIRCO M can be equipped with 2 operating handles:
 - front **direct** handle
 - front **external** handle.
- Changeover SIRCO M is available in 3 and 4 poles, from 25 to 100 A, with pre-break or signalisation auxiliary contacts (accessories).

Changeover switches from 25 to 100 A

⇒ Function

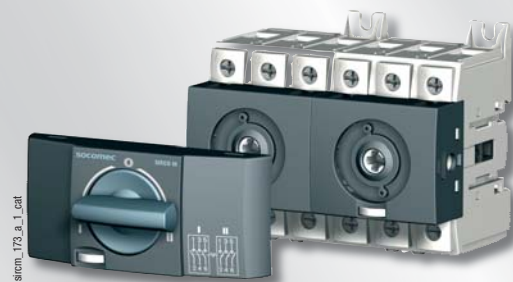
SIRCO M Changeover Switches are 3 or 4 pole manually operated modular changeover switches. They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

⇒ General characteristics

- Fully visualised breaking.
- DIN rail mounting, panel or modular panel with 45 mm front cut out.
- IP20 accessories.
- Overlapping Changeover I-I+II-II available, see page 18.

⇒ Conformity to standards

- IEC 60947-3
- EN 60947-3



➔ References

Rating (A)	No. of poles	Switch body	Direct handle	External front handle	Shaft extensions for external handle	Auxiliary contacts	Terminal shrouds	Bridging kit						
25 A	3 P	2230 3002	Blue 2239 5012	S00-type I - 0 - II Black IP65 1473 1113 ⁽¹⁾	150 mm 1407 0515	M1 type 1 contact NO + NC 2299 0001	1 P	3 P						
	4 P	2230 4002					2294 1005 ⁽²⁾	2299 3005						
40 A	3 P	2230 3004					S00-type I - 0 - II Black IP65 1473 1113 ⁽¹⁾	200 mm 1407 0520	M1 type 1 contact NO + NC 2299 0001	3 P	4 P			
	4 P	2230 4004								2294 3005 ⁽²⁾	2299 4005			
63 A	3 P	2230 3006					S00-type I - 0 - II Black IP65 1471 1113 ⁽¹⁾	320 mm 1407 0532	M1 type 1 contact 2 NC 2299 0011	1 P	3 P			
	4 P	2230 4006								2294 1009 ⁽²⁾	2299 3009			
80 A	3 P	2230 3008								S00-type I - 0 - II Black IP65 1471 1113 ⁽¹⁾	320 mm 1407 0532	M1 type 1 contact 2 NC 2299 0011	3 P	4 P
	4 P	2230 4008											2294 3009 ⁽²⁾	2299 4009
100 A	3 P	2230 3009								S00-type I - 0 - II Black IP65 1471 1113 ⁽¹⁾	320 mm 1407 0532	M1 type 1 contact 2 NC 2299 0011	3 P	4 P
	4 P	2230 4009											2294 3009 ⁽²⁾	2299 4009

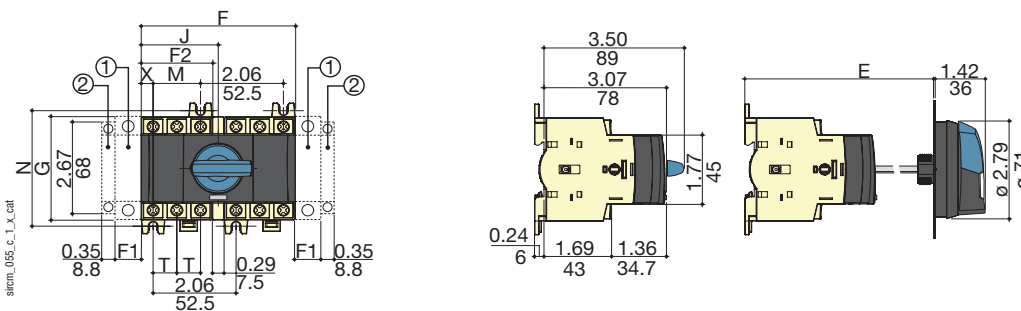
(1) Defeatable handle.
(2) Set of top and bottom.

➔ Dimensions

SIRCO M 25 to 100 A

Direct front operation 3/4-pole changeover switches

External front operation for 3 and 4-pole changeover switches

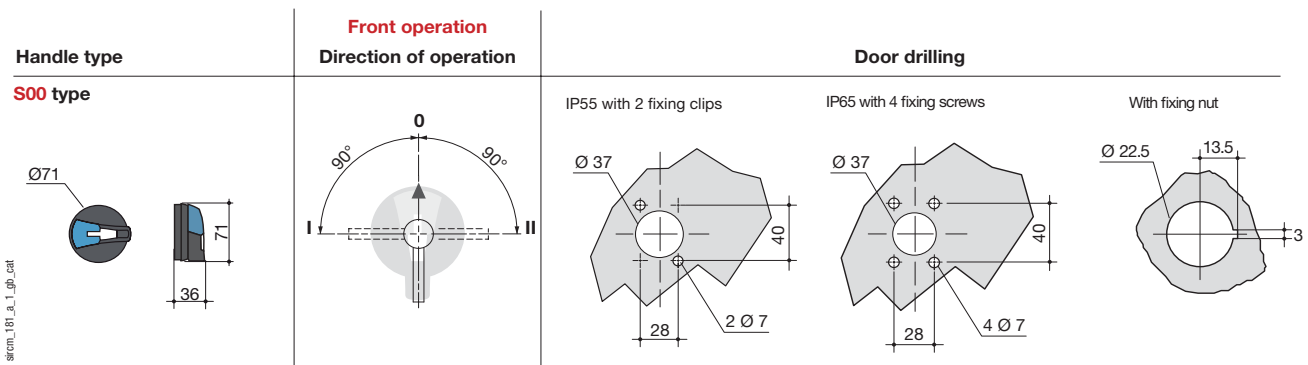


1. Location for: 1 switched fourth pole module (1 on each side max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact (See accessories, page 21).
2. Position for 1 auxiliary contact only.

Note: max 4 additional blocks.

Rating (A)	Overall dimensions		Switch body					Switch mounting		Connection	
	E min	E max	F	F1	F2	G	J	M	N	T	X
25	105	372	97.5	15	45	68	48.75	30	75	15	7.5
40	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63...100	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

Dimensions for external handles



➔ Accessories

See "SIRCO M switches", page 21 to 25.

➔ Characteristics according to IEC 60947-3

See "SIRCO M switches", page 26.

SIRCO VM1



Visible breaking changeover switches from 63 to 125 A

➤ Function

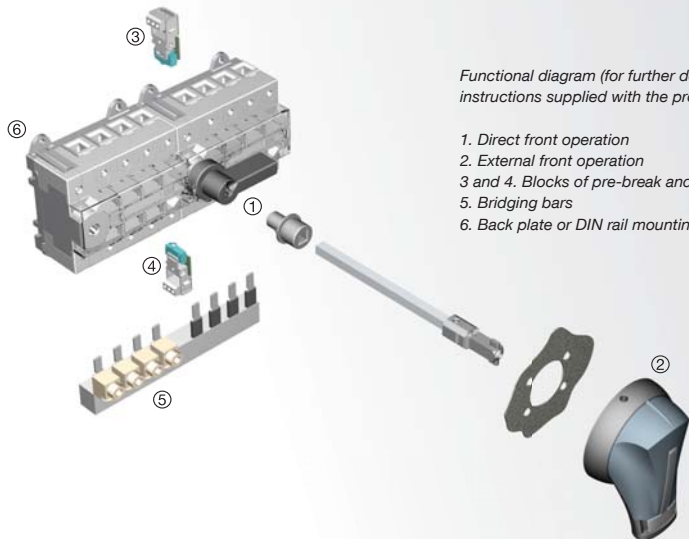
SIRCO VM1 changeover switches are manually operated three or four pole changeover switches. They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

➤ General characteristics

- Safety isolation by fully visible double breaking.
- DIN rail mounting, panel or modular panel with 45 mm front cut out.
- IP20 devices and accessories.

➤ Conformity to standards

- IEC 60947-3
- IS 14947-3
- EN 60947-3
- VDE 0660-107 (1992)
- NBN EN 60947-3
- BS EN 60947-3



Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation
2. External front operation
- 3 and 4. Blocks of pre-break and signalling auxiliary contacts
5. Bridging bars
6. Back plate or DIN rail mounting

comnt_021_a_1_x_cat

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 contacts
63 A	3 P	4430 3006 ⁽¹⁾	Black 4439 5012	S1 type Black IP65 1413 2113	200 mm 1402 0820	3 P 4499 3006	1 auxiliar 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 page 496 "Enclosed changeover switches").

(2) IP: Degree of protection according to standard IEC 60529.

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	3 P 4499 3006
	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: Degree of protection according to standard IEC 60529.

Accessories

Direct handle



Rating (A)	Switching type	Reference
63 ... 125	I - 0 - II	4439 5012
63 ... 125	I - I+II - II	4449 5012

Door interlocked external handle



Use

Padlockable handle including escutcheon.

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

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

Alternative S-type handle cover colours

acce_199_a_1_cat



Use

For single lever type S1 handles.

Other colours: Consult us.

Color	To be ordered by multiple	Reference
Light grey	50	1401 0001
Dark grey	50	1401 0011

S type handle adapter

acce_197_a_1_cat



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

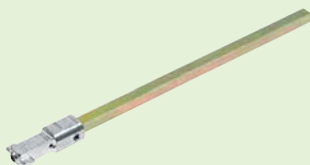
Adds 12 mm to the depth.

Color	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	10	IP65	1493 0000

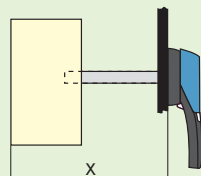
(1) IP: Degree of protection according to standard IEC 60529.

Shaft for external handle

acce_146_b_1_cat



acce_202_a_1_x_cat



Use

Standard lengths:

- 200 mm,
- 320 mm.

Other lengths: Consult us.

In position I - 0 - II

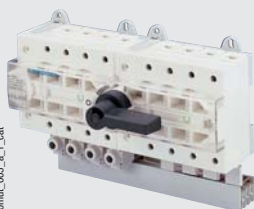
Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
63 ... 125	128 ... 290	200 mm	1402 0820
63 ... 125	128 ... 410	320 mm	1402 0832

In position 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

IP20 bridging bar

comul_005_a_1_cat



Use

Connects to the standard switch terminals in order to provide common bridging point.

Can be fitted to either top or bottom side of the switch.

Rating (A)	No. of poles	Reference
63 ... 125	3 P	4499 3006
63 ... 125	4 P	4499 4006

NO/NC changeover auxiliary contacts

Use

Pre-break and signalling of positions I and II: 1 NO/NC auxiliary contact for each position.

Characteristics

- Snaps on and is locked by a screw.
- Connector block with a capacity max. of 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_o (A)					
Rated voltage	Load duty category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A / AC-21 B	63/63	80/80	100/100	125/125
400 VAC	AC-22 A / AC-22 B	63/63	80/80	100/100	125/125
400 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(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
At 400 VAC with pre-break AC ⁽⁴⁾		30/30	40/40	51/51	63/63
At 400 VAC with pre-break AC ⁽⁴⁾		33/33	33/33	33/33	33/33

Reactive power (kvar)					
At 400 VAC ⁽⁴⁾		28	37	45	55

Fuse protected short-circuit withstand (kA rms prospective)					
Prospective short-circuit current (kA rms) ⁽⁵⁾		100	100	100	50
Associated fuse rating (A) ⁽⁵⁾		63	80	100	125

Overload capacity					
Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)		4.5	4.5	4.5	4.5
Short-circuit making capacity (kA peak) ⁽⁵⁾		12	12	12	12

Connection					
Minimum Cu cable section (mm ²)		4	4	4	4
Maximum Cu cable section (mm ²)		50	50	50	50
Tightening torque min (Nm)		6	6	6	6

Mechanical characteristics					
Durability (number of operating cycles) ⁽⁶⁾		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 operations - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barriers.

(3) 4-poles device with 2 poles in series by polarity.

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

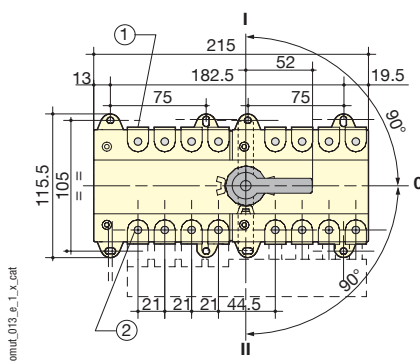
(5) For a rated operational voltage $U_o = 400$ VAC.

(6) Increased durabilities: please consult us.

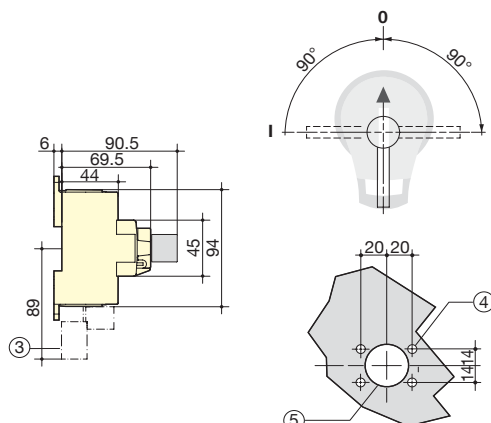
↪ Dimensions

63 to 125 A

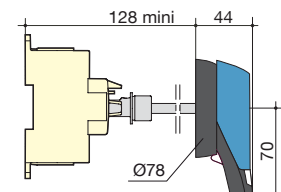
Direct front operation



External front operation



- Max connection:
 - Rigid: 50 mm²
 - Flexible: 35 mm²
- 6-sided 5 - Pozidrive no. 1 slot 4.5 mm.
- Bridging bar
- Mounting by 2 or 4 screws Ø7 mm.



comul_013_e_1_x_saf

SIRCOVER BY-PASS



Changeover switches with fully visualised breaking from 125 to 3200 A

⇒ Function

SIRCOVER products are manually operated multipolar changeover switches. They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

SIRCOVER BY-PASS are manually operated changeover switches. They are a combination of three interlocked switches enabling the use with 3 + 6 pole or 4 + 8 pole. They insulate by providing simultaneous safety isolation top and bottom and by passing loads of low voltage circuits mainly during maintenance operations.

⇒ General characteristics

- 3 stable positions, (I, 0, II) or overlapping contacts (I, I+II, II), and on load changeover switching (AC-22 and AC-23).
- Fully visualized breaking.
- IP20 devices and accessories.

⇒ Available on request

- Devices 6 or 8 pole
- Devices with oversized neutral ex.: 3 x 250 A + N 400 A.
- Devices with advanced neutral.

⇒ Conformity to standards

- IEC 60947-3
- IS 14947-3
- EN 60947-3
- VDE 0660-107 (1992)
- NBN EN 60947-3
- BS EN 60947-3

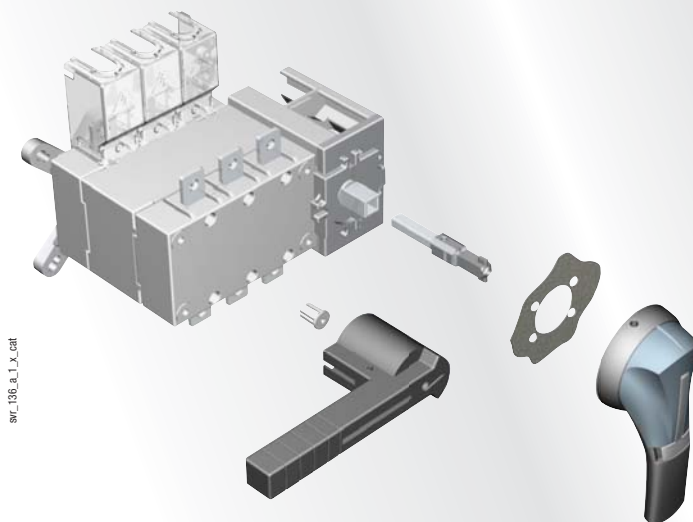
⇒ Approvals and certifications⁽¹⁾

- Bureau Véritas
- BBJ Poland (Attestation of verification)

⁽¹⁾ Product reference on request.

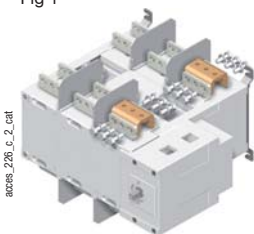
What you need to know

- **SIRCOVER** with **3 stable positions** (I, O, II) are 3 or 4 pole devices from 125 A 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 1800A. They are available enclosed in a steel enclosure from 125 to 1600 A.
- **SIRCOVER BY-PASS** with **3 stable positions** (I, O, II) are a combination of three interlocked switches enabling the use with 3+6 poles or 4+8 poles from 125 to 1600 A. They are available in steel enclosure from 125 to 1600 A and with overlapping contacts (I, I+II, II).
- **SIRCOVER** and **SIRCOVER BY-PASS** can be used with a **direct or external handle**.



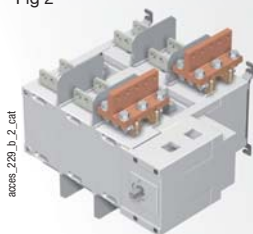
- A **connection kit for copper bars** allows the link between the 2 connection terminals of one pole (fig 1 and 2) and the bridging of the upstream and downstream link for ratings 2000, 2500 and 3200A (fig 3).

Fig 1



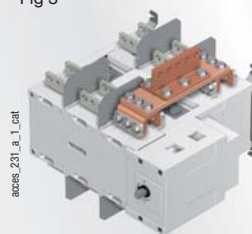
Top or bottom **flat connection**

Fig 2



Edgewise connection
Top or bottom

Fig 3



Top or bottom **bridging connection**



➔ SIRCOVER and SIRCOVER BY-PASS - References



sw_051_a_1_cat

SIRCOVER I-O-II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bar*	Auxiliary contacts	Terminal shrouds	Terminals protection screen				
125 A	3 P	4100 3013 ⁽¹⁾	Black 4199 5012 ⁽²⁾	Type S2 Black IP55 1421 2113 Black IP65 1423 2113 ⁽²⁾	200 mm 1400 1020 320 mm 1400 1032 ⁽²⁾	4109 0019	1 st /2 nd contact NO/NC 4109 0021 ⁽⁴⁾	3 P 2694 3014 ⁽⁵⁾⁽⁶⁾	3 P 1509 3012 ⁽⁷⁾				
	4 P	4100 4013 ⁽¹⁾								3 P 2694 4014 ⁽⁵⁾⁽⁶⁾	3 P 1509 4012 ⁽⁷⁾		
160 A	3 P	4100 3016 ⁽¹⁾										4 P 2694 4014 ⁽⁵⁾⁽⁶⁾	4 P 1509 4012 ⁽⁷⁾
	4 P	4100 4016 ⁽¹⁾											
200 A	3 P	4100 3019								4109 0025	3 P 2694 3021 ⁽⁵⁾⁽⁶⁾	3 P 1509 3025 ⁽⁷⁾	
	4 P	4100 4019											
250 A	3 P	4100 3025 ⁽¹⁾				4109 0039		4 P 2694 4021 ⁽⁵⁾⁽⁶⁾	4 P 1509 4025 ⁽⁷⁾				
	4 P	4100 4025 ⁽¹⁾											
400 A	3 P	4100 3039 ⁽¹⁾				Black 2799 7052 ⁽²⁾		S4 type Black IP65 1443 3113 ⁽²⁾	200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾	4109 0050	1 st /2 nd contact NO/NC 4109 0021 ⁽⁴⁾	3 P 2694 3051 ⁽⁵⁾⁽⁶⁾	3 P 1509 3063 ⁽⁷⁾
	4 P	4100 4039 ⁽¹⁾											
500 A	3 P	4100 3050 ⁽¹⁾								4109 0063		3 P 2694 3051 ⁽⁵⁾⁽⁶⁾	3 P 1509 3063 ⁽⁷⁾
	4 P	4100 4050 ⁽¹⁾											
630 A	3 P	4100 3063 ⁽¹⁾								4109 0080		4 P 2694 4051 ⁽⁵⁾⁽⁶⁾	4 P 1509 4063 ⁽⁷⁾
	4 P	4100 4063 ⁽¹⁾											
800 A	3 P	4100 3080 ⁽¹⁾								4109 0120		3 P 2694 3051 ⁽⁵⁾⁽⁶⁾	3 P 1509 3080 ⁽⁷⁾
	4 P	4100 4080 ⁽¹⁾											
1 250 A	3 P	4100 3120 ⁽¹⁾	4109 0160	4 P 2694 4051 ⁽⁵⁾⁽⁶⁾	4 P 1509 4080 ⁽⁷⁾								
	4 P	4100 4120 ⁽¹⁾											
1 600 A	3 P	4100 3160 ⁽¹⁾	4109 0160	3 P 2694 3051 ⁽⁵⁾⁽⁶⁾	3 P 1509 3160 ⁽⁷⁾								
	4 P	4100 4160 ⁽¹⁾											
1 800 A	3 P	4100 3180	4109 0160	4 P 2694 4051 ⁽⁵⁾⁽⁶⁾	4 P 1509 4160 ⁽⁷⁾								
	4 P	4100 4180											
2 000 A	3 P	4100 3200	Black 2799 7012 ⁽²⁾	Black IP65 2799 7146 ⁽²⁾	320 mm 2799 3018 ⁽²⁾		1 st contact NO/NC included 2 nd contact NO/NC 4409 0022 ⁽⁴⁾		included				
	4 P	4100 4200											
2 500 A	3 P	4100 3250				4109 0160		3 P 2694 3051 ⁽⁵⁾⁽⁶⁾		3 P 1509 3160 ⁽⁷⁾			
	4 P	4100 4250											
3 200 A	3 P	4100 3320				4109 0160		4 P 2694 4051 ⁽⁵⁾⁽⁶⁾		4 P 1509 4160 ⁽⁷⁾			
	4 P	4100 4320											

* 1 piece required per pole.

(1) Available enclosed (see pages 498 and 500 "Enclosed changeover switches").

(2) Standard.

(3) See page 281 "Copper bars connection kits".

(4) 2 pieces: one for position I and one for position II.

(5) To shroud front switch top and bottom 2 references required.

(6) To fully shroud front, rear, top and bottom 4 references required.

(7) 2 pieces: one for top side and another for bottom side.

SIRCOVER_a_1_cat



SIRCOVER I - I+II - II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bar*	Auxiliary contacts	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 ⁽⁶⁾ 4 P 1509 4012 ⁽⁶⁾				
	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⁾											
	4 P	4190 4025 ⁽¹⁾											
400 A	3 P	4190 3039 ⁽¹⁾											
	4 P	4190 4039 ⁽¹⁾											
500 A	3 P	4190 3050 ⁽¹⁾											
	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			3 P 1509 3080 ⁽⁶⁾ 4 P 1509 4080 ⁽⁶⁾
	4 P	4190 4080 ⁽¹⁾											
1 250 A	3 P	4190 3120 ⁽¹⁾											
	4 P	4190 4120 ⁽¹⁾											
1 600 A	3 P	4190 3160 ⁽¹⁾											
	4 P	4190 4160 ⁽¹⁾											
1 800 A	3 P	4190 3180											
	4 P	4190 4180											

* 1 piece required per pole.

(1) Available enclosed (see pages 498 and 500 "Enclosed changeover switches").

(2) Standard.

(3) 2 pieces: 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: one for top side and another for bottom side.



avr_059_a_4_cat

SIRCOVER BY-PASS

Rating (A)	No. of poles	Switch body I-0-II	Direct handle	External handle	Shaft for external handle	Bridging bar	Auxiliary contacts	Terminal shrouds	Terminal screens																					
125 A	3 + 6 P	4100 7013 ⁽¹⁾	Black 4199 5012 ⁽²⁾	S2 type Black IP55 1421 2113 ⁽²⁾ Black IP65 1423 2113	200 mm 1400 1020	4109 0019	1st/2nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3014 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4014 ⁽⁴⁾⁽⁵⁾	3 P 1509 3012 ⁽⁶⁾ 4 P 1509 4012 ⁽⁶⁾																					
	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 ⁽²⁾	S3 type Black IP65 1433 3113 ⁽²⁾	200 mm 1401 1520	4109 0025	1st/2nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3021 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4021 ⁽⁴⁾⁽⁵⁾	3 P 1509 3025 ⁽⁶⁾ 4 P 1509 4025 ⁽⁶⁾														
	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⁾	Black 2799 7012 ⁽²⁾	Black IP65 4199 7146 ⁽²⁾	200 mm 2799 3015	4109 0039	1st/2nd 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 9063 ⁽¹⁾																												
800 A	3 + 6 P	4100 7080 ⁽¹⁾																												
	4 + 8 P	4100 9080 ⁽¹⁾																												
1 250 A	3 + 6 P	4100 7120 ⁽¹⁾								Black 2799 7012 ⁽²⁾	Black IP65 4199 7146 ⁽²⁾	200 mm 2799 3015	4109 0050	1st/2nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3051 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4051 ⁽⁴⁾⁽⁵⁾	3 P 1509 3080 ⁽⁶⁾ 4 P 1509 4080 ⁽⁶⁾														
	4 + 8 P	4100 9120 ⁽¹⁾																												
1 600 A	3 + 6 P	4100 7160															Black 2799 7012 ⁽²⁾	Black IP65 4199 7146 ⁽²⁾	450 mm 2799 3019 ⁽²⁾	4109 0063	1st/2nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3051 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4051 ⁽⁴⁾⁽⁵⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾							
	4 + 8 P	4100 9160																												
1 600 A	3 + 6 P	4100 7160																						Black 2799 7012 ⁽²⁾	Black IP65 4199 7146 ⁽²⁾	450 mm 2799 3019 ⁽²⁾	4109 0080	1st/2nd contact NO/NC 4109 0021 ⁽³⁾	3 P 2694 3051 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4051 ⁽⁴⁾⁽⁵⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾
	4 + 8 P	4100 9160																												

* For By-Pass 2 pieces are required per pole.

(1) Available enclosed (see pages 498 and 500 "Enclosed changeover switches").

(2) Standard.

(3) 2 pieces: 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: one for top side and another for bottom side.

Accessories

Direct handle



SIRCOVER

Rating (A)	Handle color	Handle type	Reference
125 ... 630	Black	Single lever	4199 5012
800 ... 1800	Black	Single lever	2799 7052
2000 ... 3200	Black	Double lever	2799 7012

SIRCOVER BY-PASS

Rating (A)	Handle color	Handle type	Reference
125 ... 200	Black	Single lever	4199 5012
250 ... 630	Black	Single lever	2799 7052
800 ... 1600	Black	Double lever	2799 7012

External operation handle



Use

The door interlocked external operation handle includes one padlockable handle, one escutcheon and must be utilised with a shaft extension.

SIRCOVER

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		2799 7146⁽²⁾

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

(2) Double lever handle.

SIRCOVER BY-PASS

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		4199 7146

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

Alternative S-type handle cover colours



Use

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

Color	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.

Color	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	10	IP65	1493 0000

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

Shaft guide for external operation



aces_260_a_2_cat

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 length over 320 mm.

Description	Reference
Shaft guide	1429 0000

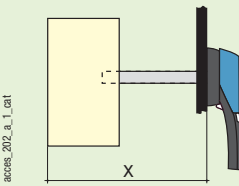
Shaft for external handle



aces_143_b_1_cat



aces_144_b_1_cat



aces_202_a_1_cat

Use

Standard lengths:
- 200 mm,
- 320 mm,
- 450 mm.
Other lengths: Consult us.

SIRCOVER

Rating (A)	Shaft length (mm)	Dimension X (mm)	Reference
125 ... 400	200 mm	210 ... 310	1400 1020
125 ... 400	320 mm	210 ... 430	1400 1032
500 ... 630	200 mm	280 ... 390	1400 1020
500 ... 630	320 mm	280 ... 510	1400 1032
800 ... 1800	200 mm	425 ... 577	1401 1520
800 ... 1800	320 mm	425 ... 697	1401 1532
2000 ... 3200	320 mm	653 ... 923	2799 3018 ⁽¹⁾

(1) Extension shaft.

SIRCOVER BY-PASS

Rating (A)	Shaft length (mm)	Dimension X (mm)	Reference
125 ... 200	200 mm	320 ... 450	1400 1020
125 ... 200	320 mm	320 ... 570	1400 1032
250 ... 400	200 mm	298 ... 420	1401 1520
250 ... 400	320 mm	298 ... 540	1401 1532
500 ... 630	200 mm	417 ... 539	1401 1520
500 ... 630	320 mm	417 ... 659	1401 1532
800 ... 1600	200 mm	550 ... 680	2799 3015 ⁽¹⁾
800 ... 1600	450 mm	550 ... 800	2799 3019 ⁽¹⁾

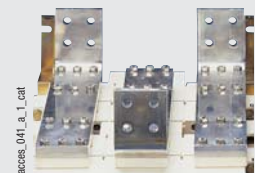
(1) Extension shaft.

Bridging bars

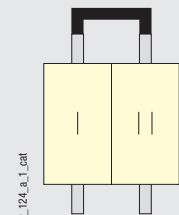
SIRCOVER



aces_205_a_2_cat



aces_041_a_1_cat

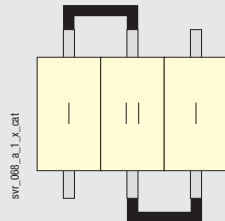


svr_124_a_1_cat

SIRCOVER BY-PASS



aces_208_a_2_cat



svr_008_a_1_x_cat

Use

Creation of a common link, on the top or bottom side of the switch, in order to feed load with either power supply I or/and II. For SIRCOVER BY-PASS, two sets of bridging bars are needed as the switch is composed of three basic switch frames.

Position I: 6 or 8 poles
Position II: 3 or 4 poles

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	50 x 6	4109 0080
1250	60 x 8	4109 0120
1600 ... 1800	90 x 10	4109 0160

Copper bars connection kits for 2000 to 3200 A SIRCOVER

Fig.1

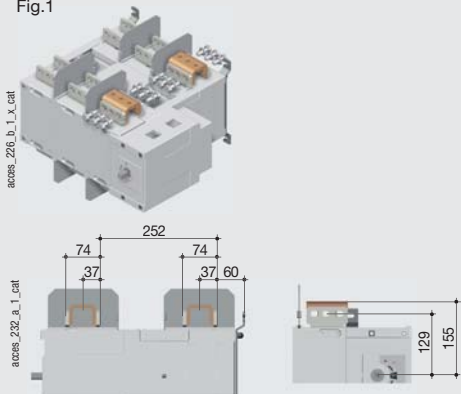


Fig. 2

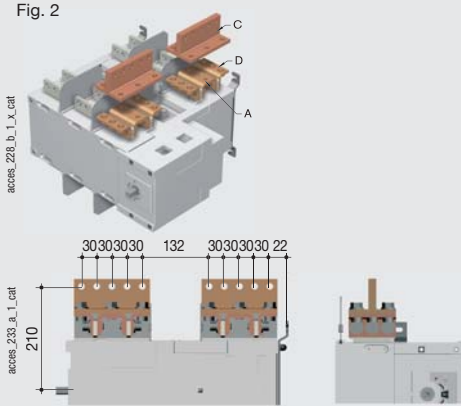
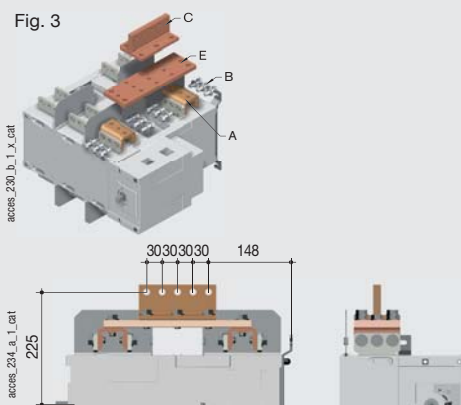


Fig. 3



Use

Enables:

- To allow connection between the two power terminals from a same pole for 2000 to 3200A 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.

Technical notice for these specific accessories is downloadable from www.socomec.com

Top or bottom flat connection - Fig. 1

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2 000 ... 2 500	Connection - part A	2	2619 1200
2 000 ... 2 500	Bolt set - part B	2	2699 1200
3 200	Connection - part A		included
3 200	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
2 000 ... 2 500	Connection - part A	2	2619 1200
2 000 ... 2 500	T piece - part C	2	2629 1200 ⁽²⁾
2 000 ... 2 500	Right angle - part D	2	2639 1200 ⁽²⁾
3 200	Connection - part A		included
3 200	T piece - part C	2	2629 1200 ⁽²⁾
3 200	Right angle - 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
2 000 ... 2 500	Connection - part A	2	2619 1200
2 000 ... 2 500	Bolt set - part B	2	2699 1200
2 000 ... 2 500	Bar - piece E	1	4109 0250 ⁽²⁾
2 000 ... 2 500	T piece - part C	1	2629 1200 ⁽²⁾
3 200	Connection - part A		included
3 200	Bolt set - part B	2	2699 1200
3 200	Bar - piece E	1	4109 0320 ⁽²⁾
3 200	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 contacts



Use

Pre breaking and positions I and II signalling: 1 or 2 NO/NC auxiliary contacts in each position.
 Low level auxiliary contacts: Consult us.

Connection to the control circuit
 By 6.35 mm fast-on terminal.

Electrical characteristics
 30 000 operations.

NO/NC changeover contact

Rating (A)	Contact(s)	Reference
125 ... 1800	1 st /2 nd	4109 0021
2000 ... 3200	1 st	included
2000 ... 3200	2 nd	4409 0022

Characteristics

Rating (A)	Nominal current (A)	Operating current I ₀ (A)			
		A - 250 -13VAC	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
125 ... 3200	16	12	8	14	6

Terminal shrouds

accres_206_a_2_cat



Use

Protection against direct contact with terminals or connecting parts.

Advantage

Perforations allowing remote thermographic inspection without removal.

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 BY-PASS.

(2) To shroud front switch top and bottom 2 references required for a SIRCOVER and a SIRCOVER BY-PASS.

Terminal screens

accres_207_a_2_cat



Use

Top or 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 ... 1 250	3 P	top / bottom	1509 3080
800 ... 1 250	4 P	top / bottom	1509 4080
1 600 ... 1 800	3 P	top / bottom	1509 3160
1 600 ... 1 800	4 P	top / bottom	1509 4160
2 000 ... 3 200	3 / 4 P	top / bottom	included

Inter phase barriers

accres_008_a_1_cat



Use

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

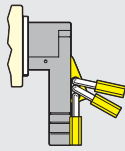
The terminal shrouds also provide phase separation from 125 to 630 A.

Rating (A)	No. of poles	Reference
125 ... 200	3 P	2998 0033 ⁽¹⁾
125 ... 200	4 P	2998 0034 ⁽¹⁾
250 ... 400	3 P	2998 0023 ⁽¹⁾
250 ... 400	4 P	2998 0024 ⁽¹⁾
500 ... 630	3 P	2998 0013 ⁽¹⁾
500 ... 630	4 P	2998 0014 ⁽¹⁾
800 ... 3200	3 / 4 P	included

(1) Use 2 sets per side.

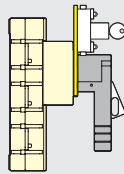
Handle key interlocking accessories

Fig. 1



access_061_a_1_x_cat

Fig. 2



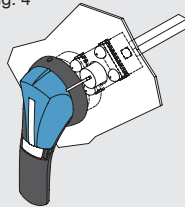
access_001_a_1_x_cat

Fig. 3



access_132_a_1_x_cat

Fig. 4



access_158_a_1_x_cat

Use

- using padlock (not supplied), this device is factory mounted in the direct or external operation handle and allows using up to 3 padlocks (Fig.1).
- Locking:
 - using lock (not supplied)
 - using undervoltage coil.

The interlocking positions are either determined as standard or configured by the user, removing pre-formed tabs. Padlocking and locking can be combined.

Lockable in position I, 0 or II

Rating (A) SIRCOVER	Rating (A) SIRCOVER BY-PASS	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 BY-PASS	Operation	Figure	Reference
125 ... 630	125 ... 200	direct	2	4109 1006⁽¹⁾
	250 ... 630	direct	3	consult us
800 ... 1800	800 ... 1600	direct	3	4109 1004⁽²⁾
2000 ... 3200		direct	3	4109 2007
125 ... 1800	125 ... 630	external	4	1499 7701
2000 ... 3200	800 ... 1600	external	4	2799 7002

- (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 BY-PASS	Operation	Figure	Reference
125 ... 630	125 ... 200	direct	2	4109 1002⁽¹⁾
	250 ... 630	direct	3	consult us
800 ... 1800	800 ... 1600	direct	3	4109 1004⁽²⁾
2000 ... 3200		direct	3	4109 2007
125 ... 1800	125 ... 630	external	4	1499 7701
	800 ... 1600	external	4	2799 7002

- (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 0 (factory fitted)

Rating (A) SIRCOVER	Rating (A) SIRCOVER BY-PASS	Operation	Figure	Reference
800 ... 3200	800 ... 1600	direct	3	consult us

Locking using CASTELL type K lock (not included)

Rating (A) SIRCOVER	Rating (A) SIRCOVER BY-PASS	Operation	Figure	Reference
125 ... 1800	125 ... 630	external	4	1499 7702
2000 ... 3200	800 ... 1600	external	4	2799 7003

Other specific accessories



bid_03_04_01

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Inter phase barrier.
- Connection accessories.
- Low level auxiliary contacts.

125 to 500 A

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

Rated operational currents I_e (A)

Rated voltage	Load duty category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	400/400	500/500
400 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	250/250	400/400	500/500
400 VAC	AC-23 A / AC-23 B	125/125	160/160	160/160	250/250	250/250	500/500
690 VAC ⁽²⁾	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	400/400	500/500
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	160/160	200/250	200/250	400/400
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	125/125	125/125	125/160	125/160	250/315
690 VAC ⁽²⁾	AC-23 A / AC-23 B	63/80	63/80	63/80	100/125	100/125	160/200
220 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	400/400	500/500
220 VDC	DC-21 A / DC-21 B	125/125	160/160	160/160	250/250	250/250	500/500
220 VDC	DC-22 A / DC-22 B	125/125	160/160	160/160	250/250	250/250	400/500
220 VDC	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	400/400
440 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	400/400	500/500
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⁾	400 ⁽³⁾ /400 ⁽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⁾	315 ⁽³⁾ /400 ⁽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⁾	400 ⁽⁴⁾ /400 ⁽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	280/280
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	55/75	55/75	55/75	90/110	90/110	150/185

Reactive power (kvar)

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

Prospective short-circuit (kA rms) ⁽⁶⁾	100	100	50	50	18	100
Associated fuse rating (A) ⁽⁶⁾	125	160	200	250	400	500

Overload capacity

Rated short-time withstand current 0.3 s. I_{cw} (kA eff.)	15	15	15	17	17	25
Rated peak withstand current (kA peak) ⁽⁶⁾	20	20	20	30	30	45

Connection

Minimum Cu cable section (mm ²)	35	50	50	95	185	240
Minimum Cu busbar section (mm ²)						
Maximum Cu cable section (mm ²)	50	95	95	150	240	240
Maximum Cu busbar width (mm)	25	25	25	32	32	40
Tightening torque min (Nm)	9	9	9	20	20	20

Mechanical characteristics

Durability (number of operating cycles) ⁽⁷⁾	10 000	10 000	10 000	10 000	10 000	5 000
Weight of 3 P switch (kg)	1.5	1.6	1.8	2	3	3.5
Weight of 4 P switch (kg)	1.6	1.7	1.9	2.1	3.5	4

- (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 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.
 (7) Increased endurance: please consult us.

630 to 3200 A

Thermal current I_{th} (40°C)	630 A	800 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	Load duty 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-21 A / AC-21 B	630/630	800/800	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200
400 VAC	AC-22 A / AC-22 B	630/630	800/800	1250/1250	1600/1600	1800/1800	2000/2000	2000/2500	2500/3200
400 VAC	AC-23 A / AC-23 B	500/500	800/800	1250/1250	1250/1250	1250/1250	1600/1600	1600/1600	1600/1600
690 VAC ⁽²⁾	AC-20 A / AC-20 B	630/630	800/800	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200
690 VAC ⁽²⁾	AC-21 A / AC-21 B	500/500	800/800	800/800	1000/1000	1000/1000	2000/2000	2000/2500	2000/2500
690 VAC ⁽²⁾	AC-22 A / AC-22 B	315/315	800/800	800/800	1000/1000	1000/1000	1000/1000	1000/1000	1000/1000
690 VAC ⁽²⁾	AC-23 A / AC-23 B	160/200	200/250	200/250	500/500	500/500	800/800	800/800	800/800
220 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200
220 VDC	DC-21 A / DC-21 B	630/630	800/800	1250/1250	1250/1250	1250/1250	2000/2000	2000/2500	2000/2500
220 VDC	DC-22 A / DC-22 B	500/500	800/800	1250/1250	1250/1250	1250/1250	1250/1600	1250/1600	1250/1600
220 VDC	DC-23 A / DC-23 B	500/500	800/800	1250/1250	1250/1250	1250/1250	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾
440 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600	1800/1800	2000/2000	2500/2500	3200/3200
440 VDC	DC-21 A / DC-21 B	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽³⁾ /800 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	2000/2000	2000/2000	2000/2000
440 VDC	DC-22 A / DC-22 B	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽³⁾ /800 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾
440 VDC	DC-23 A / DC-23 B	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽³⁾ /800 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1000 ⁽³⁾ /1000 ⁽³⁾	1000 ⁽³⁾ /1000 ⁽³⁾	1000 ⁽³⁾ /1000 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	280/280	450/450	710/710	710/710	710/710	710/710	710/710	710/710	710/710
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	150/185	185/220	185/220	475/475	475/475	750/750	750/750	750/750	750/750

Reactive power (kvar)

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

Prospective short-circuit (kA rms) ⁽⁶⁾	70	50	100	100	100	100	100		
Associated fuse rating (A) ⁽⁶⁾	630	800	1250	2 x 800	2 x 800	2 x 1000	2 x 1250		

Overload capacity

Rated short-time withstand current 0.3 s. I_{ow} (kA eff.)	25	50	65	100	100	100	100	110	110
Rated peak withstand current (kA peak) ⁽⁶⁾	45	55	80	110	110	110	110	120	120

Connection

Minimum Cu cable section (mm ²)	2 x 150	2 x 185							
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	2 x 80 x 5	3 x 100 x 5	4 x 100 x 5	4 x 100 x 5	
Maximum Cu cable section (mm ²)	2 x 300	2 x 300	4 X 185	6 x 185	6 x 185				
Maximum Cu busbar width (mm)	50	63	63	100	100	125	125	125	
Tightening torque min (Nm)	20		20	40	40	40	40	40	

Mechanical characteristics

Durability (number of operating cycles) ⁽⁷⁾	5 000	3 000	3 000	4 000	4 000	3 000	3 000	3 000	3 000
Weight of 3 P switch (kg)	3.5	17.5	22.5	34	34	50	50	50	50
Weight of 4 P switch (kg)	4	21	27.5	42	42	60	60	60	60

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

(4) 4-pole device with 2 pole 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.

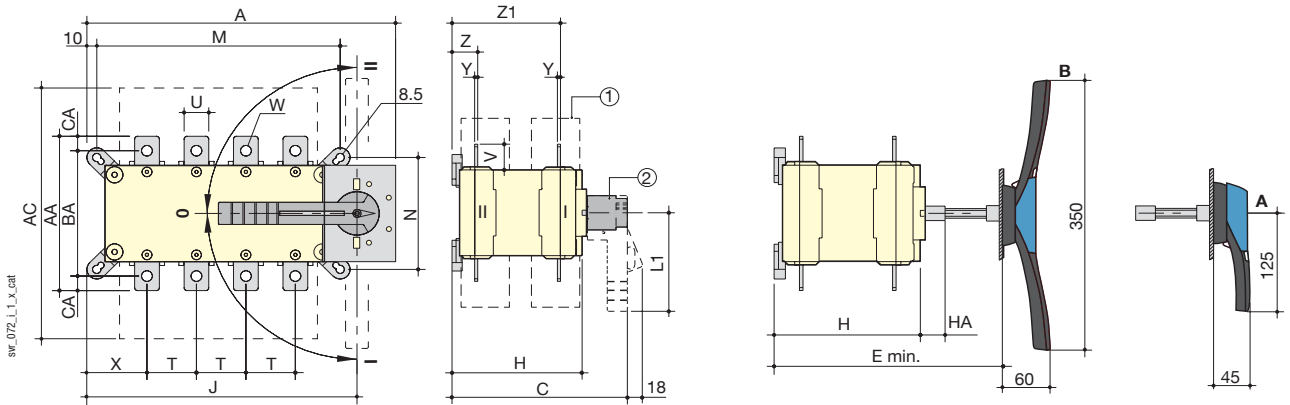
(7) Increased endurance: please consult us.

➔ SIRCOVER and SIRCOVER BY-PASS - Dimensions

SIRCOVER 125 to 1800 A

Direct front operation

External front operation



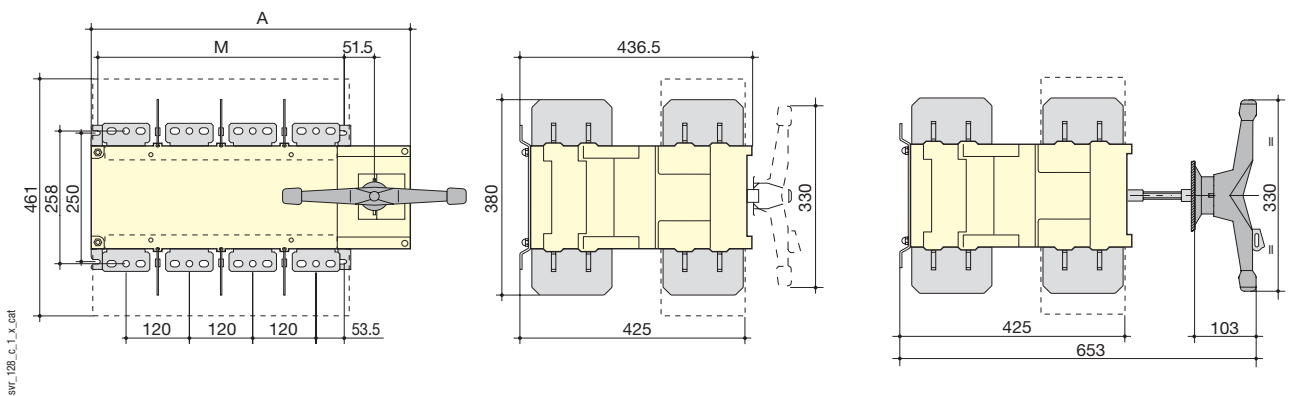
A. S2 type handle for external operation: 125 to 630 A
B. S4 type handle for external operation: 800 to 1800 A

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
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
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	306.5	388.5	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

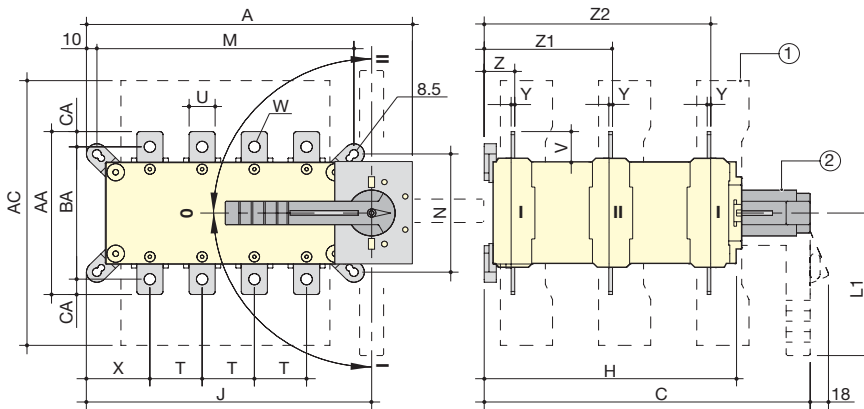
Direct front operation



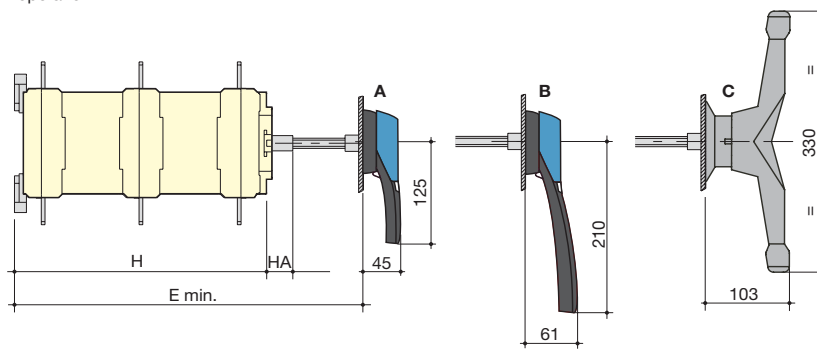
Rating (A)	Overall dimensions		Switch mounting	
	A 3p.	A 4p.	M 3p.	M 4p.
2000 ... 3200	478	598	347	467

SIRCOVER BY-PASS 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.

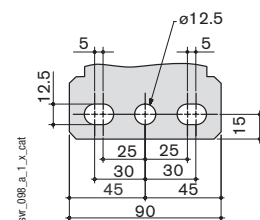
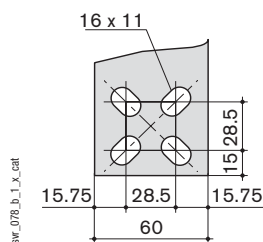
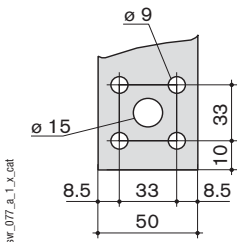
Rating (A)	Overall dimensions			E min.	Terminal shrouds		Switch body				Switch mounting				Connection										
	A 3+6p.	A 4+8p.	C		AC	H	HA	J 3+6 p.	J 4+8 p.	M 3+6 p.	M 4+8 p.	N	T	U	V	W	X 3+6p.	X 4+8p.	Y	Z	Z1	Z2	AA	BA	AC
125	221	251	313	320	235	243	25	182	212	156	186	101	36	20	25	8,5	56	50	3,5	28	124	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 BY-PASS 800 A

SIRCOVER and SIRCOVER BY-PASS 1250 A

SIRCOVER 1600 to 3200 A
SIRCOVER BY-PASS 1600 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.

SIRCOVER 800 to 1800 A

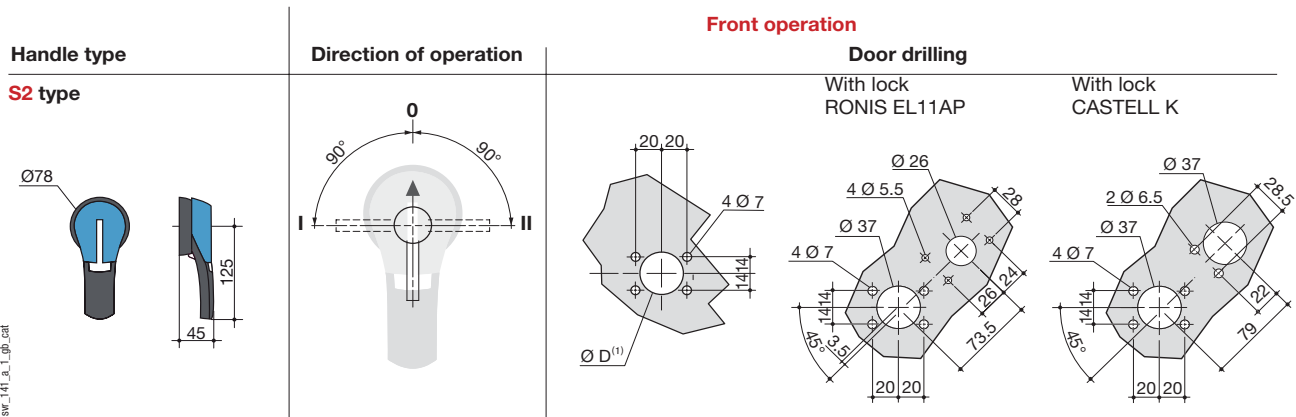
Handle type	Direction of operation	Front operation	
		Door drilling	
S4 type			

(1) Ø31 to Ø37: rear screw mounting
Ø37: front clip mounting.
(2) Ø6 to Ø7: fast fixing.

SIRCOVER 2000 to 3200 A

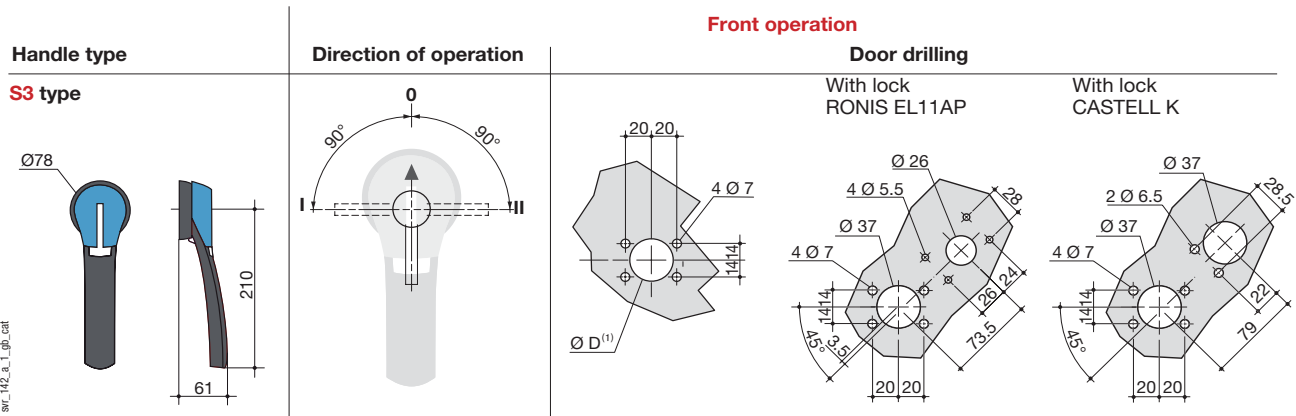
Handle type	Direction of operation	Front operation	
		Door drilling	
C type			

SIRCOVER BY-PASS 125 to 200 A



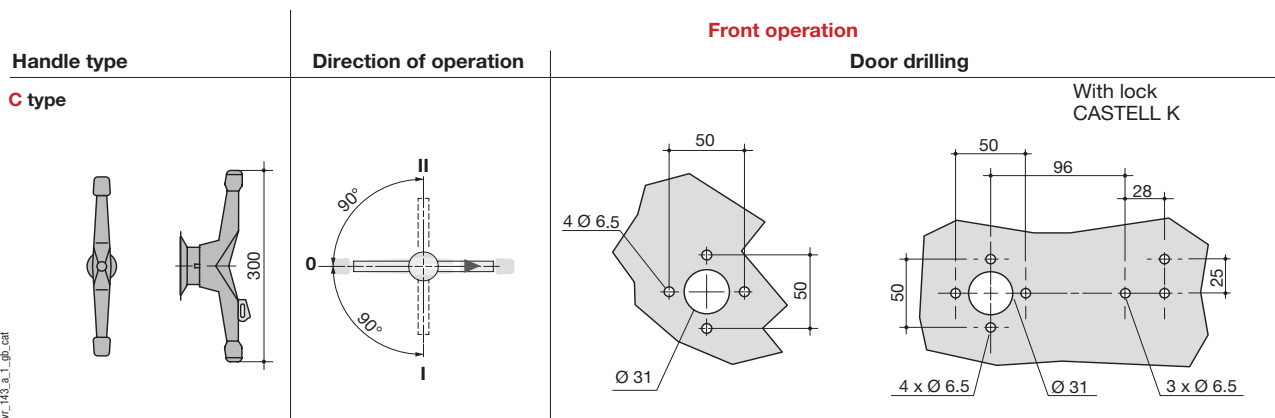
(1) Ø31 to Ø37: rear screw mounting Ø37: front clip mounting.

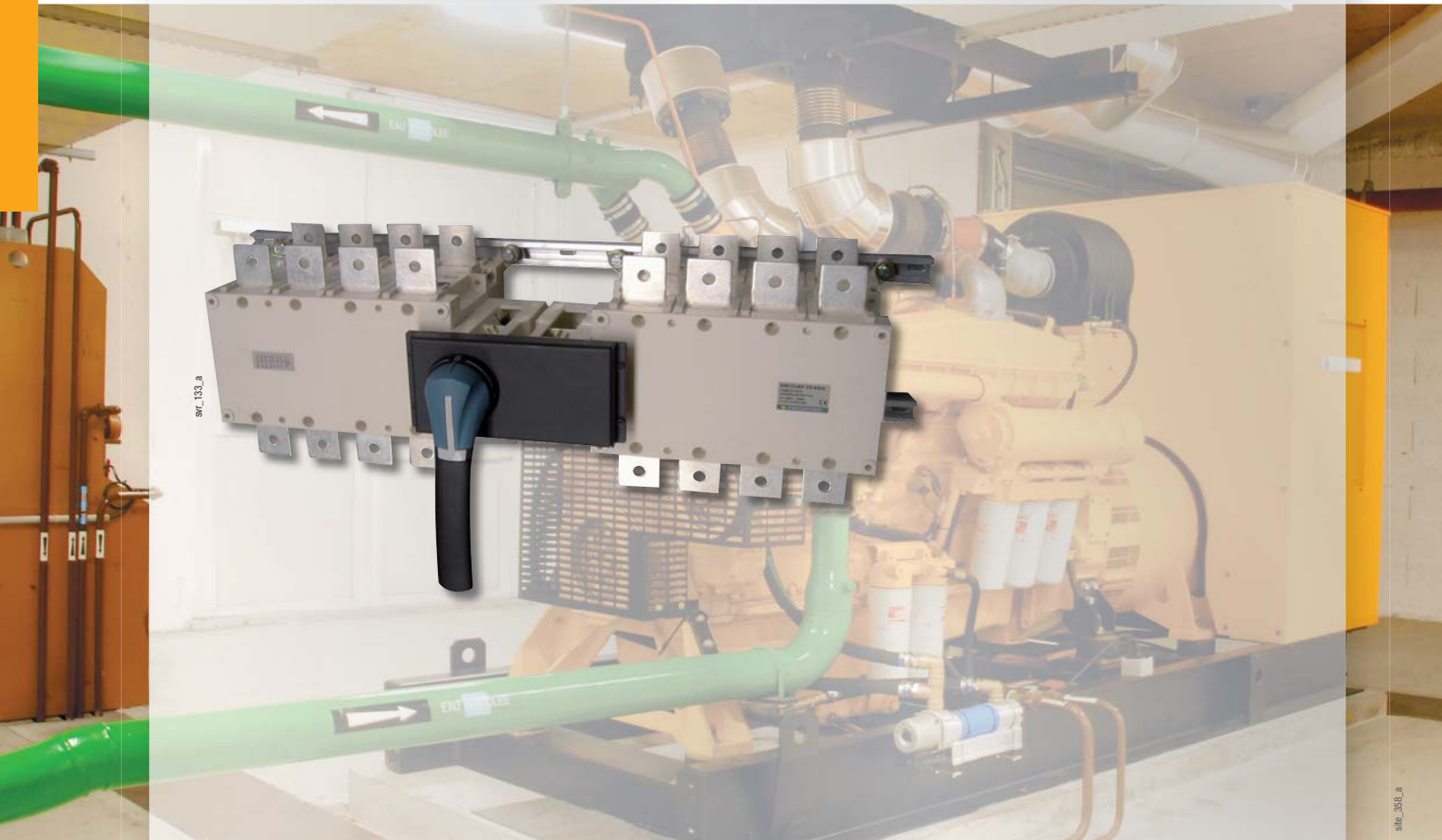
SIRCOVER BY-PASS 250 to 630 A



(1) Ø31 to Ø37: rear screw mounting Ø37: front clip mounting.

SIRCOVER BY-PASS 800 to 1600 A





From 125 to 1600 A

Function

ATS BY-PASS are designed to isolate ATS type electrical equipment (automatic transfer switch) without interrupting the load supply. With the SOCOMEC **ATS BY-PASS** system, top and bottom isolation is achieved simultaneously. Integrating a SOCOMEC changeover switch into the installation allows the source used for bypassing to be selected.

General characteristics

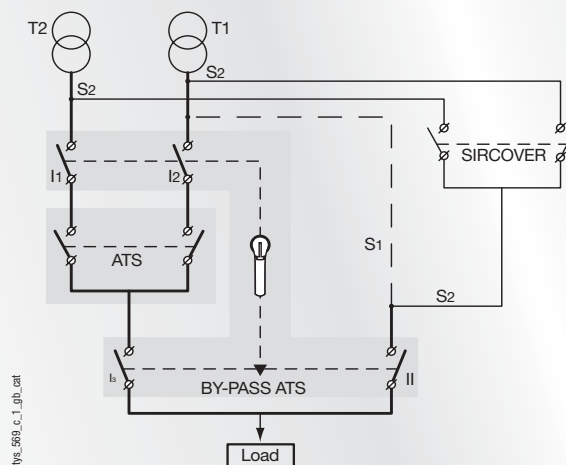
- From 125 to 1600 A.
- Available with 4 poles only.
- Manual operation.
- 3 stable positions (I, 0, II) and ease to switch from one to the other under load (AC-22).
- Fully visualized breaking.
- Mechanical interlocking.
- IP20 devices and accessories.
- Direct and external operation.

Accessories

- Bridging bar.
- Auxiliary contact.
- Terminals protection screen.
- Terminal shrouds.
- Key handle interlocking system
- Different optional accessories are available.

Conformity to standards

- IEC 60947-3
- S 14947-3
- EN 60947-3
- VDE 0660-107 (1992)
- NBN EN 60947-3
- BS EN 60947-3



Operating principle

- Without SIRCOVER: load is supplied by one of the two power sources (transformer T1 for example).
- With a SIRCOVER: the source to be used for the supply during BYPASS can be selected.

References



Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft extensions for external handle	Bridging bars	Auxiliary contacts (1 per position)	Terminal shrouds (1 set)	Terminal screens (1 per position)
125 A	12 + 4 P	4100 9813	Type S3 Black IP65 I - O - II 1433 3113	Type S3 Black IP65 I - O - II 1433 3113	200 mm 1401 1520	1 P 4109 0019	1 st contact NO/NF included 2 nd contact NO/NC 4109 0021	4 P 2694 4014 ⁽¹⁾⁽²⁾	4 P 1509 4012 ⁽³⁾
160 A	12 + 4 P	4100 9816							
250 A	12 + 4 P	4100 9825							
400 A	12 + 4 P	4100 9840							
630 A	12 + 4 P	4100 9863							
800 A	12 + 4 P	4100 9880	Black 2799 7062	Black IP65 I - O - II 2799 7147 ⁽⁴⁾	400 mm 1401 1540	1 P 4109 0039	included	consult us	4 P 1509 4025 ⁽³⁾
1000 A	12 + 4 P	4100 9881							
1250 A	12 + 4 P	4100 9882							
1600 A	12 + 4 P	4100 9886							
						1 P 4109 0063		4 P 2694 4051 ⁽¹⁾⁽²⁾	4 P 1509 4063 ⁽³⁾
						1 P 4109 0080			
						1 P 4109 0160			

(1) To fully shroud front, rear, top and bottom 8 references required.

(2) To shroud front switch top and bottom 4 references required.

(3) Top/bottom.

(4) Shaft extension for external handle included.

Accessories

Key handle interlocking system

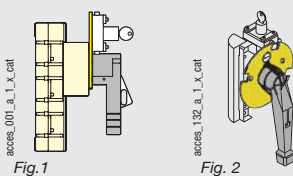


Fig. 1

Fig. 2

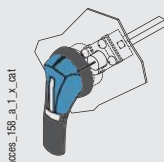


Fig. 3

Locking using RONIS EL11AP lock in position 0 (not included)

Rating (A)	Operation	Figure	Reference
125 ... 630	direct	1	4109 1006 ⁽¹⁾
125 ... 630	external	3	1499 7701
800 ... 1600	direct and external	2	consult us

(1) Specific handle included.

Locking using RONIS EL11AP lock in positions I, 0, II (not supplied)

Rating (A)	Operation	Figure	Reference
125 ... 630	direct	1	4109 1002 ⁽¹⁾
800 ... 1600	direct	2	consult us

(1) Specific handle included.

Locking using CASTELL type K lock (not included)

Rating (A)	Operation	Figure	Reference
125 ... 630	external	3	1499 7702
800 ... 1600	external		consult us

ATS BY-PASS - Characteristics according to IEC 60947-3

125 to 1600 A

Thermal current I_{th} (40°C)	125 A	160 A	250 A	400 A	630 A	800 A	1000 A	1250 A	1600 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_n (A)

Rated voltage	Load duty 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⁾
400 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
400 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
400 VAC	AC-23 A / AC-23 B	125/125	160/160	250/250	250/250	500/500	800/800	1000/1000	1250/1250	1250/1250
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	560/560	560/560	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

Overload capacity

Rated short-time withstand current 1 s. I_{cw} (kA eff.)	7	7	9	9	13	26	35	35	50
Closing capacity on short-circuit (kA peak) ⁽⁶⁾	20	20	30	30	45	55	80	80	110

Connection

Minimum Cu cable section (mm ²)	35	50	95	185	2 x 150	2 x 185	2 x 240		
Minimum 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	2 x 80 x 5
Maximum Cu cable section (mm ²)	50	95	150	240	2 x 300	2 x 300	4 x 185	4 x 185	6 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	40

Mechanical characteristics

Durability (number of operating cycles) ⁽⁷⁾	10 000	10 000	10 000	10 000	5 000	3 000	3000	3 000	4 000
Weight of 3 P switch (kg)	1.5	1.6	2	3	3.5	17.5		22.5	34
Weight of 4 P switch (kg)	1.6	1.7	2.1	3.5	4	21		27.5	42

(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 pole in series by polarity.

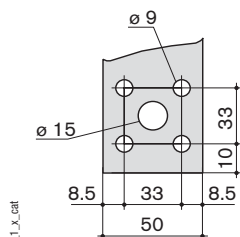
(5) The power value is given for information only, the current values vary from one manufacturer to another.v

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

(7) Increased durabilities: please consult us.

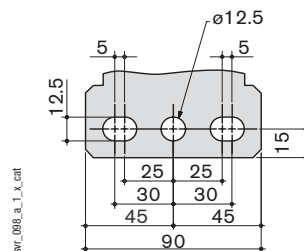
Connection terminals

ATS BY-PASS 800 to 1000 A



sw_077_a_1_x_cat

ATS BY-PASS 1250 to 1600 A



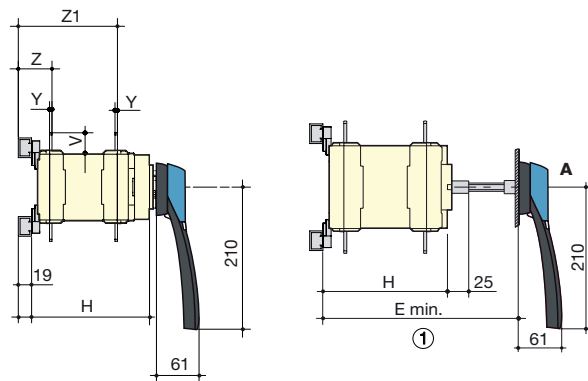
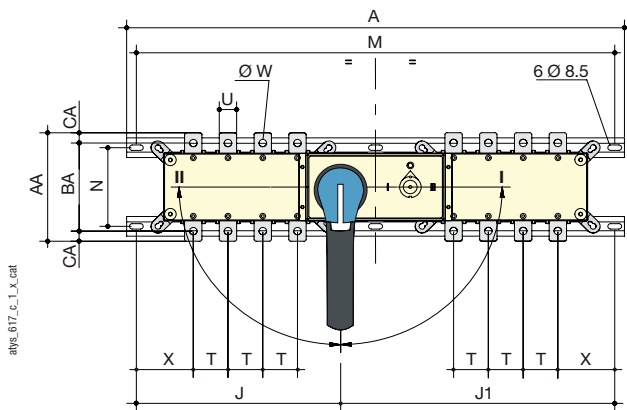
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➤ Dimensions

ATS BY-PASS 125 to 630 A

Direct front operation

External front operation



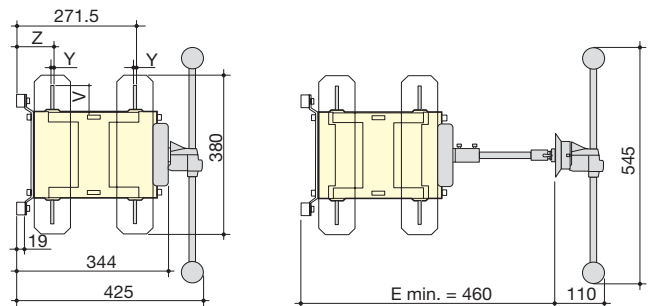
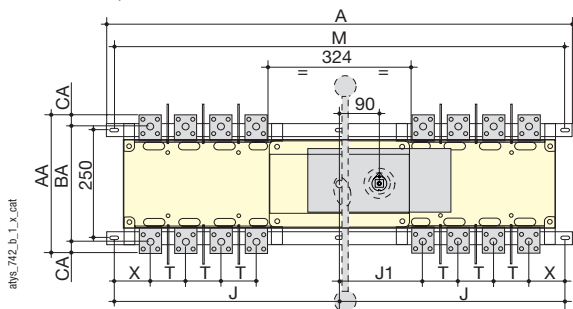
A. S3 type handle for external front operation: 125 to 630 A.
1. Minimum length with shaft extension: E min + 50 mm.

Rating (A)	Overall dimensions		Switch body			Switch mounting		Connection			V	W	X 8p.	Y	Z	Z1	AA	BA	AC
	A 8p.	E min	H	J 8p.	J1 8p.	M 8p.	N	T	U										
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	

ATS BY-PASS 800 to 1600 A

Direct front operation

External front operation

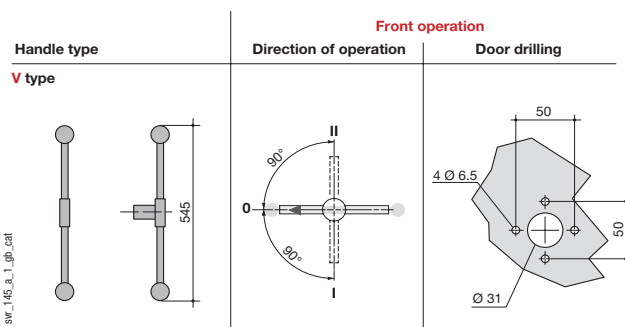
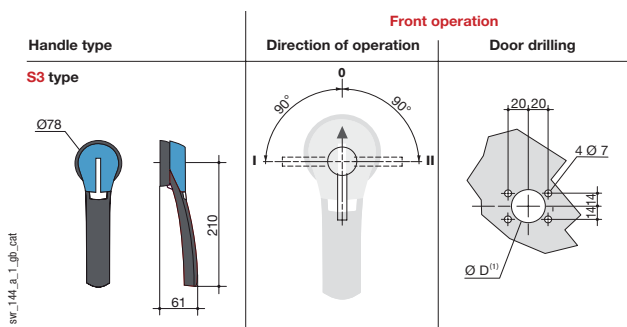


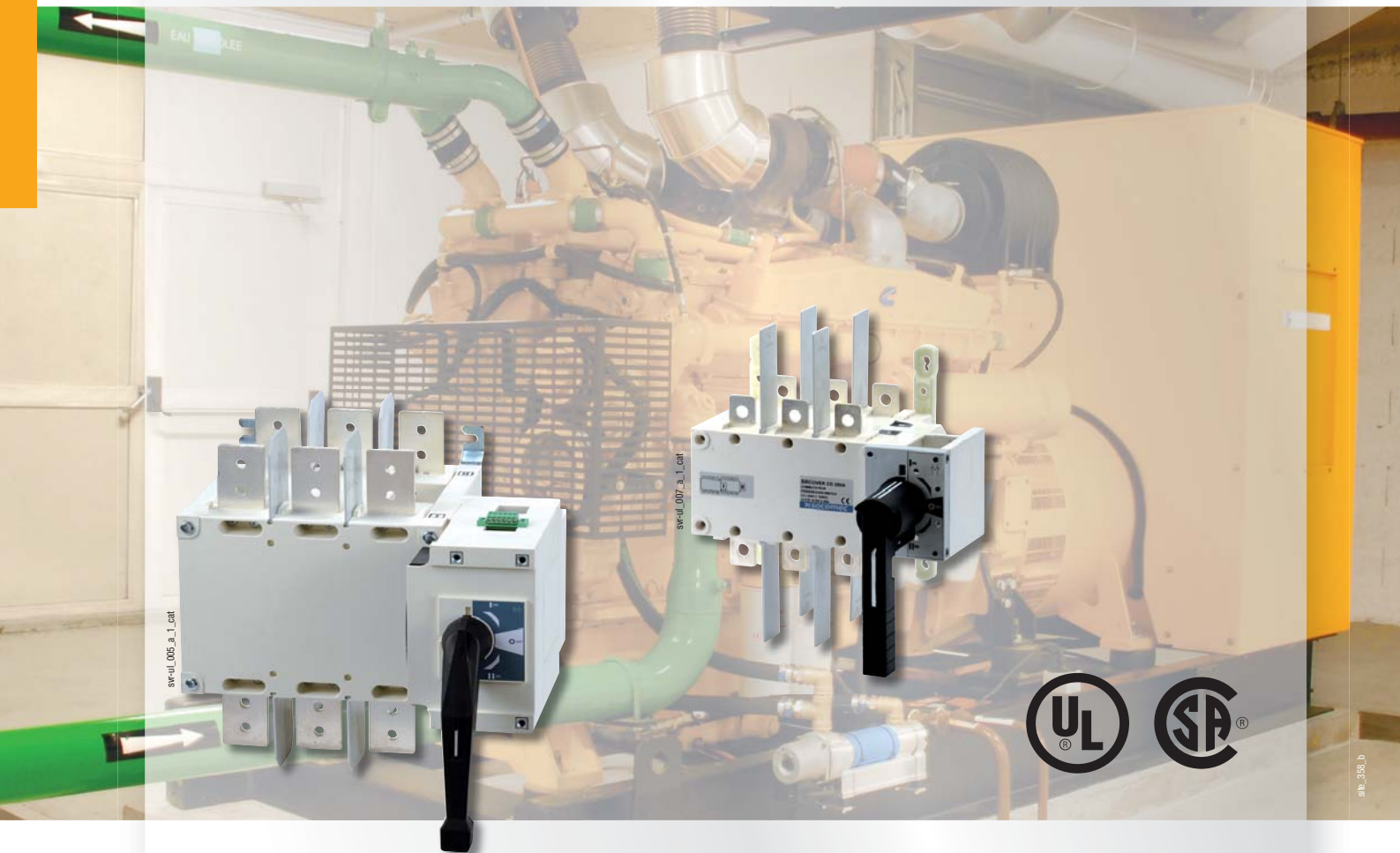
Rating (A)	Overall dimensions		Switch body			Switch mounting		Connection			AA	BA	AC
	A 8p.	J 8p.	J1 8p.	M 8p.	T	V	X 8p.	Y	Z				
800	1 055	510.5	189	1 021	80	60.5	81.5	7	84.5	321	268	26.5	
1000	1 055	510.5	189	1 021	80	60.5	81.5	7	84.5	321	268	26.5	
1250	1 320	643	195	1 286	120	44	88	8	85.5	288	258	15	
1600	1 320	643	195	1 286	120	44	88	8	85.5	288	258	15	

➤ Dimensions for external handles

ATS BY-PASS 125 to 630 A

ATS BY-PASS 800 to 1600 A





100 to 1200 A

➤ Function

SIRCOVER 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.

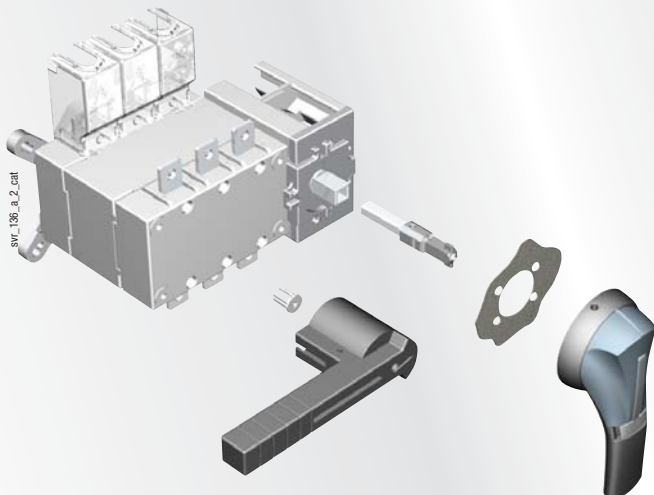
These switches are extremely durable and are tested and approved for use in the most demanding applications as resistive load or total system applications.

➤ General characteristics

- 3 stable positions (I, 0, II).
- On load switching.
- Direct or external handle.
- 480VAC total system.
- 600VAC resistive load.
- Back to back construction compact foot print

➤ Conformity to standards

- UL98, Guide WHTY, file 201138
- UL1008, Guide WPHY, file 317092
- CSA 22.2#4, Class 4651-02
- IEC 60947-3



➔ 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	3 P	4150 3011 ⁽¹⁾	Black 4199 4012	S2 type Black I - 0 - II 4, 4X 142D 2113	200 mm 7.9 inches 1400 1020	3P 4159 3021 4P 4159 4021	Contact NO/NC 4159 0021 Low level 4159 0022	3P 4158 3021 4P 4158 4021	
	4 P	4150 4011 ⁽¹⁾		320 mm 12.6 inches 1400 1032					
200 A	3 P	4150 3021 ⁽¹⁾		Black 4199 7012	S2 type Black I - 0 - II 4, 4X 142D 2813 ⁽²⁾	400 mm 15.7 inches 1400 1040		3P 4159 3041 4P 4159 4041	3P 4158 3041 4P 4158 4041
	4 P	4150 4021 ⁽¹⁾			320 mm 12.6 Inches 1401 1532				
400 A	3 P	4150 3041 ⁽¹⁾			S3 type Black I - 0 - II 4, 4X 143D 3113	S3, S4 type 200 mm 7.9 inches 1401 1520		3 P 4159 3063 4 P 4159 4063	3 P 1609 3063 4 P 1609 4063
	4 P	4150 4041 ⁽¹⁾							
600 A	3 P	4150 3060			S4 type Black I - 0 - II 4, 4X 144D 3813 ⁽²⁾	400 mm 15.7 Inches 1401 1540		3 P 4159 3080 4 P 4159 4080	3 P 1609 3080 4 P 1609 4080
	4 P	4150 4060							
800 A	3 P	4150 3080		Black 4199 7062	S4 type Black I - 0 - II 4, 4X 144D 3813 ⁽²⁾	400 mm 15.7 Inches 1401 1540		3 P 1609 3080 4 P 1609 4080	
	4 P	4150 4080							
1200 A	3 P	4150 3120		Black 4199 7062	S4 type Black I - 0 - II 4, 4X 144D 3813 ⁽²⁾	400 mm 15.7 Inches 1401 1540		3 P 1609 3080 4 P 1609 4080	
	4 P	4150 4120							

(1) New range, all ratings are UL98 certified, ratings 100A, 200A and 400A will by UL 1008 certified from January 2011.
 For MTS, from 100A to 400A UL 1008 certified, see our website.

(2) Padlockable in all 3 positions.

➔ SIRCOVER UL - Accessories

Direct handle



Rating (A)	Colour	Handle type	Reference
100 ... 400	Black	1 lever	4199 4012
600	Black	2 lever	4199 7012
800 ... 1250	Black	2 lever	4199 7062

External handle



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 with the use of a tool (authorized persons only). The interlocking function is restored when the door is re-closed.

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	144E 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	V1	Black	1	no	4199 7149

Shaft for external handle



Rating (A)	Handle type	Length (in)	Length (mm)	Cote X (in)	Cote X (mm)	Reference
100 ... 200	S2 type	7.9	200	5.31 ... 10.43	135 ... 265	1400 1020
100 ... 200	S2 type	12.6	320	3.74 ... 20.87	95 ... 530	1400 1032
100 ... 200	S2 type	15.7	400	4.92 ... 17.72	125 ... 450	1400 1040
400 ... 600	S3 type	7.9	200	8.70 ... 13.50	221 ... 343	1401 1520
400 ... 600	S3 type	12.6	320	8.70 ... 18.23	221 ... 463	1401 1532
400 ... 600	S3 type	15.7	400	11.61 ... 29.72	295 ... 755	1401 1540
800 ... 1200	S4 type	7.9	200	8.70 ... 13.50	221 ... 343	1401 1520
800 ... 1200	S4 type	12.6	320	8.70 ... 18.23	221 ... 463	1401 1532
800 ... 1200	S4 type	15.7	400	11.61 ... 29.72	295 ... 755	1401 1540
800 ... 1200	V1	12.6	320			4199 3018
800 ... 1200	V1	15.7	400			4199 3019

Bridging bars

accses_205_a_1_cat



Use

Creation of a common point, above or below the switch, between positions I and II.

Rating (A)	No. bridging bar	Reference
100 ... 200	3	4159 3021
100 ... 200	4	4159 4021
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

Terminal protection screen

accses_207_a_1_cat



Use

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

Rating (A)	No. of poles	Reference
100 ... 200	3 P	4158 3021
100 ... 200	4 P	4158 4021
400	3 P	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

Auxiliary contacts

accses_005_a_1_cat



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 0121
600 ... 1200	NO/NC on position 1 and 2	as Standard

Terminal lugs

Use

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

dl_002_3



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)	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

➔ **SIRCOVER UL - 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 3 ph

240 VAC Total System (A)	100	100	250	400	700	700
240 VAC Resistive load (A)	100	200	400	600	800	1200
480 VAC Total System (A)	100	100	125	350	600	600
480 VAC Resistive load (A)	100	200	400	600	800	1200
600 VAC Resistive load (A)	100	200	400	400	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 (A)	100 A ⁽¹⁾	200 A ⁽¹⁾	400A ⁽¹⁾	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 3 ph motor max.

220-240 VAC	30 / 80	75 / 196	125 / 312	200 / 480	200 / 480	200 / 480
440-480 VAC	60 / 77	125 / 156	250 / 302	400 / 477	500 / 590	500 / 590
600 VAC	100 / 99	200 / 192	350 / 336	350 / 336	500 / 472	500 / 472

Max. motor power, 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		

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

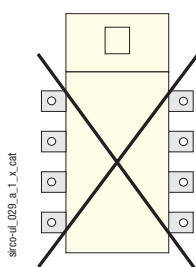
Auxiliary contacts

Electrical characteristics	A300	A300	A300	A300	A300	A300
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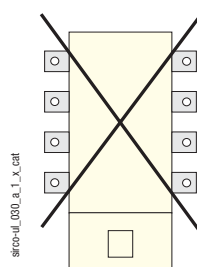
(1) Only UL98 listed, availability see our Website.

➔ **Mounting orientation**

SIRCOVER - 100 to 400 A

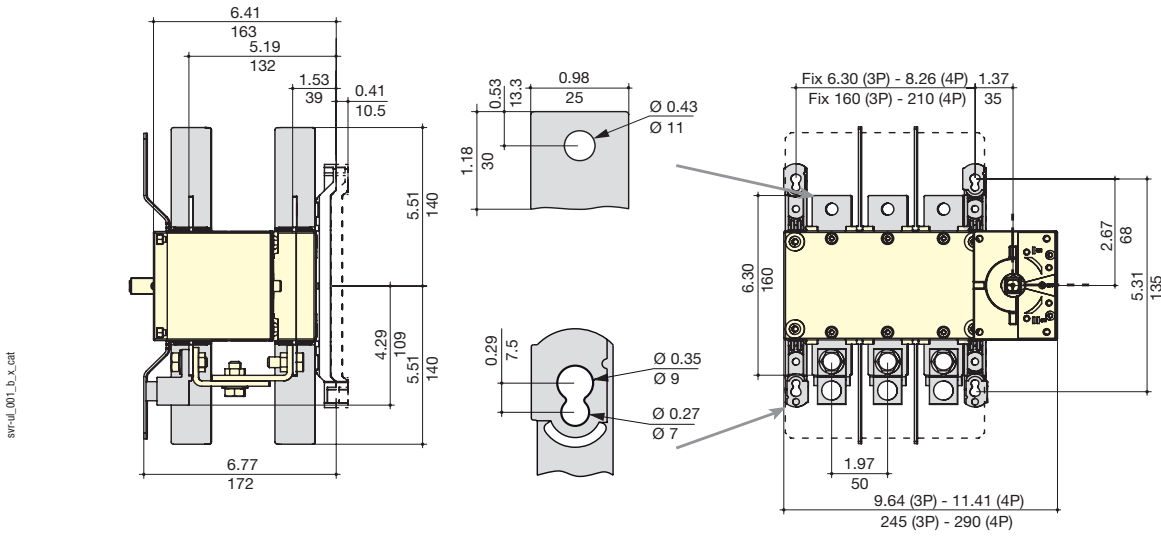


SIRCOVER - 600 to 1200 A

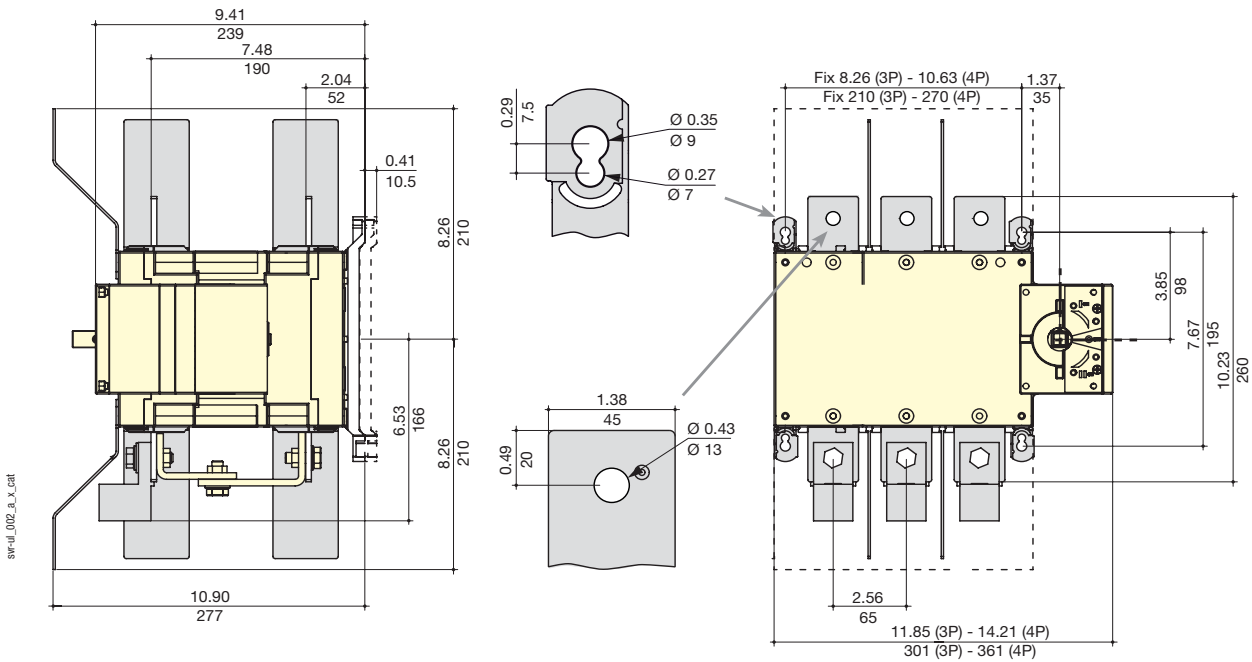


➔ Dimensions (in / mm)

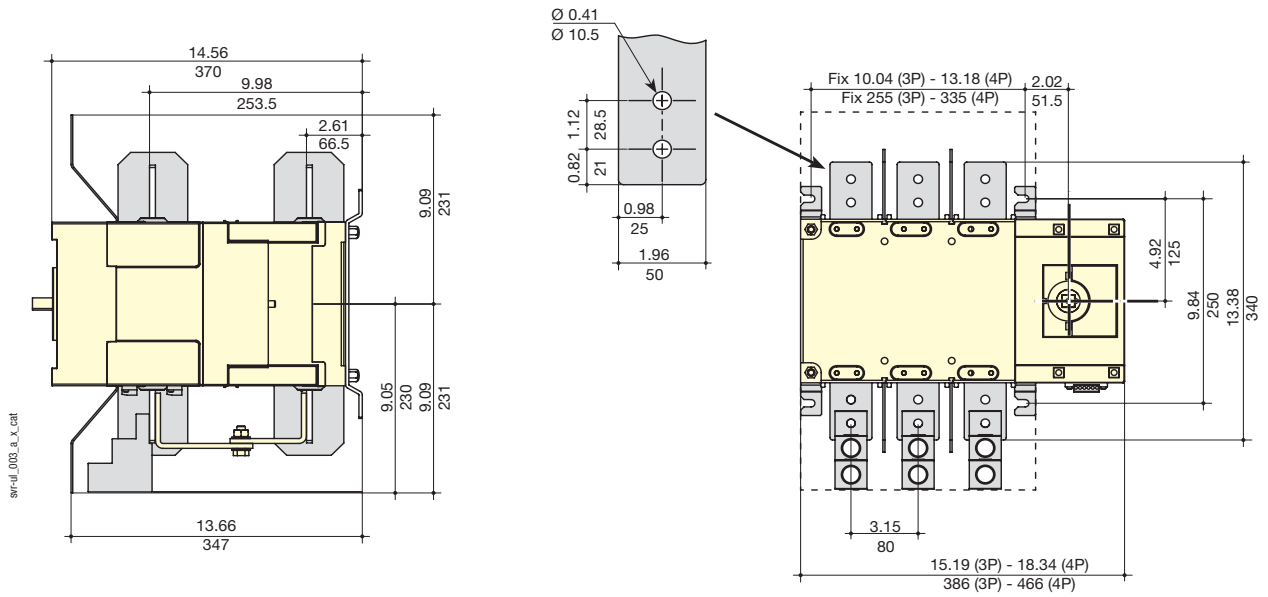
100 to 200 A



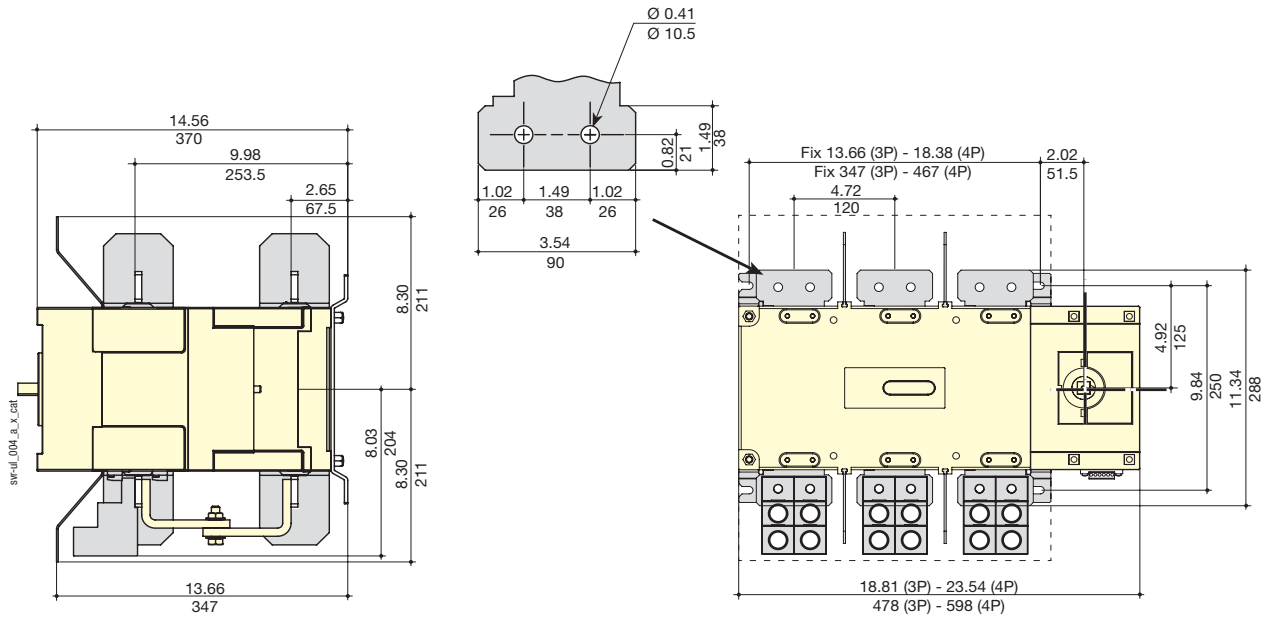
400 A



600 A

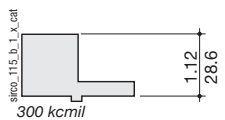
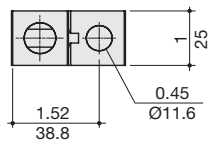


800 to 1200 A

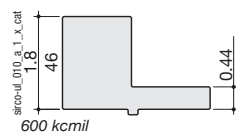
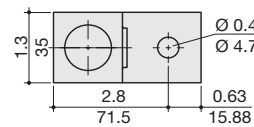


➔ Terminal lugs (in / mm)

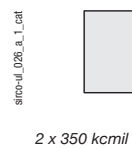
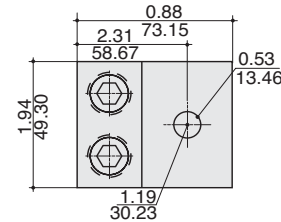
SIRCOVER 100 to 200 A



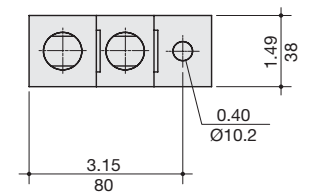
SIRCOVER 400 A



SIRCOVER 400 A

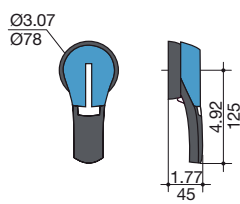
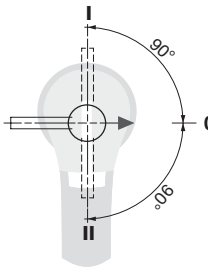
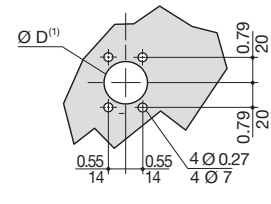


SIRCOVER 600 to 1200 A

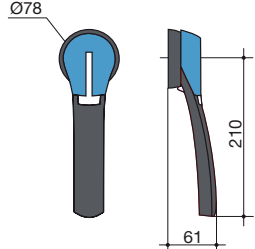
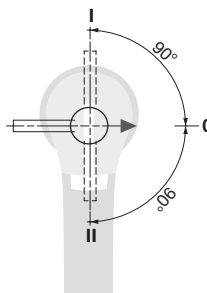
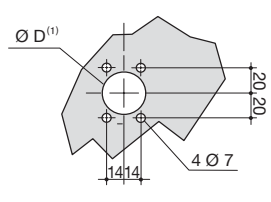


➔ External handles dimensions (in / mm)

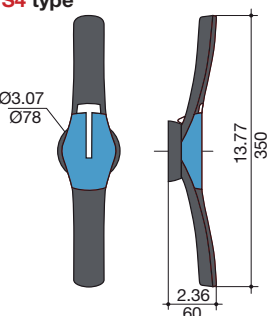
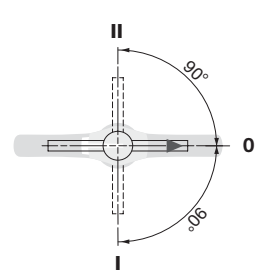
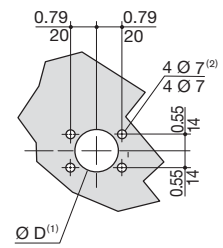
SIRCOVER 100 and 200 A

Handle type	Front operation Direction of operation	Door drilling
<p>S2 type</p>  <p>svr-ul_010_a_1_gp_cat</p>		

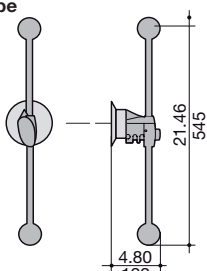
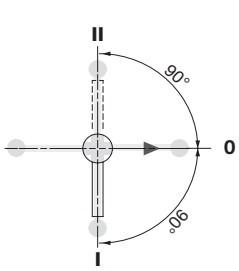
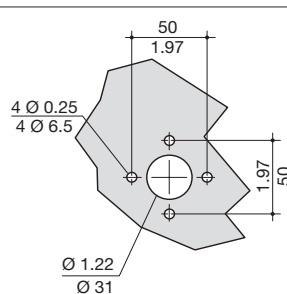
SIRCOVER 400A

Handle type	Front operation Direction of operation	Door drilling
<p>S3 type</p>  <p>svr-ul_012_a_1_gp_cat</p>		

SIRCOVER 600 to 1200 A

Handle type	Front operation Direction of operation	Door drilling
<p>S4 type</p>  <p>svr-ul_011_a_1_gp_cat</p>		

SIRCOVER 600 A - 6/8 poles

Handle type	Front operation Direction of operation	Door drilling
<p>V1 type</p>  <p>svr-ul_031_a_1_gp_cat</p>		



From 40 to 160 A

➤ Function

The **ATyS M**, dedicated to applications below 160A, enables the switching On Load of single or three phase sources in remote or automatic mode.

This Transfer Switching Equipment (TSE) is designed to be used in low voltage power systems for Open Transition Transfer applications.

This Transfer Switching Equipment (TSE) is composed of two mechanically and electrically interlocked switches.

- The **ATyS M 3** (RTSE) is driven by volt-free dry contacts allowing switching operation between position I, 0, II, from an external control logic or a PLC (control relay type ATyS C30).
- The **ATyS M 6** (ATSE) is dedicated to break before make automatic transfer applications. The ATyS M 6 integrates control relays, timers and test functions to manage a Normal/Backup switching operation between two networks or between a generator set and a network.

➤ General characteristics

- Isolation with positive break indication.
- On load switching.
- Manual emergency operation.
- 3 stable positions.(I, 0, II).
- Padlocking in 0 or in all three positions (I, 0, II).
- AUTO / MANU selector.
- Command of the device in 0 position thanks to the energy storage device (ATyS M 6e).
- Single phase or three phase control on networks I and II (ATyS M 6s and M 6e).
- Electrical measurements (ATyS M 6e).

➤ Conformity to standards

- IEC 60947-3
- IS 14947-3
- EN 60947-3
- NBN EN 60947-3
- BS EN 60947-3
- GB 14048
- IEC 60947-6-1
- EN 60947-6-1
- NBN EN 60947-6-1
- BS EN 60947-6-1
- VDE 0660-107



Emergency manual operation



Padlocking facility



AUT/ MAN sealable cover

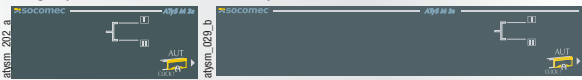
What you need to know

On ATyS M 3s model

Power supply

Single-phase interface

Three-phase interface



ATyS M 3s is equipped with two independent 230 VAC (176-288 VAC), 50/60 Hz (45/65-65 Hz) power inputs.

These two supplies can be connected individually to switch I and 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 double power supply module (DPS) or an external supply enables the full security of the 3 position commands in all circumstances (from the available source). In this case, both supply inputs of the ATyS M 3s must be connected in parallel in order for them both to be supplied from the output of the DPS.

On ATyS M 6s and 6e models

Power supply

ATyS M 6 products are self power supplied 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 products: two different versions are available:

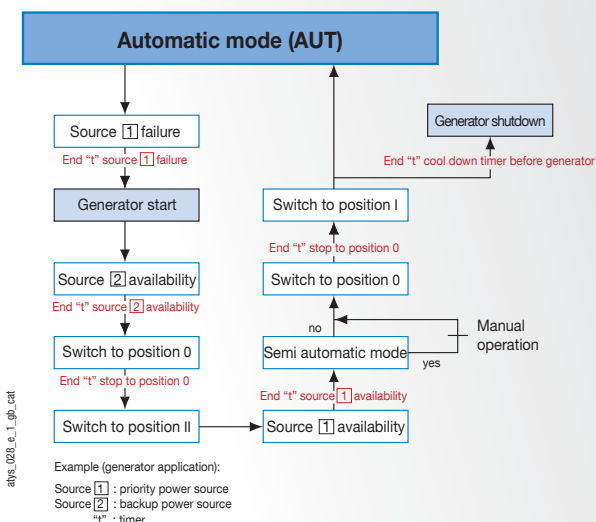
- 230 / 400 VAC with neutral conductor distributed: product is power supplied between phase and neutral,
- 127 / 230 VAC with or without neutral conductor distributed: product is power supplied between 2 phases.

For single phase products: one version is available:

- 230 VAC networks: product is power supplied between phase and neutral, The neutral conductor can be connected to the left or right side of the switch.

Automatic control

The ATyS M 6e and M 6s are equipped with a sequence logic.



Electrical control

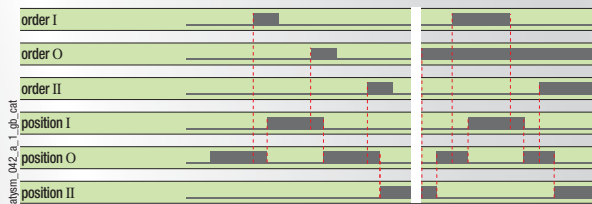
The switching operation can be driven by an external volt free contact coming from an external control relay (ATyS C30 for example). The positions are stable in case of loss of supply. There are two types of command logic to choose from: impulse or contactor.

Impulse logic

- A switching command of at least 60 ms is necessary to initiate operation.
- Orders I and II have priority over order 0.
- Order 0 must be maintained (joint connection 317).

Contactor logic

- If command I or II disappears, the device returns to zero position, if power supply is available.
- The first command (order) received (I or II) has priority as long as it remains present.



Configuration

ATyS M 6s

Single-phase interface

Three phase interface



Common points between the three-phase and single-phase versions:

- 2 potentiometers (Sector loss and return time delays)
- 2 dip-switches (Pause for 2 seconds in position 0 during the transitions I->II ; Network-Network Application or Network-Genset).
- 4 LED's (Supplies status; Automatic mode; Fault)
- 3 inputs for external control (Inhibition of the automatic mode; Remote Test on load; Manual retransfer from standby supply to 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).

Three phase ATyS M specificities:

- 2 potentiometers (Nominal voltage; Voltage thresholds)
- 2 dip switches (50 or 60 Hz; Network)

Specificity of the single phase ATyS M:

- PRG button: automatic voltage and nominal frequency programming.

ATyS M 6e

Three phase interface



- 4 applications: Network/Genset, Network/Network, With or without priority.

- Adjustable thresholds and hysteresis.

- Display + keyboard (Programming of the values; Visualization of the electrical readings; Test and control positions function; Visualization of the availability of supplies).

- LED's (Product Power On; Supplies status; Position of the switch status; Automatic mode TEST/CONTROL Mode; Fault)

- 3 configurable inputs for external control (Automatic mode inhibition; Test on load and off load; Manual retransfer; Electrical control of the switch in positions I, 0 or II; Change of priority network...).

- 3 NO output relays (250 VAC / 3 A), configurable (Availability of the supplies; Auxiliary position contacts; Load shedding control; Operational product...)

- 1 configurable bi-stable output relay for generator start /stop command (30 VDC / 2 A).

- Connection of a remote interface ATyS D10 or D20.

- A version with RS485 Communication, JBUS/Modbus protocol, is available.

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 contacts unit
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 unit as standard 2 nd unit 1309 0001⁽²⁾
	4 P	230 VAC	1323 4004				
63 A	2 P	230 VAC	1323 2006				
	4 P	230 VAC	1323 4006				
80A	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) In the three-phase version, in order to ensure complete upstream and downstream protection, order the reference twice, for the single-phase version, order the reference once.

(2) 1 contact block for I, 0 and II positions.



ATyS M 6s

Rating (A)	No. of poles	Network (VAC)	ATyS M 6s	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contacts unit	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 1309 0001⁽²⁾	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	1309 4016				

(1) In the three-phase version, in order to ensure complete upstream and downstream protection, order the reference twice.

(2) 1 contact block for I, 0 and II positions.



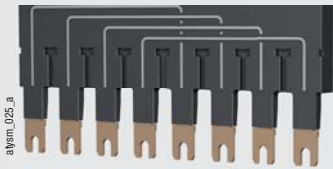
ATyS M 6e

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 contacts unit	Remote Human/Machine 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 1309 0001 ⁽²⁾	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) In order to ensure complete upstream and downstream protection, order the reference twice.
(2) 1 contact block for I, 0 and II positions.

Accessories

Bridging bars



Use

To provide common point on either incoming or outgoing 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

Voltage sensing and power supply tap



Use

To allow connection of $2 \times \leq 1.5 \text{ mm}^2$ voltage sensing or power cables. The voltage sensing tap can be mounted in all the terminals without reducing their connecting capacity.

Rating (A)	Lot de	Reference
40 ... 160	2 pieces	1399 4006

Terminal shrouds



Use

To have a full protection against direct contact with the connection terminals or parts.

Terminal shrouds advantages

Perforations enabling remote thermographic verification without dismantling.
Possibility of sealing.

Mounting

In three-phase version, for upstream and downstream protection, order the reference twice, in single phase version order the reference just once.

Rating (A)	Position	Reference
40 ... 160	Top and bottom	2294 4016 ⁽¹⁾

(1) Reference made of 2 pieces.

Auxiliary contact



Use

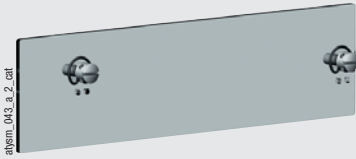
Up to 2 auxiliary contacts accessory per product.
Each accessory integrates 1 NOC auxiliary contact (for each position I, 0 and II).
The ATyS M 3s is delivered in standard with 1 unit.

Characteristics

250 VAC / 5 A maximum.

Rating (A)	Reference
40 ... 160	1309 0001

Sealable cover



Use

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

Residential enclosure



Use

Dedicated to the implementation of a single phase ATyS M, it enables easy access to an IP41 compact supply switching solution.

Rating (A)	H x W x D (mm)	Reference
40 ... 160	410 x 305 x 150	1309 9056

Auto transformer

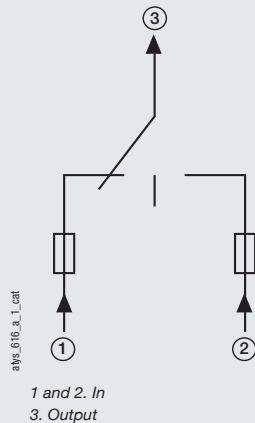
Use

The 400/230 Vac 400 VA auto transformer is used with the ATyS M 6 in case of three-phase network without neutral.

To use it with the ATyS M 6e version 230/400 Vac, the position of the neutral (right or left) and the product network type (3NBL) have to be configured in the programming mode.

Rating (A)	Reference
40 ... 160	4359 4315

Double power supply - DPS



Use

Allows an ATyS M 3s to be supplied by two 230 VAC 50/60Hz networks.

Input

- The input is considered as "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: fuse protected 3.15 A
- Terminal connections: max. 6 mm².
- Modular device: 4 modules 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	1599 4001

Connecting cable for remote interfaces



Use

To connect between a remote interface (D10 or D20) and a control product (ATyS M 6e).

Characteristics: RJ45 8 straight non insulated cables, 3 m length.

Type	Length	Reference
RJ45 cable	3 m	1599 2009

Power connection terminals

Use

The power connection terminals allow conversion of the ATyS M cage terminals into bolt-on type connection terminals, allowing the connection of up to two 70mm² cables.

Each power connection terminal is provided with separation screens.

Rating (A)	Reference
40 ... 160	1399 4017

Remote interfaces for ATyS M 6e



atys_561.c.1_cat

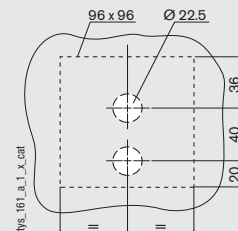


atys_565.c.1_cat



atys_567.a.1_cat

Interfaces are self powered from the ATyS M 6e



Drillings

Use

To display source availability and changeover state on the front of a panel. Interfaces are self powered from the ATyS M 6e. Maximum connection distance of 3 m.

ATyS D10

To display source availability and changeover state on the cabinet front panel. Protection degree: IP21

ATyS D20

In addition to the ATyS D10, it allows displays, operation; tests and configuration on the cabinet front panel. Protection degree: IP21

Door mounting

2 holes Ø 22.5. ATyS connection via RJ45 cable, not isolated.

Cable not provided

Description of accessories

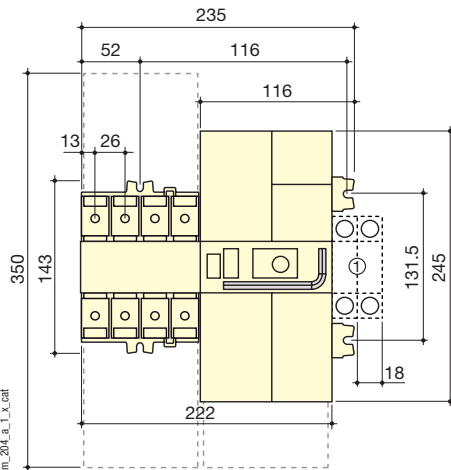
Reference

ATyS D10	1599 2010
ATyS D20	1599 2020

Dimensions

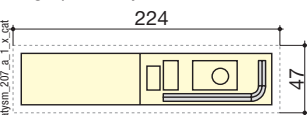
ATyS M 40 to 160 A

Single phase ATyS M

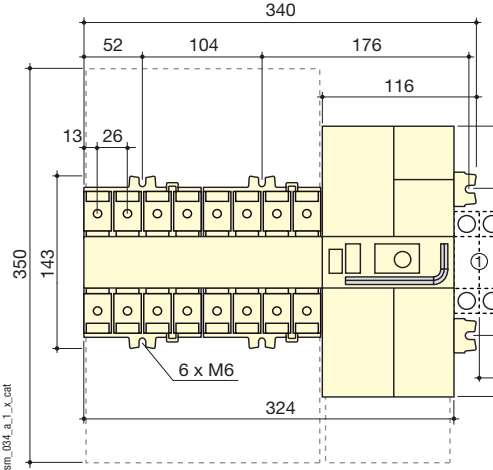


1. Auxiliary contact (2 max).

Single phase ATyS M - Door cutout

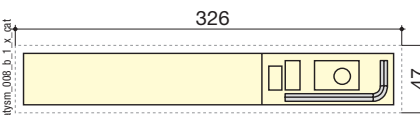


Three-phases ATyS M



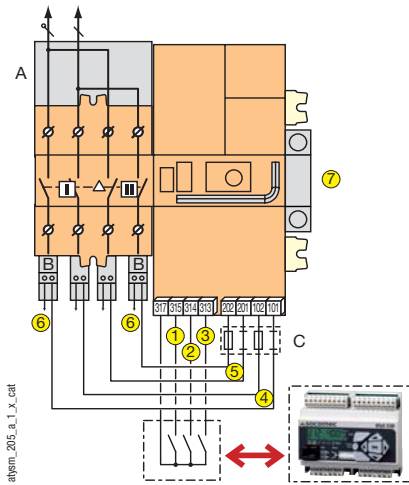
1. Auxiliary contact (2 max).

Three-phases ATyS M - Door cutout

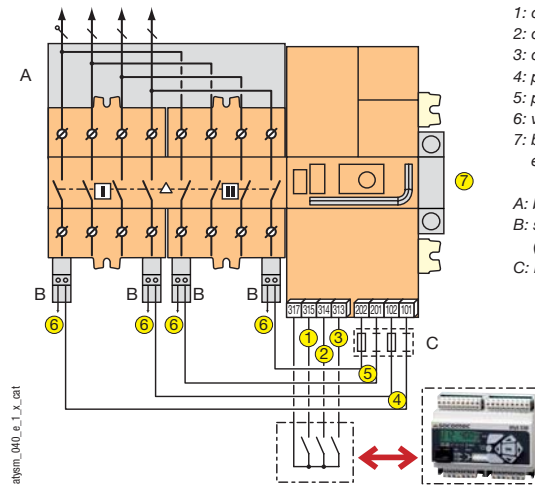


➤ Terminals and connections

Single phase ATyS M 3s

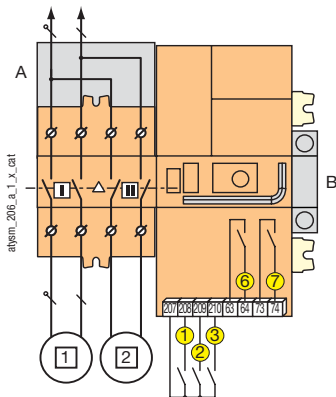


Three-phases ATyS M 3s

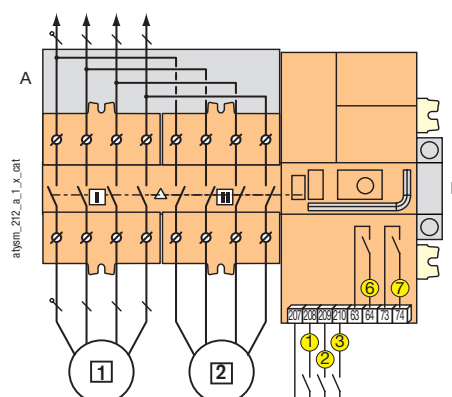


- 1: control position I
 - 2: control position II
 - 3: control position 0 / C
 - 4: power supply I (230 VAC)
 - 5: power supply II (230 VAC)
 - 6: voltage tap
 - 7: block auxiliary contacts - 1 NO/NC each position I, 0, II (factory fitted)
- A: bridging bar (accessories)
 B: single phase voltage sensing tap (accessories)
 C: F1 / F2 = fuse 10 A gG

Single phase ATyS M 6s

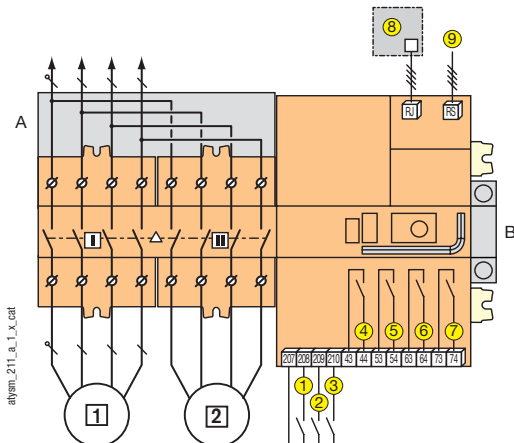


Three-phases ATyS M 6s



- 1 preferred source
 - 2 alternate source
- 1: manual retransfer / priority change
 - 2: charge test
 - 3: automatic mode inhibition
 - 6: relay for product availability
 - 7: genset start / stop relay generating set
- A: bridging bar (accessories)
 B: block auxiliary contacts - 1 NO/NC each position I, 0, II (factory fitted)

Three-phases ATyS M 6s



- 1 preferred source
 - 2 alternate source
- 1: manual retransfer / priority change
 - 2: charge test
 - 3: automatic mode inhibition
 - 6: relay for product availability
 - 7: genset start / stop relay generating set
- A: bridging bar (accessories)
 B: auxiliary contacts unit - 1 AC per position I, 0, II (accessory)

⇒ Characteristics according to IEC 60947-3 and IEC 60947-6-1

40 to 160 A

Thermal current I_{th} (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)	4	4	4	4	4	4

Rated operational currents I_o (A) (IEC 60947-3)

Rated voltage	Load duty category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
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	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
690 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	80/80	100/125	100/125
690 VAC	AC-23 A / AC-23 B	40/40	63/63	63/63	80/80	80/80	80/80

Rated operational currents I_o (A) (IEC 60947-6)-1

Rated voltage	Load duty 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	-/80	-/80	-/80

Overload capacity

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) ⁽²⁾	17	17	17	17	17	17
Prospective short-circuit current (kA rms) ⁽²⁾	50	50	50	50	50	50
Rating of the associated fuse (A) ⁽²⁾	40	63	80	100	125	160

Connection

Minimum connection section	6	6	6	6	6	6
Maximum Cu cable 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⁾	50	50	50	50	50	50
I - II or II - I (ms) ⁽³⁾	180	180	180	180	180	180
Duration of "electrical blackout" I - II (ms) minimum (ATyS M 3s)	60	60	60	60	60	60
Duration of "electrical blackout" I - II (ms) minimum (ATyS M 6s or 6e)	90	90	90	90	90	90

Power supply

Supply 230 VAC mini / maxi (VAC) (ATyS M 3s and ATyS M 6s)	176/288	176/288	176/288	176/288	176/288	176/288
Supply 230 VAC mini / maxi (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

Endurance (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000
Weight (kg)	3.5	3.5	3.5	3.5	3.5	3.5

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

(2) For a rated operating voltage $U_o = 400$ VAC.

(3) Between the order given and reaching of position at U_o (under nominal conditions).

⇒ Services & Technical Assistance

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.





From 125 to 3200 A

➤ Function

The **ATyS** dedicated to applications from 125A, enables the switching On Load three phase sources in remote or automatic mode. This Transfer Switching Equipment (TSE) is designed to be used in low voltage power systems for Open Transition Transfer applications.

This Transfer Switching Equipment (TSE) is composed of two mechanically and electrically interlocked switches.

- The **ATyS 3 (RTSE)** is driven by volt-free dry contacts allowing switching operation between position I, 0, II, from an external control logic or a PLC (control relays type ATyS C30).
- The **ATyS 6 (ATSE)** is dedicated to break before make automatic transfer applications. The ATyS 6 integrates control relays, timers and test functions to manage a Normal/ Backup switching operation between two networks or between a generator set and a network.

➤ General characteristics

- Fully visible breaking.
- On load switching.
- Manual emergency operation.
- 3 stable positions (I, 0, II), overlapping contacts on request (I, I+II, II).
- Padlocking in 0 position (I and II optional).
- AUTO / MANU selector.
- Single phase or three phase control on networks I and II (ATyS 6e and 6m).
- Electrical measurements (ATyS 6e and 6m).
- Measure of I, P, Q, S and PF (ATyS 6m).
- Configurable Control Logic.
- Possibility of inhibition of the electrical control (ATyS 3e).
- Optional communication and inputs/outputs modules (ATyS 3e and ATyS 6).

➤ Conformity to standards

- IEC 60947-3
- IS 14947-3
- EN 60947-3
- NBN EN 60947-3
- BS EN 60947-3
- GB 14048
- IEC 60947-6-1
- EN 60947-6-1
- NBN EN 60947-6-1
- BS EN 60947-6-1
- VDE 0660-107



atys_007_b_1_cat

AUT/MAN command



atys_013_a_1_cat

Emergency manual operation



atys_008_a_1_cat

Padlocking facility

What you need to know

On ATyS 3s and 3e models

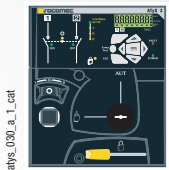
Operation

ATyS 3s



ATyS M 3s is equipped with one 230VAC power input (176-288 VAC), 50/60 Hz (45/65 Hz).

ATyS 3e



ATyS 3e is equipped with 2 power inputs: one for power source 1 & the other one as backup power source 2. It allows the product to be electrically controlled in the 3 positions with only one of the supplies present.

Electrical control

General

- The switching operation can be driven by an external dry contact.
- On ATyS 3e, it is possible to inhibit the electrical control (dry contact closed between terminal n° 313 and 317).

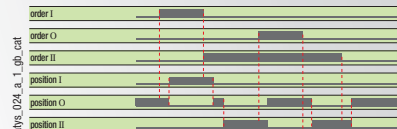
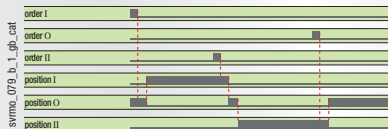
- The first order received has priority as long as it is present. A zero command has always priority, excepted in case of controls inhibition.

Pulse logic

- The switching command is a pulsed dry contact (100ms minimum).
- When the order disappears, the product remains in position. The impulse can be of infinite duration without causing any disturbance.

Contactor logic

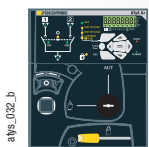
- The transfer command is a maintained dry contact.
- If command I or II disappears, the device returns to zero position, if power supply is available.
- A 0 command drives the device into zero position, irrespective of the status of the I and II commands.



On ATyS 6e and 6m models

Operation

ATyS 6e



ATyS 6m



ATyS 6e and 6m are equipped with 2 power inputs (same as ATyS 3e): one for power source 1 & the other one as backup power source 2. It allows the product to be electrically controlled in the 3 positions with only one of the supplies present.

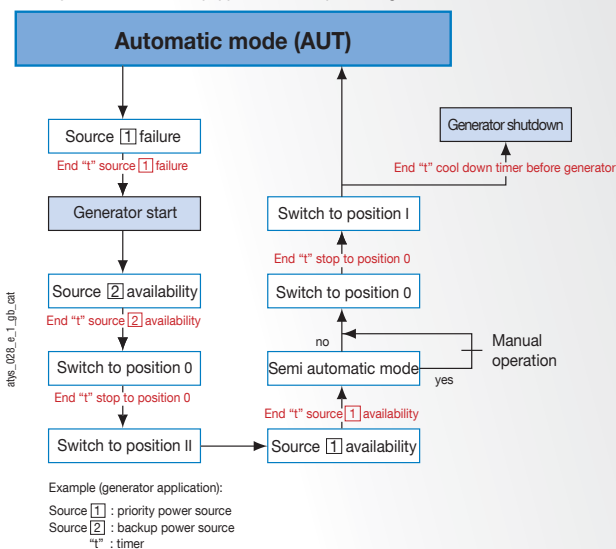
Characteristics

- Single phase or three phase control on networks I and II.
- Independent adjustable over/undervoltage and over/underfrequency 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; ATyS 6e and 6m N/E cycle delay; 3I, In, P, Q, S, PF - 3 phases only on ATyS 6m).

- Display + keyboard (adjustment of all threshold parameters; adjustment of MFT, DTT, OMF, MRT, OMR and CDT Visualization of electrical values; Test functions and position control functions;
- LED's (Product Power On; Status of the electrical sources; Position of the switch status; "AUT" mode; TEST/CONTROL mode and default.
- 1 configurable bistable output relay for generator start/stop command.(30 VDC, 5 A, AC1).
- 1NO fault relay activated in case of changeover position ordered and not reached (30 VDC, 5 A, AC1).

Automatic Control

The ATyS 6e and 6m are equipped with a sequence logic.



Control modes

- Test On Load: This test simulates a loss of priority source. The complete automatic sequence is then followed. Can be activated from the keypad of the product or remotely from an external dry contact.
- Test Off-Load: This test will start and stop the generator without load transfer. Can be activated from the keypad of the product.
- Control of position I, 0, II: Allows the selection of the position of the product; the Automatic mode is inhibited. Can be activated from the keypad of the product or remotely from an external dry contact.
- Manual retransfer (Semi automatic): When this parameter is programmed, the switching back to the main must be acknowledge on the keypad of the product or through the contact of an optional Input/output module.

➔ ATyS - References



ATyS 3

Rating (A)	No. of poles	ATyS 3s	ATyS 3e	Bridging bars*	Terminal shrouds	Terminal screens	Optional modules	Auxiliary contacts	Voltage transformer 400/230 VAC							
125 A	3 P	1523 3012	1533 3012	4109 0019	3 P 2694 3014 ⁽³⁾⁽⁴⁾	3 P 1509 3012 ⁽⁵⁾										
	4 P	1523 4012 ⁽¹⁾	1533 4012		4 P 2694 4014 ⁽³⁾⁽⁴⁾	4 P 1509 4012 ⁽⁵⁾										
160 A	3 P	1523 3016	1533 3016		4109 0025	3 P 2694 3021 ⁽³⁾⁽⁴⁾				3 P 1509 3025 ⁽⁵⁾	ATyS 3s 1599 1002 ⁽⁷⁾					
	4 P	1523 4016 ⁽¹⁾	1533 4016								ATyS 3e 1599 0002 ⁽⁷⁾					
250 A	3 P	1523 3025	1533 3025	4109 0039	4 P 2694 4021 ⁽³⁾⁽⁴⁾	4 P 1509 4025 ⁽⁵⁾		RS485 MODBUS 1599 2000 ⁽⁶⁾ 2 inputs / 2 outputs 1599 2001 ⁽⁶⁾			1599 4063					
	4 P	1523 4025 ⁽¹⁾	1533 4025													
400 A	3 P	1523 3040	1533 3040	4109 0063	2694 3051 ⁽³⁾⁽⁴⁾	1509 3063 ⁽⁵⁾										
	4 P	1523 4040 ⁽¹⁾	1533 4040										2694 4051 ⁽³⁾⁽⁴⁾	1509 4063 ⁽⁵⁾		
630 A	3 P	1523 3063	1533 3063	4109 0080		3 P 1509 3080 ⁽⁵⁾						ATyS 3s 1599 1032 ⁽⁷⁾				
	4 P	1523 4063 ⁽¹⁾	1533 4063										ATyS 3e 1599 0032 ⁽⁷⁾			
800 A	3 P	1523 3080	1533 3080									4109 0120		4 P 1509 4080 ⁽⁵⁾		
	4 P	1523 4080 ⁽¹⁾	1533 4080													
1000 A	3 P	1523 3100	1533 3100	4109 0160		3 P 1509 3160 ⁽⁵⁾										
	4 P	1523 4100 ⁽¹⁾	1533 4100													
1250 A	3 P	1523 3120	1533 3120			4 P 1509 4160 ⁽⁵⁾										
	4 P	1523 4120 ⁽¹⁾	1533 4120													
1600 A	3 P	1523 3160	1533 3160			3 P 1509 3200 ⁽⁵⁾										
	4 P	1523 4160 ⁽¹⁾	1533 4160													
1800 A	3 P	1523 3180				4 P 1509 4200 ⁽⁵⁾										
	4 P	1523 4180														
2000 A	3 P		1533 3200			3 P 1509 3250 ⁽⁵⁾										
	4 P		1533 4200													
2500 A	3 P		1533 3250			4 P 1509 4200 ⁽⁵⁾										
	4 P		1533 4250													
3200 A	3 P		1533 3320													
	4 P		1533 4320													

* 1 required per pole.

(1) Available enclosed (see pages 503 "Enclosed changeover switches").

(2) See page 317 "Copper bars connection kits".

(3) To shroud front switch top and bottom 2 references required.

(4) To fully shroud front, rear, top and bottom 4 references required.

(5) To shroud the front switch top and bottom, 1 reference is required.

(6) On ATyS 3e only.

(7) Factory fitted.

ATyS 3 (continued)

Rating (A)	No. of poles	ATyS 3s	ATyS 3e	DC power supply	Padlockable handle	Key handle interlocking system	Door protective surround	Mounting spacers	DPS - Dual power supply						
125 A	3 P	1523 3012	1533 3012	12VDC/230 VAC 1599 5012	1599 0003 ⁽²⁾	1509 1006 ⁽²⁾	ATyS 3s 1529 0012	1509 0001	1599 4001 ⁽³⁾						
	4 P	1523 4012 ⁽¹⁾	1533 4012												
160 A	3 P	1523 3016	1533 3016												
	4 P	1523 4016 ⁽¹⁾	1533 4016												
250 A	3 P	1523 3025	1533 3025												
	4 P	1523 4025 ⁽¹⁾	1533 4025												
400 A	3 P	1523 3040	1533 3040												
	4 P	1523 4040 ⁽¹⁾	1533 4040												
630 A	3 P	1523 3063	1533 3063												
	4 P	1523 4063 ⁽¹⁾	1533 4063												
800 A	3 P	1523 3080	1533 3080							24VDC/230 VAC 1599 5112	1599 0004 ⁽²⁾	1509 1004 ⁽²⁾	ATyS 3s 1529 0080	1509 0001	1599 4001 ⁽³⁾
	4 P	1523 4080 ⁽¹⁾	1533 4080												
1000 A	3 P	1523 3100	1533 3100												
	4 P	1523 4100 ⁽¹⁾	1533 4100												
1250 A	3 P	1523 3120	1533 3120												
	4 P	1523 4120 ⁽¹⁾	1533 4120												
1600 A	3 P	1523 3160	1533 3160												
	4 P	1523 4160 ⁽¹⁾	1533 4160												
1800 A	3 P	1523 3180													
	4 P	1523 4180													
2000 A	3 P		1533 3200												
	4 P		1533 4200												
2500 A	3 P		1533 3250												
	4 P		1533 4250												
3200 A	3 P		1533 3320												
	4 P		1533 4320												

(1) Available enclosed (see pages 503 "Enclosed changeover switches").

(2) Factory fitted.

(3) On ATyS 3e only.



ATyS 6*

Rating (A)	No. of poles	ATyS 6e	ATyS 6m	Bridging bars**	Voltage sensing kit	Terminal shrouds	Terminal screens	Optional modules	Human interface / Offset Machine	RJ45 connecting cable				
125 A	3 P	1563 3012	1573 3012	4109 0019	3 P 1559 3012 4 P 1559 4013 ⁽³⁾	3 P 2694 3014 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4014 ⁽⁴⁾⁽⁵⁾	3 P 1509 3012 ⁽⁶⁾ 4 P 1509 4012 ⁽⁶⁾	RS485 MODBUS 1599 2000 2 inputs/ 2 outputs 1599 2001	ATyS D10 1599 2010 ATyS D20 1599 2020	1599 2009				
	4 P	1563 4012 ⁽¹⁾	1573 4012											
160 A	3 P	1563 3016	1573 3016											
	4 P	1563 4016 ⁽¹⁾	1573 4016											
250 A	3 P	1563 3025	1573 3025								4109 0025	3 P 1559 3025 4 P 1559 4026 ⁽³⁾	3 P 2694 3021 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4021 ⁽⁴⁾⁽⁵⁾	3 P 1509 3025 ⁽⁶⁾ 4 P 1509 4025 ⁽⁶⁾
	4 P	1563 4025 ⁽¹⁾	1573 4025											
400 A	3 P	1563 3040	1573 3040	4109 0039	3 P 1559 3040 4 P 1559 4041 ⁽³⁾	3 P 2694 4021 ⁽⁴⁾⁽⁵⁾ 4 P 2694 4021 ⁽⁴⁾⁽⁵⁾	3 P 1509 4025 ⁽⁶⁾ 4 P 1509 4025 ⁽⁶⁾							
	4 P	1563 4040 ⁽¹⁾	1573 4040											
630 A	3 P	1563 3063	1573 3063	4109 0063	3 P 1559 3063 4 P 1559 4064 ⁽³⁾	2694 3051 ⁽⁴⁾⁽⁵⁾	1509 3063 ⁽⁶⁾							
	4 P	1563 4063 ⁽¹⁾	1573 4063			2694 4051 ⁽⁴⁾⁽⁵⁾	1509 4063 ⁽⁶⁾							
800 A	3 P	1563 3080	1573 3080	4109 0080	3 P 1559 3080 4 P 1559 4081 ⁽³⁾	3 P 1509 3080 ⁽⁶⁾ 4 P 1509 4080 ⁽⁶⁾	3 P 1509 3080 ⁽⁶⁾ 4 P 1509 4080 ⁽⁶⁾							
	4 P	1563 4080 ⁽¹⁾	1573 4080											
1000 A	3 P	1563 3100	1573 3100	4109 0120	3 P 1559 3120 4 P 1559 4121 ⁽³⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾	3 P 1509 3080 ⁽⁶⁾ 4 P 1509 4080 ⁽⁶⁾							
	4 P	1563 4100 ⁽¹⁾	1573 4100											
1250 A	3 P	1563 3120	1573 3120	4109 0160	3 P 1559 3160 4 P 1559 4161 ⁽³⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾							
	4 P	1563 4120 ⁽¹⁾	1573 4120											
1600 A	3 P	1563 3160	1573 3160	4109 0160	3 P 1559 3160 4 P 1559 4161 ⁽³⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾	3 P 1509 3160 ⁽⁶⁾ 4 P 1509 4160 ⁽⁶⁾							
	4 P	1563 4160 ⁽¹⁾	1573 4160											
2000 A	3 P	1563 3200	1573 3200	(2)	3 P 1559 3200 4 P 1559 4201 ⁽³⁾	3 P 1509 3200 ⁽⁶⁾ 4 P 1509 4200 ⁽⁶⁾	3 P 1509 3200 ⁽⁶⁾ 4 P 1509 4200 ⁽⁶⁾							
	4 P	1563 4200	1573 4200											
2500 A	3 P	1563 3250	1573 3250	(2)	3 P 1559 3200 4 P 1559 4201 ⁽³⁾	3 P 1509 3200 ⁽⁶⁾ 4 P 1509 4200 ⁽⁶⁾	3 P 1509 3200 ⁽⁶⁾ 4 P 1509 4200 ⁽⁶⁾							
	4 P	1563 4250	1573 4250											
3200 A	3 P	1563 3320	1573 3320	(2)	3 P 1559 3200 4 P 1559 4201 ⁽³⁾	3 P 1509 3200 ⁽⁶⁾ 4 P 1509 4200 ⁽⁶⁾	3 P 1509 3200 ⁽⁶⁾ 4 P 1509 4200 ⁽⁶⁾							
	4 P	1563 4320	1573 4320											

* (ATS) Enclosed Automatic Transfer Switch.

** 1 required per pole.

(1) Available enclosed (see pages 504 "Enclosed changeover switches").

(2) See page 317 "Copper bars connection kits".

(3) Neutral on the left (on the right, see page 318).

(4) To shroud front switch top and bottom 2 references required.

(5) To fully shroud front, rear, top and bottom 4 references required.

(6) To shroud front switch top and bottom 1 references required.

ATyS 6* (continued)

Rating (A)	No. of poles	ATyS 6e	ATyS 6m	Auxiliary contacts	Voltage transformer 400/230 VAC	DC power supply	Padlockable handle	Key handle interlocking system	Door protective surround	Mounting spacers						
125 A	3 P	1563 3012	1573 3012	1599 0002 ⁽²⁾	1599 4063	12 VDC / 230 VAC 1599 5012 24 VDC / 230 VAC 1599 5112	1599 0003 ⁽²⁾	1509 1006 ⁽²⁾	1539 0012	1509 0001						
	4 P	1563 4012 ⁽¹⁾	1573 4012													
160 A	3 P	1563 3016	1573 3016													
	4 P	1563 4016 ⁽¹⁾	1573 4016													
250 A	3 P	1563 3025	1573 3025													
	4 P	1563 4025 ⁽¹⁾	1573 4025													
400 A	3 P	1563 3040	1573 3040													
	4 P	1563 4040 ⁽¹⁾	1573 4040													
630 A	3 P	1563 3063	1573 3063													
	4 P	1563 4063 ⁽¹⁾	1573 4063													
800 A	3 P	1563 3080	1573 3080								1599 0032 ⁽²⁾	1599 4120	1599 0004 ⁽²⁾	1509 1004 ⁽²⁾	1539 0080	
	4 P	1563 4080 ⁽¹⁾	1573 4080													
1000 A	3 P	1563 3100	1573 3100													
	4 P	1563 4100 ⁽¹⁾	1573 4100													
1250 A	3 P	1563 3120	1573 3120													
	4 P	1563 4120 ⁽¹⁾	1573 4120													
1600 A	3 P	1563 3160	1573 3160													
	4 P	1563 4160 ⁽¹⁾	1573 4160													
2000 A	3 P	1563 3200	1573 3200	included	1599 4200											
	4 P	1563 4200	1573 4200													
2500 A	3 P	1563 3250	1573 3250													
	4 P	1563 4250	1573 4250													
3200 A	3 P	1563 3320	1573 3320													
	4 P	1563 4320	1573 4320													

* (ATS) Enclosed Automatic Transfer Switch.

(1) Available enclosed (see pages 504 "Enclosed changeover switches").

(2) Factory fitted.

Other products

Make before break motorised changeover switch (overlapping contact).



atyb_003_a_1_cat

Function

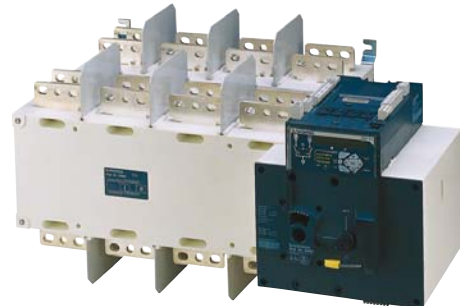
They provide switching, uninterrupted low voltage source inversion and safety isolation. They are intended to be coupled with a UPS (I, I+II, II).

General characteristics

- For ratings from 125 to 1800 A, 3 and 4 pole.
- 3 stable positions (I - I+II - II).
- Automatic on-load switching and source changeover without interruption with a UPS.
- Manual emergency operation.
- Padlocking in 3 positions.

Consult us

Motorised mixed pole changeover switches



atyb_725_a_1_cat

Function

They provide switching and source inversion for low voltage sources of different power ratings.

General characteristics

1250 to 3200 A ratings, 3 and 4 pole.

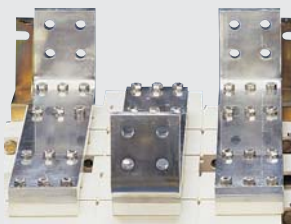
Consult us

⇒ Accessories

Bridging bars



access_205_a_2_cat



access_041_a_1_cat

Use

To provide common point on either incoming or outgoing terminals.

Rating (A)	Section (mm)	Reference
125 ... 160	20 x 2.5	4109 0019
250	25 x 2.5	4109 0025
400	32 x 5	4109 0039
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

Copper bars connection kits

Fig.1

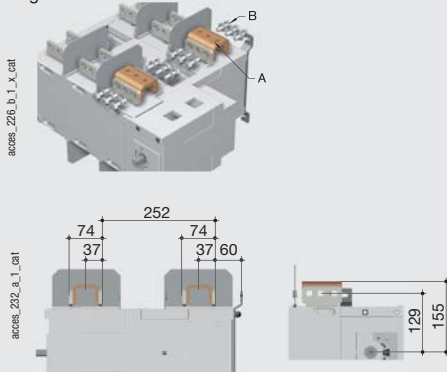


Fig. 2

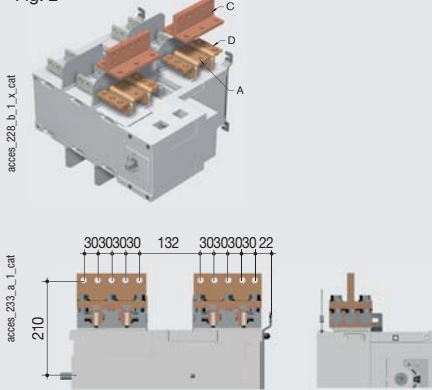
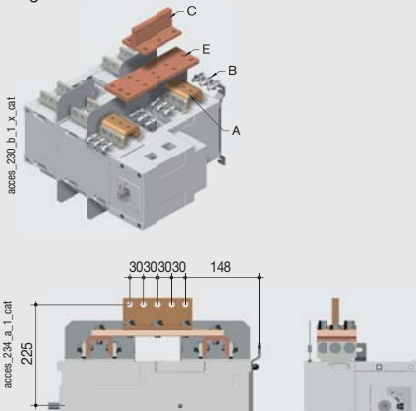


Fig. 3



Use

Enables:

- Connection between the two power terminals from 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 piece (part A) are delivered bridged from factory. Bolt sets must be ordered separately. Technical notice for these specific accessories can be download from www.socomec.com

Top or bottom flat connection - Fig. 1

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2 000 ... 2 500	Connection - part A	2	2619 1200
2 000 ... 2 500	Bolt set - part B	2	2699 1200
3 200	Connection - part A		included
3 200	Bolt set - part B	2	2699 1200

Top or bottom edgewise connection - Fig. 2

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2 000 ... 2 500	Connection - part A	2	2619 1200
2 000 ... 2 500	T piece - part C	2	2629 1200⁽²⁾
2 000 ... 2 500	Right angle - part D	2	2639 1200⁽²⁾
3 200	Connection - part A		included
3 200	T piece - part C	2	2629 1200⁽²⁾
3 200	Right angle - part D	2	2639 1200⁽²⁾

Top or bottom bridging connection - Fig. 3

Rating (A)	Piece	Quantity to order per pole ⁽¹⁾	Reference
2 000 ... 2 500	Connection - part A	2	2619 1200
2 000 ... 2 500	Bolt set - part B	2	2699 1200
2 000 ... 2 500	Bar - piece E	1	4109 0250⁽²⁾
2 000 ... 2 500	T piece - part C	1	2629 1200⁽²⁾
3 200	Connection - part A		included
3 200	Bolt set - part B	2	2699 1200
3 200	Bar - piece E	1	4109 0320⁽²⁾
3 200	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.

Control voltage transformer

Use

Enables a 230 VAC device to be supplied with 400 VAC.

Rating (A)	Reference
125 ... 630	1599 4063
800 ... 1800	1599 4120
2000 ... 3200	1599 4200

DC power supply

Use

Allows standard ATyS 3 or ATyS 6 to be DC power supplied. To be positioned as close as possible to 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

Mounting spacers



atys_00b_a_2_cat

Use

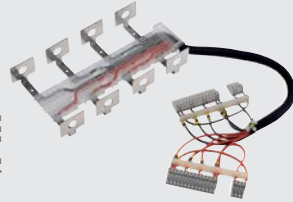
Raises the device's terminals 10mm away from the bottom of the enclosure or frame on which the device is mounted.

This may also be used to replace the original mounting spacers.

Rating (A)	Description of accessories	Reference
125 ... 630	1 set of 2 spacers	1509 0001

Voltage sensing and power supply kit

From 125 to 630 A.



atys_60b_a_1_cat

Use

For ATyS 6 power supply and voltage measurement (4 wires, three phase). 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 ATyS 6 - 3 pole

Rating (A)	Reference
125 ... 160	1559 3012
250	1559 3025
400	1559 3040
630	1559 3063
800 ... 1000	1559 3080
1250	1559 3120
1600	1559 3160
2000 ... 3200	1559 3200

From 800 to 3200 A.



atys_60b_a_2_cat

From ATyS 6 - 4 pole

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	1559 4160	1559 4161
2000 ... 3200	1559 4200	1559 4201

Plug-in optional modules



atys_016_a_1_cat

Use

N°1 - communication module

Control and state feedback of the changeover switch via a 2 or 3-wire RS485 link with JBUS/MODBUS protocol® and transmission speed up to 38 400 baud.

No. 2 - module with 2 inputs / 2 outputs

- On ATyS 3e
 - 2 inputs: changeover control + backup network availability;
 - 2 outputs: a load shedder relay + fault relay.
- On ATyS 6e and 6m, 2 inputs / 2 programmable outputs.

Description of accessories	Reference
RS485 MODBUS (N°1)	1599 2000
2 inputs/2 outputs (N°2)	1599 2001

Terminal shrouds



aces_20b_a_2_cat

Use

Protection IP2X against direct contact with terminals or connecting parts.

Advantages

Perforations allowing remote thermographic inspection without removal.

Rating (A)	No. of poles	Position	Reference
125 ... 160	3 P	top / bottom / front (I) / rear (II)	2694 3014 ⁽¹⁾⁽²⁾
125 ... 160	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⁾
630	3 P	top / bottom / front (I) / rear (II)	2694 3051 ⁽¹⁾⁽²⁾
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.

Terminal screens

access_207_a_2_cat



Use

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

Rating (A)	No. of poles	Position	Reference
125 ... 160	3 P	top / bottom	1509 3012
125 ... 160	4 P	top / bottom	1509 4012
250 ... 400	3 P	top / bottom	1509 3025
250 ... 400	4 P	top / bottom	1509 4025
630	3 P	top / bottom	1509 3063
630	4 P	top / bottom	1509 4063
800 ... 1 250	3 P	top / bottom	1509 3080
800 ... 1 250	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

Auxiliary contacts

access_006_a_1_cat



Use

Pre breaking and signalling of positions I and II: 1 extra NO / NC auxiliary contact in each position (factory fitted).

Low level auxiliary contacts : Consult us.

For ATyS 3s

Rating (A)	Reference
125 ... 630	1599 1002
800 ... 1800	1599 1032

For ATyS 3e, 6e and 6m

Rating (A)	Reference
125 ... 630	1599 0002
800 ... 1600	1599 0032
2000 ... 3200	included

Padlocking in the 3 positions I-0-II

atys_125_a_1_cat



Use

Allows padlocking of the operation in the 3 positions I, 0 and II (factory fitted).

Rating (A)	Reference
125 ... 630	1599 0003
800 ... 3200	1599 0004

Key handle interlocking accessories

atys_101_a_1_cat



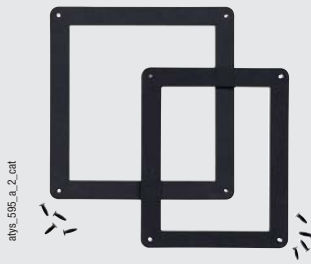
Use

Locking the electrical control and the backup control in position 0 using a RONIS EL11AP lock (factory fitted).

As standard, locking in position 0. Optional padlocking in 3 positions: Locking in position I, 0 or II

Rating (A)	Reference
125 ... 630	1509 1006
800 ... 3200	1509 1004

Door protective surround



aty_s55_a_2_cat

Use

Door finishing surround for protecting ATyS application.

For ATyS 3s

Rating (A)	Reference
125 ... 630	1529 0012
800 ... 1800	1529 0080

For ATyS 3e, 6e and 6m

Rating (A)	Reference
125 ... 630	1539 0012
800 ... 3200	1539 0080

Remote control interfaces for ATyS 6e, 6m and C30



aty_s64_c_1_cat



aty_s65_c_1_cat

Use

To display source availability and changeover state on the front of a panel. Interfaces are self powered from the ATyS. Maximum connection distance: 3 m.

ATyS D20

In addition to the ATyS D10 allows displays, operation and configuration on the cabinet front panel. Protection degree: IP21.

ATyS D10

To display source availability and changeover state on the cabinet front panel. Protection degree: IP21.

Door mounting

2 holes Ø 22.5. ATyS connection via RJ45 cable, not isolated.

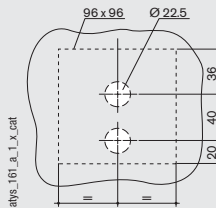
Cable not provided.

Interfaces are self powered from the ATyS.

Drillings



aty_s67_a_1_cat



aty_s68_a_1_x_cat

Description of accessories

Description of accessories	Reference
ATyS D10	1599 2010
ATyS D20	1599 2020

Connecting cable for remote interfaces



access_209_a_2_cat

Use

To connect between a remote interface (D10 or D20) and a control product (C30 or ATyS 6e or 6m).

Characteristics

RJ45 8 straight non insulated wires, length 3m.

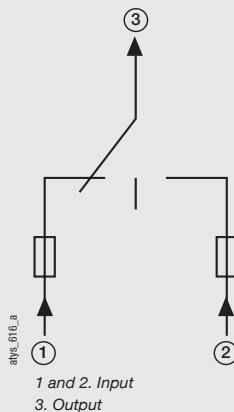
For ATyS 6e, 6m and C30

Type	Length	Reference
RJ45 cable	3 m	1599 2009

Double power supply - DPS



aty_s612_a_2_cat



Use

Allows an ATyS 3s to be supplied by two 230 VAC 50/60Hz networks.

Input

- The input is considered as "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: fuse protected 3.15 A
- Terminal connections: max. 6 mm².
- Modular device: 4 modules 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

Description of accessories	Reference
	1599 4001

Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 1000 A

Thermal current I_{th} (40°C)	125 A	160 A	250 A	400 A	630 A	800 A	1 000 A
Rated insulation voltage U_i (V)	800	800	800	800	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	12	12	12

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Load duty 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-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000
415 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000
415 VAC	AC-23 A / AC-23 B	125/125	160/160	250/250	250/250	500/500	800/800	1000/1000
690 VAC ⁽²⁾	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	200/250	200/250	500/500	800/800	800/800
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	125/125	125/160	125/160	315/315	800/800	800/800
690 VAC ⁽²⁾	AC-23 A / AC-23 B	63/80	63/80	100/125	100/125	160/200	200/250	200/250
220 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	630/630	800/800	1000/1000
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	500/500	800/800	1000/1000
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	500/500	800/800	1000/1000
440 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000
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⁾
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⁾
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⁾

Rated operational currents I_o (A) according to IEC 60947-6-1

415 VAC	AC - 31 B	125	160	250	400	630	800	1 000
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Overload capacity

Rated short-time withstand current 1 s. I_{sw} (kA eff.)	7	7	9	9	13	26	35
Short-circuit making capacity (kA peak) ⁽⁵⁾	20	20	30	30	45	55	80
Prospective short-circuit (kA rms) ⁽⁵⁾	100	100	50	18	70	50	100
Associated fuse rating (A) ⁽⁵⁾	125	160	250	400	630	800	1000

Connection

Minimum Cu cable section (mm ²)	35	50	95	185	2 x 150	2 x 185	2 x 240
Minimum Cu busbar section (mm ²)					2 x 30 x 5	2 x 40 x 5	2 x 50 x 5
Maximum Cu cable section (mm ²)	50	95	150	240	2 x 300	2 x 300	4 x 185
Maximum Cu busbar width (mm)	25	25	32	32	50	63	63
Tightening torque min / max (Nm)	9/13	9/13	20/26	20/26	20/26		

Switching time (Standard setting)

I - II or II - I (s) ⁽⁶⁾	0.75	0.75	1.3	1.3	1.3	2.6	2.6
I - 0 or II - 0 (s) ⁽⁶⁾	0.45	0.45	0.85	0.85	0.85	1.6	1.6
Duration of "electrical blackout" I - II (s)	0.3	0.3	0.6	0.6	0.6	1.5	1.5

Power supply

Power supply 230 VAC min / max (VAC)	176/288	176/288	176/288	176/288	176/288	176/288	176/288
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Control supply power demand

Supply 230 VAC inrush / nominal (VA)	420/80	420/80	420/100	420/100	420/110	450/120	450/120
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Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	8 000	8 000	5 000	4 000	4 000
Weight of 3 P switch (ATyS 3) (kg)	3.2	3.3	3.7	4.7	5.2	19.6	23.1
Weight of 4 P switch (ATyS 3) (kg)	3.3	3.4	3.8	5.2	5.7	23.1	24.6
Weight of 3 P switch (ATyS 6) (kg)	4	4.1	4.5	5.5	6	20.4	23.9
Weight of 4 P switch (ATyS 6) (kg)	4.1	4.2	4.6	6	6.5	23.9	25.4

(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 by polarity.

(5) For a rated operational voltage $U_o = 400$ VAC.

(6) Between the command given and arrival in position at U_n (under nominal conditions).

1 250 to 3 200 A

Thermal current I_{th} (40°C)	1 250 A	1 600 A	1 800 A	2 000 A	2 500 A	3 200 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Load duty category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-21 A / AC-21 B	1250/1250	1600/1600	1800/1800	-/2000	-/2500	-/3200
415 VAC	AC-22 A / AC-22 B	1250/1250	1600/1600	1800/1800	-/2000	-/2500	-/3200
415 VAC	AC-23 A / AC-23 B	1250/1250	1250/1250	1250/1250	-/1600	-/1600	-/1600
690 VAC ⁽²⁾	AC-20 A / AC-20 B	1250/1250	1600/1600	1800/1800			
690 VAC ⁽²⁾	AC-21 A / AC-21 B	800/800	1000/1000	1000/1000			
690 VAC ⁽²⁾	AC-22 A / AC-22 B	800/800	1000/1000	1000/1000			
690 VAC ⁽²⁾	AC-23 A / AC-23 B	200/250	500/500	500/500			
220 VDC	DC-20 A / DC-20 B	1250/1250	1600/1600	1800/1800			
220 VDC	DC-21 A / DC-21 B	1250/1250	1250/1250	1250/1250			
220 VDC	DC-22 A / DC-22 B	1250/1250	1250/1250	1250/1250			
220 VDC	DC-23 A / DC-23 B	1250/1250	1250/1250	1250/1250			
440 VDC	DC-20 A / DC-20 B	1250/1250	1600/1600	1800/1800			
440 VDC	DC-21 A / DC-21 B	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾			
440 VDC	DC-22 A / DC-22 B	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾			
440 VDC	DC-23 A / DC-23 B	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾	1250 ⁽³⁾ /1250 ⁽³⁾			

Rated operational currents I_s (A) according to IEC 60947-6-1

415 VAC	AC - 31 B	1 250	1 600	1800	2 000	2 500	3 200
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Overload capacity

Rated short-time withstand current 1 s. I_{cw} (kA eff.)	35	50	50	55	55	55
Rated peak withstand current (kA peak) ⁽⁴⁾	80	110	110	120	120	120
Prospective short-circuit (kA rms) ⁽⁴⁾	100	100	100			
Associated fuse rating (A) ⁽⁴⁾	1250	1600	1800			

Connection

Minimum Cu busbar section (mm ²)	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 section (mm ²)	4 x 185	6 x 185	6 x 185			
Maximum Cu busbar width (mm)	63	100	100	100	100	100
Tightening torque min / max (Nm)	20/26	40/45	40/45	40/45	40/45	40/45

Switching time (Standard setting)

I - II or II - I (s) ⁽⁵⁾	2.6	2.6	2.6	2	2	2
I - 0 or 0 (s) ⁽⁵⁾	1.6	1.6	1.6	1	1	1
Duration of "electrical blackout" I - II (s)	1.5	1.6	1.6	1	1	1

Power supply

Power supply 230 VAC min / max (VAC)	176/288	176/288	176/288	176/288	176/288	176/288
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Control supply power demand

Supply 230 VAC inrush / nominal (VA)	450/120	450/120	450/120	550/390	550/390	550/390
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Mechanical characteristics

Durability (number of operating cycles)	4 000	3 000	3 000	3 000	3 000	3 000
Weight of 3 P switch (ATyS 3) (kg)	24.6	36.1	36.1	47	51	59
Weight of 4 P switch (ATyS 3) (kg)	29.6	42.1	42.1	57	61	69
Weight of 3 P switch (ATyS 6) (kg)	25.4	36.9		47	51	59
Weight of 4 P switch (ATyS 6) (kg)	30.4	42.9		57	61	69

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

(2) With terminal shrouds or phase barrier.

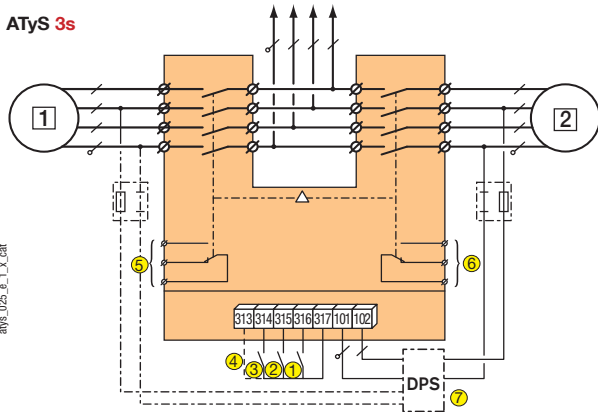
(3) 4-pole device with 2 poles in series by polarity.

(4) For a rated operational voltage $U_s = 400$ VAC.

(5) Between the command given and arrival in position at U_s (under nominal conditions).

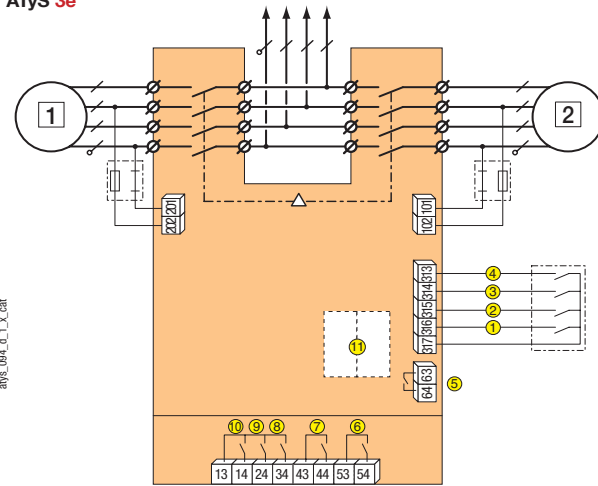
➤ Terminals and connections

ATyS 3s



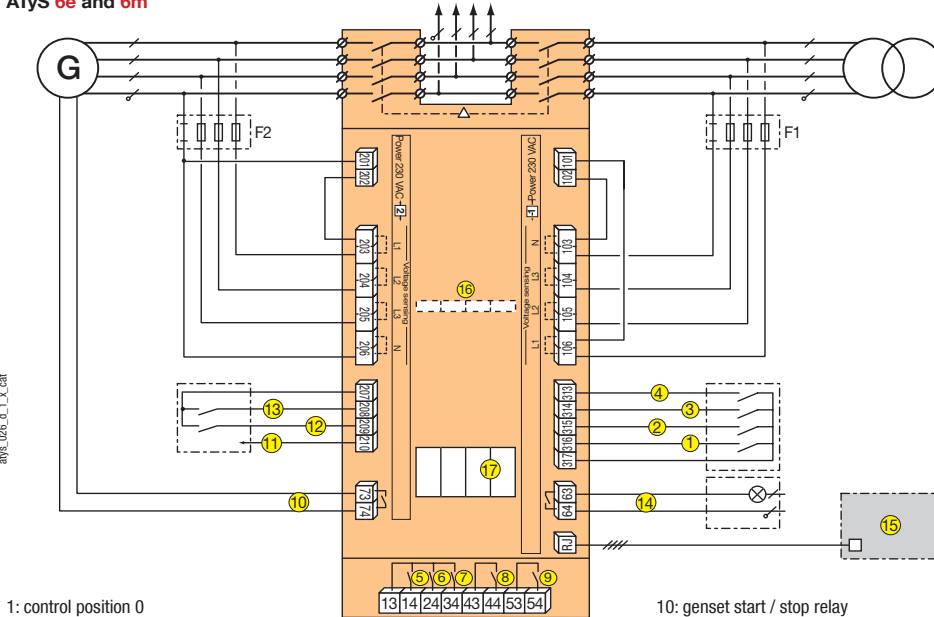
- 1 preferred source
- 2 alternate source
- 1: control position 0
- 2: control position I
- 3: control position II
- 4: configuration of the control logic
- 5: NO/NC position and prebreaking contact for position I
- 6: NO/NC position and prebreaking contact for position II
- 7: Double Power Supply (accessory)

ATyS 3e



- 1 preferred source
- 2 alternate source
- 1: control position 0
- 2: control position I
- 3: control position II
- 4: inhibition of the control position
- 5: fault relays
- 6: auxiliary contact, closed when the switch is padlocked
- 7: auxiliary contact, closed when the switch is in "AUT" mode
- 8: auxiliary contact, closed when the switch is in position 0
- 9: auxiliary contact, closed when the switch is in position II
- 10: auxiliary contact, closed when the switch is in position I
- 11: slots for optional modules

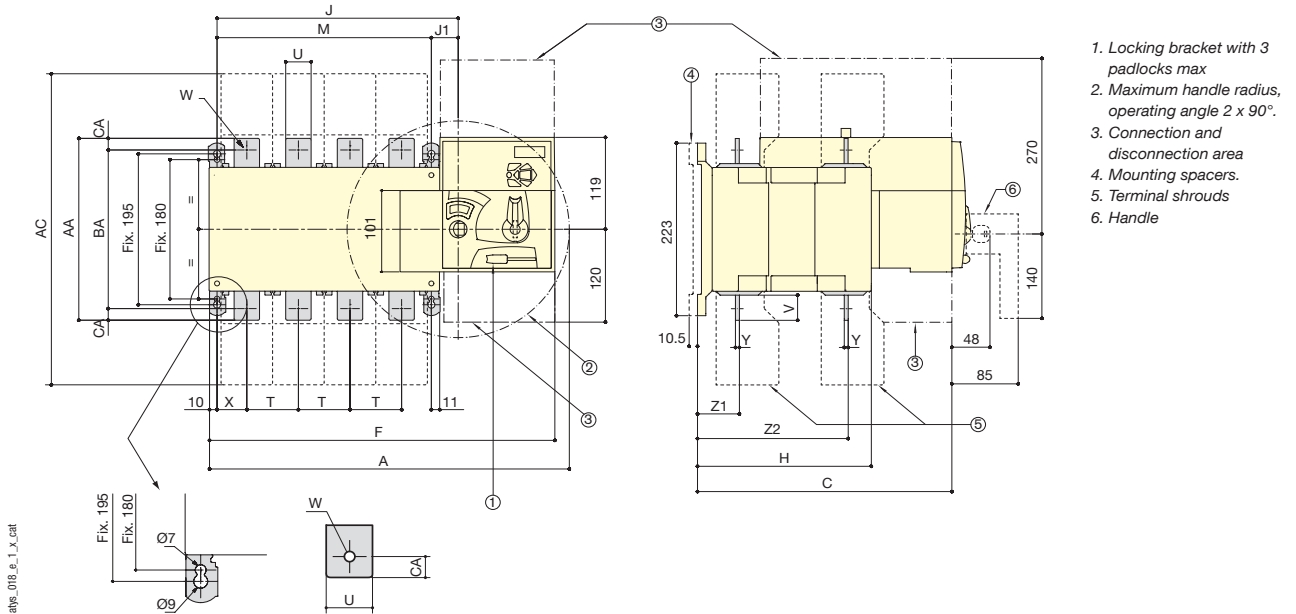
ATyS 6e and 6m



- 1: control position 0
- 2: control position I
- 3: control position II
- 4: remote command
- 5: auxiliary contact, closed when the switch is in position I
- 6: auxiliary contact, closed when the switch is in position II
- 7: auxiliary contact, closed when the switch is in position 0
- 8: auxiliary contact, closed when the switch is in "AUT" mode
- 9: auxiliary contact, closed when the switch is padlocked
- 10: genset start / stop relay
- 11: auxiliary power supply (for optional modules control)
- 12: remote "test on-load" input
- 13: DTT inhibit input. Transfer initiated as soon as the input is closed when DTT = max. value.
- 14: fault relay
- 15: remote control interface
- 16: current transformers (ATyS 6m only)
- 17: slots for optional modules

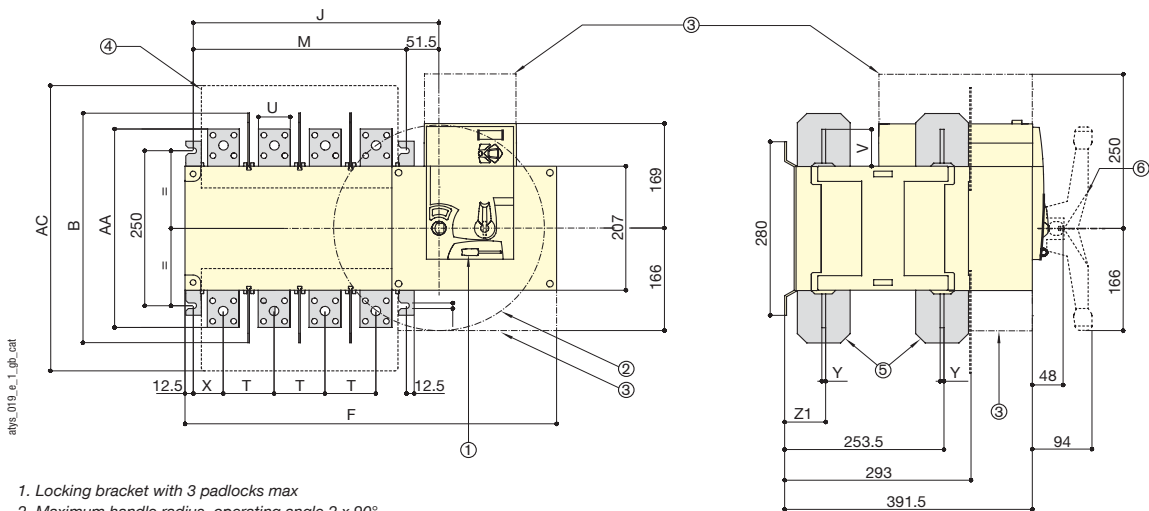
➔ ATyS - Dimensions

ATyS 125 to 630 A



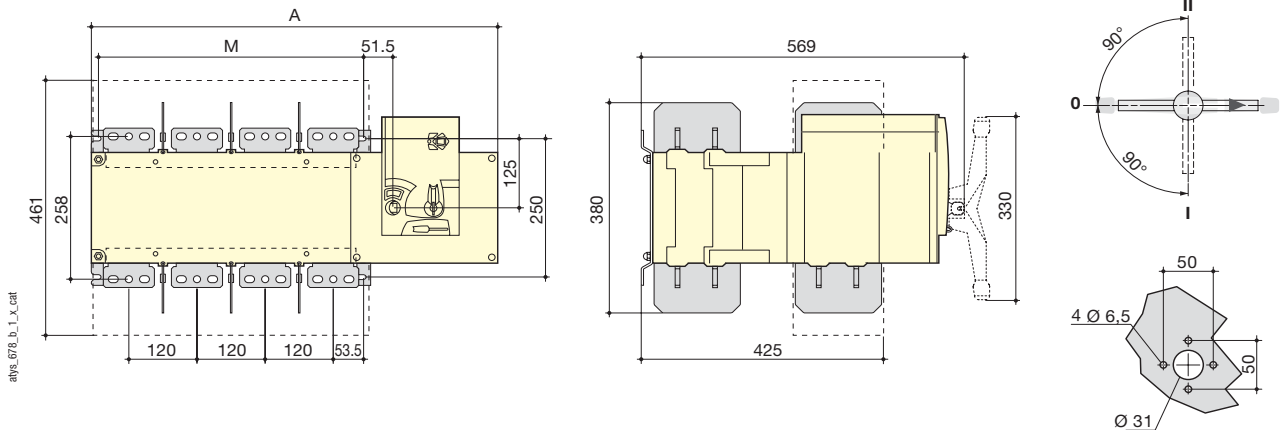
Rating (A)	Overall dimensions			Terminal shrouds AC	Switch body					Switch mounting		Connection												
	A 3p.	A 4p.	C		F 3p.	F 4p.	H	J 3p.	J 4p.	J1	M 3p.	M 4p.	T	U	V	W	X 3p.	X 4p.	Y	Z1	Z2	AA	BA	AC
125	304	340	244	235	286.5	322.5	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10
160	304	340	244	235	286.5	322.5	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10
250	345	395	244.5	280	328	378	153	195	245	35	160	210	50	25	30	11	33	33	3.5	39.5	134.5	160	130	15
400	345	395	244.5	280	328	378	153	195	245	35	160	210	50	35	35	11	33	33	3.5	39.5	134.5	170	140	15
630	394	459	320.5	400	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



Rating (A)	Overall dimensions B	Terminal shrouds AC	Switch body				Switch mounting		Connection						
			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	60	7	66.5	321
1000	370	461	504	584	306.5	386.5	255	335	80	50	60.5	60	7	66.5	321
1250	370	461	504	584	306.5	386.5	255	335	80	60	65	60	7	66.5	330
1600	380	481	596	716	398.5	518.5	347	467	120	90	44	66	8	67.5	288
1800	380	481	596	716	398.5	518.5	347	467	120	90	44	66	8	67.5	288

ATyS 2000 to 3200 A



Rating (A)	Overall dimensions		Switch mounting	
	A 3p.	A 4p.	M 3p.	M 4p.
2 000 ... 3 200	596	716	347	467

➤ Cut of dimensions

ATyS 125 to 630 A

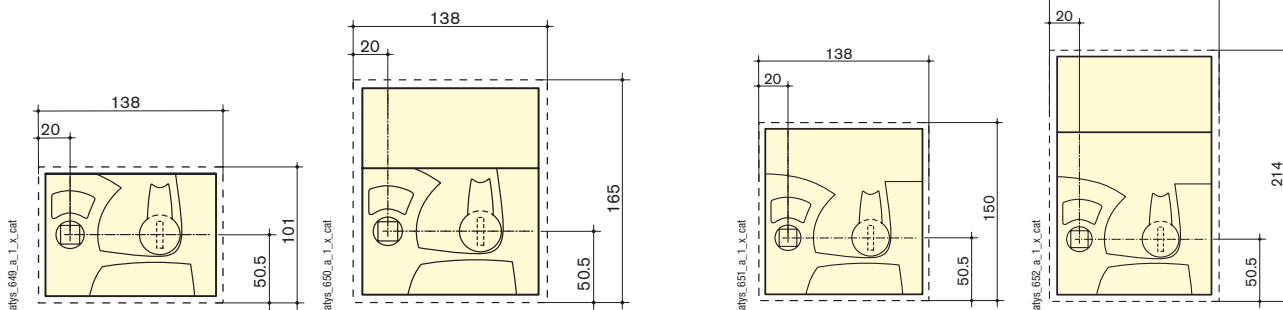
ATyS 3s

ATyS 3e, 6e, 6m

ATyS 800 to 1800 A

ATyS 3s

ATyS 3e, 6e, 6m

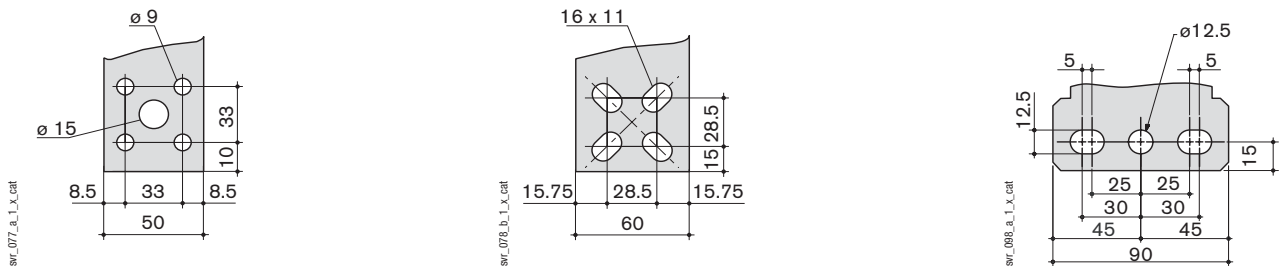


➤ Connection terminals

ATyS 800 to 1000 A

ATyS 1250 A

ATyS 1600 to 3200 A



ATyS C30 / ATyS C40

Control relays



➤ Applications

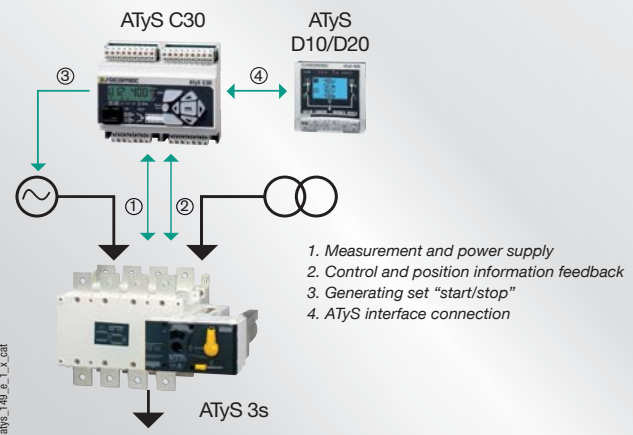
ATyS C30

➤ Function

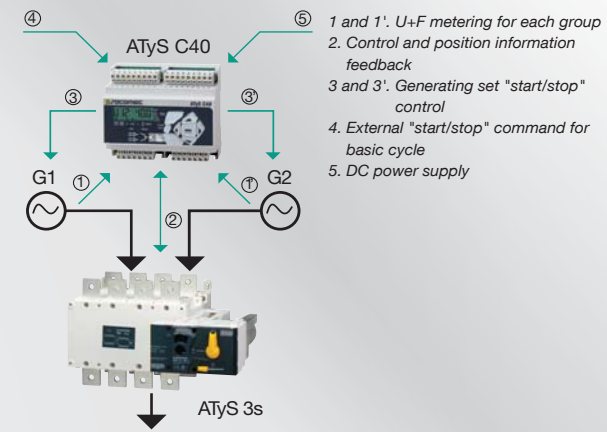
ATyS C30 / C40 allows any type of motorized changeover control: ATyS and ATyS M, contactors, circuit breakers or other motorised switches.

➤ Conformity to standards

- IEC 61010-1
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-4-8
- IEC 61000-4-11
- IEC 60068-2-6
- IEC 60068-2-11
- IEC 60068-2-30



ATyS C40



General characteristics

- Modular design (6 modules).
- DIN rail mounting.
- 2 output relays for changeover control.

ATyS C30

- ATyS D10 or D20 connection.
- Inputs for auxiliary position contacts.
- Metering 3U on network 1.
- Metering 1U on network 2.
- 2 programmable inputs for the following functions: test, loss of a network, remote starting/stopping.
- 2 programmable inputs for the following functions: information transfer, circuit breaker control.

ATyS C40

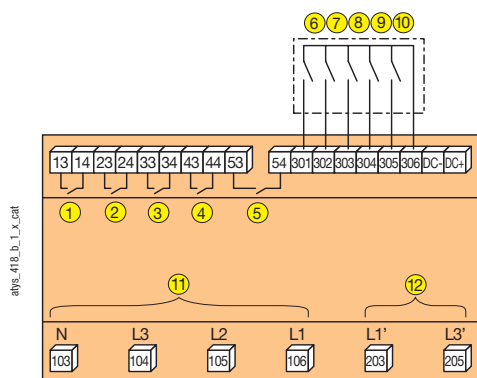
- Dual gensets controller with a redundant genset application cycle (basic cycle).
- Single phase sensing on Gen1 & Gen 2.
- 3 programmable inputs for the following functions: test, loss of a network, remote starting/stopping.
- 1 programmable input for the following functions: information transfer, circuit breaker control.
- 2 start Gen contacts (Gen1 & Gen2).

Electrical characteristics

Supplied from measurement circuit	110 ... 400 VAC
DC power supply	< 9 ... 30 VDC
Measurement range	110 ... 400 VAC / $\pm 10\%$
Frequency	50/60 Hz
Accuracy	$\pm 1\%$

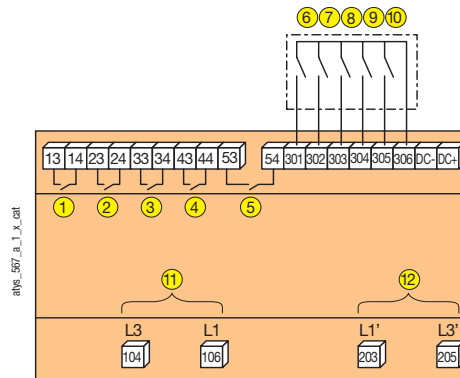
Terminals

ATyS C30



- | | |
|-------------------------------------|--|
| 1. Generator 1 start / stop control | 8. AC 2: auxiliary contact position 2 |
| 2. Pos 1: power component control | 9. I1: programmable input |
| 3. Pos 2: power component control | 10. I2: programmable input |
| 4. O1: programmable output | 11. Source 1: 3 U network measurement and power supply |
| 5. O2: programmable output | 12. Source 2: 1 U network measurement and power supply |
| 6. 1: auxiliary contact position 1 | |
| 7. 0: auxiliary contact position 0 | |

ATyS C40



- | | |
|---------------------------------------|--|
| 1. Generator 1 start / stop control | 7. I3: programmable input |
| 2. Pos 1: power component control | 8. AC 2: auxiliary contact position 2 |
| 3. Pos 2: power component control | 9. I1: programmable input |
| 4. O1: programmable output | 10. I2: programmable input |
| 5. Generator 2 start / stop control | 11. Metering 1U + frequency generator G1 |
| 6. AC 1: auxiliary contact position 1 | 12. Metering 1U + frequency generator G2 |

References

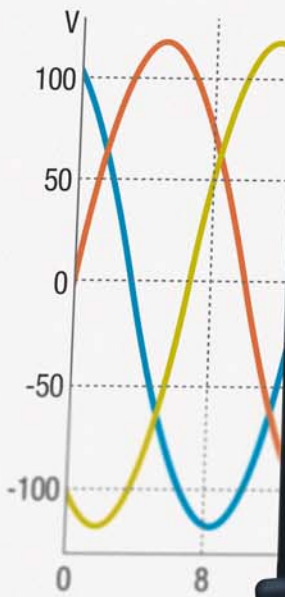


Type	ATyS C30 Reference	ATyS C40 Reference
Supplied from measurement circuit	1599 3030	1599 3040
DC power supply	1599 3031	1599 3040

Energy management, measurement and analysis



Current waveforms



socomec DIRIS D600

Socomec Diris N600 Transformer 1 03/11/2009 13:35

- Measures
- Energies
- Quality
- Events
- Parameters
- Diagnostic
- System
- Help

Tr
15/
V1
V2
V3
F 5

socomec

0009374 kWh
T23

AC 50/60Hz 0.5-10(63)A

socomec DIRIS A40

1-2 400.3 V ✓
U 2-3 399.5
3-1 399.9
F 50.00 Hz
E 000217683 kWh

100 100 100
50 50 50
10 10 10
11 12 13

1 °C V F P PF MAX AVG H

Energy efficiency

From sensors to supervision: complete solutions for monitoring power distribution



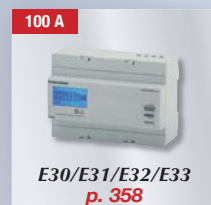
➔ You want to design and put in place a system for...

- monitoring an electrical installation**
 SOCOMEC offers a complete solution from the measuring sensor to the monitoring software. We offer a wide range of digital and analogue indicators (single or multifunction) to meet all your needs.
See our selection guide p. 330
- energy management**
 More than 15 years ago, SOCOMEC developed DIRIS, a complete system designed to run high and low voltage electrical networks, whilst ensuring the measurement and monitoring of electrical values, the metering and management of energy (electricity, water, gas, etc.), the remote control and checking of devices and the protection of networks.
See our selection guide p. 331
- Power quality management**
 The DIRIS N300 and N600 are 2 high-precision products (class 0.2) which provide quality measurement functions.
See our selection guide p. 331

➔ SERVICES & TECHNICAL ASSISTANCE: second nature!

When different parts of a supply system interconnect, it brings together technical areas which don't always see things the same. SOCOMEC's multidisciplinary expertise guarantees optimal commissioning and use of the proposed solutions (*see following pages*).

COUNTIS energy meters



DIRIS multifunction meters



Electrical network analysis system

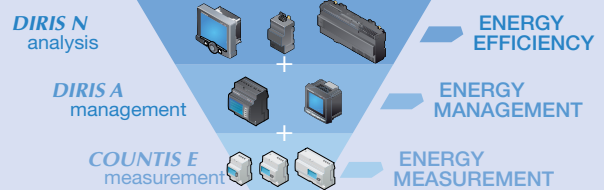


Range overview

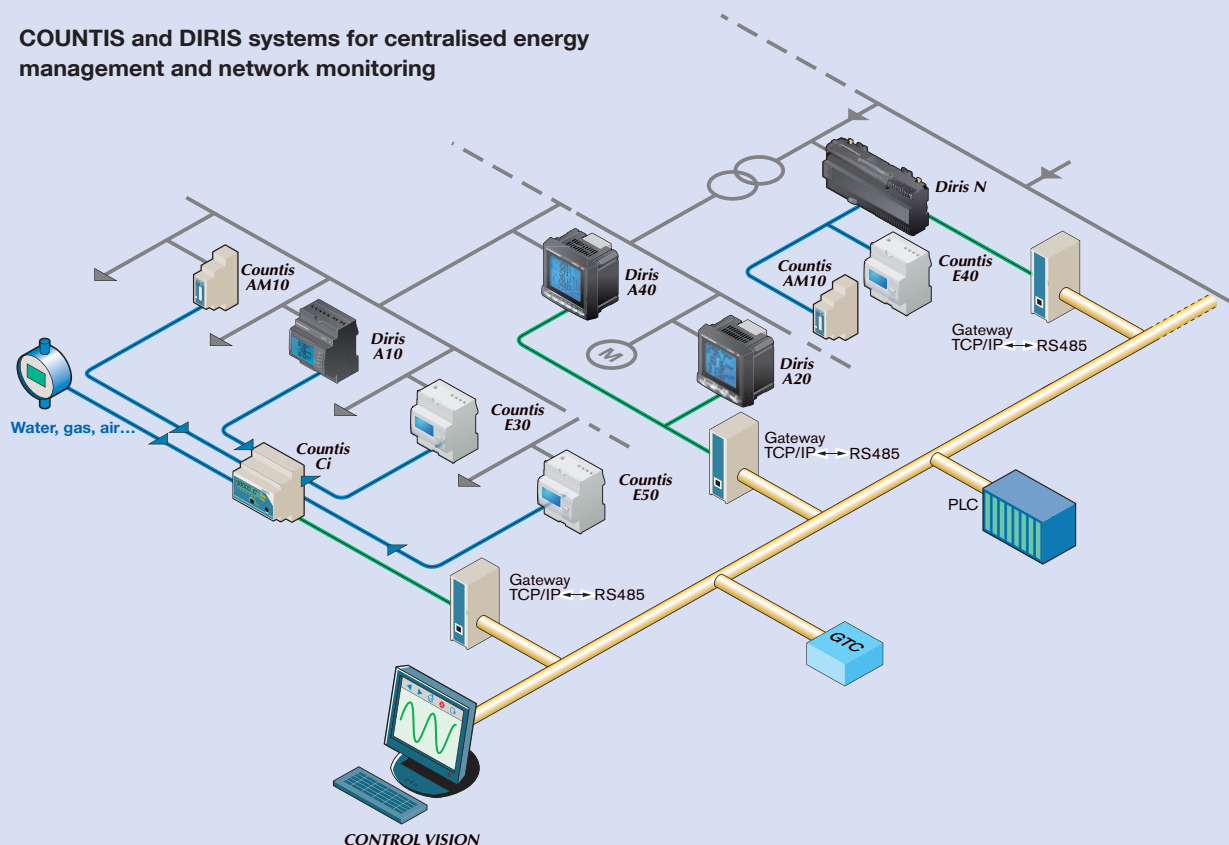
The "Energy measurement & management" section covers the devices and components used to measure energy and display, centralise and process data. A detailed presentation is given below.

Selection guide

Our solutions based on your application:
See the next page.



COUNTIS and DIRIS systems for centralised energy management and network monitoring



The **COUNTIS energy metering** offer consists of several meters suited to all type of electrical networks. These meters are all equipped with a pulse output allowing data to be exported to a concentrator, RS485 communication facility is also available as an option.

The **DIRIS range multifunction meters** can be adapted to any electrical network. These devices take measurements and monitor electrical values, meter energy or pulses (water, air, etc.). They also manage energy using average power values for 10 minute periods, and carry out control and command of installations.

The pulse concentrator and measurement units communicate with a PC or PLC via a suitable communications interface.

Monitoring can be performed by:

- a technical building management system (BMS) or a centralised technical management system (CTM)
- SOCOMEC software (CONTROL VISION and BILLING APPLICATION).

➔ Monitoring and communications interfaces

➔ Electrical network analysis system

Manage



Sub-billing



➔ DIRIS multifunction meters



➔ Active energy meters and concentrator COUNTIS



Concentrator



➔ Measurement sensors



➔ Electrical measurement devices



➔ Made to measure...

Our adaptation laboratory can develop indicators to your specifications.

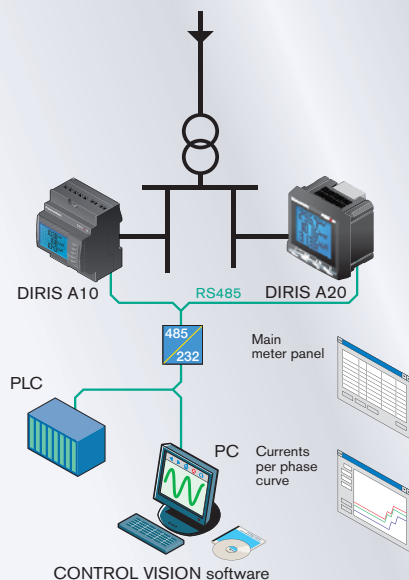


Your applications - our solutions

Monitor your electrical installation

By efficiently monitoring your distribution network, you are helping to ensure continuity of service and optimise the operation of your installation. You can quickly identify overloaded equipment and available power reserves. It also helps you better distribute and balance loads.

⇒ SOCOMEC solutions



The DIRIS A10 and A20 allow all the parameters of an LV installation to be used. These can be centralised on a PC or PLC. The complete solution offered by SOCOMEC includes:

- sensors installed on the network (**measurement shunts** and **current transformers**),
- **DIRIS A20** or **A10** Multifunction meters,
- **communication interfaces**,
- and the **CONTROL VISION** monitoring software.

⇒ DIRIS A: compliant with IEC 61557-12

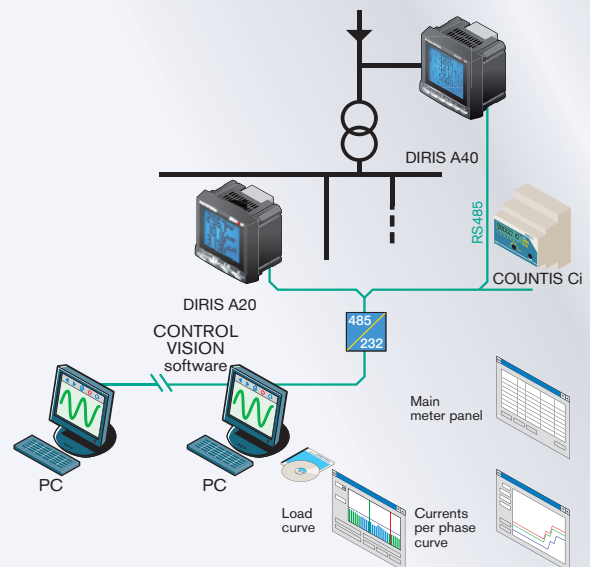
DIRIS A conforms to this new standard, which has been specifically created to govern Performance Measuring and monitoring Devices (PMD). IEC 61557-12 guarantees the user that the product meets all the metrological, mechanical and environmental requirements of an electrical distribution network (EMC, temperature, etc.).

Manage and optimise energy consumption

By measuring the energy consumption of the various sub-assemblies in your building, you can identify the main consumers. By correctly managing the peaks in consumption, you can avoid high costs and even optimise your energy contract. Thanks to submetering, you can also distribute your energy costs between the various users.

In addition to offering savings, energy management enables your company to make better use of energy resources and therefore minimise the impact on the environment.

⇒ SOCOMEC solutions



The CONTROL VISION software displays all the electrical values measured and reads the energy consumption of an item of equipment or a production line.

BILLING APPLICATION, is used to charge energy consumption on the price of parts manufactured or even to reinvoice this consumption to those hiring equipment or service users.

The complete solution offered by SOCOMEC includes:

- sensors installed on the network (**measurement shunts** and **current transformers**),
- the **DIRIS A20, A40, A60** multifunction meters and the **COUNTIS Ci** concentrator connected to **COUNTIS** meters,
- **communication interfaces**,
- and the **CONTROL VISION** and **BILLING APPLICATION** monitoring software.



Energy efficiency



All information available at:
www.socomec.com/diris/fr

⤷ SERVICES & TECHNICAL ASSISTANCE: second nature!

When different parts of a supply system interconnect, it brings together technical areas which don't always see things the same. SOCOMEC's multidisciplinary expertise guarantees optimal commissioning and use of the proposed solutions.

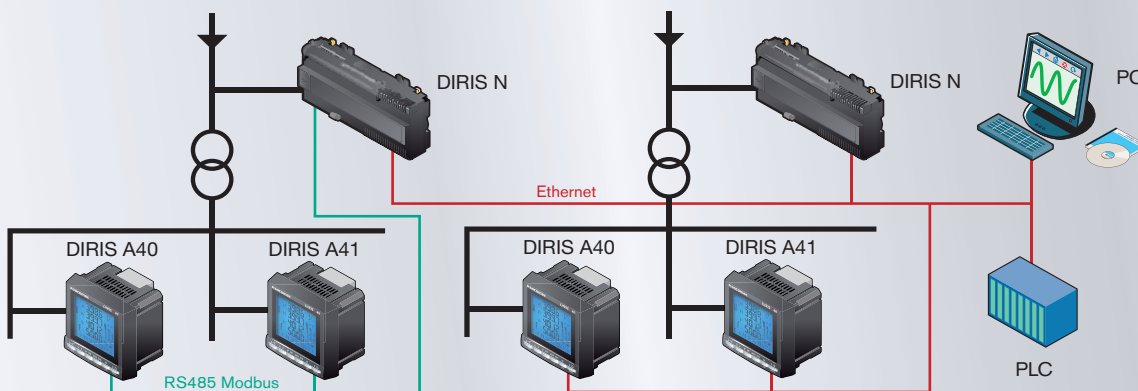
Our **SERVICES & TECHNICAL ASSISTANCE** department will **audit** your installation, **commission** selected equipment and **train** personnel responsible for its use. This service provision corresponds to level 2 or 3 of the "Service Categories" reference by GIMELEC. For further information, please contact your SOCOMEC agency.

* Group of industries supplying electrical equipment, control-command systems and associated services.

Power quality management

By monitoring energy quality, you can identify any problems in the electrical supply, for example due to the installation of a new element on the network. By preventing equipment malfunctions and premature wear, you can optimise your installation and make long-term savings.

⤷ SOCOMEC solutions



DIRIS N records events and their waveforms in case of disturbance or failure. It also provides the user with a complete diagnostic of the electrical supply quality (EN50160 report).

DIRIS N300 and N600 are stand-alone acquisition, processing and memory modules. They are installed at the back of the cabinet on a DIN rail or plate. Both have Ethernet, RS 485 and USB communication ports. They can communicate with each other, with other equipment or with a supervision unit. In particular, they can be interconnected with COUNTIS and DIRIS A, from which they can retrieve and transmit information.



Measurement devices

Function

SOCOMEK **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, 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 fastening. The connections are made by screws or by fast-on terminals.

- Accuracy class: 0.5.
- Accuracy class: 1 or 3 for higher required powers.
- Dielectric quality: 3 kV - 50 Hz 1 mn.
- Usage frequency: 50 - 60 Hz.
- Permanent overload 1.2 I_n .

Abbreviated description

- **Primary wound moulded case transformer: TRB xxx** (xxx = CT width)
- **Cable-through transformer: TCA xx** (xx = cable diameter)
- **Bar or cable-through transformer: TCB xx-yy** (xx = cable diameter, yy = bar width)
- **Bar-through transformer: TBA yy** (yy = bar width)
- **Split-core transformer: TO xx-yy** (xx = inside width, yy = inside height).

Conformity to standards

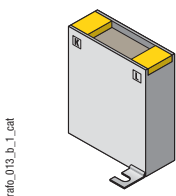
- IEC 185 (IEC 44-1)
- VDE 0414

Other products

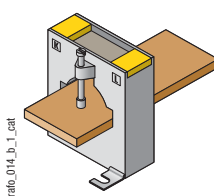
- Accuracy class: 0.2 S.
- 1 A secondary.
- Frequency 400 Hz.
- Double or triple primary ratio.
- Summation.
- Voltage transformer.

Composition of the range

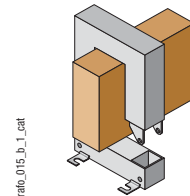
Primary wound moulded case



Bar or cable-through



Split-core transformer



References

Primary wound moulded case CT



Info_076_a_1_cat



Info_077_a_2_cat

Cable-through CT



Info_018_a_2_cat

Primary	Secondary	TRB 60 Reference	TRB 70 Reference	TRB 135 Reference
5 A	5 A	192T 0505	192T 0521	
10 A	5 A	192T 0510	192T 0522	
15 A	5 A	192T 0515	192T 0523	
20 A	5 A	192T 0520	192T 0524	
25 A	5 A		192T 0525	192T 0603
30 A	5 A		192T 0530	192T 0607
40 A	5 A		192T 0540	192T 0604
50 A	5 A			192T 0605
60 A	5 A			192T 0606
75 A	5 A			192T 0608
100 A	5 A			192T 0610
125 A	5 A			192T 0612
150 A	5 A			192T 0615

Primary	Secondary ⁽¹⁾	TCA 21 Reference	TCA 22 Reference
50 A	5 A	192T 2005	
60 A	5 A	192T 2006	
75 A	5 A	192T 2007	
100 A	5 A	192T 2010	192T 2022
125 A	5 A	192T 2012	192T 2026
150 A	5 A	192T 2015	192T 2023
160 A	5 A	192T 2060	
200 A	5 A	192T 2020	192T 2024
250 A	5 A	192T 2016	192T 2025
300 A	5 A	192T 2017	192T 2030
400 A	5 A		192T 2034
500 A	5 A		192T 2035
600 A	5 A		192T 2036

(1): Secondary 1 A: on request

Accessories

	Reference	Reference	Reference
DIN rail mounting	192T 0003	192T 0005	
Sealable cover	192T 0105	192T 0103	192T 0101

Accessories

	Reference	Reference
DIN rail mounting	192T 0006	192T 0007

CT Plug-in transducer



Info_074_a_2_cat

Info_061_a_2_cat

Power supply	Output	CE-VA for TRB 60 Reference	CE-VA for TRB 70 Reference
230 VAC	4-20 mA / 0-10 VDC	192T 0255	192T 0265
24 VDC	4-20 mA / 0-10 VDC	192Y 0155	192Y 0165

Power supply	Output	Reference	Reference
Self supplied	0-20 mA / 0-10 VDC	192Y 0015	192Y 0025
230 VAC	0-20 mA / 0-10 VDC	192Y 0215	192Y 0225
24 VDC	0-20 mA / 0-10 VDC	192Y 0115	192Y 0125

Bar or cable-through CT



Primary	Secondary ⁽¹⁾	TCB 17-20 Reference	TCB 26-30 Reference	TCB 28-30 Reference	TCB 26-40 Reference	TCB 32-40 Reference
50 A	5 A		192T 2305	192T 2405		192T 4005
60 A	5 A	192T 2106	192T 2306	192T 2406		192T 4006
75 A	5 A	192T 2107	192T 2307	192T 2407		192T 4007
100 A	5 A	192T 2110	192T 2310	192T 2410	192T 3210	192T 4010
125 A	5 A	192T 2112	192T 2312	192T 2412	192T 3212	192T 4012
150 A	5 A	192T 2115	192T 2315	192T 2415	192T 3215	192T 4015
160 A	5 A	192T 2116			192T 3216	
200 A	5 A	192T 2120	192T 2320	192T 2420	192T 3220	192T 4020
250 A	5 A	192T 2125	192T 2325	192T 2425	192T 3225	192T 4025
300 A	5 A	192T 2130	192T 2330	192T 2430	192T 3230	192T 4030
400 A	5 A	192T 2140	192T 2340	192T 2440	192T 3240	192T 4040
500 A	5 A		192T 2350	192T 2450	192T 3250	192T 4050
600 A	5 A		192T 2360	192T 2460	192T 3260	192T 4060
750 A	5 A		192T 2375		192T 3275	192T 4075
800 A	5 A				192T 3280	192T 4080
1000 A	5 A					192T 4090

(1) Secondary 1 A: on request

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 0005
Sealable cover		192T 0105	192T 0105	192T 0103

Plug-in transducer to CT (CEA-VA4)

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

Plug-in transducer to CT (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

Bar or cable-through CT



Primary	Secondary ⁽¹⁾	TCB 44-50 Reference	TCB 44-63 Reference	TCB 55-80 Reference	TCB 85-100 Reference	TCB 100-125 Reference
100 A	5 A	192T 5010				
150 A	5 A	192T 5015				
200 A	5 A	192T 5020	192T 6420			
250 A	5 A	192T 5025	192T 6425			
300 A	5 A	192T 5030	192T 6430			
400 A	5 A	192T 5040	192T 6440	192T 8140		
500 A	5 A	192T 5050	192T 6450	192T 8150		
600 A	5 A	192T 5060	192T 6460	192T 8160		
750 A	5 A	192T 5075	192T 6475	192T 8175	192T 9675	
800 A	5 A	192T 5080	192T 6480	192T 8180	192T 9680	
1000 A	5 A	192T 5090	192T 6490	192T 8190	192T 9690	192T 9590
1200 A	5 A	192T 5092	192T 6492	192T 8192	192T 9692	192T 9592
1250 A	5 A	192T 5095	192T 6493	192T 8193	192T 9693	192T 9593
1500 A	5 A		192T 6495	192T 8195	192T 9695	192T 9595
1600 A	5 A		192T 6494	192T 8194	192T 9694	
2000 A	5 A			192T 8196	192T 9696	192T 9596
2500 A	5 A				192T 9697	192T 9597
3000 A	5 A				192T 9698	192T 9598
4000 A	5 A					192T 9599

(1) Secondary 1 A: on request

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	2 x 192T 0105	2 x 192T 0105

Plug-in transducer to CT (CEA-VA4)

Power supply	Output	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

Plug-in transducer to CT (CEA-VA4)

Input	Output	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

Bar-through CT



Primary	Secondary	TBA 60 Reference	TBA 100 Reference	TBA 103 Reference	TBA 127 Reference
200 A	5 A	192T 7020			
250 A	5 A	192T 7025			
300 A	5 A	192T 7030			
400 A	5 A	192T 7040		192T 9340	192T 9740
500 A	5 A	192T 7050		192T 9350	192T 9750
600 A	5 A	192T 7060	192T 8060	192T 9360	192T 9760
750 A	5 A	192T 7075	192T 8075	192T 9375	192T 9775
800 A	5 A	192T 7080	192T 8080	192T 9380	192T 9780
1000 A	5 A	192T 7090	192T 8090	192T 9390	192T 9790
1200 A	5 A	192T 7092	192T 8092	192T 9392	192T 9792
1250 A	5 A	192T 7093	192T 8093	192T 9393	192T 9793
1500 A	5 A	192T 7095	192T 8095	192T 9395	192T 9795
1600 A	5 A	192T 7094	192T 8094	192T 9394	
2000 A	5 A	192T 7096	192T 8096	192T 9396	192T 9796
2500 A	5 A		192T 8097		192T 9797
3000 A	5 A		192T 8098		182T 9798 ⁽¹⁾
4000 A	5 A		192T 8099 ⁽²⁾		182T 9799 ⁽¹⁾

(1) Replacement model TRA 127 for this rating.
 (2) TBA 100 with 4000 A primary, different dimensions.

Accessories

	Reference	Reference	Reference	Reference
Sealable cover	192T 0102	192T 0102	192T 0102	192T 0102

Summation CT



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

Three-phase CT DIN rail mounted

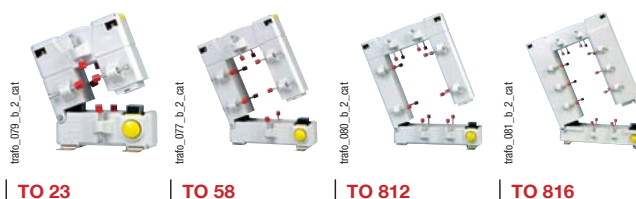


TCA 13 - 3P

Primary	Secondary (A) ⁽¹⁾	Frequency	VA	Class	Max. operating voltage	Number of modules	Reference
3 x 50 A	5 A	50 - 60 Hz	1	1	720 VAC	6	192T 1905
3 x 60 A	5 A	50 - 60 Hz	1.25	1	720 VAC	6	192T 1906
3 x 75 A	5 A	50 - 60 Hz	1.5	1	720 VAC	6	192T 1907
3 x 80 A	5 A	50 - 60 Hz	1.5	1	720 VAC	6	192T 1908
3 x 100 A	5 A	50 - 60 Hz	2.5	0.5	720 VAC	6	192T 1910
3 x 125 A	5 A	50 - 60 Hz	2.5	0.5	720 VAC	6	192T 1912
3 x 150 A	5 A	50 - 60 Hz	2.5	0.5	720 VAC	6	192T 1915
3 x 160 A	5 A	50 - 60 Hz	2.5	0.5	720 VAC	6	192T 1916

(1) Secondary 1 A: on request.

Split-core CT



Primary	Secondary (A)	Reference	Reference	Reference	Reference
100 A	5 A	192T 4601			
150 A	5 A	192T 4602			
200 A	5 A	192T 4603			
250 A	5 A	192T 4604	192T 4625	192T 4725	
300 A	5 A	192T 4605	192T 4630	192T 4730	
400 A	5 A	192T 4606	192T 4640	192T 4740	
500 A	5 A		192T 4650	192T 4750	
600 A	5 A		192T 4660	192T 4760	
750 A	5 A		192T 4675	192T 4775	
800 A	5 A		192T 4680	192T 4780	
1000 A	5 A		192T 4610	192T 4710	192T 4810
1250 A	5 A			192T 4712	192T 4812
1500 A	5 A			192T 4715	192T 4815
2000 A	5 A				192T 4820
2500 A	5 A				192T 4825
3000 A	5 A				192T 4830
4000 A	5 A				192T 4840
5000 A	5 A				192T 4850

➤ Current transformers - Characteristics

Primary wound moulded case CT

Primary (VA)	TRB 60			TRB 70			TRB 135		
	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3
5 A	2.5	5	7.5	10	15	20			
10 A	2.5	5	7.5	10	15	20			
15 A	2.5	5	7.5	10	15	20			
20 A	2.5	5	7.5	10	15	20			
25 A				10	15	20	10	15	30
30 A				5	10	20	10	15	30
40 A				5	10	20	10	15	30
50 A							10	15	30
60 A							10	15	30
75 A							10	15	30
100 A							10	15	30

Transducer

Type	1	2	
DIN rail mounting	yes	yes	
H x W x D (mm)	78.5 x 61 x 35	88.5 x 71 x 45	85 x 135 x 60

Cable-through CT

Primary (VA)	TCA 21			TCA 22		
	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3
50 A		1	2			
60 A		1.2	2.5			
75 A		1.5	3			
100 A		2.5	5		1	2
125 A		2.5	3.7		1	3
150 A		2.5	3.7		1.5	3
160 A		1.5	2.5		3.75	
200 A		2.5	5		10	
250 A		5	7.5		15	5
300 A		5	7.5		15	5
400 A					10	20
500 A					10	20
600 A					10	20

Transducer

DIN rail mounting	yes	yes
Ø cable (mm)	21	22.5
H x W x D (mm)	65 x 45 x 30	65 x 49.5 x 35

Bar or cable-through CT

Primary (VA)	TCB 17-20 Class			TCB 26-30 Class			TCB 28-30 Class			TCB 26-40 Class			TCB 32-40 Class			TCB 44-50 Class			TCB 44-63 Class			
	0.5	1	3	0.5	1	3	0.5	1	3	0.5	1	3	0.5	1	3	0.5	1	3	0.5	1	3	
50 A				1	2		1	1.5	2						1.5	3						
60 A		1	2		1	2	1.25	2	3						1.5	3						
75 A		1	2		1.5	3	2.5	3.7	5						2.5	5						
100 A		1.5	3	1.5	2.5	5	2.5	3.7	5		1.5	3	2.5	3.7	7.5		1.5	3				
125 A		1.5	3	1.5	2.5	5	5	7.5	10		2.5	4	2.5	3.7	7.5							
150 A		2.5	5	1.5	2.5	5	5	2.5	10		2.5	5	2.5	5	10	2.5	5	10				
160 A		2.5	3.75							1.5	2.5	3.75										
200 A		2.5	5	2.5	5	10	5	10	15		2.5	5	5	10	15	5	10	15				
250 A		5	7.5	5	10	15	5	10	15		5	10	5	10	20	5	10	15	1.5	2.5	5	
300 A		5	10	5	10	15	5	10	15		5	10	10	15	30	5	10	20	1.5	2.5	5	
400 A		10	15	5	10	15	10	15	20		5	10	10	15	30	10	15	30	2.5	5	10	
500 A				5	10	15	10	15	20		10	20	10	15	30	10	15	30	5	10	20	
600 A				5	10	15	10	15	20		10	20	10	15	30	10	15	30	10	15	30	
750 A											15	30	10	15	30	15	30	45	10	15	30	
800 A											15	30	15	30	45	15	30	45	10	15	30	
1000 A													15	30	45	15	30	45	10	15	30	
1200 A																15	30	45	15	30	45	
1250 A																			15	30	45	
1500 A																			15	30	45	

Transducer

Type	1		2		3		
DIN rail mounting	yes	yes		yes	yes		
Bar (mm)	20 x 5	30 x 10	30 x 10	40 x 10	40 x 10	50 x 12	63 x 10
Ø cable (mm)	17.5	26	28	26	32	44	44
H x W x D (mm)	65 x 49.5 x 50	78.5 x 61 x 48	70 x 49.9 x 68	78.5 x 61 x 48	88.5 x 71 x 58	101.5 x 86 x 58	108.5 x 96 x 58

Through-bar or through-cable CT

Primary (VA)	TCB 55-80 Class			TCB 85-100 Class			TCB 100-125 Class		
	0.5	1	3	0.5	1 VA	3 VA	0.5	1	3
400 A	2.5	5	10						
500 A	5	10	20						
600 A	5	10	20						
750 A	10	15	30	2.5	5	10			
800 A	10	20	30	5	10	20			
1000 A	15	30	45	10	15	30	5	10	20
1200 A	15	30	45	10	15	30	10	15	30
1250 A	15	30	45	15	30	45	10	15	30
1500 A	15	30	45	15	30	45	15	30	45
1600 A	15	30	45	15	30	45			
2000 A	15	30	45	30	45	60	30	45	60
2500 A				30	45	60	30	45	60
3000 A				30	45	60	30	45	60
4000 A							30	45	60

Transducer

Type	3		
DIN rail mounting			
Bar (mm)	80 x 10	2 x 100 x 10	2 x 120 x 10
Ø cable (mm)			
H x W x D (mm)	126.5 x 120 x 58	187.5 x 172 x 52	187.5 x 172 x 52

Bar-through CT

Primary (VA)	TBA 60			TBA 100			TBA 103			TBA 127		
	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3
200 A		2.5	5									
250 A	2.5	2.5	5									
300 A	2.5	5	10									
400 A	5	10	20				2.5	5	10	2.5	5	7.5
500 A	5	10	20				2.5	5	10	2.5	5	7.5
600 A	10	15	30	5	10	20	2.5	5	10	2.5	5	10
750 A	10	15	30	5	10	20	2.5	5	10	2.5	5	10
800 A	10	15	30	5	10	20	5	10	15	5	10	15
1000 A	15	30	45	5	10	20	10	15	20	10	15	20
1200 A	15	30	45	10	15	30	10	15	20	10	15	20
1250 A	15	30	45	10	15	30	10	15	20	10	15	20
1500 A	15	30	45	15	30	45	10	15	20	15	30	45
1600 A	15	30	45	15	30	45	10	15	30			
2000 A	15	30	45	15	30	45	15	15	20	15	30	45
2500 A				30	45	60				15	30	45
3000 A				30	45	60				15	30	45
4000 A				30	45	60						

Dimensions

Bar (mm)	60 x 30	100 x 30	100 x 35	125 x 35
H x W x D (mm)	132 x 88 x 78	170 x 129 x 78 ⁽¹⁾	150 x 99 x 55	175 x 100 x 55

(1) TBA 100 to 4000A primary: 217 x 129 x 78 mm.

Split-core CT

Primary (VA)	TO 23			TO 58			TO 812			TO 816		
	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3	Class 0.5	Class 1	Class 3
100 A		1.25	1.5									
150 A		1.5	2.5									
200 A		1.5	2.5									
250 A		1.5	2.5	1	2	4	1	2	4			
300 A	1.5	4	6	1.5	3	6	1.5	3	6			
400 A	2.5	6	10	1.5	3	10	1.5	3	6			
500 A				2.5	5	15	2.5	5	10			
600 A				2.5	5	15	2.5	5	10			
750 A				2.5	5	15	2.5	5	10			
800 A				2.5	5	15	2.5	5	10			
1000 A				5	10	20	5	10	20	10	15	20
1250 A							7.5	15	25	10	15	20
1500 A							7.5	15	25	10	15	20
2000 A										10	15	20
2500 A										10	15	20
3000 A										15	25	35
4000 A										15	25	35
5000 A										15	25	35

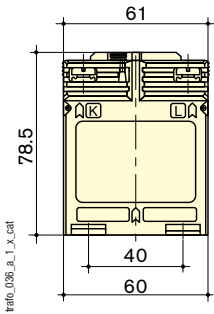
Dimensions

H x W x D (mm)	106 x 93 x 58	152 x 125 x 58	198 x 155 x 58	246 x 195 x 79
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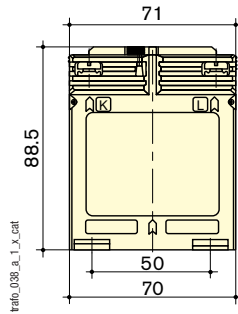
➔ Dimensions

Primary wound moulded case CT

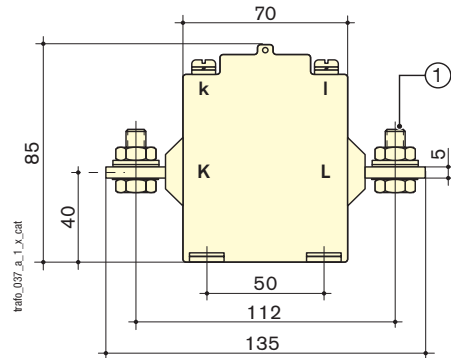
TRB 60



TRB 70



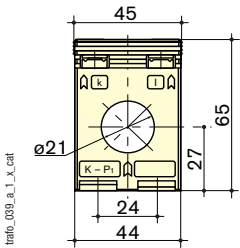
TRB 135



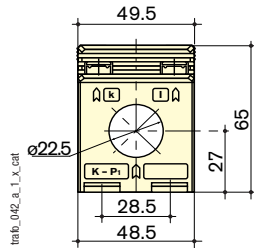
1. 25 to 100 A: M8 x 25

Cable-through CT

TCA 21

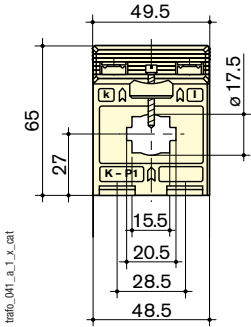


TCA 22

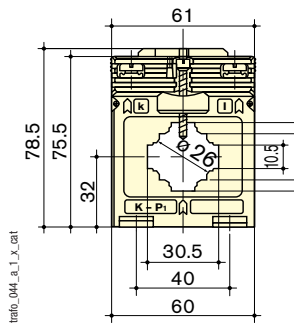


Bar or cable-through CT

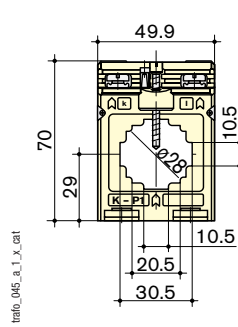
TCB 17-20



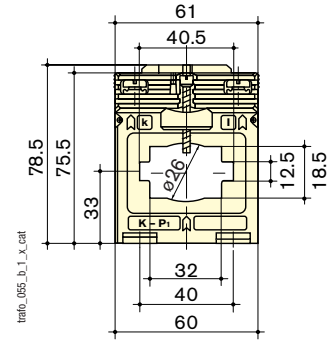
TCB 26-30



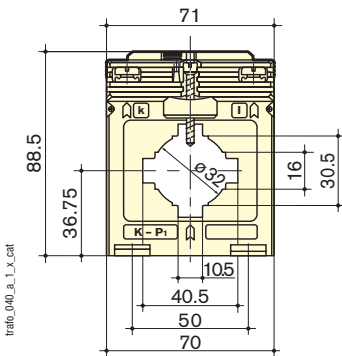
TCB 28-30



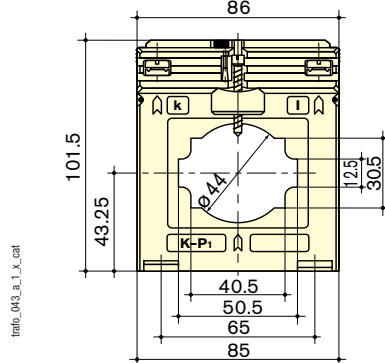
TCB 26-40



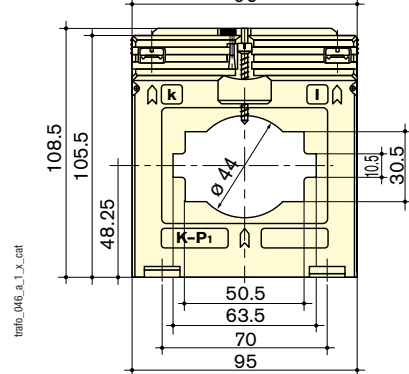
TCB 32-40



TCB 44-50

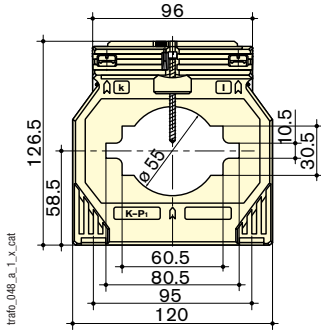


TCB 44-63



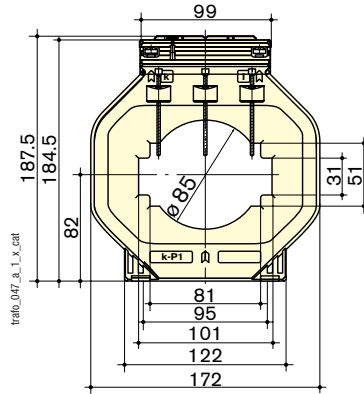
Bar or cable-through CT

TCB 55-80



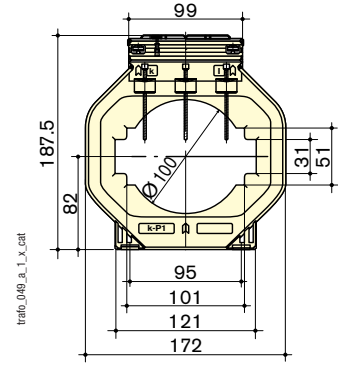
trafo_048_a_1_x_cat

TCB 85-100



trafo_047_a_1_x_cat

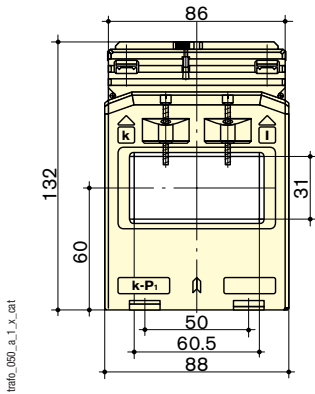
TCB 100-125



trafo_049_a_1_x_cat

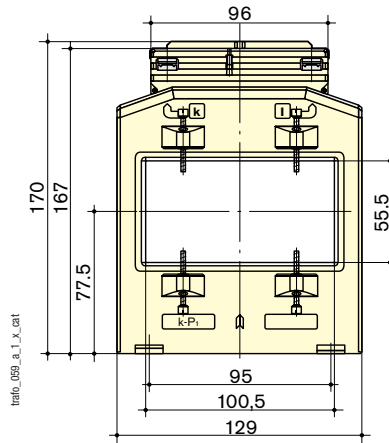
Bar-through CT

TBA 60



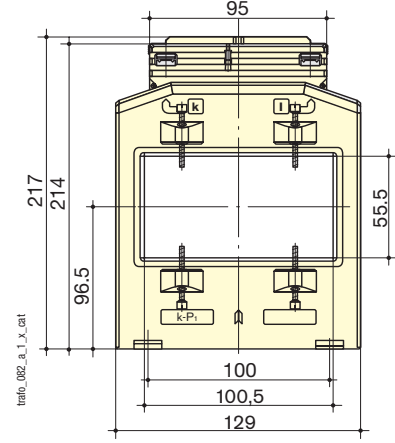
trafo_050_a_1_x_cat

TBA 100 - 600 to 3000 A



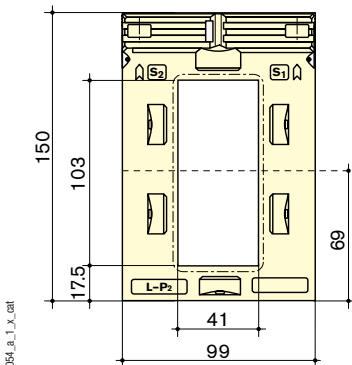
trafo_051_a_1_x_cat

TBA 100 - 4000 A



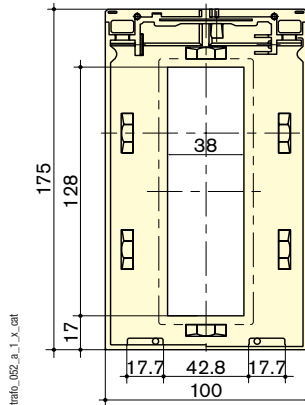
trafo_052_a_1_x_cat

TBA 103



trafo_054_a_1_x_cat

TBA 127



trafo_052_a_1_x_cat

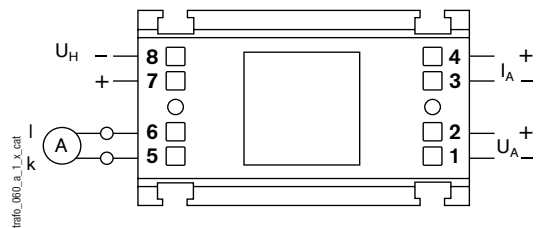
Transducers to be associated



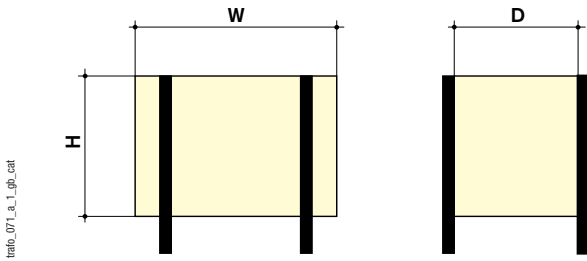
trafo_074_a_1_cat

Transducer to be associated with adapted current transformers:

- 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.



trafo_060_a_1_x_cat



trinfo_071_a_1_x_cat

TRB 60 to 70

Transducer	Type	Height (mm)	Width (mm)	Depth (mm)
Type 1	TRB 60	50.5	60	32.5
Type 2	TRB 70	50	70	43

TCB 26-30 / 26-40 / 32-40

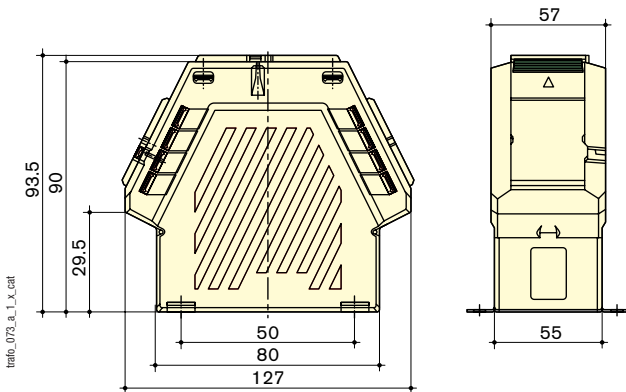
Transducer	Type	Height (mm)	Width (mm)	Depth (mm)
Type 1	TCB 26-30	50.5	60	32.5
Type 1	TCB 26-40	50.5	60	32.5
Type 2	TCB 32-40	50	70	43

TCB 44-63 / 55-80

Transducer	Type	Height (mm)	Length (mm)	Depth (mm)
Type 3	TCB 44-63	50.5	95	43
Type 3	TCB 55-80	50.5	95	43

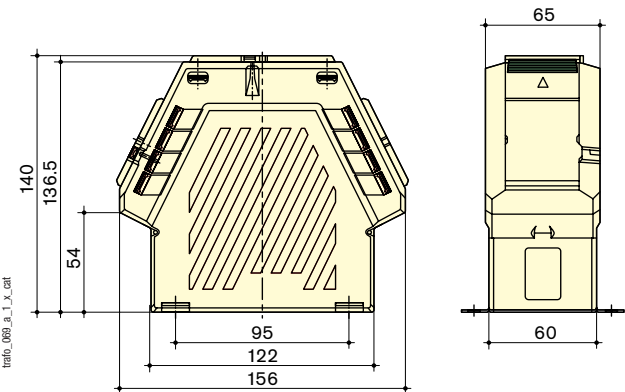
Summation CT

BSA 02 to 03



trinfo_072_a_1_x_cat

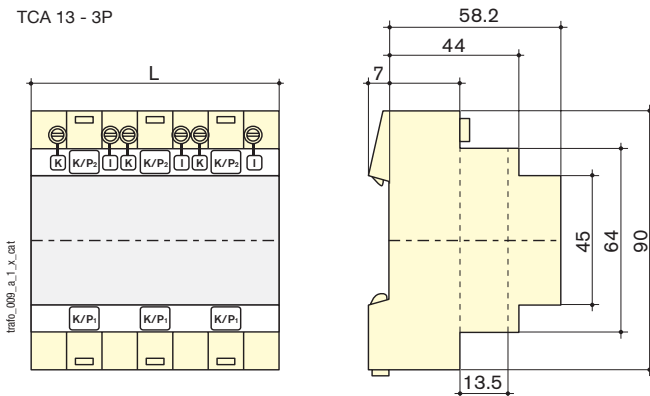
BTA 04



trinfo_089_a_1_x_cat

Three-phase CT DIN rail mounted

TCA 13 - 3P

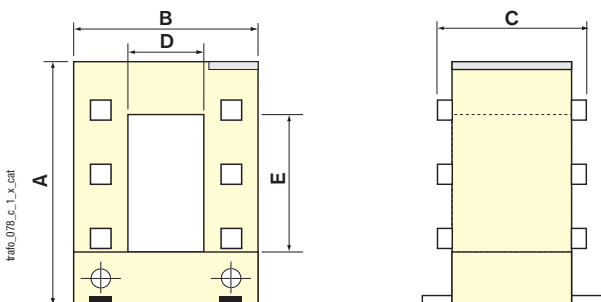


trinfo_089_a_1_x_cat

Number of optional modules	Front protection rating	Terminal block protection rating	W (mm)	Mounting
6	IP65	IP20	105	35 mm DIN-rail

Split core CT

TO 23 to 816



trinfo_078_c_1_x_cat

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
TO 23	106	93	58	20	30
TO 58	152	125	58	50	80
TO 812	198	155	58	80	120
TO 816	246	195	79	80	160

Fixed by M5 new



Function

SOCOMEK **shunts** provide indirect measurement of direct current by creating a standardised voltage drop.

Composition of the range

- 20 ratings available from 1 to 6000A, in 100 mV.
- 2 models:
 - ECONOMIC, 10 to 600 A,
 - DIN, 1 to 6000 A.

Characteristics

- Voltage drop: 100 mV for nominal rating.
- Accuracy class: 0.5.
- Permanent overload 1.2 I_n .
- 10 I_n / 5 s rating \leq 250 A
- 5 I_n / 5 s rating 300 to 2000 A
- 2 I_n / 5 s rating 300 to 10 kA.

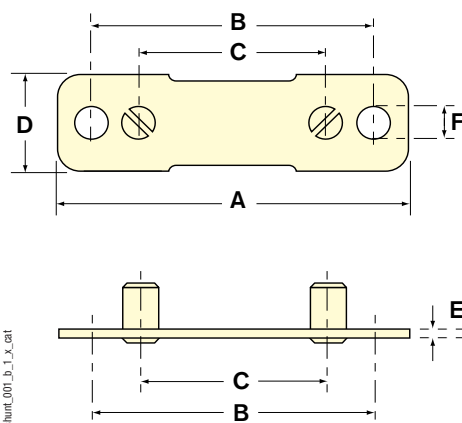
Other products⁽¹⁾

- 60 or 150 mV voltage drop.

⁽¹⁾ Please consult us.

Dimensions

Economic Series 10 to 600 A

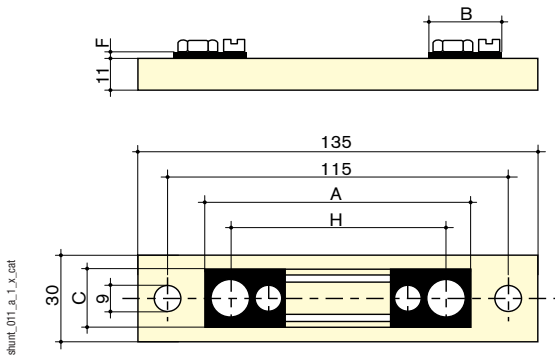


Rating ⁽¹⁾	A	B	C	D	E	F
10 A	136	116	82	25	2	8.5
15 A	136	116	82	25	2	8.5
25 A	136	116	82	25	2	8.5
40 A	136	116	82	25	2	8.5
60 A	136	116	82	25	2	8.5
100 A	136	116	82	25	2	8.5
150 A	136	116	82	25	2	8.5
200 A	150	125	82	25	3.5	12.5
250 A	150	125	82	25	3.5	12.5
300 A	177	137	82	50	4	17
400 A	177	137	82	50	4	17
600 A	177	137	82	50	4	17

⁽¹⁾ Connection: 2 M5 screws x 6 and 2 washers \varnothing 5.3 mm.

DIN Series 1 to 25 A

Fig. 1

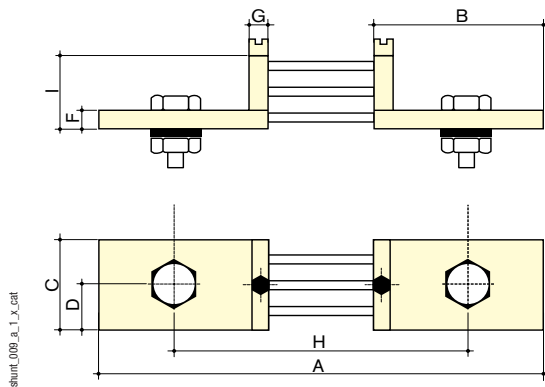


Rating ⁽¹⁾	Figure	A	B	C	D	E	F	G	H	I
1 A	1	90	28	20			8		78	
4 A	1	90	28	20			8		78	
6 A	1	90	28	20			8		78	
10 A	1	90	28	20			8		78	
15 A	1	90	28	20			8		78	
25 A	1	90	28	20			8		78	
40 A	2	123	33	20			8		103	
60 A	2	123	33	20			8		103	
100 A	2	123	33	20			8		103	
150 A	2	123	33	20			8		103	
200 A	2	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.

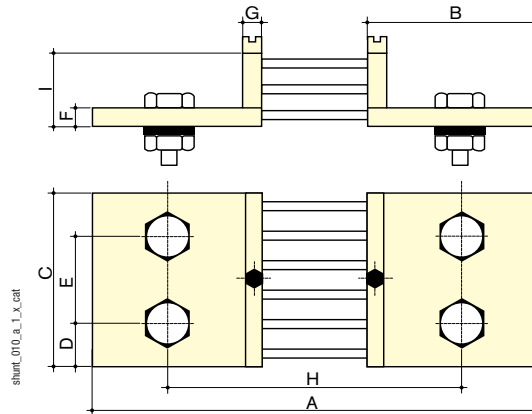
DIN Series 40 to 1000 A

Fig. 2



DIN Series 1500 to 6000 A

Fig. 3



References



Rating ⁽¹⁾	Secondary voltage drop	Economic series Reference	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 2410	192S 2110
15 A	100 mV	192S 2412	192S 2112
25 A	100 mV	192S 2414	192S 2114
40 A	100 mV	192S 2416	192S 2116
60 A	100 mV	192S 2418	192S 2118
100 A	100 mV	192S 2420	192S 2120
150 A	100 mV	192S 2425	192S 2125
200 A	100 mV	192S 2428	192S 2220
250 A	100 mV	192S 2429	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 rating: Please consult us



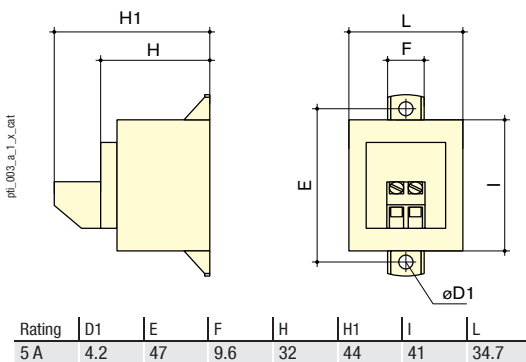
appli_201_3

PTI: CT automatic short-circuit device



pt_005_a_2_cat

Dimensions



pt_003_a_1_x_cat

Use

This device provides automatic short-circuiting of the CT secondary if the measuring circuit is opened.

Conformity to standards

- Decree n° 88-1056 from 14-11-88: protection of workers.
- NF C 15-100 article 473.1.4-556.3.
- Complies with the Mines and Quarries decree n° 91-986.
- GAM EG 13.C (military standard).

References

Rating	Voltage limit peak	Operating frequency	Max. differential voltage	Reference
5 A	21 VAC	45 ... 400 Hz	600 VAC	4990 0521
5 A	25 VAC	45 ... 400 Hz	600 VAC	4990 0525 ⁽¹⁾

(1) DCN approved (French State Naval Construction Company).

Characteristics

Switch body protection degree	IP55
Terminal protection degree	IP20
Connection wire range	2.5 mm ²
Weight	82 g

Bar or cable-through saturation current transformer



trafo_066_a_1_cat

Use

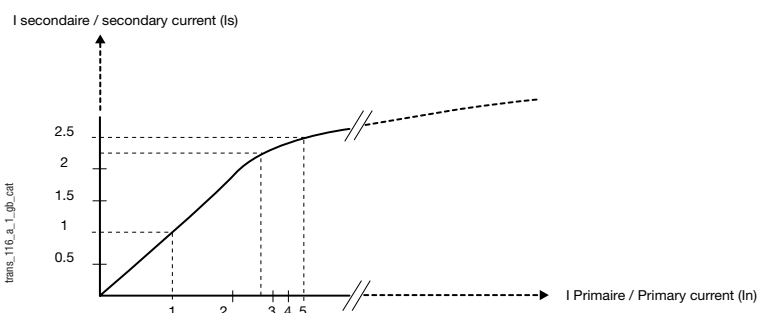
The protection transformers are used for thermal relays. The TCS 30 - 40 are transformers for cables and busbars. They protect the low power terminal relays against from the engine starting intensity.

Available in primary wound version for current between 1 to 75 A (1 A secondary, 2 VA, Cl. 1). Please consult us.

References

Rating	Secondary (A)	Burden - Cl. 1	Reference
100 A	1 A	2	192T 0710
150 A	1 A	2	192T 0715
200 A	1 A	2	192T 0720
250 A	1 A	2	192T 0725
300 A	1 A	2	192T 0730
400 A	1 A	2	192T 0740
500 A	1 A	2	192T 0750

Saturation curve

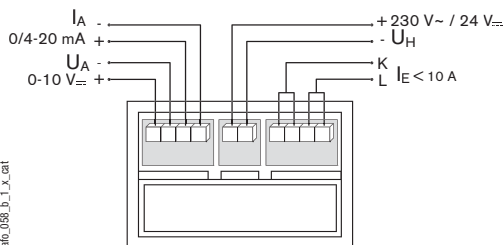


Transformer with integrated transducer



Compact cable-through current transformer with integrated measurement transducer (Ø27 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	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		192Y 0506	on request	192Y 0606	192Y 0906
30 A		192Y 0507	192Y 0807	192Y 0607	192Y 0907
40 A	192Y 0408	192Y 0508	192Y 0808	192Y 0608	192Y 0908
50 A	192Y 0409	192Y 0509	192Y 0809	192Y 0609	192Y 0909
60 A	192Y 0410	192Y 0510	192Y 0810	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	192Y 0515	192Y 0815	192Y 0615	on request
200 A	192Y 0420	192Y 0520	192Y 0820	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	192Y 0860	on request	192Y 0960
750 A	192Y 0475	192Y 0575	192Y 0875	192Y 0675	192Y 0975
800 A	192Y 0480	192Y 0580	192Y 0880	192Y 0680	192Y 0980

Voltage transformer BTV 25



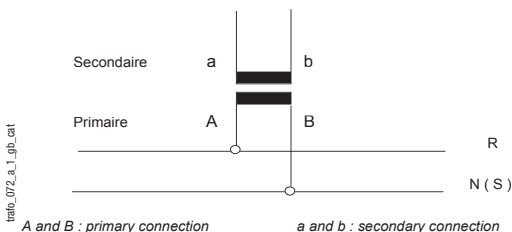
Applications

Measurement and conversion of the input value read at the primary of a transformer in a directly proportional voltage signal. BTV 25s 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 dephasing error. If the consumption is greater than 25 VA, another transformer must be added.

Connection



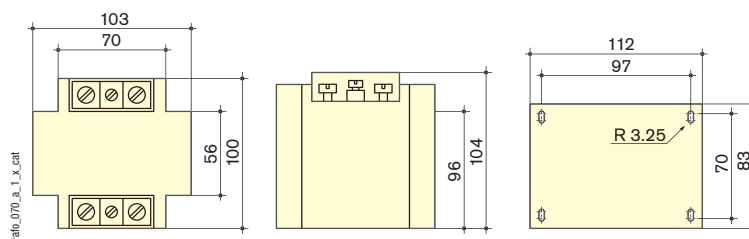
References

Primary	Secondary (A)	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	consult us

Characteristics

Accuracy class	1 %
Dielectric quality	3 kV for 1 min.
Operating frequency	50 - 60 Hz
Sustained overload	1.2 U_n

Dimensions



Other electrical measurement devices

Measurement devices



Transducers



trans_071_a_2_cat

They provide conversion of an AC electrical quantity (A, V, Hz, Cos phi, W, Var) into a DC signal, with standardized current or voltage. They are available in surface-mounting casings (CS range).

These devices are designed for DIN rail or back plate mounting.

Type CS transducers in surface-mounted casings come in two dimensions:

- 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



SOCOMEF ferromagnetic ammeters and voltmeters measure the AC current voltage of any electrical circuit. SOCOMEF 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 exist 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 equipments. Consult us.

Changeover switches



Voltmeter and ammeter switches allow the phase changeover for 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 measurement 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 indicators or connected 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-indicators 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.



Applications

Single phase - Direct 32 A

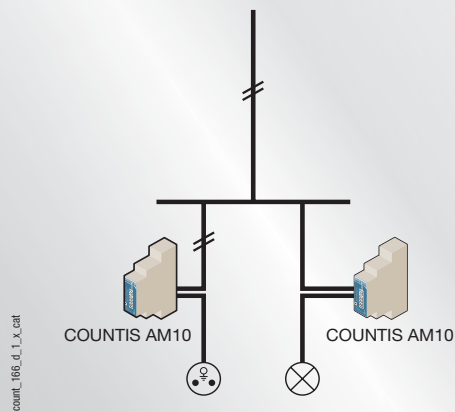
Function

The **COUNTIS AM10** is a modular active energy meter designed for single phase load metering.

This product is used for direct connections up to 32 A.

Conformity to standards

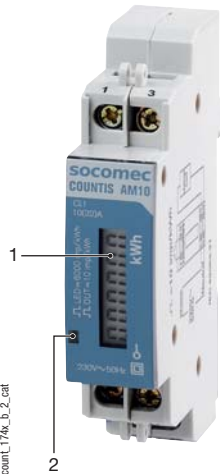
- IEC 62053-21 class 1
- IEC 61010-1
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-4-8
- IEC 61000-4-11
- IEC 60068-2-6
- IEC 60068-2-11
- IEC 60068-2-30



The **COUNTIS AM10** is a 32 A active energy meter. Its LCD display shows the kWh consumed by, for example, a machine, a motor or a boat in a marina.

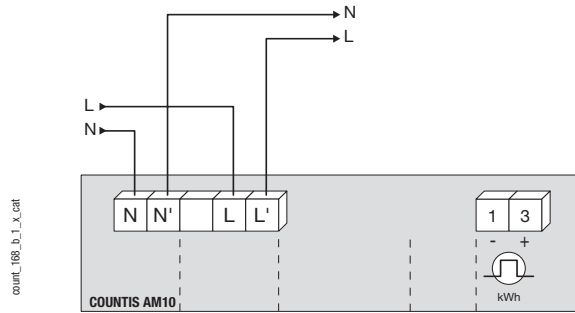
The pulse output enables the kWh consumption to be gathered / uploaded to a PC in order to be analysed for billing, energy saving or energy cost management purposes.

Front panel



1. kWh display.
2. Metrological LED (6000 pulses/kWh)

Terminals and connections



- N - L: Network voltage inputs.
 N' - L': Network voltage outputs.
 1 - 3: Pulse outputs.

Characteristics

Current measurement (TRMS)

Type	32 A direct input
Input consumption	1 VA
Permanent overload	40 A
Overload	20 I _{max} for 500 ms
Minimum current measured	15 mA

Voltage measurements (TRMS)

Range of measurement	184 ... 276 VAC
Input consumption	≤ 8 VA
Sustained overload	276 VAC

Energy accuracy

Active (according to IEC 62053-21)	class 1
------------------------------------	---------

Power supply

Self supplied	yes
---------------	-----

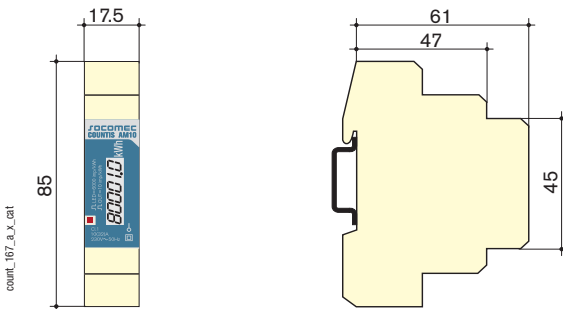
Output (pulsed)

Number	1
Type phototransistor	10 ... 35 VDC
Fixed weight of impulses	100 Wh
Impulse duration	100 ms

Operating conditions

Operating temperature	- 20 ... + 45 °C
Storage temperature	- 25 ... + 70 °C
Relative humidity	85 %

Case



Type	Modular
Number of optional modules	1
Dimensions W x H x D	17.5 x 85 x 61
Case protection index	IP 20
Front protection rating	IP 50
Display type	LCD 5+1 digits
Rigid cable connection section	10 mm ²
Flexible cable connection section	6 mm ²
Weight	150 g

References

Connection

Direct 32 A

COUNTIS
 AM10
 Reference
 4850 AM10

Services and Technical assistance

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.





Single phase - Direct 63 A

➤ Function

The **COUNTIS E1x** is an active electrical energy meter designed for single phase load metering. It is used for direct connections up to 63 A.

➤ Applications

The **COUNTIS E10** displays the total energy consumed and allows remote access through pulse output. Metering over specific period can be managed through a partial counter.

The **COUNTIS E11** is a double tariff meter meant for dual tariff invoicing. For each tariff a partial counter is available.

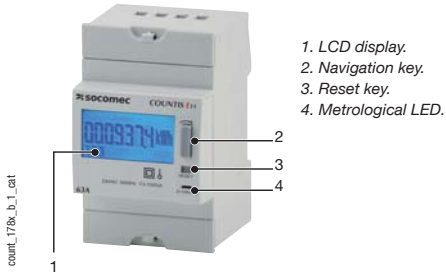
The **COUNTIS E12** features MID certification. MID certified meters feature:

- Extra thefts protection : meter can not be reset, sealed casing.
- Extra accuracy : MID specifications on accuracy according to temperature, humidity, and other external factors are extended.

➤ Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-31
- IEC 62053-11
- EN 50470-1
- EN 50470-3

➔ **Front panel**



➔ **Electrical characteristics**

Current measurement

Type	Single phase - Direct 63 A
Input consumption	0.8 VA max.
Startup current (I_{st})	40 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾
Transition current (I_{tr})	1 A ⁽²⁾
Reference current (I_{ref})	10 A ⁽³⁾
Permanent overload (I_{max})	63 A
Short-time over-current	1890 A max for 10 ms

Voltage measurement

Range of measurement	230 ... 400 V +/- 20 %
Consumption (VA)	0.5 VA max.
Sustained overload	280 V phase-neutral

Energy accuracy

Active (according to IEC 62053-21)	Class 1
------------------------------------	---------

Power supply

Self supplied	Yes
Frequency	50/60 Hz

Output (pulsed)

Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)
Number	1
Fixed weight of impulses	100 Wh
Impulse duration	100 ms

Operating conditions

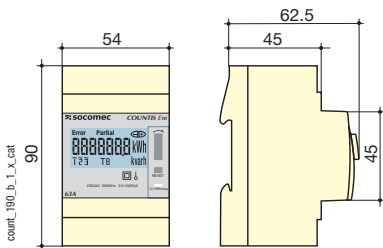
Operating temperature	-10 to 55 °C
Storage temperature	-20 to 70 °C
Relative humidity	85 %

(1) $I_{min} \leq 0.5 \cdot I_r$

(2) The accuracy class is guaranteed between I_r et I_{max} .

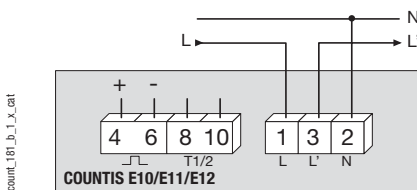
(3) $I_{ref} = I_{(b)}$ (base current) = $10 \cdot I_{(tr)}$ for direct connection COUNTIS.

➔ **Case**



Type	Modular
Number of optional modules	3
Dimensions W x H x D	54 x 90 x 62.5 mm
Case protection index	IP 20
Front protection rating	IP 51
Display type	Backlit LCD display
Rigid cable connection section	1.5 to 16 mm ²
Flexible cable connection section	1 to 16 mm ²
Weight	170 g

➔ **Connection**



➔ **References**

Type	COUNTIS E10 Reference	COUNTIS E11 Reference	COUNTIS E12 Reference
63 A direct	4850 3000		
63 A direct - Dual tariff		4850 3001	
63 A direct - Dual tariff and MID			4850 3002

➔ **Certification MID**

The Measuring Instruments Directive (MID) authorises the use of MID Countis in applications for which sub-billing of the electrical energy consumed is necessary (apartments, commercial units, etc.). It guarantees each user that meters meets a high level of accuracy, quality design and manufacturing through a 3rd party verification.



NEW



3-phase - 63 A direct

➤ Function

The **COUNTIS E2x** is an active electrical energy meter designed for three-phase networks. It is used for direct connections up to 63 A.

➤ Applications

The **COUNTIS E20** displays the total energy consumed and allows remote access through pulse output. Metering over specific period can be managed through a partial counter.

The **COUNTIS E21** is a double tariff meter meant for dual tariff invoicing. For each tariff a partial counter is available.

➤ Conformity to standards

- IEC 62053-21 class 1

➔ Front panel



➔ Electrical characteristics

Current measurement

Type	63 A direct - 3-phase
Input consumption	0.8 VA max. per phase
Startup current (I_{st})	40 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾
Transition current (I_{tr})	1 A ⁽²⁾
Reference current (I_{ref})	10 A ⁽³⁾
Permanent overload (I_{max})	63 A
Short-time over-current	1890 A max for 10 ms

Voltage measurement

Range of measurement	230 ... 400 V +/- 20 %
Consumption (VA)	2 VA max.
Sustained 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

Output (pulsed)

Number	1
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)
Fixed weight of impulses	100 Wh
Impulse duration	100 ms

Operating conditions

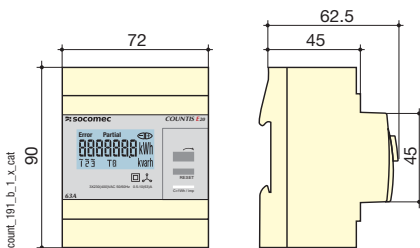
Operating temperature	-10 to 55 °C
Storage temperature	-20 to 70 °C
Relative humidity	85 %

(1) $I_{min} \leq 0.5 \cdot I_{tr}$

(2) The accuracy class is guaranteed between I_{tr} et I_{max} .

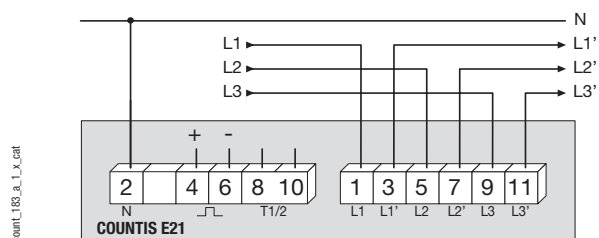
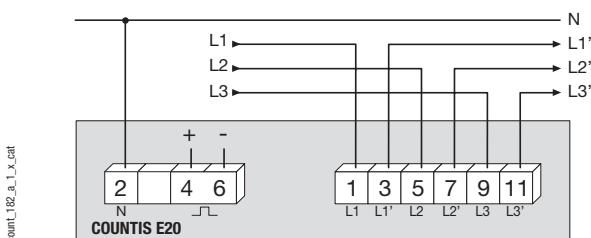
(3) $I_{ref} = I_{tr}$ (base current) = $10 \cdot I_{tr}$ for direct connection COUNTIS.

➔ Case



Type	Modular
Number of optional modules	4
Dimensions W x H x D	72 x 90 x 62.5 mm
Case protection index	IP20
Front protection rating	IP51
Display type	Backlit LCD display
Rigid cable connection section	1.5 to 16 mm ²
Flexible cable connection section	1 to 16 mm ²
Weight	245 g

➔ Connection



➔ References

Type	COUNTIS E20 Reference	COUNTIS E21 Reference
63 A direct - 3-phase	4850 3003	
63 A direct - 3-phase - Dual tariff		4850 3004

NEW



3-phase - Direct 100 A

➤ Function

The **COUNTIS E3x** is an active electrical energy meter designed for three-phase networks. It is used for direct connections up to 100 A.

➤ Applications

The **COUNTIS E30** displays the total energy consumed and allows remote access through pulse output. Metering over specific period can be managed through a partial counter.

➤ Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-23 class 2
- EN 50470-1
- EN 50470-3

The **COUNTIS E31** is a double tariff meter meant for dual tariff invoicing. For each tariff a partial counter is available.

In addition to the **COUNTIS E31** functions, the **COUNTIS E32** also offers MID certification.

In addition to the **COUNTIS E30** functions, the **COUNTIS E33** also offers JBUS/ MODBUS RTU communication via RS485.

In addition to the **COUNTIS E33** functions, the **COUNTIS E34** also offers MID certification.

COUNTIS E32 and **E34** cannot be reset.

The **COUNTIS E33** is bi-directional (import and export).

➔ **Front panel**



1. LCD display
2. Navigation key
3. Reset key
4. Metrological LED

➔ **Electrical characteristics**

Current measurement

Type	3-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_{tr})	2 A ⁽²⁾
Reference current (I_{ref})	20 A ⁽³⁾
Permanent overload (I_{max})	100 A
Short-time over-current	3000 A max for 10 ms

Voltage measurement

Range of measurement	230 ... 400 V +/- 20 %
Consumption on inrush (VA)	2
Permanente 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 weight of impulses	100 Wh
Impulse duration	100 ms

Operating conditions

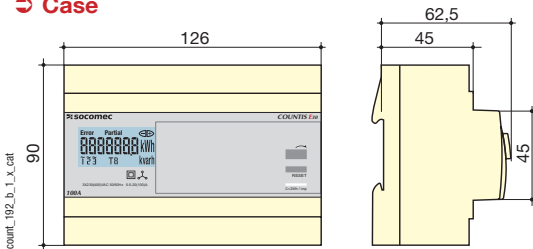
Operating temperature	-10 to 55 °C
Storage temperature	-20 to 70 °C
Relative humidity	85 %

Communication

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® en mode RTU
JBUS/MODBUS® speed	3800 ... 38400 bauds

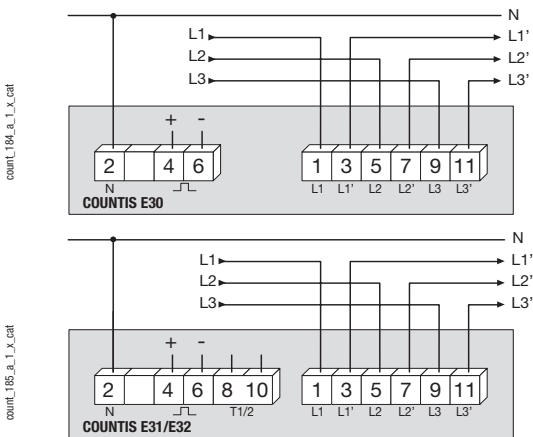
- (1) $I_{min} \leq 0.5 \cdot I_r$
 (2) The accuracy class is guaranteed between I_{tr} et I_{max} .
 (3) $I_{ref} = I_{(b)}$ (base current) = $10 \cdot I_{(b)}$ for direct connection COUNTIS.

➔ **Case**



Type	Modular
Number of optional modules	7
Dimensions W x H x D	126 x 90 x 62.5 mm
Case protection index	IP20
Front protection rating	IP51
Display type	Backlit LCD display
Rigid cable connection section	2.5 to 35 mm ²
Flexible cable connection section	2.5 to 35 mm ²
Weight	490 g

➔ **Connection**



➔ **References**

Type	COUNTIS E30 Reference	COUNTIS E31 Reference	COUNTIS E32 Reference	COUNTIS E33 Reference	COUNTIS E34 Reference
3-phase - Direct 100 A	4850 3005				
100 A direct - 3-phase - Dual tariff		4850 3006			
100 A direct - 3-phase - Dual tariff - MID			4850 3007		
100 A direct with JBUS/MODBUS communication via RS485				4850 3012	
100 A direct with JBUS/MODBUS communication via RS485 - MID					4850 3013

➔ **MID certification**

The Measuring Instruments Directive (MID) authorises the use of MID Countis in applications for which sub-billing of the electrical energy consumed is necessary (apartments, commercial units, etc.). It guarantees each user that meters meets a high level of accuracy, quality design and manufacturing through a 3rd party verification.



COUNTIS

Active energy meter and concentrator

E40 / E41 / E42 / E43 / E44

NEW



3-phase - Via CT up to 6000 A

➤ Function

The **COUNTIS E4x** is an active and reactive electrical energy meter designed for three-phase networks. It is used for connection via CT up to 6000 A.

➤ Applications

The **COUNTIS E40** displays the total energy consumed and allows remote access through pulse output. Metering over specific period can be managed through a partial counter.

➤ Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-23 class 2
- EN 50470-1
- EN 50470-3

The **COUNTIS E41** is a double tariff meter meant for dual tariff invoicing. For each tariff a partial counter is available.

In addition to the **COUNTIS E41** functions, the **COUNTIS E42** also offers MID certification.

In addition to the **COUNTIS E40** functions, the **COUNTIS E43** also offers JBUS/ MODBUS RTU communication via RS485.

In addition to the **COUNTIS E43** functions, the **COUNTIS E44** also offers MID certification.

COUNTIS E42 and **E44** cannot be reset.

The **COUNTIS E43** is bi-directional (import and export).

➤ Front panel



1. LCD display
2. Navigation key
3. Reset key
4. Metrological LED
5. Programming key

➤ Electrical characteristics

Current measurement

Type	Three-phase on CT/5A up to 6000 A
Input consumption	0.2 VA per phase
Startup current (I_{st})	10 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
Short-time over-current	120 A for 0.5 s

Voltage measurement

Range of measurement	230 ... 400 V +/- 20 %
Consumption (VA)	2 VA
Sustained 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 (except E43)
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)
Fixed weight of impulses	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

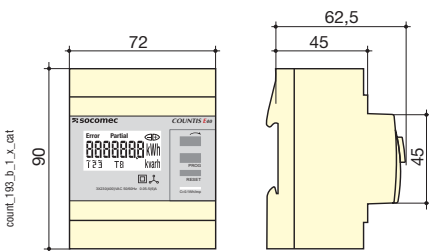
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® en mode RTU
JBUS/MODBUS® speed	1400 ... 38400 bauds

(1) $I_{min} \leq 0.5 \cdot I_r$

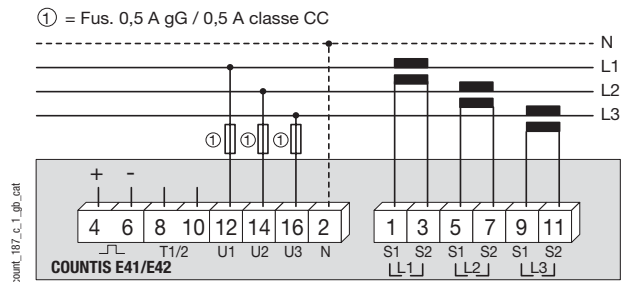
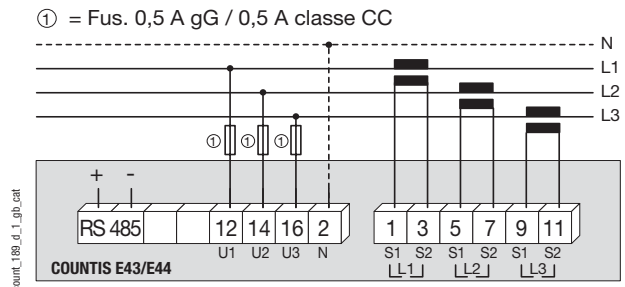
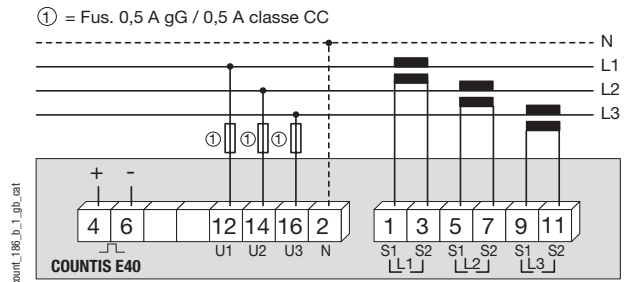
(2) The accuracy class is guaranteed between I_{tr} et I_{max} .

(3) $I_{ref} = I_{(b)}$ (base current) = $10 \cdot I_{(r)}$ for direct connection COUNTIS.

➤ Case



➤ Connection



Type	Modular
Number of optional modules	4
Dimensions W x H x D	73 x 90 x 62.5 mm
Case protection index	IP20
Front protection rating	IP51
Display type	Backlit LCD display
Rigid cable connection section	1.5 to 10 mm ²
Flexible cable connection section	1 to 6 mm ²
Weight	230 g

➤ References

Type	COUNTIS E40 Reference	COUNTIS E41 Reference	COUNTIS E42 Reference	COUNTIS E43 Reference	COUNTIS E44 Reference
Via CT	4850 3008				
Via CT - Dual tariff		4850 3009			
Via CT - Dual tariff - MID			4850 3015		
Via CT with JBUS MODBUS communication via RS485				4850 3017	
Via CT with JBUS MODBUS communication via RS485 - MID					4850 3014

➤ MID certification

The Measuring Instruments Directive (MID) authorises the use of MID Countis in applications for which sub-billing of the electrical energy consumed is necessary (apartments, commercial units, etc.). It guarantees each user that meters meets a high level of accuracy, quality design and manufacturing through a 3rd party verification.



COUNTIS E50 / E53

Active energy meter and concentrator

NEW



count_196_a_1_cat

*Three-phase
Via CT up to 6000 A*

Function

COUNTIS E5x are active and reactive energy meters.

The **COUNTIS E50** is a totalising meter allowing direct reading of the power consumed, using a pulse output.

Two partial meters with reset allow the energy to be metered over a specific period.

The **COUNTIS E53** provides additional JBUS/MODBUS communication via RS485.

Conformity to standards

- IEC 62053-23 class 2
- IEC 62053-21 class 1
- IEC 61557-12

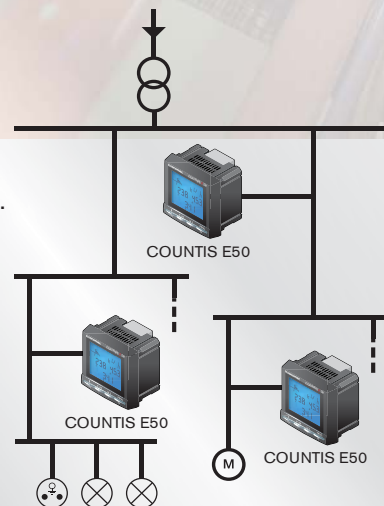
Applications

COUNTIS E50 and E53 are equipped as per standards with a totalising meter which allows direct reading in kWh and a pulse output. The CT ratio can be configured by the user via the keypad and the display.

In addition, once they are associated with **COUNTIS Ci**, it is possible to centralise consumption with an automaton or a PC equipped with **CONTROL VISION**.

Multi-function meter

- Current
 - instantaneous: I1, I2, I3
- Voltages & frequency
 - instantaneous: U1, U2, U3, U12, U23, U13
- Power
 - instantaneous: 3P, 3Q, 3S
 - mean maximum: 3P
- Power factor
 - instantaneous: 3PF



count_197_a_1_x_cat

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent energy: kVAh

References

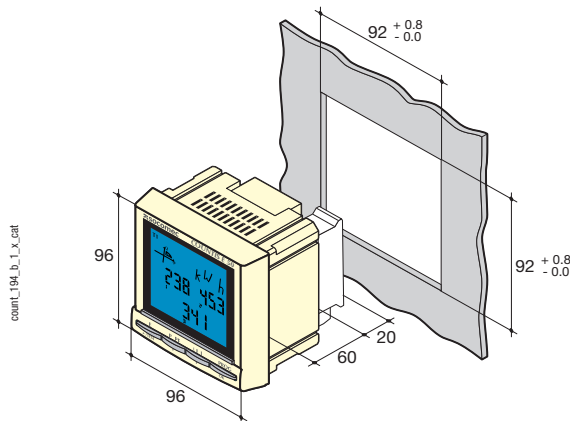
Type	COUNTIS E50 Reference	COUNTIS E53 Reference
Outputs (Pulse)	4850 3010	
MODBUS RS485 communication		4850 3011

➤ 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. Enter key in programming mode

➤ Case



➤ 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
Short-time over-current	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 61268)	Class 2
Active (according to IEC 62053-21)	Class 0.5 S

Power supply

Self supplied	No
Auxiliary power supply U_s	110 400 VAC / $\pm 10\%$
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) $I_{min} \leq 0.5 \cdot I_r$
 (2) The accuracy class is guaranteed between I_r et I_{max} .
 (3) $I_{ref} = I_{tr}$ (base current) = $10 \cdot I_{tr}$ for direct connection COUNTIS.

Type	panel mounting
Dimensions W x H x D	96 x 96 x 80 mm
Case protection index	IP30
Front protection rating	IP52
Display type	Blue backlit LCD display
Voltage and other connection section	0.5 ... 2.5 mm ²
Current connection section	1.5 ... 6 mm ²
Weight	370 g

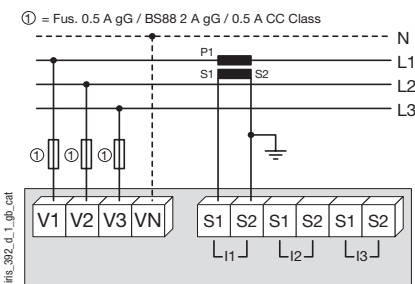
➤ Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- While disconnecting the COUNTIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically via a SOCOMEC product, the PTI, can be found in the SOCOMEC catalogue page 348.

Low voltage balanced network

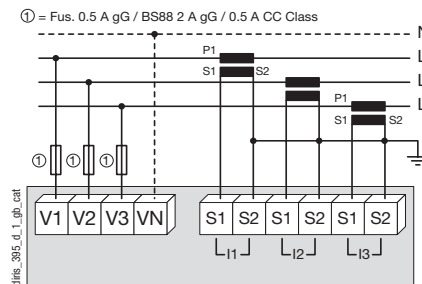
3/4 wires with 1 CT



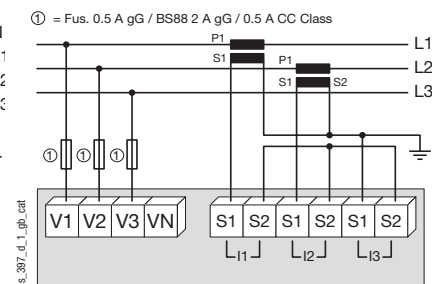
Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Low voltage unbalanced network

3/4 wires with 3 CTs



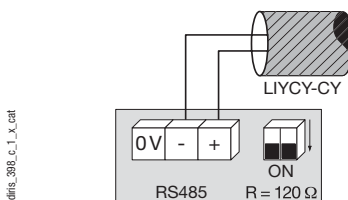
3 wires with 2 CTs



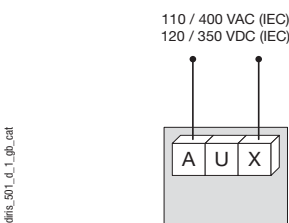
Use of 2 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Additional information

Communication via RS485 link



AC & DC auxiliary power supply



It is recommended that the auxiliary power supply be protected by 500mA gG fuses.



Pulse concentrator

Function

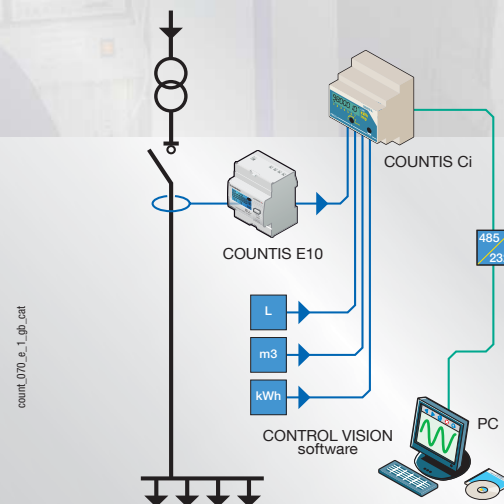
The **COUNTIS Ci** is a pulse concentrator communicating via an RS485 link using JBUS/MODBUS protocol.

Through 7 insulated on/off inputs, it counts the number of pulses from different energy meters (water, air, gas, electricity...) and transmits this information to a PC equipped with CONTROL VISION software or a PLC.

Conformity to standards

- IEC 61010-1
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-4-8
- IEC 61000-4-11
- IEC 60068-2-6
- IEC 60068-2-11
- IEC 60068-2-30

Applications



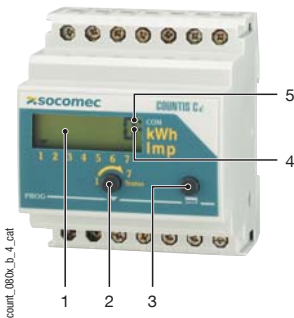
As electricity is not the only energy consumption source, COUNTIS allows collection of other energies such as water, air or gas.

CONTROL VISION software, via the COUNTIS Ci concentrator and its RS485 link JBUS/MODBUS® protocol allows centralization of all consumptions whilst guaranteeing an optimal accuracy and ease of use (Windows™ environment).

The **COUNTIS Ci** provides:

- 7 total counters to count kWh or a number of pulses.
- Time-dated memory for kWh consumed over one month for each input. This record is carried out once a month for 12 successive months. Values are accessible through JBUS/MODBUS communication facility.
- 4 out of 7 inputs can store load curves over a period of 8, 10, 15, 20 or 30 minutes. Example: load curves over 8 days if average power values are stored every 10-minutes.
- Status of the 7 inputs.

Front panel



1. Displays consumption per input (▼).
2. Pushbutton to display consumption and status per input.
3. Validation pushbutton in programming mode.
4. Unit indicator (kWh or Imp)
5. Communication status indicator (COM).

Characteristics

Auxiliary power supply

Self supplied	no
Alternating voltage	230 / 400 VAC
Tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	< 5 VA
Insulation voltage	2.5 kV

Communication

Link	RS-485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® in RTU mode
JBUS/MODBUS® speed	4800 ... 38400 bauds

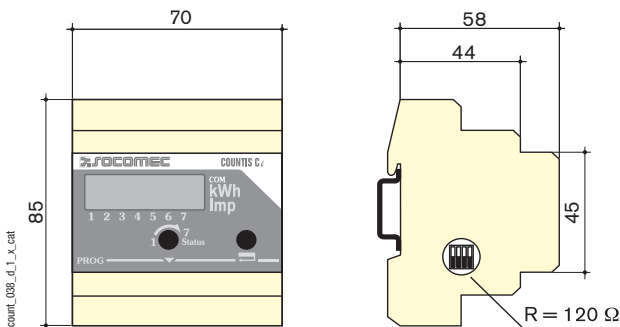
Inputs

Number	7
Control voltage (integrated)	10 ... 30 VDC
Minimal signal width	10 ms
Maximum signal width	2 s
Minimum length between 2 impulses	18 ms
Edge triggering	rising
Type	ON - OFF switch

Operating conditions

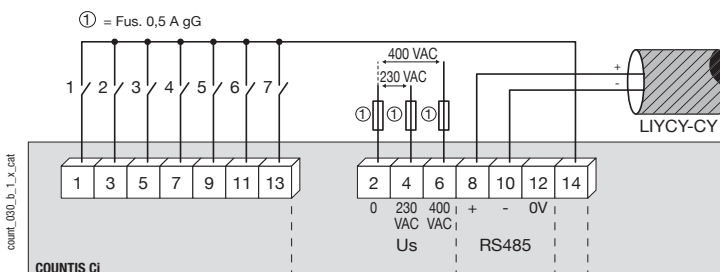
Operating temperature	-5 ... +45 °C
Storage temperature	-20 ... +70 °C
Relative humidity	85 %

Case



Type	Modular
Number of optional modules	4
Dimensions W x H x D	70 x 85 x 58 mm
Case protection index	IP20
Front protection rating	IP40
Display type	LCD
Terminal blocks type	Fixed
Rigid cable connection section	1 ... 10 mm ²
Flexible cable connection section	0.5 ... 6 mm ²
Weight	500 g

Terminals and connections



- 1: on/off switch input n°1
- 3: on/off switch input n°2
- 5: on/off switch input n°3
- 7: on/off switch input n°4
- 9: on/off switch input n°5
- 11: on/off switch input n°6
- 13: on/off switch input n°7

- 2 - 4 - 6: auxiliary power supply U_s
- 8 - 10 - 12: RS485 link
- 14: internal direct source to supply the 7 inputs

References

Auxiliary power supply U_s

230 / 400 VAC

COUNTIS Ci

Reference

4852 0000

Description of accessories

Panel mounting kit

Reference

192J 8015

NEW



Modular multi function meter

Function

The **DIRIS A10** is a multi function meter for measuring electrical values in low voltage networks in modular format. It allows all electrical parameters to be displayed and the measurement, energy metering and communication functions to be used. In addition, the DIRIS A10 has a function for correcting errors in CT connections. It also allows variations in temperature to be detected thanks to its internal temperature measurement function.

Conformity to standards

- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2
- IEC 61557-12

Applications

Multi-function meter

- Current
 - 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 factor
 - instantaneous: 3PF, ΣPF
- Internal temperature

Metering

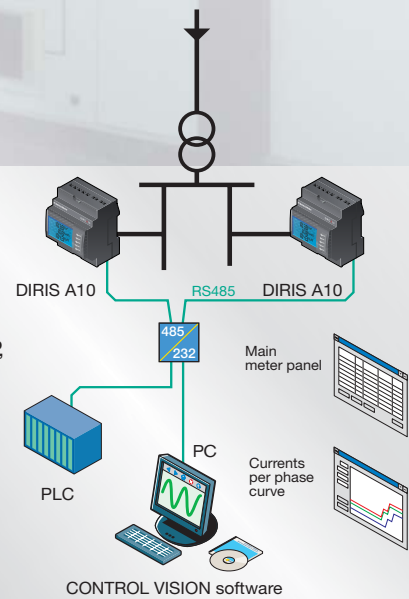
- Active energy: + kWh
- Reactive energy: + kvarh
- Hours: ⌚

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 (JBUS/MODBUS) digital

Output

- Remote comand of apparatus
- Alarm report
- Pulse report

Input

- Remote control

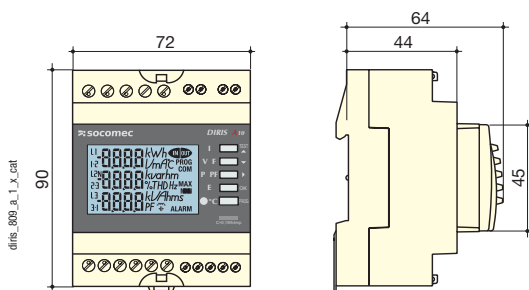
(1) Available as an option (see the following pages).

➔ Front panel



1. Backlit LCD screen.
2. Direct access key for currents (instant and maximum) and current THD.
3. Direct access key for voltages, frequency and voltage THD.
4. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies and hour meter.
6. Pushbutton for currents, temperatures and CT setup wiring correction.
7. Metrological LED.

➔ Case



Type	Modular
Number of optional modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case protection index	30
Front protection rating	52
Display type	LCD
Voltage and other connection section	4 mm ²
Connection cross-section of others	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 %
Sustained 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 %
Sustained 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	220 ... 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 ⁸

Communication

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® in RTU mode
JBUS/MODBUS® speed	1400 ... 38400 bauds

Operating conditions

Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 70 °C
Relative humidity	85 %

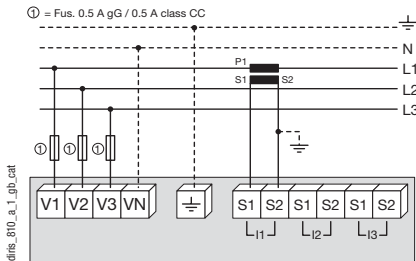
➤ DIRIS A10 - Connection

Low voltage balanced network

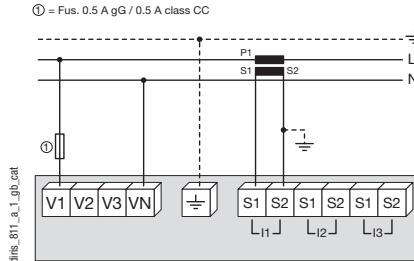
Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically from a product in the SOCOMEC catalogue, PTI: consult us.
- It is recommended that the earthing point for the DIRIS A10 and the current transformer secondaries should not be earthed at the same time.

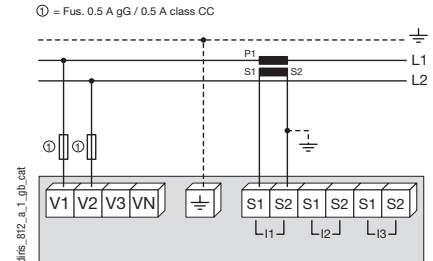
3/4 wires with 1 CT



Single phase

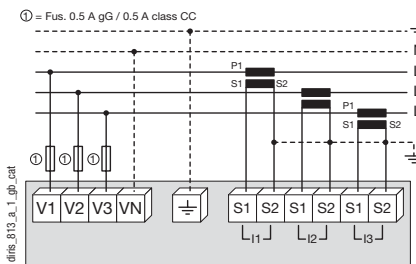


Two phase

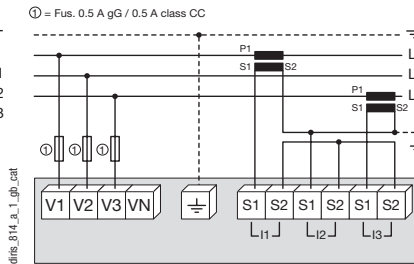


Low voltage unbalanced network

3/4 wires with 3 CTs

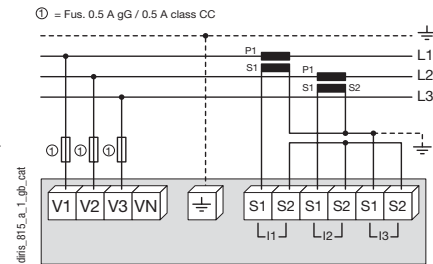


3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

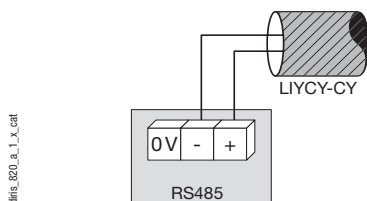
3 wires with 2 CTs



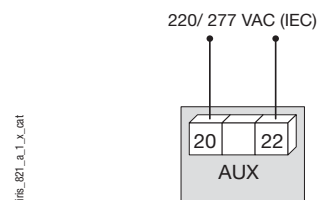
Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

Additional information

Communication via RS485 link

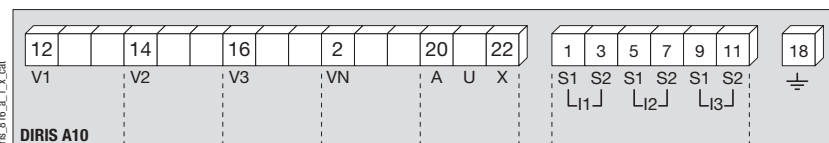


AC & DC auxiliary power supply



It is recommended that the auxiliary power supply be protected by the use of 500 mA gG fuses.

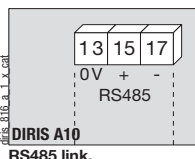
↳ Terminals



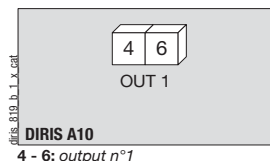
S1 - S2: current inputs.

AUX: auxiliary power supply Us.
V1, V2, V3 & VN: voltage inputs.

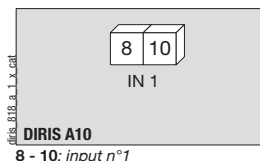
Communication (option)



Output



Input



↳ References



Basic device

Description

DIRIS A10 (grey colour available on request)	4825 0010
DIRIS A10 with JBUS/MODBUS communication via RS485 (grey colour available on request)	4825 0011

DIRIS A10 Reference

4825 0010
4825 0011

Description of accessories

Description of accessories	To be ordered by multiple	Reference
Fuse combination switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse combination 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 transformers range		See page 334

↳ Services and Technical assistance

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.



NEW



diris_750_a_1_cat

Monitoring and managing energy for low voltage electrical installations

Function

DIRIS A20 are 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 used and analysed remotely using the CONTROL VISION software.

Conformity to standards

- IEC 61557-12
- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2

Applications

Multi-function meter

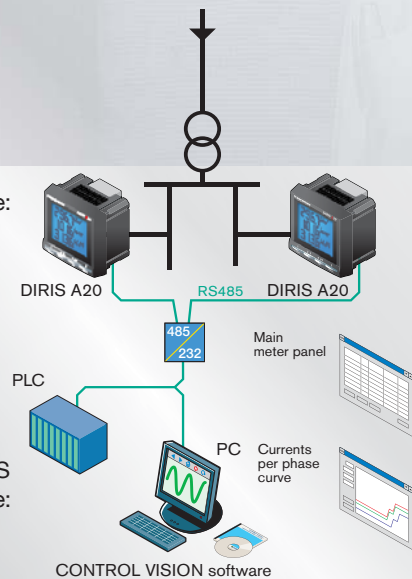
- Current
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: U1, U2, U3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factor
 - instantaneous: 3PF, ΣPF

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



diris_576_d_1_jpb_cat

Events⁽¹⁾

Alarms on all electrical values

Communications⁽¹⁾

RS485 (JBUS/MODBUS) digital

Output⁽¹⁾

- Remote comand of apparatus
- Alarm report
- Pulse report

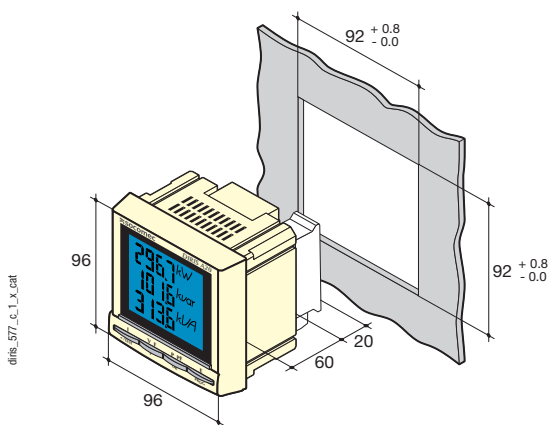
⁽¹⁾ Available as an option (see the following pages).

➔ Front panel



1. Backlit LCD screen.
2. Direct access key for currents (instantaneous and max. values), current THD and set up wiring correction.
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 and hour meter.

➔ Case



Type	Panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case protection index	IP30
Front protection rating	IP52
Display type	LCD
Terminal blocks type	fixed or pull-out
Voltage and other connection section	0.2 ... 2.5 mm ²
Current connection section	0.5 ... 6 mm ²
Weight	400 g

➔ Plug-in modules



1 Output

- 1 output assignable to:
- Pulses: configurable (type, weight, time) in kWh or kvarh
 - Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer
 - Control of apparatus

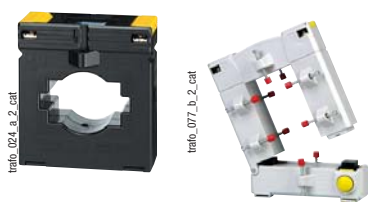


Communication

RS485 link with JBUS / MODBUS protocol
(speed up to 38400 bauds)

➔ Accessories

Current transformer (see page 334)



IP65 protection



Mounting kit for 144 x 96 mm cut out plate



↳ DIRIS A20 - 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 %
Sustained 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 %
Sustained 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

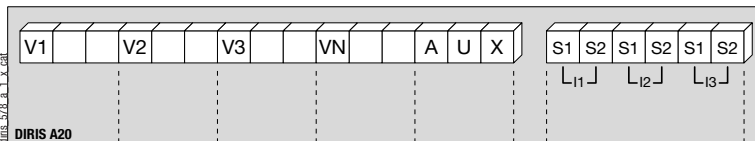
Communication

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® in RTU mode
JBUS/MODBUS® speed	1400 ... 38400 bauds

Operating conditions

Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

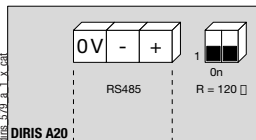
↳ Terminals



S1 - S2: current inputs.

AUX: auxiliary power supply Us.
V1, V2, V3 & VN: voltage inputs.

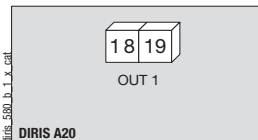
Communication module



RS485 link.

R = 120 Ω: internal resistance for the RS485 link.

Output or alarm module



18 - 19: output n°1

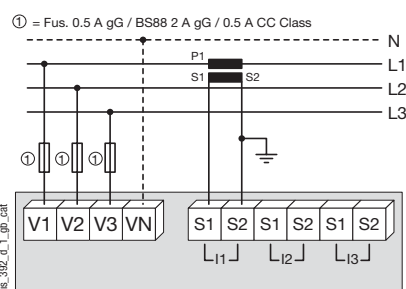
↳ Connection

Recommendation:

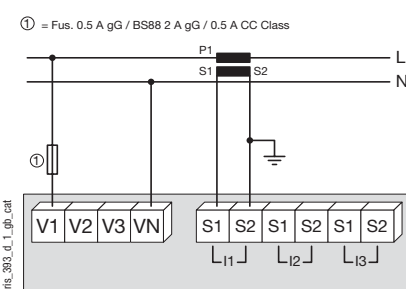
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically from a product in the SOCOMEC catalogue, PTI: consult us.

Low voltage balanced network

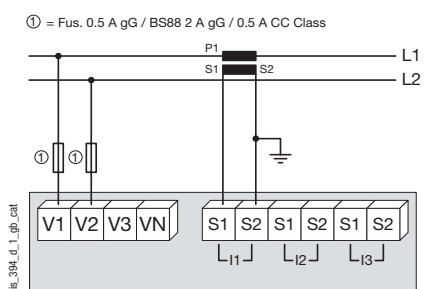
3/4 wires with 1 CT



Single phase



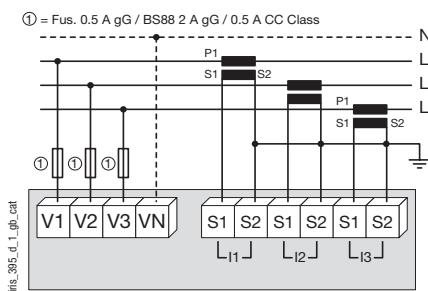
Two phase



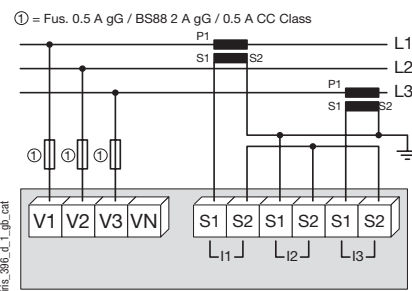
Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Low voltage unbalanced network

3/4 wires with 3 CTs

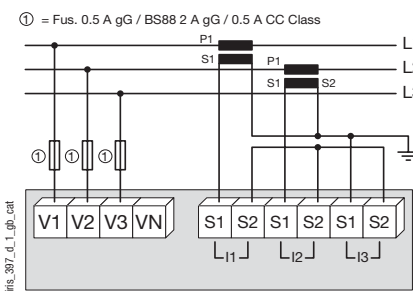


3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

3 wires with 2 CTs

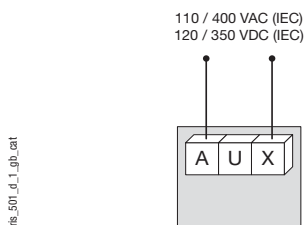
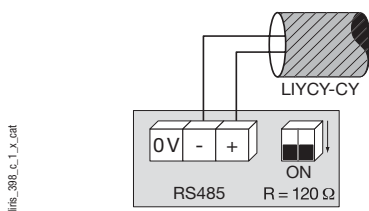


Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

Additional information

Communication via RS485 link

AC & DC auxiliary power supply



It is recommended that the auxiliary power supply be protected by the use of 500 mA gG fuses.

References



DIRIS A20
Reference
4825 0200

Basic device

Auxiliary power supply Us
110 ... 400 VAC / 180 ... 350 VDC

Options

Plug-in modules

1 output
RS485 JBUS / MODBUS® communication

Reference

4825 0080
4825 0082

Accessories

Description of accessories	To be ordered by multiple	Reference
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cutout	1	4825 0088
Fuse combination switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse combination 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 transformers range		See page 334

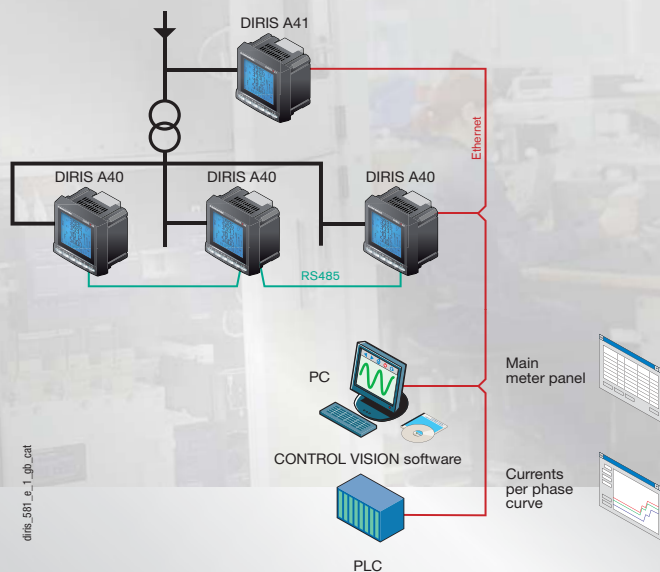
Services and Technical assistance

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.





Applications



Monitoring and managing energy for high/low voltage electrical installations

Function

The DIRIS A40 and A41 are multifunction meters which ensure the user has access to all the measurements required for energy efficiency projects and monitoring of electrical distribution.

All this information can be used and analysed remotely using the CONTROL VISION software.

Conformity to standards

- IEC 61557-12
- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2

Multi measurement

- Current
 - instantaneous: I1, I2, I3, In, Isystem
 - average/maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: U1, U2, U3, U12, U23, U31, F, Vsystem, Ussystem
 - average/maximum average: U1, U2, U3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - average/maximum average: ΣP, ΣQ, ΣS
 - predictive: (ΣP), (ΣQ), (ΣS)
- Power factor
 - instantaneous: 3PF, ΣPF
 - average/maximum average: ΣPF
- Temperatures⁽¹⁾
 - internal
 - external via 3 PT100 sensors

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent energy: kVAh
- Hours: ⌚

Harmonic analysis

- Harmonic distortion rate
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd U1, thd U2, thd U3
 - Phase to phase voltage: thd U12, thd U23, thd U31

- Individual up to level 63
 - Currents: HI1, HI2, HI3, HIn
 - Phase-to-neutral voltage: HU1, HU2, HU3,
 - Phase to phase voltage: HU12, HU23, HU31

Load curves⁽¹⁾

- Active and reactive power: ΣP+/-; ΣQ+/-
- Voltages & frequency: U1, U2, U3, U12, U23, U31, F

Events⁽¹⁾

- Alarms on all electrical values.

Communications⁽¹⁾

- Analogues 0/4- 20 mA
- Digital RS485 (Jbus/Modbus & Profibus-DP)
- Ethernet (modbus/TCP or Jbus/Modbus RTU over TCP and Web server)
- Ethernet with RS485 gateway Jbus/Modbus RTU over TCP

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 screen.
2. Pushbutton for currents and setup wiring correction
3. Pushbutton for voltages and frequency.
4. Pushbutton for active, reactive, and apparent power and power factor.
5. Pushbutton for maximum and average current and power values.
6. Pushbutton for harmonics values.
7. Pushbutton for pulse, hours and electrical energy meters.

➔ Plug-in modules

DIRIS® A40



DIRIS® A41



Pulse outputs

2 configurable pulse outputs (type, weight and run) on \pm kWh, \pm kvarh and kVAh



JBUS / MODBUS® communication

RS485 link with JBUS / MODBUS® protocol (speed up to 38400 bauds).



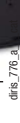
PROFIBUS® DP communication

SUB-D9 link with PROFIBUS® DP protocol (speed up to 12 Mbauds).



Ethernet communication

- Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP



Ethernet communication with RS485 JBUS/MODBUS gateway

- Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP
- Connection of 1 to 247 RS485 JBUS/MODBUS slaves



Analogue outputs

A maximum of 2 modules may be connected, that is 4 analogue outputs.
2 outputs assignable to:
3I, In, 3V, 3U, F, \pm Σ P, \pm Σ Q, Σ S, Σ PFL/C, I sys, Vsys, Usys, Ppred, Q pred, Spred, internal T°C, T°C 1, T°C 2, T°C 3 and to 17 VDC power supply



2 inputs - 2 outputs

A maximum of 3 modules may be connected, giving 6 inputs.
2 outputs assignable to:
- monitoring: 3I, In, 3V, 3U, F, \pm Σ P, \pm Σ Q, SS, Σ PFL/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.



Memory

- 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, Σ P \pm , Σ Q \pm , Σ S, 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).

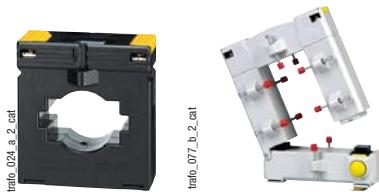


Temperature

- Temperature indication
- Internal
 - External sensor PT 100 (T°C 1)
 - External sensor PT 100 (T°C 2)
 - External sensor PT 100 (T°C 3)

↳ DIRIS A40 / A41 - Accessories

Current transformer
(see page 334)



IP65 protection

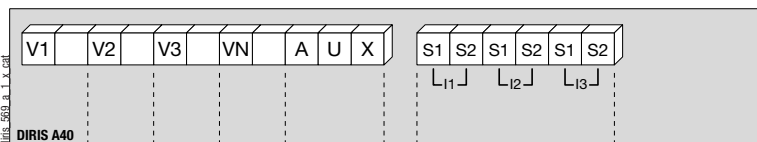


Mounting kit for 144 x 96 mm cut out plate



↳ Terminals

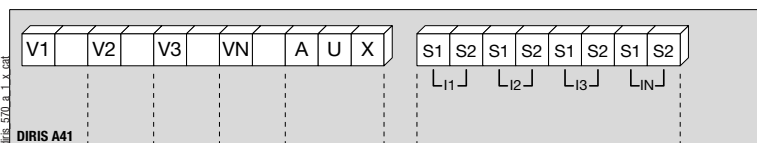
DIRIS A40



S1 - S2: current inputs

AUX: auxiliary power supply U_s
V1 - V2 - V3 - VN: voltage inputs

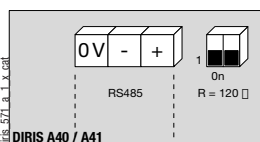
DIRIS A41



S1 - S2: current inputs

AUX: auxiliary power supply U_s
V1 - V2 - V3 - VN: voltage inputs

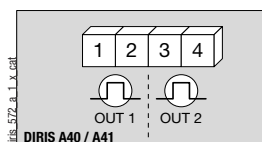
Communication module



DIRIS A40 / A41

RS485 link.
 $R = 120 \Omega$: internal resistance for the RS485 link.

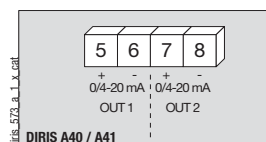
Pulse output module



DIRIS A40 / A41

1 - 2: pulse output n°1.
3 - 4: pulse output n°2.

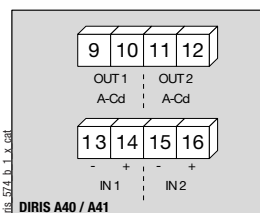
Analogue output module



DIRIS A40 / A41

5 - 6: analogue output n°1.
7 - 8: analogue output n°2.

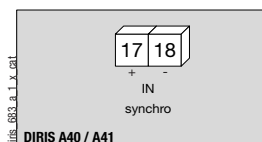
2 inputs / 2 outputs module



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.

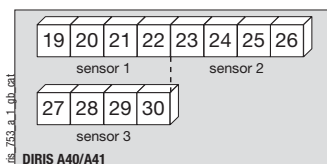
Memory module



DIRIS A40 / A41

17 - 18: synchronisation input.

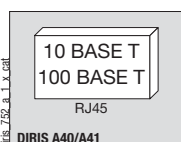
Temperature module



DIRIS A40/A41

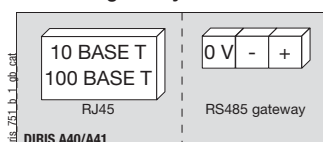
Sensor 1	Sensor 2	Sensor 3
19: Red	23: Red	27: Red
20: Red	24: Red	28: Red
21: White	25: White	29: White
22: White	26: White	30: White

Ethernet Module



DIRIS A40/A41

Ethernet module + RS485 JBUS / MODBUS gateway



DIRIS A40/A41

Electrical characteristics

Current measurement on insulated inputs (TRMS)	
Via CT primary	10 000 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 %
Sustained 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 %
Sustained overload	760 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 ... 17 VDC
Minimal signal width	10 ms
Minimum length between 2 impulses	18 ms
Type	phototransistor

Pulse outputs module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁶

Analogue output module	
Number of outputs	2 ⁽²⁾
Type	insulated
Scale	0 / 4 ... 20 mA
Load resistance	600 Ω
Maximum current	30 mA

JBUS/MODBUS communication module	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® in RTU mode
JBUS/MODBUS® speed	1400 ... 38400 bauds

PROFIBUS-DP communication module	
Link	SUB-D9
Protocol	PROFIBUS® DP
PROFIBUS® speed	9.8 kbauds ... 12 Mbauds

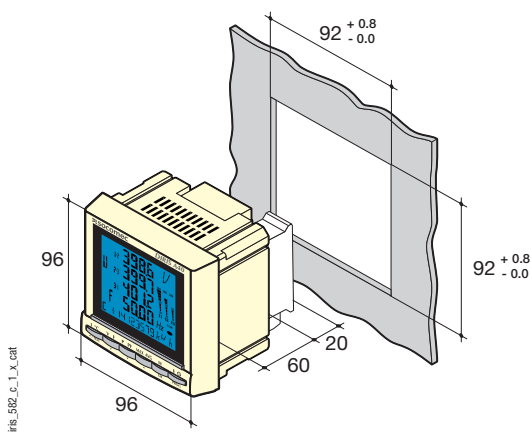
Ethernet Communication Module	
Connectique	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or JBUS/MODBUS RTU over TCP

Module 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



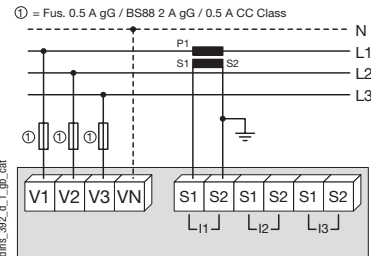
Type	Panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case protection index	IP30
Front protection rating	IP52
Display type	LCD
Terminal blocks type	fixed or pull-out
Voltage and other connection section	0.2 ... 2.5 mm ²
Current connection section	0.5 ... 6 mm ²
Weight	400 g

➔ DIRIS A40 / A41 - Connections

Recommendation: when disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically by a product in the SOCOMEC catalogue, PTI: consult us.
In TNC neutral system it is recommended to use functional earth module.

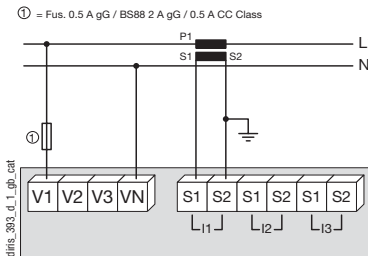
Low voltage balanced network for DIRIS A40

3/4 wires with 1 CT

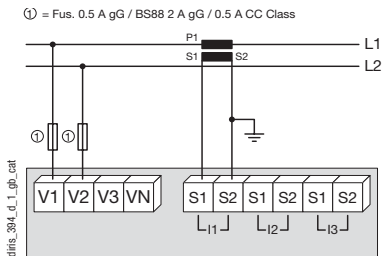


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Single phase

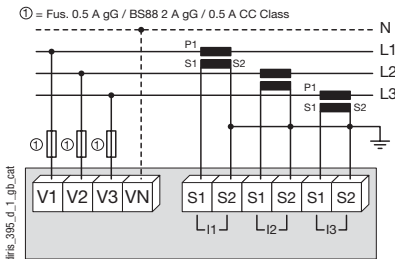


Two phase

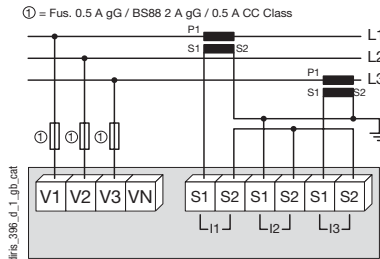


Low voltage unbalanced network for DIRIS A40

3/4 wires with 3 CTs

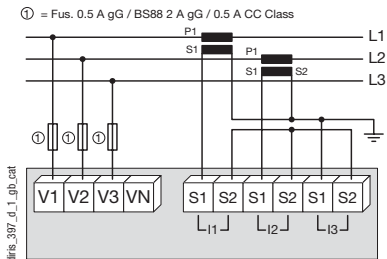


3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

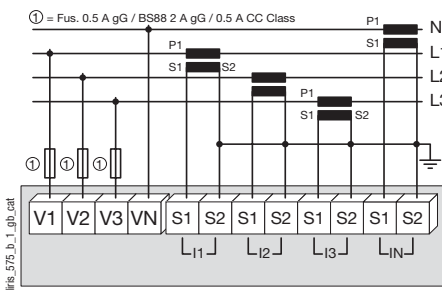
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

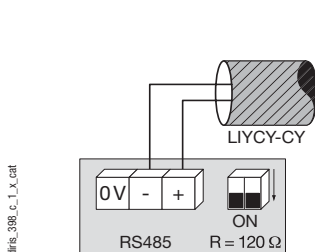
Low voltage unbalanced network for DIRIS A41

4 wires with 4 CTs

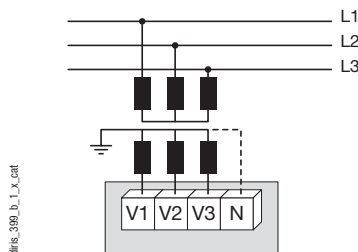


Additional information

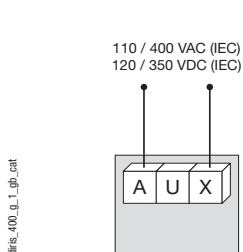
Communication via RS485 link



Voltage transformer for HV networks



AC & DC auxiliary power supply



110 / 400 VAC (IEC)
120 / 350 VDC (IEC)

It is recommended that the auxiliary power supply be protected by the use of 500 mA gG fuses.

➔ References



DIRIS A41 a. 1. cat

Basic device	DIRIS A40	DIRIS A41
Auxiliary power supply U _s	Reference	with CT on the neutral 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
Sub D9 JBUS/MODBUS [®] communication	4825 0092	4825 0092
Analogue outputs	4825 0093	4825 0093
2 inputs / 2 outputs	4825 0094	4825 0094
RS485 PROFIBUS [®] DP communication	4825 0205	4825 0205
Memory	4825 0097	4825 0097
Ethernet communication	4825 0203	4825 0203
Ethernet communication + RS485 gateway JBUS/MODBUS	4825 0204	4825 0204
Temperature inputs	4825 0206	4825 0206
Functional Earth	4825 0087	4825 0087

Accessories

Description of accessories	To be ordered in multiples of		To be ordered in multiples of	
		Reference		Reference
IP65 protection	1	4825 0089	1	4825 0089
Panel mounting kit for a 144 x 96 mm cutout	1	4825 0088	1	4825 0088
Fuse combination switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018	4	5601 0018
Fuse combination switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000	10	6012 0000
Current transformers range		See page 334		See page 334

(1) Ease of integration for additional functions (maximum 4 on A40 and 3 on A41).

➔ Services and Technical assistance

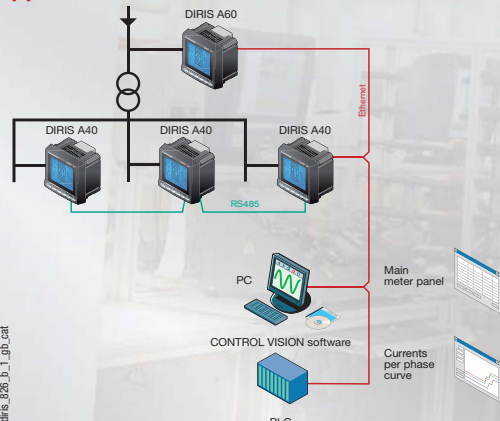
Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.





diris_a24_a_1_cat

Applications



diris_a26_b_1_dp_cat

In addition to the functions of the DIRIS A40, the DIRIS A60 also:

- shows the current and voltage unbalance
- shows the tangent phi
- stores the load curves (50 days with an interval of 10 minutes) for:
 - 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 1/2 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-function meter

- Current
 - instantaneous: I1, I2, I3, In, Isystem,
 - average/maximum average: I1, I2, I3, In,
 - unbalance: I unb.
- Voltages & frequency
 - instantaneous: U1, U2, U3, U12, U23, U31, F, Vsystem, Ussystem
 - average/maximum average: U1, U2, U3, 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
 - FP, ΣFP
- Instantaneous total tangent phi
- Instantaneous, averaged, max averaged disbalance

- Temperatures⁽¹⁾
 - internal
 - external via 3 PT100 sensors

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent energy: kVAh
- Hours: \odot

Harmonic analysis (level 63)

- Harmonic distortion rate
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd U1, thd U2, thd U3
 - Phase to phase voltage: thd U12, thd U23, thd U31
- Individual
 - Currents: HI1, HI2, HI3, HIn
 - Phase-to-neutral voltage: HU1, HU2, HU3,
 - Phase to phase voltage: HU12, HU23, HU31

Events⁽¹⁾

- Alarms on all electrical values

Communications⁽¹⁾

- Analogues 0/4- 20 mA
- Digital RS485 (Jbus/Modbus & Profibus-DP)
- Ethernet (modbus/TCP or Jbus/Modbus RTU over TCP and Web server)
- Ethernet with RS485 gateway Jbus/Modbus RTU over TCP

Inputs / Outputs⁽¹⁾

- Pulse metering
- Remote control/command
- Alarm report
- Pulse report

⁽¹⁾ Available as an option (see the following pages).

Events monitoring and managing energy for high/low voltage electrical installations

Function

DIRIS A60 is a measurement station which takes over all the functions of DIRIS A40 and which is enhanced by a history of harmful events for installation. A graphic representation of these harmful events is associated and provided to the user. All this information can be used and analysed remotely using free quality measurement software that can be downloaded on the site www.socomec.com.

Conformity to standards

- IEC 61557-12
- IEC 62053-22 class 0.5 S
- IEC 62053-23 class 2

➔ Front panel



1. Backlit LCD screen.
2. Pushbutton for currents, temperatures and CT setup wiring correction.
3. Pushbutton for voltages and frequency.
4. Pushbutton for active, reactive, and apparent power and power factor.
5. Pushbutton for maximum and average current and power values.
6. Pushbutton for harmonics values.
7. Pushbutton for energies and hour run meter.

➔ Plug-in modules

DIRIS® A60



Pulse outputs

- 2 configurable pulse outputs (type, weight and run) on \pm kWh, \pm kvarh and kVAh

JBUS / MODBUS® communication

- RS485 link with JBUS / MODBUS® protocol (speed up to 38400 bauds).

PROFIBUS® DP communication

- RS485 link with PROFIBUS® DP protocol (speed up to 12 Mbauds).

Ethernet communication

- Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP

Ethernet communication with RS485 JBUS/MODBUS gateway

- Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP
- Connection of 1 to 247 RS485 JBUS/MODBUS slaves

Analogue outputs

- A maximum of 2 modules may be connected, that is 4 analogue outputs. 2 outputs assignable to: 3I, In, 3V, 3U, F, \pm Σ P, \pm Σ Q, Σ S, Σ PFL/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.

2 inputs - 2 outputs

- A maximum of 3 modules may be connected, giving 6 inputs. 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 pulses metering.

Temperature

- Temperature indication:
 - Internal
 - External sensor PT 100 (T°C 1)
 - External sensor PT 100 (T°C 2)
 - External sensor PT 100 (T°C 3)

↳ DIRIS A60 - Accessories

Current transformer
(see page 334)



Current transformer



IP65 protection

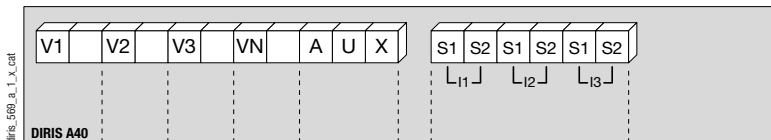


Mounting kit for kit 144 x 96 mm
cut out plate



↳ Terminals

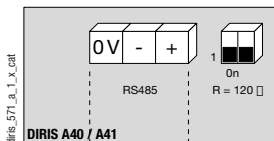
DIRIS A60



S1 - S2: current inputs

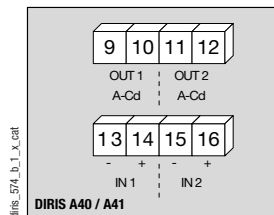
AUX: auxiliary power supply U_s
V1 - V2 - V3 - VN: voltage inputs

Communication module



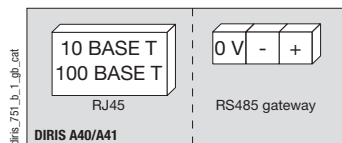
RS485 link.
R = 120 Ω : internal resistance for the RS485 link.

2 inputs / 2 outputs module

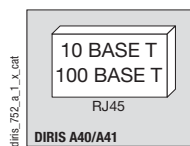


9 - 10: relay output $n^{\circ}1$.
11 - 12: relay output $n^{\circ}2$.
13 - 14: opto input $n^{\circ}1$.
15 - 16: opto input $n^{\circ}2$.

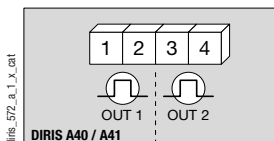
Ethernet module + RS485 JBUS /
MODBUS gateway



Ethernet Module

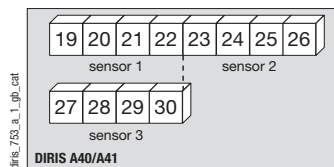


Pulse output module

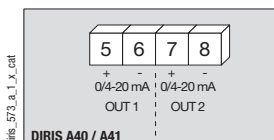


1 - 2: pulse output $n^{\circ}1$.
3 - 4: pulse output $n^{\circ}2$.

Temperature module



Analogue output module



5 - 6: analogue output $n^{\circ}1$.
7 - 8: analogue output $n^{\circ}2$.

Electrical characteristics

Current measurement on insulated inputs (TRMS)

Via CT primary	10 000 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 %
Sustained 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 %
Sustained overload	760 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

Number	2 ⁽¹⁾
Power supply	10 ... 30 VDC
Minimal signal width	10 ms
Minimum length between 2 impulses	18 ms
Type	phototransistor

Pulse outputs module

Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁶

Analogue output module

Number of outputs	2 ⁽²⁾
Type	insulated
Scale	0 / 4 ... 20 mA
Load resistance	600 Ω
Maximum current	30 mA

JBUS/MODBUS communication module

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	JBUS/MODBUS® in RTU mode
JBUS/MODBUS® speed	1400 ... 38400 bauds

PROFIBUS-DP communication module

Link	SUB-D9
Protocol	PROFIBUS® DP
PROFIBUS® speed	9.8 kbauds ... 12 Mbauds

Ethernet Communication Module

Connectique	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or JBUS/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

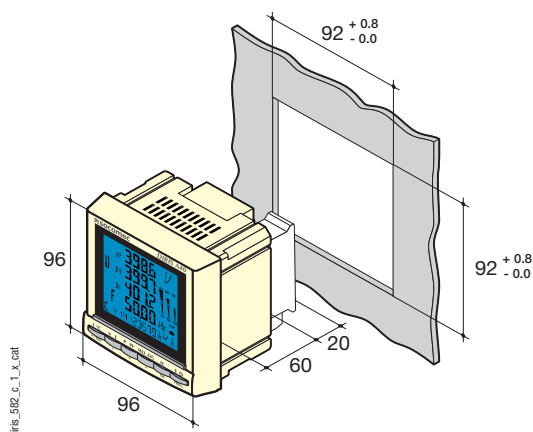
Operating conditions

Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

(1) Max. 3 modules / DIRIS.

(2) Max. 2 modules / DIRIS.

Case



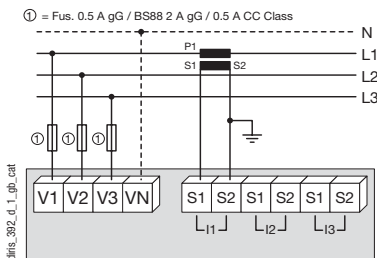
Type	Panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case protection index	IP30
Front protection rating	IP52
Display type	LCD
Terminal blocks type	fixed or pull-out
Voltage and other connection section	0.2 ... 2.5 mm ²
Current connection section	0.5 ... 6 mm ²
Weight	400 g

➔ DIRIS A60 - Connection

Recommendation: when disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically by a product in the SOCOMEC catalogue, PTI: consult us.

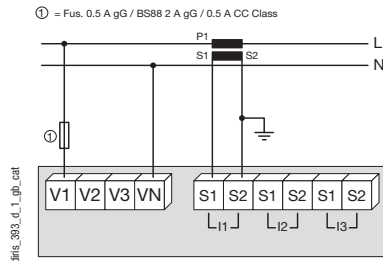
Low voltage balanced network for DIRIS A60

3/4 wires with 1 CT

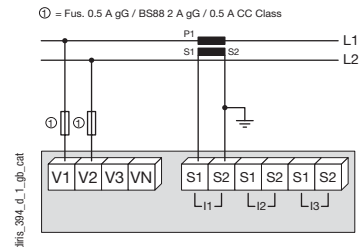


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Single phase

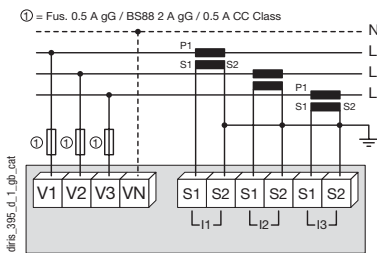


Two phase

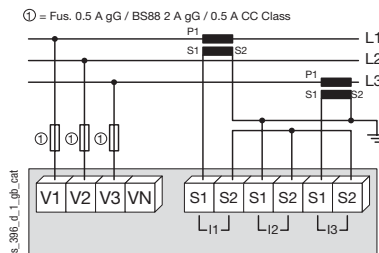


Low voltage unbalanced network for DIRIS A60

3/4 wires with 3 CTs

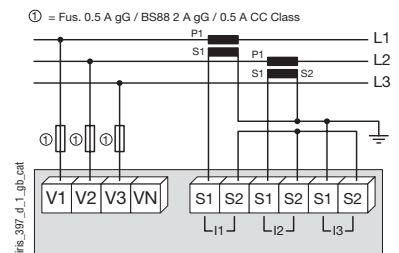


3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

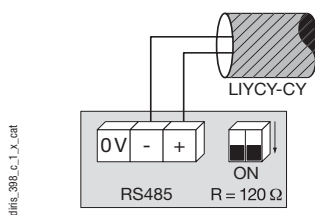
3 wires with 2 CTs



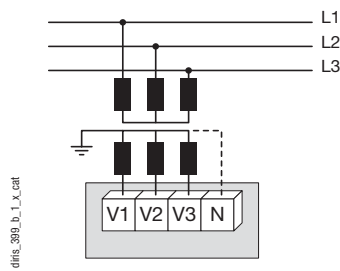
Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

Additional information

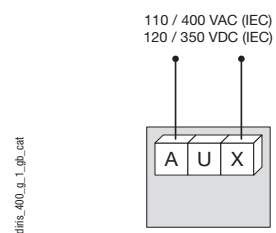
Communication via RS485 link



Connection of voltage transformer for HV networks



AC & DC auxiliary power supply



It is recommended that the auxiliary power supply be protected by the use of 500 mA gG fuses.

➔ **Software**

Visualize the SAG, SWELL, CUT-OFF and Over current curves

This software allows the DIRIS A60 event monitoring system to help you improve the reliability of your electrical installation, by detecting and allowing the analysis of the events through graphic display.

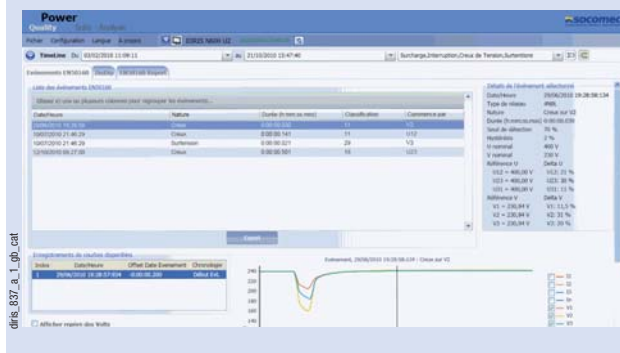
It provides the following functions:

- List of voltage dips, cuts, and surges, and over current
- Display of the 10 curves (3V, 3U, 3I, In) related to the event with advanced zoom in functions
- Classification of the events according to EN50160
- Export pictures or XLM files of curves.

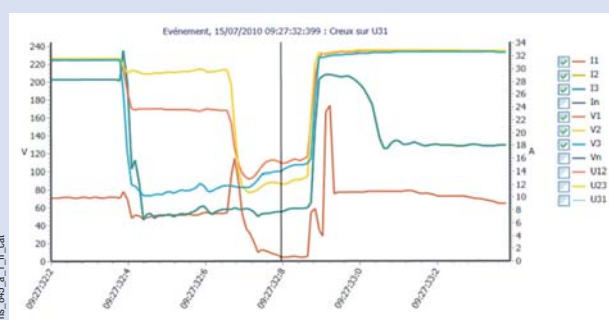
Software can be connected to the DIRIS either in Modbus TCP / Modbus RTU over TCP or Modbus RTU over RS485.

Software can be downloaded on the SOCOMEC website : www.socomec.com

Event log: Display



Curve display



➔ **References**

Basic device

Auxiliary power supply Us

110 ... 400 VAC / 120 ... 350 VDC



diris_a60_a_1_cat

DIRIS A60
Reference

4825 0207

Options

Plug-in-modules⁽¹⁾

	Reference
Pulse outputs	4825 0090
RS485 JBUS/MODBUS® communication	4825 0092
Analogue outputs	4825 0093
2 inputs / 2 outputs	4825 0094
RS485 PROFIBUS®/DP communication	4825 0205
Ethernet communication	4825 0203
Ethernet communication + RS485 gateway JBUS/MODBUS	4825 0204
Temperature inputs	4825 0206

(1) Ease of integration for additional functions (maximum 3).

Accessories

Description of accessories	To be ordered by multiple	Reference
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cutout	1	4825 0088
Fuse combination switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse combination 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 transformers range		See page 334

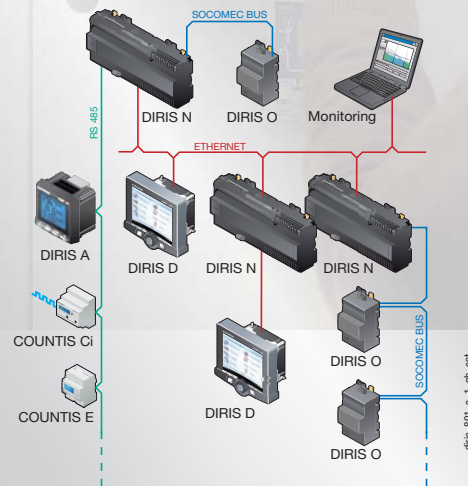
➔ **Services and Technical assistance**

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.





Application



Network quality control and analysis system

Function

DIRIS N300 / N600 are multifunction network analysers designed for all energy efficiency projects. They actively contribute to procedures for optimising the operation of your electrical networks and give the user a solution which helps to:

- improve the efficiency of the facility,
- reduce production costs,
- optimise operating costs,
- reduce maintenance costs.

To ensure these aims are achieved, the **DIRIS N** assures the following functions:

- measurement of electrical values and temperatures,
- management of energy and allocation of other fluids (water, gas),
- monitoring of all parameters,
- control/command of apparatus,
- analysis of the network quality (waveform, EN50160 report),
- communication.

A modular and open system

The **DIRIS N** is a true system made up of "functional blocks":

- data acquisition and processing: DIRIS N300/N600
- graphic colour display: DIRIS D (option of using a single DIRIS D 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 Ci, for example, using an Ethernet network via an RS485 port to centralise information for monitoring.

Its use is made even easier by the additional functions that it offers, from checking the connection to providing a metrological report, and including USB ports and an SD card reader for loading or downloading information (measurements for example).

As an option, **DIRIS O** remote input/output modules allow the control/command function to be moved close to the components concerned. Besides being user friendly, the **DIRIS D600's** colour graphic display, gives the user access to all the parameters.

Conformity to standards

- IEC 61557-12
- EN 50160
- IEC 61000-4-30

General characteristics of the DIRIS N300 and N600

The vast majority of the functions below are available as numbers (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)
- EN50160 report
- Voltage transients (sampling 1.33 μ s)
- Voltage and current interharmonics.



A hub of innovation

The DIRIS N, developed using innovative technology, has enabled some functions to cross a new frontier.

• Measurements

Optimal calculation functions and sampling in the range of 1.33 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.

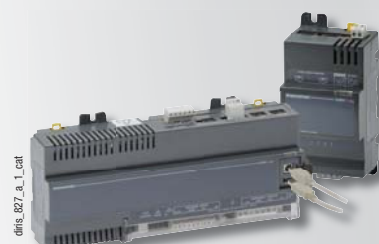
• Operating

A DIRIS D colour LCD display module gives the user access to all the installation's parameters with the greatest of ease. They will be able to access both numerical values and graphs.

The DIRIS N offers the option of downloading all the data in its internal memory onto a USB key or SD card.

• Installation

The DIRIS N, D and O have been designed to be located as close as possible to the function and its operation so as to reduce the number of cables needed. Using a remote display module avoids having lots of cables across the 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.



↳ DIRIS N300 / N600 - Software suite

The DIRIS N300/N600 network analyser is delivered with the software package which allows to manage remotely all features. Friendly and intuitive, these software tools insure the functions of:

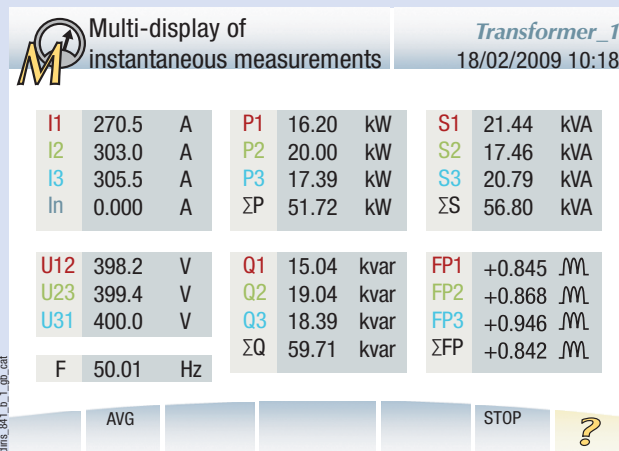
SOFTWARE 1: Real time remote monitoring installation

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:

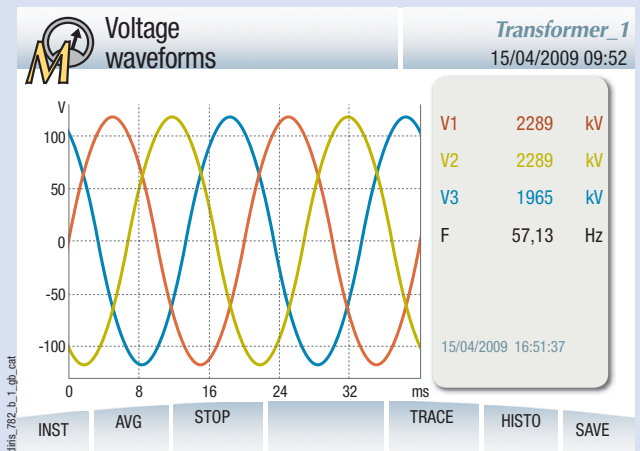
- Measurements
- Energies
- Events
- Quality Parameters
- Diagnosis
- Configuration.

Communication between the PC and the DIRIS N units is via Ethernet. A simultaneous display of several DIRIS N is possible.

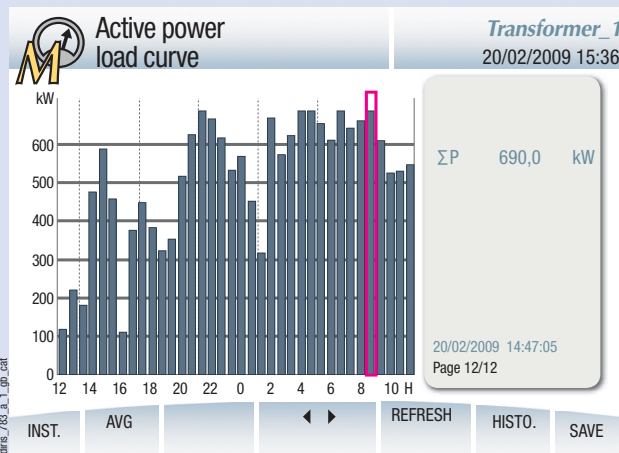
All measurements displayed on a single screen



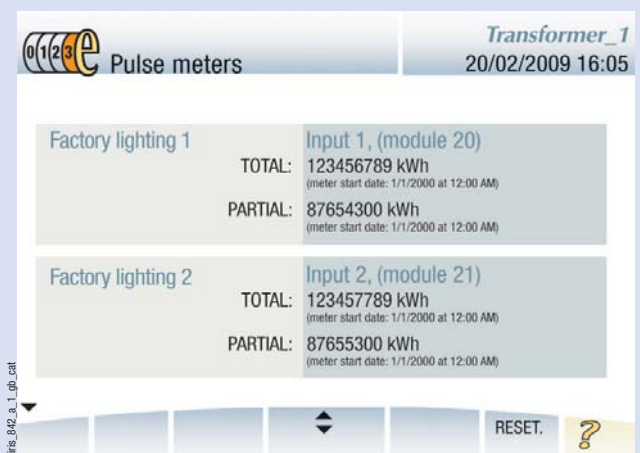
Voltage waveforms displayed



Load curve displayed



Total and partial consumption displayed per time slot

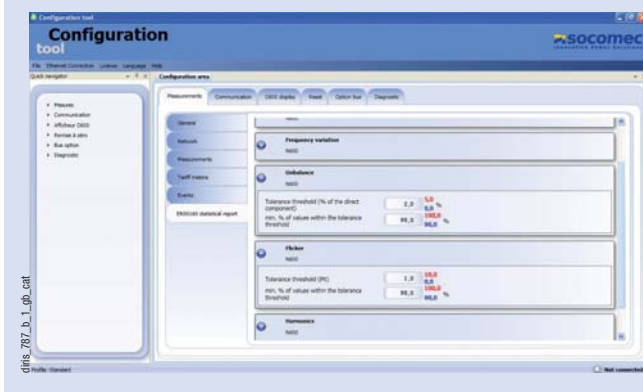


SOFTWARE 2: Configuration for a simple and fast parameter setting

This configurator allows to modify and to adapt quickly the parameters of regulation of the network analyser. The following parameters are available:

- Networks
- Events
- EN50160 report thresholds
- Tariff meters
- Histories and load curves
- Control/command functions linked to DIRIS 0 remote modules.

A maintenance function allows the connection and operation of the DIRIS Ns to be checked after they have been configured.



SOFTWARE 3: Operation to analyze the quality parameters

This software allows access to the DIRIS N300/N600 quality parameters so that you may improve the efficiency of your electrical installation.

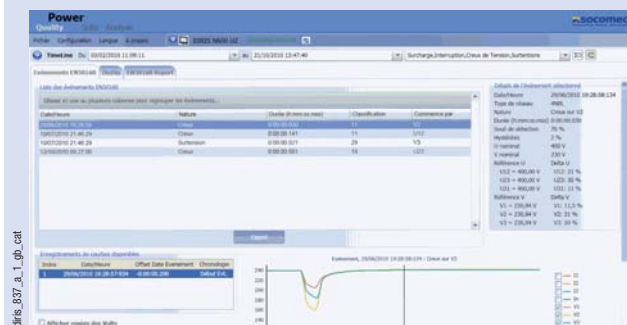
It provides the following functions:

- Classification of voltage dips, cuts and surges (DisDip table)
- EN50160 automatic reports (voltages, frequencies, harmonics, flickers...)
- Automatic detection of out of limits event
- Timestamp EN50160 events list (surges, dips, cut-offs...)

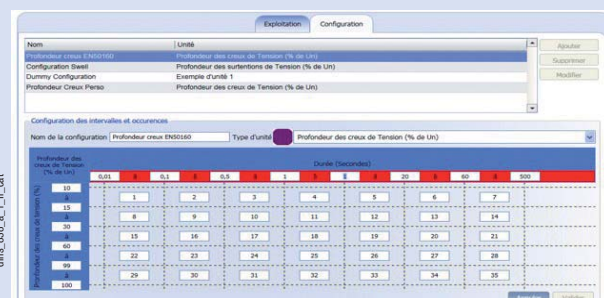
The application enables reports to be issued for periods which can be customised by the user.

The temporal display screen allows rapid access to information relating to the desired period.

Event log: Display



DisDip table template: Configuration



EN50160 report Configuration



EN50160 report Display



➤ Mounting and dimensions

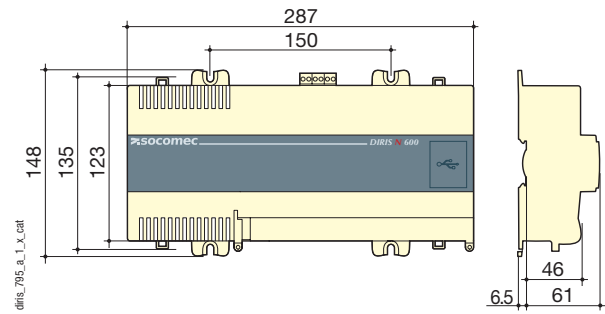
DIRIS N300 / N600

Base-mounted



dfis_793_a_1_cat

Overall dimensions



dfis_795_a_1_x_cat

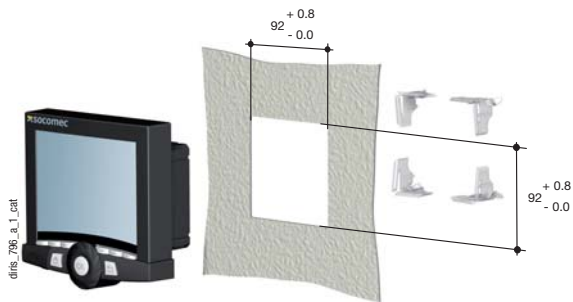
DIN-rail mounting



dfis_794_a_1_cat

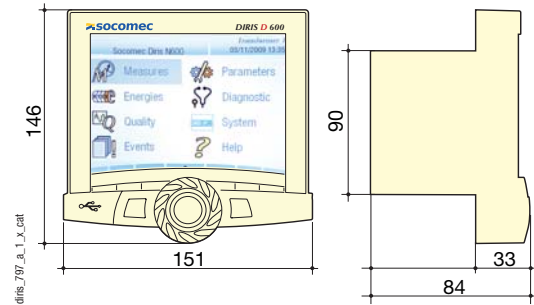
DIRIS D600

Remote display



dfis_796_a_1_cat

Overall dimensions



dfis_797_a_1_x_cat

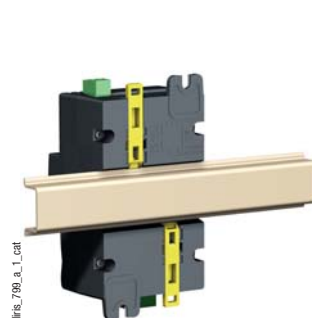
DIRIS O

Base-mounted



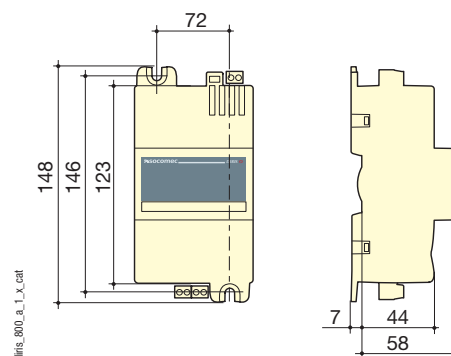
dfis_798_a_1_cat

DIN-rail mounting



dfis_799_a_1_cat

Overall dimensions



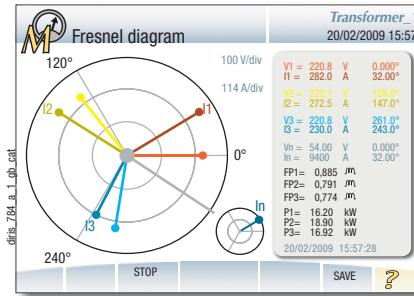
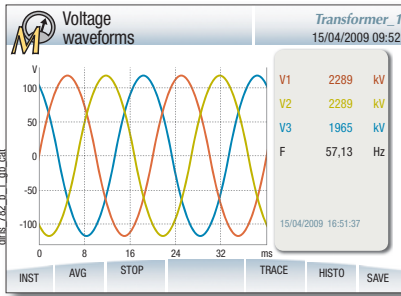
dfis_800_a_1_x_cat

➤ Options

DIRIS D: the ergonomic remote graphic display



1. High-definition colour display.
2. Direct access buttons.
3. Control by rotating wheel.



The **DIRIS D600** is a high-definition colour display which allows adaptable, local or remote viewing of the functions of the DIRIS N300 and N600.

A single DIRIS D600 display can show information coming from several DIRIS N using 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 (fluids, 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.



➤ DIRIS N / O / D - Characteristics

	DIRIS N300/N600	DIRIS D600 remote display	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 DIN 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
Cutout		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	IP 40 (nose), IP 20 (unit)	IP 52	IP 52 (front panel), IP 20 (unit)	IP 40 (nose), IP 20 (unit)	IP 40 (nose), IP 20 (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 display	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	JBUS/MODBUS® in RTU mode	MODBUS® TCP or proprietary	Proprietary in TCP mode	Proprietary in CAN mode	Proprietary in CAN mode
JBUS/MODBUS® speed	9.6 ... 115.2 kbauds				
Address	000 ... 256				
Connection	2.5 mm ² pull-out 3 point terminal block	1 RJ 45 8 point straight cable	1 RJ 45 8 point straight cable	2 RJ 45 8 point straight cables	2 RJ 45 8 point straight cables

↳ DIRIS N300 / N600 - Characteristics

Characteristics of the PMD (IEC 61557-12)

Evaluation of the power supply quality (future function)	White
PMD classification	SD
Temperature	K55
Humidity + Altitude	White
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
Qa, Qv (reactive power) - class 1	5 % I _n to 2 I _n
Sa, Sv - class 0.2	5 % I _n to 2 I _n
Ea - class 0.2	5 % I _n to 2 I _n
Era, Erv - class 1	5 % I _n to 2 I _n
Eapa, Eapv - class 0.2	5 % I _n to 2 I _n
f - class 0.02 / class B complies IEC 61000 = 4-30	F _{nom} ±15 %
l - class 0.1	0.1 I _n to 2 I _n
ln / Inc - class 0.1	0.1 I _n to 2 I _n
U - class 0.1	
PFa / 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 3 or 4
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	750 kHz i.e. 1.33 μs
Instantaneous measurements refresh frequency	1 s
Plot refresh frequency	1 ... 60 minutes
History refresh frequency	1 ... 60 s

Voltage inputs

Number of voltage inputs	3 Phase + Neutral + Earth
Nominal voltage without VT	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
Sustained overload	800 VAC
Frequency	45 ... 65 Hz
Insulation	600 V cat III
Connection	2.5mm ² pull-out 4 point terminal block

Current inputs

Number of current inputs	3 Phase + Neutral
Nominal current without CT	5 A
Current transformer	Primary: max 10 000 A / Secondary: 1 or 5 A
Input consumption	< 0.3 VA
Sustained overload	20 A
Intermittent overload	20 I _n / 1 s
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
-------------	--------

SD Card

Compatible size	Up to 1 Gb
-----------------	------------

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	ICE 62053-22 (class 0.2S or 0.5S)
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	JBUS
Ethernet	MODBUS
USB	USB 2.0
CAN	ISO11898-2

DIRIS D600 screen

Technology	TFT
Format	640 x 480 pixels
Dimension	115.2 x 86.4 mm

DIRIS O 4i2o-d inputs (4 inputs/2 outputs)

Number	4
Type	phototransistor
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	108 operations

DIRIS O 4i2o-d outputs (4 inputs/2 outputs)

Number of switchings	≥ 10 ⁶ operations
Type	230VAC - 250VDC - 0.2A - 1500VA - 50W
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

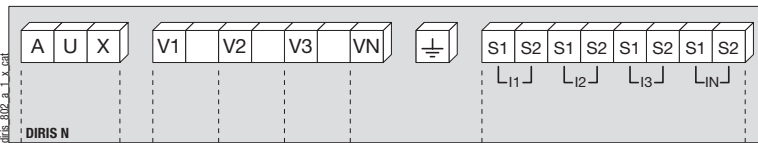
DIRIS O 2o-a outputs (2 analogue outputs)

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

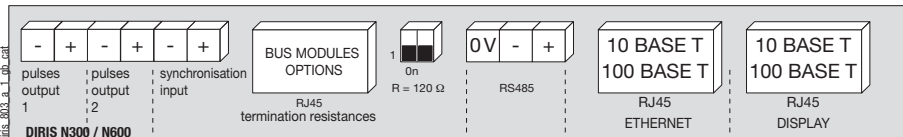
DIRIS N300 / N600

Lower terminal blocks



DIRIS N

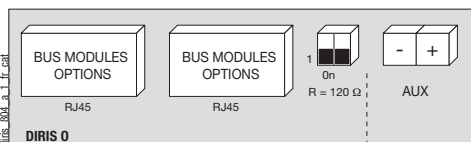
Upper terminal blocks



DIRIS N300 / N600

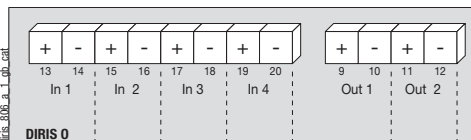
DIRIS O

Upper terminal blocks (shared by all modules)



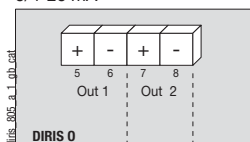
DIRIS O

4 inputs/2 outputs digital



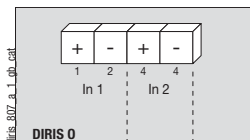
DIRIS O

2 analogue outputs,
0/4-20 mA



DIRIS O

2 analogue inputs,
0/4-20 mA



DIRIS O

↳ References



DIRIS N300/N600
Reference

Description	Reference
DIRIS N300	4826 0001
DIRIS N600	4826 0002

optional

Description	DIRIS D600 Reference
DIRIS D600 (remote display)	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

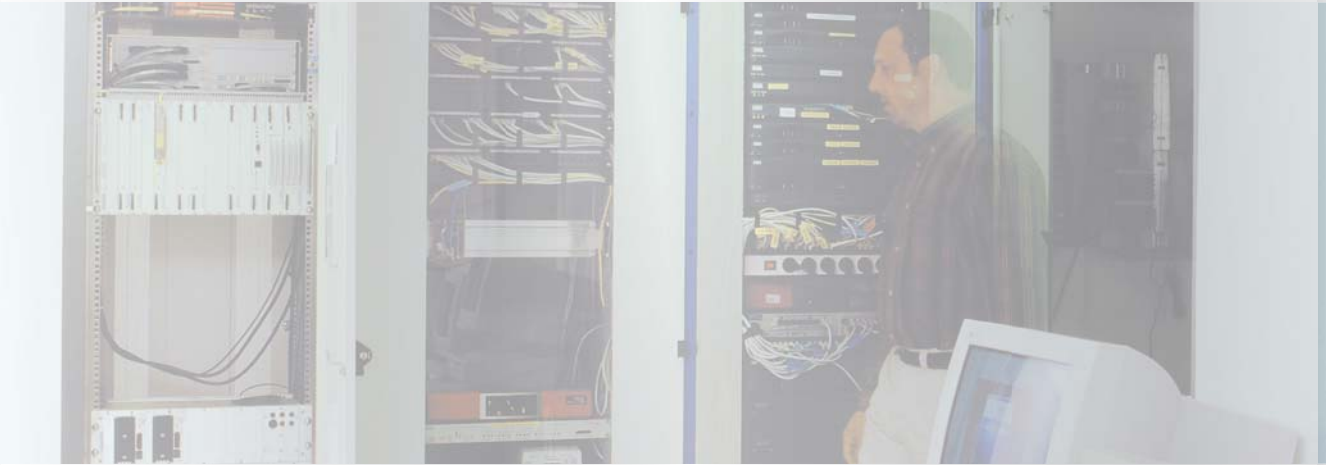
Description of accessories	To be ordered by multiple	Reference
Fuse combination switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse combination switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000
Current transformers range		See page 334

↳ Services and Technical assistance

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.

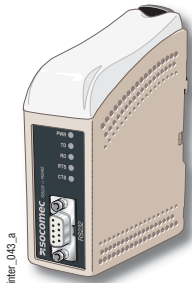


Communication accessories



Connecting the RS485 link

RS232 / RS485 interface



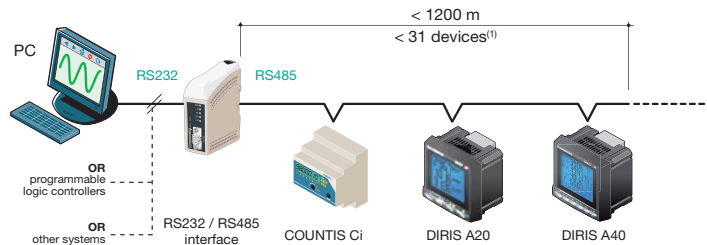
inter_043_a

Function

If the PC is equipped with an RS232 port, the interface will convert RS232 signal into RS485. 31 devices can be connected to the interface over a distance of 1200 m at 9600 bauds.

References

Auxiliary power supply Us	Frequency	Reference
95 ... 240 VAC / 110 ... 250 VDC	50 Hz	4899 0100



(1) Beyond these characteristics, use an "RS422 / RS485 repeater".

diris_141_g_1_gb_cat

USB / RS485 interface



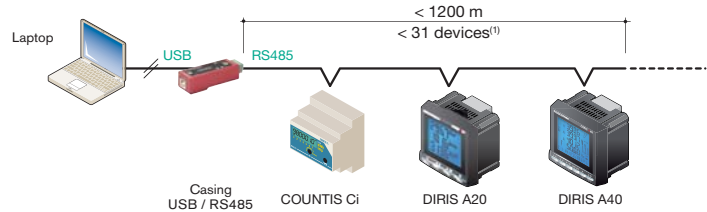
inter_002_a_2_cat

Function

If the PC is not equipped with a serial port, the interface will connect via the USB port to obtain an RS485 communication port. This product is recommended for local, non-permanent use.

References

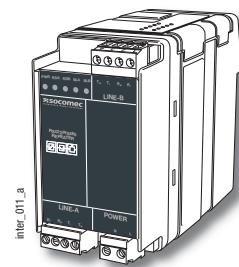
Description of accessories	Reference
External USB / RS485 interface unit	4899 0110



(1) Beyond these characteristics, use an "RS422 / RS485 repeater".

inter_142_l_1_gb_cat

RS422 / RS485 repeater



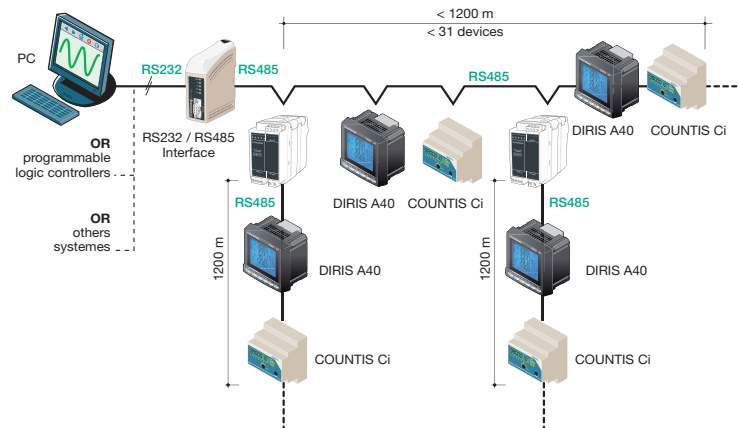
inter_011_a

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 create a new branch on the network thereby making it possible to reduce the length of cable required to connect the devices by avoiding back and forth cabling.

References

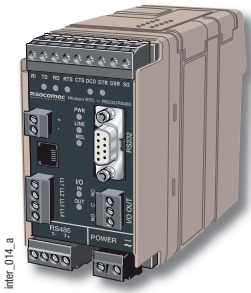
Auxiliary power supply Us	Frequency	Reference
95 ... 240 VAC / 110 ... 250 VDC	50 Hz	4899 0120



inter_143_g_1_gb_cat

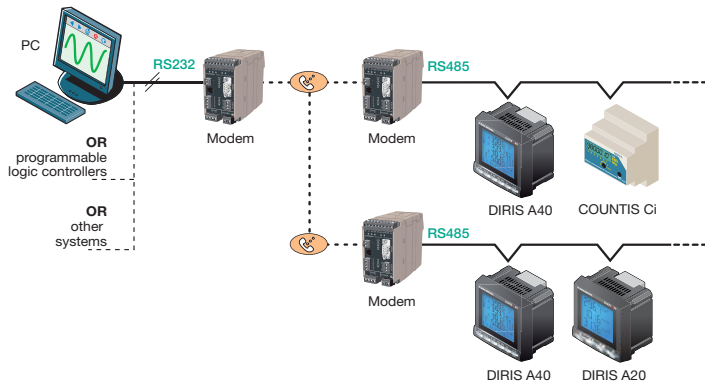
Using the telephone network

RTC / RS232 - RS485 modem



Function

On some sites, it is impossible to connect all the DIRIS's using a single cable. Indeed, the distances may be such that the investment would be too costly. In this case, a modem may be used. 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 Us	Frequency	Reference
22 ... 240 VAC / 12 ... 48 VDC	50 Hz	4899 0200

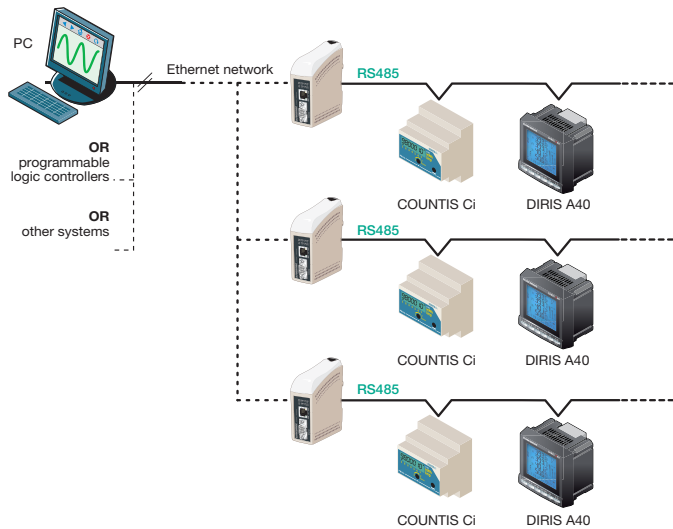
Using the Ethernet network

Ethernet / RS232-RS485 interface



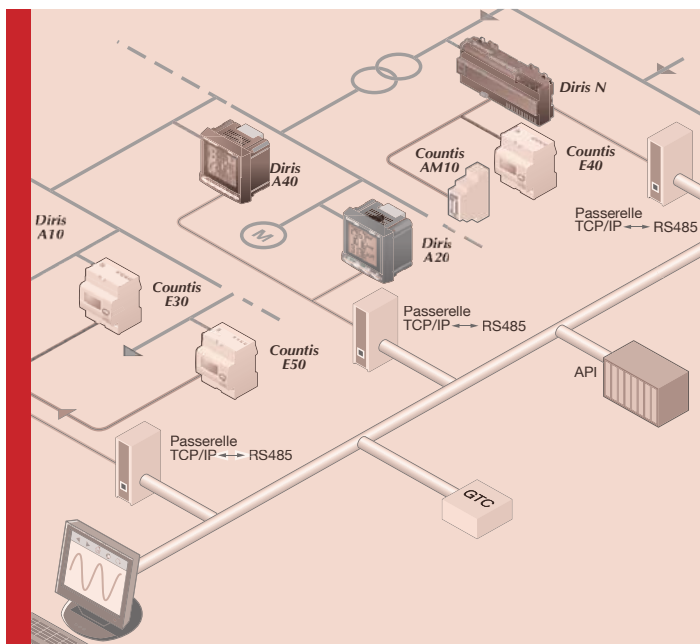
Function

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 Us	Frequency	Reference
230 VAC / 12 ... 48 VDC	50 Hz	4899 0300



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?

No problem with **SERVICES & TECHNICAL ASSISTANCE**. This department will fully integrate all your SOCOMEC devices, audit your installation, commission selected equipment and train personnel in charge of their use.

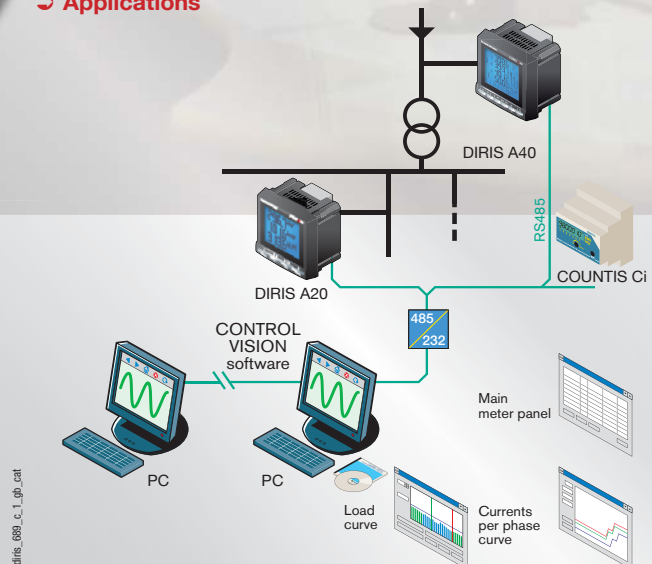
For further information, please contact your SOCOMEC agency.

CONTROL VISION software

Supervision



Applications



To configure, display and monitor DIRIS / COUNTIS

Function

CONTROL VISION is a metering and monitoring software for DIRIS Am, A10, A20, A40, A41, A60, Ap, M, Mh, C, CC, CM, CMv2, N300/N600 and COUNTIS Ci devices.

It operates in a Windows XP Service Pack 3 or Vista environment.

Minimum PC requirement: 1.0GHz processor with 512MB of RAM, 500MB of available hard drive space and a monitor with a minimum resolution of 1024x768. Communication with the devices is either directly via the Ethernet network, a serial port or the computer's USB connection.

The **CONTROL VISION** software is designed to communicate with all devices in the installation and create logs based on manual and automatic scanning.

CONTROL VISION will display all the electrical values measured and read the total energy consumption. The user can also create logs of several electrical values over a selected time period.

All these functions can be performed in relation to a DIRIS (corresponding to one output) or a predefined group of DIRIS (all outputs relating to a workshop, for example).

The user will also be able to import or export the configuration parameters with EXCEL. The ease of integration and modification of the number of products on this RS485 link makes this a long-lasting solution.

➤ General characteristics

- The CONTROL VISION software allows:
- remote configuration of DIRIS and COUNTIS Ci devices,
 - displaying all electrical parameters measured, energies, indices, alarms, harmonics and the configuration of all the devices,
 - creating readings, backups and automatic print-outs,
 - displaying, of DIRIS CM/CMv2/A40/A60 and COUNTIS Ci inputs:
 - table of min. 10P, corresponding load curve,

- displaying historical data for each DIRIS in tabular or graphical format:
 - immediate measurements,
 - harmonics values,
 - status changing of inputs / outputs.

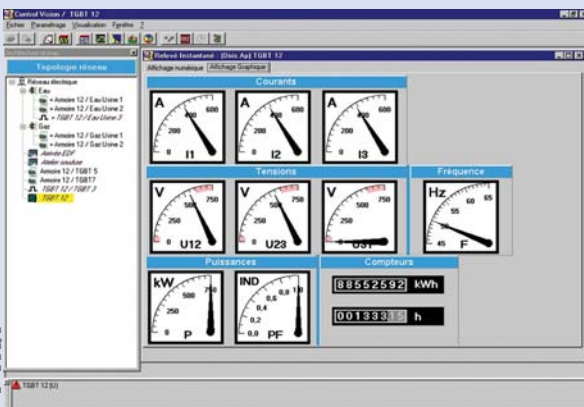
The CONTROL VISION software is available in a multilingual version comprising the following languages: english, french, german, italian, spanish.

➤ References

Type	CONTROL VISION software Reference
CONTROL VISION software	4805 0000
CONTROL VISION software + INTRANET option (multi user)	4805 0001

➤ Functions

Instantaneous measurement display



All electrical values displayed either with digital values or analogue indicators, depending on the tab selected:

- currents,
- phase to phase voltage,
- powers,
- frequency,
- active energy and time meter (according to DIRIS) of the selected DIRIS.

Alarm levels (programmed in the device) are indicated in red.
The parameters to be displayed can be customised.
All screens are refreshed automatically.

Monthly general reading of COUNTIS Ci

Nom	Janvier	Février	Mars	Avril	Mai	Juin	Juillet
Eau	5 L	0 L	0 L	0 L	0 L	0 L	0 L
+ Amoneo 12 / Eau Usine 1	3 L	0 L	0 L	0 L	0 L	0 L	0 L
+ Amoneo 12 / Eau Usine 2	2 L	0 L	0 L	0 L	0 L	0 L	0 L
Gaz	7 m3	0 m3	0 m3	0 m3	0 m3	0 m3	0 m3
+ Amoneo 12 / Gaz Usine 1	6 m3	0 m3	0 m3	0 m3	0 m3	0 m3	0 m3
+ Amoneo 12 / Gaz Usine 2	1 m3	0 m3	0 m3	0 m3	0 m3	0 m3	0 m3
Amoneo 12 / TGBT 5	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh
Amoneo 12 / TGBT 7	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh	0 kWh

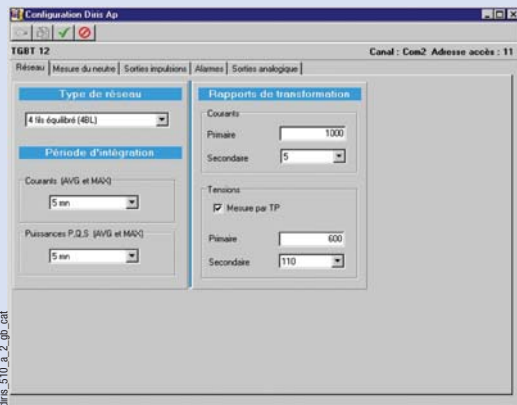
Monthly meter readings of all COUNTIS Ci present on the network.
COUNTIS Ci memorises monthly consumption (energy or pulse), via each of their 7 inputs, the software retrieves the values and allocates them into the allocated "group".
This screen may be printed and extracted manually by clicking on the respective pushbuttons.

General reading of measurements

Nom	En + (kWh)	Er + (kvarh)	Es (kVAh)	Cpt 1	Cpt 2	Cpt 3
Eau	0	0	0	4 971 285 L		
+ Amoneo 12 / Eau Usine 1				Eau Usine 1: 3 541 L		
+ Amoneo 12 / Eau Usine 2				Eau Usine 2: 336 L		
+ TGBT 12 / Eau Usine 3				Eau Usine 3: 4 967 724 L		
Gaz	0	0	0	5 196 m3		
+ Amoneo 12 / Gaz Usine 1				Gaz Usine 1: 1 008 m3		
+ Amoneo 12 / Gaz Usine 2				Gaz Usine 2: 5 028 m3		
Arrivée EDF	93 028	63 328	0			
Atelier soudure	89 316	22 572	0			
Amoneo 12 / TGBT 5	252					
Amoneo 12 / TGBT 7						TGBT 7: 242 kWh
TGBT 12 / TGBT 3	0					
TGBT 12	88 582 408	1 808 218	88 918 345			

Energy consumption table or metered pulses of all the DIRIS / COUNTIS Ci present on the network. This readout comprises (depending on the type of DIRIS) positive and negative active energy (kWh), positive and negative reactive energy (kVarh), apparent power (kVA) and pulses metered by the devices' on/off inputs. These pulses are configurable (name, weight and unit).
These values can be added (or subtracted) in groups, allowing them to be grouped by type (electricity, water, gas, etc.).
They can be printed and saved (Excel file) automatically (one file per day created at a set time, for example).
This screen may be printed and extracted manually by clicking on the respective pushbuttons.

Configuration of the devices



Display window for viewing and configuring the parameters entered in DIRIS/COUNTIS. Each device's settings can be checked in a single window (divided into tabs depending on the options).

Modification of the following parameters are possible from this window using a password (depending on the options):

- type of network,
- CT and VT ratio,
- weight of pulse outputs,
- levels and assignment of the alarms,
- assignment of the 4/20 mA outputs and parameters,
- assignment and weight of the TOR inputs.

General reading of the instantaneous measurement

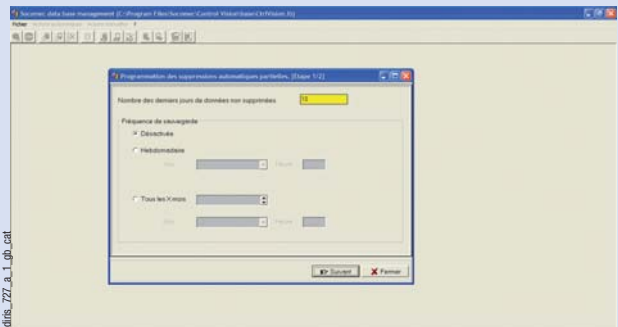
Nom	I1 (A)	I2 (A)	I3 (A)	IN (A)	V1 (V)	V2 (V)	V3 (V)	U12 (V)	U23 (V)	U31 (V)	P (kW)	Q (kvar)	S (kVA)
Activité EDF	1157	0	0	1157,5	229,63	229,89	229,61	397,87	397,85	397,62	0	265,5	265,5
Atelier 8	736	0	0	736	229,4	229,1	229,5	397	397,1	397,4	-168,3	13	168,8
Atelier soudure	231,7	0	0	232,3	230,64	229,43	229,93	397,82	397,73	398,26	0	53,3	53,3
Chauffière	236,2	0	0	-	-	-	-	0	0	0	-53,11	-2,79	53,18
TGBT 12	392,5	392,5	392,5	0	2153,13	1576,36	2149,26	584,13	580,26	3	2298,38	0	2305,05

Displayed in numerical format:

- currents,
- voltages,
- powers,
- frequency,
- power factor,
- electrical value in the alarm.

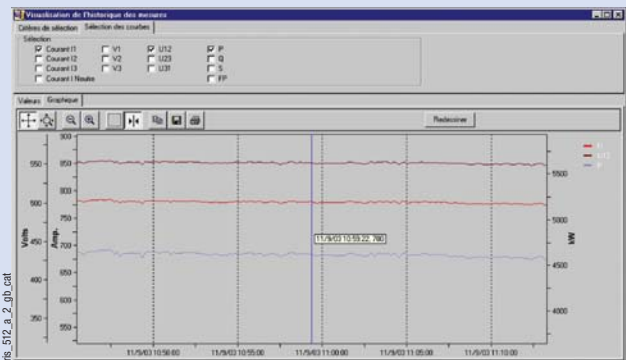
This screen may be printed and extracted manually by clicking on the respective pushbuttons.

Managing the database (DMT)



The DMT software (supplied with CONTROL VISION) is a database management tool. It helps ensure by automatic or manual action (complete or partial database backup and partial database deletion), thereby providing a database suitable for the efficient operation of CONTROL VISION.

History of device measurements



CONTROL VISION records the electrical parameters of the devices defined under "permanent scanning" into a central database. The scale of the graphical display can be selected and specific areas enlarged. The cursor allows obtaining the value / date time of an exact point where it is placed. All colours may be customized in order to complement the Windows environment. This screen may be printed and extracted manually by clicking on the respective pushbuttons.

General harmonics readings

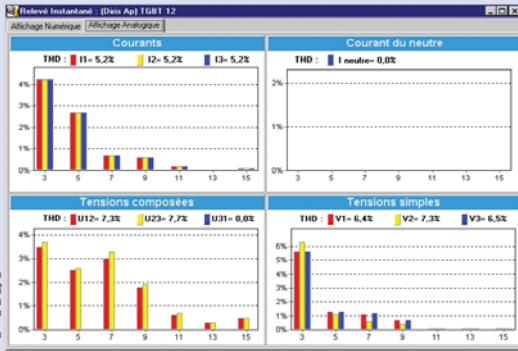
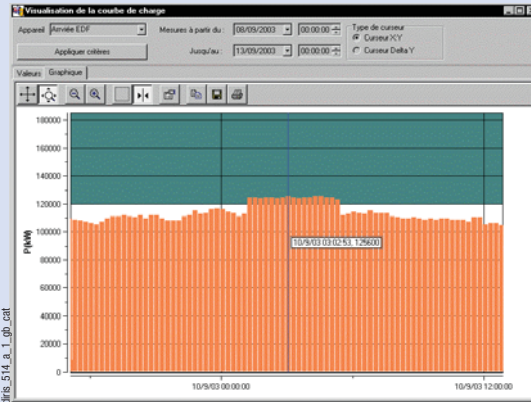


Table or bar graph showing harmonics for the selected device (DIRIS A40/A60) row by row for:

- the 3 currents and neutral (on the basis of the network type)
 - the simple and Ph-Ph and Ph-N voltages (on the basis of the network type).
- All colours may be customized in order to complement the Windows environment. All screens are refreshed automatically.

Load curve



The load curve gives a graphic image of the load on the network according to the selected period DIRIS CM / CMV2 / A60 (A40 fitted with memory module) and COUNTIS Ci (via 4 inputs) regularly records the average values for a period (for example, 10 minutes); CONTROL VISION regularly retrieves and records the results in the database in order to format the load data in a table of all devices within CONTROL VISION.

The concerned devices are those configured in CONTROL VISION. On the graph, the orange section represents the average value of the power consumed during this period (10 minutes in this case), the green section represents the power zone outside the procured power (which the user has defined per product). This allows the user to quickly see (and zoom in on) the zone where the load has exceeded the value procured from the electricity supplier.

The cursor allows obtaining the value / date time of an exact point where it is placed. All colours may be customized in order to complement the Windows environment. This screen may be printed and extracted manually by clicking on the respective pushbuttons.

Power distribution

Appareil	Entree	Periode 1 : Ex	Periode 2 : Ex	Periode 3 : Ex	Periode 4 : Ex	Periode 5 : Ex	Periode 6 : Ex	Periode 1 : Ex	Periode 2 : Ex	Periode 3 : Ex	Periode 4 : Ex	Periode 5 : Ex	Periode 6 : Ex
Amarec 12	TGB17	0	0	0	381	0	0	0	0	0	0	0	0
TGB17		1276	2490	804	2249	9381	4761	0	0	0	0	0	0
Autre		0	0	0	0	0	0	0	0	0	0	0	0
Année EDF		0	7025	0	3	0	0	161	6083	6			

Display of the active and reactive energy consumption by period and by device. Each period is defined by a name, a time of starting and of ending. The concerned devices are those configured in CONTROL VISION. This screen may be printed and extracted manually by clicking on the respective pushbuttons.

Quality

Date / Heure	Fréquence moyenne (Hz)
09/03/2007 22:29:30	50,01
09/03/2007 22:29:40	50,02
09/03/2007 22:29:50	50,02
09/03/2007 22:30:00	50,01
09/03/2007 22:30:10	50,02
09/03/2007 22:30:20	50,02
09/03/2007 22:30:30	50,02
09/03/2007 22:30:40	50,01
09/03/2007 22:30:50	49,99
09/03/2007 22:31:00	49,99
09/03/2007 22:31:10	49,99
09/03/2007 22:31:20	50,00
09/03/2007 22:31:30	50,00

Allows display of events (voltage dips, voltage surges, cut-offs, average voltages, average frequencies) in table form. It requires a DIRIS A60 or DIRIS A40 with a memory module.

Services and Technical assistance

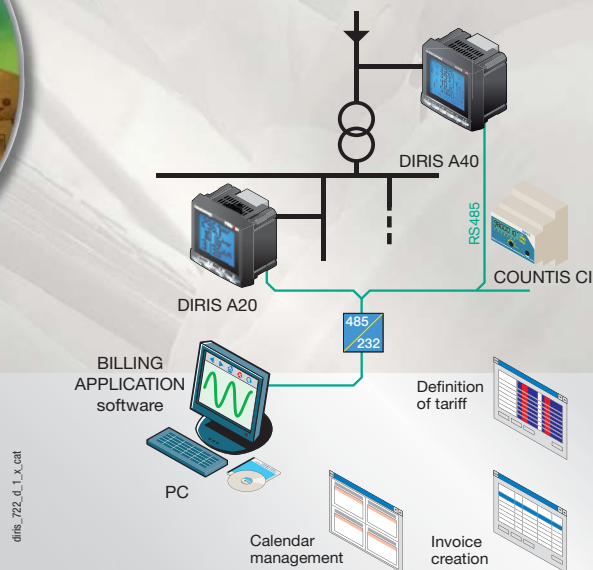
Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.



software



Applications



Sub-billing of energy consumption by time slot

Function

BILLING APPLICATION is an energy consumption management software package. Using a defined tariff system, it allows underbilling and simulation of consumption invoices.

CONTROL VISION is required for the software to operate.

The software operates in a Windows XP Service Pack 3 or VISTA environment. Minimum PC requirement: 1.0GHz processor with 512MB of RAM, 500MB of available hard drive space and a monitor with a minimum resolution of 1024x768.

The **BILLING APPLICATION** software uses information gathered from the COUNTIS Ci, DIRIS CMv2 and DIRIS A40 linked to a memory module, or from a DIRIS A60, to enable internal invoicing or tariff simulation to optimally define the requirements.

BILLING APPLICATION enables the consumption of a production line to be refined in order for the costs to be allocated in relation to the production. Users can also distribute the energy consumption according to the various departments within a company (e.g. a hospital with a geriatrics department, surgery and restaurant, etc.).

Using load curves, **BILLING APPLICATION** also enables users to define the most appropriate tariff for their application in order to reduce their energy bill.

➤ **General characteristics**

BILLING APPLICATION allows:

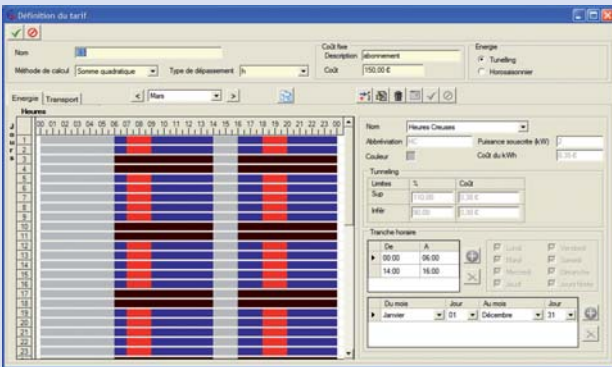
- calendar management (bank holidays...),
- price creation (periods, cost, fixed, premium...),
- pricing calculation management,
- device group creation,
- bill edition according to period and consumer,
- load curves visualisation,
- consumption comparison.

The **BILLING APPLICATION software** is available in a multilingual version comprising the following languages:

- french,
- english,
- spanish,
- german,
- italian.

➤ **Functions**

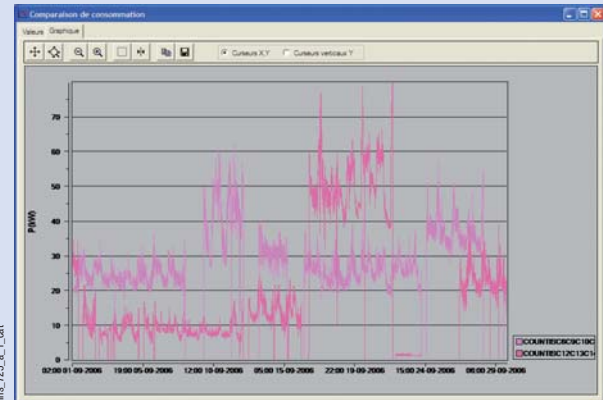
Definition of tariff



Tariff definition window for power consumption and transmission:

- kWh price definition,
- tariff name,
- calculation method,
- type of overrun,
- additional fixed costs (subscription, service...),
- consumption and transmission periods list,
- seasonal or transport use.

Comparison of 2 load curves



Visualisation of several devices or device groups for defined period. Table form or curve display.

Invoice creation

Périodes	Type de période	Energie	Concentration	Min de consommation	Max de consommation	Nombre de déplacements	Coût de déplacement	Coût à l'heure	Coût
Heures Creuses	Energie	3 945 535,24	0,50	331,58	1176	1176	36,42 €	0,30 €	36,42 €
Heures pleines H.	Energie	4 700 820,35	0,50	330,60	1455	1455	63,48 €	0,45 €	63,48 €
Heures de pointe	Energie	1 630 062,79	0,50	331,44	495	495	26,10 €	0,55 €	26,10 €
Heures Pleines H.	Energie	1 265 959,11	195,72	201,12	386	386	19,30 €	0,55 €	19,30 €
Transport	Transport	3 945 535,29	0,50	331,58	1023	1023	30,71 €	0,30 €	34,30 €
Transport 1	Transport	4 700 821,54	0,50	330,60	1231	1231	46,13 €	0,45 €	54,53 €
Transport 3	Transport	1 265 959,11	195,72	201,12	386	386	17,69 €	0,55 €	17,69 €
Total		23 221 026,42			6142	209 794	214,47 €		

Périodes	Type de période	Energie	Concentration	Min de consommation	Max de consommation	Nombre de déplacements	Coût de déplacement	Coût à l'heure	Coût
Heures Creuses	Energie	3 945 535,24	0,50	331,58	1176	1176	36,42 €	0,30 €	36,42 €
Heures pleines H.	Energie	4 700 820,35	0,50	330,60	1455	1455	63,48 €	0,45 €	63,48 €
Heures de pointe	Energie	1 630 062,79	0,50	331,44	495	495	26,10 €	0,55 €	26,10 €
Heures Pleines H.	Energie	1 265 959,11	195,72	201,12	386	386	19,30 €	0,55 €	19,30 €
Transport	Transport	3 945 535,29	0,50	331,58	1023	1023	30,71 €	0,30 €	34,30 €
Transport 1	Transport	4 700 821,54	0,50	330,60	1231	1231	46,13 €	0,45 €	54,53 €
Transport 3	Transport	1 265 959,11	195,72	201,12	386	386	17,69 €	0,55 €	17,69 €
Total		23 221 026,42			6142	209 794	214,47 €		

Print an invoice or export data into EXCEL for one device or a group of products. Software enables user to select tariff and billing period.

➤ **References**

Type

BILLING APPLICATION software

BILLING APPLICATION software Reference

4805 0002

➤ **Services and technical assistance**

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.



Electronic protection



Differential protection - voltage surge protection - overcurrent protection

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 entitled 'Electronic protection', we have grouped together all the devices which protect your installation against these various hazards:

- RESYS differential protection
See our selection guide "Earth leakage protection" **p. 404**
- SURGYS surge protection devices
See our selection guide "Protection against voltage surges" **p. 416**

➤ **Warning: 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 supply source, the length of the conductors and the type and nature of the electrical receivers connected to the network.

With long-term experience in industry and perfect knowledge of installation standards, **SOCOME C guarantees** much more than the supply of high-performance products. We carry out an audit of your LV installation, define the protection requirements and integrate the products perfectly into your electrical distribution system; we also perform commissioning, offer training in the use of the installation and the standards governing it and provide turnkey supervision solutions. **Contact us now to see how we can help with your project!**

The essential

Earth leakage



SURGYS surge protection devices



Services & Technical Assistance:
Take advantage of our expertise!

We will help you design your protection solution, guaranteeing perfect integration of the products in your environment. For further information, please contact your SOCOME C agency.



*Earth leakage relays type A
"protection of people"*

➤ Function

RESYS M20 earth leakage relays are associated with a remote trip breaking device (automatic power breaking), thus providing the following functions:

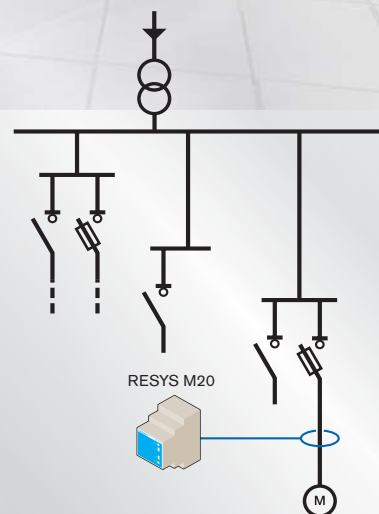
- protection against indirect contacts,
- limitation of leakage currents.

The relay also monitors electrical installations when used directly as signalling relay.

➤ Conformity to standards

- IEC 60755
- IEC 60947-2
- IEC 62020
- IEC 60364

➤ Applications



resys_082_b_1_x_cat

Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production.

Examples of conventional applications

AC LV networks: IT, TT, TNS.

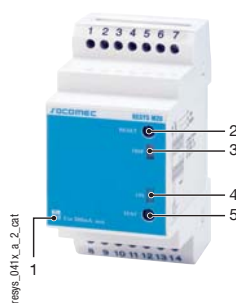
Monitoring pure AC differential currents (type AC) and pulsed (type A) to provide the following functions:

- Protection:
 - against direct contact,
 - against fire risk,
 - earth and protection conductors.
- Preventive signalling.
- Used with SOCOMEC "Core balance transformers" (see page 410).

➤ General characteristics

- M20 with 1 alarm relay.
- Sensitivity: 30 or 300mA depending on the version.
- Time delay: 0 (instantaneous) or 60ms depending on the version.
- Tripping accuracy by TRMS measurement.
- Automatic permanent relay-toroid connection test.

➤ Front panel



1. Threshold value and time delay indication.
2. "RESET" pushbutton
3. "TRIP" alarm LED.
4. "ON" LED.
5. "TEST" pushbutton

➤ Characteristics

Auxiliary power supply Us	
Frequency	47 ... 63 Hz
Operating zone	0,85 ... 1,15 U _s
Max. consumption	6 VA

Insulation (according to IEC 60664-1 standard)	
Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230 VAC)
Degree of pollution	Class 3

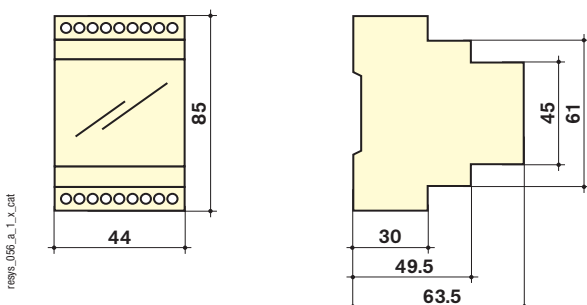
Threshold values	
I Δ n setting	30 / 300 mA
Accuracy of tripping	- 20 ... - 10 % I Δ n
Network frequency range	15 ... 400 Hz

Alarm	
Alarm configuration mode	save
Reset	Manual by pushbutton / using terminal

Output contacts	
Number of contacts	1
Type of ALARM contact	250 VAC - 8 A - 2000 VA
ALARM operating mode	negative security

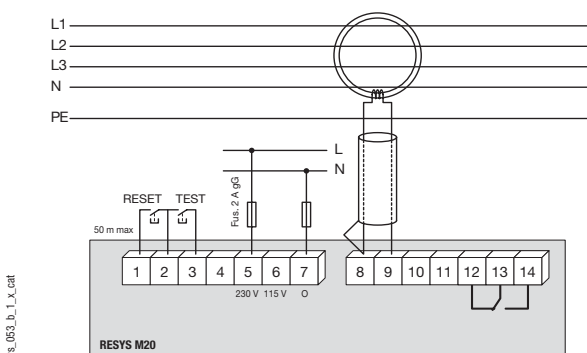
Operating conditions	
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

➤ Case



Type	Modular
Number of modules	2.5
Dimensions W x H x D	44 x 85 x 63.5
Case degree of protection	IP40
Terminal block degree of protection	IP20
Rigid cable connection section	0.2 ... 4 mm ²
Flexible cable connection section	0.2 ... 2.5 mm ²
Weight	190 g

➤ Terminals and connections



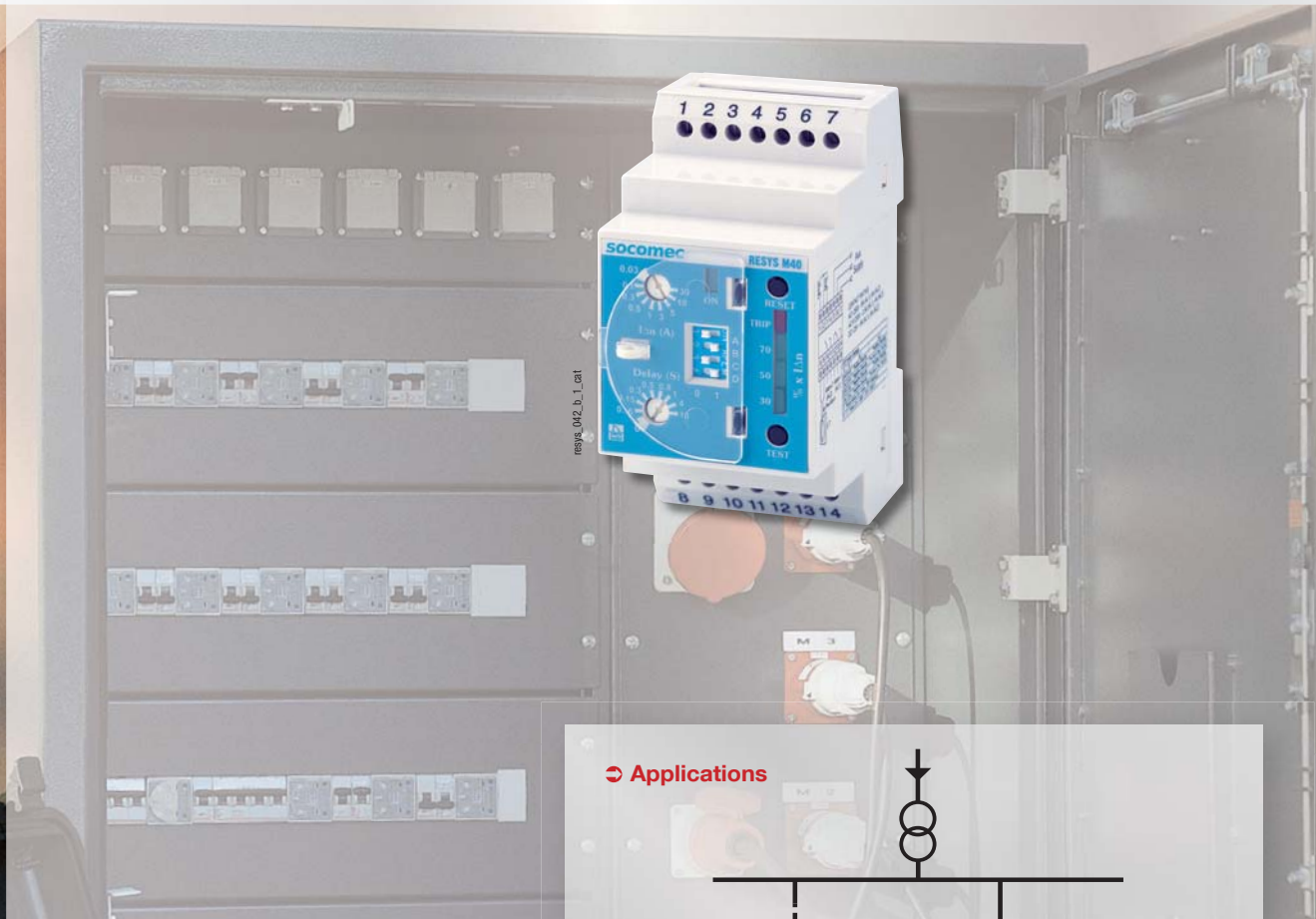
- 1 - 2 - 3: external pushbuttons
- 5 - 6 - 7: auxiliary power supplies U_s
- 8 - 9: SOCOMEC differential toroid connections
- 12 - 13 - 14: alarm relay outputs

NOTE The earthing 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	I Δ n delay	Time setting	RESYS M20 Reference
115 / 230 VAC	30 mA	0 s	4941 4723 ⁽¹⁾
115 / 230 VAC	300 mA	0 s	4941 5723 ⁽¹⁾
115 / 230 VAC	300 mA	60 ms	4941 6723 ⁽¹⁾

(1) References and characteristics of closed, split core and rectangular toroids: see page 410 "Core balance transformers type A and type B".



Earth leakage relays type A "Motor feeder"

Function

RESYS M40 earth leakage relays are associated with a remote trip breaking device (automatic power breaking), thus providing the following functions:

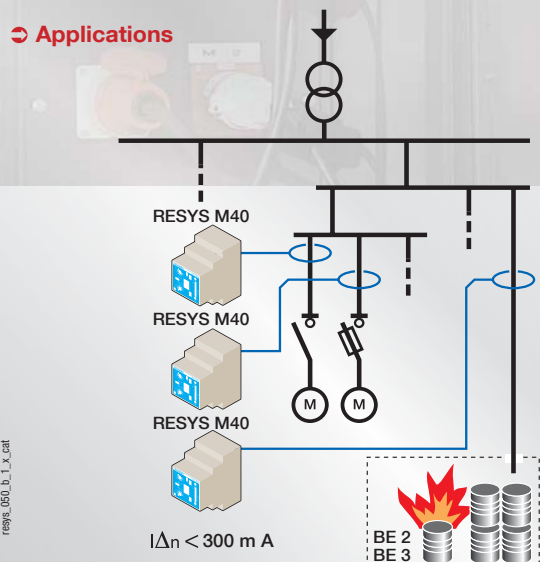
- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

Conformity to standards

- IEC 60755
- IEC 60947-2
- IEC 62020
- IEC 60364

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. TRMS measurement avoids repeated random tripping and the bargraph allows the display of permanent leakage current.

Examples of conventional applications

AC LV networks: IT, TT, TNS.

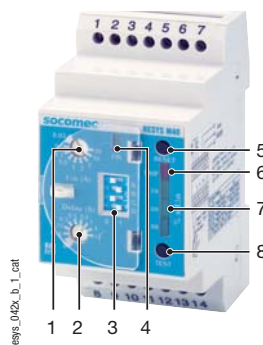
Monitoring pure AC differential currents (type AC) and pulsed (type A) to provide the following functions:

- protection
 - against indirect contact,
 - against fire or explosion risk, (classified sites BE2 and BE3 depending NF C 15-100),
 - of earth and protection conductors.
- preventive signalling,
- monitoring installations where periodic insulation measurement with power off is impossible.

➤ General characteristics

- RESYS M40 with 2 configurable relays:
 - either 2 alarm relays,
 - or 1 alarm relay and 1 pre-alarm relay (50 % I_{Δn}).
- Adjustment sensitivity from 30 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.

➤ Front panel



1. I_{Δn} setting.
2. Time delay setting
3. Configuration micro-switches (x4).
4. "ON" LED.
5. "RESET" pushbutton
6. "TRIP" alarm LED.
7. LED bargraph (% x I_{Δn}).
8. "TEST" pushbutton

➤ Characteristics

Auxiliary power supply Us	
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 _{Δn} setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % I _{Δn}
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 _{Δn}
Hysteresis of the PRE-ALARM relay	20 % I _{Δn}

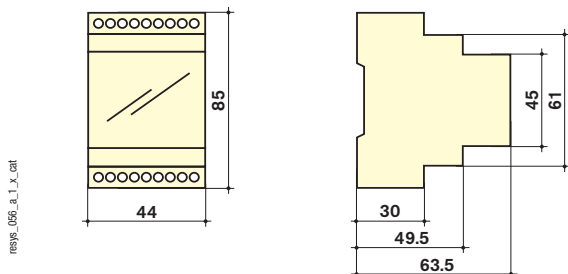
Alarm	
Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	Manual by pushbutton / contact on terminals

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
ALARM 2 or PRE-ALARM operating mode	positive / negative security ⁽¹⁾
Factory setting of ALARM 1 operating mode	negative security
Factory setting of ALARM 2 operating mode	positive security

(1) According to configuration.

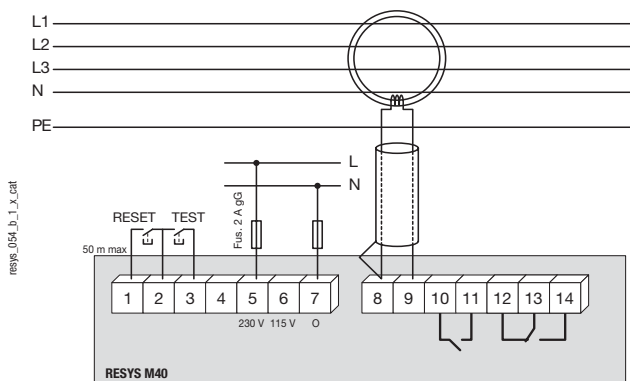
Operating conditions	
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

➤ Case



Type	Modular
Number of modules	2.5
Dimensions W x H x D	44 x 85 x 63.5
Case degree of protection	IP40
Terminal block degree of protection	IP20
Rigid cable connection section	0.2 ... 4 mm ²
Flexible cable connection 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 earthing 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⁾
115 / 230 VAC
400 VAC
12 ... 125 VDC

RESYS M40
Reference

4941 2723 ⁽²⁾
4941 2740 ⁽²⁾
4941 2602 ⁽²⁾

(1) Other rating: please consult us.

(2) References and characteristics of closed, split core and rectangular toroids: see page 410 "Core balance transformers type A and type B".



Earth leakage relays type A "Motor output"

Function

RESYS P40 earth leakage relays are associated with a remote trip breaking device (automatic power breaking), thus providing the following functions:

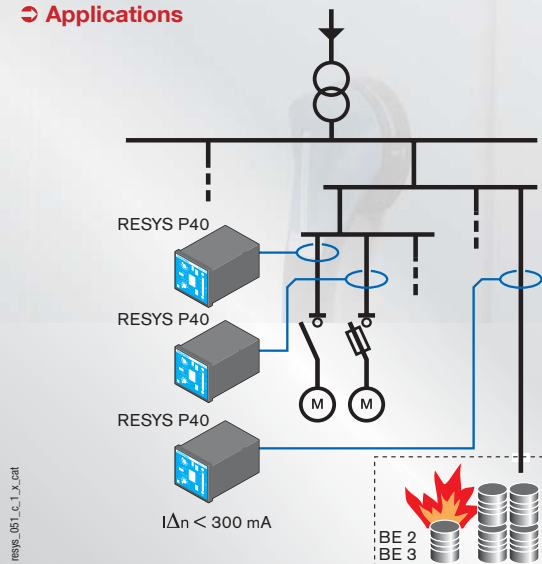
- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

Conformity to standards

- IEC 60755
- IEC 60947-2
- IEC 62020
- IEC 60364

Applications



resys_001_e_1_x_cat

TRMS measurement avoids repeated random tripping and the bargraph allows the display of permanent leakage current. 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.

Examples of conventional applications

AC LV networks: IT, TT, TNS.

Monitoring pure AC differential currents (type AC) and pulsed AC differential currents (type A) to provide the following functions:

- protection
 - against indirect contact,
 - against fire or explosion risk, (classified sites BE2 and BE3 depending NF C 15100),
 - of earth and protection conductors,
 - motor, equipment and hardware protection;
- preventive signalling,
- monitoring installations where periodic insulation measurement with power off is impossible.

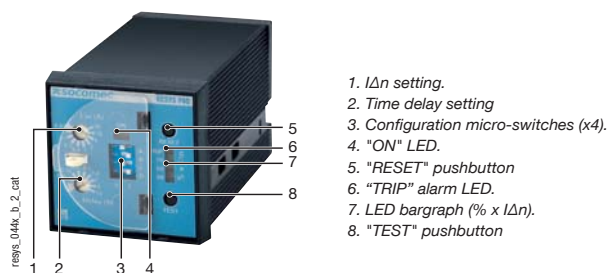
➤ General characteristics

- Compact.
- RESYS P40 relay with 2 configurable relays:
 - either 2 alarm relays,
 - or 1 alarm relay and 1 pre-alarm relay (50 % IΔn).
- Adjustment sensitivity from 30 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 Us	
Frequency	47 ... 63 Hz
AC operating zone	0.8 ... 1.15 Us
DC operating zone	0.8 ... 1.05 Us
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	
IΔn setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % IΔn
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 % IΔn
Hysteresis of the PRE-ALARM relay	20 % IΔn

➤ Front panel



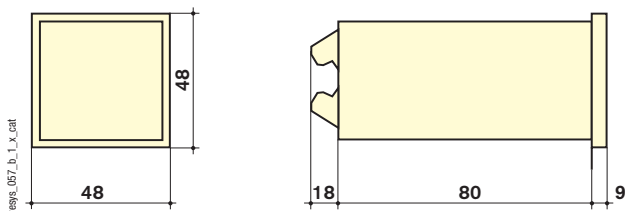
Alarm	
Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	manual by pushbutton / using terminal

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
ALARM 2 or PRE-ALARM operating mode	positive / negative security ⁽¹⁾
Factory setting of ALARM 1 operating mode	negative security
Factory setting of ALARM 2 operating mode	positive security

(1) According to configuration.

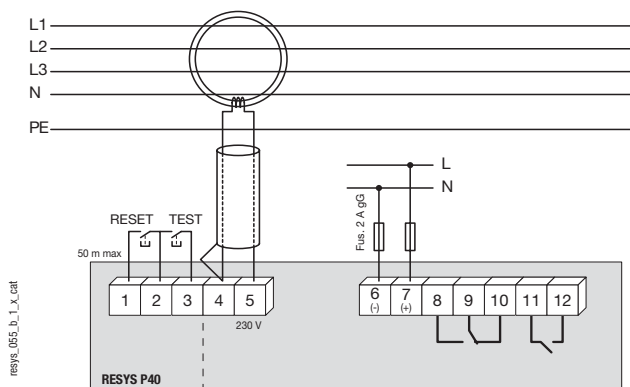
Operating conditions	
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

➤ Case



Type	panel mounting
Dimensions W x H x D	48 x 48 x 107
Case degree of protection	IP40
Terminal block degree of protection	IP20
Rigid cable connection section	0.2 ... 4 mm ²
Flexible cable connection 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 Us
- 8 - 9 - 10: alarm relay 1 outputs
- 11 - 12: alarm relay 2 or pre-alarm outputs

NOTE: The earthing 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 Us ⁽¹⁾	RESYS P40 Reference
115 VAC	4942 2711 ⁽²⁾
230 VAC	4942 2723 ⁽²⁾
12 ... 125 VDC	4942 2602 ⁽²⁾

(1) Other rating: please consult us.

(2) References and characteristics of closed, split core and rectangular toroids: see page 410 "Core balance transformers type A and type B".

Description of accessories	Reference
Soft protection cover IP65	4942 0000

type A and B

Closed toroids



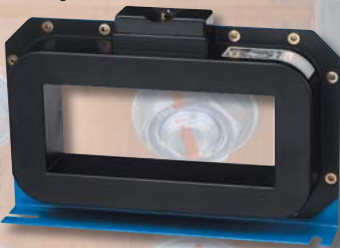
tor_014_a_1_cat

Split core toroids



tor_016_a_1_cat

Rectangular closed toroids

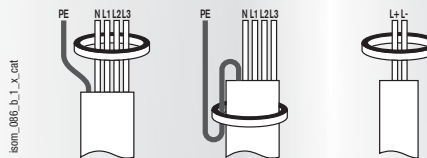


tor_015_a_1_cat

➔ Installation of toroids

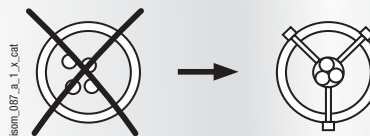
All of the active conductors must be passed through the detection toroid's aperture. The protective conductor must pass on the outside of the toroid or pass once for each direction.

Installation of the detection toroids



from_0616_b_1_x_cat

Installation limiting distortions during heavy load switching



from_0617_a_1_x_cat

➔ Function

The installation of protection or signalling resources such as earth leakage protection relays involves the use of core balance transformers.

These enclose active conductors, providing the differential summation of vector currents and revealing leakage current. The DLD core balance transformers proposed by SOCOMEC meet the requirements for measurement sensitivity and are adapted to the RESYS M20/M40/P40 differential relays.

Closed (series W, WR and TFR) or split core (series WS) types, suit all wiring configurations.

A special range is proposed for RESYS B470/B 471 and B 420 relays.

➔ Conformity to standards

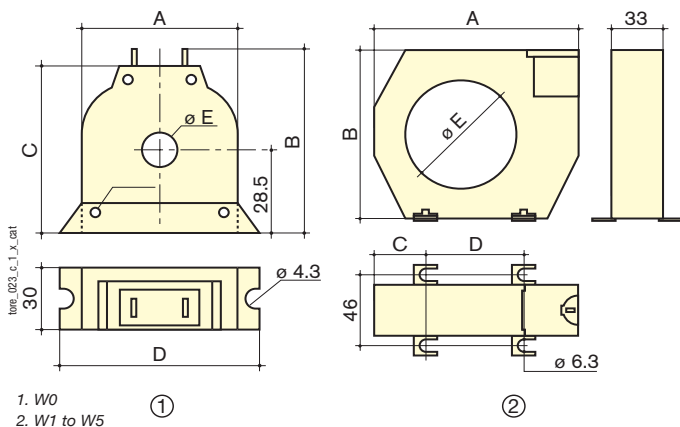
- IEC 60044-1

➤ Characteristics

Insulation coordination	according to IEC 664-1
Rated insulation voltage	690 VAC
Dielectric quality	6 kV
Degree of pollution	3
Test voltage according to IEC 255	3 kVAC
Transformation ratio	600 / 1
Resistance of winding	≈ 7 Ω
Rated primary current (W/WR/TFR/WS toroids)	10 A
Rated primary current (Specific toroids for RESYS B470/B471)	3 A
Permanent current withstand	20 A
Associated thermal short-circuit current	14 kA / 1s
Nominal power	50 mVA
Max. accuracy class	5
Operating temperature	-10 ... +55°C
Flammability class	UL94V-0

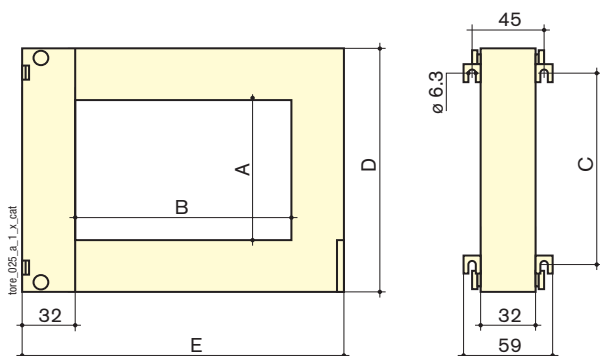
➤ Dimensions

W series - Closed toroids



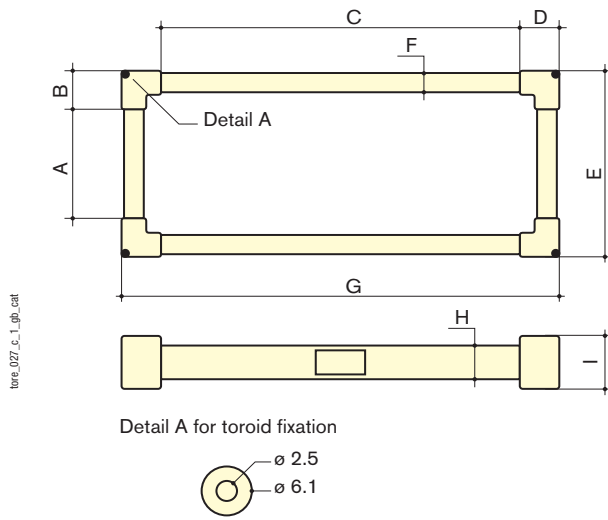
Type	A	B	C	D	E	Weight (kg)
W0-S15	55.5	71	62	75	14.5	0.09
W1-S35	100	79	26	48.5	35	0.25
W2-S70	130	110	32	66	70	0.38
W3-S105	170	146	38	94	105	0.70
W4-S140	220	196	48.5	123	140	1.50
W5-S210	229	284	69	161	210	2.50

Split core toroids WS series



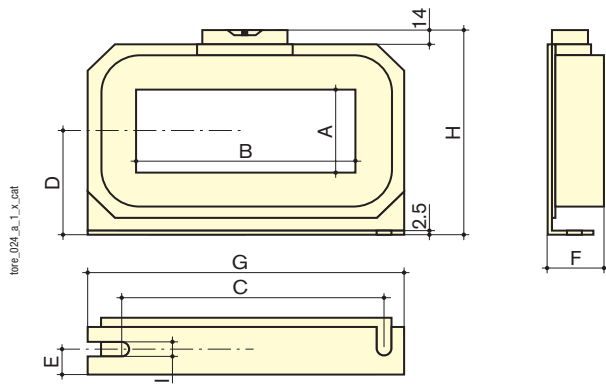
Type	A	B	C	D	E
WS 50 x 80	50	80	78	114	145
WS 80 x 80	80	80	108	144	145
WS 80 x 120	80	120	108	144	185
WS 80 x 160	80	160	108	144	225

Rectangular closed toroids TFR series



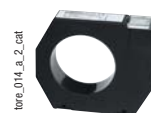
Type	A	B	C	D	E	F	G	H	I	Weight (kg)
TFR 200 x 500	159	48	460	48	239	26	540	40	76	7.2

Rectangular closed toroids WS series



Type	A	B	C	D	E	F	G	H	I
WR 70 x 175	70	175	225	85	22	46	261	176	7.5
WR 115 x 305	115	305	360	116	25	55	402	240	8
WR 150 x 350	150	350	415	140	28	55	460	285	8

References



**Closed toroids
series W**

Type	Toroid diameter (mm)	Reference
W0-S15	15	4793 2001 ⁽¹⁾
W1-S35	35	4793 2003 ⁽¹⁾
W2-S70	70	4793 2007 ⁽¹⁾
W3-S105	105	4793 2010 ⁽¹⁾
W4-S140	140	4793 2014 ⁽¹⁾
W5-S210	210	4793 2020 ⁽¹⁾

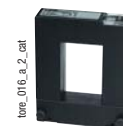
(1) Toroids for RESYS M20 / M40 / P40 relays.



**Rectangular
closed toroids
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 M20 / M40 / P40 relays.



**Split core
toroids 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 M20 / M40 / P40 relays.

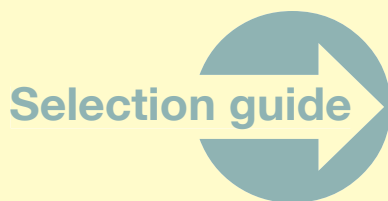
Protection against overvoltages



SOCOMEC's SURGYS surge protection devices ensures the protection of electrical receivers against transient overvoltages from various sources:

- indirect effects of a lightning strike,
- Switching operations on an industrial network,
- disruptive loads (switched-mode power supplies, inductive loads, etc.).

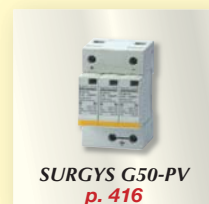
The SURGYS range covers both strong and weak currents.



➔ PV surge protection devices Photovoltaic installation



Photovoltaic supply networks



SURGYS G50-PV
p. 416

⇒ **Surge protection devices - Type 1**
Installations with **lightning rods**

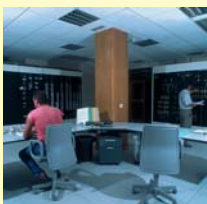


Industrial buildings,
sites classed as at risk

Head of installation



SURGYS G140-F
p. 418



Head of installation
equipped with sensitive equipment



SURGYS G40-FE
p. 420

⇒ **Surge protection devices - Type 2**
Installation with **frequent lightning strikes** or industrial networks subject to **operational voltage surges**



Head of installation



SURGYS G70
p. 422



Distribution panel



SURGYS D40
p. 424

Coordination
inductance



SURGYS L1
p. 430

⇒ **Surge protection devices - Type 3**
Sensitive electrical receivers or loads



Distribution panel
or sub-distribution panel/load



SURGYS E10
p. 426

⇒ **Strategic installations** subject to lightning strikes



IT centres, telephone exchanges, industrial
control networks, public buildings,

Surge protectors for extra low voltage

For serial, 4-20 mA and
RTC telephone networks



**SURGYS RS-2, mA-2,
TEL-2** p. 428

For telecommunication
networks



SURGYS COAX
p. 428



sgys_008_a_1_cat

Surge arrester PV - Type 2 "photovoltaic panels"

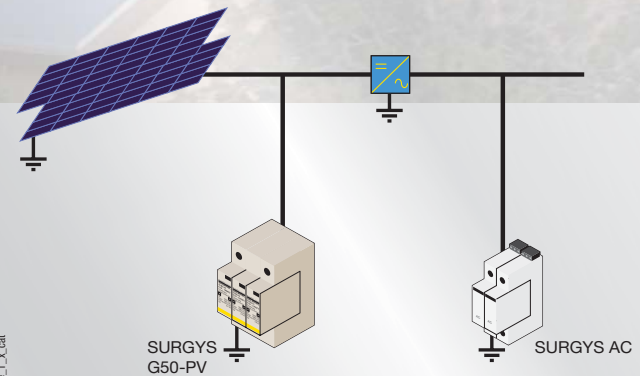
⇒ Function

SURGYS® G50-PV Surge Protective Device is designed to ensure protection of photovoltaic supply networks against transient overvoltages.

⇒ General characteristics

- Type 2 Surge Protective Device.
- Available with protection from 500 V d.c. to 1000 V d.c.
- Monobloc design.
- Common mode / differential mode protection.
- Remote signalling contact (depending on reference).
- End of service life indicator.
- Plug-in protection module.

⇒ Applications



sgys_002_e_1_x_cat

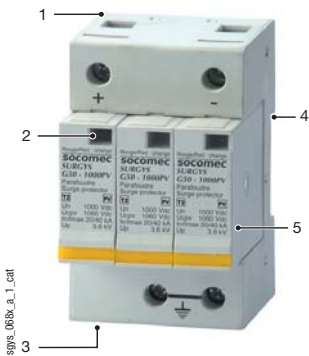
Main incoming protection in a photovoltaic network:

- SURGYS G50-PV is installed in the d.c. side, in the combiner box, close to the solar cell strings, for protecting the downstream d.c. equipment from the effects of lightning...
- SURGYS a.c. is installed in the a.c. side close to the inverter for protecting the downstream a.c. equipment from the effects of lightning.

⇒ Conformity to standards

- EN 61643-11 class 2 tests
- IEC 61643-1 class 2
- IEC 60364-7-712

⇒ Front panel



1. Monobloc base.
2. End of service life indicator.
3. Remote signalling contact.
4. DIN rail mounting.
5. Plug-in module.

⇒ Characteristics

Mains

Network type	500 V d.c. / 600 V d.c. / 800 V d.c. / 1000 V d.c.
Nominal voltage U_n	500 V d.c. / 600 V d.c. / 800 V d.c. / 1000 V d.c.
Nominal voltage U_{cqv}	530 V d.c. (500V version) / 680 V d.c. (600 V version) / 840 V d.c. (800 V version) / 1060 V d.c. (1000 V version)

Protection characteristics

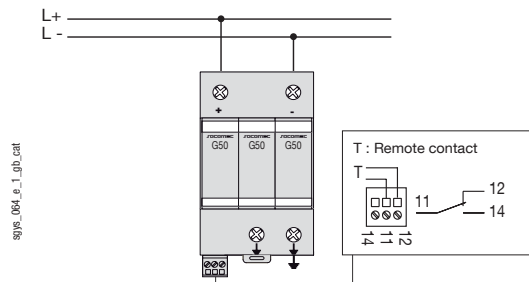
Level of protection U_p	1,8 kV (500 V) / 2,5 kV (600 V) / 3 kV (800 V) / 3,6 kV (1000 V)
Maximum discharge current (1 shock 8/20 μ s) I_{max}	40 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	20 kA
Mode of protection	common and differential

Associated characteristics

Residual current I_c	< 0,1 mA
Response time t_r	< 25 ns
Follow current I_f	none
Rated conditional short-circuit current I_{cc}	25 kA
Type of disconnection indicator	mechanical
Number of disconnection indicators	1

⇒ Connections

Common mode / differential mode protection



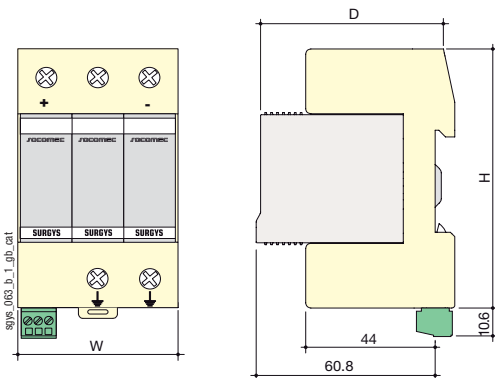
Remote signalling contact

Contact type	inverter
a.c. making capacity	0,5 A
d.c. making capacity	2 A
a.c. nominal voltage	250 V a.c.
d.c. nominal voltage	30 V d.c.
Sustained current	2 A
Connection type	Terminal block
Max. section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

⇒ Case



Type	Modular 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
Case degree of protection	IP20
Terminal block protection degree	IP20
Case material	UL94-V0 thermoplastic
Network connection section	4 ... 25 mm ²
Earth connection section	4 ... 25 mm ²

⇒ References

Network d.c. voltage	Description	No. of pole	Mode of protection	Number of side by side modules	References
500	without remote signal	2	MC ⁽¹⁾	2	4982 1500
500	with remote signal	2	MC ⁽¹⁾	2	4982 1501
600	without remote signal	2	MC ⁽¹⁾	2	4982 1530
600	with remote signal	2	MC ⁽¹⁾	2	4982 1531
800	without remote signal	2	MC ⁽¹⁾ / MD ⁽²⁾	3	4982 1510
800	with remote signal	2	MC ⁽¹⁾ / MD ⁽²⁾	3	4982 1511
1000	without remote signal	2	MC ⁽¹⁾ / MD ⁽²⁾	3	4982 1520
1000	with remote signal	2	MC ⁽¹⁾ / MD ⁽²⁾	3	4982 1521

Accessories	Mode of protection	References
Spare plug-in module m-G50-500PV	MC ⁽¹⁾	4982 0509
Spare plug-in module m-G50-600PV	MC ⁽¹⁾	4982 0539
Spare plug-in module m-G50-800PV	MC ⁽¹⁾ / MD ⁽²⁾	4982 0519
Spare plug-in module m-G50-1000PV	MC ⁽¹⁾ / MD ⁽²⁾	4982 0529

(1) Common mode.
(2) Differential mode.



srgys_054_b_1_cat



shp_141_a

Surge arresters - Type 1 "presence of lightning rod and classified installations"

⇒ 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.

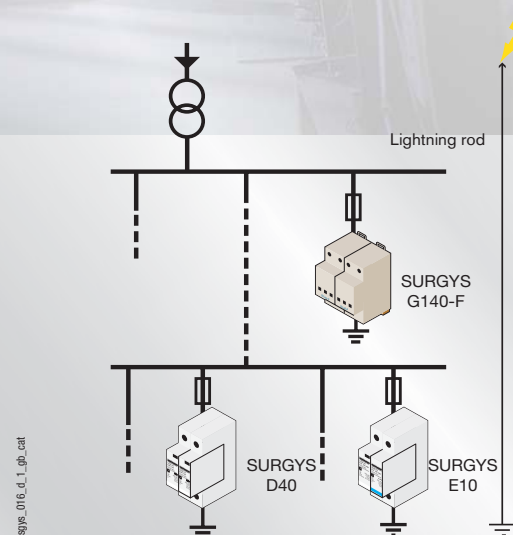
This type of Surge Protective Device is particularly recommended in case of risk of direct impact of high energy level lightning strikes.

NEW: impulse current (limp) of 25 kA per pole.

⇒ Conformity to standards

- EN 61643-11 class 1 tests
- IEC 61643-1 class 1 and 2
- UL1449 ed. 2

⇒ Applications



- Upstream location of the distribution surge arresters.
- Main switchboard + building protected against lightning either:
 - through lightning conductors,
 - through mesh cages.
- Main switchboard 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 altitudes.
- Distribution board of a building with presence of Lightning Protection Systems.

srgys_016_d_1_gp_cat

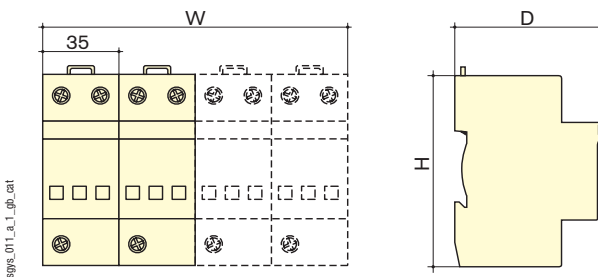
➤ **General characteristics**

- 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 142).

➤ **Characteristics**

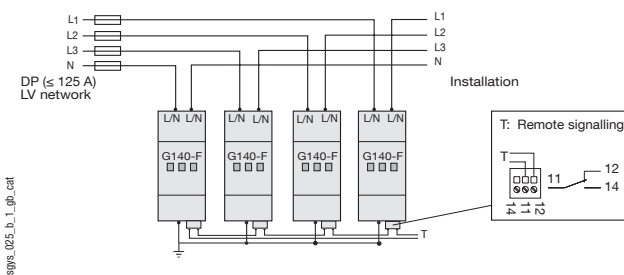
Network	
Network type	230 / 400 VAC
Neutral systems	TT-TN-IT
Nominal voltage U_n	400 VAC
Maximum voltage U_c	400 VAC
Temporary surge in power line frequency U_T	400 VAC
Protection characteristics	
Level of protection U_p	2.5 kV
Maximum discharge current (1 shock 8/20 μ s) I_{max}	140 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	50 kA
Residual voltage at I_{imp}	1.5 kV
Shock current (1 shock 10/350 μ 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}	25 kA
Recommended disconnectors	125 A fuses gG ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnector indicators	3

➤ **Case**



➤ **Connection**

Series arrangement



➤ **Front panel**



Remote signalling contact

Number of contacts per pole	1
Contact type	terminal connections
a.c. making capacity	3 A
d.c. making capacity	2 A
a.c. nominal voltage	125 VAC
d.c. nominal voltage	30 VDC
Sustained current	2 A
Connection type	screw block
Max. section of terminal connections	1.5 mm ²

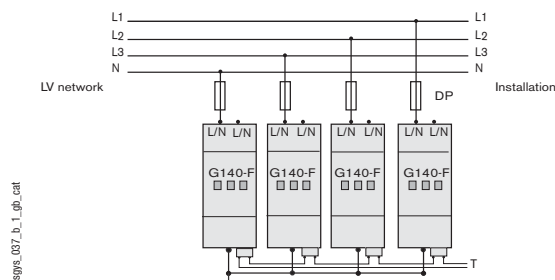
Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value in accordance with article 534.1.5.3 of NF C 15100: higher ranges can however be used in case reinforced service continuity of the surge arrester line is desired.

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 section	10 ... 50 mm ²
Earth connection section	10 ... 50 mm ²

Parallel arrangement



➤ **References**

No. of poles	Number of side by side modules	Reference
2	2	4981 1521
3	3	4981 1531
4	4	4981 1541

SURGY'S®
G140-F



*Surge arresters - Type 1 and 2
"presence of lightning
conductors and classified
installations with sensitive
receivers"*

➤ Function

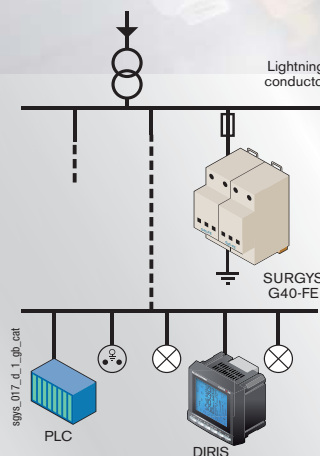
The **SURGYS® G40-FE** surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation overvoltages and overvoltages owing to lightning.

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.

➤ Conformity to standards

- EN 61643-11 class 1 and 2 tests
- IEC 61643-1 class 1 and 2
- UL1449 ed. 2

➤ Applications



- 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 of remote sites containing electronics.

- 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.

➤ General characteristics

- Type 1 and 2 Surge Protective Device.
- Designed to resist discharge linked to direct lightning strike.
- Up protection level optimized 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 142).

➤ **Front panel**



1. End of 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 surge in power line frequency U_T	400 VAC

Protection characteristics

Level of protection U_p (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
Shock current (1 shock 10/350 μ 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}	25 kA
Recommended disconnectors	125 A fuses gG ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnector indicators	1

Remote signalling device

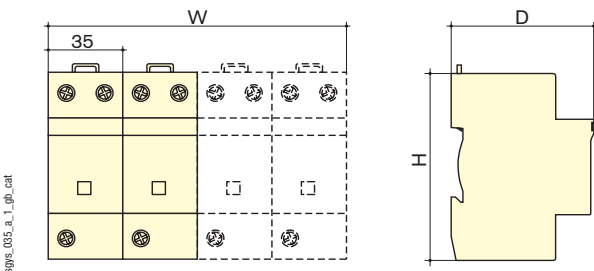
Number of contacts per pole	1
Contact type	inverter
Alternating making capacity	3 A
Direct making capacity	2 A
Alternating nominal voltage	125 VAC
Direct nominal voltage	30 VDC
Continuous current	2 A
Connection type	screw block
Max. section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value in accordance with article 534.1.5.3 of NF C 15100: higher ranges can however be used in case reinforced service continuity of the surge arrester branch is desired.

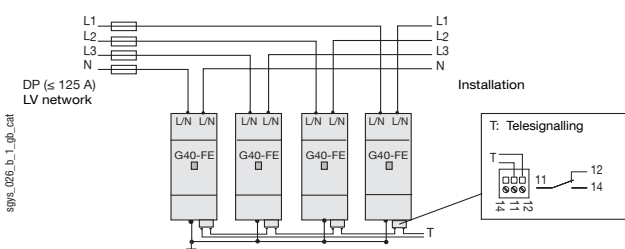
➤ **Case**



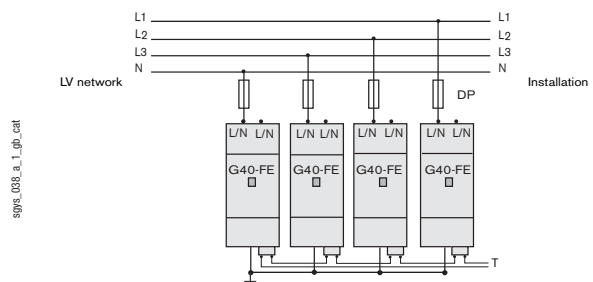
Type	Modular
Dimensions W x H x D in 2 poles	70 x 90 x 67 mm
Dimensions W x H x D in 3 poles	105 x 90 x 67 mm
Dimensions W x H x D in 4 poles	140 x 90 x 67 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL94-5VA
Network connection section	10 ... 50 mm ²
Earth connection section	10 ... 50 mm ²

➤ **Connections**

Series arrangement



Parallel arrangement



➤ **References**

No. of poles	Number of side by side modules	Reference
2	2	4981 0420
3	3	4981 0430
4	4	4981 0440

SURGY'S®
G40-FE



Surge arrester - Type 2 "sites frequently struck by lightning"

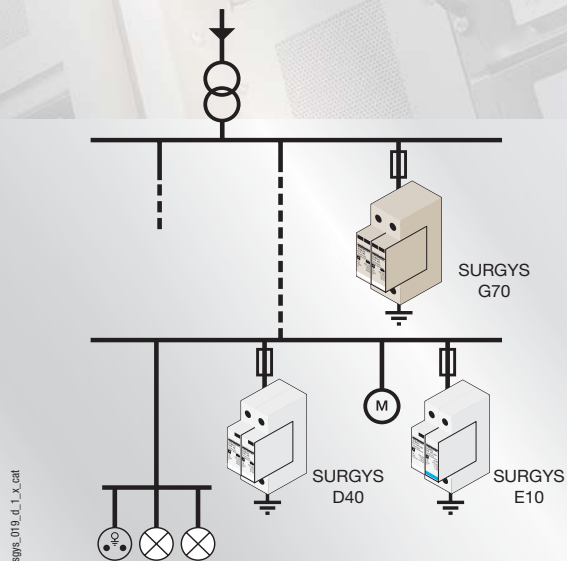
⇒ Function

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.

⇒ General characteristics

- Type 2 Surge Protective Device.
- Max. discharge current 70 kA.
- Protection in common mode.
- Monobloc body.
- Plug-in modules for each active conductor (PH or N).
- Possibility of live replacement under voltage.
- Redundant functioning of protection.
- Plug-in remote signalling contact.
- End of service life indicator.
- Fuse combination switch recommended: FUSERBLOC (see page 142).

⇒ Applications

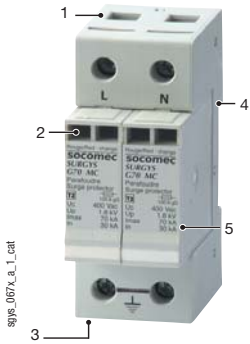


- Safety main switchboard.
- Main switchboard of high power inverters.
- Distribution boards of remote sites.
- Protection of electrotechnical equipment such as motors, switching devices, control devices...

⇒ Conformity to standards

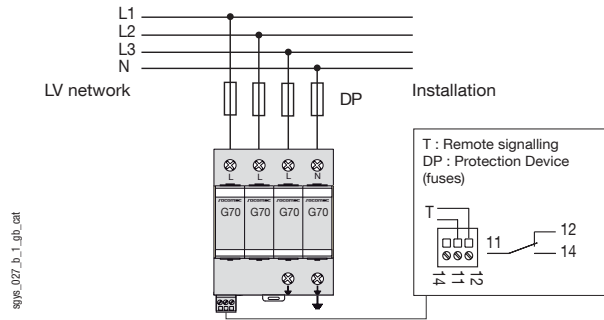
- EN 61643-11 class 2 tests
- IEC 61643-1 class 2

➤ Front panel



1. Monobloc base.
2. End of service life indicator.
3. Remote signalling contact.
4. DIN rail mounting.
5. Plug-in module.

➤ 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 surge in power line 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	100 A fuses gG ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnector indicators	2

Remote signalling contact

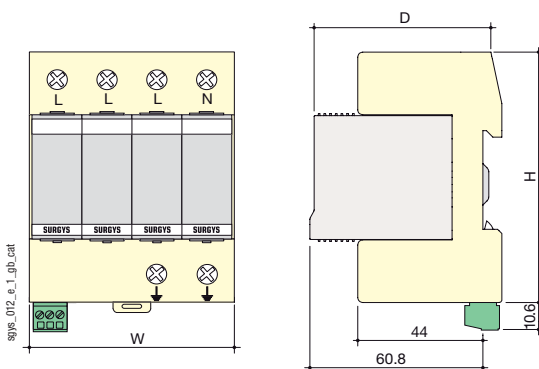
Contact type	inverter
a.c. making capacity	0.5 A
d.c. making capacity	2 A
a.c. nominal voltage	250 VAC
d.c. nominal voltage	30 VDC
Sustained current	2 A
Connection type	through screw block
Max. section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value in accordance with article 534.1.5.3 of NF C 15100: higher ranges can however be used in case reinforced service continuity of the surge arrester branch is desired.

➤ Case



Type	Modular 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
Network connection section	4 ... 25 mm ²
Earth connection section	4 ... 25 mm ²⁽¹⁾

(1) Minimum 10 mm² section in presence of 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

NEW



Surge arrester - Type 2 "distribution boards"

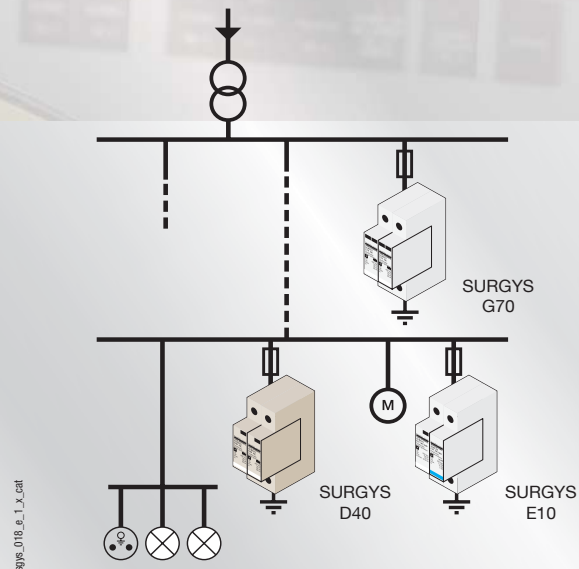
⇒ Function

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.

⇒ General characteristics

- Type 2 Surge Protective Device.
- Max. discharge current 40 kA.
- Common mode / differential mode protection.
- Monobloc body.
- Plug-in remote signalling contact.
- End of service life indicator.
- Plug-in module.
- Differential mode versions (only TT and TN conditions).
- Fuse holder recommended: RMS (see page 218).

⇒ Applications

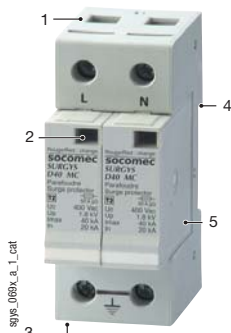


- Power distribution unit (downstream of a main switchboard).
- Autonomous power supply units such as generator sets, medium power UPS.
- Machine equipment unit.

⇒ Conformity to standards

- EN 61643-11 class 2 tests
- IEC 61643-1 class 2

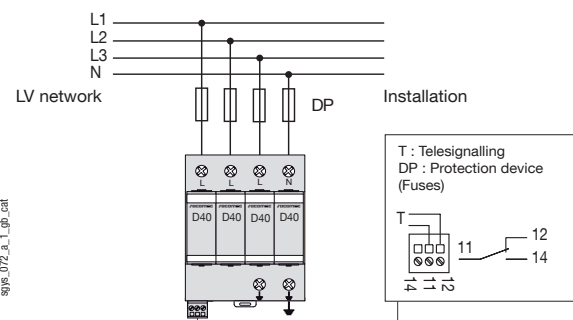
➤ Front panel



1. Monobloc base.
2. End of service life indicator.
3. Remote signalling contact.
4. DIN rail mounting.
5. Plug-in module.

➤ Connection

Common mode (MC) and differential mode (MC/MD) protection



➤ 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 surge in power line 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 μ s) I_{max}	40 kA
Nominal discharge current (15 shocks 8/20 μ s) 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
Permissible short-circuit current I_{cc}	25 kA
Recommended disconnectors	50 A fuses gG ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnector indicators	1

Remote signalling contact

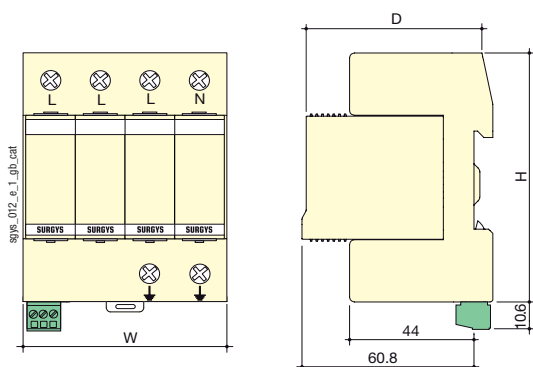
Contact type	inverter
a.c. making capacity	0.5 A
d.c. making capacity	2 A
a.c. nominal voltage	250 VAC
d.c. nominal voltage	30 VDC
Sustained current	2 A
Connection type	screw block
Max. section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Value in accordance with article 534.1.5.3 of NF C 15100: higher ranges can however be used in case reinforced service continuity of the surge arrester branch is desired.

➤ Case



Type	Modular 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 section	4 ... 25 mm ²
Network connection section	4 ... 25 mm ²

➤ References

No. of poles	Neutral systems	Mode of protection	Number of side by side modules	SURGY'S 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 / MD ⁽²⁾⁽¹⁾	2	4982 1424
4	TT, TN	MC / MD ⁽²⁾⁽¹⁾	4	4982 1444

(1) Common mode.
(2) Differential mode.

Description of accessories	Mode of protection	Reference
Spare plug-in module m-D40	MC ⁽¹⁾	4982 0419
Spare plug-in module m-D40	MC / MD ⁽²⁾⁽¹⁾	4982 0418

(1) Common mode.
(2) Differential mode.

NEW



Surge arrester - Type 2 and 3 "terminal receivers and sensitive loads"

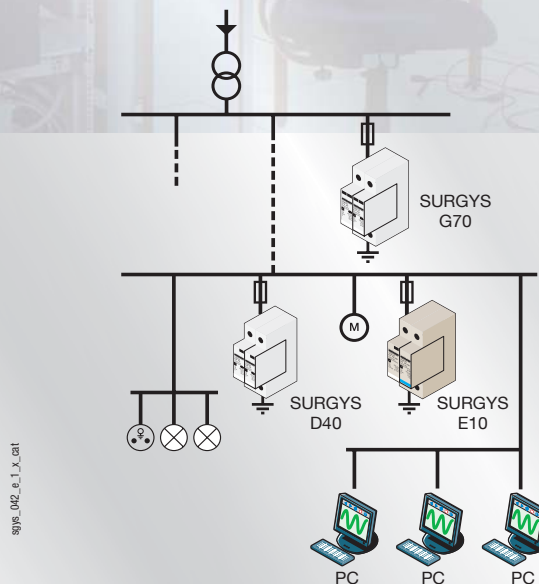
↻ Function

The **SURGYS® E10** surge arresters are designed to ensure protection of installations connected to single-phase, three-phase or d.c. networks against industrial operation overvoltages. They act against transient overvoltages owing to lightning.

↻ Conformity to standards

- EN 61643-11 class 2 and 3 tests
- IEC 61643-1 class 2 and 3

↻ Applications

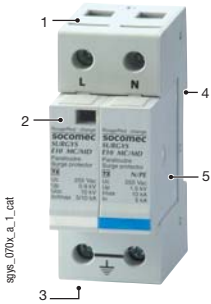


- AC or DC power distribution unit (downstream of a main switchboard).
- Protection of electrotechnical equipment such as motors, switching devices, control devices...

↻ General characteristics

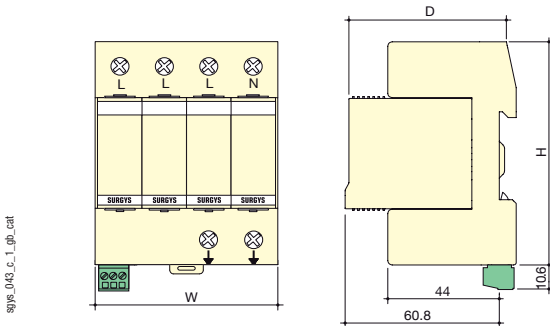
- Type 2 and 3 Surge Protective Device.
- Max. discharge current 10 kA.
- Common mode / differential mode protection.
- Monobloc design.
- Compact DC network version.
- Plug-in remote signalling contact.
- End of service life indicator.
- Plug-in module for each active conductor.
- Possibility of live replacement.
- Fuse holder recommended: RMS (see page 218).

➔ **Front panel**



1. Monobloc base.
2. End of service life indicator.
3. Remote signalling contact.
4. DIN rail mounting.
5. Plug-in module.

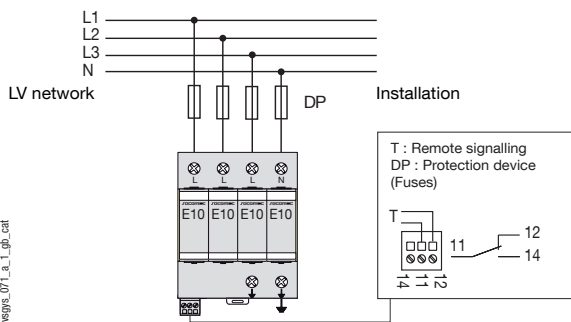
➔ **Case**



Type	Modular monobloc design
Dimensions W x H x D (DC versions)	17.5 x 90 x 67 mm
Dimensions W x H x D in 2 poles (AC version)	36 x 90 x 67 mm
Dimensions W x H x D in 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 section	1.5 ... 10 mm ² (E10 2p.) / 1.5 ... 16 mm ² (E10 4p.)
Earth connection section	4 ... 25 mm ² (E10 2p.) / 4 ... 16 mm ² (E10 4p.)

➔ **Connection**

AC version - Common mode (MC) and differential mode (MC/MD) protection



➔ **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 surge in power line 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 μs) I _{max}	10 kA
Nominal discharge current (15 shocks 8/20 μs) 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
Permissible short-circuit current I _{cc}	25 kA
Recommended disconnectors	20 A fuses gG ⁽¹⁾
Type of disconnection indicator	mechanical
Number of disconnector indicators	1

Remote signalling contact

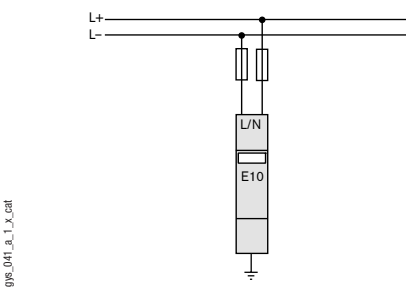
Contact type	inverter
a.c. making capacity	0.5 A
d.c. making capacity	2 A
a.c. nominal voltage	250 VAC
d.c. nominal voltage	30 VDC
Sustained current	2 A
Connection type	par bornier vis
Max. section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) MC / MD: Common mode / Differential mode.
(2) Value in accordance with article 534.1.5.3 of NF C 15100: higher ranges can however be used in case reinforced service continuity of the surge arrester branch is desired.

DC version



➔ **References**

AC applications			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 / MD ⁽²⁾⁽¹⁾	4983 1126
4	TT, TN	MC / MD ⁽²⁾⁽¹⁾	4983 1146

Spare plug-in module for AC application		SURGYS® E10-AC
Mode of protection		Reference
MC / MD ⁽¹⁾⁽²⁾		4983 0198
MC ⁽¹⁾		4983 0199

(1) Common mode.
(2) Differential mode.

DC Applications			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



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Surge arrester - Extra low voltage "communication network"

➤ Function

For protection against transient overvoltages of equipment connected to telecommunication and data transmission networks, the **SURGYS®** range includes 4 surge arrester models:

- **SURGYS® RS-2,**
- **SURGYS® mA-2,**
- **SURGYS® TEL-2,**
- **SURGYS® COAX.**

➤ General characteristics

- Max. discharge current 20 kA.
- Common and differential protection mode.
- End-of-life signalling by interruption of transmission.
- Serial connection on the very-low-voltage line.

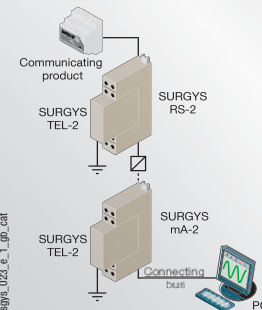
➤ Conformity to standards

- EN 61643-21

➤ Applications

SURGYS® RS-2

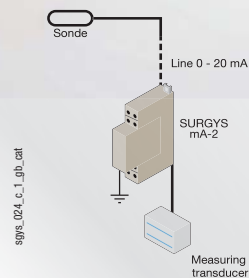
- Protection of the RS422/RS485 connections.
- Digital telephone line T2.
- ETHERNET connection (10 baseT).



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SURGYS® mA-2

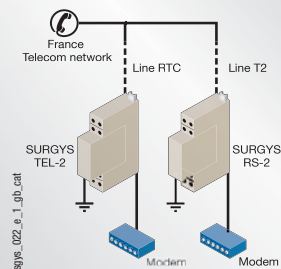
- Field bus:
 - Profibus (DP, PA, FMS...),
 - Fieldbus (H1, H2),
 - Wordbus,
 - Fipway,
 - LONworks,
 - Interbus,
 - Batibus,
- Measurement loops, measurement acquisition cards:
 - current loops 0 / 4-20 mA,
 - analog signals 0 to 10 V.
- Regulation, control loops.
- RS232 connections.
- Numeris network (RNIS-T0).
- Specialized telephone connections.



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SURGYS® TEL-2

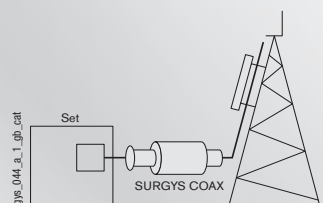
- Analog telephone line:
 - modem,
 - automatic switch,
 - telephone alarm,
 - DSL.



sgys_022_a_1_db_cat

SURGYS® COAX

- Protection of radiocommunication equipment.



sgys_044_a_1_db_cat

➔ Front panel



➔ Characteristics

	SURGYs® RS-2	SURGYs® mA-2	SURGYs® TEL-2	SURGYs® COAX
Use	RS422/RS485/Telecom T2	4-20mA, field bus	via land line	telecommunication network
Maximum voltage U_c	6 V	48 V	170 V	6 V
Maximum usage frequency	20 MHz	20 MHz	2 kHz	70 MHz
Level of protection U_p	25 V	75 V	220 V	25 V
Line impedance	50-150 Ω	50-150 Ω	600 Ω	50-75 Ω

Characteristics

Protected configuration	2 wires
Maximum line intensity	200 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	Earthing

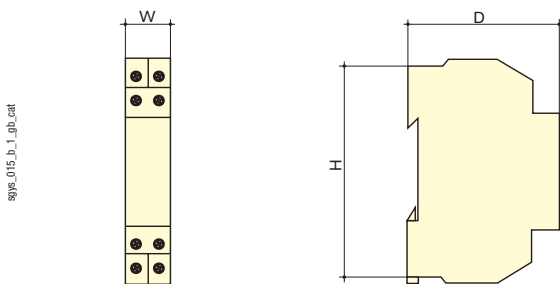
Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

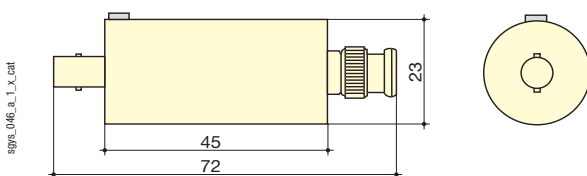
(1) Line current of the equipment to be protected greater than 200 mA or other direct current applications: please consult us.

➔ Case

Modular design



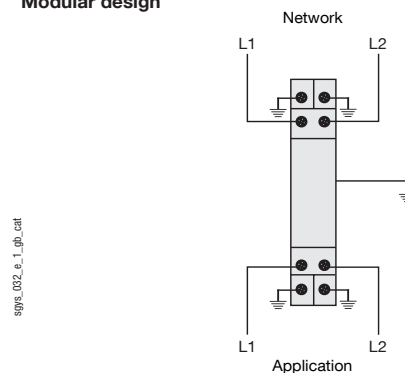
Coaxial design



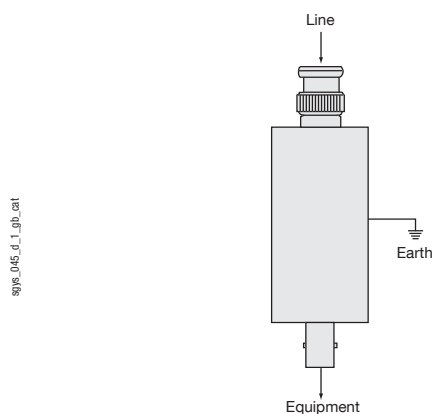
Type	Modular
Dimensions W x H x D	18 x 90 x 58 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL94-V0
Connection section	0,2 ... 4 mm ²
Earth connection section	1,5 ... 4 mm ²

➔ Connections

Modular design



Coaxial design



➔ References

Type of protection	SURGYs® RS-2 Reference	SURGYs® mA-2 Reference	SURGYs® TEL-2 Reference	SURGYs® COAX Reference
Protection of high speed data and telephone networks	4986 2020			
Protection of measurement-control-regulation circuits and field bus		4987 2420		
Protection of telephone networks			4985 2170	
Protection of radio-communication networks				4984 0111



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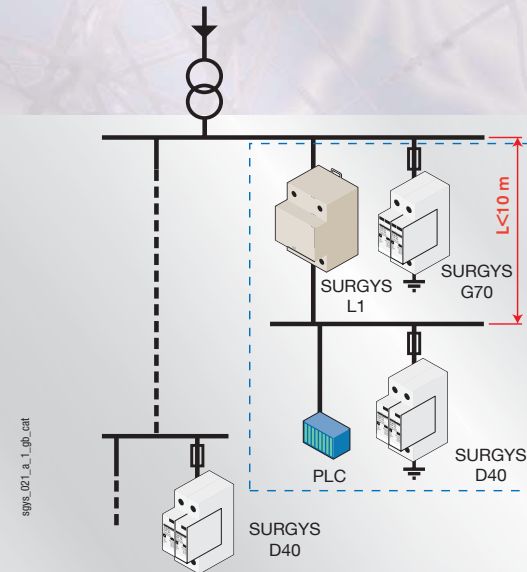
Applications

Function

The **SURGYS® L1** inductance coordination unit is designed to ensure the implementation of head and distribution low voltage surge arresters of the SOCOMEC range. This inductance is necessary for carrying out a coordination or "cascading" of surge arresters when the "natural" inductance of the wiring is insufficient (length < 10 m).

General characteristics

- Maximum current of 100 A per conductor.
- Line inductance of 15 µH.



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Coordination between head surge arresters:

- SURGYS® G140-F
- SURGYS® G40 FE
- SURGYS® G70.

and distribution surge arresters:

- SURGYS® D40
- SURGYS® E10.

located in immediate proximity.

⇒ **Characteristics**

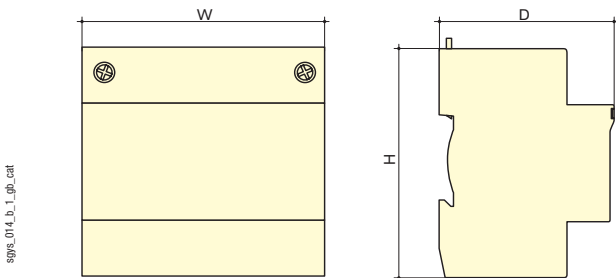
Network

Network type	230/400 VAC
Nominal voltage U_n	400 VAC
Maximum voltage U_c	500 VAC
Maximum line current	100 A
Line inductance L	15 μ H

Operating conditions

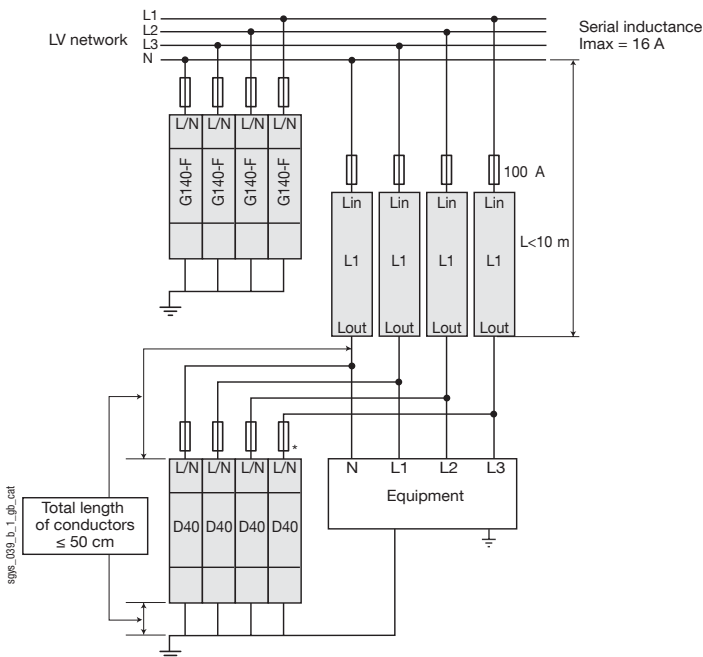
Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

⇒ **Case**



Type	Modular
Dimensions W x H x D	106 x 90 x 59 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Mounting	35 mm symmetric rail
Case material	polycarbonate UL94- 5VA
Network connection section	4 ... 50 mm ²

⇒ **Connection**



⇒ **References**



SURGYS® L1
Reference

4988 9100

Device

Coordination inductance L1



Enclosures & accessories

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. Wishing, as always, to facilitate your work, we have set out these pages so as to fit most closely with your **process for designing** a cabinet (see below and the next page).

⇒ SOCOMEC works with your Design Office

- **Sizing a cabinet**

Please do not hesitate to contact us if you need help with thermal dimensioning of your enclosure based on your specifications. Contact your SOCOMEC office.

- **Sizing 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.

See page 444

- **Assistance with construction**

You can also entrust us with your projects with particular construction requirements.
See the section on "Built-in products"

- **Integration of electric functions**

In this catalogue, you will find solutions for a great number of your requirements in terms of LV distribution.

Take a look at the **overview**

The essential

Enclosures



COMBIESTER
p. 434



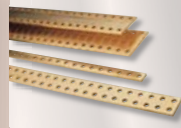
CADRYS DELTA
p. 435

⇒ **Think about it...** SOCOMEC offers a wide range of **pre-equipped units** for **breaking, protection and switching**; these units perfectly fulfil the requirements in terms of secure usage and installation conditions (see our section on "Built-in products").

Busbar



Busbar supports and Insulators
p. 444



Rigid copper bars
p. 440



Flexible copper bars
p. 442

Distribution



Power terminals
p. 464



Cable champs and cage terminals p. 466



Distribution blocks
p. 468

Mounting accessories



Mounting rails and profiles p. 474



➤ Function

COMBIESTERs are modular insulated enclosures.

They protect all low voltage electrical equipment against direct contact.

➤ General characteristics ⁽¹⁾

These enclosures provide:

- an electrical safety with:
 - double insulation,
 - good resistance to creepage current distance.
- an IP66, IK9 degree of protection,
- an excellent withstanding to climatic conditions,
- a good withstanding to chemical agents,
- a 960°C self-extinguishable ability (polyester glasswool loaded),
- a 850°C self-extinguishable ability (for polycarbonate),
- a 650°C self-extinguishable (for polyamide),
- case and cover with opaque colour RAL 7035.

⁽¹⁾ Please consult us.



Monobloc enclosures

- 4 modules with sizes: 125 x 75 mm to 250 x 175 x mm
- 2 types of covers in polycarbonate:
 - transparent,
 - opaque,
- Solid casing in polycarbonate (with cover on request).

Constructible enclosures

- 17 constructible modules every 90 mm for sizes 180 x 135 mm and 720 x 540 mm
- 2 types of sealable covers:
 - transparent (polycarbonate),
 - opaque (polycarbonate or polyester).
- Solid casing or with openings:
 - in polyamide for sizes 180 x 135 mm and 270 x 135 mm,
 - in polyester for sizes 270 x 180 mm to 720 x 540 mm.

➤ Conformity to standards

- IEC 60439-1
- IEC 60529
- NF C 20010
- NF C 20455
- DIN 40050

➤ Available on request

- Pre-drilled casing and cover.
- Pres-assembled enclosures.
- Pre-mounted accessories.
- Construction of support frames.



➔ Function

CADRYs ST, SH, SP and SI wall-mounted enclosures are intended to include automatic or control equipment.

They provide:

- Degree of protection IP65 (except double-leaf door enclosure, IP55).
- Perfect sealing:
 - casing edge in channel form,
 - robot positioning polyurethane joint.
- High rigidity provided by a folded and welded casing.

➔ General characteristics ⁽¹⁾

CADRYs ST enclosures, steel

- 51 models, heights from 300 to 1200 mm, widths from 200 to 1000 mm and depths from 150 to 400 mm.
- 1 or 2 solid doors opening to 120°.

CADRYs SP enclosures, steel

- 17 models, heights from 500 to 1200 mm, widths from 400 to 800 mm and depths from 250 and 400 mm.
- Casing with polyester paint RAL 7035.
- Transparent door with frame with polyester epoxy paint RAL 7035.

- Good resistance to chemical agents:

- carbon steel FE 40 + polyester epoxy paint 70 µ,
- stainless steel 304 L brushed and polished.

- High and low closing plates for ST and SP enclosures.

➔ Conformity to standards

- IEC 60439-1
- EN 60439-1
- NFC 15-100

➔ Available on request

- Special paint,
- Specific cutouts (enclosures, plates...)
- Specific dimensions.

The basic CADRYs ST and SP enclosures are equipped with:

- double bar locking,
- bottom closing plate with pressed neoprene seal,
- concealed hinges,
- earthing screw,
- door profiles perforated every 25 mm,
- casing and solid door, steel, polyester epoxy paint RAL 7035,
- reversible doors.

CADRYs SI enclosures, brushed stainless steel

- 9 models, heights from 200 to 1000 mm, widths from 200 to 800 mm and depths from 150 to 300 mm.
- Solid door, double bar locking, concealed hinges, without closing plate.

(1) Please consult us.

modular



keys_418_b_1_cat

keys_460_a_1_cat

0109_2306_3

⇒ Function

CADRY'S 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 side to back. They can be delivered pre-assembled or, on request, in kit form.

⇒ Approvals and certifications

- PSA E03.15.605.G
- RENAULT EB03.15.613

⇒ Equipment

- Drilled plate
- Perforated plate
- Mounting frame
- Modular casing

⇒ Preassembly

- We can preassemble your cabinet configuration on request.

⇒ 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 framework, front door, ear panel (or door) and the top panel.
- It is supplied on a handling pallet H 100 mm.

(1) Please consult us.

⇒ Conformity to standards

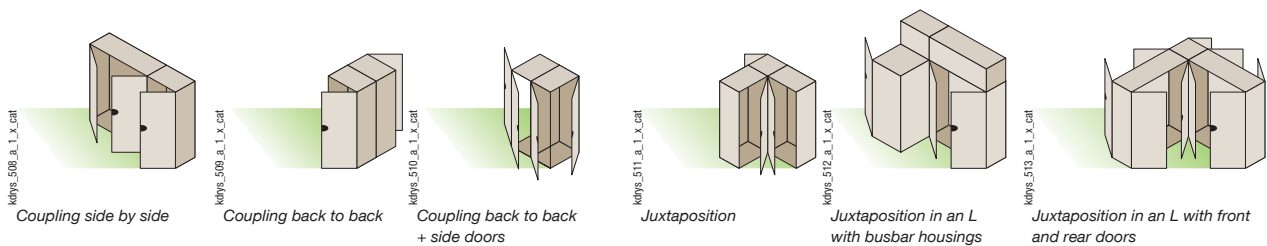
- IEC 60529
- IEC 60439-1
- NF C 15-100
- NF C 20010
- Protection rating IP 55, IK 10

⇒ Available on request

- Canopies.
- Drillings.
- Special colours and paints.
- Doors, panels of 2 mm.
- Specific dimensions.
- Adaptations as per drawings.
- Aluminium or painted stainless steel doors and panels.



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.



➤ CADRYS DELTA modular - External options

Tripod

The frame elements are assembled by screwing onto a tripod.



Back panel

The back panel can be replaced by a door without the addition or removal of any accessories.



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.



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.



Busbar housing

- Fits in between the top panel and the top of the cubicle.
- Takes bars up to 160 mm high.



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.



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.



Juxtaposition

The juxtaposition of cubicles side or back to back is achieved using a kit that guarantees IP55 sealing.



➔ Internal options

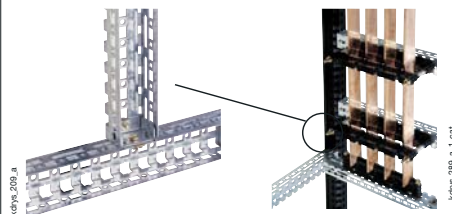
Perforated plate

- The placing of the plates is facilitated by an anchoring system.
- No intermediate pieces are needed to fix them in place.



Mounting profiles

The perforations in these profiles allow the positioning of the nuts every 25 mm or continuously.



Solid plate

A system of slides and clips facilitate the positioning of the plates and holds them in place during assembly.



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.



Nuts

The clip-on nuts fit onto the mounting profiles and perforated plates whilst also providing earthing.



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.

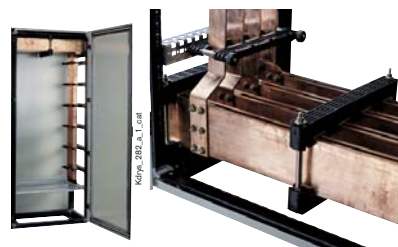
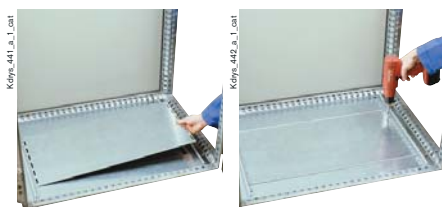


Structural profiles

- 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.

Gland plate

- The closing plate is fixed in place by a knurled nut.
- It is tightened manually with no tools required.





Characteristics

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.

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

Function

The SOCOMEC rigid copper bars are suitable for providing main or distribution connections.

General characteristics of copper

- Material: electrolytic copper Cu-ETP (Cu/A1).
- State: hammer-hardened 1/2 hard (H12).
- Maximum resistivity: 0.017241 $\Omega\text{mm}^2/\text{m}$ at 20°C.

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.

Connector for drill-free connection on the busbar

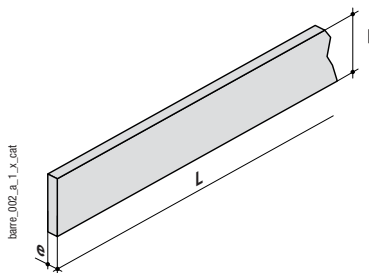
- Cable for 2.5 to 185 mm².
- Bars for thickness 5 or 10 mm.

Connection Earth / Neutral

- Corner piece for Earth / Neutral connection, L = 1750 mm.
- Earth bar, L = 470 mm and L = 120 mm

➔ References

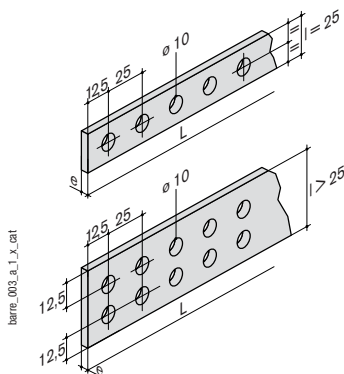
Solid bars



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 by multiple 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 3010	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⁾

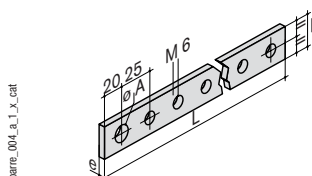
(1) To be ordered by multiple 10 bars
(2) To be ordered by multiple 5 bars

Pre-punched bars



I x e (mm)	L (mm)	Weight (kg/ml)	Nb de rows	Pack qty	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

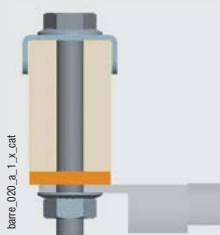
Pre-punched and threaded bars



I x e (mm)	L (mm)	Weight (kg/ml)	Ø A (mm)	To be ordered by multiple	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

➔ 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 by multiple	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

Insulated flexible copper bars

Busbar



Function

SOCOMEK **flexible copper bars** are mainly used to make the links between series of distribution bus bars and the disconnection devices.

Technical characteristics

Conductor

Strips of electrolytic copper Cu/ETP, FINAL ANNEALING state.

Insulated flexible busbar

- Operating temperature: from -40°C to $+105^{\circ}\text{C}$.
- Maximum operating voltage: 1000 V AC / 1500 V DC.
- Alternative voltage withstand (10-min 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 following break 35 %
 - Resistivity: 1.724 micro Ω/cm to 20°C .

General characteristics

- Width of 9 to 100 mm
- Thickness of 0.8 to 1 mm
- Length of 2 m

Ease of positioning

- Compact
- Wide flexibility of the bus bar
- Time saving by the elimination of terminal lugs and their crimping.

Increased safety by the elimination of crimped connections

- Better behaviour in short-circuits.
- Decrease of heating points.
- Better protection of people.

Insulator

High temperature co-extruded vinyl compound on the copper strips (insulation thickness: 1.5 to 2 mm)

- Self-extinguisher: NFC 32200.
- 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: $6 \cdot 10^{15} \Omega$.
- Oxygen index: 29.5 %.
- Scratch and tear resistant.

Conformity to standards

- VDE 207 Y16
- BS 6746
- NF A 51-050
- VDE 207 YM4
- DIN 40050

Available on request

- Other lengths: consult us.
- Bars in tin-plated copper or aluminium
- Halogen-free insulation.

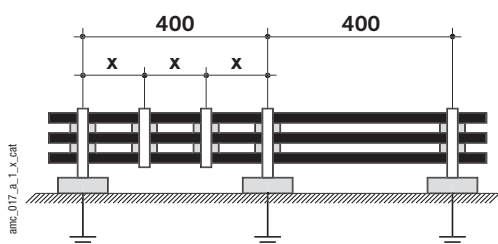
References

Flexible copper bars



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

Assembly instructions



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.

Icc maxi (kA rms)	Distance x between straps (mm) ⁽¹⁾
20	350
25	200
35	100
45	70

(1) 9 mm straps, load 80 kg.

(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 strips.
 e: strip thickness in mm.



⇒ Function

SOCOMEK insulating busbar supports allow the fixation of a copper or aluminium bar or busbar.

⇒ General 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 supports

- High dielectric strength.
- High mechanical strength.
- High resistance to humidity (supplied "tropicalised").

Stair type supports

- Thermoplastic material.
- VO self extinguishable.
- Insulating voltage: 1000 V.

⇒ Composition of the range

Current rating from 630 to 7000 A Edgewise mounting

- SB C 10, SB C 20, SB C 30 with fixed distance between phases.
- SBC ER, SBC ER Power with adjustable distance between phases.



Current rating from 630 to 5800 A Flat mounting

- SB 205 and SB 306 unipolar mounting busbar supports.
- SB 7500 and SB P 30 multipolar mounting busbar supports.



Current rating up to 630 A

- Hexagonal insulators, SB 1 SB 2 and SB 3 unipolar busbar supports.
- SB E 44, SB P 10 and SB P 44 multipolar busbar supports.



⇒ Conformity to standards

- IEC 60439-1
- IEC 60865-1

⇒ Approvals and certifications⁽¹⁾

- KEMA
- Lloyd's Register of Shipping
- ASEFA/LCIE

⁽¹⁾ Product reference on request.

What you need to know

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 or XP environment.



Selection guide: Edgewise mounting

● Busbar supports with **fixed interphase**

icc up to **120 kA**
(short circuit current)

icc up to **50 kA**

SB C 10 (p. 446) SB C 10 (p. 446) SB C 20 (p. 448) SB C 30 (p. 450)

100 A 400 A 500 A 630 A 1000 A 1600 A 2500 A 4000 A 5800 A 7000 A

Nominal current

icc up to **40 kA**

icc up to **80 kA**

SBC ER (p. 452) SB C ER Power (p. 453)

● Busbar supports with **variable interphase**

Selection guide: Flat mounting

● Busbar supports

SB 205 (p. 454) SB 306 (p. 454) icc 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

icc up to **50 kA**

icc up to **80 kA**

SB 7500 (p. 455) SB P 30 (p. 456)

● Multipolar busbar supports

Selection guide: Other supports

● Busbar supports

icc up to **50 kA**

1. Hexagonal insulators (p. 457)
2. SB 1 and SB 2 (p. 460)
3. SB 3 (p. 461)

100 A 400 A 500 A 630 A 1000 A 1600 A 2500 A 4000 A 5800 A 7000 A

Nominal current

icc up to **30 kA**

icc up to **40 kA**

4. SB E 44 (p. 462)
5. SB P 10 (p. 463)
6. SB P 44 (p. 463)

● Tetrapolar busbar supports



Edgewise mounting busbar supports
Current rating from 630 to 7000 A

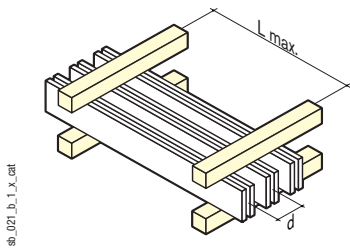
SB C 10

Multipolar edgewise mounting busbar supports with fixed interphase

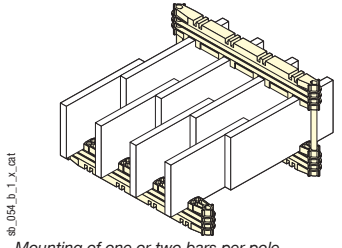
Characteristics

Characteristics of 3 and 4 poles with 5 mm for SB C 10

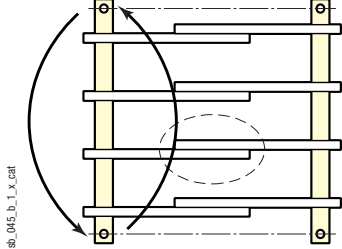
peak I _{sc}	Max. L (distance between centers of supports in mm) for					d (mm)	I _z (A) ⁽¹⁾
	30 kA	42 kA	52 kA	63 kA	110 kA		
rms I _{sc}	15 kA	20 kA	25 kA	30 kA	50 kA		
Bar x no.						d (mm)	I _z (A) ⁽¹⁾
32 x 5 x 1	425	300	250	200	120	60	410
32 x 5 x 2	400	275	225	175	110	60	700
40 x 5 x 1	500	350	275	225	135	60	500
40 x 5 x 2	475	325	250	225	125	60	850
50 x 5 x 1	550	400	325	250	140	60	600
50 x 5 x 2	550	375	300	250	150	60	1050
60 x 5 x 1	650	450	375	300	140	60	700
60 x 5 x 2	650	450	375	300	175	60	1250
80 x 5 x 1	750	525	425	350	135	60	900
80 x 5 x 2	775	550	450	375	200	60	1250
100 x 5 x 1	875	625	500	400	135	60	1100
100 x 5 x 2	925	650	525	425	250	60	1900
125 x 5 x 1	1000	725	575	400	135	60	1300
125 x 5 x 2	1000	775	625	525	300	60	2350



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

(1) Admissible nominal current for a temperature in the enclosure of 45°C and 80°C for the bars. Other assembly configurations: consult us.

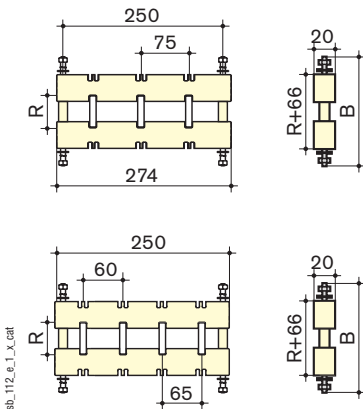
Characteristics of 3 and 4 poles with 10 mm for SB C 10

peak I _{sc}	Max. L (distance between centers of supports in mm) for					d (mm)	I _z (A) ⁽¹⁾
	30 kA	42 kA	52 kA	63 kA	110 kA		
rms I _{sc}	15 kA	20 kA	25 kA	30 kA	50 kA		
Bar x no.						d (mm)	I _z (A) ⁽¹⁾
25 x 10 x 1	925	650	525	425		62	330
25 x 10 x 2	950	675	550	450	250	90	590
25 x 10 x 2	900	625	500	425	225	62	590
32 x 10 x 1	1000	750	600	500	275	65	610
32 x 10 x 2	1000	800	650	525	300	90	1050
32 x 10 x 2	1000	725	575	475	275	65	1050
40 x 10 x 1	1000	850	675	550	325	65	700
40 x 10 x 2	1000	925	725	600	350	90	1250
40 x 10 x 2	1000	850	675	550	325	65	1250
50 x 10 x 1	1000	950	775	625	350	65	850
50 x 10 x 2	1000	1000	850	700	400	90	1550
50 x 10 x 2	1000	975	775	650	375	65	1550
63 x 10 x 1	1000	1000	900	725	425	65	1050
63 x 10 x 1	1000	1000	1000	850	475	90	1850
63 x 10 x 2	1000	1000	1000	825	475	90	1850
63 x 10 x 2	1000	1000	1000	775	425	65	1850
80 x 10 x 1	1000	1000	1000	850	450	65	1300
80 x 10 x 1	1000	1000	1000	975	550	90	1300
80 x 10 x 2	1000	1000	1000	975	550	90	2300
80 x 10 x 2	1000	1000	1000	900	425	65	2300
100 x 10 x 1	1000	1000	1000	975	450	65	1550
100 x 10 x 1	1000	1000	1000	1000	550	90	1550
100 x 10 x 2	1000	1000	1000	1000	550	90	2750
100 x 10 x 2	1000	1000	1000	1000	425	62	2750
125 x 10 x 1	1000	1000	1000	1000	450	65	1900
125 x 10 x 2	1000	1000	1000	1000	550	90	3350
125 x 10 x 2	1000	1000	1000	1000	450	65	3350
160 x 10 x 1	1000	1000	1000	1000	450	65	2350
160 x 10 x 1	1000	1000	1000	1000	550	90	2350
160 x 10 x 2	1000	1000	1000	1000	550	90	4150
160 x 10 x 2	1000	1000	1000	1000	450	65	4150

(1) Admissible nominal current for a temperature in the enclosure of 45°C and 80°C for the bars. Other assembly configurations: consult us.

➔ SB C 10 - Dimensions

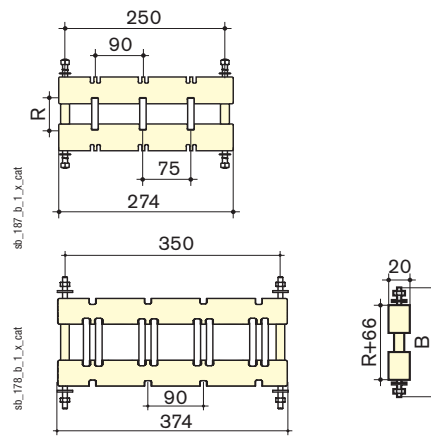
2 bars of 5 mm or 1 bar of 10 mm



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.

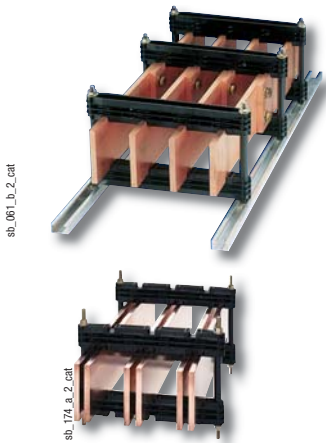
1 or 2 bars of 10 mm



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.

➔ References



Supports without nuts and bolts ⁽¹⁾

No. of poles	Isolation voltage (VAC)	Number of bars max x bar thickness (mm)	R bar height (mm)	B (mm)	Pack qty	Type	Reference
3	1000	2 x 5 / 1 x 10	75	250	1	1	5024 6300
4	1000	2 x 5	60	250	1	1	5024 6500
4	1000	1 x 10	65	250	1	1	5024 6500
3	800	1 x 10	65	250	1	1	5024 6400
3	800	2 x 10	90	250	1	1	5024 6400 ⁽²⁾
4	800	2 x 10	65	250	1	1	5024 6700
4	1000	2 x 10 / 2 x 10	90	350	1	2	5024 6600
4	1000	1 x 6.35	65	253	1	3	5024 1500
4	1000	1 x 10	65	253	1	3	5024 2500
4	1000	1 x 6.35	60	253	1	3	5024 4500

(1) Content: one support per reference.

(2) For interconnection details: please consult us.

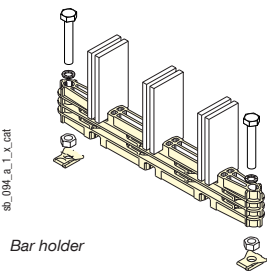
Accessories

R bar height (mm) ⁽¹⁾	Pack qty	Mounting accessories ⁽²⁾	Pack qty	Insulating spacers
25 / 25.4	1	5020 2025	50	5020 4025
30	1	5020 2030	50	5020 4030
32	1	5020 2032	50	5020 4032
38.1	1	5020 2038	50	5020 4038
40	1	5020 2040	50	5020 4040
50 / 50.8	1	5020 2050	50	5020 4050
60	1	5020 2060	50	5020 4060
53 / 63.5	1	5020 2063	50	5020 4063
70	1	5020 2070	50	5020 4070
76.2	1	5020 2076	50	5020 4076
80	1	5020 2080	50	5020 4080
100 / 101.6	1	5020 2100	50	5020 4100
120	1	5020 2120	50	5020 4120
125	1	5020 2125	50	5020 4125
127	1	5020 2127	50	5020 4127
152.4	1	5020 2152	50	5020 4152
160	1	5020 2160	50	5020 4160
200	1	5020 2200	50	5020 4200

(1) Other dimensions: please consult us.

(2) Mounting accessories: 2 M8 threaded studs + 2 black insulating spacers + 4 nuts + mounting instructions.

➔ Accessories



Bar holder

Diamond nuts ⁽¹⁾

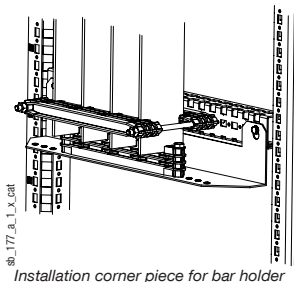
H x W (mm)	Insert M	Pack qty	Reference
34 x 20	M8	100	5000 0038

(1) Required when mounting on C profile rail.

Bar holder ⁽¹⁾

No. of poles	Number of bars max x bar thickness (mm)	Pack qty	Reference
3	2 x 5 / 1 x 10	1	5024 9031
4	2 x 5 / 1 x 10	1	5024 9041
3	1 x 10 / 2 x 10	1	5024 9034
4	1 x 10 / 2 x 10	1	5024 9044

(1) Bar holder: 1 support + 2 M8 screws + 2 nuts.



Installation corner piece for bar holder

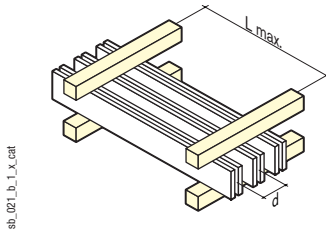


Edgewise mounting busbar supports
Current rating from 630 to 7000 A

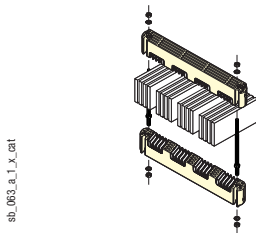
SB C 20

Multipolar busbar supports with fixed interphase

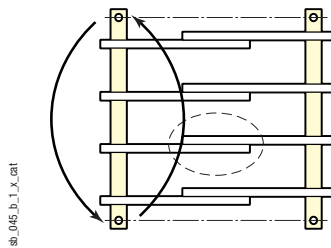
➔ **Characteristics**



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.

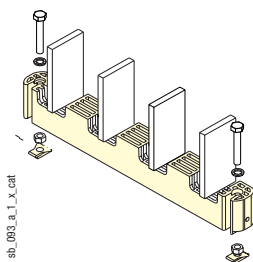


Mounting of one to four bars per pole



Bars joined by reversing a support

➔ **Accessories**



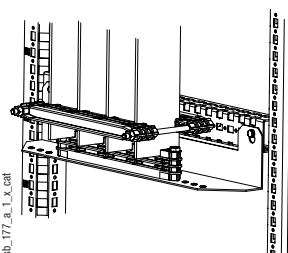
Bar holder

Characteristics of 3 and 4 poles with 10 mm bars

peak lcc rms lcc	Max. L (distance between centres of supports in mm) for								d (mm)
	63 kA 30 kA	84 kA 40 kA	110 kA 50 kA	143 kA 65 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	700	525	450	400	350	275	90
50 x 10 x 2	1000	850	625	475	400	350	300	250	90
60 x 10 x 1	1000	1000	750	575	500	450	375	300	90
60 x 10 x 2	1000	925	700	525	450	400	350	275	90
70 x 10 x 1	1000	1000	775	600	525	450	375	325	90
70 x 10 x 2	1000	950	700	550	475	400	350	275	90
80 x 10 x 1	1000	1000	875	675	575	525	425	350	90
80 x 10 x 2	1000	1000	800	600	525	475	400	325	90
100 x 10 x 1	1000	1000	975	750	650	575	475	400	90
100 x 10 x 2	1000	1000	875	675	575	525	425	350	90
125 x 10 x 1	1000	1000	1000	850	725	650	550	450	90
125 x 10 x 2	1000	1000	950	725	625	550	475	400	90
160 x 10 x 1	1000	1000	1000	950	825	725	625	500	90
160 x 10 x 2	1000	1000	975	750	650	575	475	400	90
200 x 10 x 1	1000	1000	1000	1000	900	800	675	525	90
200 x 10 x 2	1000	1000	900	675	600	525	450	375	90

Characteristics of 3 and 4 poles with 5 mm bars

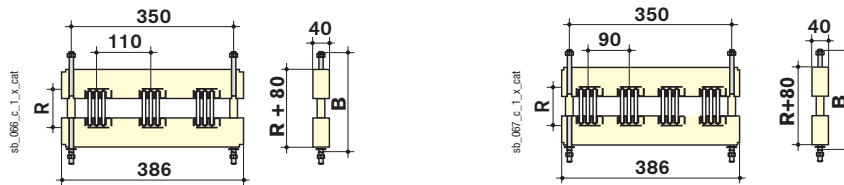
peak lcc rms lcc	Max. L (distance between centres of supports in mm) for								d (mm)
	63 kA 30 kA	84 kA 40 kA	110 kA 50 kA	143 kA 65 kA	165 kA 75 kA	187 kA 85 kA	220 kA 100 kA	264 kA 120 kA	
Bar x no.									
50 x 5 x 1	625	475	350	275	225	200	175	150	90
50 x 5 x 2	525	400	300	225	200	175	155	130	90
50 x 5 x 3	600	450	350	250	225	200	175	145	90
50 x 5 x 4	675	525	375	300	250	225	175	160	90
60 x 5 x 1	675	525	400	300	250	225	200	165	90
60 x 5 x 2	600	450	350	250	225	200	175	145	90
60 x 5 x 3	675	525	375	300	250	225	175	165	90
60 x 5 x 4	750	575	425	325	275	250	200	175	90
63 x 5 x 1	700	550	400	300	250	225	200	170	90
63 x 5 x 2	625	475	350	275	225	200	175	150	90
63 x 5 x 3	700	525	400	300	250	225	200	170	90
63 x 5 x 4	775	600	425	325	275	250	200	175	90
80 x 5 x 1	800	625	450	350	300	250	225	175	90
80 x 5 x 2	725	550	425	325	275	250	200	175	90
80 x 5 x 3	800	625	450	350	300	275	225	175	90
80 x 5 x 4	875	675	500	375	325	300	250	200	90
100 x 5 x 1	900	700	525	400	350	300	250	200	90
100 x 5 x 2	850	650	475	375	325	275	225	200	90
100 x 5 x 3	925	700	525	400	350	300	250	200	90
100 x 5 x 4	975	750	550	425	375	325	275	225	90
125 x 5 x 1	1000	800	600	450	400	350	300	250	90
125 x 5 x 2	975	750	550	425	375	325	275	225	90
125 x 5 x 3	1000	800	600	450	400	350	300	250	90
125 x 5 x 4	1000	825	600	450	400	350	300	250	90



Installation corner piece for bar holder

➔ SB C 20 - Dimensions

- Fixed interphase:
 • 3 poles: 110 mm
 • 4 poles: 90 mm



➔ References



Supports without nuts and bolts ⁽¹⁾

No. of poles	Isolation voltage (VAC)	Number of bars (mm)	R bar height (mm)	B (mm)	Pack qty	Reference
3	1000	1 ... 4	5	110	1	5024 8300
4	1000	1 ... 4	5	90	1	5024 8400
3	1000	1 ... 2	10	110	1	5024 7300
4	1000	1 ... 2	10	90	1	5024 7400

⁽¹⁾ Content: two supports per reference complete with inserts.

Accessories

R bar height (mm) ⁽¹⁾	Pack qty	Mounting accessories ⁽²⁾	Pack qty	Insulating spacers
25 / 25.4	1	5020 2025	50	5020 4025
30	1	5020 2030	50	5020 4030
32	1	5020 2032	50	5020 4032
38.1	1	5020 2038	50	5020 4038
40	1	5020 2040	50	5020 4040
50 / 50.8	1	5020 2050	50	5020 4050
60	1	5020 2060	50	5020 4060
53 / 63.5	1	5020 2063	50	5020 4063
70	1	5020 2070	50	5020 4070
76.2	1	5020 2076	50	5020 4076
80	1	5020 2080	50	5020 4080
100 / 101.6	1	5020 2100	50	5020 4100
120	1	5020 2120	50	5020 4120
125	1	5020 2125	50	5020 4125
127	1	5020 2127		
152.4	1	5020 2152	50	5020 4152
160	1	5020 2160	50	5020 4160
200	1	5020 2200	50	5020 4200

⁽¹⁾ Other dimensions: please consult us.

⁽²⁾ Mounting accessories: 2 M8 threaded studs + 2 black insulating spacers + 4 nuts + mounting instructions.

Diamond nuts ⁽¹⁾

H x W (mm)	Insert M	Pack qty	Reference
34 x 20	M8	100	5000 0038

⁽¹⁾ Required when mounting on C profile rail.

No. of poles	Number of bars max x bar thickness (mm)	Pack qty	Reference
3	2 x 5 / 1 x 10	1	5024 9031
4	2 x 5 / 1 x 10	1	5024 9041
3	1 x 10 / 2 x 10	1	5024 9034
4	1 x 10 / 2 x 10	1	5024 9044

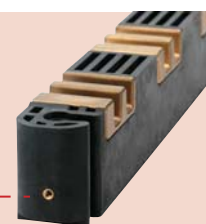
⁽¹⁾ Bar holder: 1 support + 2 M8 screws + 2 nuts.



➔ 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.



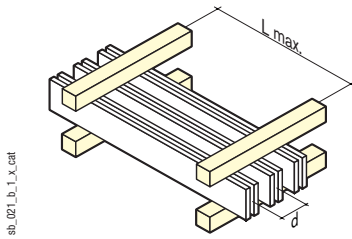


Edgewise mounting busbar supports
Current rating from 630 to 7000 A

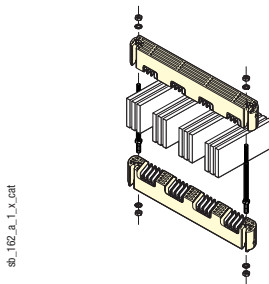
SB C 30

Multipolar busbar supports with fixed interphase

Characteristics



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.

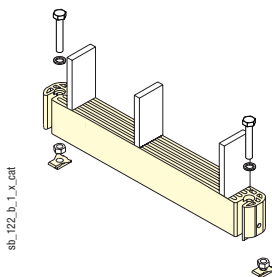


Mounting of one to three bars per pole

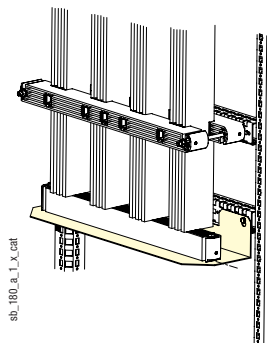
Characteristics of 3 and 4 poles with 10 mm bars

peak lcc rms lcc	Max. L (distance between centres of supports in mm) for								d (mm)
	63 kA 30 kA	84 kA 40 kA	110 kA 50 kA	143 kA 65 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	825	625	550	475	400	350	130
50 x 10 x 2	1000	900	675	525	450	400	325	275	130
50 x 10 x 3	725	550	400	300	275	225	200	175	130
60 x 10 x 1	1000	1000	900	700	600	525	450	375	130
60 x 10 x 2	1000	1000	750	575	500	425	375	300	130
60 x 10 x 3	825	625	450	350	300	275	225	175	130
70 x 10 x 1	1000	1000	925	700	600	550	450	375	130
70 x 10 x 2	1000	1000	775	575	500	450	375	300	130
70 x 10 x 3	850	650	475	375	325	275	225	200	130
80 x 10 x 1	1000	1000	1000	800	675	600	500	425	130
80 x 10 x 2	1000	1000	850	650	575	500	425	350	130
80 x 10 x 3	1000	750	575	425	375	325	275	225	130
100 x 10 x 1	1000	1000	1000	875	750	675	575	475	130
100 x 10 x 2	1000	1000	950	725	625	550	475	400	130
100 x 10 x 3	1000	900	650	500	425	375	325	275	130
125 x 10 x 1	1000	1000	1000	975	850	750	625	525	130
125 x 10 x 2	1000	1000	1000	800	675	600	500	425	130
125 x 10 x 3	1000	1000	775	600	525	450	375	325	130
160 x 10 x 1	1000	1000	1000	1000	925	825	700	575	130
160 x 10 x 2	1000	1000	1000	800	700	625	525	425	130
160 x 10 x 3	1000	1000	950	725	625	550	475	375	130
200 x 10 x 1	1000	1000	1000	1000	1000	900	750	625	130
200 x 10 x 2	1000	1000	950	725	625	550	475	400	130
200 x 10 x 3	1000	1000	750	575	500	425	375	300	130

Accessories



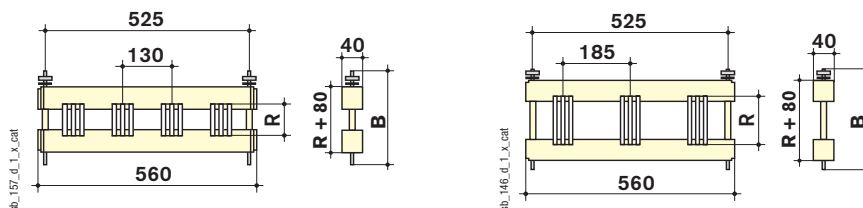
Bar holder



Installation corner piece for bar holder

SB C 30 - Dimensions

- Fixed interphase:
- 3 poles: 185 mm
 - 4 poles: 130 mm



References

Supports without nuts and bolts⁽¹⁾

No. of poles	Insulation voltage (VAC)	No. of bars	Bars thickness (mm)	Interphase (mm)	Pack qty	Reference
3 P	1000	1 ... 3	10	185	1	5024 5300
4 P	1000	1 ... 3	10	130	1	5024 5500

(1) Content: 2 supports per reference complete with inserts.

Accessories

R bar height (mm) ⁽¹⁾	Pack qty	Mounting accessories ⁽²⁾	Pack qty	Insulating spacers
25 / 25.4	1	5020 2025	50	5020 4025
30	1	5020 2030	50	5020 4030
32	1	5020 2032	50	5020 4032
38.1	1	5020 2038	50	5020 4038
40	1	5020 2040	50	5020 4040
50 / 50.8	1	5020 2050	50	5020 4050
60	1	5020 2060	50	5020 4060
63 / 63.5	1	5020 2063	50	5020 4063
70	1	5020 2070	50	5020 4070
76.2	1	5020 2076	50	5020 4076
80	1	5020 2080	50	5020 4080
100 / 101.6	1	5020 2100	50	5020 4100
120	1	5020 2120	50	5020 4120
125	1	5020 2125	50	5020 4125
127	1	5020 2127		
152.4	1	5020 2152	50	5020 4152
160	1	5020 2160	50	5020 4160
200	1	5020 2200	50	5020 4200

(1) Other dimensions: please consult us.

(2) Mounting accessories: 2 M8 threaded studs + 2 back insulating spacers + 4 nuts + mounting instructions.

Diamond nuts⁽¹⁾

H x W (mm)	Insert M	Pack qty	Insulating spacers
34 x 20	M8	100	5000 0038

(1) Required when mounting on C profile rail.

Bar holder⁽¹⁾

No. of poles	Pack qty	Insulating spacers
3 / 4 P	1	5024 9033

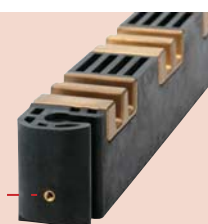
(1) Bar holder: one support + 2 M8 screws + 2 nuts.



Our advantages

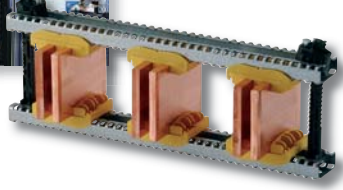
The details which make a difference

SB C 30 busbar supports have threaded holes which allow a protective screen to be attached.





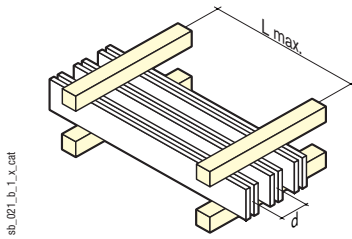
Edgewise mounting busbar supports
Current rating from 630 to 7000 A



SBC ER

Multipolar edgewise mounting busbar supports with adjustable interphase

➔ **Characteristics**



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.

peak lsc	Max. L (distance between centers of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
	24 kA	48 kA	63 kA	82 kA	114 kA		
rms lsc	12 kA	23 kA	30 kA	39 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	175	75	1 050
50 x 5 x 3	1000	525	400	300	200	75	1 450
63 x 5 x 1	1000	550	425	325	200	75	700
63 x 5 x 2	1000	525	400	300	200	75	1 250
63 x 5 x 3	1000	625	475	350	200	75	1 800
80 x 5 x 1	1000	625	475	375	225	75	900
80 x 5 x 2	1000	625	475	375	225	75	1250
80 x 5 x 3	1000	725	550	425	225	75	2 200
100 x 5 x 1	1000	725	550	425	225	75	1 100
100 x 5 x 2	1000	750	575	425	225	75	1 900
100 x 5 x 3	1000	875	650	450	225	75	2 650
125 x 5 x 1	1000	850	650	500	250	75	1300
125 x 5 x 2	1000	900	675	500	250	75	2350
125 x 5 x 3	1000	1000	800	500	250	75	3250
50 x 10 x 1	1000	975	700	400	200	75	850
50 x 10 x 2	1000	950	675	400	200	75	1550
63 x 10 x 1	1000	1000	725	425	200	75	1050
63 x 10 x 2	1000	1000	700	400	200	75	1850
80 x 10 x 1	1000	1000	750	450	225	75	1300
80 x 10 x 2	1000	1000	750	425	225	75	2300
100 x 10 x 1	1000	1000	800	475	225	75	1550
100 x 10 x 2	1000	1000	800	450	225	75	2750
125 x 10 x 1	1000	1000	850	500	250	75	1900
125 x 10 x 2	1000	1000	850	500	250	75	3350

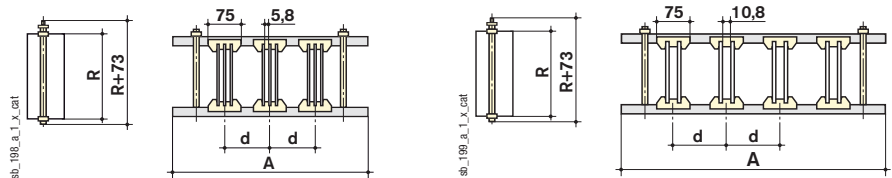
(1) Admissible nominal current for a temperature in the enclosure of 45°C and 80°C for the bars. Other assembly configurations: consult us.

➔ **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



➔ **References**

Order guide

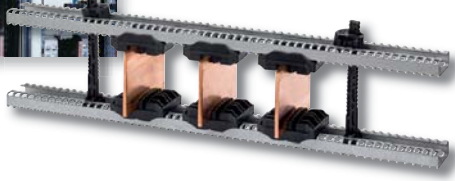
- With three poles, order: 6 x studs, 2 x rods, 2 x profiles.
- With four poles, order: 8 x studs, 2 x rods, 2 x profiles.

Description of accessories	Thickness of the bar (mm)	No. of poles	Length	Quantity	To be ordered by multiple	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⁾	8	5025 5110
Slot for 10 mm bars	10	4		8 ⁽¹⁾	8	5025 2110
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

(1) Quantity necessary to make 1 busbar support
(2) Kit of 2 profiles and 4 square fixings.



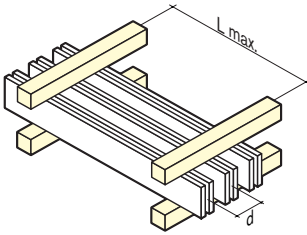
Edgewise mounting busbar supports
Current rating from 630 to 7000 A



SB C ER Power

Multipolar edgewise mounting busbar supports with adjustable interphase for high output

➤ **Characteristics**



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.

peak Isc	Max. L (distance between centers of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
	82 kA	114 kA	152 kA	165 kA	187 kA		
rms Isc	39 kA	52 kA	69 kA	75 kA	85 kA		
Bar x no.						d min. (mm)	Iz (A) ⁽¹⁾
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

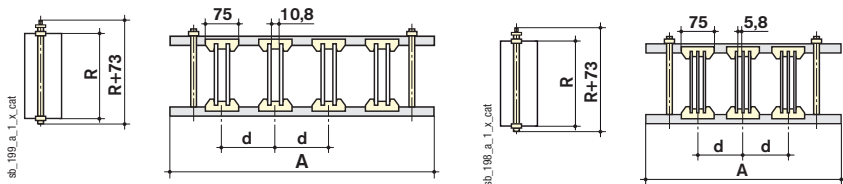
(1) Admissible nominal current for a temperature in the enclosure of 45°C and 80°C for the bars. Other assembly configurations: consult us.

➤ **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



➤ **References**

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.

Description of accessories	Thickness of the bar (mm)	No. of poles	Length	Quantity	To be ordered by multiple	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⁾	8	5025 5210
Slot for 10 mm bars	10	4		8 ⁽¹⁾	8	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	4	5025 5120
Profile for Prisma cabinet ⁽²⁾			525	1 ⁽¹⁾	1	5025 5130

(1) Quantity necessary to make 1 busbar support
(2) Kit of 2 profiles and 4 square fixings.

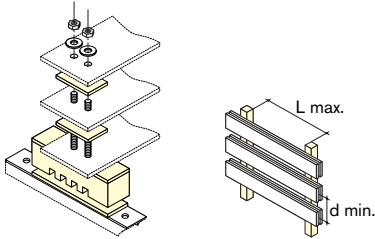


Flat mounting busbar supports
Current rating from 630 to 5800 A

SB 205 - SB 306

Unipolar flat mounting busbar support

Characteristics



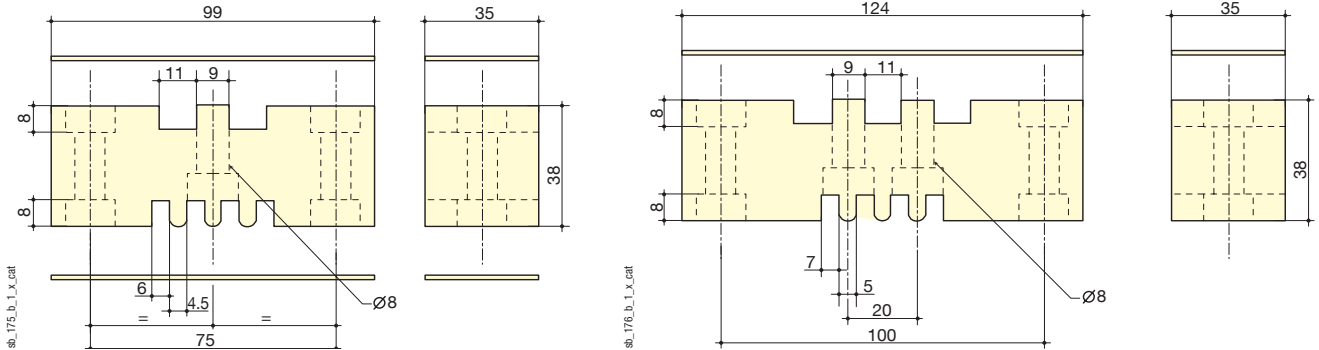
		Max. L (distance between centers of supports in mm) for						d min. (mm)	Iz (A) ⁽¹⁾
		peak Isc	48 kA	63 kA	82 kA	114 kA	152 kA		
	rms Isc	23 kA	30 kA	39 kA	52 kA	69 kA	75 kA		
Support	Bar x no.								
SB 205	100 x 10 x 1	1000	1000	1000	1000	1000	1000	125	1550
SB 205	100 x 10 x 2	1000	1000	1000	1000	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 enclosure of 45°C and 80°C for the bars.
 Other assembly configurations: 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



References

Support	Isolation voltage (VAC)	No. of bars	Bar width (mm)	Pack qty	Reference
SB 205	1 000	1 ... 3	100	6	5022 5110
SB 306	1 000	1 ... 3	160	6	5023 6110



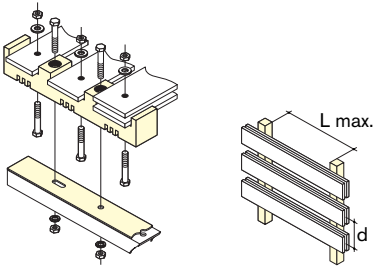
Flat mounting busbar supports
Current rating from 630 to 5800 A



SB 7500

Multipolar flat mounting busbar supports with fixed interphase

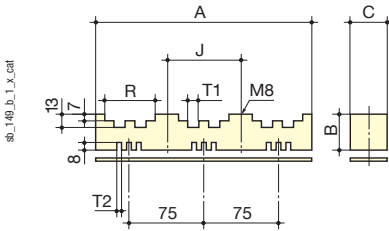
↪ **Characteristics**



Mounting
SB 7500: 1 to 2 bars of max. width
50 mm per pole. Fixed interphase of 75 mm.

peak Isc	Max. L (distance between centers of supports in mm) for							
	24 kA	48 kA	63 kA	82 kA	114 kA	152 kA		
rms Isc	12 kA	23 kA	30 kA	39 kA	52 kA	69 kA		
Bar x no.							d (mm)	Iz (A)
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	1 050

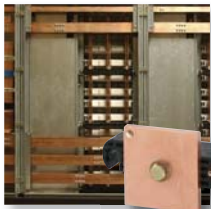
↪ **Dimensions**



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

↪ **References**

No. of poles	Isolation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3	1 000	40-50	1	5027 5310
4	1 000	40-50	1	5027 5410



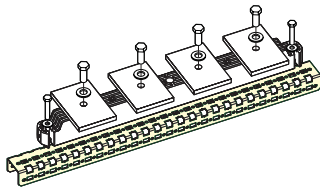
Flat mounting busbar supports
Current rating from 630 to 5800 A

SB P 30

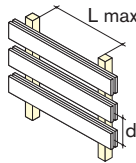
Multipolar flat mounting busbar supports with fixed interphase

➤ **Characteristics**

sb_180_a_1_x_cat



sb_200_a_1_esp_cat



d = 123 mm

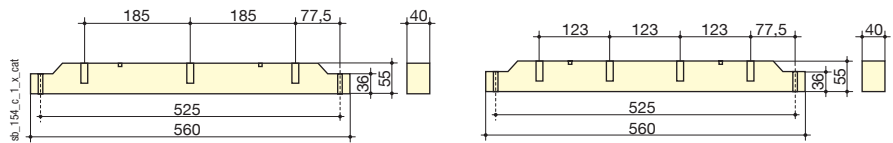
peak lsc	Max. L (distance between centers of supports in mm) for								d (mm)	lz (A)
	63 kA	84 kA	110 kA	143 kA	165 kA	176 kA	187 kA	220 kA		
rms lsc	30 kA	40 kA	50 kA	65 kA	75 kA	80 kA	85 kA	100 kA		
Bar x no.									d (mm)	lz (A)
50 x 5 x 1	1000	950	525	300	225	200	175	130	123	600
63 x 5 x 1	1000	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	1 550
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	1 550
63 x 10 x 1	1000	925	525	300	225	200	175	130	123	1 050
63 x 10 x 2	1000	950	525	300	225	200	175	130	123	1 850
80 x 10 x 1	1000	900	500	300	225	175	175	125	123	1 300
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

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.

peak lsc	Max. L (distance between centers of supports in mm) for								d (mm)	lz (A)
	63 kA	84 kA	110 kA	143 kA	165 kA	176 kA	187 kA	220 kA		
rms lsc	30 kA	40 kA	50 kA	65 kA	75 kA	80 kA	85 kA	100 kA		
Bar x no.									d (mm)	lz (A)
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

➤ **Dimensions**



➤ **References**

No. of poles	Isolation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3	1000	50-100	1	5023 0310
4	1000	50-80	1	5023 0410

sb_211_a_1_cat



sb_210_a_1_cat



Mounting brackets

Description of accessories	To be ordered by multiple	Reference
2 mounting brackets for SB P 30	1	5024 9002

Bar fixing screws

Description of accessories	To be ordered by multiple	Reference
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



Other supports
Current rating up to 630 A

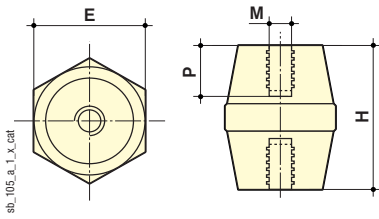


Hexagonal insulators

Unipolar flat mounting busbar support

Characteristics

Female to female hexagonal insulator



Height H (mm)	Insert M	Nominal voltage (V) AC/DC	Isolation voltage (VAC)		Mechanical characteristics (daN)		Tightening torque max (Nm)
			50 Hz 1 min	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 enclosure of 45°C and 80°C for the bars.
Other assembly configurations: consult us.

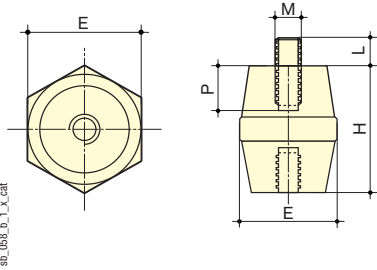
sb_104_a_2_cst



Height H (mm)	Insert M	Depth P (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

↳ Busbar supports- References

Hexagonal insulator male to female and male to male



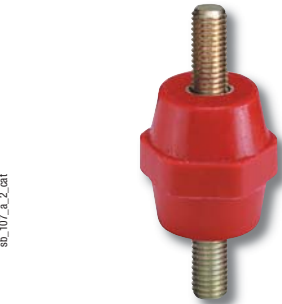
Height H (mm)	Insert M	Nominal voltage (V) AC/DC	Insulation voltage (VAC)		Mechanical characteristics (daN)		Tightening torque max (Nm)
			50 Hz 1 min	Peak	Flexion	Tention	
16	M4	500	3000	5500	100	150	3
16	M5	500	3000	5500	100	150	6
25	M5	500	3000	11000	180	400	6
25	M6	500	3000	11000	180	400	12
35	M8	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

Male to female high withstand insulator



Height H (mm)	Insert M	Depth P (mm)	Diameter E (mm)	Length L (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	10	30	15	1	5036 3508
35	M10	8	32	30	1	5038 3510
50	M8	14	46	25	1	5038 5008
50	M10	14	46	30	1	5038 6010

Male to male high withstand insulator



Height H (mm)	Insert M	Diameter E (mm)	Length L (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	16	10	1	5039 2506
35	M8	30	15	1	5037 3508
35	M10	26	30	1	5039 3510
50	M8	37	25	1	5039 5008
50	M10	37	30	1	5039 6010

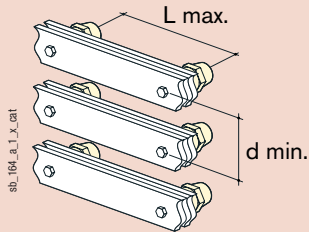
Headless screw



Length (mm)	Thread	Pack qty	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



➔ Ensure the busbar is defined



So that your busbar equipped with hexagonal insulators can mechanically withstand the short circuit, it must correspond to the table below. Values according to IEC 60439-1.

General characteristics

Height H (mm)	Insert M	Bar x no.	Max. L (distance between centers of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾	
			peak Isc	24 kA	48 kA	63 kA	82 kA			114 kA
			rms Isc	12 kA	23 kA	30 kA	39 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	175	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 enclosure of 45°C and 80°C for the bars.
Other assembly configurations: consult us.



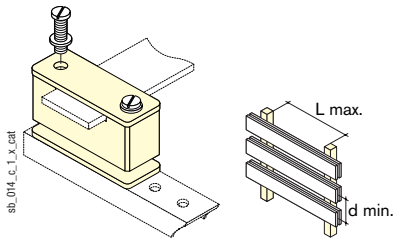
Other supports
Current rating up to 630 A



SB 1 - SB 2

Multipolar flat mounting busbar support

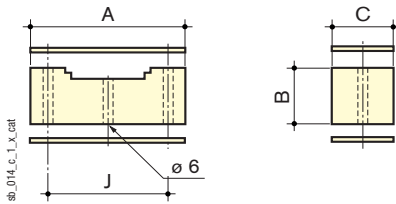
Characteristics



		Max. L (distance between centers of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
		peak lsc	48 kA	63 kA	82 kA	114 kA		
	rms lsc	12 kA	23 kA	30 kA	39 kA	52 kA		
Support	Bar x no.							
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 enclosure of 45°C and 80°C for the bars.
Other assembly configurations: consult us.

Dimensions (mm)



Support	A	B	C	J
SB 1	50	23	20	34
SB 2	68	23	23.5	50

References

Mounting

SB 1: 1 bar of max. width 25 mm

SB 2: 1 bar of max. width 40 mm

Support	Isolation voltage (VAC)	No. of bars	Bar width (mm)	Pack qty	Reference
SB 1	690	1	20-25	6	5021 0110
SB 2	690	1	32-40	6	5022 0110

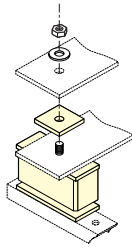


Other supports
Current rating up to 630 A

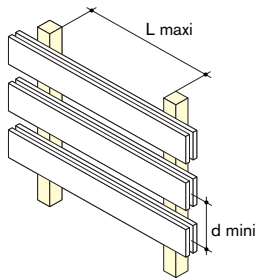
SB 3

Multipolar flat mounting busbar support

Characteristics



sb_089_b_1_x_cat

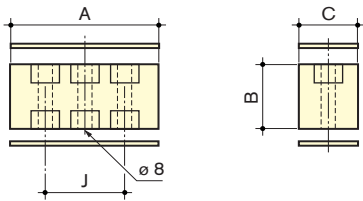


sb_089_b_1_x_cat

peak Isc	Max. L (distance between centers of supports in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
	24 kA	48 kA	63 kA	82 kA	114 kA		
rms Isc	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 enclosure of 45°C and 80°C for the bars.
Other assembly configurations: consult us.

Dimensions



sb_089_b_1_x_cat

Support	A	B	C	J
SB 3 bare	65	32	28	36
SB 3 pre-equipped	65	32	28	36

References

Mounting

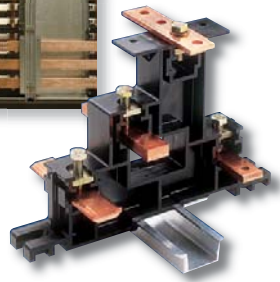
SB 3: 1 to 2 bars of max. width 63 mm.

Support	Isolation voltage (VAC)	No. of bars	Bar width (mm)	Pack qty	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.



Other supports
Current rating up to 630 A



SBE 44

4 pole stair type supports

Characteristics

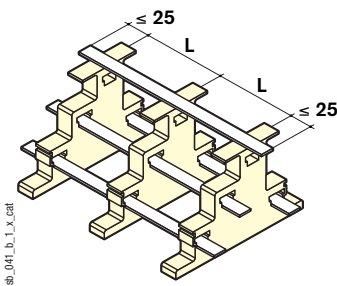
		Max. L (distance between centers of supports in mm) for						Iz (A) ⁽¹⁾
		10 kA	15 kA	24 kA	38 kA	48 kA	63 kA	
peak Isc		10 kA	15 kA	24 kA	38 kA	48 kA	63 kA	
rms Isc		6 kA	9 kA	12 kA	19 kA	23 kA	30 kA	
Support	Bar x no.							
Type 1	15 x 3 x 1	950	625	400	250	175		160
Type 1	15 x 5 x 1	1000	825	500	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 enclosure of 45°C and 80°C for the bars.

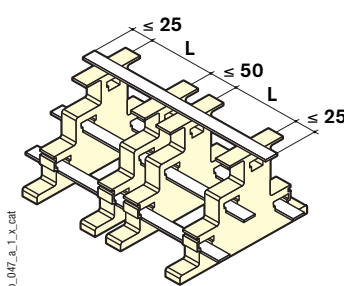
Other assembly configurations: consult us.

Note: Iz is given for solid bars only.

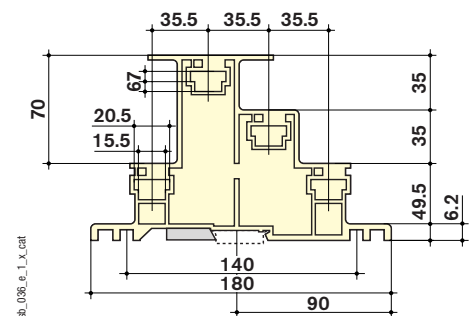
Dimensions



Type 1: set of busbars including 2 (or more) equally spaced SB E 44 supports.



Type 2: set of busbars including 3 (or more) SB E 44 supports with doubled intermediary supports.



Fixation by oblong holes: distance between two holes 150 to 170 mm.

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
Lot of 20 adaption protection cover spacers	1	5028 0415

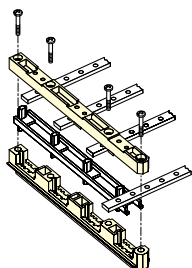
Other supports
Current rating up to 630 A



SB P 10

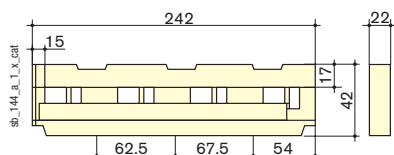
Multipolar flat mounting busbar supports with fixed interphase

Characteristics



peak Isc	Max. L (distance between centers of supports in mm) for					d min. (mm)	Iz (A)
	10 kA	15 kA	24 kA	48 kA	63 kA		
rms Isc	6 kA	9 kA	12 kA	23 kA	30 kA		
Bar x no.						d min. (mm)	Iz (A)
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

Dimensions



SB P 10: 1 bar with a thickness of 5 or 10 mm, width 12, 20, 25 or 30 mm.

Reference

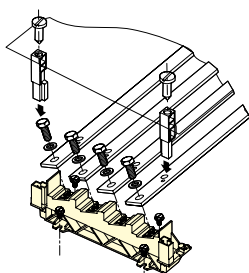
No. of poles	Isolation voltage (VAC)	Bar width (mm)	Pack qty	Reference
4	690	12-30	1	5026 0460



SB P 44

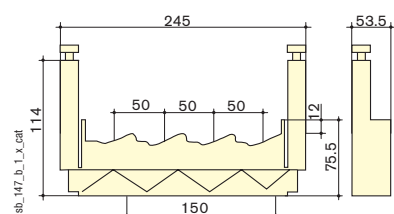
4-pole flat mounting busbar support with fixed interphase, for mounting tilted bars

Characteristics



peak Isc	Max. L (distance between centers of supports in mm) for						d min. (mm)	Iz (A)
	10 kA	15 kA	24 kA	48 kA	63 kA	82 kA		
rms Isc	6 kA	9 kA	12 kA	23 kA	30 kA	39 kA		
Bar x no.							d min. (mm)	Iz (A)
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

Dimensions

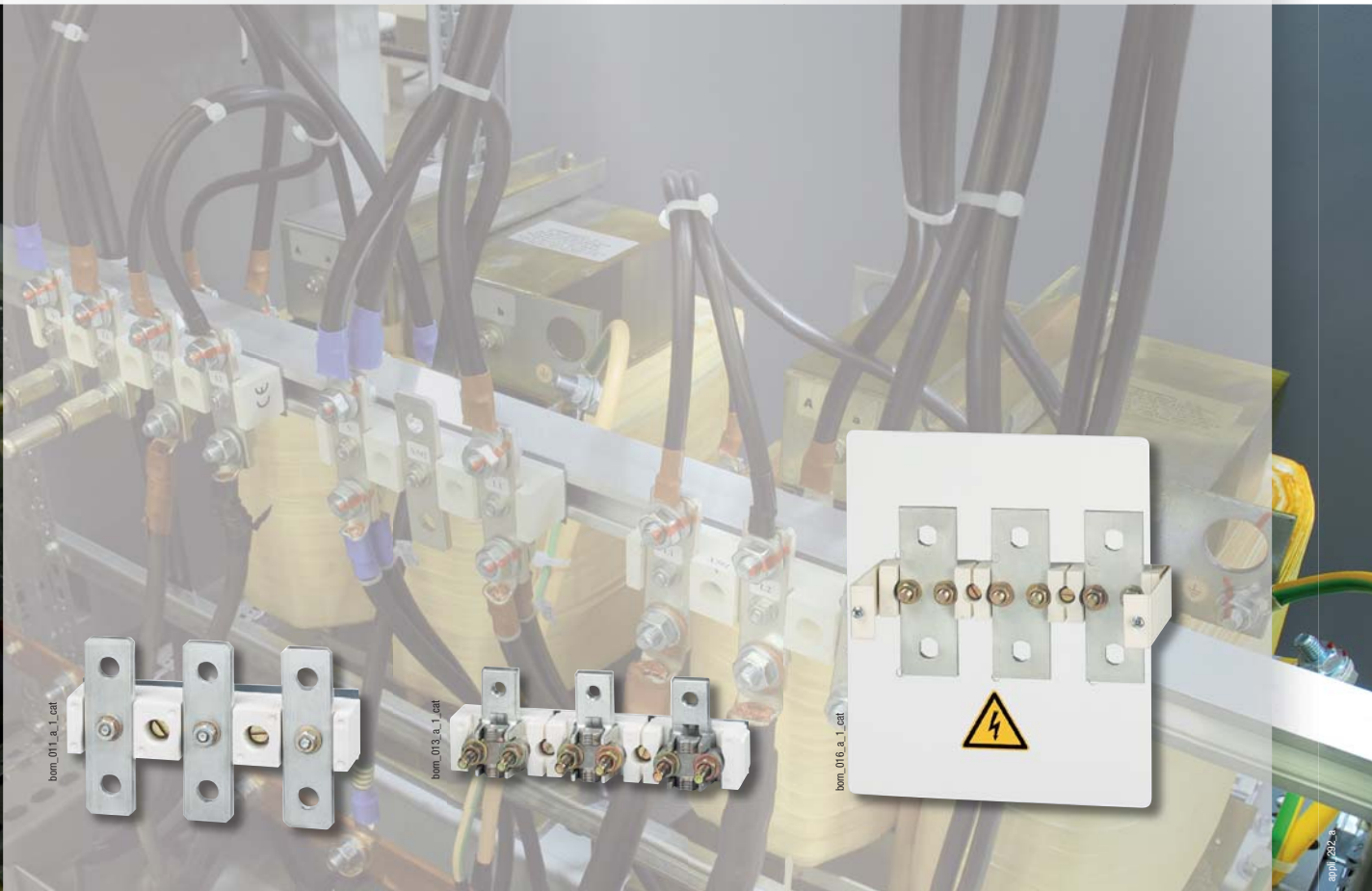


SB P 44: 1 bar with a thickness of 5 or 10 mm, width 20, 25, 30 or 32 mm.

Note: protection cover not supplied.

Reference

No. of poles	Isolation voltage (VAC)	Bar width (mm)	Pack qty	Reference
4	1 000	20-32	1	5026 0450



Function

SOCOMEK **power terminals** provide connections for power circuits. They consist of connection plates fixed onto insulating brackets.

General characteristics

- Tin-plated aluminium plates
- High dielectric strength.
- High mechanical resistance
- High resistance to humidity (supplied "tropicalised").

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: interphase screen, front cover to protect against unintentional contact.

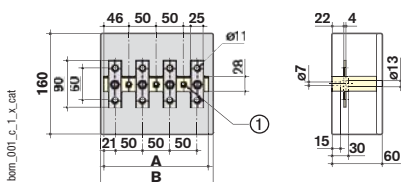
Conformity to standards

- IEC 60439-1
- DIN 46206



Type 1

Dimensions



1. M6 screws mounting.

References

I_{max} (A)	Top connection by	Bottom connection 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

Type	Reference
Protective cover for 3 pole terminals	4501 1003
Protective cover for 4 pole terminals	4501 1004



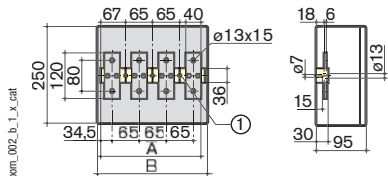
Type 2

References

I_{max} (A)	Top connection by	Bottom connection 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.

Dimensions



1. M6 screws mounting.

Accessories

Type	Reference
Protective cover for 3 pole terminals	4502 1003
Protective cover for 4 pole terminals	4502 1004
Interphase screen	4500 0107



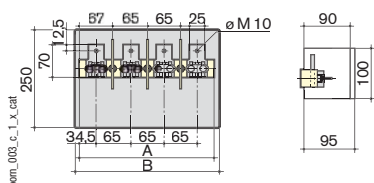
Type 3

References

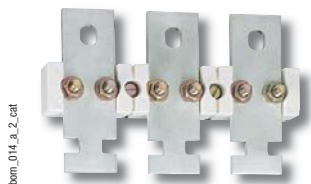
I_{max} (A)	Top connection by	Bottom connection by	No. of poles	A (mm)	B (mm)	Reference
400	lugs	cable clamps ⁽¹⁾	3 P	197	206	4503 0003 ⁽²⁾
400	lugs	cable clamps ⁽¹⁾	4 P	262	271	4503 0004 ⁽²⁾

(1) 185 mm² cable clamps included.
(2) Terminals supplied without terminal shroud.

Dimensions



Type	Reference
Protective cover for 3 pole terminals	4502 1003
Protective cover for 4 pole terminals	4502 1004
Interphase screen	4500 0106



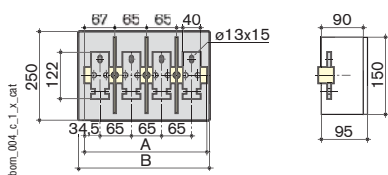
Type 4

References

I_{max} (A)	Top connection by	Bottom connection 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.

Dimensions



Accessories

Type	Reference
Protective cover for 3 pole terminals	4502 1003
Protective cover for 4 pole terminals	4502 1004
Interphase screen	4500 0107



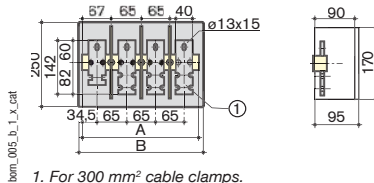
Type 5

References

I_{max} (A)	Top connection by	Bottom connection 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.

Dimensions



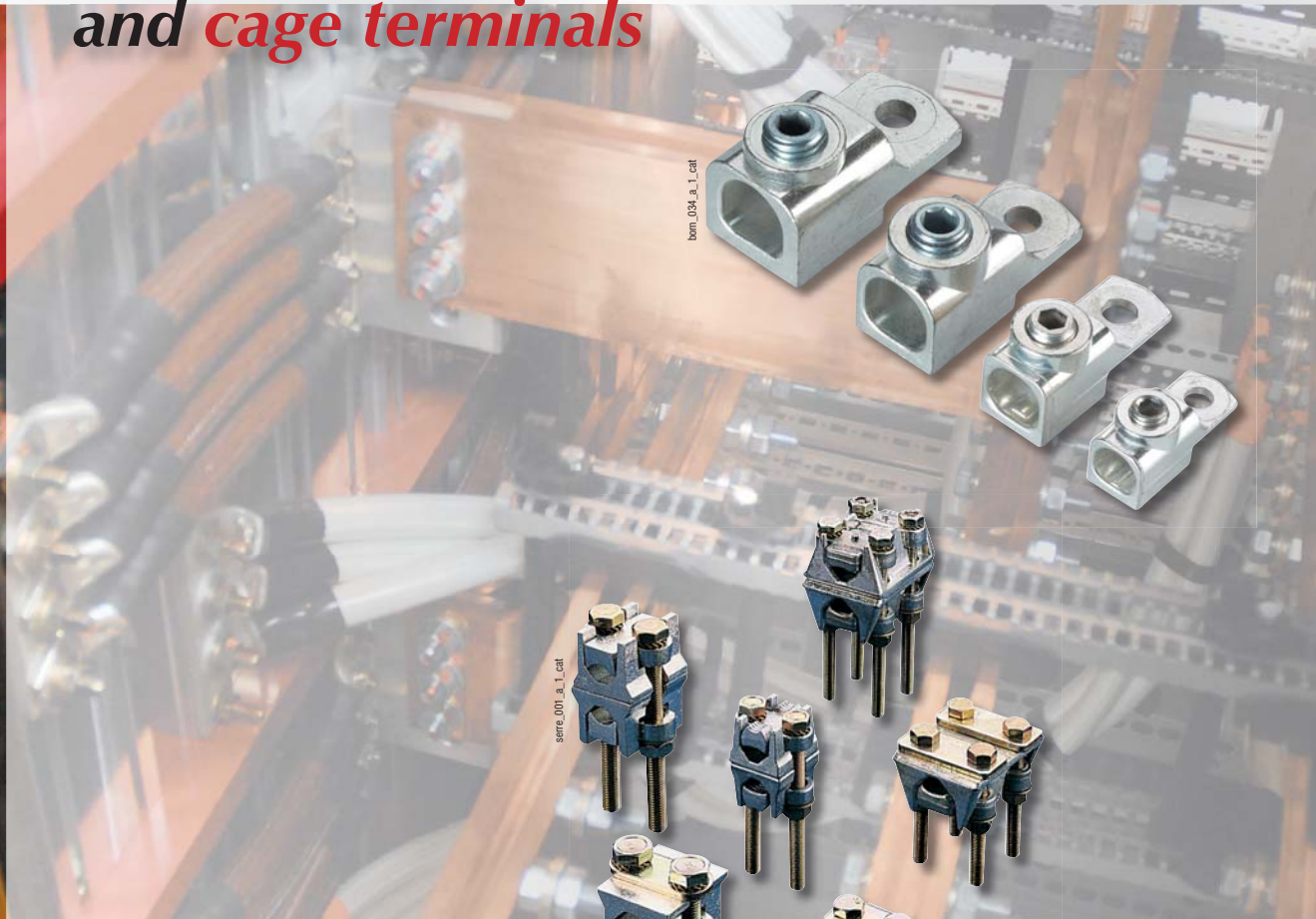
1. For 300 mm² cable clamps.

Accessories

Type	Reference
Protective cover for 3 pole terminals	4502 1003
Protective cover for 4 pole terminals	4502 1004
Interphase screen	4500 0108

Cable clamps and cage terminals

Distribution



⇒ Function

SOCOME 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").

SOCOME **cage terminals** are connection devices fixed onto the connection plates of SOCOME 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.

⇒ Composition of the range

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.

⇒ Conformity to standards

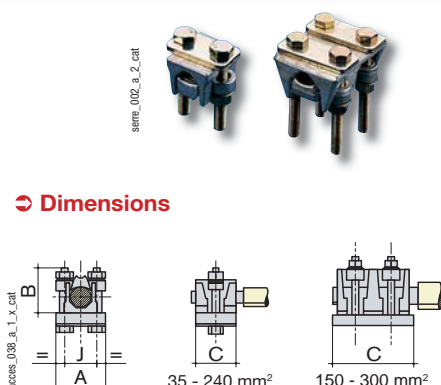
Cable clamps

- IEC 60439-1
- DIN 46206

Cage terminals

- IEC 60947-1 (if mounted to SOCOME devices)
- NF C 63-060
- NF C 63-062

⇒ Dimensions

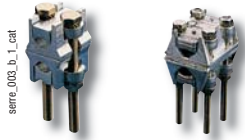


Single cable clamps

⇒ 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

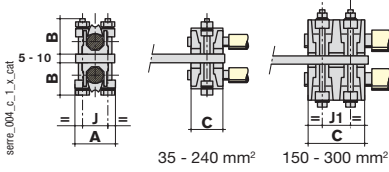


Double cable clamps

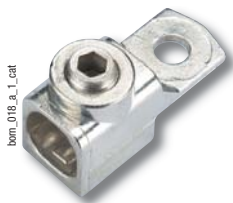
References

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

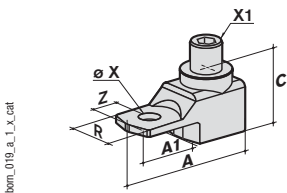


Single cage terminals

References

Tightening capacity (mm ²)	Rating of switch (A)	No. of poles	Tightening torque (Nm)	Width flexible bar (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

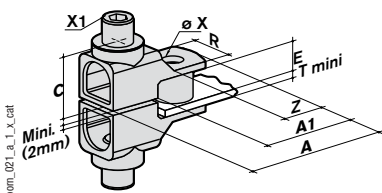


Double cage terminals

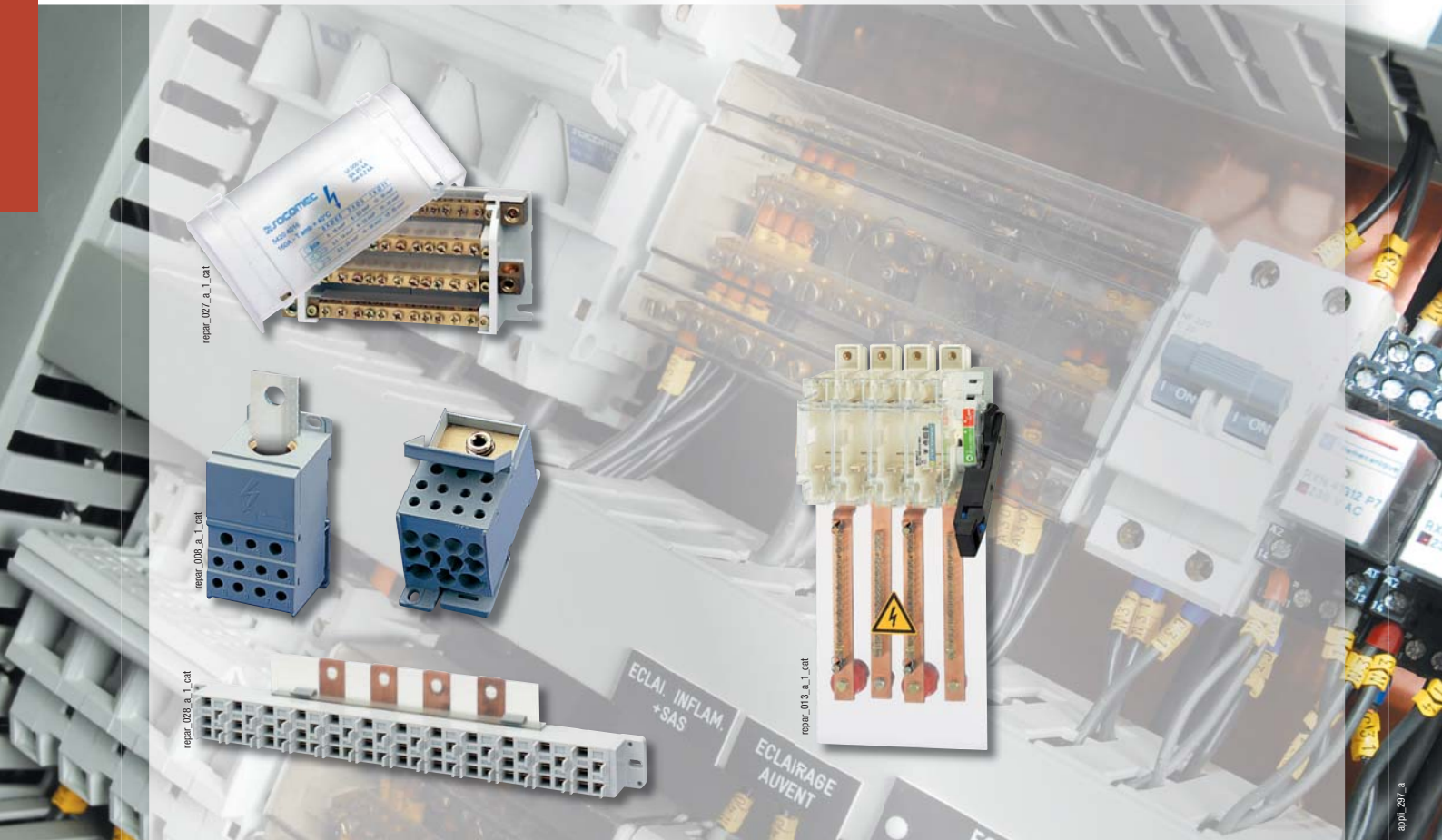
References

Tightening capacity (mm ²)	Rating Switch (A)	No. of poles	Tightening torque (Nm)	Width flexible bar (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



⇒ Function

SOCOMEK **distribution blocks** allow easy connection of conductors. They are installed downstream of a load break switch, a changeover switch or a fuse combination switch.

⇒ 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.

⇒ General characteristics

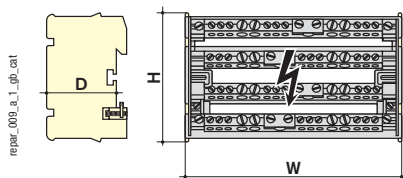
- Insulating voltage:
 - ferrules terminal distribution block: 500 V,
 - modular row terminal distribution block: 690 V,
 - wire-terminal distribution block: 1000 V.
- Impulse voltage:
 - ferrules terminal distribution block: 6 kV,
 - modular row terminal distribution block: 6 kV,
 - wire-terminal distribution block: 8 kV.
- Self-extinguishing: 960°C.

⇒ Conformity to standards

- IEC 60439-1
- EN 60439-1
- NF C 20455

Direct or cable connection

Bridge multipolar distribution block



Direct or cable connection distribution blocks which can be clipped onto a symmetric DIN rail.

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

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)	Dimensions H x W x D (mm)	Switch mounting N (mm)	I _{cm} (kA rms)	Reference
80	66 x 27 x 47	56.5	1.9	5410 1008
125	74.5 x 27 x 46.5	65	4.4	5410 1012
175	71 x 45 x 43.5	60.5	11	5410 1017
250	96 x 45 x 50	86	21	5410 1025
400	96 x 45 x 50	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.

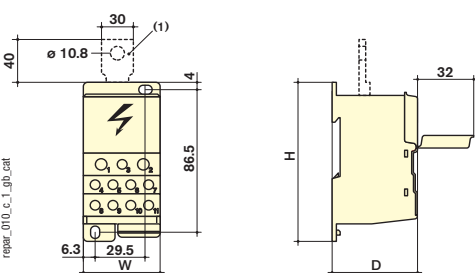
Dimensions

Rating (A)	Dimensions H x W x D	I _{cc} (kA rms) ⁽¹⁾
80	47 x 66 x 27	1.9
125	46 x 74 x 27	4.4
175	42.5 x 71 x 45	11
250	44.5 x 96 x 50	21
400	44.5 x 96 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 10 + 4 x + 1.5 x 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

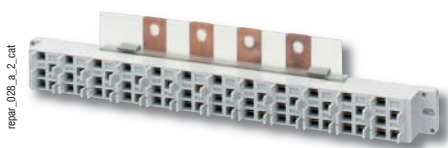


References

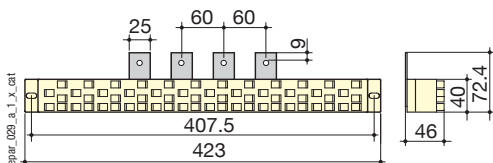
Mounting by	No of feeders per section (mm ²)	Material	L (mm)	Pack qty	Reference
2 self M4	10 x 16 + 2 x 35	brass	120	10	5414 0120
2 self M6	41 x 16 + 2 x 35	brass	470	10	5414 0470

Row distribution blocks

Row distribution block with connectors



Dimensions



Distribution blocks designed to supply power to a row of modular devices. IP20.

Connection

- 12 three pole/four pole connections
- 24 single phase connections
- Maximum current = 63 A

References

Rating (A)	Length	With connector leads ⁽¹⁾	Icm (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.

Cables Rating (A)	Type	Length (mm)	Colour	Pack qty	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

Row distribution block with screws



References

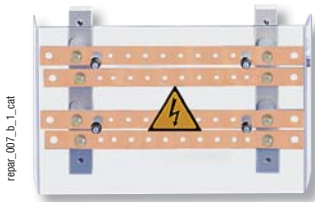
Rating (A)	Dimensions H x W x D (mm)	No of connections		Reference
		Phase	Neutral	
80	50 x 24 modules x 40	3 x 8	2 x 8	5420 2408
80	50 x 36 modules x 40	3 x 12	2 x 12	5420 3608

Adapter for cable up to 35 mm²

Section (mm ²)	Pack qty	Reference
35	4	5420 0001

Terminal connections

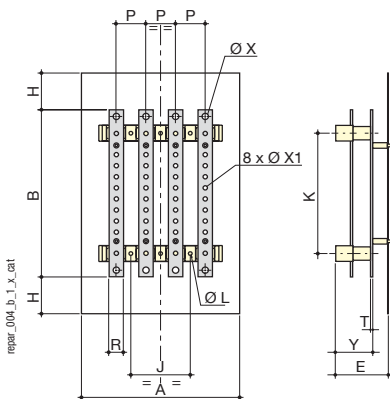
Multipolar distribution blocks



References

Rating (A)	No. of poles	Icm (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

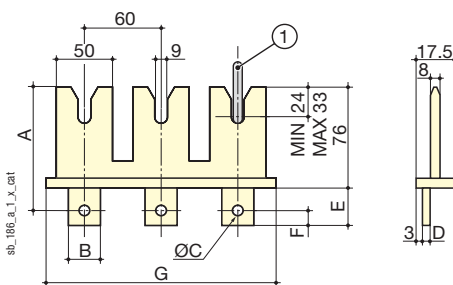


Terminal connections distribution blocks with front protection cover against direct contact.

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

Plug-in unit for 5 to 6.3 mm bars

Dimensions



1. Dropper busbar with a thickness of 5 to 6.3 mm.

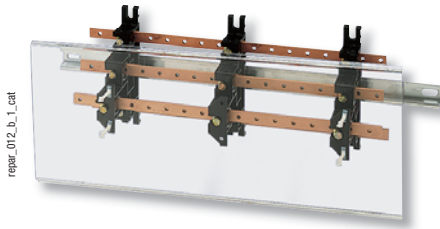
References

Rating (A)	No. of poles	Reference
125/160	3 P	3699 3P16
125/160	4 P	3699 6P16
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

Terminal connections (continued)

Stair type multipolar distribution blocks

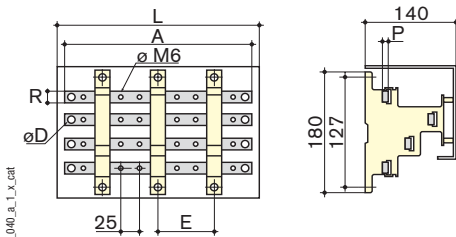


repair_012_b_1_cat

References

Rating (A)	L (mm)	No. of poles	Icc (kA rms)	No. of supports	Distribution block	Protection cover
					Reference	Reference
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

Dimensions



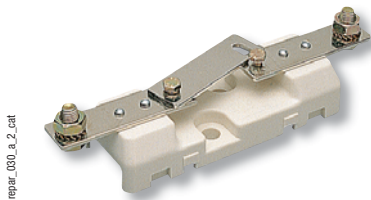
repair_040_a_1_x_cat

Stair type distribution blocks with threaded holes. Can be clipped onto a symmetric DIN rail.
Factory assembled and supplied without protection cover

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

Disconnectable solid neutral links

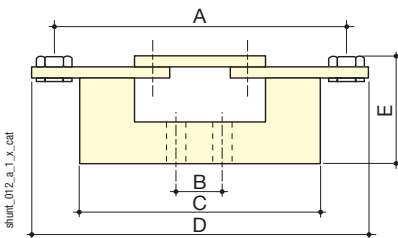


repair_030_a_2_cat

References

Rating (A)	Connection type	Reference
160	Direct or cable connection	NB10 0000
160	Terminal connections	NB16 0000
250	Terminal connections	NB25 0000
400	Terminal connections	NB40 0000
800	Terminal connections	NB63 0000

Dimensions



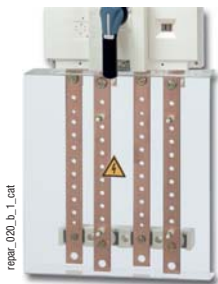
shunt_012_a_1_x_cat

Rating (A)	A	B	C	D	E	Width max. (mm)
160	100	25	86	117	32	32
160	100	25	86	117	44	32
250	150	25	120	172	45	32
400	175	25 ⁽¹⁾	151	200	60	55
800	175	25 ⁽¹⁾	151	200	40	55

(1) Offset fixing holes.

Terminal connections (continued)

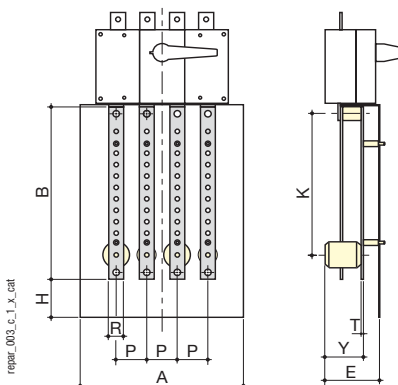
SIRCO multipolar distribution blocks



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

Dimensions

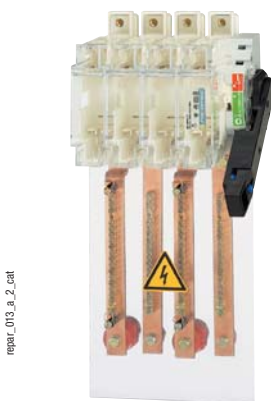


Terminal connections distribution blocks with front protection cover against direct contact (breaking device not supplied).

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

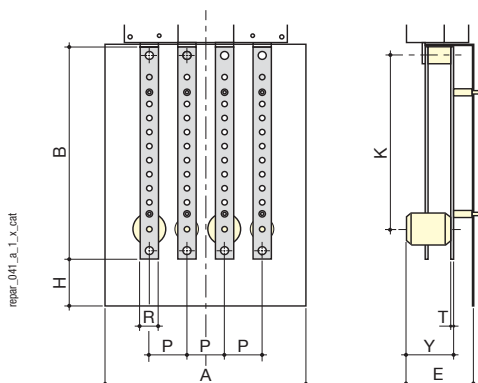
Multipolar distribution blocks for FUSERBLOC and SIRCO VM2

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

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



Function

SOCOMEK frame parts come in steel, 304 L stainless steel or aluminium (profiles and accessories) and allow the fixing of any electrical equipment.

General characteristics

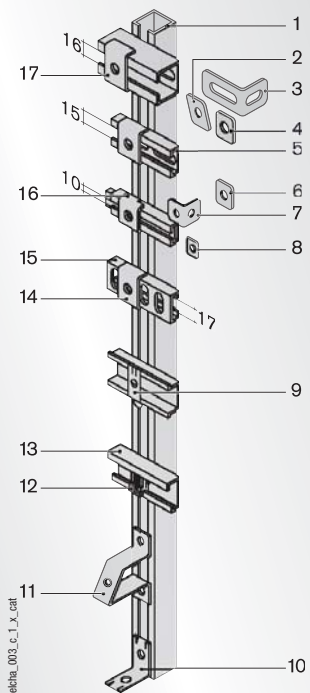
- High dielectric strength.
- Good corrosion resistance (white zinc-coated steel, stainless steel or aluminium).

Conformity to standards

- EN 60715

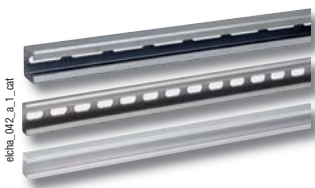
Composition of the range

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 profile
16. Straddle bracket 20 x 14
17. Straddle bracket 35 x 35



➔ References

Profile C

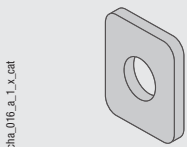


W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	Reference
20 x 14 x 1.5	8.2 x 40	50	Steel z-b ⁽¹⁾	3	30 m	5000 0120
30 x 15 x 1.5	8.2 x 40	50	Steel z-b ⁽¹⁾	3	30 m	5000 0121
35 x 35 x 2	8.2 x 40	50	Steel z-b ⁽¹⁾	2	12 m	5000 0132
35 x 35 x 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

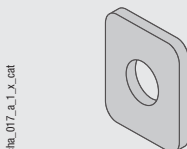
(1) White zinc-coated.

➔ Profile C

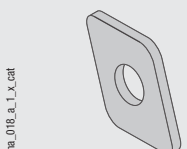
Screws



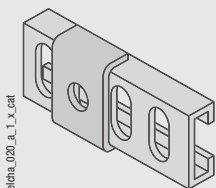
Square nut



Rectangular nut



Rhomboidal nut



Straddle bracket

Type	Insert M	Dimension H x W (mm)	For profiles	To be ordered by multiple	Reference
Square nut	M3	15.5 x 15.5	20 x 14	100	5000 0023
Square nut	M4	15.5 x 15.5	20 x 14	100	5000 0024
Square nut	M5	15.5 x 15.5	20 x 14	100	5000 0025
Square nut	M6	15.5 x 15.5	20 x 14	100	5000 0026
Square nut	M8	15.5 x 15.5	20 x 14	100	5000 0028
Square nut	M8	25 x 25	30 x 15	100	5000 0029
Rectangular	M8	35 x 28	35 x 35	100	5000 0037
Rectangular	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

Foam



Type	l x e (mm)	Pack qty	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) Allows to maintain the nuts in the symmetrical profiles.

Asymmetrical DIN rail



W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	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.

Asymmetrical DIN rail



W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	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	10 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.

Asymmetrical DIN rail

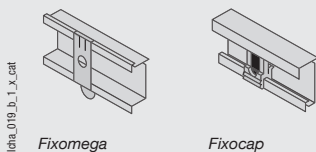


W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	Reference
32 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	2	30 m	5000 0307
32 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	3	30 m	5000 0308
32 x 15 x 1.5	6.3 x 18	25	Steel z-b ⁽¹⁾	2	30 m	5000 0044
32 x 15.5 x 1.5	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.

➔ Accessories

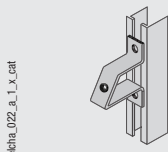
Fixomega / Fixocap



Type	Insert M	To be ordered by multiple	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
Gray Fixocap ⁽²⁾	M4 / M6	100	5800 0006

(1) Nut for symmetrical profile.
(2) Nut for asymmetrical profile.

Support for inclined mounting



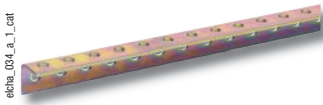
Type	Number of holes	Ø hole (mm)	Insert M	To be ordered by multiple	Reference
Support for inclined mounting	2	7	M5	10	5000 0100

Cable support rail



W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	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

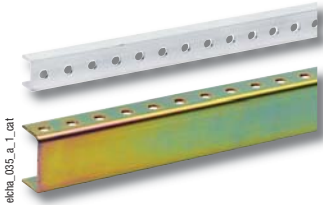
L profile



W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	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.

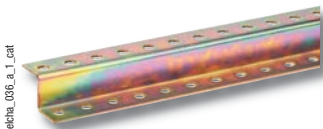
U profile



W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	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.

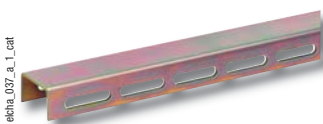
Z profile



W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	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

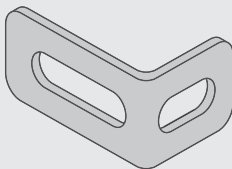


W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered by multiple	Reference
30 x 50 x 2.5	8.2 x 45	55	Steel z-b ⁽¹⁾	2	8 m	5000 0005

(1) White zinc-coated.

Accessories

Bracket

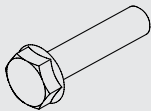


Use
For steel profile.

Characteristics
Bichromate zinc-coated steel.

H x W x D (mm)	Number of holes	Ø hole (mm)	Insert M	To be ordered by multiple	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

Screws



Use
For steel profile.

Characteristics
Bichromate zinc-coated steel.
Integrated washer

Thread	W (m)	Class	To be ordered by multiple	Reference
M6	10	8.8	100	5000 0066
M8	12	8.8	100	5000 0068
M8	16	8.8	100	5000 0069

Washer

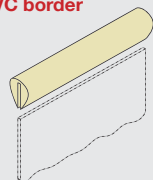


Use
For steel profile.

Characteristics
Bichromate zinc-coated steel.

Ø x e (mm)	Ø hole (mm)	To be ordered by multiple	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

PVC border



Use
PVC border for sheet metal.

Characteristics
Color Light grey

Steel thickness (mm)	To be ordered by multiple	Reference
2	25 m	7739 0025

Integrated products



Enclosures and cabinets equipped with breaking or protection functions



When they are not mounted in cabinets, load break switches, changeover switches or fuse combination switches are generally delivered enclosed. Placed as close as possible to the operator, their function is to guarantee his or her safety and to ensure continuity of operation.

For local safety breaking purposes, SOCOMEC - leader in this field - offers the widest range of equipped enclosures on the market. This **dual expertise** means we can offer you **complete systems** to meet your specific requirements (normal or explosive atmosphere).

The result of many years building on our experience, our enclosures are **quick and easy to fit**. These enable personnel who are not electricians to carry out work on the installation **without risk of error and in complete safety, whilst adhering to the rules for ensuring safe electrical lockout**.

On the next page, you will find our range of **safety enclosures** and **local isolator enclosures**.

Our services are regularly sought to create enclosures or boards **according to specification**. If this is of interest to you, please consult us.

Do not hesitate to make the most of our expertise! To find out more, please contact your SOCOMEC office.

The essential

Safety enclosures

Steel



p. 482

Polyester



p. 482

Local safety enclosures

Steel or polyester



*Enclosed SIRCO
p. 492*



*Specific enclosures
p. 512*

Changeover enclosures

Steel or polyester



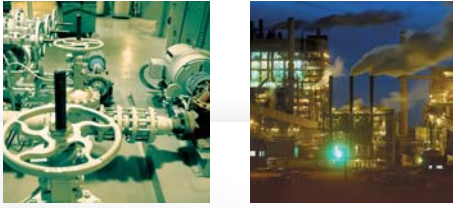
*Enclosed ATyS
p. 503*

➔ **Discover our complete selection guide** (see next page)

➔ **Need a suggestion?** We will help you find the best solution for your application.

➔ **A special requirement?** SOCOMEC makes specific products. Please feel free to consult us.

Our range of products



➔ Our products meet the specific constraints of each application

- Mining - Cement works - Steel works
- Heavy industry - Wood industry:

Robustness - Reliability - Dust-resistance -
Corrosion-resistance - Risks of explosion

- food and beverage industry:

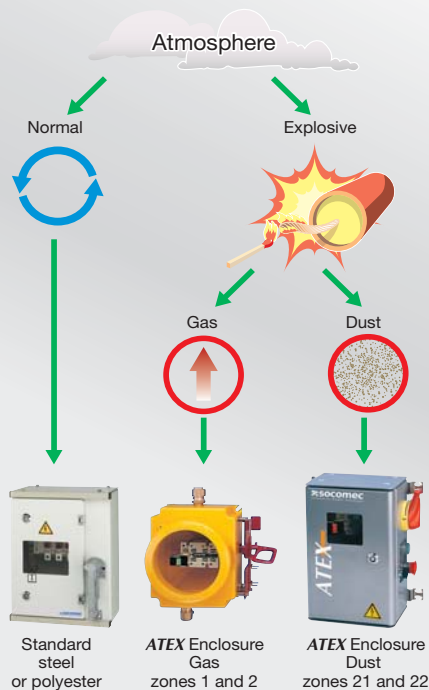
Resistance to humidity, and to dust - Risk of
explosion due to dust or gas

- Chemical and petrochemical industries:

Resistance to humidity and to corrosive
atmospheres - Resistance to dust and to gas

➔ Which ambient atmosphere?

The 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.



SOCOMEK has the skills and resources to build enclosures and distribution switchboards to specification.

You will find a guide on page 512 for drawing up your request.

Please do not hesitate to contact us for suggestions or any requirements about your project.



Selection guide

➔ Safety enclosures

For normal atmosphere

Steel



Polyester



For explosive atmospheres

Steel



Customised solutions
see page 512



➔ Local safety enclosures

With load break switches

Steel



Polyester



With fuse combination switches

Steel



Polyester



With changeover and ATS switches

Steel or polyester



Steel or polyester



Steel or polyester



➔ Enclosures and distribution switchboards

See page 512



Function

Safety enclosures equipped with SOCOMECH switches provide emergency breaking, breaking for mechanical maintenance and safety isolation in the vicinity of any low voltage final circuit.

General characteristics

Steel enclosure:

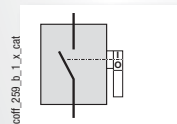
- FeP01ZE, electrogalvanized, 2 mm thick,
- 2 earth connection points,
- IP55, Ik 10 (without window).

Polyester enclosure:

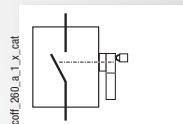
- good resistance to creepage current distance,
- high resistance to chemicals,
- self-extinguishing at 960°C,
- 2 earth connection points.

Conformity to standards

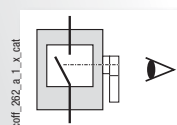
- IEC 60364
- EN 60204-1
- EN 60439
- EN 60695-2-11



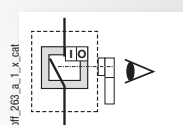
Isolator clearly evident



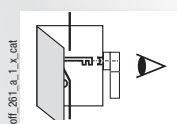
Triple padlocking of the handle



Visible breaking



mechanical flag indicator (Optional)

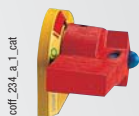


Double locked door

Environment	Steel enclosure	Polyester enclosure
Chemical aggression		•
Mechanical risk	•	
Dust risk	•	
Contamination risk		•
Atmospheric corrosion		•

➤ Safety functions

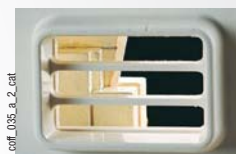
Isolation clearly evident



The handle can only indicate the "open" position if the contacts are actually open. The marking of the label (position 0 or I) and the print stamp marking on the movable bar made in the factory allows fully visible isolation to be achieved.

Visible breaking

In position 1

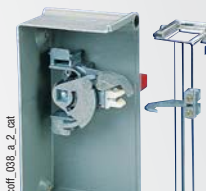


In position 0

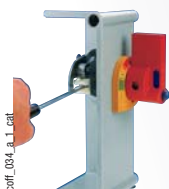


In accordance with NF C 13-100: "an isolating device is considered as having visible breaking if the separation of the contacts is directly visible."

Double locking



Double locking system of the enclosure prevents the opening of the door when the breaking device is closed and prevents the closure of the breaking device when the door is open (ex: Side operation).



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.

Padlocking



The ergonomic handle can accommodate up to three locks.

Mechanical flag indicator (Optional)



Flush with the viewing glass and integral with the movable bar, it indicates the position of the contacts unambiguously and at a glance. It provides easier visualisation of the visible breaking.

SIDER steel enclosure

References



Rating (A)	No. of poles	Front operation ⁽¹⁾		Side operation ⁽¹⁾	
		Connection top/bottom	Connection bottom/bottom	Connection top/bottom	Connection bottom/bottom
		Reference	Reference	Reference	Reference
50	3 P	3211 3005	3221 3005	3261 3005	3271 3005
50	4 P	3211 4005	3221 4005	3261 4005	3271 4005
50	6 P			3261 6005	3271 6005
80	3 P	3211 3008	3221 3008	3261 3008	3271 3008
80	4 P	3211 4008	3221 4008	3261 4008	3271 4008
80	6 P			3261 6008	3271 6008
125	3 P	3211 3012	3221 3012	3261 3012	3271 3012
125	4 P	3211 4012	3221 4012	3261 4012	3271 4012
125	6 P	3211 6012	3221 6012	3261 6012	3271 6012
200	3 P	3211 3020	3221 3020	3261 3020	3271 3020
200	4 P	3211 4020	3221 4020	3261 4020	3271 4020
200	6 P	3211 6020	3221 6020	3261 6020	3271 6020
400	3 P	3211 3040	3221 3040	3261 3040	3271 3040
400	4 P	3211 4040	3221 4040	3261 4040	3271 4040
400	6 P	3211 6040	3221 6040		
500	3 P	3211 3050	3221 3050	3261 3050	3271 3050
500	4 P	3211 4050	3221 4050	3261 4050	3271 4050
630	3 P	3211 3063	3221 3063	3261 3063	3271 3063
630	4 P	3211 4063	3221 4063	3261 4063	3271 4063
800	3 P	3211 3080	3221 3080	3261 3080	3271 3080
800	4 P	3211 4080	3221 4080	3261 4080	3271 4080
1250	3 P	3211 3120	3221 3120	3261 3120	3271 3120
1250	4 P	3211 4120	3221 4120	3261 4120	3271 4120
1600	3 P	3211 3160	3221 3160	3261 3160	3271 3160
1600	4 P	3211 4160	3221 4160	3261 4160	3271 4160

(1) Or the mechanical indicator option, replace the second digit in the enclosure reference number with the letter V.
For example: 3V11 3005.

General characteristics

- Load break switch: SIDER visible breaking.
- Handle: aluminium handle (natural colour)
- Protection degree: IP55.
- Colour: RAL 9001; other, RAL 7032; roof and/or closing plates.
- Cable gland plate(s) top and bottom for TB version and bottom only for BB version.
- Material: galvanised steel, thickness 20 / 10 mm.
- Coating: polyester powder
- Wall mounting: 4 fixing lugs supplied, not mounted
- Locking system: 8 mm male square (key supplied).
- Miscellaneous: Bottom-Bottom configuration, connection through busbar system (range > 80 A).

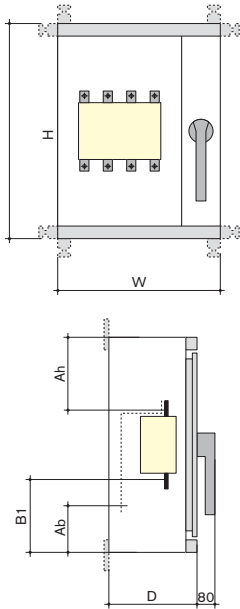
Rated operational currents I_e (A)

Rated voltage	Load duty category	Load duty category						
		50 A	80 A	125 A	200 A	400 A	500 A	630 A
400 VAC	AC-21	50	80	125	200	400	500	630
400 VAC	AC-22	50	63	125	200	400	500	630
400 VAC	AC-23	50	63	125	200	400	500	630
690 VAC	AC-21	40	63	100	160	400	400	630
690 VAC	AC-22	25	40	63	100	200	200	315
690 VAC	AC-23		10	16		80	80	100

Motor power output (kW)								
400 VAC without pre-break AC		25	30	63	100	220	220	355
690 VAC without pre-break AC			7.5	11		75	75	90
400 VAC without pre-break AC		25	30	63	100	220	220	355
690 VAC without pre-break AC		22	33	55	90	185	185	295

➔ Dimensions

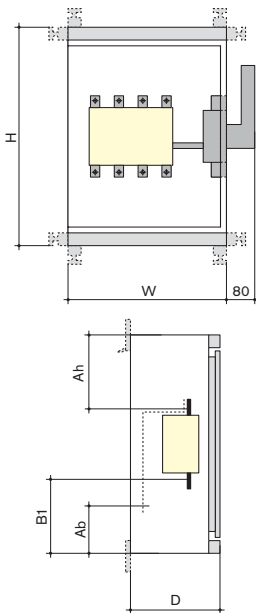
Front operation



conf_115_d_1_gb_cat

Rating (A)	No. of poles	H x W x D (mm)	Max connection section (mm ²)	Connection Top/Bottom			Connection Bottom/Bottom		
				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	205	155	9
80	3/4 P	300 x 250 x 130	35	70	105	10	225	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



conf_117_d_1_gb_cat

Rating (A)	No. of poles	H x W x D (mm)	Max connection section (mm ²)	Connection Top/Bottom			Connection Bottom/Bottom		
				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	210	160	9
50	6 P	300 x 400 x 200	16	120	130	10	210	160	10
80	3/4 P	300 x 200 x 150	35	100	110	8	230	140	9
80	6 P	300 x 400 x 200	35	100	110	10	230	140	10
125	3/4 P	400 x 300 x 200	50	155	130	16	190	225	17
125	6 P	500 x 400 x 200	50	190	190	17	240	275	21
200	3 P	500 x 300 x 200	95				180	220	21
200	3 P	500 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

SIDER polyester enclosure

References



Rating (A)	No. of poles	Front operation ⁽¹⁾		Side operation ⁽¹⁾	
		Connection Top/Bottom	Connection bottom/bottom	Connection top/bottom	Connection bottom/bottom
		Reference	Reference	Reference	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	3215 3012	3225 3012	3265 3012	3275 3012
125	4 P	3215 4012	3225 4012	3265 4012	3275 4012
125	6 P	3215 6012	3225 6012	3265 6012	3275 6012
200	3 P	3215 3020	3225 3020	3265 3020	3275 3020
200	4 P	3215 4020	3225 4020	3265 4020	3275 4020
200	6 P	3215 6020	3225 6020	3265 6020	3275 6020
400	3 P	3215 3040	3225 3040	3265 3040	3275 3040
400	4 P	3215 4040	3225 4040	3265 4040	3275 4040
400	6 P	3215 6040	3225 6040		
500	3 P	3215 3050	3225 3050	3265 3050	3275 3050
500	4 P	3215 4050	3225 4050	3265 4050	3275 4050
630	3 P	3215 3063	3225 3063	3265 3063	3275 3063
630	4 P	3215 4063	3225 4063	3265 4063	3275 4063
800	3 P	3215 3080	3225 3080	3265 3080	3275 3080
800	4 P	3215 4080	3225 4080	3265 4080	3275 4080
1250	3 P	3215 3120	3225 3120	3265 3120	3275 3120
1250	4 P	3215 4120	3225 4120	3265 4120	3275 4120
1600	3 P	3215 3160	3225 3160	3265 3160	3275 3160
1600	4 P	3215 4160	3225 4160	3265 4160	3275 4160

(1) For the mechanical indicator option, replace the second digit in the enclosure reference number with the letter V. For example: 3V15 3012.

General characteristics

- Load break switch: SIDER visible breaking.
- Handle: red plastic.
- Protection degree: IP55.
- Colour: RAL 7035 (range ≤ 400 A), RAL 7035 (range ≥ 630 A).
- Cable gland plate(s): n/a.
- Material: glass fibre reinforced polyester.
- Coating: n/a.
- Wall mounting: 4 fixing lugs supplied, not mounted
- Locking system: screws (range ≤ 400 A), 3 mm double bar key, key supplied.
- Miscellaneous: Bottom-Bottom configuration, connection through busbar system (range > 80 A).

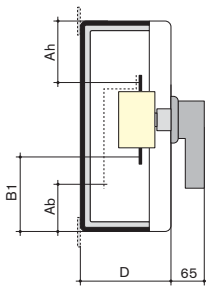
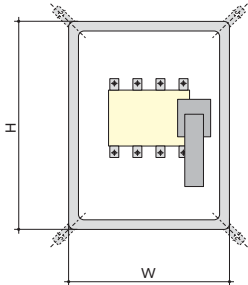
Rated operational currents I_e (A)

Rated voltage	Load duty category	Load duty category						
		50 A	80 A	125 A	200 A	400 A	500 A	630 A
400 VAC	AC-21	50	80	125	200	400	500	630
400 VAC	AC-22	50	63	125	200	400	500	630
400 VAC	AC-23	50	63	125	200	400	500	630
690 VAC	AC-21	40	63	100	160	400	400	630
690 VAC	AC-22	25	40	63	100	200	200	315
690 VAC	AC-23		10	16		80	80	100

Motor power output (kW)								
400 VAC without pre-break AC		25	30	63	100	220	220	355
690 VAC without pre-break AC			7.5	11		75	75	90
400 VAC without pre-break AC		25	30	63	100	220	220	355
690 VAC without pre-break AC		22	33	55	90	185	185	295

➔ Dimensions

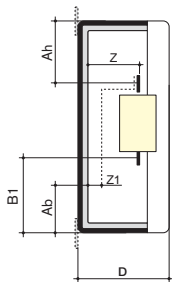
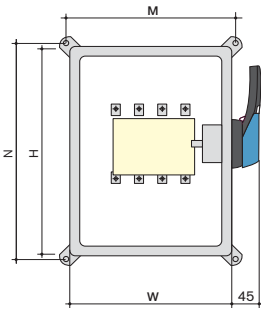
Front operation



conf_118_e_1_gb_cat

Rating (A)	No. of poles	H x W x D (mm)	Max connection section (mm ²)	Connection Top/Bottom			Connection Bottom/Bottom		
				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	1000 x 750 x 300	4 x 185	365	365	42	515	594	60
1600	3/4 P	1000 x 750 x 300	4 x 300	360	360	47	500	580	65

Side operation



conf_119_e_1_gb_cat

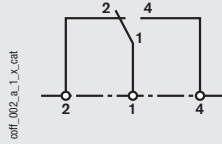
Rating (A)	No. of poles	H x W x D (mm)	Max connection section (mm ²)	Connection Top/Bottom			Connection Bottom/Bottom		
				Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
50	3/4 P	270 x 180 x 171	16	84	116	3	186	116	3
50	6 P	270 x 360 x 201	16	84	116	5	186	116	5
80	3/4 P	270 x 180 x 171	35	73	106	3	197	106	3
80	6 P	270 x 360 x 201	35	73	106	5	197	106	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	1000 x 750 x 300	4 x 185	365	365	42	570	622	60
1600	3/4 P	1000 x 750 x 300	4 x 300	360	360	47	550	608	65

➔ Safety enclosures standard - Accessories

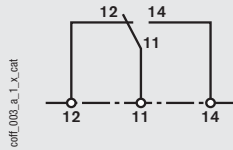
No pre-wired auxiliary contacts



1st NO/NC AC for pre-break



2nd NO / NC AC for pre-break



Use

For pre-breaking or signalling of positions 0 and I of the switch.

Mounting

- On the double locking system.
- Possibility of factory mounting on enclosure (give enclosure reference when ordering).

For front operation

Contact(s)	Reference
2 nd NO/NC changeover AC in polyester enclosure ≤ 80A	2999 0012
1 st NO/NC changeover AC in polyester enclosure ≥ 125 A	2799 0001
2 nd NO/NC changeover AC in polyester enclosure ≥ 125 A	2799 0002

For side operation

Contact(s)	Reference
2 NO/NC changeover AC in polyester enclosure ≤ 80A	2999 0012

For front operation (factory fitted)

Contact(s)	Reference
2 NO/NC changeover AC in steel or polyester enclosure	2999 1012 ⁽¹⁾
1 st NO/NC changeover AC in polyester enclosure ≥ 125 A	2799 1001 ⁽¹⁾
2 nd NO/NC changeover AC in polyester enclosure ≥ 125 A	2799 1002 ⁽¹⁾

(1) Give the reference number of the enclosure to be equipped.

For side operation (factory fitted)

Contact(s)	Reference
2 NO/NC changeover AC in steel or polyester enclosure	2999 1012 ⁽¹⁾

(1) Give the reference number of the enclosure to be equipped.

Pre-wired auxiliary contacts



Use

For pre-breaking or signalling of positions 0 and I of the switch.

Mounting

- On the double locking system.
- Possibility of factory mounting on enclosure (give enclosure reference when ordering).

For side operation

Contact(s)	Reference
2 NO/NC changeover AC in steel or polyester enclosure	3290 6002

For side operation (factory fitted)

Contact(s)	Reference
2 NO/NC changeover AC in polyester enclosure A	3290 6012 ⁽¹⁾
2 NO/NC changeover AC in steel or polyester enclosure	3290 6102 ⁽¹⁾

(1) Give the reference number of the enclosure to be equipped.

Red handle



Use

Red steel handle for load breaking or emergency stop.

For front operation (factory fitted)

Rating (A)	Reference
50 ... 80	3211 0080 ⁽¹⁾
125 ... 500	3211 0500 ⁽¹⁾
630 ... 1600	3211 1250 ⁽¹⁾

(1) Give the reference number of the enclosure to be equipped.

For side operation (factory fitted)

Rating (A)	Reference
50 ... 80	3261 0080 ⁽¹⁾
125 ... 500	3211 0500 ⁽¹⁾
630 ... 1600	3211 1250 ⁽¹⁾

(1) Give the reference number of the enclosure to be equipped.

Key handle interlocking system

conf_205_c_1_cat



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.

Locking in position 0

Type	Reference
Locking using RONIS EL11AP lock (not included)	3290 7005
Locking using XOP10 lock (not included)	3290 7015
Lock RONISEL11AP	4409 8511 ⁽¹⁾
Serv Trayvou XOP10 lock	4409 8601

Locking in position 0 (factory fitted)

Type	Reference
Lock mounting kit, factory fitted (lock not included)	3290 7006 ⁽²⁾

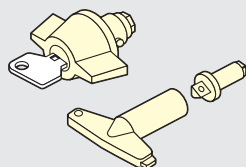
(1) The key number is a number that the customer cannot choose.

If you need a specific key number, please consult us.

(2) Give the reference number of the enclosure to be equipped.

Door closure

conf_110_a_1_x_cat



Use

- On steel safety enclosure: 8 mm square key.
- On polyester enclosure: with screw or double 3 mm bar.

Optional

- 6 to 8 mm square key, 6.5 - 7 - 8 mm triangular key.
- Key locking (no. to specify).

Type	Reference
	Please consult us

Ventilation, humidity evacuation device, cable glands

conf_216_a_1_cat



Use

- Humidity evacuation.
- Ventilation.
- Plastic and brass cable glands \varnothing 9 to 80 mm.

Type	Reference
	Please consult us

Labelling

conf_215_a_1_cat



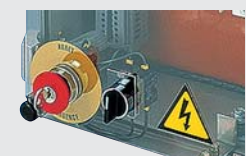
Use

- Engraved dilophane label, fixed by rivets.
- Colour: white, red, black.
- Format: 65 x 20, 100 x 40 or 80 x 30 mm.

Type	Reference
	Please consult us

Remote control auxiliary

conf_041_a_2_cat



Use

- Push buttons start/stop, emergency stop.
- Measuring devices.
- Signalling indicators.

Type	Reference
	Please consult us



conf_280_b_1_cat

shb_280_a



Zone 21 and 22 (dust) as per European Directive ATEX 94/9/CE Category 2

Function

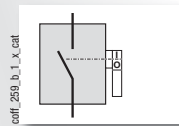
ATEX enclosures equipped with SOCOMEC switches provide emergency breaking, breaking for mechanical maintenance and safety isolation in the vicinity of any low voltage final circuit. Installed in an explosive area.

They offer the following features:

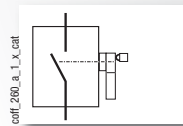
- fully visible breaking
- visible breaking
- triple locking of the handle
- double locked door, side operation
- mechanical flag indicator

Conformity to standards

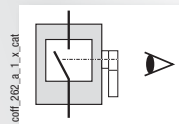
- Directive 94/9/CE
- EN 50 281-1-1
- EN 50 281-1-2
- EN 50014
- EN 60204-1
- EN 60439-1
- EN 60695-2-11
- EN 60947-3
- NF C 15-100
- IEC 60364
- Decree 29.07.92: Machine safety
- Decree n°88-1056 from 14-11-88: protection of workers
- Decree n°96-1010 from 19.11.96
- Decree 11.01.93: particularly for compliance with the machine



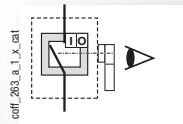
Isolation clearly evident



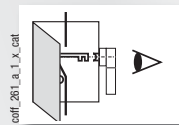
Triple padlocking of the handle



Visible breaking



Mechanical flag indicator (Optional)



Double locked door

SIDER steel enclosure, side operation

conf_280_b_2_cat



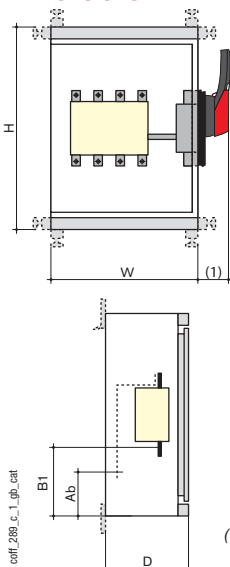
References

Rating (A)	No. of poles	Connection bottom/bottom 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

General characteristics

- Adapted to mechanical risk and dust hazard.
- Load break switch: SIDER/SIDER ND with visible breaking and mechanical flag indicator.
- Handle: S-type red handle padlockable.
- Protection degree: IP65.
- Colour: metallic grey.
- Cable gland plate: bottom.
- Material: steel, thickness 2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 fixing lugs supplied loose.
- Locking system: 8 mm male square (key supplied). For lock, please consult us.
- Miscellaneous: earthing bolts, 2 internal connection points, top configuration, connection through busbar system (range > 80 A).
- Installation of push-buttons and signaling lights on the right side of the enclosure: consult us.
- Installation of push-buttons and signaling lights on the front door of the enclosure: consult us.
- Polyamide or brass cable glands fitted: consult us.
- Auxiliary contact and push-button wired on terminal: consult us.

Dimensions



conf_288_c_1_gd_cat

(1) 50 ... 400 A: 45 mm
630 A: 61 mm

Rating (A)	No. of poles	H x W x D (mm)	Max. connection section (mm ²)	Connection Bottom/Bottom		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

Accessories

Cable gland ATEX

conf_283_a_1_cat



Black polyamide

Diameter (mm)	Min. cable diameter (mm)	Max. cable diameter (mm)	Cable gland	Locknut
			Reference	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

Crude brass

Diameter (mm)	Min. cable diameter (mm)	Max. cable diameter (mm)	Cable gland	Locknut
			Reference	Reference
10	1.5	5	3240 2010	3240 4010
12	4	8	3240 2012	3240 4012
16	6	11	3240 2016	3240 4016
20	7.5	13	3240 2020	3240 4020
25	12.5	18	3240 2025	3240 4025
32	17.5	25	3240 2032	3240 4032
40	24.5	33	3240 2040	3240 4040

conf_283_b_1_cat





appli_342_a

Polycarbonate enclosure SIRCO M with front operation

catl_337_a_1_cat



References

Empty enclosures

Rating (A)	No. of poles	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

Enclosed switches

Rating (A)	No. of poles	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.

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.

For enclosure 162 x 99 mm

- 4 pre-drill holes M16 (on the side).
- 4 pre-drill holes M20 / M25 (top and bottom).
- 4 pre-drill holes M20 (rear).

For enclosure 210 x 125.5 mm

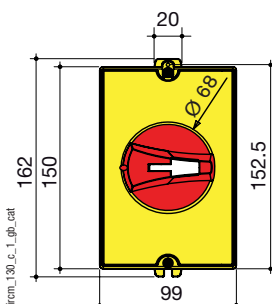
- 4 pre-drill holes M16 (on the side).
- 4 pre-drill holes M25 / M32 (top and bottom).
- 2 pre-drill holes M25 / M32 (rear).

Conformity to standards

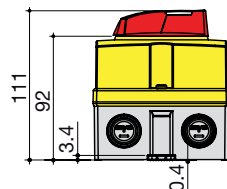
- IEC 60947-3
- EN 60947-3
- UL 508 - see page 100.

Dimensions

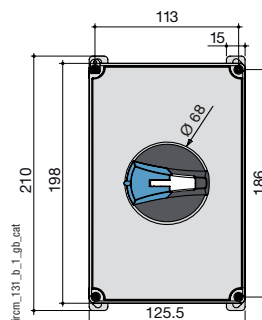
SIRCO M 16 to 40 A



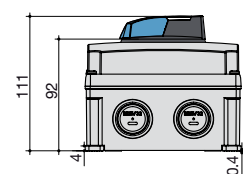
sircm_130_c_1_gp_cat



SIRCO M 63 to 100 A



sircm_131_b_1_gp_cat



SIRCO steel enclosure with front operation

conf_285_a_1_cat



General characteristics

- Adapted to mechanical risk and dust hazard.
- Handle: S-type black handle padlockable.
- Protection degree: IP55 / Ik 10 (IP65 on request).
- Colour: polyester powder 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 casing.
- 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.

SIRCO polyester enclosure with front operation

conf_292_a_2_cat



General characteristics

- Adapted to chemical attack, dust hazard, contamination hazard and atmospheric corrosion.
- Handle: S-type black handle padlockable.
- Protection degree: IP55.
- Colour: RAL 7030.
- Cable gland plate: N/A
- Material: glass fibre reinforced polyester
- Coating: N/A
- Wall mounting: 4 fixing lugs supplied, not mounted
- Locking system: Screw.

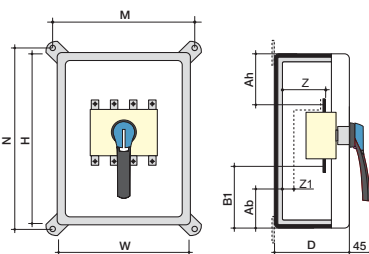
References

Rating (A)	No. of poles	Connection	Connection
		Top/Bottom	Bottom/Bottom
		Reference ⁽¹⁾	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

(1) Combined fuse version: please consult us.

Dimensions

conf_114_d_1_gp_cat



Rating (A)	H x W x D (mm)	Max connection section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Connecting Top/Bottom			Connecting Bottom/Bottom		
							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

Enclosed fuse switches

Other switch enclosure



Function

- Emergency breaking.
- Protection against overcurrents.
- Breaking for mechanical maintenance.
- Safety isolation in the vicinity of any low voltage final circuit.

Conformity to standards

- IEC 60364
- EN 60204-1
- EN 60439
- EN 60695-2

FUSERBLOC steel enclosure with front operation



cat_235_a_1_cat

General characteristics

- Adapted to mechanical risk and dust hazard.
- Handle: S-type black handle padlockable.
- Protection degree: IP55 / Ik 10 (IP65 on request).
- Colour: polyester powder RAL 7035.
- Cable gland 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 casing.
- Solid door 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. Fuses not supplied.

Please consult us.

FUSERBLOC polyester enclosure with front operation



cat_319_a_2_x_cat

References

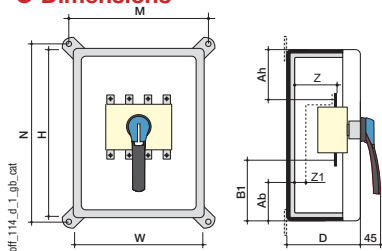
General characteristics

- Adapted to chemical attack, dust hazard, contamination hazard and atmospheric corrosion.
- Handle: S-type black handle padlockable
- Protection degree: IP55 / Ik 10.
- Colour: RAL 7030.
- Cable gland plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 fixing lugs supplied, not mounted
- Locking system: screw.
- For fuses, auxiliary contacts and other accessories please consult us.

Rating (A)	Fuses NFC and DIN	Connection Top/Bottom Reference	Connection Bottom/Bottom 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

FUSERBLOC polyester enclosure with front operation

Dimensions



Rating (A)	H x W x D (mm)	Max. connection section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Connection Top/Bottom			Connection Bottom/Bottom		
							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			
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

(1) Please consult us.

FUSERBLOC polyester enclosure with side operation



References

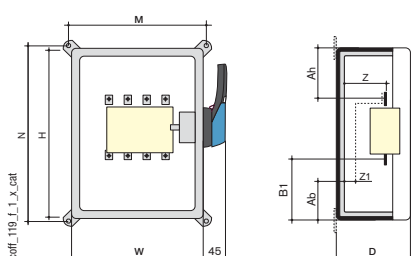
General characteristics

- Adapted to chemical attack, dust hazard, contamination hazard and atmospheric corrosion.
- Handle: S-type black handle padlockable.
- Protection degree: IP55 / Ik 10.
- Colour: RAL 7030.
- Cable gland plate: N/A.
- Material: glass fibre reinforced polyester
- Coating: N/A.
- Wall mounting: 4 fixing lugs supplied, not mounted
- Locking system: screw.
- For fuses, auxiliary contacts and other accessories please consult us.

Connection Top/Bottom | Connection Bottom/Bottom

Rating (A)	Fuses NFC and DIN	Reference	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

Dimensions



Rating (A)	H x W x D (mm)	Max connection section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Connection Top/Bottom			Connection Bottom/Bottom		
							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.

Enclosed changeover switches

Other switch enclosure



COMO C polyester enclosure with front operation



com_338_a_2_cat

Function

- Emergency breaking.
- Switching and source inversion.
- Switching on load.
- Breaking for mechanical maintenance.
- Safety isolation in the vicinity of any low voltage final circuit.

Conformity to standards

- IEC 60364
- EN 60204-1
- EN 60439
- EN 60695-2-11

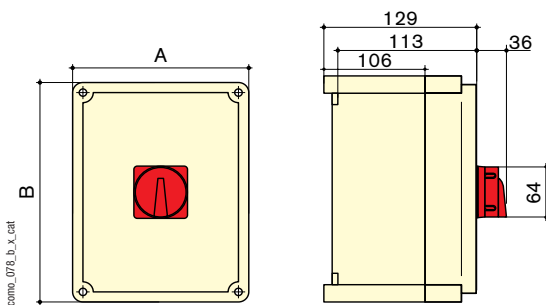
General characteristics

- Adapted to chemical attack, dust hazard, contamination hazard and atmospheric corrosion.
- Handle: Red/yellow handle
- Protection degree: IP65.
- Colour: RAL 7030.
- Material: glass fibre reinforced polyester
- Product supplied as a kit, to be self-fitted.
- Locking system: Screw.
- Miscellaneous: the enclosed COMO C 80 A is derated to 70 A in the 4-pole version.

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 - I	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.



com_078_b_x_cat

SIRCO VM1 changeover steel enclosure with front operation

cat_208_b_1_cat



⇒ Function

- Emergency breaking.
- Switching and source inversion.
- Switching on load.
- Breaking for mechanical maintenance.
- Safety isolation in the vicinity of any low voltage final circuit.

⇒ Conformity to standards

- IEC 60364
- EN 60204-1
- EN 60439
- EN 60695-2-11

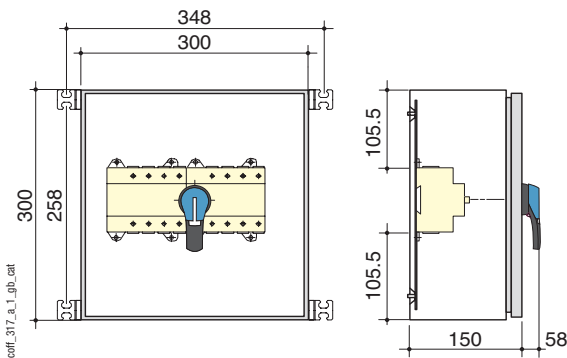
⇒ General characteristics

- Adapted to mechanical risk and dust hazard.
- Handle: S-type black handle padlockable.
- Protection degree: IP54 / Ik 9.
- Colour: polyester powder RAL 7032.
- 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 pole	Connection Top/Bottom 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



cat_317_a_1_gd_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

SIRCOVER steel enclosure with front operation



conf_208_b_2_cat

Function

- Emergency breaking.
- Switching and source inversion.
- Switching on load.
- Breaking for mechanical maintenance.
- Safety isolation in the vicinity of any low voltage final circuit.

Conformity to standards

- IEC 60364
- EN 60204-1
- EN 60439
- EN 60695-2-11

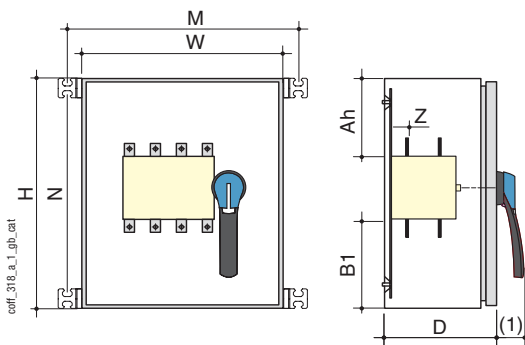
General characteristics

- Adapted to mechanical risk and dust hazard.
- Handle: S-type black handle padlockable in position 0.
- Protection degree: IP54 / Ik 9.
- Colour: RAL 7035 (<630A), other ratings RAL 9001.
- Cable gland plate: top and bottom
- Material: XC steel, thickness 1.5 mm.
- Coating: epoxy polyester powder (ratings < 630 A), polyester powder (ratings ≥ 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	Connection	Connection
		Top/Bottom I - 0 - II	Top/Bottom I - I+II - II
		Reference	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
1 250	3 P	4212 3120	4116 3120
1 250	4 P	4212 4120	4116 4120
1 600	3 P	4212 3160	4116 3160
1 600	4 P	4212 4160	4116 4160

Dimensions



(1) 125 ... 630 A: 58 mm
800 ... 1 600 A: 74 mm.

Rating (A)	No. of poles	H x W x D (mm)	Max connection section (mm ²)	M (mm)	N (mm)	Z (mm)	Connection		Weight (kg)
							Top/Bottom	Top/Bottom	
							Ah (mm)	B1 (mm)	
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
1 250	3/4 P	1200 x 700 x 500	4 x 185	740	1152	24	465	465	88
1 600	3/4 P	1200 x 700 x 500	4 x 300	740	1152		470	470	94

SIRCOVER BY-PASS steel enclosure with front operation



conf. 208_b_2_cat

Function

- Emergency breaking.
- Switching and source inversion.
- Switching on load.
- Breaking for mechanical maintenance.
- Safety isolation in the vicinity of any low voltage final circuit.

Conformity to standards

- IEC 60364
- EN 60204-1
- EN 60439
- EN 60695-2-11

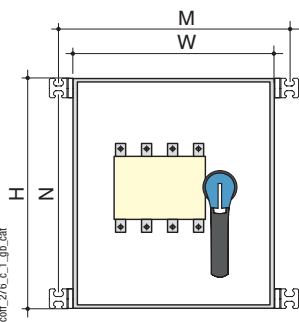
General characteristics

- Adapted to mechanical risk and dust hazard.
- Handle: S-type black handle padlockable in position 0
- Protection degree: IP54 / Ik 9.
- 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.

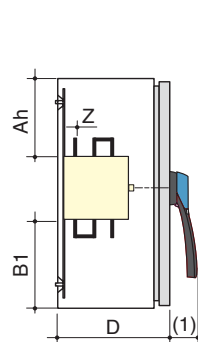
References

Rating (A)	No. of poles	Connection Top/Bottom I - O - 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
1 250	3 + 6 P	4119 7120
1 250	4 + 8 P	4119 9120
1 600	3 + 6 P	4119 7160
1 600	4 + 8 P	4119 9160

Dimensions



- (1) 125 ... 160 A: 58 mm
 250 ... 630 A: 74 mm
 800 ... 1 600 A: 120 mm



Rating (A)	No. of poles	H x W x D (mm)	Max connection section (mm ²)	M (mm)	N (mm)	Z (mm)	Connection Top/Bottom		Weight (kg)
							Ah (mm)	B1 (mm)	
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+6 / 4+8 P	1200 x 700 x 700	2 x 300	740	1152	24	466	466	(1)
1 250	3+6 / 4+8 P	1200 x 700 x 700	4 x 185	740	1152	85.5	469	469	(1)
1 600	3+6 / 4+8 P	1200 x 700 x 700	4 x 300						(1)

(1) Please consult us.

SIRCOVER polyester enclosure with front operation



coff_298_a_1_cat

Function

- Emergency breaking.
- Switching and source inversion.
- Switching on load.
- Breaking for mechanical maintenance.
- Safety isolation in the vicinity of any low voltage final circuit.

Conformity to standards

- IEC 60364
- EN 60204-1
- EN 60439
- EN 60695-2-11

General characteristics

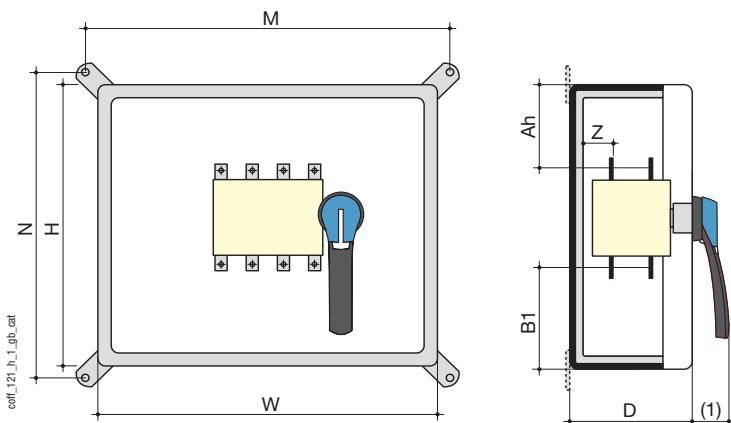
- Adapted to chemical attack, dust hazard, contamination hazard and atmospheric corrosion.
- Handle: S-type black handle padlockable in position 0
- Protection degree: IP55 / Ik 10 (IP65 on request).
- Colour: RAL 7030 (ratings < 400 A), RAL 9002 (ratings ≥ 400 A).
- Cable gland plate: N/A.
- Material: glass fibre reinforced polyester
- 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: high resistance to chemicals, self-extinguishable at 960°C, 2 bolted earth connection points.

References

Rating (A)	No. of poles	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

Connection
Top/Bottom
I - 0 - II

Dimensions



coff_121_h_1_glb_cat

(1) 125 ... 630 A: 45 mm

Rating (A)	No. of poles	H x W x D (mm)	Max connection 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

Single phase ATyS M in polycarbonate enclosure



atysm_251_a_1_cat

Function

- Remote control changeover switch, single phase ATyS M 3s version.
- Automatic Transfer changeover Switches (ATS), single phase ATyS M 6s version.
- Modular design.
- No additional wiring is required for the ATyS M 6s version.
- Connection accessories integrated.
- Steel operation handle.
- Optional accessories available.

Conformity to standards

- IEC 60947-6-1
- NF EN 60947-6-1
- NBN EN 60947-6-1
- BS EN 60947-6-1
- IEC 60947-3
- IEC 60439-2

General characteristics

- From 40 to 160 A.
- 230 VAC network
- 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.
- Weight: 5.5 kg.
- Connection: recommended cable size (Cu): 25 to 70 mm².

References

Version ATyS M 3s

Rating (A)	No. of poles	Reference
40	2 P	1823 2004
63	2 P	1823 2006
80	2 P	1823 2008
100	2 P	1823 2010
125	2 P	1823 2012
160	2 P	1823 2016

Version ATyS M 6s

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

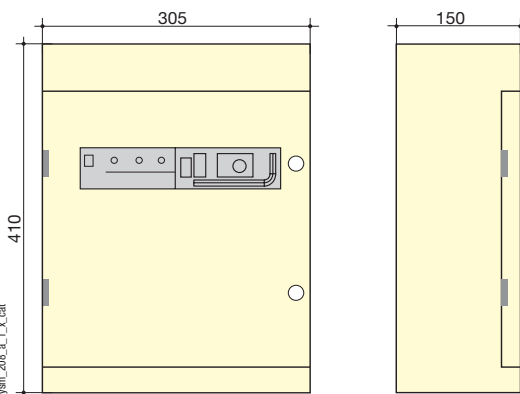
Accessories

- 1 NO/NC added auxiliary contact per position (I, O, II), max. 1 set per enclosure.
- Voltage sensing and power supply connecting points: allows connections of 2 cables of 1.5 mm² to be connected.
- Sealable cover. It prevents access to the configuration; for the ATyS M 6s only.

Accessories - customer fit

Description	Reference
Auxiliary contacts	1309 0001
Voltage sensing and power supply tap	1399 4006
Sealable cover	1359 2000

Dimensions



atysm_208_a_1_x_cat

ATyS M steel enclosure



conf_3616_a_1_cat

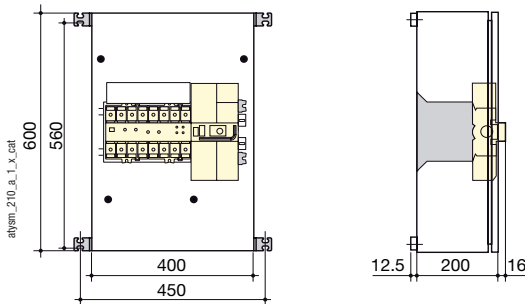
General characteristics

- From 40 to 160 A.
- Network 230/400 VAC +/-20 % in standard
- Network 127/230 VAC on request for ATyS M 6s and ATyS M 6e.
- For 3/4 pole.
- Bridging bar.
- Protection degree: IP3X (standard), IP54 (optional). For a higher degree of protection please consult us.
- Colour RAL 7035.
- Cable gland plate: Top and bottom.
- Materials: steel, thickness 1.2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 wall mounting brackets supplied - not mounted
- Door: with hinges, cut out 327.4 x 47.6 mm.
- Locking system: 3 mm double-bar key (key supplied).
- Weight (without accessories): 15 kg.
- Connection (without power connection terminals): min. Cu 6 mm², max. 70 mm².

Accessories

- 1 NO/NC added auxiliary contact per position (I, O, II), max. 1 set per enclosure.
- Voltage sensing and power supply connecting points: allows connections of 2 cables of 1.5 mm² to be connected.
- Power connection terminals with maximum connection cross section of 2 x 70 mm².
- Sealable cover.

Dimensions



atysm_210_a_1_x_cat

Function

- Remote control changeover switch, ATyS M 3s version.
- Automatic Transfer Changeover Switches, versions ATyS M 6s and ATyS M 6e.
- Modular design.
- Optional accessories available.

Conformity to standards

- IEC 60947-6-1
- NF EN 60947-6-1
- NBN EN 60947-6-1
- BS EN 60947-6-1
- IEC 60947-3
- IEC 60439-2

References

Version ATyS M 3s - Network 230 VAC

Rating (A)	No. of poles	Protection degree	Reference
40	4 P	IP 3X	1823 4004
63	4 P	IP 3X	1823 4006
80	4 P	IP 3X	1823 4008
100	4 P	IP 3X	1823 4010
125	4 P	IP 3X	1823 4012
160	4 P	IP 3X	1823 4016
40	4 P	IP 54	1823 4005
63	4 P	IP 54	1823 4007
80	4 P	IP 54	1823 4009
100	4 P	IP 54	1823 4011
125	4 P	IP 54	1823 4013
160	4 P	IP 54	1823 4017

Version ATyS M 6s (ATS*) - Network 230/400 VAC

Rating (A)	No. of poles	IP	Reference ⁽¹⁾
40	4 P	IP 3X	1854 4004
63	4 P	IP 3X	1854 4006
80	4 P	IP 3X	1854 4008
100	4 P	IP 3X	1854 4010
125	4 P	IP 3X	1854 4012
160	4 P	IP 3X	1854 4016
40	4 P	IP 54	1854 4005
63	4 P	IP 54	1854 4007
80	4 P	IP 54	1854 4009
100	4 P	IP 54	1854 4011
125	4 P	IP 54	1854 4013
160	4 P	IP 54	1854 4017 ⁽¹⁾

**(ATS) Enclosed Automatic Transfer Switch.*

(1) Network 127/230 VAC, on request.

Version ATyS M 6e (ATS*) - Network 230/400 VAC

Rating (A)	No. of poles	IP	Reference ⁽¹⁾
40	4 P	IP 3X	1884 4004
63	4 P	IP 3X	1884 4006
80	4 P	IP 3X	1884 4008
100	4 P	IP 3X	1884 4010
125	4 P	IP 3X	1884 4012
160	4 P	IP 3X	1884 4016
40	4 P	IP 54	1884 4005
63	4 P	IP 54	1884 4007
80	4 P	IP 54	1884 4009
100	4 P	IP 54	1884 4011
125	4 P	IP 54	1884 4013
160	4 P	IP 54	1884 4017

**(ATS) Enclosed Automatic Transfer Switch.*

(1) Network 127/230 VAC, on request.

Accessories - customer fit

Description	Reference
Auxiliary contacts	1309 0001 ⁽¹⁾
Voltage sensing and power supply tap	1399 4006
Conducting neutral	1309 9008
Sealable cover	1359 0000 ⁽²⁾
Kit IP54	1399 4016
Power connection terminals	1399 4017 ⁽³⁾

(1) 1 AC block as standard for ATyS M 3s.

(2) Only on ATyS M 6s.

(3) For fully equipped product, order the reference 3 times.

ATyS 3s steel enclosure



coff. 305 a_1_cat

General characteristics

- ATyS 3s up to 1600 A.
- ATyS 3e for rating 2000, 2500 and 3200 A.
- Adapted to mechanical risk and dust hazard.
- Protection degree: IP54 (standard device)
- Colour: RAL 7035
- Cable gland plate: top and bottom
- Connection of cables: Top or bottom from 125 to 250 A, top from 400 to 1600 A.
- The auxiliary contacts are wired to a terminal block.
- Material: steel thickness 2 mm
- Coating: epoxy polyester powder
- Wall mounting: 4 wall mounting brackets supplied - not mounted (ratings ≤ 400 A), floor standing feet (ratings > 630 A).
- Door: solid with hinges
- Locking system: 3 mm double bar key (key supplied)
- Miscellaneous: 2 bolted earth connection points, dual power supply, 2nd auxiliary contact, solid neutral to the right, 400/230 VAC transformers (one on each input), padlocking in 3 positions.

Available on request

- Enclosures for specific connections:

Function

- Non-Automatic Motorized Transfer Switch
- Compact Design
- Mechanically interlocked switching
- Connection blocks supplied for external logic control

Conformity to standards

- IEC 60439-1
- IEC 60947-3
- IEC 60947-6-1

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

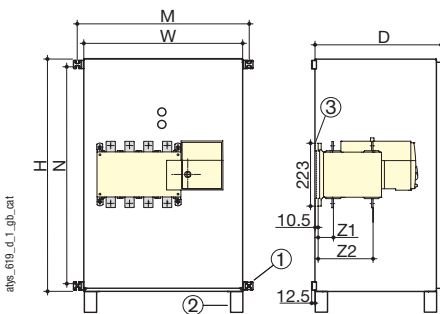
Accessories - factory fitted

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
Transformer. 400/230 VAC	consult us
Terminal shrouds	consult us
3 positions padlocking	1599 9003

Accessories - customer fit

Solid 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

Dimensions



- (1) Wall mounting brackets supplied up to 400 A.
 (2) Floor standing feet from 630 A
 (add 200 mm for feet, to H dimension).
 (3) Mounting spacer.

Rating (A)	Connection section (mm ²)	Max. connection 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	95	650	400	300	448	608	38	134	25
250	120	150	1000	650	475	698	958	39.5	134.5	45
400	240	240	1000	650	475	698	958	39.5	134.5	50
630	2 x 185	2 x 240	1000	650	475			53	190	70
800	2 x 240	2 x 300	1200	800	660			66.5	253.5	135
1000	4 x 150	2 x 300 / 4 x 240	1200	800	660			66.5	253.5	140
1250	4 x 185	2 x 300 / 4 x 240	1600	1000	830			66.5	253.5	270
1600	4 x 240	6 x 185 / 4 x 300	1600	1000	830			67.5	253.5	375
2000			2000	1000	1000					400
2500			2000	1000	1000					400
3200			2000	1000	1000					400

ATyS 6e* steel enclosure



coff_306_a_1_cat

➤ General characteristics

- Adapted to mechanical risk and dust hazard.
- Protection degree: IP54
- Colour: RAL 7035.
- Connection of cables: Top or bottom flat connection from 125 to 250 A, top from 400 to 1600 A.
- The auxiliary contacts are wired to a terminal block.
- Material: 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).
- Miscellaneous: 2 bolted earth connection points, 2nd auxiliary contact, solid neutral, 400/230 VAC transformers (one on each input), padlocking in 3 positions.

➤ Available on request

- Enclosures with specific connections: neutral on the left.

* Enclosed Automatic Transfer Switch (ATS)

➤ Function

- Automatic Transfer Switch - ATS.
- Compact Design.
- Mechanically interlocked switching.
- Connection blocks supplied for external logic control.

➤ Conformity to standards

- IEC 60439-1

➤ References

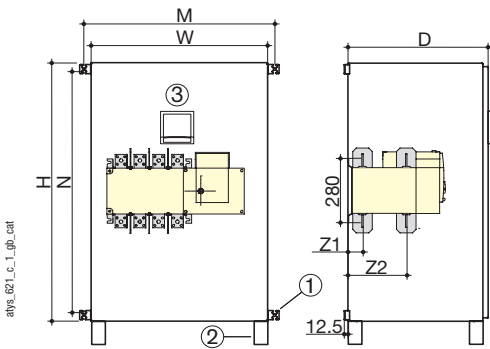
Standard device - 230 VAC		
Rating (A)	No. of poles	Reference
125	4 P	1763 4012
160	4 P	1763 4016
250	4 P	1763 4025
400	4 P	1763 4040
630	4 P	1763 4063
800	4 P	1763 4080
1000	4 P	1763 4100
1250	4 P	1763 4120
1600	4 P	1763 4160
2000	4 P	1763 4200
2500	4 P	1763 4250
3200	4 P	1763 4320

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
Transformer 400 / 230 VAC	consult us
Terminal shrouds	consult us
3 positions padlocking	1599 9003

Accessories - 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⁾
JBUS/MODBUS communication module	1599 2000
2 inputs / 2 outputs module	1599 2001

(1) Necessary to connect an ATyS D10 or D20.

➤ **Dimensions**



Rating (A)	Connection section (mm ²)	Max connection 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	95	650	400	300	448	608	38	134	25
250	120	150	1000	650	475	698	958	39.5	134.5	45
400	240	240	1000	650	475	698	958	39.5	134.5	50
630	2 x 185	2 x 240	1000	650	475			53	190	70
800	2 x 240	2 x 300	1200	800	660			66.5	253.5	135
1000	4 x 150	2x300 / 4x240	1200	800	660			66.5	253.5	140
1250	4 x 185	2x300 / 4x240	1600	1000	830			66.5	253.5	270
1600	4 x 240	6x185 / 4x300	1600	1000	830			67.5	253.5	375
2000			2000	1000	1000					400
2500			2000	1000	1000					400
3200			2000	1000	1000					400

- (1) Wall mounting brackets supplied up to 400 A.
 (2) Floor standing feet from 630 A (add 200 mm for feet, to H dimension).
 (3) Interfaces ATyS D10 or D20 (option).

➤ **Services and Technical assistance**

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.





Enclosed ATS By-Pass from 40 to 3200 A

⇒ Function

- Automatic Transfer Switching between 2 sources for reliability of the power supply.
- By-Pass Single Line & Double Line of the Automatic Transfer Switch in order to insure continuity of the supplies during inspection, test and maintenance.
- Complete isolation of the Automatic Transfer Switch for safe exploitation.

⇒ General characteristics

- From 40 to 3200A, 4 poles (fully rated).
- 230/400 VAC +/- 20%, 50/60 Hz, self supplied from incoming sources.
- Normal/Emergency logic control sequence.
- Three phase voltage and frequency control on source I and II.
- Control of phase rotation.
- 1 configurable contact output relay for generator start/stop command.
- Position I,0,II control by external dry contact.
- Manual emergency operation.
- Auxiliary contacts.
- JBus/Modbus Communication (as standard).

- The association of an ATYS 6 along with a remote interface ATyS D20, will enable an easy configuration, exploitation and visualization of the data shown on the front of the equipment (timers settings, hysteresis, start/stop of the genset...).
- Different optional accessories are available.

⇒ Conformity to standards for equipment

- IEC 60439-1
- IEC 60529

⇒ Conformity to standards for integrated products

- IEC 60947-6-1
- GB 14048-11
- IEC 60947-3

- AUTO / MANU selector.
- Protection degree: IP41 (except with ATyS D20: IP21)
- Hinged door, double bar locking system.
- Wall mounting brackets delivered up to 125 A.
- Floor standing feet from 250 to 3200 A.
- Withdrawable ATS from 250 to 3200 A.
- Phase identification.
- Functional/mimic diagram (indicating LED as an option).
- Complete protection against direct contact on each functional unit.
- Steel enclosure
- Colour: Grey Toyo.

* ATS : Automatic Transfer Switch

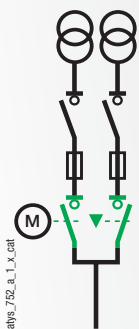
⇒ **Changeover equipment presentation**

For economic and safety reasons, the Transfer Switches Equipment (TSE) are used in all types of applications where changeover between 2 sources will secure the continuity & the reliability of the supply.

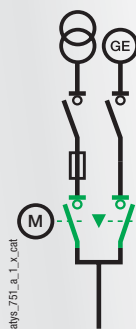
The SOCOMEC ATS range have been designed, developed and approved as per the IEC standards. Our range is fully compliant with the IEC 60947-6-1 and IEC 60947-3.

⇒ **ATS By-Pass equipment application**

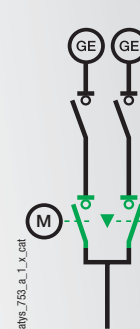
• **Main/Main (standard)**



• **Main/Genset (standard)**



• **Genset/Genset (on request)**



⇒ **Applications**

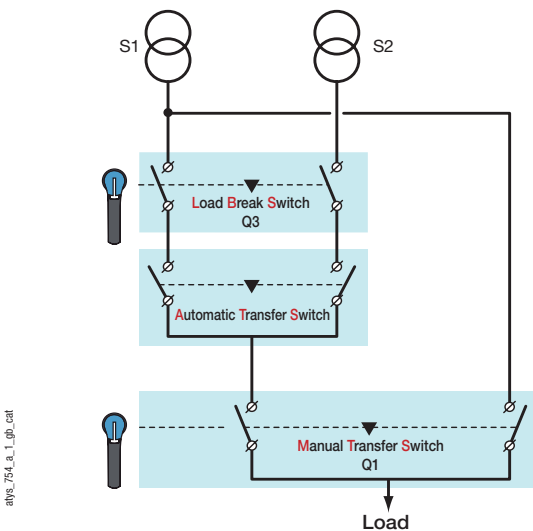
Ranges:

To propose a solution close to customers requests, Socomec have designed 2 versions of enclosed ATS By-Pass solution.

• **ATS By-Pass Single Line**

It consists of 2 functions, an Automatic Transfer Switch and a One-Way By-Pass Isolation Switch connected to the main supply.

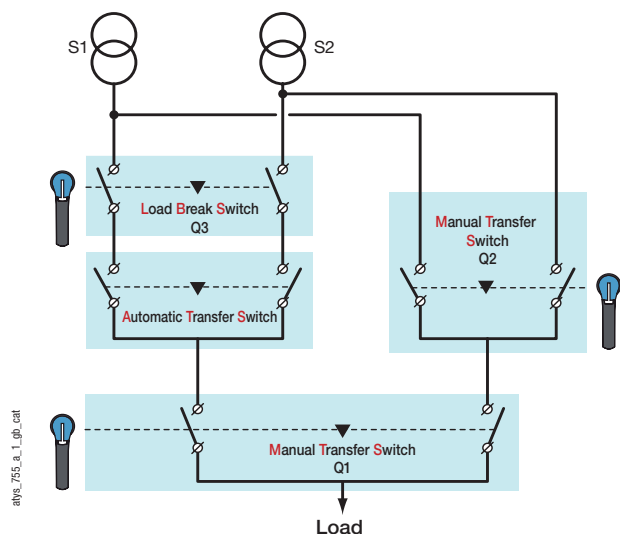
ATS from 40 to 3200 A - SINGLE LINE



• **ATS By-Pass Double Line**

It consists of 2 functions, an Automatic Transfer Switch & a Two-Way By-Pass Isolation Switch which enables the selection of the available source.

ATS from 40 to 3200 A - DOUBLE LINE



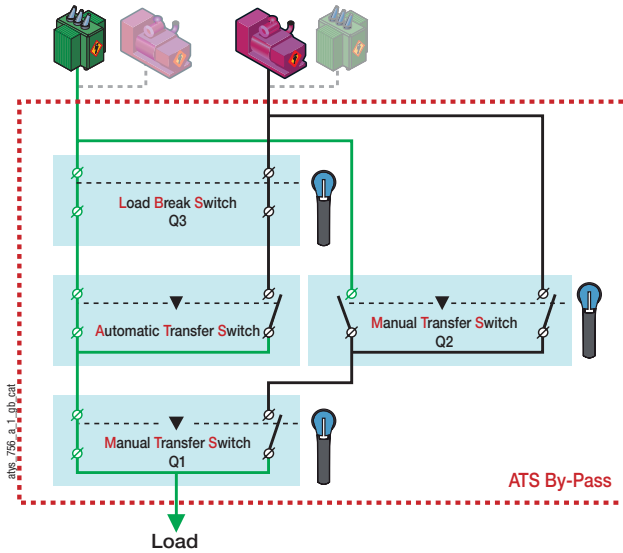
The Markets:

- Data centers
- Hospitals
- High Rise Buildings
- Transportation
- ...

Utilisation

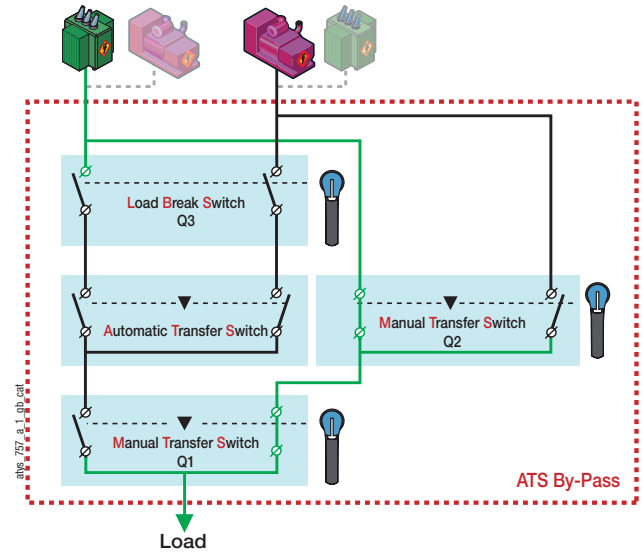
Normal Position:

The load is supplied by Source 1 or Source 2 through the ATS; the LBS (Q3) is closed and the MTS (Q1) is on Normal position.



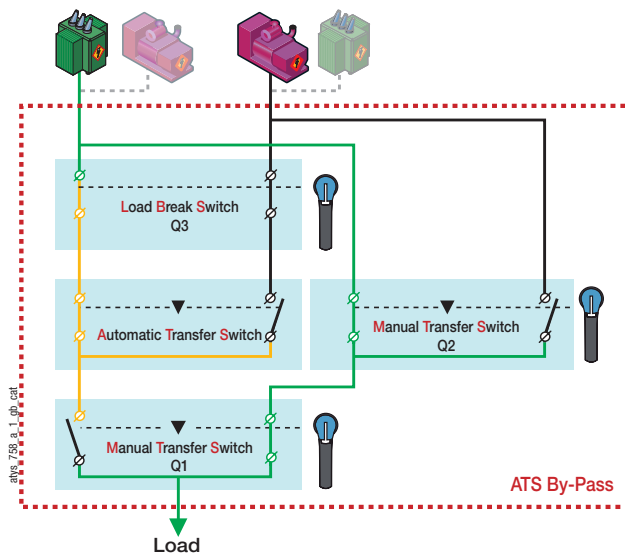
By-Pass Position:

The ATS is By-passed and fully isolated, the load is supplied by source 1 or Source 2 but through the MTS (Q2); (Q3) and (Q1) isolate the ATS.



Test Position:

The load is not supplied by the ATS but through the MTS (Q2) by closing (Q3). The ATS can be tested without interference to the load side.



➔ **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	1783 4004	1784 4004
63	4 P	1783 4006	1784 4006
80	4 P	1783 4008	1784 4008
100	4 P	1783 4010	1784 4010
125	4 P	1783 4012	1784 4012
160	4 P	1783 4016	1784 4016

(1) 127/230 VAC network, on request.

Standard Product - 230 VAC for ATyS 6e

Rating (A)	No. of poles	SINGLE LINE Reference ⁽¹⁾⁽²⁾	DOUBLE LINE Reference ⁽¹⁾⁽²⁾
250	4 P	1783 4025	1784 4025
400	4 P	1783 4040	1784 4040
630	4 P	1783 4063	1784 4063
800	4 P	1783 4080	1784 4080
1000	4 P	1783 4100	1784 4100
1250	4 P	1783 4120	1784 4120
1600	4 P	1783 4160	1784 4160
2000	4 P	1783 4200	1784 4200
2500	4 P	1783 4250	1784 4250
3200	4 P	1783 4320	1784 4320

(1) 3P without neutral, on request.

(2) 127/230 VAC network, on request.

Accessories - customer fit

Description	Reference
2 inputs / 2 outputs module	1599 2001

➔ **Accessories (factory fitted)**

Extension cabinet



extc_500_a_2_cat

Use

From 1250A to 3200A, the standard enclosed ATS By-Pass 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 By-Pass enclosure, when utilising all other types of connections (TT/TB/BT). The extension cabinet also enables any necessary future adaptation.

Rating (A)	Reference
1250 ... 2000	1599 9004
2500 ... 3200	1599 9005

Protection against overvoltages



spgs_060_a_1_cat

Use

In order to insure the protection against overvoltages of the equipment, Surge protection is available.

For more information, please see pages 412 to 429.

Rating (A)	Reference
40 ... 125	1599 9016
250 ... 400	1599 9017
630 ... 3200	1599 9018

Multi-function meter



dmf_750_a_1_cat

Use

Multi-function meters are now available for visualization and monitoring of all the electric parameters.

For more informations, please see pages 366 to 385.

Engine Exerciser

Use

The enclosed ATS By-Pass can be supplied along with a genset exerciser. (Set the Start Time, Time of Day, Day of Week, enable or disable a routine...)

Description	Reference
Engine Exerciser	1599 9006

Description	Reference
Engine Exerciser	1599 9006

Tinned Busbars

Tinned busbars option for severe environmental conditions.

Rating (A)

250
400
630
800
1000
1250 ... 1600
2000
2500 ... 3200

Reference

1599 9007
1599 9008
1599 9009
1599 9010
1599 9011
1599 9013
1599 9014
1599 9015

Remote ATS By-Pass management



Use

As standard an RS485 JBUS/MODBUS serial communication module is provided. ATyS Vision Monitoring Software is available for download on the User's Area of our website; www.socomec.com

In order to extend communication facilities, an optional module can be integrated in the enclosed ATS By-Pass to allow communication through Ethernet for the following functions :

- Alarm management (SNMP protocol)
- Data logging.
- Remote control.
- ...

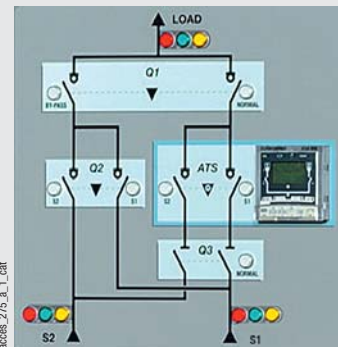
Description

Remote control module

Reference

4899 0400

Signalling



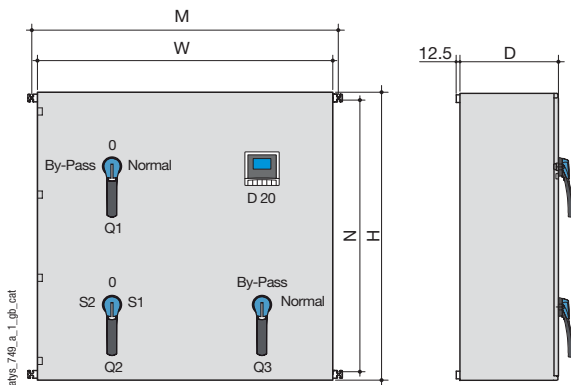
Use

To enable better visualisation of the front panel's functional/mimic diagram, 16 LED indicators (16mm industrial grade) can be provided, factory fitted.

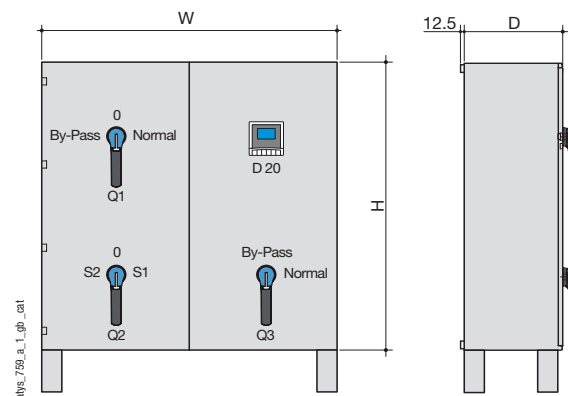
Rating (A)	Signalling	
	Single Line Reference	Double Line Reference
40 ... 125	1599 9023	1599 9024
200 ... 400	1599 9025	1599 9026
630 ... 1000	1599 9027	1599 9028
1250 ... 3200	1599 9029	1599 9030

➔ **Dimensions**

from 40 to 125 A



≥ 250 A



Wall mounting

Rating (A)	Section racc. (mm ²)	Section racc. maxi (mm ²)	H (mm)	W (mm)	D (mm)	M (mm)	N (mm)	Weight (Kg)
40	6	70	800	800	300	848	752	80
63	10	70	800	800	300	848	752	80
80	16	70	800	800	300	848	752	80
100	25	70	1000	800	300	848	752	80
125	35	70	1000	800	300	848	752	80

Floor standing

Rating (A)	Section racc. (mm ²)	Section racc. maxi (mm ²)	H (mm)	W (mm)	D (mm)	Weight (Kg)
250	95	150	1200 ⁽¹⁾	1000	550	180
400	185	240	1200 ⁽¹⁾	1000	550	200
630	2 x 150	2 x 240	1600 ⁽¹⁾	1200	600	600
800	2 x 185	2 x 300	1800 ⁽¹⁾⁽²⁾	1600	800	1000
1000	2 x 240	4 x 150	1800 ⁽¹⁾⁽²⁾	1600	800	1000
1250	4 x 185	6 x 185	2360	2000	1000	2000
1600	4 x 240	6 x 240	2360	2000	1000	2000
2000	6 x 185	6 x 240	2360	2000	1000	2500
2500	6 x 240	8 x 240	2360	2000	1000	2500
3200	8 x 240	8 x 300	2360	2000	1000	2500

⁽¹⁾ Add 100 mm for feet.

⁽²⁾ Add 60 mm for lifting system of the equipment.

➔ **Environment**

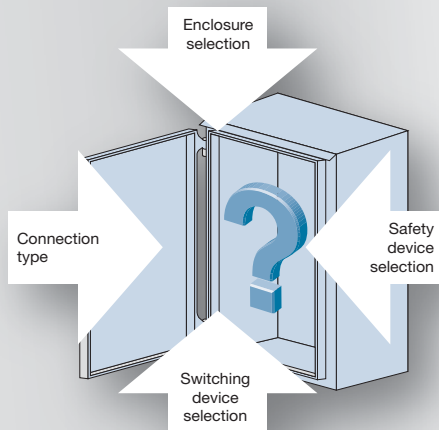
The complete equipment complies to the following requirements:

- Operating temperature: from -20 to +40°C without de-rating,
- Operating temperature: from +40 to +70°C with de-rating,
- 80% humidity non condensing at +55°C,
- 95% humidity non condensing at +40°C,
- Maximum operating altitude: 2000 meters above sea level.



➔ **Thanks to the enclosed ATS By-Pass solution, Socomec guarantees you:**

- **a reliable solution**
 - Complete ATS redundancy.
 - Optimized MTTR (Mean Time To Repair).
 - Easy Inspections, Test and Maintenance.
- **a safe solution**
 - Intuitive and secured operation.
 - High electrical performance.
 - A French Builder warranty and certification (Made in France).
- **a compact solution**
 - Complete solution according to the standards.
 - New and Retrofit installation.
 - Remote control capabilities.



Our services are regularly sought to create enclosures or distribution boards **to specification**.

You will find below a simplified description of the projects we are currently carrying out to meet the specifications of our customers.

For any request of customised products, please contact your SOCOMEC agency.

⇒ Safety enclosures

Typical applications:

Enclosed load break switch for the following sites:

- Cement works
- Paper mill
- Aluminium manufacturing
- Chemical industry
- Automotive

Available on request:

- Sheet steel, insulating material, painted (coastal location) or brushed stainless steel version (food processing industry).
- Specific colours (enclosure, handle).
- Specific dimensions (to measure).
- Sloping roof and window protective cover.
- Control auxiliaries (push button, AC, etc.) wired onto the terminal.
- Locking using a specific lock (type EL11AP, etc.).
- Specific marking.
- Specific connection (BB, earthing enclosure, extended copper busbar).
- Multipolar 6-pole or 9 pole load break, side or front operation.
- Interlocking between two switches (horizontally or vertically).

⇒ Presenting examples



coff_145_c_3_cat

Of the safety enclosure side operation with, Lock and double interlocking device.



coff_040_a_2_cat

Enclosure with 6-pole switch, special closure, air vent and cable gland



⇒ Enclosed load break switches

Typical application:

- Motor cut-off

Available on request:

- Specific devices with or without trip breaking.
- Specific connections (BB, extended ranges, etc.).
- Special colours.
- Control auxiliaries (push button, AC, etc.) wired onto the terminal.
- Specific characteristics (DC, 690 VAC, etc.).

⇒ Examples



NATO green enclosure

⇒ Enclosed fuse combination switches

Typical applications:

- Battery protection
- Protection transformer
- Application HVAC

Available on request:

- Specific devices with or without trip breaking (FUSERBLOC, SIDERMAT combination unit, FUSOMAT, etc.)
- Specific characteristics DC
- Specific connecting
- Special colours
- SIRCO distributor + fuse bases for protecting the compressors on an air conditioning unit.
- Protection transformer

⇒ Examples



Steel enclosure with visible breaking fuse switch and double locking

⇒ Enclosed changeover switches

Typical applications:

- Generators sets
- High-rise buildings

Available on request:

- Manual changeover or motorised
- Option of integrating the customer's control units
- Specific connections
- Enclosure with changeover switch BY-PASS system

⇒ Examples



Steel enclosure with changeover switches

⇒ Complete integrated equipment.

Typical applications:

- Main distribution boards
- Hospitals
- Public lighting
- Dock cabinet (naval)
- Tramway enclosure (earthing)

Available on request:

The complete solution to your needs: distribution switchboards etc.

⇒ Examples



Pre-cabled distribution board





UPS Division

The **availability of high quality energy**



Equipment and services for your high quality power supply

Teams of specialised designers, highly integrated production and a dedicated commercial network have all helped SOCOMEC to forge the most complete ranges of high quality power supplies, industrial switching and protection components, on the market.

Marketed under the SOCOMEC UPS brand, our range of products and services fulfils all your needs for a quality, continuous electrical power supply. UPS, secure power supplies, static transfer systems, harmonic equalisers, rectifiers, DC/AC converters, covering a very wide range of applications for every sector of the market.

They have gained approval from the most demanding of users: telecoms operators, the nuclear industry, naval industry.

SOCOMECS UPS: the availability of high quality energy

Why an uninterruptible power system ?

The distribution of electrical energy is often subject to interference, this can be short lived or for extended periods, caused by both external and internal factors. Atmospheric phenomena or phenomena determined by human action cause incalculable harm every day in terms of the alteration or complete destruction of data-bases and damage to sensitive electronic equipment.

The main phenomena and their causes

Blackout

Causes

- Storms
- Accidental causes
- Short circuit
- Industrial loads
- Overload

Irregular phenomenon

- Loss of data
- Disk crash
- Hardware damage
- Interruption of operations

The various levels of protection

	High protection	Total protection	Excellent protection
Black-out			
Current and voltage peaks			
Interference			
Voltage variations			
Microinterruptions			
Frequency variations			
Current harmonics			
Voltage distortion			

Electrical impurities

Causes

- Current and voltage peaks
- Interference
- Voltage variations
- Microinterruptions
- Frequency variations
- Current harmonics
- Voltage distortion

Irregular phenomenon

- Alteration of data
- Operating faults
- Premature wear of electronic parts
- Irreparable damage to electronic components
- Excessive current consumption.

What you need to know about uninterruptible power systems

The various types of uninterruptible power systems can be divided into three distinct categories, according to their technology, the degree of protection offered and power rating.

	Offline	Line interactive with AVR	Online dual conversion
Standard IEC62040-3	VFD-SY-311	VI-SS-311	VFI-SS-111
Level of protection	High	Total	Excellent
Normal supply	From mains power	From mains power	From UPS
Emergency supply	With switching < 10 ms	With switching	Without switching
Voltage regulation	No	Yes	Yes
Frequency regulation	No	No	Yes
Power ratings used	Low power	Recommended up to 3 kVA	Medium and high power
Advantages	Low cost	Voltage stabilisation	High protection
	Reduced maintenance	Better use of the batteries	Many options available
	Suitable for small power ratings	Sinusoidal output*	Extended back-up time

* certain models.

SOCOMECS UPS: the availability of high quality energy (cont.)

➔ Choosing the right one

	NETYS	ITYS	MODULYS stand alone	MASTERYS	Green Power	DELPHYS MP elite	DELPHYS MX elite	DELPHYS MX	STATYS	Flywheel VSS ⁺ DC	SHARYS ² and SHARYS IP	PHASYS ³	IT-SWITCH and LUM ⁴	ATRYs ⁵
Private user	•													
Offices and shops	•	•	•											
Small and medium enterprises	•	•	•	•										
Corporate networks and telephony		•	•	•										
Rack 19" IT Networking			•	•	•	•	•	•	•				•	•
Datacenters				•	•	•	•	•	•	•	•	•	•	•
Telecom		•	•	•	•	•	•	•	•	•	•	•	•	•

(1) Rectifier-chargers (2) DC-AC inverters (3) Static Transfer System (4) Harmonic compensator.

SOCOMECS UPS: for a high quality power supply

Innovative power solutions

Marketed under the SOCOMECS UPS trademark, our range of products and services fulfils all needs for a high quality, continuous electrical power supply. Our UPS, as well as our secure power supplies, static transfer systems, harmonic equalizers, rectifiers and DC/AC and AC/DC converters, comprise the most complete ranges in the world and cover a very wide range of applications for every sector of the market.

➔ A key requirement

High quality energy supply at any moment is vital in many fields such as telecommunications, data processing or certain industrial processes. It is even mission-critical for many medical applications. In all these sectors SOCOMECS UPS has over 40 years of experience at your disposal.

➔ Product solutions that meet requirements

Underpinned by significant R&D resources, our product offer continually evolves as a consequence of our contact with customers. Our products have the approval of some of the most stringently demanding users: Telecom companies worldwide, Ministries of Defence, nuclear industry

operators... To ensure the highest availability, we provide the latest UPS technology combined either with traditional batteries or with other innovating energy storage system.

➔ Recognised expertise

Having already received the 2004 Award for Customer Service Excellence and the 2006 Award for Product Innovation from Frost & Sullivan, SOCOMECS UPS recently has once again excelled by winning the 2009 Best Practice Award for "European Energy & Power Systems Product Line Strategy". This prestigious accolade was presented in recognition of the company's ability to propose an extensive product range demonstrating the most insight into the needs and product demands of its customers.

➔ Continuing innovation

"The facts speak for themselves: first French manufacturer to offer static power supplies (1968), designer of the first UPS with PWM technology (1980), first to integrate IGBT technology into major power sources (1996), designer of the first UPS in a modular rack system (2000), first to integrate hybrid components (2001), first 200 kVA UPS with IGBT rectifier (2003), new battery

charging design (2004), dynamic energy storage system (flywheel) replacing the more traditional battery-based solution (2006), first UPS true online double conversion 120-200 kVA with 96 % efficiency certified (2007), most compact STS 19" rack hot-swappable (2009), most compact UPS true online double conversion 900 kVA (2010).

➔ Always focused on customer needs

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

➔ An organisation "hard-wired" for customer satisfaction

Design and production in each UPS factory is certified to ISO 9001. Together with quality service and maintenance, the UPS are your guarantee of a fail-safe electrical power supply.

➔ A controlled environmental management

With its ISO 14001 certification, SOCOMECS UPS is committed to continuous improvement of its environmental management system.



Our commitment to Absolute Green

For maximum availability and true cost savings



➤ Availability

- The system is supplied with top-quality electrical power, minimising the risk of downtime.
- Protection is ensured by the use of on-line double conversion UPS, the most reliable technology on the market.
- The system is fully safeguarded against blackouts and any disturbance caused by the mains power supply and by distorting loads.

➤ Saving

- UPS energy costs cut by up to 40 %.
- The saving is guaranteed by the highest available efficiency performance for online double conversion UPS on the market, certified up to 96 %.
- Optimising the power supply to the system makes it possible to reduce the use of nonrecyclable materials and cut CO₂ emissions.

SOCOMECS UPS can also provide

Commissioning, Inspection & Maintenance



➤ Start-up

With the start-up of your equipment, CIM guarantees the compatibility of the UPS with your environment and checks it is compliant with the various installation standards.

➤ Performance

Recovery from alarm state, replacement of faulty parts, mechanical and electrical checks, suggestions and advice on better use of the equipment.

➤ Training

For the training of users on their UPS systems, SOCOMEC UPS organises

courses held at its training centre or at the user's premises, with practical sessions involving "hands-on" use of machines.

➤ Maintenance contracts

We tailor our services around your operating constraints. This means that for each of your contracts, we provide you with adapted solutions to match your expectations. Our Silver, Gold and Platinum solutions meet your needs by protecting and securing the electrical supply to your sensitive applications (office, automation, servers, data-processing centres, NICT, security...).

➤ Remote surveillance

Thanks to the *T.Service* remote monitoring service, our team of technical specialists remains continuously connected to the UPS via the telephone network or the internet.

T.Service:

- checking the parameters required to enable your equipment to function properly,
- identifying potential problems in order to establish a reliable and comprehensive diagnostic function which can provide you with a quick and effective solution,
- supplies regular reports on the status of the UPS

➤ Preventive and predictive maintenance

The *CIM thermo* service involves checking the components of your electrical installation using special equipment (thermal imaging cameras). In this way it is possible to perform a preventive diagnosis of breakdown risks by analysing the temperature (thermographic control) of each component.

➤ CIM rent

When you require high-quality uninterrupted electrical energy over a limited period (weeks or months), leasing is the most economical answer for your short-term needs. Leasing enables you to draw on the global expertise of SOCOMEC, which not only assures the availability of the UPS system, but also provides an all-in-one service to guarantee you a clean and uninterrupted energy supply.

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