GENERAL CATALOG

Solutions for Power Switching, Power Monitoring, Power Conversion and Energy Storage

UL/CSA
Ed.3

POWER SWITCHING | POWER MONITORING | POWER CONVERSION | EXPERT SERVICES | ENERGY STORAGE

socomec
Innovative Power Solutions

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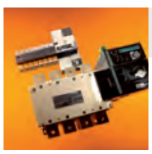

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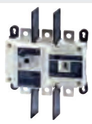
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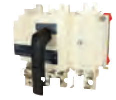
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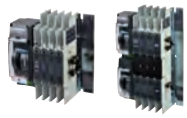
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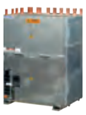
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For the energy performance of your critical installations

The benefit of a specialist

Since its foundation more than 95 years ago, SOCOMEC continues to design and manufacture its core products in Europe. Notably solutions for its primary mission: the availability, control and safety of low voltage electrical networks.

As an independent manufacturer, the Group is committed to constant innovation to improve the energy performance of electrical installations in infrastructures as well as industrial and commercial sites.

Throughout its history, SOCOMEC has constantly anticipated market changes by developing cutting-edge technologies, providing solutions that are adapted to customer requirements and fully in keeping with international standards.

“Optimizing the performance of your system throughout its life cycle” - this is the commitment carried out every day by the SOCOMEC teams around the world, wherever your business is located.

SYDIV 514 B

1
independent manufacturer

37,675 ft²
of test platforms

One of the leading independent power testing labs in Europe

10 %
of turnover invested in R&D

Always at the cutting-edge of technology for innovative, high-quality products

110,000
on-site interventions per year

Nearly 400 experts in commissioning, technical audit, consultancy and maintenance

ENERGY SPECIALIST SINCE 1922

THE GLOBAL COMPACT
WE SUPPORT

Your energy, our expertise

Power conversion

Ensuring the availability and storage of high quality power

With its wide range of continuously evolving products, solutions and services, Socomec are recognized experts in the cutting-edge technologies used for ensuring the highest availability of the electrical power supply to critical facilities and buildings, including:

- static uninterruptible power supplies (UPS) for high-quality power free of distortions and interruptions occurring on the primary power supply
- changeover of static, high availability sources for transferring the supply to an operational back-up source
- permanent monitoring of the electrical facilities to prevent failures and reduce operating losses
- energy storage for ensuring the proper energy mix of buildings and for stabilization of the power grid.

© Datadock

Power switching

Managing power and protecting persons and facilities

Active in the industrial switching market since its foundation in 1922, Socomec is today an undisputed leader in the field of low voltage switchgear, providing expert solutions that ensure:

- isolation and on load breaking for the most demanding switching applications
- continuity of the power supply to electrical facilities via manual remotely operated or automatic transfer switching equipment
- protection of persons and assets via fuse-based and other specialist solutions.

APPLI 575A

Power monitoring

Managing the energy performance of buildings

Socomec solutions, from current sensors through to a wide choice of innovative scalable software packages are driven by experts in energy performance. They meet the critical requirements of facility managers and operators of commercial, industrial and local authority buildings for:

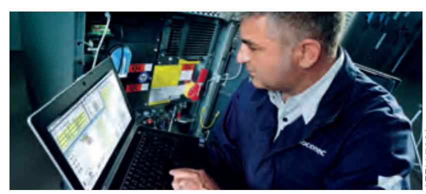
- measuring energy consumption, identifying sources of excess consumption and raising the awareness of occupants about their impact
- limiting reactive energy and avoiding the associated tariff penalties
- using the best available tariffs, checking utility bills and accurately distributing energy billing among consumer entities
- monitoring and detecting insulation faults.

Expert Services

Enabling available, safe and efficient energy

Socomec is committed to delivering a wide range of value-added services to ensure the reliability and optimization of end-users' equipment:

- prevention and service operations to lower the risks and enhance the efficiency of operations
- measurement and analysis of a wide range of electrical parameters leading to recommendations for improving the site's power quality
- optimization of the total cost of ownership and support for a safe transition when migrating from an old to a new generation of equipment
- consultancy, deployment and training from the project engineering stage through to final procurement
- performance assessment of the electrical installation throughout the life cycle of the products via analysis of data transmitted by connected devices.

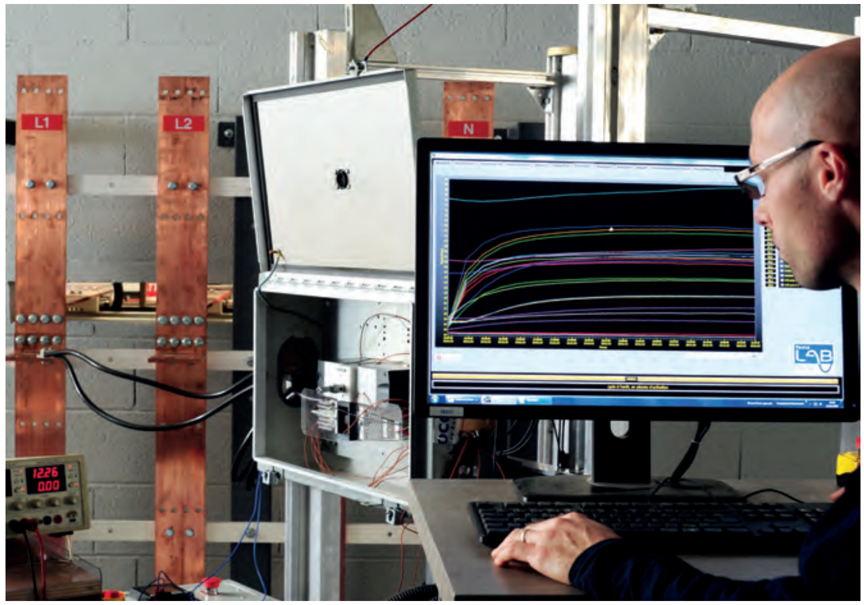


APPLI 760A

A cutting-edge laboratory

the backing of an expert

Created in 1965, SOCOMEC's laboratory brings its expertise to guarantee the reliability and the conformity of our products and solutions.
Since 2015, the laboratory renamed Tesla Lab – Power Testing and Certification in 2015, offers its testing and certification services to all its customers.



CORPO 441 A

Proven expertise

Tesla Lab is an independant laboratory specialized in testing of LV switchgears, components and switchgear assemblies.

4 million dollars has been invested since 2011 in this 21528 ft² laboratory, where 30 experts guarantee the quality of the performed tests, making the Tesla Lab one of the most modern laboratories in Europe.

Vast range of tests

The laboratory has 100 MVA (I_{cc} 100 kA rms 1 s) short-circuit platform, three 10 kA overload platforms and many other test facilities covering 21528 ft² for:

- functional tests
- mechanical tests: endurance
- dielectric tests
- environmental tests: vibrations
- Ingress Protection (IP)
- temperature rise tests up to 60 °C/140 °F ambient

International partnership

The laboratory is recognized by the major certification bodies worldwide: member of ASEFA and LOVAG, it is accredited by COFRAC, UL (CTDP), CSA (shared certification) and DEKRA (WMT).
The partnership with many international certification bodies guarantees the quality and safety requirements in each country.

Implementation of standard IEC / EN 61439

Electrical switchgear manufacturers

IEC / EN 61439 standards define the requirements of "Low voltage switchgear assemblies" as well as the tests necessary to ensure the achievement of the specified levels of performance. The compliance with these standards gives a guarantee of safety and performance to the user of the equipment

IEC/EN 61439 READY

An original manufacturer according to IEC / EN 61439 standards

Socomec offers a wide range of original manufacturer solutions complying with IEC 61439 standards.

- FLEXYS and CADRYS cabinet systems designed for distribution panel applications.
- Local switching and equipment cabinets covering requirements in power availability and safety.
- Components for integration.

Tesla Lab accredited by COFRAC

With its world-class testing facilities, the Tesla Lab can perform all of the tests required by IEC / EN 61439 standards for switchgear assemblies

We can therefore help you to:

- define a verification program,
- perform conformity tests,
- issue test reports in order to get certification from third party certification bodies (ASEFA, LOVAG, DEKRA, UL, CSA, COFRAC, ASTA…).

Expert in power conversion

maximising power quality and availability

Socomec at the forefront of innovation

European design and production
Socomec's products are designed and developed by our talented team of in-house engineers with their real depth and wide knowledge in power electronics and digital controls. Our expertise in manufacturing - combined with the use of only the highest quality components in the most efficient production and testing processes – means that when it comes to reliability our products are unrivaled.

Socomec factories join the digital world
Since 2014, Socomec has been investing to bring its manufacturing facilities in line with industry 4.0 standards. Beyond lean manufacturing, the digitalisation of production means that we can ensure the delivery of a competitive offering with continuously improving service levels whilst also supporting the creation of more personalised products.

Factory Acceptance Test (FAT)
The FAT service is available to all customers who want to audit their order before it leaves the factory. With the support of Socomec Platform Engineers and dedicated infrastructure, several live product tests are available, including:
- standard tests to verify product performance,
- custom tests according to your precise requirements.

3 levels of protection according to your criticality

PRIME
Trustworthy power

Reliable and cost effective protection to assure operational continuity

SUPERIOR
Unrivalled power performance

Best in class & certified performance to optimise usage and Total Cost of Ownership

ULTIMATE
Fault tolerant power without compromise

Fully redundant architecture for maximum availability, minimum MTTR and risk free maintenance

Experts at your service

Socomec is committed to delivering a wide range of value-added services to ensure the reliability and optimisation of end-users' equipment during its life cycle:

- prevention and service operations to lower the risk and enhance the efficiency of equipment,
- measurement and analysis of a wide range of electrical parameters leading to recommendations for power quality improvement,
- consultancy, deployment and training from the project engineering stage to the final procurement stage.

Specialists at your service

Our Services team comprises qualified engineers whose mission is to ensure the correct operation of your equipment.

We offer a comprehensive support service package which gives you complete peace of mind: commissioning, on-site testing, preventive maintenance visits, 24-hour call out and rapid on-site repairs, original spare parts, power quality and energy efficiency audits, consultancy, design and implementation of installation modifications and updates, etc.

Our Services team is the most reliable partner to advise you on the maintenance of Socomec equipment and to resolve any problems in accordance with current environmental standards and procedures.

APPL_944_A.EPS

Professional tools

Our Services team use the:

- Personal Protective Equipment (protective goggles, helmet, insulated gloves, fireproof jacket, safety shoes, earplugs…) they are provided with.
- laptop embedding all the softwares required for the performance of the equipment,
- measuring equipment calibrated annually by our metrology department (multimeter, digital scope, current clamps, infra-red camera, power analyser).

Reports

For each intervention an exhaustive report (commissioning, preventive maintenance, troubleshooting, etc.), is automatically generated, sent to the customer and synchronized with our systems.

Remote diagnostic

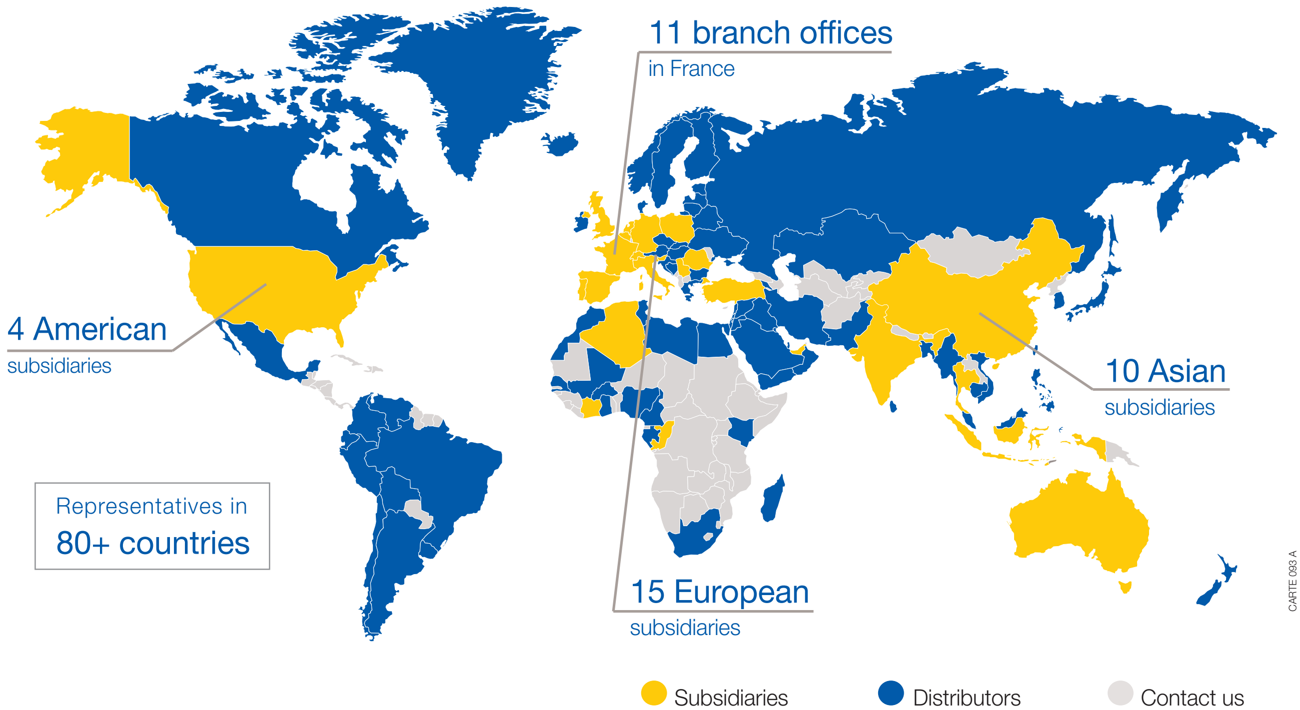
In case of any anomaly, an automatic notification is sent to a local call centre for proactive online troubleshooting.

Availability of original spare parts

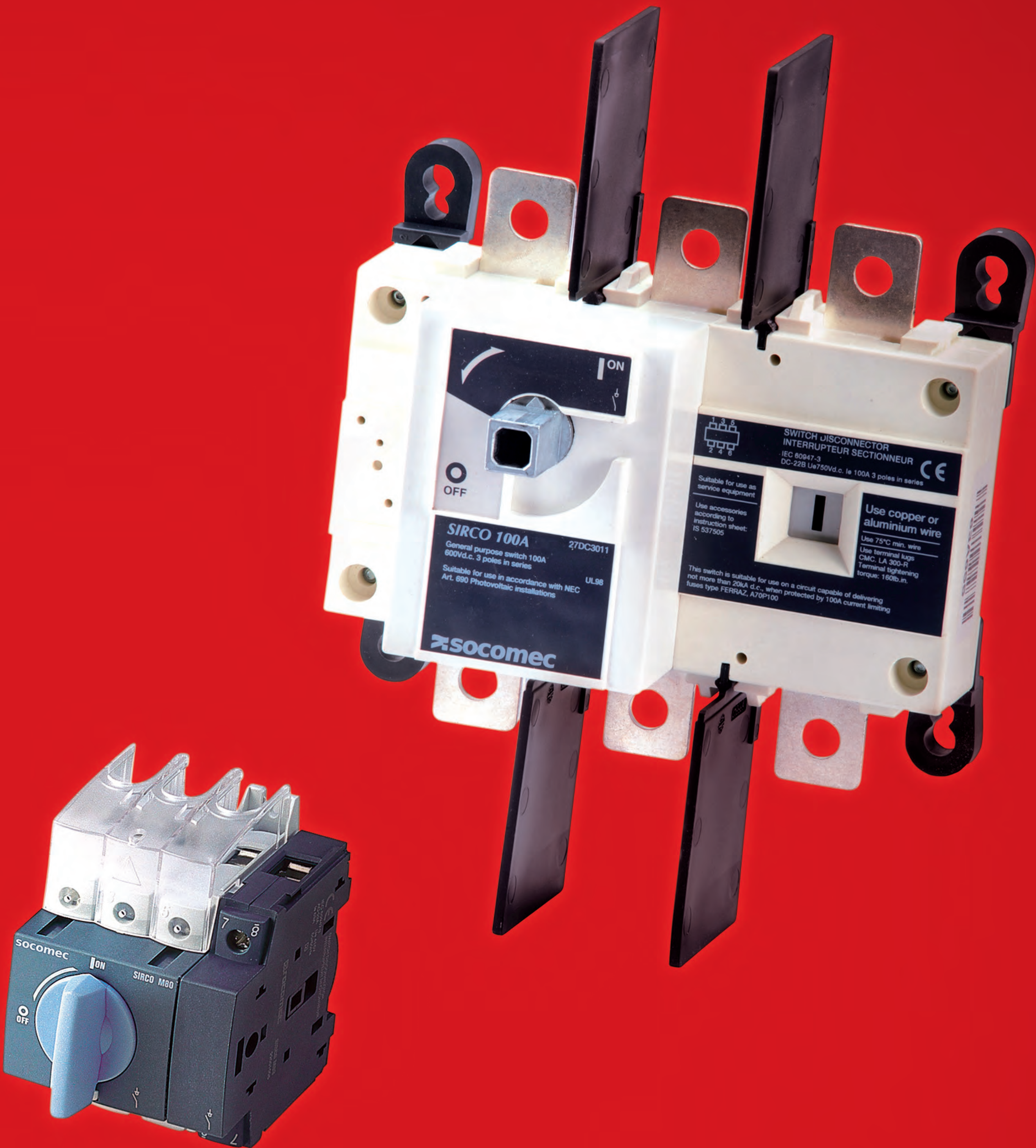
The various original parts and components that we stock guarantee that any faulty equipment can be rapidly brought back online, whilst maintaining its original performance and reliability.

Key figures

Nearly 400 Socomec experts supported by 250 engineers and technicians from our distributors, drive the solutions to your specific needs.



ON-SITE SERVICE MANAGEMENT	TECHNICAL HOTLINE NETWORK	CERTIFIED EXPERTISE
		
110,000 service operations per year (mainly preventive visits)	**25+** languages spoken	**8,000** hours of technical training deployed per year (product, methodology and safety)
98 % Service Level Agreement compliance rate	**3** advanced technical support centres	
	110,000+ incoming calls handled per year	


ON
OFF
SIRCO 100A
27DC3011
General purpose switch 100A
600Vd.c. 3 poles in series
Suitable for use in accordance with NEC
Art. 690 Photovoltaic installations
UL98
socomec
SWITCH DISCONNECTOR
INTERRUPTEUR SECTIONNEUR
IEC 60947-3
DC-22B Ue750Vd.c. Ie 100A 3 poles in series
Suitable for use as service equipment
Use accessories according to instruction sheet: IS 537505
Use copper or aluminium wire
Use 75°C min. wire
This switch is suitable for use on a circuit capable of delivering not more than 20kA d.c., when protected by 100A current limiting fuses type FERRAZ, A70P100
socomec
ON
SIRCO M80
OFF

AC non-fusible disconnect switches

Non-fusible disconnect switches

SIRCO M UL 508
16 to 100 A
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SIRCO M
UL 98
30 to 100 A
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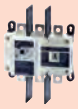

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100 to 1200 A
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30 to 400 A
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UL 98C
400 to 800 A
p. 45

Enclosed solution

SOCOMEC offers a range of pre-equipped enclosure in polyester, polycarbonate, stainless steel or painted steel.

Selection guide

Non-fusible disconnect switches

UL/ CSA standards for disconnect switches

UL 98 - Enclosed and dead front switches (equivalent to CSA-C22.2 no 4)

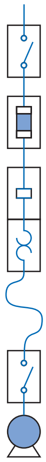
These requirements cover enclosed or dead front switches doesn't need to be capitalized, with or without provision for fuses, at 600 V or less.

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

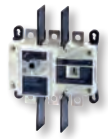
UL 489 - Molded case switches (equivalent to CSA-C22.2 no 5)

This requirements cover Molded-case Circuit Breaker, Molded case switches and fused Molded-case switches, rated at 600 volts or less and 6 000 amperes or less.

Typical control panel



UL 98 or UL 489
Non-fusible disconnect switches
SIRCO M UL 98, SIRCO UL 98, SIRCO V
or
Fusible disconnect switches
FUSERBLOC



sirco-ul_022_b_1_cat

UL 508
Non-fusible switches
SIRCO M UL 508

sircom_174_a

UL standards for electrical machinery

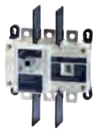
UL 508 - Industrial Control Equipment (equivalent to CSA-C22.2 no 14)

These requirements cover manual, starter, controllers, and overload don't need to be capitalized.

These products are IEC type products, requiring only a creepage distance between phases of 1/2 inch. UL 508 standard requested only 5 kA or 10 kA as short circuit withstand with fuse protection. Their use as a disconnecting mean is therefore limited to local disconnection of motors. These products can only be used as a disconnect mean when they have been additionally tested “suitable as motor disconnect”. This additional testing ensures that the switch as a proper closing capacity on short circuit. UL 508 (switches or Circuit breakers) can not be used as main disconnect of a electrical panel. (i.e. in entrance of control panels).

A manual motor controller marked “Suitable as motor disconnect” shall be installed only on the load side of the branch circuit protective device (UL 508A 30.3.3 and NEC 430.109(6)).

Which application? → Which function? → Which operation handle? → Which type of breaking?

	Machine control		Power distribution		
					
	SIRCO M UL 508 16 to 100 A	**SIRCO M** UL 98 30 to 100 A	**SIRCO** UL 98 100 to 1200 A	**SIRCO** V 30 to 400 A	**SIRCO** UL 98C 400 to 800 A
Applications					
Main switchboard	•	•	•	•	
Distribution panel	•	•	•	•	
Emergency disconnect	•	•	•	•	
Genset output		•	•	•	
Network coupling		•	•	•	
Local safety disconnect	•	•	•	•	
Machine control	•	•		•	
Photovoltaic disconnect					•
Enclosed switches	•	•	•	•	
Functions					
3/4 pole non-fusible disconnect switch	•	•	•	•	•
6/8 pole non-fusible disconnect switch	•				
3/4 pole changeover switch (I-0-II)	•				
3/4 pole changeover switch (I-I+II-II)	•				
Characteristics					
Rating					
600 VAC	•	•	•	•	
800 VAC					•
Operation					
Manual (rotating)	•	•	•	•	•
Manual flange				•	
Manual toggle	•				
Direct operation handle					
Front	•	•	•	•	•
External operation handle					
Front	•	•	•	•	•
Right side	•	•		•	
Flange				•	
Indication of breaking					
Positive break indication	•	•	•	•	•
Switch body					
Modular	•	•			

SIRCO M UL 508

Non-fusible disconnect switches standards UL and CSA
from 16 to 100 A

sircm_132_a

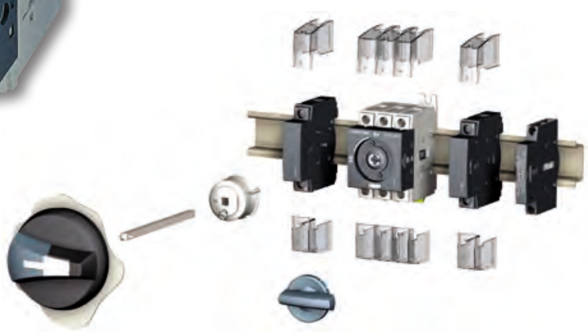
Rotary switch
SIRCO M *3 x 80 A*

sircm_133_a

Toggle switch
SIRCO M *3 x 80 A + 2 auxiliary contacts*

sircm_174_a

Rotary switch
SIRCO M *3 x 80 A*



sircm_175_a

The solution for

> OEM/Machine Builders
> Industrial Control Panels Manufacturers (UL 508A)
> Switchboards Manufacturers (UL 891)
> Distributors

Strong points

> Positive break indication
> Direct or external operation
> Compact footprint
> DIN-rail or base mounting
> Wide range of accessories
> Up to 8 pole or 4 pole MTS

Conformity to standards

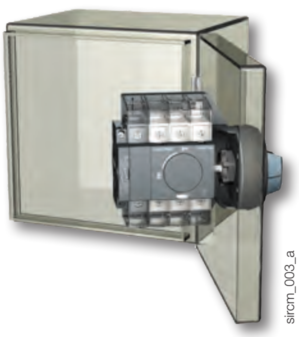
> UL 508, CSA-C22.2 No. 14 Guide NLRV, File E173959
> CSA-C22.2 No. 14, Class 3211-05, File 112964
> IEC 60947-3

Function

SIRCO M UL/CSA are compact and modular non-fusible disconnect switches. They make and break under all types of load conditions and provide safe isolation for any low voltage circuit, especially for machine control circuits.

General characteristics

- Positive break indication.
- Direct or external operation.
- Compact footprint.
- DIN-rail, base or door mounting.
- Wide range of accessories.
- Up to 8 pole or 4 pole MTS.



sircm_003_a

UL 508 manual motor controller “Suitable as motor disconnect”

References

<table>
<tr><th>Rating (A)</th><th>No. of poles</th><th>Toggle switch (direct handle included)</th><th>Rotary switch</th><th>Direct handle</th><th>External front and right side handles[4]</th><th>Shaft for external handles</th><th>Switched fourth pole module</th><th>Auxiliary contacts</th><th>Terminal shrouds</th><th>Door mounting kit</th></tr>
<tr><td>16 A</td><td>3 P</td><td>2205 3000</td><td>2200 3000</td><td rowspan="8">Blue
2299 5012</td><td rowspan="8">S00 type
I - 0
Black
3R, 12
1473 1111

Red/Yellow
3R, 12[1]
1474 1111

Black
4, 4X[1]
147D 1111

Red/Yellow
4, 4X[1]
147E 1111

S0 type
I - 0
Black
1, 3R, 12[1]
1483 1111

Red/Yellow
1, 3R, 12[1]
1484 1111

Black 4, 4X[1]
148D 1111

Red/Yellow
4, 4X[1]
148E 1111</td><td rowspan="8">S00/S0 type
5.9 in
150 mm
1407 0515

7.9 in
200 mm
1407 0520

12.6 in
320 mm
1407 0532[2]</td><td>1 P
2200 1000</td><td rowspan="8">M type
1 AC
NO + NC
2299 0001

1 AC 2 NC
2299 0011</td><td rowspan="5">1 P
2294 1005[3]

3 P
2294 3005[3]</td><td rowspan="8">2299 3409</td></tr>
<tr><td>20 A</td><td>3 P</td><td>2205 3001</td><td>2200 3001</td><td>1 P
2200 1001</td></tr>
<tr><td>25 A</td><td>3 P</td><td>2205 3002</td><td>2200 3002</td><td>1 P
2200 1002</td></tr>
<tr><td>32 A</td><td>3 P</td><td>2205 3003</td><td>2200 3003</td><td>1 P
2200 1003</td></tr>
<tr><td>40 A</td><td>3 P</td><td>2205 3004</td><td>2200 3004</td><td>1 P
2200 1004</td></tr>
<tr><td>63 A</td><td>3 P</td><td>2205 3006</td><td>2200 3006</td><td>1 P
2200 1006</td><td rowspan="3">1 P
2294 1009[3]

3 P
2294 3009[3]</td></tr>
<tr><td>80 A</td><td>3 P</td><td>2205 3008</td><td>2200 3008</td><td>1 P
2200 1008</td></tr>
<tr><td>100 A
CD</td><td>3 P</td><td></td><td>2200 3009</td><td>1 P
2200 1009</td></tr>
</table>

Common accessories - more available on next pages.
(1) Please order the shaft guide: 1419 0000 with the shaft.
(2) Top and bottom.
(3) There is no door interlocking when the switch is fitted on the side of the enclosure.

UL 508 non-metallic polycarbonate 4, 4X enclosed SIRCO M

cofi_368_a_1_cat

Function

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

General characteristics

- Grey enclosure with red handle.
- Equipped with a 3 pole SIRCO M UL 508.
- 1 removable ground terminal.
- Possibility of adding 1 power pole and 1 auxiliary contact.
- Nema/UL type 1, 3R, 12, 4, 4X.

Conformity to standards[1]

> UL 508, CSA-C22.2 No. 14 Guide NLRV, File E173959
> CSA-C22.2 No. 14, Class 3211-05, File 112964
> IEC 60947-3

(1) Product reference on request.

SIRCO M UL 508

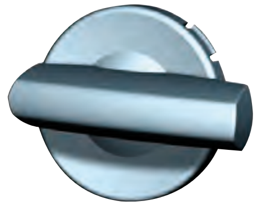
Non-fusible disconnect switches standards UL and CSA

from 16 to 100 A

Accessories

Direct operation handle

Rating (A)	Handle color	Handle type	Reference
16 … 100 CD	Blue	M00	2299 **5012**



M00 handle

acces_277_a_2_cat

External operation handle

Use

The handle locking function prevents the user from opening the door of the enclosure when the switch is in the “ON” position (only if the handle is fitted on the door).

No interlock in the “OFF” position for S00 and S0 handles.

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. The handle is padlockable with 3 padlocks.

S00 handle

acces_264_a_2_cat

Front and right side handles I - 0

Rating (A)	Handle color	Handle type	Nema/UL type	Reference
16 … 100 CD	Black	S00	3R, 12	1473 **1111**
16 … 100 CD	Red/Yellow	S00	3R, 12	1474 **1111**
16 … 100 CD	Black	S00	4, 4X	147D **1111**
16 … 100 CD	Red/Yellow	S00	4, 4X	147E **1111**
16 … 100 CD	Black	S0	1, 3R, 12	1483 **1111**
16 … 100 CD	Red/Yellow	S0	1, 3R, 12	1484 **1111**
16 … 100 CD	Black	S0	4, 4X	148D **1111**
16 … 100 CD	Red/Yellow	S0	4, 4X	148E **1111**
16 … 100 CD	Black	S01 (1)	3R, 12	140F **2111**
16 … 100 CD	Red/Yellow	S01 (1)	3R, 12	140G **2111**
16 … 100 CD	Black	S01 (1)	4, 4X	140D **2111**
16 … 100 CD	Red/Yellow	S01 (1)	4, 4X	140E **2111**

(1) Not compatible with door mounting kit.

S0 handle

acces_279_a_2_cat

Front handle for heavy duty I - 0 with metallic lever

Rating (A)	Handle color	Handle type	Nema/UL type	Reference
16 … 100 CD	Black	S01	4, 4X	140D **2911**
16 … 100 CD	Red/Yellow	S01	4, 4X	140E **2911**

S01 handle

acces_304_a_2_cat

Front handle for transfer switches I - 0 - II

Rating (A)	Handle color	Handle type	Nema/UL type	Reference
16 … 100 CD	Black	S00	4, 4X	1473 **1113** (1)

(1) Not UL.

Shafts for external handle

Use

Standard lengths:

- 5.9 in / 150 mm
- 7.9 in / 200 mm
- 12.6 in / 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 SIRCO M transfer switches.

acces_280_a_2_cat

For 3/4 pole

Ratg (A)	Handle type	Length (in)	Length (mm)	Reference
16 … 100 CD	S00/S0	5.9	150	1407 **0515**
16 … 100 CD	S00/S0	7.9	200	1407 **0520**
16 … 100 CD	S00/S0	12.6	320	1407 **0532**
16 … 100 CD	S01	7.9	200	1404 **0520**
16 … 100 CD	S01	12.6	320	1404 **0532**
16 … 100 CD	S01	15.7	400	1404 **0540**

For 6/8 pole

Rating (A)	Handle type	Length (in)	Length (mm)	Reference
16 … 100 CD	S00/S0	5.9	150	1407 **0515**
16 … 100 CD	S00/S0	7.9	200	1407 **0520**
16 … 100 CD	S00/S0	12.6	320	1407 **0532**

Accessories (continued)

Shaft guide for external handle

Use
This accessory enables handle to engage extension shaft with a misalignment of up to 0.59 in/15 mm.
Required for a shaft lenght from 12.6 in/320 mm.

Handle type	Reference
S00 and S0	1419 **0000**


acces_260_a_2_cat

Additional pole

4th pole

Rating (A)	No. of poles	Type	Reference
16	1 P	switched	2200 **1000**
20	1 P	switched	2200 **1001**
25	1 P	switched	2200 **1002**
32	1 P	switched	2200 **1003**
40	1 P	switched	2200 **1004**
63	1 P	switched	2200 **1006**(1)
80	1 P	switched	2200 **1008**(1)
100 CD	1 P	switched	2200 **1009**(1)

(1) Not UL.

Use
Transforms:
- 3 pole SIRCO M non-fusible disconnect switch into a 4 pole,
- 3 pole SIRCO M transfer switch into a 4 pole.


sircm_072_b_1_cat

Solid neutral pole

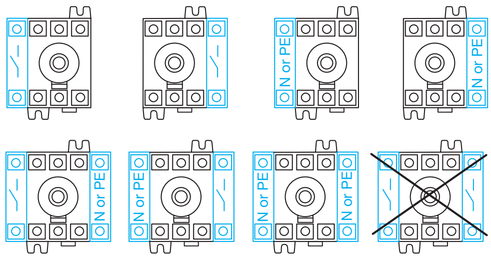
Rating (A)	No. of poles	Type	Reference
16 … 40	1 P	unswitched	2200 **5005**
63 … 100 CD	1 P	unswitched	2200 **5009**

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

Ground module

Rating (A)	No. of poles	Type	Reference
16 … 40	1 P	unswitched	2200 **9005**
63 … 100 CD	1 P	unswitched	2200 **9009**

Use
Adds 1 protective ground module pole to the non-fusible disconnect switch.



sircm_078_a_1_gb_cat

Terminal shrouds

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

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

Rating (A)	No. of poles	Position	Reference
16 … 40	1 P	top and bottom	2294 **1005**
16 … 40	3 P	top and bottom	2294 **3005**
63 … 100 CD	1 P	top and bottom	2294 **1009**
63 … 100 CD	3 P	top and bottom	2294 **3009**


sircm_049_a_1_cat

SIRCO M UL 508

Non-fusible disconnect switches standards UL and CSA

from 16 to 100 A

M type Auxiliary Contacts

Use

Pre-break and signaling 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.

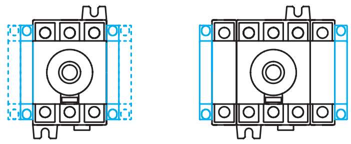
Max 4 Auxiliary Contacts per product (2 modules).

Characteristics

A300.

Rating (A)	No. of AC	AC type	Reference
16 ... 100 CD	1 AC	NO + NC	2299 **0001**
16 ... 100 CD	1 AC	2 NO	2299 **0011**

sircm_075_b_2_cat



sircm_081_a_1_x_cat

Auxiliary contacts configurations for SIRCO M

Conversion kit

Use

These accessories enable the assembly of 2 switches in order to achieve:

- 6 or 8 pole switches
- 3 or 4 pole open or close transition transfer switches.

Rating (A)	Type	Reference
16 ... 100 CD	Non-fusible disconnect switches 6/8 pole	2269 **6009**
16 ... 100 CD	Transfer switch 3/4 pole (I - 0 - II)	2209 **6009**
16 ... 100 CD	Transfer switch 3/4 pole (I - I+II - II)	2299 **6009** (1)

(1) Not UL.

sircm_050_c_2_cat

Conversion kit for 6 or 8 pole non-fusible disconnect switches

sircm_097_b_2_x_cat

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

sircm_086_b_1_cat

Door mounting kit

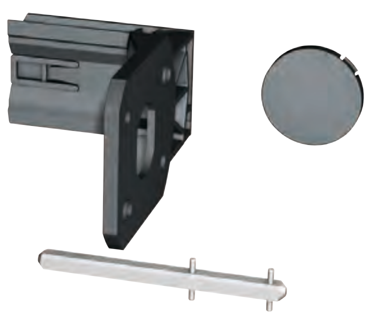
Use

This kit enables direct mounting of the switch on the panel door or on the right or left side of the panel with S00 and S0 handles.

The S0 and S00 external handles are 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 ... 100 CD	3/4 P	2299 **3409**

Not compatible with S01 handle.
No need of external shaft.



sircm_051_b_2_cat

Characteristics

Characteristics according to UL 508 and CSA-C22.2 No. 14

General use rating (A)	16 A	20 A	25 A	32 A	40 A	63 A	80 A	100 A CD
Short circuit rating at 600 VAC (kA)	65	65	65	65	10/65	50/65	50/65	50/65
Type of fuse	J	J	J	J	J	J	J	J
Max fuse rating (A)	30	30	30	30	60/30	100/60	100/60	100/60
Max. motor hp/FLA 3 ph motor max.								
208 VAC	3/0.6	5/16.7	7.5/24.2	7.5/24.2	7.5/24.2	15/46.2	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	20/54
440-480 VAC	10/14	10/14	15/21	20/27	20/27	40/52	40/52	40/52
600 VAC	10/11	15/17	20/22	25/27	25/27	40/41	40/41	40/41
Connection terminals								
Solid - 1 wire	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#8 - #2
Solid - 2 wires	2 x #12	2 x #12	2 x #12	2 x #12	2 x #12	2 x #12	2x #12	2x - #12
Stranded - 1 wire	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #1	#14 - #1	#14 - #10
Stranded - 2 wires	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#10 - #6)	2 x (#10 - #6)	2 x - (#10-#6)
Auxiliary contacts								
Electrical characteristics	A300	A300	A300	A300	A300	A300	A300	A300
Mechanical characteristics								
Endurance (number of operating cycles)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
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	8.9/1

Characteristics according to IEC 60947-3

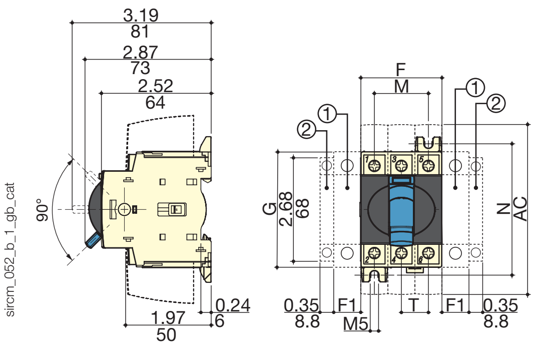
Thermal current I_{th} (40°C)		16 A	20 A	25 A	32 A	40 A	63 A	80 A	100 A CD
Rated insulation voltage U_i (V)		800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	8	8	8	8
Rated operational currents I_e (A)									
Rated voltage	**Utilization**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-23 A/AC-23 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	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	100/100
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	25
Associated fuse rating (A)(3)		16	20	25	32	40	63	80	100
Overload capacity (U_e 415 VAC)									
Rated short-time withstand current 0.3 s. I_{cw} (kA rms)(3)		2.5	2.5	2.5	2.5	2.5	3	3	1.5
Rated short-circuit making capacity I_{cm} (kA peak)(3)		6	6	6	6	6	9	9	2.1
Connection									
Minimum Cu cable cross section (mm²)		1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5
Maximum Cu cable section (mm²)		16	16	16	16	16	35	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	3.5/3.85

(1) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.
(2) The power value is given for information only, the current values vary from one manufacturer to another.
(3) For a rated operating voltage U_e = 400 VAC.

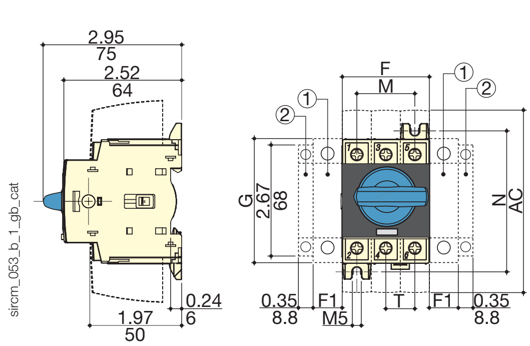
Dimensions (in / mm)

16 to 100 A

Toggle operation



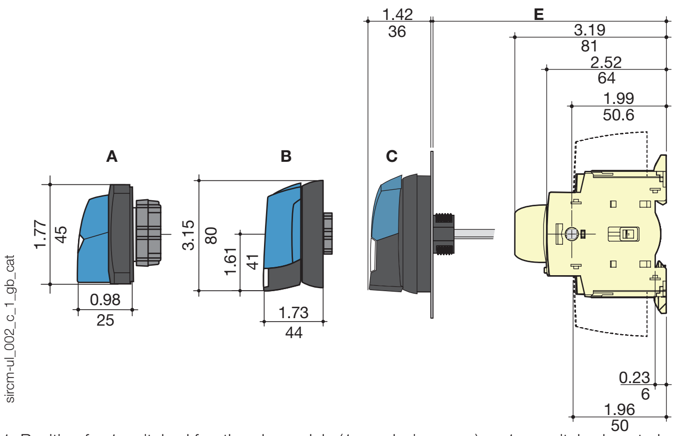
Direct operation with handle



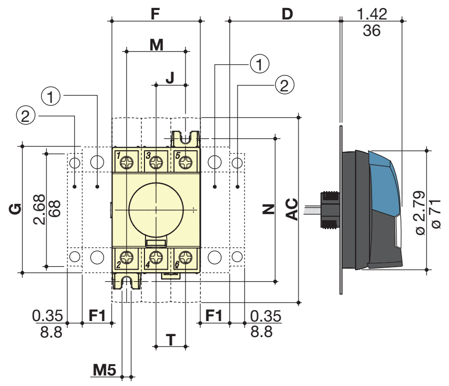
1. Position for 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 protective ground module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

External front handle



External side handle

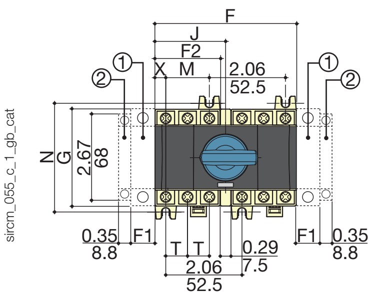


1. Position for 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 ground module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

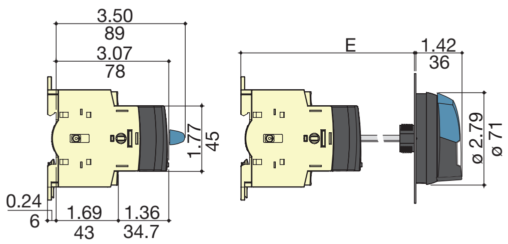
Note: Maximum of 4 additional blocks.

Rating (A)	Units	Overall dimensions D min	D max	E min	E max	Terminal shrouds AC	Switch body F	F1	G	J	Switch mounting M	N	Connection T
16 ... 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 ... 100 CD	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 non-fusible disconnect switches **or** 3/4-pole transfer switches



External front handle for 6/8-pole non-fusible disconnect switches **or** 3/4-pole transfer switches



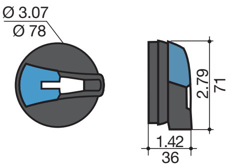
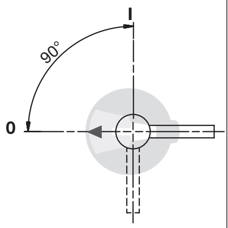
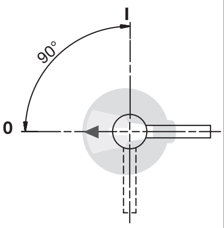
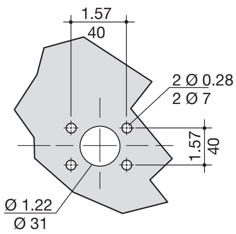
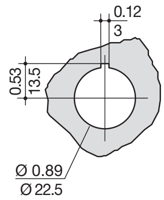
1. Position for 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 ground module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

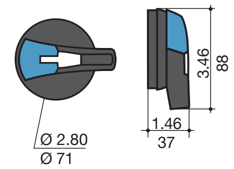
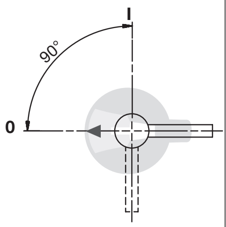
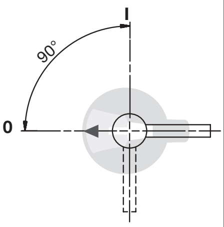
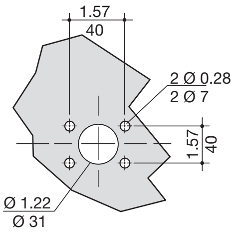
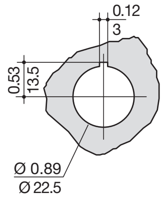
Rating (A)	Units	Overall dimensions E min	E max	Switch body F	F1	F2	G	J	Switch mounting M	N	Connection T	X
16 ... 40	in	4.13	14.64	3.83	0.59	1.77	2.67	1.92	1.18	2.95	0.59	0.29
	mm	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 ... 100 CD	in	4.13	14.65	4.13	0.69	2.06	2.99	2.06	1.38	3.35	0.69	0.34
	mm	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

External handles dimensions (in / mm)

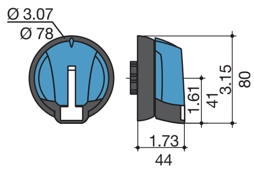
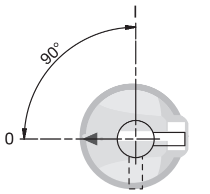
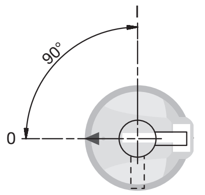
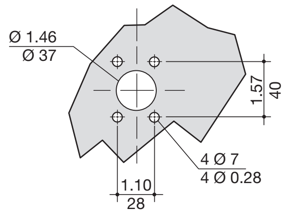
16 to 100 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S00 type 			With 4 fixing screws  With fixing nut 

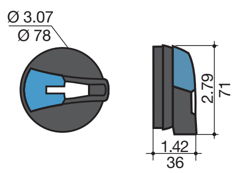
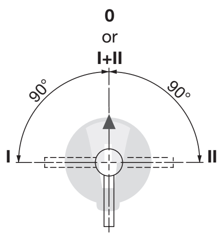
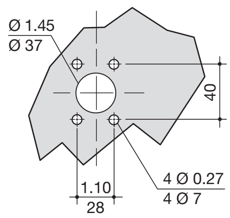
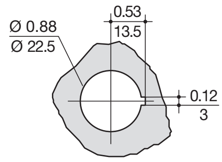
poign_059_c_1_us_cat

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S0 type 			With 4 fixing screws  With fixing nut 

poign_060_a_1_us_cat

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S01 type 			With 4 fixing screws 

poign_018_a_1_gb_cat

Handle type	Front operation Direction of operation	Door drilling
S00 type Transfer switches 		With 4 fixing screws  With fixing nut 

poign_070_a_1_gb_cat

SIRCO M UL 98

Non-fusible disconnect switches standards UL and CSA

from 30 to 100 A

Rotary switch
SIRCO M *3 x 100 A*

The solution for

- > OEM/Machine Builders
- > Industrial Control Panels Manufacturers (UL 508A)
- > Switchboards Manufacturers (UL 891)
- > Distributors

Strong points

- > Positive break indication
- > Touch safe
- > DIN rail or back plate-mounted
- > Direct or external operation handle
- > Contact point technology

Conformity to standards

- > UL 98, CSA-C22.2 No. 4, Guide WHTY, File E201138
- > CSA-C22.2 No. 4, Class 4651-02, File 112964
- > IEC 60947-3

c UL us LISTED

Function

SIRCO M UL 98 are compact non-fusible disconnect switches that make and break under on and off load conditions and provide safe isolation.
These switches are extremely durable and are tested and approved for use in the most demanding applications.

General characteristics

- Positive break indication.
- Touch safe.
- DIN rail or back plate-mounted.
- Direct or external operation handle.

Specific characteristics

- Contact point technology.

References

UL 98 non-fusible disconnect switches

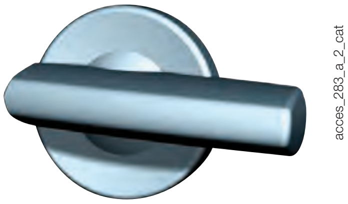
Rating (A)	No. of poles	Switch body	Direct handle	External front and right side handles	Shafts for external front and side handles	Switched fourth pole module	Unswitched neutral pole	Ground module	Auxiliary contacts	Terminal shrouds
30 A	3 P	2201 **3003**				1 P 2201 **1003**				
60 A	3 P	2201 **3006**	Blue 2299 **5032**	S0 type I - 0 Black 4, 4X 148D **1111** Red/Yellow 4, 4X 148E **1111**	5.9 in 150 mm 1407 **0515** 7.9 in 200 mm 1407 **0520** 12.6 in 320 mm 1407 **0532**(1)	1 P 2201 **1006**	1 P 2200 **5011**	1 P 2200 **9011**	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)
100 A	3 P	2200 **3010**				1 P 2200 **1010**				

Common accessories - more available on next pages.
(1) Shaft guide reference 14190000, is required for shaft length over 12.6 in / 320 mm.
(2) Top and bottom.

Accessories

Direct operation handle

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



M01 handle

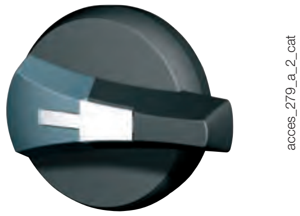
External operation handle

Use

The handle locking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position (only if the handle is fitted on the door).

No interlock in the “OFF” position for S0 handles.

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. The handle is padlockable with 3 padlocks.



S0 handle

S01 handle

Front and right side handles I - 0

Rating (A)	Handle color	Handle type	Nema/UL type	Reference
30 … 100	Black	S0	1, 3R, 12	1483 **1111**
30 … 100	Red/Yellow	S0	1, 3R, 12	1484 **1111**
30 … 100	Black	S0	4, 4X	148D **1111**
30 … 100	Red/Yellow	S0	4, 4X	148E **1111**
30 … 100	Black	S01	3R, 12	140F **2111**
30 … 100	Red/Yellow	S01	3R, 12	140G **2111**
30 … 100	Black	S01	4, 4X	140D **2111**
30 … 100	Red/Yellow	S01	4, 4X	140E **2111**

Front handle for heavy duty I - 0 with metallic lever

Rating (A)	Handle color	Handle type	Nema/UL type	Reference
16 … 100 CD	Black	S01	4, 4X	140D **2911**
16 … 100 CD	Red/Yellow	S01	4, 4X	140E **2911**

Shafts for external handle

Use

Standard lengths:
- 5.9 in / 150 mm,
- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: please consult us.

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

For 3/4 pole

Rating (A)	Handle type	Length (inches)	Length (mm)	Reference
30 … 100	S0	5.9	150	1407 **0515**
30 … 100	S0	7.9	200	1407 **0520**
30 … 100	S0	12.6	320	1407 **0532**
30 … 100	S01	7.9	200	1404 **0520**
30 … 100	S01	12.6	320	1404 **0532**
30 … 100	S01	15.7	400	1404 **0540**

SIRCO M UL 98

Non-fusible disconnect switches

from 30 to 100 A

Accessories (continued)

Shaft guide for external handle

Use

This accessory makes shaft introduction easier with up to 0.59 in / 15 mm misalignment.
Required for a shaft length over 12.6 in / 320 mm.

Handle type	Reference
S0	1419 **0000**

acces_260_a_2_cat

Additional pole for SIRCO M

4th pole

Rating (A)	No. of poles	Type	Reference
30	1 P	switched	2201 **1003**
60	1 P	switched	2201 **1006**
100	1 P	switched	2200 **1010**

Use

Adding one or two additional poles transforms a non-fusible disconnect switch from 3 poles to 4 poles.

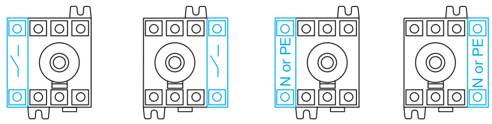
sircm_072_b_1_cat

Solid neutral pole

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

Use

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

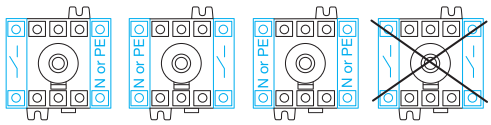


Ground module

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

Use

Adds 1 ground module pole to the switch-disconnector.



sircm_078_a_1_gb_cat

Terminal shrouds

Use

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

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

Rating (A)	No. of poles	Position	Reference
30 ... 100	1 P	top and bottom	2294 **1011**
30 ... 100	3 P	top and bottom	2294 **3016**

sircm_049_a_1_cat

M type auxiliary contacts

Use

Pre-break and signaling of positions 0 and I by NO+NC or 2 NO auxiliary contacts.

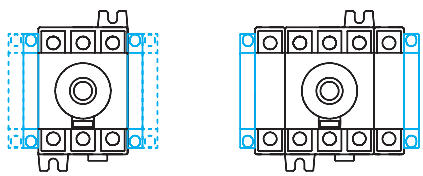
They can be mounted on the left or on the right side of the switch.
Max 4 auxiliary contacts (2 modules).

Characteristics

A300.

Rating (A)	No. of AC	AC type	Reference
30 ... 100	1 AC	NO + NC	2299 **0001**
30 ... 100	1 AC	2 NO	2299 **0011**

sircm_075_b_2_cat



sircm_081_a_1_x_cat

Auxiliary contacts configurations for SIRCO M

Characteristics

Characteristics according to UL 98 and CSA-C22.2 No. 4

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	#10	#10	#10
Stranded - 1 wire	#10 - 2/0	#10 - 2/0	#10 - 2/0
Solid - 2 wires	2 x #10	2 x #10	2 x #10
Stranded - 2 wires	2 x (#10 - #1)	2 x (#10 - #1)	2 x (#10 - #1)
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

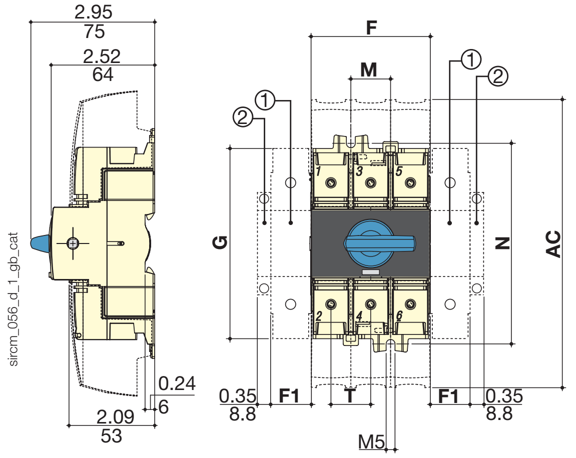
Thermal current I_{th} at 40°C (A)		30 A	60 A	100 A
Rated insulation voltage U_i (V)		800	800	800
Rated impulse withstand voltage U_{imp} (kV)		8	8	8
Rated operational currents I_e (A)				
Rated voltage	**Utilization category**	**A(1)**	**A(1)**	**A(1)**
400 VAC	AC-22 A	32	63	100
400 VAC	AC-23 A	32	63	100
690 VAC	AC-22 A	32	63	80
690 VAC	AC-23 A	32	63	63
Operational power in AC-23 (kW)				
At 400 VAC without prebreak AC in AC23 (kW)(2)(3)		15	30	45
At 500VAC without prebreak AC in AC23 (kW)(2)(3)		15	30	45
At 690VAC without prebreak AC in AC23 (kW)(2)(3)		18.5	30	45
Overload capacity (U_e 415 VAC)				
Rated short-circuit making capacity I_{cm} (kA peak)(4)		12	12	12
Connection				
Min. connection section/ (mm²)		2.5	2.5	10
Max. connection section/ (mm²)		70	70	70

(1) Category with index A = frequent operation.
(2) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.
(3) The power value is given for information only, the current values vary from one manufacturer to another.
(4) For a rated operating voltage U_e = 400 VAC.

Dimensions (in/mm)

30 to 100 A

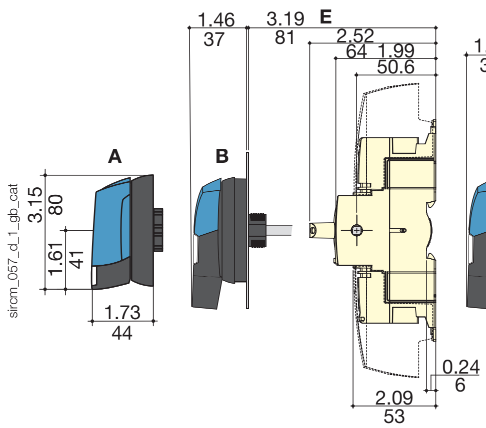
Direct operation with handle



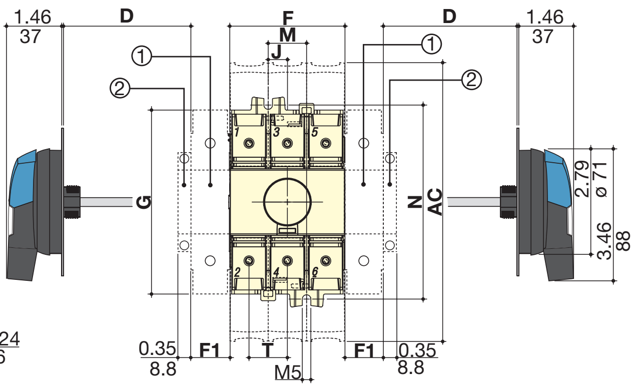
1. Location for: 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 protective earth module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

External front operation



External side operation



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

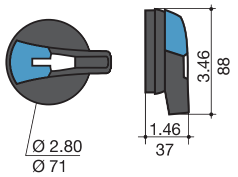
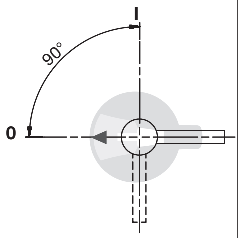
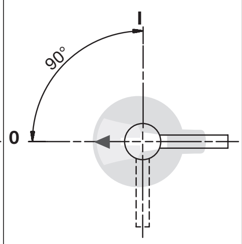
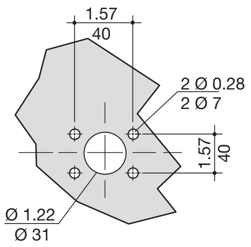
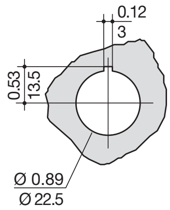
2. Position for 1 auxiliary contact module only.
Note: max 2 additional blocks.

A. S01 handle
B. S00 handle

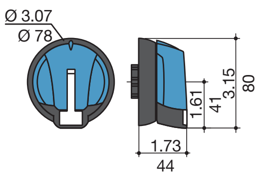
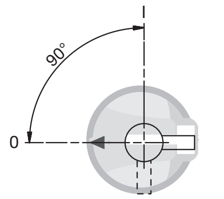
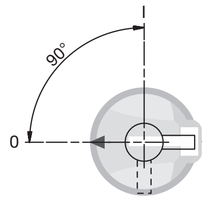
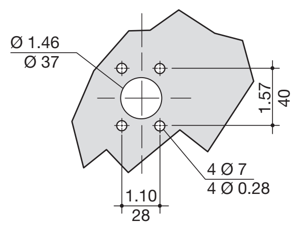
Rating (A) / Frame size		Overall dimensions				Terminal shrouds	Switch body				Switch mounting		Connection
		D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
30 … 100 / M3	mm	30	201	100	372	189	78	26	124.6	13	26	131.4	26
	in	1.18	7.93	3.94	14.64	7.44	3.07	1.02	4.90	0.51	1.02	5.17	1.02

External handles dimensions (in/mm)

30 to 100 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S0 type			With 4 fixing screws	With fixing nut
				

poign_060_a_1_us_cat

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S01 type			With 4 fixing screws
			

poign_018_a_1_us_cat

SIRCO UL 98

Non-fusible switches standards UL and CSA

100 to 1200 A

sirco-ul_022

SIRCO
3 x 200 A

sirco_093

SIRCO
3 x 600 A

The solution for

- OEM/Machine Builders
- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- AC Combiners Builders
- Distributors

Strong points

- Reliability
- Safety of property and personnel
- Simplicity
- Easy assembling

Conformity to standards[1]

- UL 98, CSA-C22.2 No. 4, Guide WHTY, File E201138
- CSA-C22.2 No. 4, Class 4651-02, File 112964
- IEC 60947-3

(1) Product reference on request.

Customized solutions

- Please consult us

Enclosed Disconnect Standards

- cULus 508A
- UL 98, Guide WHTY, File E201138
- CSA 22.2 No. 4, Class 4652-04, File 112964
- IEC 60947-3

Function

SIRCO non-fusible disconnect switches are heavy duty switches that break and make power circuits on and off load and provide safety isolation.
These switches are extremely durable and are tested and approved for use in the most demanding applications.

General characteristics

- Positive break indication.
- Fully visualized disconnection.
- High thermal and dynamic withstand.
- Severe utilization categories.
- High electrical and mechanical endurance.

UL 508A painted steel NEMA 3R, 12 enclosed SIRCO UL 98

coff-ul_032

Function

Enclosed SIRCO UL 98 allow safe disconneciton of power sources.

General Characteristics

- Painted steel enclosure with red handle.
- Fitted with a heavy duty handle that has a metallic padlock hap.
- Equipped with a 3 pole SIRCO UL 98 switch.
- Possibility of adding unswitched neutral pole auxiliary contacts, and terminal screens.
- Nema 3R, 12 up to 1200 A.

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] Red/Yellow 1, 3R, 12 142G **2111**[1] Black 4, 4X 142D **2111**[1] Red/Yellow 4, 4X 142E **2111**[1]	7.9 in 200 mm 1400 **1020** 12.6 in 320 mm 1400 **1032** 15.7 in 400 mm 1400 **1040**	1st contact NO/NC 2799 **0021** 2nd 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**						
	4 P	2700 **4021**						
400 A	3 P	2700 **3041**					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 **4041**						
600 A	3 P	2700 **3060**	Black 3799 **6012**	S3 type Black 4, 4X 143D **3111**[1] Red/Yellow 4, 4X 143E **3111**[1]	7.9 in 200 mm 1401 **1520** 12.6 in 320 mm 1401 **1532** 15.7 in 400 mm 1401 **1540**		3 P 2798 **3060**[4] 4 P 2798 **4060**[4]	3 P 3954 **3060** 4 P 3954 **4060**
	4 P	2700 **4060**						
800 A	3 P	2700 **3080**					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**						
	4 P	2700 **4100**						
1200 A	3 P	2700 **3120**						
	4 P	2700 **4120**						

Common accessories - more available on next pages
(1) Defeatable handle.
(2) Top.
(3) Bottom.
(4) Top or bottom.
(5) Max. 4 ACs.

Accessories

Direct operation handle

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


acces_135
H type handle


acces_114
B type handle

Accessories (continued)

External operation handle

Use

The interlocking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position or when the switch is padlocked in the "OFF" position.

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.


acces_150
S2 type handle


acces_166
S3 type handle


acces_152
S4 type handle


acces_236
Heavy duty S2 type handle

Front handle I - 0

Rating (A)	Handle type	Color	Nema type	Reference
100 ... 400	S2	Black	1, 3R, 12	142F **2111**
100 ... 400	S2	Red/Yellow	1, 3R, 12	142G **2111**
100 ... 400	S2	Black	4, 4X	142D **2111**
100 ... 400	S2	Red/Yellow	4, 4X	142E **2111**
600 ... 1200	S3	Black	4, 4X	143D **3111**
600 ... 1200	S3	Red/Yellow	4, 4X	143E **3111**
600 ... 1200	S4	Black	4, 4X	144D **3111**
600 ... 1200	S4	Red/Yellow	4, 4X	144E **3111**

Front handle heavy duty I - 0 with metallic lever

Rating (A)	Handle type	Color	Nema type	Reference
100 ... 400	S2	Black	4, 4X	142D **2911**
100 ... 400	S2	Red/Yellow	4, 4X	142E **2911**
600 ... 1200	S3	Black	4, 4X	143D **3911**
600 ... 1200	S3	Red/Yellow	4, 4X	143E **3911**
600 1200	S4	Black	4, 4X	144D **3911**
600 ... 1200	S4	Red/Yellow	4, 4X	144E **3911**

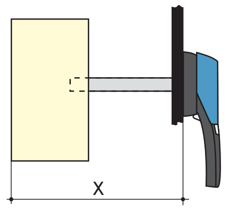
Shaft for external handle

Use

Standard lengths:
- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: please consult us.


acces_369
acces_144



acces_202_a

Rating (A)	Dimension X (in)	Dimension X (mm)	Handle type	Length (inches)	Length (mm)	Reference
100 ... 400	5.31 ... 10.43	135 ... 265	S2	7.9	200	1400 **1020**
100 ... 400	5.31 ... 15.16	135 ... 385	S2	12.6	320	1400 **1032**
100 ... 400	5.31 ... 18.31	135 ... 465	S2	15.7	400	1400 **1040**
100 ... 400	5.31 ... 22.25	135 ... 565	S2	19.7	500	1400 **1050**
600 ... 1200	8.70 ... 13.50	221 ... 343	S3, S4	7.9	200	1401 **1520**
600 ... 1200	8.70 ... 18.23	221 ... 463	S3, S4	12.6	320	1401 **1532**
600 ... 1200	8.70 ... 21.38	221 ... 543	S3, S4	15.7	400	1401 **1540**
600 ... 1200	8.70 ... 26.73	221 ... 679	S3, S4	19.7	536	1401 **1554**(1)

(1) UL pending, please consult us.

Alternative color S-type handle cover

Use

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

Other colors: please consult us.


acces_198

Handle color	Pack qty	Handle type	Reference
Light grey	50	S1, S2, S3	1401 **0001**
Dark grey	50	S1, S2, S3	1401 **0011**
Light grey	50	S4	1401 **0031**
Dark grey	50	S4	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 utilized as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 0.47 in /12 mm to the depth.


acces_187

Handle color	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 0.59 in / 15 mm misalignment.

Required for a shaft length over 12.6 in / 320 mm.


acces_260

Description	Reference
Shaft guide	1429 **0000**

Auxiliary contacts

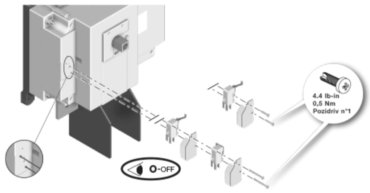
Use

Pre-break and color of positions 0 and I.
To have 2 NO/NC contacts per switch, please order 1st and 2nd auxiliary contacts per switch. 1st contact is mandatory to operate the 2nd one.

Electrical characteristics

A300 for 100 to 400 A.
A600 for 600 to 1200 A.


acces_076



NO/NC contact for 100 to 1200 A

These auxiliary contacts are for an application of 125-250VAC, 60Hz, general use 10A, 1A 1/2 HP.

Rating (A)	No. of AC	Reference
100 ... 1200	1st	2799 **0021**
100 ... 1200	2nd	2799 **0022**

Low level NO/NC contact for 100 to 1200 A

Low level auxiliary contacts are for an application of 125VAC, 60Hz, general use 1A.

Rating (A)	No. of AC	Reference
100 ... 1200	1st	2799 **0121**
100 ... 1200	2nd	2799 **0122**

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.


acces_079

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	#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**
800 ... 1200 (1)	4x (#2 - 600MCM)	2	6	Cu / Al	3954 **3120**
800 ... 1200 (1)	4x (#2 - 600MCM)	2	8	Cu / Al	3954 **4120**

(1) Two lugs per a pole are provided to put side by side per a pole.


ul_032_a

SIRCO UL 98
Non-fusible disconnect switches
100 to 1200 A

Characteristics

Characteristics according to UL 98 and CSA-C22.2 No. 4

	SIRCO UL 98 - 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 / FLA 1 ph motor max.							
220-240 VAC	10/50	10/50					
Max. motor hp / DC FLA motor max.							
125 VDC(1)	10 / 76	15 / 112	20 / 148	20 / 148			
250 VDC(2)	15 / 55	15 / 55	50 / 173	50 / 173			
Connection terminals							
Min. connection section / AWG	#6	#6	2x #6 / #4	2x #2	4x #2	4x #2	4x #2
Max. connection section / AWG	300MCM	300MCM	2x 350 / 600MCM	2x 600MCM	4x 600MCM	4x 600MCM	4x 600MCM
Mechanical characteristics							
Endurance (number of operating cycles)	10000	8000	6000	6000	3500	3500	3500
Operating torque (lbs.in/Nm)	88.5/10	88.5/10	128.3/14.5	327.5/37	442.5/50	442.5/50	442.5/50
Auxiliary contacts							
Electrical characteristics	A300	A300	A300	A600	A600	A600	A600

(1) 2 pole in series.
(2) 3 pole in series.

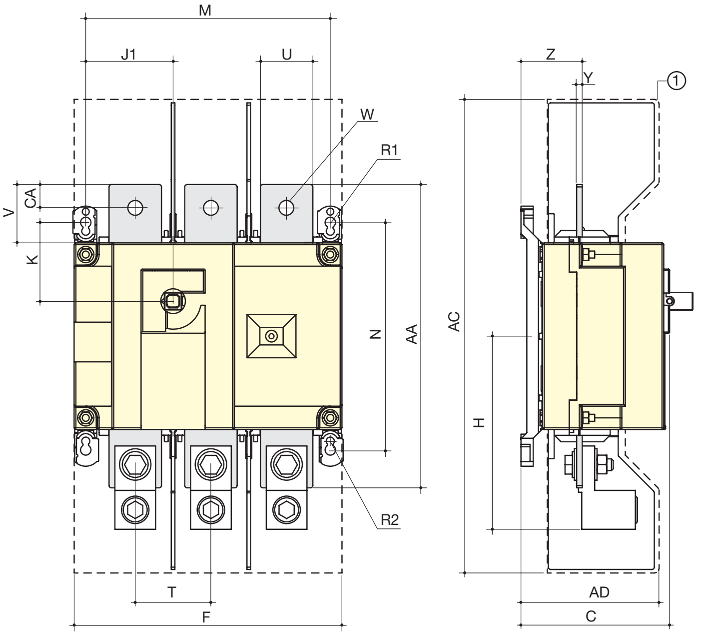
Characteristics according to IEC 60947-3

		SIRCO UL 98 - 600 to 1200 A			
Thermal current I_{th} (40°C)		**600 A**	**800 A**	**1000 A**	**1200 A**
Rated insulation voltage U_i (V)		1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)		12	12	12	12
Rated operational currents I_e (A)					
Rated voltage	**Utilization category**	**A(1)**	**A(1)**	**A(1)**	**A(1)**
400 VAC	AC-22 A	630	800	1000	1200
400 VAC	AC-23 A	630	800	1000	1000
690 VAC	AC-22 A	500	630	630	630
690 VAC	AC-23 A	200	400	400	400
Connection					
Min. Cu cable cross section (mm²)		2 x 150	2 x 185	2 x 240	
Min. Cu busbar section (mm²)		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)		355	450	560	560
At 500 VAC without prebreaking AC in AC23 (kW)(2)(3)		450	560	560	560
At 690 VAC without prebreaking AC in AC23 (kW)(2)(3)		185	400	400	400
Overload capacity (U_e 415 VAC)					
Rated short-circuit making capacity I_{cm} (kA peak)(4)		48	75	48	75

(1) Category with index A = frequent operation.
(2) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.
(3) The power value is given for information only, the current values vary from one manufacturer to another.
(4) For a rated operating voltage U_e = 400 VAC.

Dimensions (in/mm)

100 and 200 A

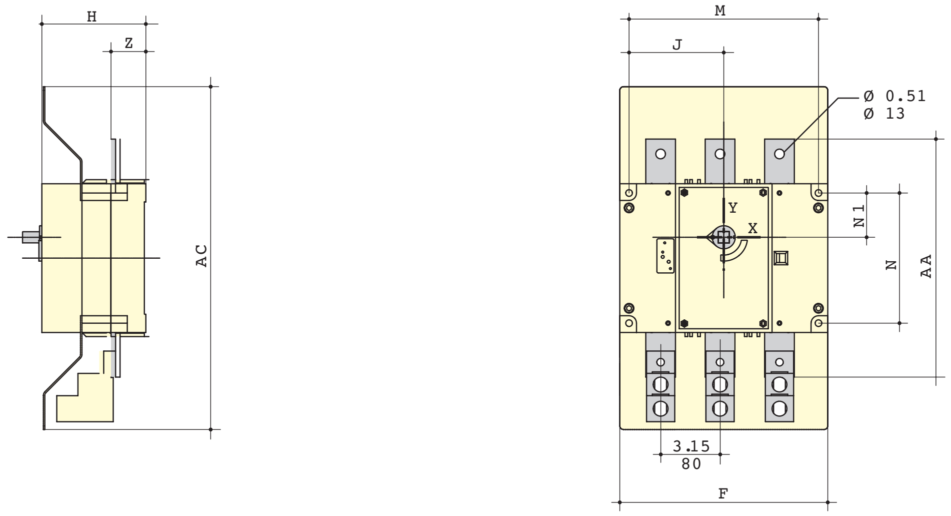


1. Terminal shrouds

sirco-ul_011_a_2_x_cat

Rating (A)	Unit	Overall dimensions	Terminal shrouds		Switch body						Switch mounting					Connection							
		C	AC	AD	F 3p.	F 4p.	H	J1 3p.	J1 4p.	K	M 3p.	M 4p.	N	R1	R2	T	U	V	W	Y	Z	AA	CA
100	in	3.72	10.1	3.05	7.09	9.06	4.22	2.17	4.13	1.8	6.3	8.27	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
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 and 600 A

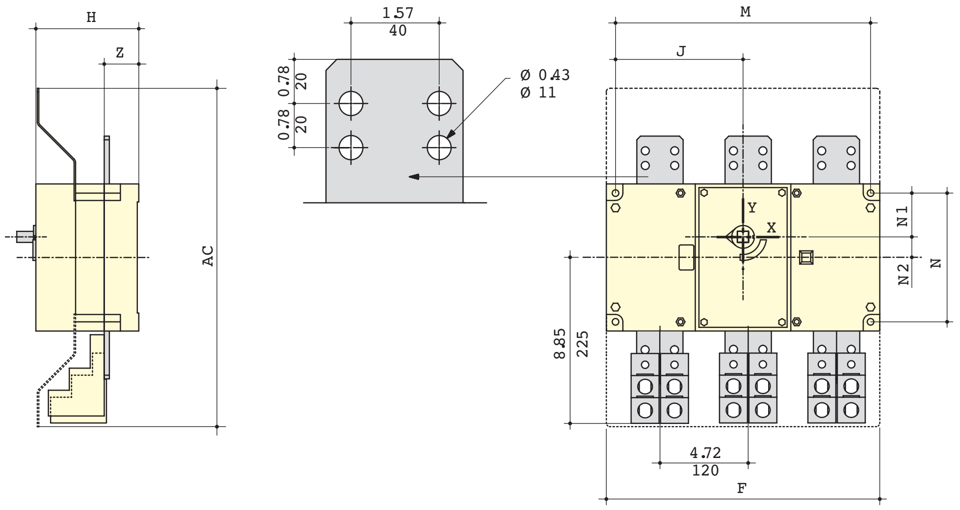


sirco_107_d_1_x_cat

Rating (A)	Unit	Terminal shrouds	Switch body					Switch mounting				Connection	
		AC	F 3p.	F 4p.	H	J 3p.	J 4p.	M 3p.	M 4p.	N	N1	AA	Z
400	in	18.12	11	14.17	5.5	5	6.59	10.04	13.19	6.88	2.34	11.81	1.85
	mm	460	280	360	140	127.5	167.5	255	335	175	59.5	300	47
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

Dimensions (in/mm) (continued)

800 to 1200 A

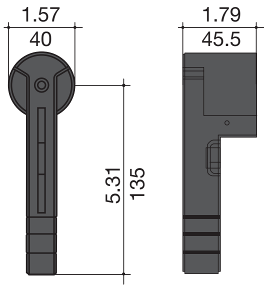


sirco_228_d_1_x_cat

Rating (A)	Unit	Terminal shrouds AC	Switch body F 3p.	F 4p.	H	J 3p.	J 4p.	Switch mounting M 3p.	M 4p.	N	N1
800	in	18.12	14.64	19.37	5.5	6.83	9.19	13.66	18.38	6.88	2.34
	mm	460	372	492	140	173.5	233.5	347	467	175	59.5
1 000	in	18.12	14.64	19.37	5.5	6.83	9.19	13.66	18.38	6.88	2.34
	mm	460	372	492	140	173.5	233.5	347	467	175	59.5
1 200	in	18.12	14.64	19.37	5.5	6.83	9.19	13.66	18.38	6.88	2.34
	mm	460	372	492	140	173.5	233.5	347	467	175	59.5

100 to 400 A

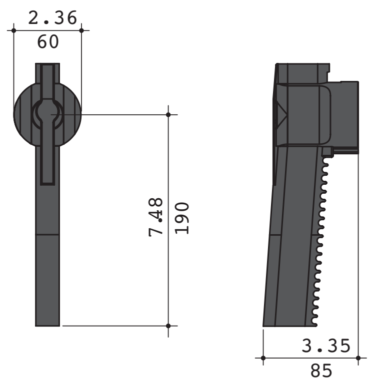
Front direct handle



sirco-ul_027_a_1_x_cat

600 to 1200 A

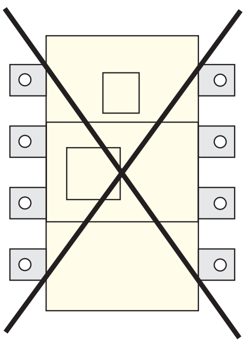
Front direct handle



sirco_267_b_1_x_cat

Mounting orientation

3/4 pole

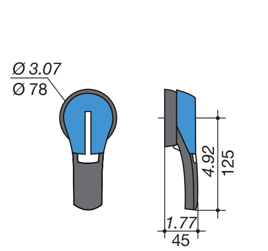


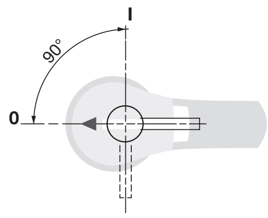
sirco-ul_028_a_1_x_cat

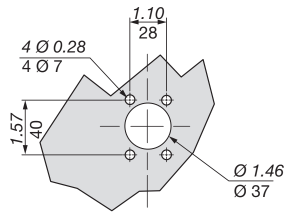
External handles dimensions (in/mm)

100 to 400 A

Handle type	Front operation Direction of operation	Door drilling
S2 type		



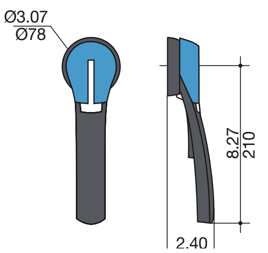


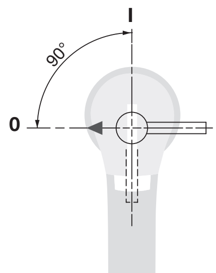


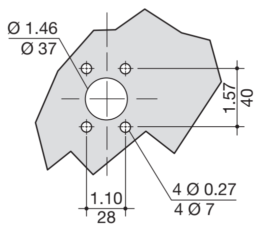
poign_013_a_1_us_cat

600 to 1200 A

Handle type	Front operation Direction of operation	Door drilling
S3 type		



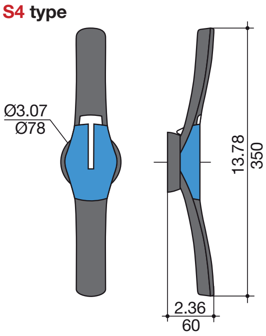


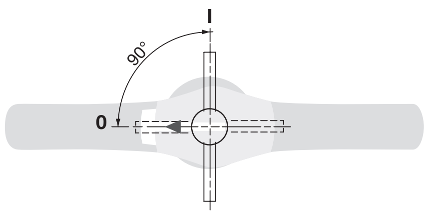


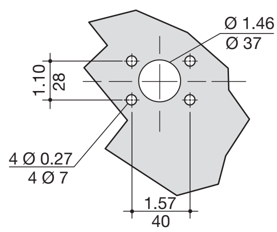
poign_046_a_1_gb_cat

600 to 1200 A

Handle type	Front operation Direction of operation	Door drilling
S4 type		



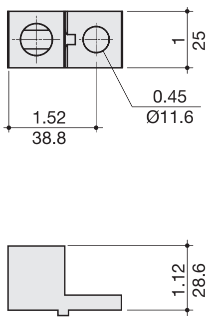




poign_036_a_1_us_cat

Terminal lugs (in/mm)

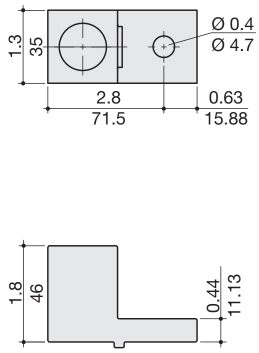
100 to 200 A



sirco_115_b_1_us_cat

300 kcmil

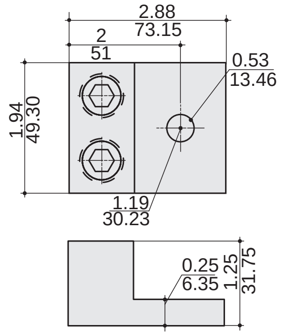
400 A



sirco-ul_010_b_1_us_cat

600 kcmil

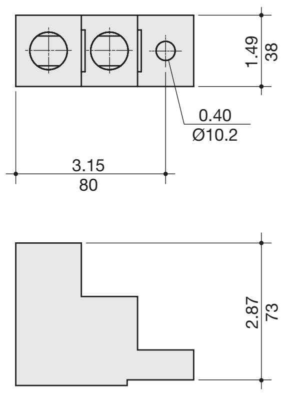
400 A



sirco-ul_026_b_1_us_cat

2 x 350 kcmil

600 to 1200 A



sirco_116_b_1_us_cat

2 x 600 kcmil

SIRCO V

Load break switches standards UL and CSA

30 to 400 A

sirco-ul_022

SIRCO
3 x 200 A

The solution for

- OEM/Machine Builders
- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- Distributors

Strong points

- Reliability
- Safety of property and personnel
- Flange compatible
- Simplicity
- Easy assembling
- Visible breaking

Conformity to standards

- UL 98, Guide WHTY, file E201138
- CSA 22.2 No. 4, Class 4651-02, File 112964
- IEC 60947-3

Customized solutions

- Please consult us

Function

SIRCO V is a manually operated multipolar load-break switch for applications that require flange accessories or visible breaking. This switch can break on and off load and provide safety isolation for any low voltage circuit. The SIRCO V switches are extremely durable and are tested and approved for use in the most demanding applications.

General characteristics

- Fully visible breaking.
- Compatible with flange accessories.
- High thermal and dynamic withstand.
- Severe utilization categories.
- High electrical and mechanical endurance.

References

Rating (A)	No. of poles	Switch body	Flange handle	Cable flange mechanism	Cable length	Rod operator for 8 to 24 inches enclosure depth	Front external handle	Shaft for external handle	NFPA 79 kit[1]	Auxiliary contacts	Terminal shrouds	Terminal lugs
30 A	3 P	2700 **3003**	Standard handle (NEMA 1, 3, 3R, 4, 12) 3729 **9002** Chrome plated handle (NEMA 1, 3, 3R, 4, 4X, 12) 3729 **9003**	3729 **9903**	36 inches 3729 **9992** 60 inches 3729 **9993** 120 inches 3729 **9994**	3729 **9904**	S1 type Black 1, 3R, 12 141F **2111** Black 4, 4X 141D **2111**	7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**	3279 **4532**	1 AC U type NO 3999 **0701** 1 AC U type NC 3999 **0702** 1 AC S type NC+NO 3999 **U041** 2 AC S type NC+NO 3999 **U041**	Integrated	Integrated
	4 P	2700 **4003**										
60 A	3 P	2701 **3006**					S2 Type Black 1, 3R, 12 141F **2111** 4, 4X 141D **2111**		3729 **7540**			
	4 P	2701 **4006**										
100 A	3 P	2701 **3010**										
	4 P	2701 **4010**										
200 A	3 P	2701 **3020**									3798 **3020**	3954 **6020**
	4 P	2701 **4020**									3798 **4020**	3954 **8020**
400 A	3 P	2701 **3039**							3729 **7544**		3798 **3040**	3954 **6060**

(1) Includes mechanism, shaft and internal handle. Please order external handle.
(2) No door interlocking

NFPA 79 accessories

Flange handle for flange operation

Use

Meets both UL 508A and NFPA 79 requirements.
The handle will operate the switch by cable or rod.

Rating (A)	Type	Nema type	Reference
30 … 400	Standard handle	1, 3, 3R, 4, 12	3729 **9002**[1]
30 … 400	Chrome plated handle	1, 3, 3R, 4, 4X, 12	3729 **9003**[1]

(1) Defeatable handle.

sirco_246_a_1_us_cat

Cable operator

Use

Link between the flange handle and the switch, please order the flange handle, the mechanism and a cable length of your choice.

Rating (A)	Description	Reference
30 … 400	Cable flange mechanism	3729 **9903**

Cable length (inches)	Cable length (mm)	Reference
36	900	3729 **9992**
60	1500	3729 **9993**
120	3000	3729 **9994**

sirco_247_a_1_cat

ul_042_b_1

Rod operator

Use

Link between the flange handle and the switch. The rod flange is an economical solution, please order the flange handle and a rod kit.

Rating 30 … 200 A

For enclosure depth (inches)	For enclosure depth (mm)	Reference
8 … 24	203 … 613	3729 **9904**

For 400 A rating, please consult us.

ul_043_a

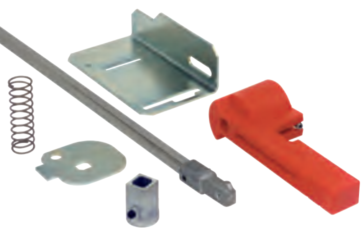
NFPA 79 "Through the door" kit

Use

Meets both UL 508A and NFPA 79 requirements.
Allows retrofit of your installations for ratings from 30 to 400 A.
Please order an S-type external handle separately.

Number of auxiliary contact installed on the switch will be limited to 1 layer (instead of 2).
If more needed please use the S type auxiliary contacts.
Delivered with a 12.6 in / 320 mm shaft.
For longer shafts, please consult us.

Rating (A)	Reference
30	3729 **4532**
60 … 200	3729 **7540**
400	3729 **7544**



ul_121_b

Accessories (continued)

External operation handle

Use

The interlocking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position or when the switch is padlocked in the "OFF" position (S1, S2, S3 and S4 type handles only).

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


acces_150
S2 type handle


acces_236
S2 type handle

Front handle I - 0

Rating (A)	Handle type	Nema type	Color	Reference
30 A	S1	1, 3R, 12	Black	141F **2111**
		1, 3R, 12	Red/Yellow	141G **2111**
		4, 4X	Black	141D **2111**
		4, 4X	Red/Yellow	141E **2111**
60 ... 400 A	S2	1, 3R, 12	Black	142F **2111**
		1, 3R, 12	Red/Yellow	142G **2111**
		4, 4X	Black	142D **2111**
		4, 4X	Red/Yellow	142E **2111**

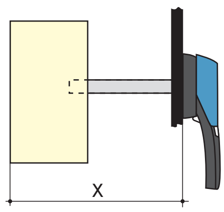
Shaft for external handle

Use

Standard lengths:
- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: please consult us.


acces_369



acces_202_a

Rating (A)	Dimension X (in)	Dimension X (mm)	Handle type	Length (inches)	Length (mm)	Reference
30 A	Consult Us	Consult Us	S1	7.9	200	1401 **0520**
30 A	Consult Us	Consult Us	S1	12.6	320	1401 **0532**
30 A	Consult Us	Consult Us	S1	15.7	400	1401 **0540**
60 ... 400 A	5.31 ... 10.43	135 ... 265	S2	7.9	200	1400 **1020**
60 ... 400 A	5.31 ... 15.16	135 ... 385	S2	12.6	320	1400 **1032**
60 ... 400 A	5.31 ... 18.31	135 ... 465	S2	15.7	400	1400 **1040**
60 ... 400 A	5.31 ... 22.25	135 ... 565	S2	19.7	500	1400 **1050**

Accessories (continued)

Shaft guide for external handle

Use
This accessory enables handle to engage shaft with a misalignment of up to 0.59 in / 15 mm.
Required for a shaft length over 400 mm for S1 to S2 handles and for a shaft from 12.6 in / 320 mm for S0 handle.

Description	Reference
Shaft guide for S1 to S2 handles	1429 **0000**

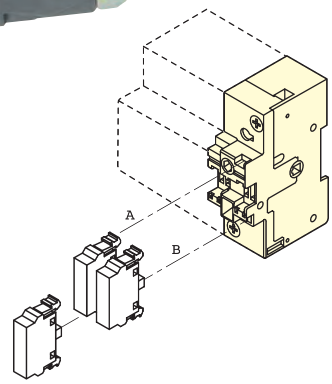

acces_260_a_2_cat

U-type auxiliary contacts

Use
Each slot can accommodate up to 2 interlocked ACs.
- For 400A, maximum 8 ACs.

Electrical characteristics
A600.
When SIRCO V is front operated, ACs are prebreak and signaling position I and 0.
When SIRCO V is side operated, Acs are signaling positions I and 0.


acces_056_a_1_cat



acces_043_a_1_x_cat

NO auxiliary contacts

Rating (A)	Number of contacts	Reference
30 … 400	1	3999 **0701**

NC auxiliary contacts

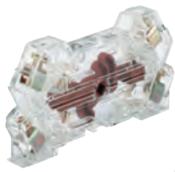
Rating (A)	Number of contacts	Reference
30 … 400	1	3999 **0702**

CD 30 : U-type auxiliary contacts cannot be mounted on switches with direct operation handle

S-type auxiliary contacts

Use
Side operated auxiliary contacts for SIRCO V 30 to 400 A, position OFF and ON signalled by 1 to 4 NO + NC auxiliary contacts.

Electrical characteristics
A600/D600.
S-type auxiliary contacts are signaling position I and 0.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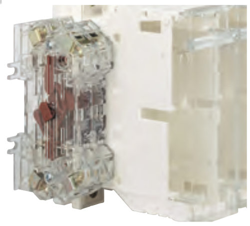

acces_083_a_1_cat

NO+NC auxiliary contacts

Rating (A)	Number of contacts	Reference
30 … 400	1	3999 **U041**
30 … 400	2	3999 **U042**

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.
2 sets required to fully shroud both line and load terminals.

Front and side operation		
Rating (A)	**No. of poles**	**Reference(1)**
30 ... 100	3/4 P	integrated
200	3 P	3798 **3020**
200	4 P	3798 **4020**
400	3 P	Consult us.

(1) Top or bottom.

fuser_314_a_1_cat

Terminals lugs

Use

Connection of cables to the terminals.

Rating (A)	Wires range	No wires per lug	Lugs per kit	Reference
30	#14 - #10	1		integrated
60 ... 100	#10 - #3	1		integrated
200	#6 - 300MCM	1	6	3954 **6020**
200	#6 - 300MCM	1	8	3954 **8020**
400	2 x (#2 - 600MCM)	2	6	3954 **6060**

ul_032_a

Characteristics

Characteristics according to UL 98 and CSA-C22.2 No. 4

Technical Characteristics	V 30 A	V 60 A	V 100 A	V 200 A	V 400 A
Operating voltage	600	600	600	600	600
Short-circuit rating at 600 VAC (kA)	65	200	200	200	200
Type of fuse	J or CC	J	J	J	J
Max. fuse rating (A)	30	60	100	200	400
Max. horsepower rating / Max. motor FLA current 3 ph					
220-240 VAC	7.5 / 22	15 / 42	30 / 80	60 / 154	125 / 312
440-480 VAC	15 /21	30 / 40	60 / 77	125 / 156	250 / 302
600 VAC	20 / 22	50 / 52	75 / 77	150 / 144	350 / 336
125 VDC	3 / 25(1)	3 / 25(1)	7.5 / 58(1)	15 / 112(1)	20 / 148(1)
250 VDC	5 / 20(1)	10 / 38(2)	20 / 72(2)	40 / 140(2)	50 / 173(2)
Mechanical characteristcis					
Endurance (number of operating cycles)	10,000	10,000	10,000	8,000	6,000
Terminal lugs					
Type	standard	standard	standard	option	option
Min. connection section / AWG(3)	#14	#10	#10	#6	2 x 2
Max. connection section / AWG (3)	#10	#3	#3	3 / 0	2 x 600 kcmil

(1) 2 pole in series.
(2) 3 pole in series.
(3) AWG: cross section of the American cable.

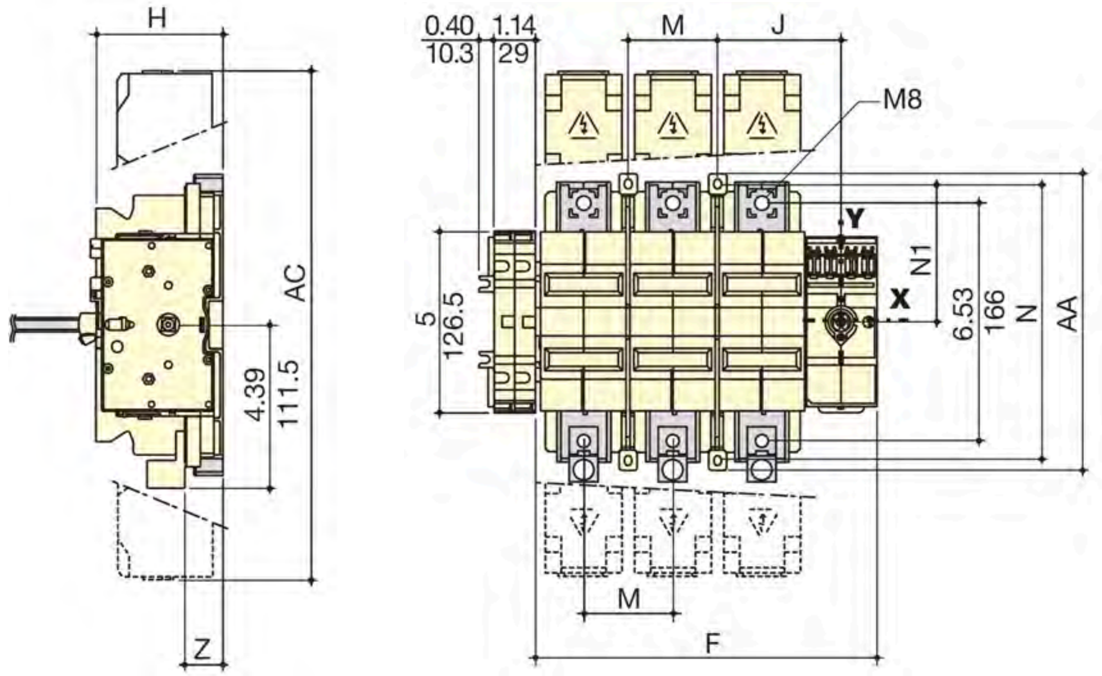
Characteristics according to IEC 60947-3

Technical characteristics		32 A	63 A	100 A	200 A	400 A
Rated insulation voltage U_i (V)		800	750	750	750	750
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	8
Rated operational currents I_e (A)						
Rated voltage	**Load duty category**	**A(1)**	**A(1)**	**A(1)**	**A(1)**	**A(1)**
400 VAC	AC-22 A	32	63	100	200	400
	AC-23 A	32	63	100	200	400
690 VAC	AC-22 A	32	63	100	200	400
	AC-23 A	32	63	100	200	315
Operational power in AC-23 A 9kW0(1)(2)						
At 400 VAC without pre-break AC		30	30	51	100	220
At 500 VAC without pre-break AC		18.5	40	63	140	220
At 690 VAC without pre-break AC		25	55	90	185	295
Conditional short-circuit current(3)						
Rated prak withstand current (kA peak)		5.5	17.6	17.6	32	40
Connection						
Minimun Cu cable section (mm^2)		6	10	25	50	186

(1) Category with index A = frequent 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_2 = 400 VAC.

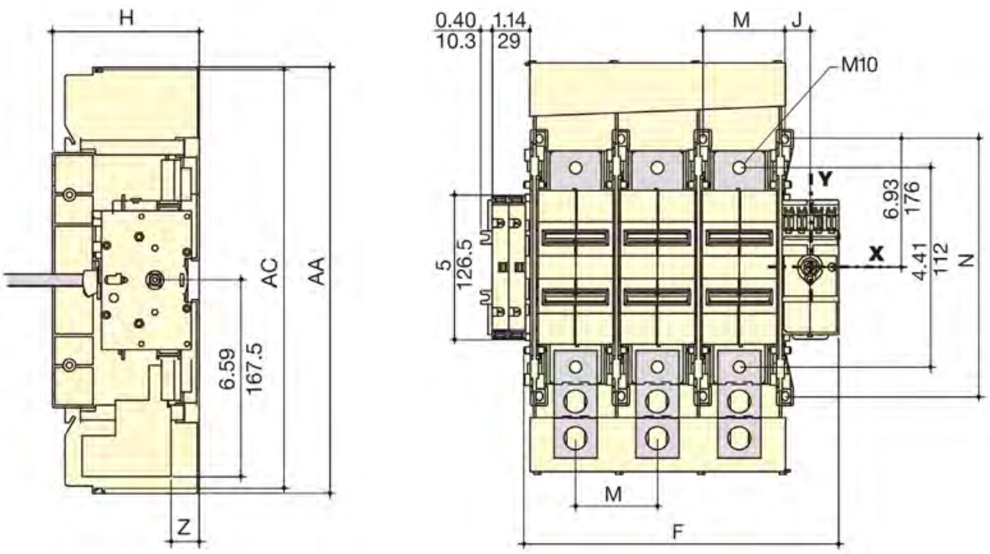
Dimensions (in/mm)

Sirco V 30 A front operation



Switch body								Switch mounting				Connection terminals			
F		H		J		J1		N		N1		AA		Z	
(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
3.78	96	2.59	66	1.47	37.5	0.59	15	3.13	79.5	1	25.5	4.56	116	1.12	28.5

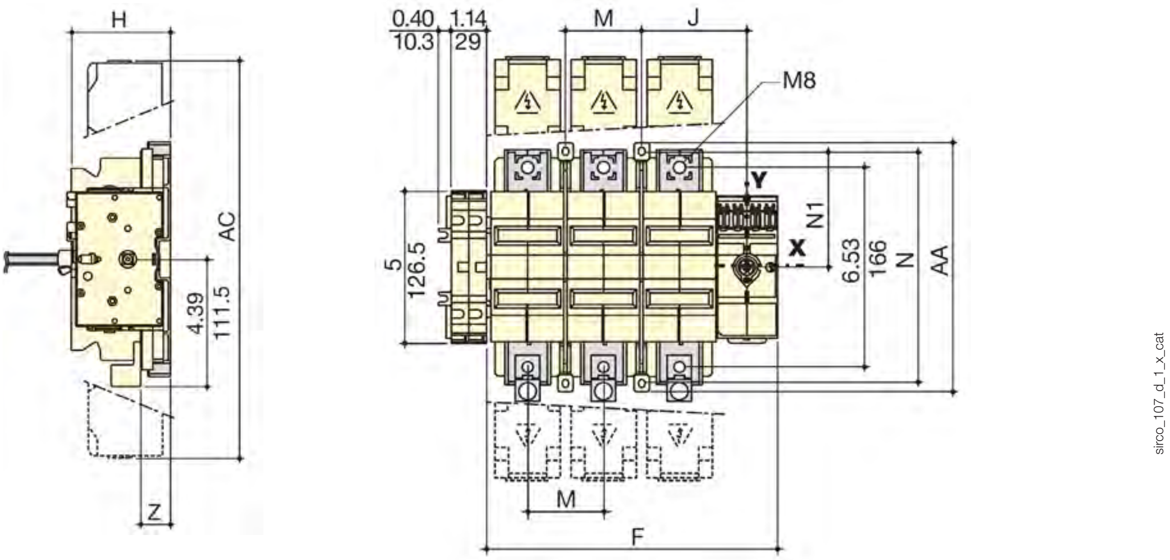
Sirco V 60 and 100 A front operation



Switch body										Switch mounting				Connection terminals			
F 3p.		F 4p.		H		J		J1		N		N1		AA		Z	
(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
5.98	152	7.48	190	3.89	99	2.12	54	1.5	38	5.25	133.5	2.63	66.5	5.87	149	0.95	24.5

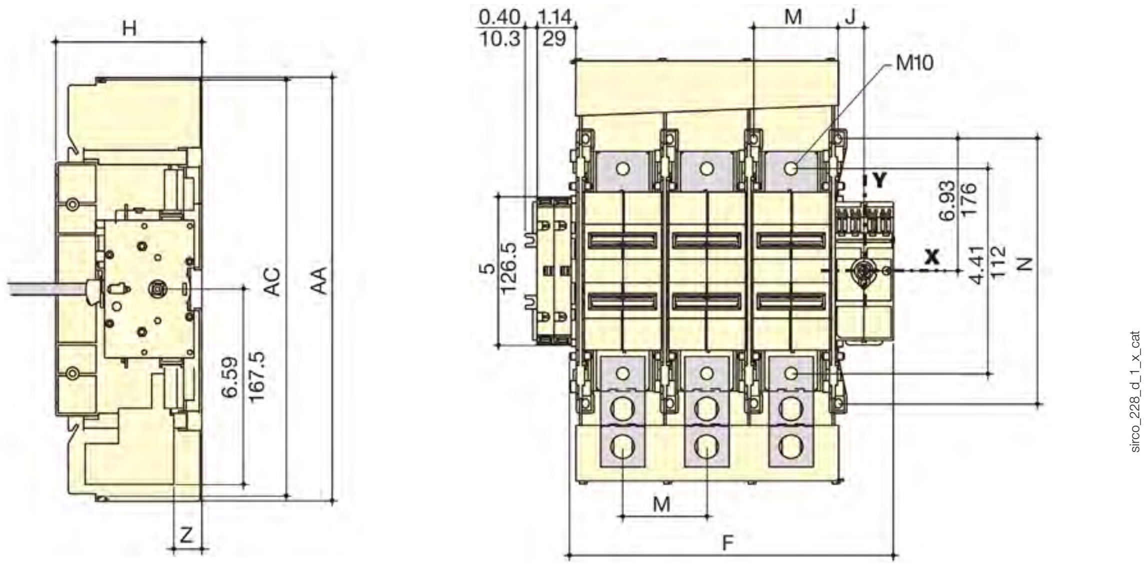
Dimensions (in/mm) (continued)

Sirco V 200A Front Operation



Terminal shrouds		Switch body								Switch mounting						Connection terminals			
AC		F 3p.		F 4p.		H		J		M		N		N1		AA		Z	
(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
13.74	349	9.37	238	11.81	300	3.42	87	3.38	86	2.44	62	7.5	190.5	3.74	96	8.13	206.5	0.95	24.5

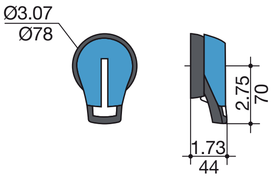
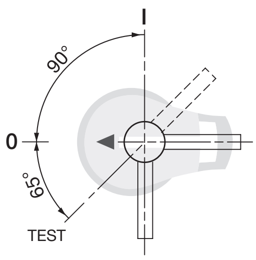
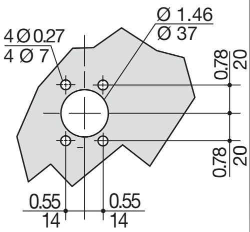
Sirco V 400A Front Operation



Terminal shrouds		Switch body								Switch mounting				Connection terminals			
AC		F 3p.		F 4p.		H		J		M		N		AA		Z	
(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
14.08	358	10.8	276	13.7	348	4.92	125	0.88	22.5	2.84	72	8.83	224	14.31	363.5	1.06	27

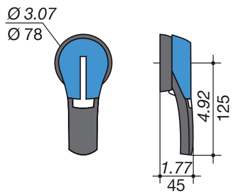
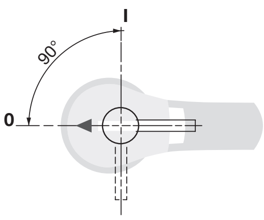
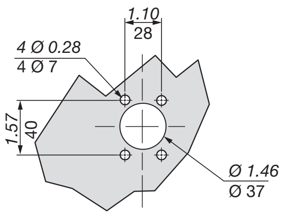
External handles dimensions (in/mm)

30 to 60 A

Handle type	Front operation Direction of operation	Front operation Door drilling
S1 type 		

fuser-ul_015_b_1_gb_cat

100 to 400 A

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

poign_013_a_1_us_cat

SIRCO UL 98C

Non-fusible switches standards UL and CSA

400 to 800 A

sirco-ul_022

SIRCO
3 x 800 A

The solution for

- AC Combiners Builders
- String Inverters Manufacturers
- Industrial Control Panels Manufacturers (UL 508A)
- Swithcboards Manufacturers (UL 891)
- Distributors

Strong points

- Up to 65 kA short circuit rating
- Reliability
- Safety of property and personnel
- Simplicity
- Easy assembling

Conformity to standards

- UL 98C
  Guide WHTY2
  File E201138

Function

SIRCO non-fusible disconnect switches are heavy duty switches that break and make power circuits on and off load and provide safety isolation up to 800 VAC.
These switches are extremely durable and are tested and approved for use in the most demanding applications.

General characteristics

- Positive break indication.
- Fully visualized disconnection.
- High thermal and dynamic withstand.
- Severe utilization categories.
- High electrical and mechanical endurance.

References

<table>
<tr><th>Rating (A)</th><th>No. of Poles</th><th>Switch Body</th><th>Direct handle</th><th>External handle</th><th>Shaft for external handle</th><th>Auxiliary contacts</th><th>Terminal protection screens</th><th>Terminal lugs kits</th></tr>
<tr><td rowspan="2">400 A</td><td>3 P</td><td rowspan="2">2700 3042</td><td rowspan="2">2699 5052</td><td rowspan="2">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)</td><td rowspan="2">7.9 in
200 mm
1400 1020

12.6 in
320 mm
1400 1032

15.7 in
400 mm
1400 1040</td><td rowspan="4">1st contact
NO/NC
2799 0021

2nd contact
NO/NC
2799 0022</td><td rowspan="2">3 P
2798 3041(2)
2798 8041(3)</td><td rowspan="2">3 P
3954 3040(4)</td></tr>
<tr><td>4 P</td></tr>
<tr><td rowspan="2">800 A</td><td>3 P</td><td>2700 3082</td><td rowspan="2">3799 6012</td><td rowspan="2">S3 type
Black
4, 4X
143D 3111(1)

Red/Yellow
4w, 4X
143E 3111(1)</td><td rowspan="2">7.9 in
200 mm
1401 1520

12.6 in
320 mm
1401 1532

15.7 in
400 mm
1401 1540</td><td rowspan="2">3 P
2798 3120(5)</td><td rowspan="2">3 P
3954 3120</td></tr>
<tr><td>4 P</td><td>2700 4082</td></tr>
</table>

Common accessories - more available on next pages
(1) Defeatable handle.
(2) Top.
(3) Bottom.
(4) Top or bottom.
(5) Load side screen, the line side is included with the switch.

Accessories

Direct operation handle

Rating (A)	Color	Handle type	Reference
400	Black	B	2699 **5052**
800	Black	H	3799 **6012**

B type handle

H type handle

SIRCO UL 98C
Non-fusible disconnect switches
400 to 800 A

Accessories (continued)

External operation handle

Use

The interlocking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position or when the switch is padlocked in the "OFF" position.

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.


S2 type handle
acces_150

Front handle I - 0

Rating (A)	Handle type	Color	Nema type	Reference
400	S2	Black	1, 3R, 12	142F **2111**
400	S2	Red/Yellow	1, 3R, 12	142G **2111**
400	S2	Black	4, 4X	142D **2111**
400	S2	Red/Yellow	4, 4X	142E **2111**
800	S3	Black	4, 4X	143D **3111**
800	S3	Red/Yellow	4, 4X	143E **3111**


S3 type handle
acces_166

Front handle heavy duty I - 0 with metallic lever

Rating (A)	Handle type	Color	Nema type	Reference
400	S2	Black	4, 4X	142D **2911**
400	S2	Red/Yellow	4, 4X	142E **2911**
800	S3	Black	4, 4X	143D **3911**
800	S3	Red/Yellow	4, 4X	143E **3911**


Heavy duty S2 type handle
acces_236

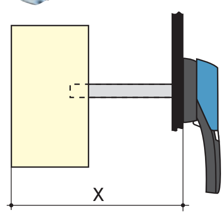
Shaft for external handle

Use

Standard lengths:
- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: please consult us.


acces_369
acces_144



acces_202_a

Rating (A)	Dimension X (in)	Dimension X (mm)	Handle type	Length (inches)	Length (mm)	Reference
400	5.31 ... 10.43	135 ... 265	S2	7.9	200	1400 **1020**
400	5.31 ... 15.16	135 ... 385	S2	12.6	320	1400 **1032**
400	5.31 ... 18.31	135 ... 465	S2	15.7	400	1400 **1040**
400	5.31 ... 22.25	135 ... 565	S2	19.7	500	1400 **1050**
800	8.70 ... 13.50	221 ... 343	S3	7.9	200	1401 **1520**
800	8.70 ... 18.23	221 ... 463	S3	12.6	320	1401 **1532**
800	8.70 ... 21.38	221 ... 543	S3	15.7	400	1401 **1540**
800	8.70 ... 26.73	221 ... 679	S3	19.7	536	1401 **1554**(1)

(1) UL pending, please consult us.

Alternative color S-type handle cover

Use

For single lever handles type S2 and S3.

Other colors: please consult us.

Handle color	Pack qty	Handle type	Reference
Light grey	50	S2, S3	1401 **0001**
Dark grey	50	S2, S3	1401 **0011**


acces_198

S-type handle raiser

Use

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

Dimensions

Adds 0.47 in /12 mm to the depth.

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


acces_187

Shaft guide for external handle

Use

This accessory makes shaft introduction easier with up to 0.59 in / 15 mm misalignment.

Required for a shaft length over 12.6 in / 320 mm.

Description	Reference
Shaft guide	1429 **0000**

acces_260

Auxiliary contacts

Use

Pre-break and signaling of positions 0 and I.

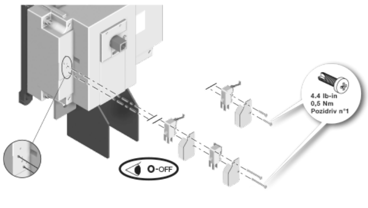
To have 2 NO/NC contacts per switch, please order 1st and 2nd auxiliary contacts per switch. 1st contact is mandatory to operate the 2nd one.

Electrical characteristics

A300 for 100 to 400 A.

A600 for 600 to 1200 A.

acces_076



NO/NC contact for 400 to 800 A

These auxiliary contacts are for an application of 125-250VAC, 60Hz, general use 10A, 1A 1/2 HP.

Rating (A)	No. of AC	Reference
400 ... 800	1st	2799 **0021**
400 ... 800	2nd	2799 **0022**

Low level NO/NC contact for 400 to 800 A

Low level auxiliary contacts are for an application of 125VAC, 60Hz, general use 1A.

Rating (A)	No. of AC	Reference
400 ... 800	1st	2799 **0121**
400 ... 800	2nd	2799 **0122**

Terminal screens

Use

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

Rating (A)	No. of poles	Position	Reference
400	3 P	top	2798 **3041**
400	3 P	bottom	2798 **8041**
800	3 P	bottom	2798 **3120**(1)

(1) Load side screen, the line side is included with the switch.

acces_079

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
400	#4 - 600MCM	1	3	Cu / Al	3954 **3040**
400	2x (#6 - 350MCM)	2	3	Cu / Al	3954 **3041**
800(1)	4x (#2 - 600MCM)	2	6	Cu / Al	3954 **3120**

(1) Two lugs per a pole are provided to put side by side per a pole.

ul_032_a

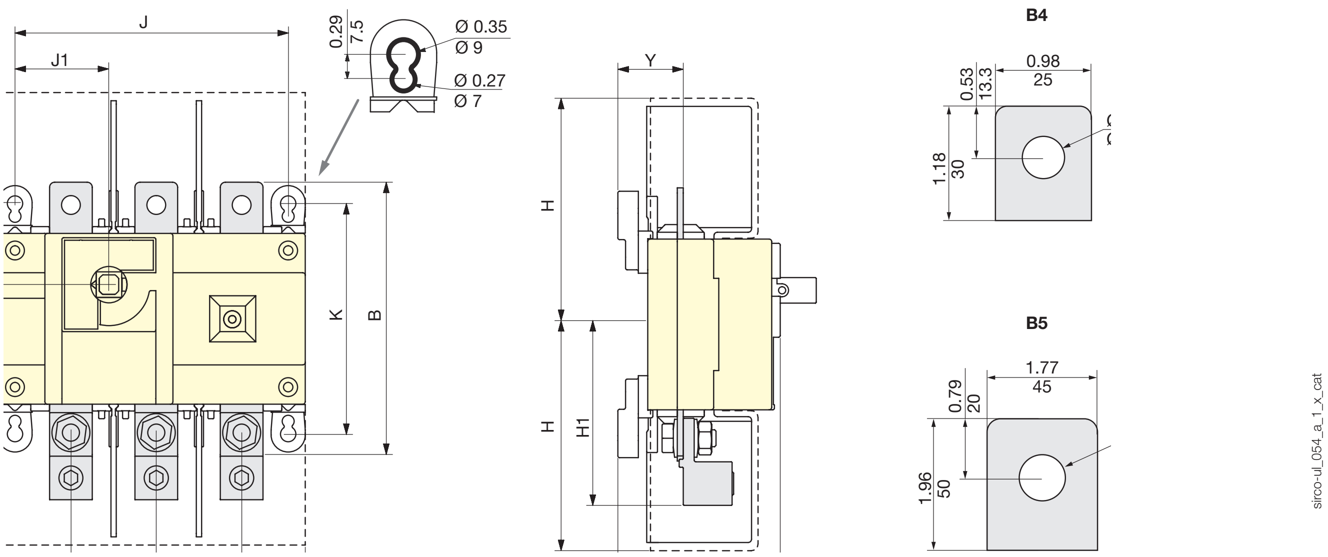
Characteristics

Characteristics according to UL 98C

General use rating (A)	400 A	800 A
Short circuit rating at 800 VAC (kA)	65	65
Type of fuse	170M7402	170M6546
Max. fuse rating (A)	400	800
Connection terminals		
Min. connection section / AWG	2x #6 / #4	4x #2
Max. connection section / AWG	2x 350 / 600MCM	4x 600MCM
Mechanical characteristics		
Endurance (number of operating cycles)	6000	3500
Operating torque (lbs.in/Nm)	128.3/14.5	442.5/50
Auxiliary contacts		
Electrical characteristics	A300	A600

Dimensions (in/mm)

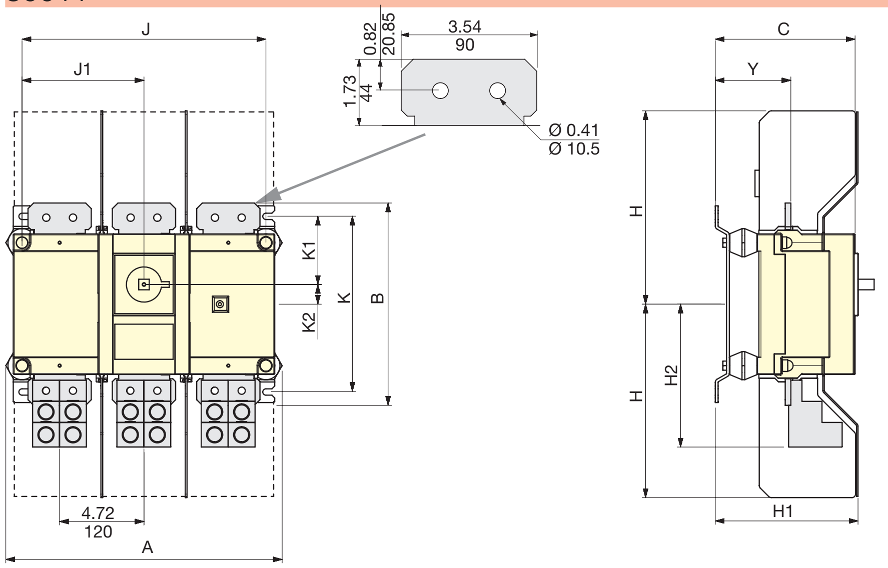
400 A



Frame Size	No. of poles	Unit	A	B	C	H	H1 max.	J	J1	J2	K	K1	Y
B5	3 P	in	9.05	10.23	4.98	8	6.53	8.26	2.95	2.56	7.67	2.65	2.02
		mm	230	260	126.5	203	166	210	75	65	195	67.5	51.5

Dimensions (in/mm) (continued)

800 A

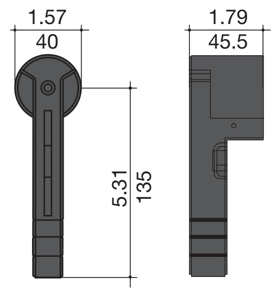


sirco-ul_059_a_1_x_cat

Frame Size	No. of poles	Unit	A	B	C	H	H1	H2	H3	J	J1	K	K1	K2	Y
B7	3 P	in	15.47	11.33	7.98	10.83	8.30	8.01	9.43	13.68	6.83	9.84	3.82	1.10	4.23
		mm	393	288	200	275	211	203.5	293.5	347	173.5	250	97	28	107.5

400 A

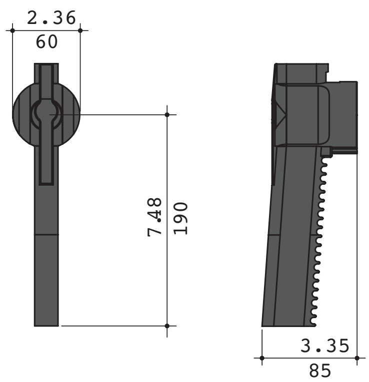
Front direct handle



sirco-ul_027_a_1_x_cat

800 A

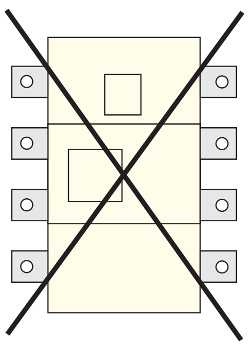
Front direct handle



sirco_267_b_1_x_cat

Mounting orientation

400 and 800 A

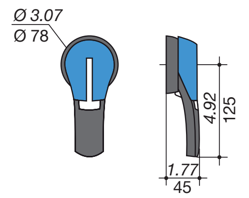


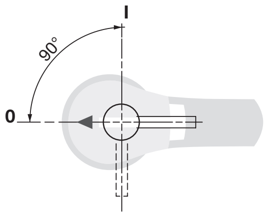
sirco-ul_028_a_1_x_cat

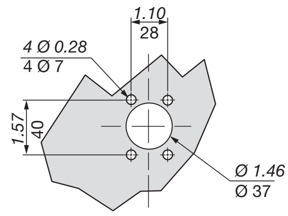
External handles dimensions (in/mm)

400 A

Handle type	Front operation Direction of operation	Door drilling
S2 type		



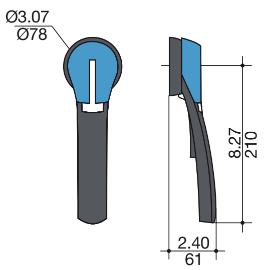


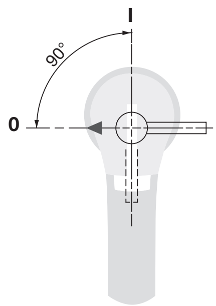


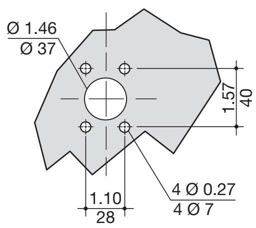
poign_013_a_1_us_cat

800 A

Handle type	Front operation Direction of operation	Door drilling
S3 type		







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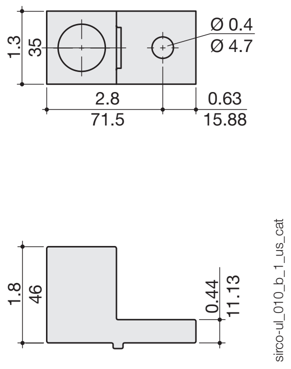
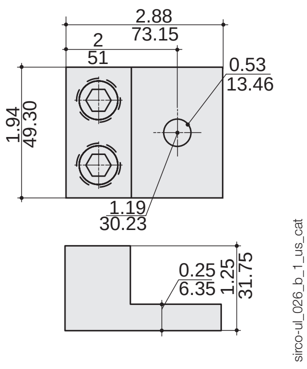
Terminal lugs (in/mm)

400 A



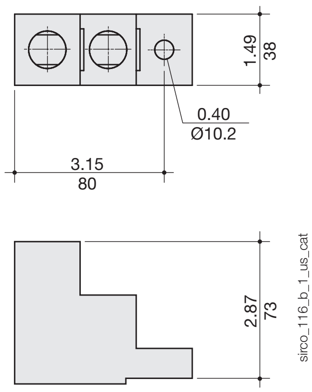
600 kcmil

400 A



2 x 350 kcmil

800 A



2 x 600 kcmil


PhotoVoltaic
PhotoVoltaic
SIRCO PV 1250A
socomec

Photovoltaic range

Photovoltaic disconnect switches

SIRCO MC PV
UL 508i
25 to 45 A
p. 57

INOSYS LBS
UL 98B
100 to 600 A
p. 65

SIRCO PV
UL 98B
100 to 2000 A
p. 77

SIRCO MOT PV
2000 A
p. 103

RM PV
30 A
p. 107

Expert Services

Our experts are here for you to make your project a success.

A fully tested range for all your PV applications

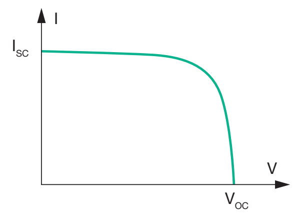
Using tested and certified components is key for the success of the design for any photovoltaic system.
The SIRCO PV and INOSYS LBS range is tested and certified according to main standards used in the photovoltaic industry.

Global approvals

Our SIRCO PV and INOSYS LB solar disconnect range meets UL 98B, UL 508i, IEC 60947-3 Standards and bear the CE mark. Using the SOCOMEC range in your design is therefore a unique opportunity to standardize your components and use the same switches on 5 continents.

PV critical current

Under particular conditions (cloudy, days, evenings…) PV systems can deliver a low current at high voltage. This type of current is extremely difficult to interrupt.
Standard AC or DC products are usually not tested in these particular conditions and could therefore be unable to interrupt low currents at high DC voltage. If the electrical arc produced is not interrupted it may result in operator injury or fire. The SIRCO PV and INOSYS LBS range has been specifically designed and tested to interrupt the current under all current/voltage conditions.



sirco pv 008 a

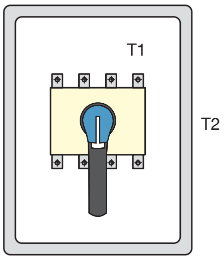
Current (I)/Voltage (V) curve of a PV system. When the current decreases (in the evening or when cloudy) the voltage may increase. SC = Short-circuit, OC = Open-circuit

Short Circuit

The complete UL 98B range is tested to withstand a short circuit of 10 kA for a duration of 50 ms without any specific protection. This allows the use of any overcurrent protection device for line protection.
Our UL 508i have been tested at 5 kA with fuses.

Thermal current test

Thermal tests have been performed according to both IEC and UL standards.



sirco-pv 065 a

According to UL 98B standard, the maximum difference authorized between T1 (temperature of terminals) and T2 is 40 °K when the switch is fully loaded.

According to IEC 60947-3, switches are tested in free air. Maximum temperature elevation on terminals is 70 °K.

Our UL 98B switches are certified up to 60 °C AMBIENT without derating

The standards for PV disconnect switches

USA
- UL 98B; Disconnect switches for photovoltaïc systems, usually for rating above 40 A.
- UL 508i; Manual disconnect switches for photovoltaic systems, usually for ratings up to 40 A.
- UL 1741; Inverters and interconnection system equipment.

Worldwide
- IEC 60947; Low-voltage switchgear and controlgear. Part 3; Switches, disconnectors, switch-disconnectors and fuse-combination units.

The 5th largest European power laboratory

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

This totally independent laboratory is recognized by the major certification bodies worldwide: member of UL, CSA and KEMA. It also works in partnership with numerous international certification organizations (CEBEC, ASTA, Lloyd's, Bureau Véritas, GOST-R, etc.). The quality and safety requirements specific to each country are therefore fully taken into account.

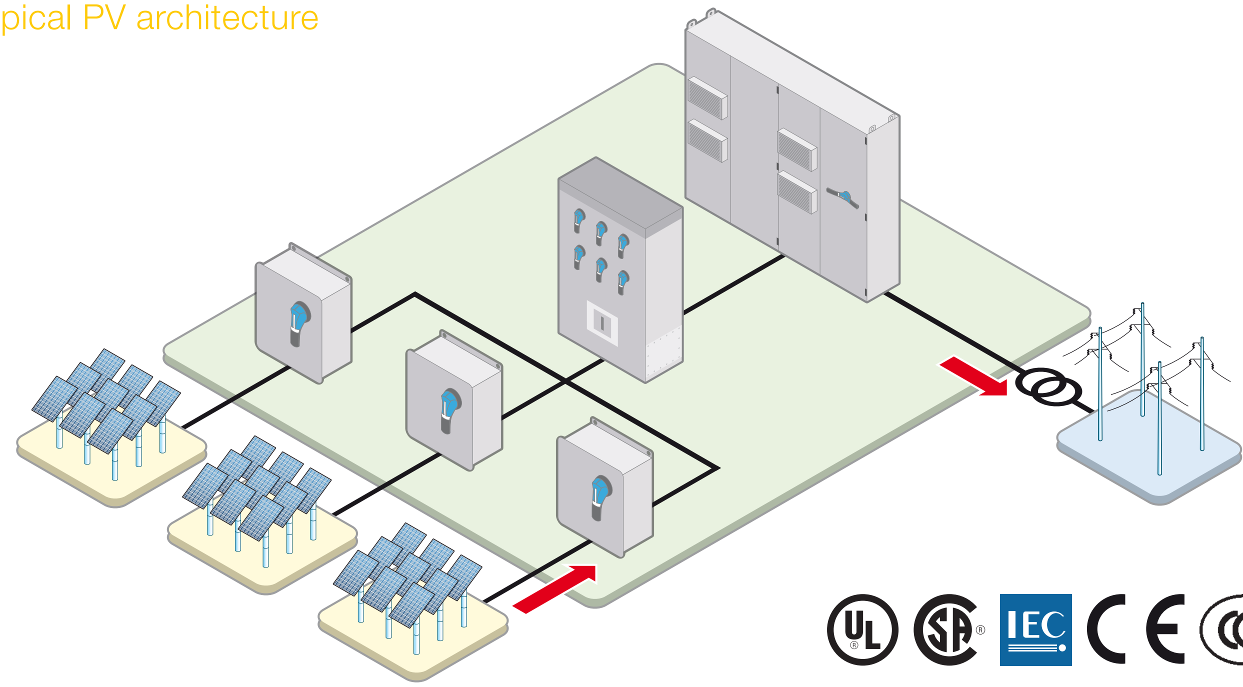
With its 100 MVA (I_{dc} 100 kA rms 1 s) short-circuit platform, three 10 kA overload platforms and numerous other test instruments, in facilities covering 1500 m², the Pierre Siat laboratory is currently the 2nd largest French power laboratory. It combines expertise in electricity and mechanics, pneumatics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

corpo 346 a

corpo 349 a

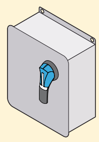
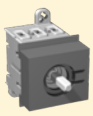
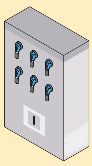
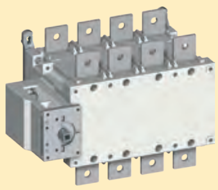
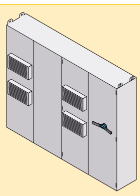
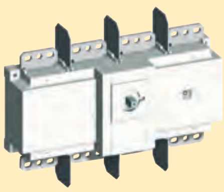
The SIRCO PV range provides safe disconnection and isolation at all levels within your PV installation.

Typical PV architecture



sirco-pv 054 b

The SOCOMEC solutions

LEVEL OF INSTALLATION	SOCOMEC SOLUTIONS	
Combiner box		
		SIRCO PV One circuit up to 400 A at 1500 VDC
		SIRCO MC PV UL 508i One circuit or two circuits up to 1000 VDC
Recombiner box		
		SIRCO PV 4 circuits up to 350 A at 1000 VDC 2 circuits up to 350 A at 1500 VDC
Inverter		
		SIRCO PV One circuit up to 2000 A at 1000 VDC

SIRCO MC PV UL 508i

Non-fusible disconnect switches for photovoltaic applications

from 25 to 45 A, up to 1000 VDC

sirco-mc_002_a_1_cat

SIRCO MC PV *25 A - 1000 VDC*
DIN-rail mounting

The solution for

- Residential
- Buildings
- Solar parks

Strong points

- Compact
- High breaking capacity up to 1000 VDC
- Safety

Conformity to standards

- UL 508i
  Guide NMSJ
  File E365404
- IEC 60947-3

Approvals and certifications[1]

(1) Product reference on request.

Function

SIRCO MC PV are DC non-fusible disconnect switches. They make and break under load conditions and provide optimum safe isolation for any PV circuit.

Advantages

Compact

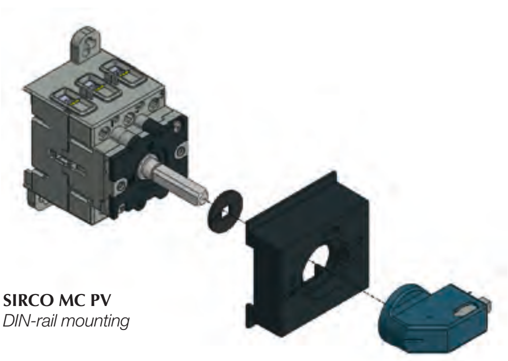
Due to its compact design, the space needed within the combiner box or the solar inverter is greatly reduced.

High breaking capacity up to 1000 VDC

- Making and breaking capacity under load conditions up to 1000 VDC.
- Specific photovoltaic test beyond requirements of UL 508i and IEC 60947-3 standard.

Safety

- Bridging bars are factory fitted for easier, quicker and safer connection.
- Direct access to connection terminals for adequate tightening.

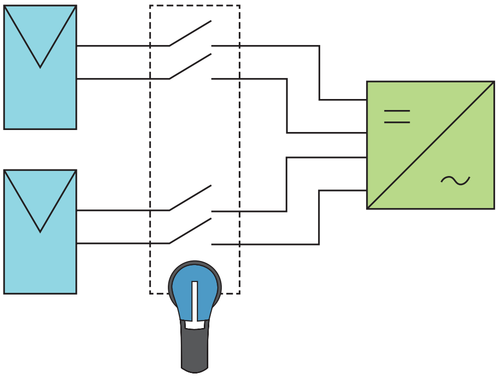


sirco-mc_028_a

SIRCO MC PV
DIN-rail mounting

Multi-circuit switching

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



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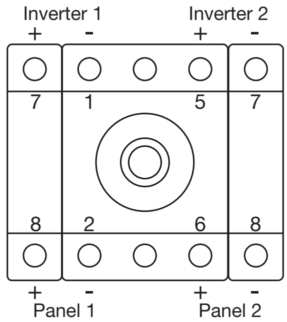
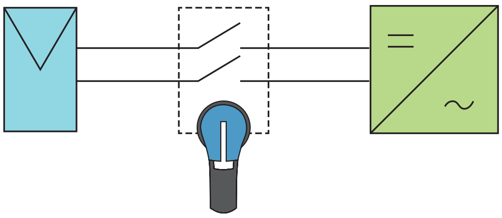
sirco-mc_016_a



sirco-mc_045_a_1_gb_cat

What you need to know

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



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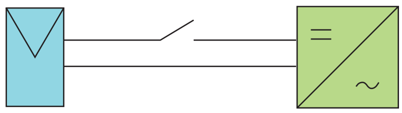


sirco-mc_027_a_1_x_cat

SIRCO MC PV UL 508i

Non-fusible disconnect switches for photovoltaic applications

from 25 to 45 A, up to 1000 VDC

References

600 VDC

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact
25 A	Single PV circuit	2 P	21PV **2102-UL**	MC01 type Blue 2119 **1012**	S00 type Black 4.4X 147D **0111** (1) Red 4.4X 147R **0111** (1)	S00 type 10.43 in 265 mm 2107 **0517**	1 contact NC+NO 2119 **0001**
	Dual PV circuit	4 P	21PV **5102-UL**				
45 A	Single PV circuit	4 P	21PV **4144**				
	Dual PV circuit	8 P	21PV **8144**	MC01 type Blue 2119 **1412**			

Common accessories - more available on next pages.

(1) Door interlocking.

1000 VDC

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact
32 A	Single PV circuit	4 P	21PV **4144**	MC01 type Black 2119 **1012**	S00 type Black 4.4X 147D **0111** (1) Red 4.4X 147R **0111** (1)	S00 type 10.43 in 265 mm 2107 **0517**	1 contact NC+NO 2119 **0001**
	Dual PV circuit	8 P	21PV **8144**	MC01 type Black 2119 **1412**			

Common accessories - more available on next pages.

(1) Door interlocking.

Accessories

Direct operation handle

Rating (A)	Handle color	Type of locking	Handle type	45 mm modular DIN front plate	Reference
25 … 45	Blue	-	MC0	yes	2119 **0012**
25 … 45	Blue	1 padlock Ø 0.20 in / 5 mm	MC01	yes	2119 **1012**
45	Blue	1 padlock Ø 0.20 in / 5 mm	MC01	yes	2119 **1412**

MC0 handle

acces_305_a_1_cat

MC01 handle

acces_293_a_1_cat

External operation handle

Use

The external control will allow the operator to safely disconnect and isolate the solar strings prior to any intervention.

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


acces_341_a_1_cat

S00 handle


acces_302_a_1_cat

MC1 handle

DIN-rail or back plate mounting

Rating (A)	Handle type	Handle color	Type of locking	Nema type	Reference
25 … 45	MC1	Black	3 padlocks Ø 0.35 in / 8 mm	4, 4X	2119 **3312**
25 … 45	MC1	Red/Yellow	3 padlocks Ø 0.35 in / 8 mm	4, 4X	2119 **3313**
25 … 45	S00	Black	3 padlocks Ø 0.35 in / 8 mm	4, 4X	147D **0111**
25 … 45	S00	Red/Yellow	3 padlocks Ø 0.35 in / 8 mm	4, 4X	147R **0111**

Shaft for external handle

Use

The shaft can be adjusted and cut depending on the need.

Shaft length

Device + shaft:
- 10.43 in / 265 mm


acces_297_a_1_cat

DIN-rail or back plate mounting

Rating (A)	Device + shaft Length	Reference
25 … 45	10.43 in / 265 mm	2107 **0517**(1)

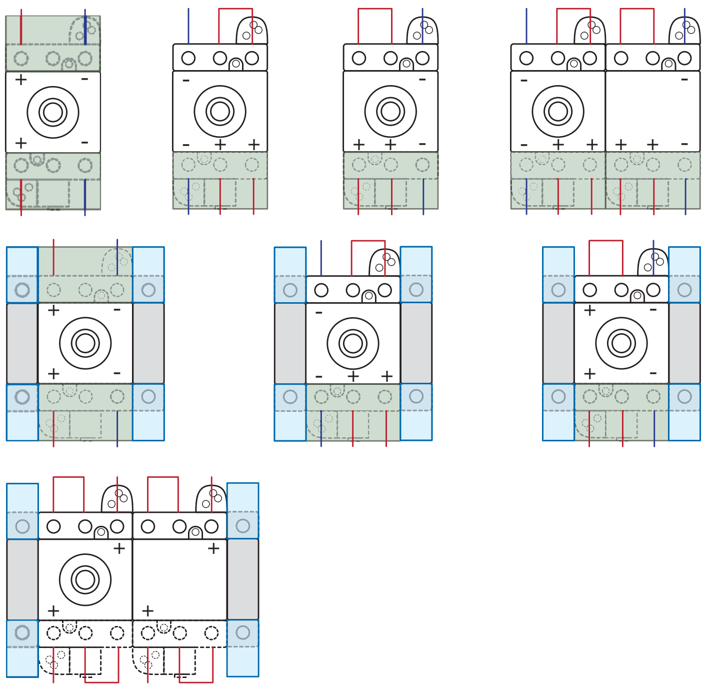
(1) Shaft for door interlocking.

Terminal shrouds

Use

Top or bottom protection against direct contact with the terminals or connection parts.
1 and 3 poles are available.
The SIRCO MC PV non-fusible disconnect switch is pre-bridged. Terminal covers are mounted on the top or bottom free space of the device.
Possibility to assemble a terminal shroud on the bridge side by removing the insulating material of the series connection bar (irreversible step).

Rating (A)	Type of mounting	No. of poles	Position	Reference
25 … 45	DIN-rail	1 P	top or bottom	2194 **1004**
25 … 45	DIN-rail	3 P	top or bottom	2194 **3004**


sirco-mc_011_e_1_cat


acces_299_a_1_cat

Terminal shrouds 1 pole


acces_300_a_1_cat

Terminal shrouds 3 pole

SIRCO MC PV UL 508i

Non-fusible disconnect switches for photovoltaic applications
from 25 to 45 A, up to 1000 VDC

Characteristics

according to UL 508i

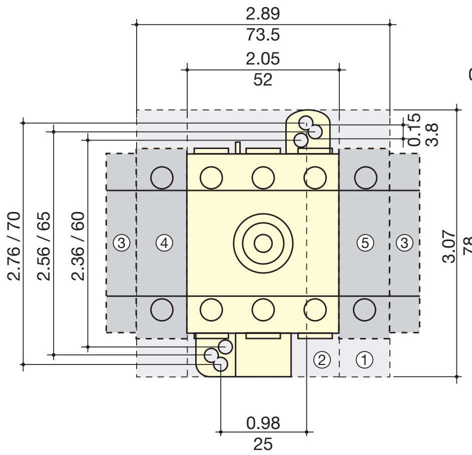
			25 A	45 A
General use rating with 200% overload extra test				
Rated voltage	**Number of poles of the device**	**Number of PV circuits**	**(A)**	**(A)**
600 VDC	2 P	1	25	-
600 VDC	4 P	1	-	45
600 VDC	2 x 2 P	2	25	-
600 VDC	2 x 4 P	2	-	45
1000 VDC	4 P	1	-	32
1000 VDC	2 x 4 P	2	-	32
Short-circuit capacity at 600 VDC				
Prospective short-circuit current (kA rms)			5	5
Type of fuse			gPV	gPV
Associated fuse rating (A)			25	80
Short-circuit capacity at 1000 VDC				
Prospective short-circuit current (kA rms)			5	5
Connection terminals				
Min. connection wire range / AWG (solid or stranded)			14 / 7	14 / 3
Mechanical characteristics				
Durability (number of operating cycles)			30,000	30,000
Tightening torque (Nm)			2	2

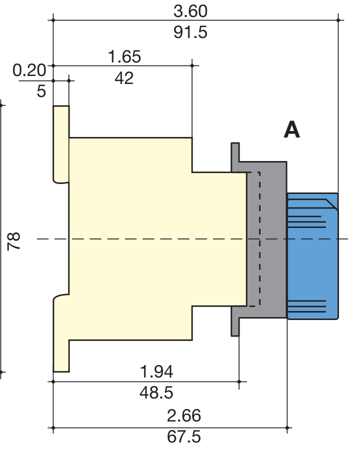
according to IEC 60947-3

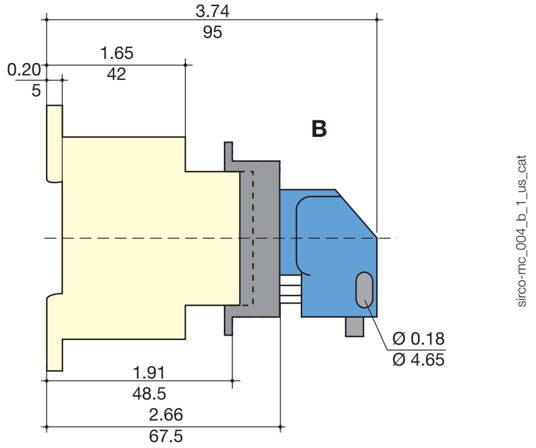
Rated current			**25 A**	**45 A**
Thermal current I_{th} at 40°C (A)			**25**	**45**
Thermal current at 50°C (A)			**25**	**45**
Thermal current at 60°C (A)			**25**	**45**
Rated insulation voltage U_i (V)			1,000	1,000
Rated impulse withstand voltage U_{imp} (kV)			8	8
Rated operational currents I_e (A)				
Rated voltage	**Number of poles of the device**	**Number of PV circuits**	**(A)**	**(A)**
600 VDC	2 P	1	30	-
600 VDC	4 P	1	-	40
600 VDC	2 x 2 P	2	30	-
600 VDC	2 x 4 P	2	-	40
1000 VDC	2 P	1	10	-
1000 VDC	4 P	1	-	40
1000 VDC	2 x 2 P	2	10	-
1000 VDC	2 x 4 P	2	-	40

Dimensions (in/mm)

DIN-rail mounting - Direct operation



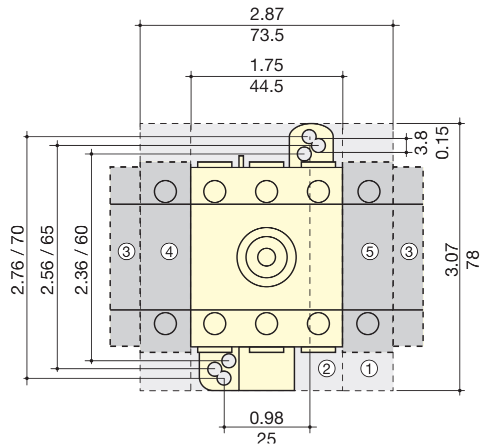


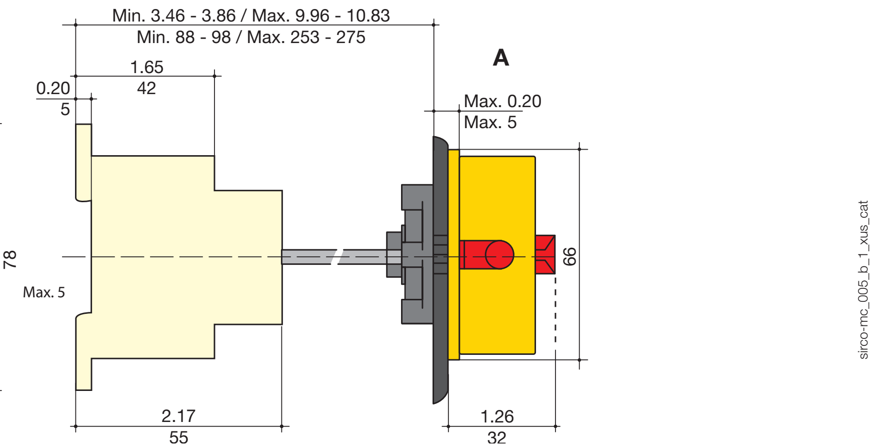


1. Terminal shrouds 1P.
2. Terminal shrouds 3P.
3. Auxiliary contact.
4. AC power pole.
5. AC or PV power pole.

A. MC0 handle
B. MC01 handle

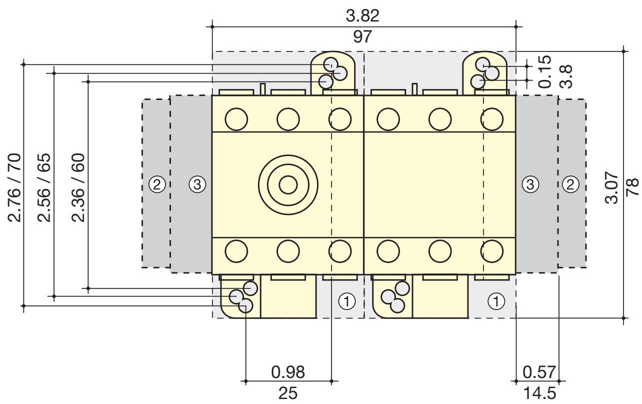
DIN-rail mounting - External operation

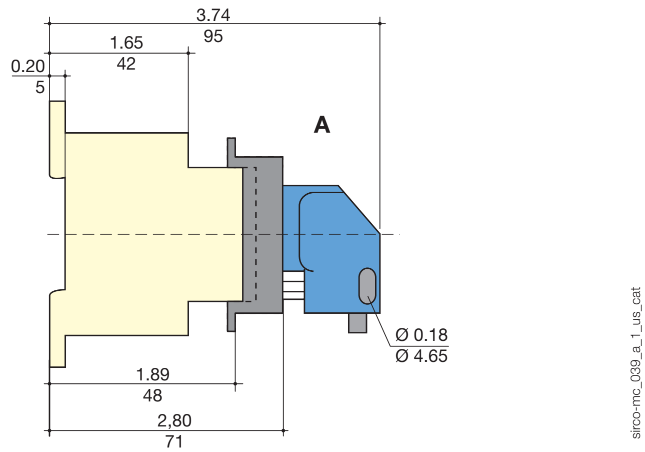




1. Terminal shrouds 1P.
2. Terminal shrouds 3P.
3. Auxiliary contact.
4. AC power pole.
5. AC or PV power pole.
A. MC1 handle

2 MPPT - 45 A - 600 VDC and 32 A - 1000 VDC - DIN-rail mounting - Direct operation





1. Terminal shrouds 3P.
2. Auxiliary contact.
3. PV power pole.

A. MC01 handle.

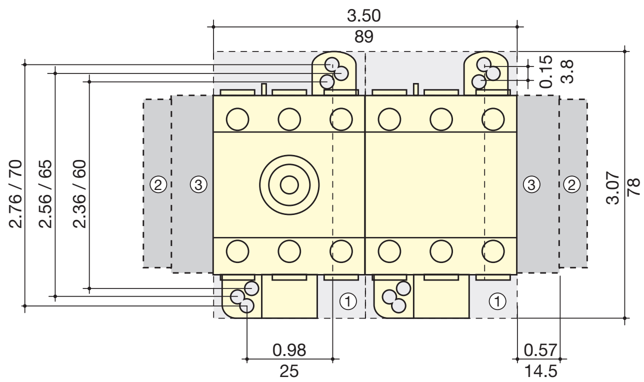
SIRCO MC PV UL 508i

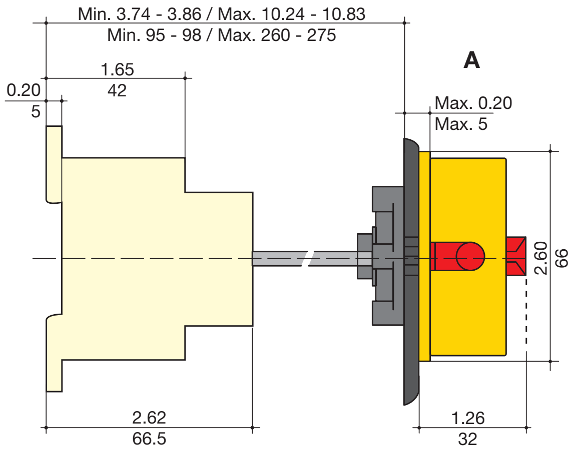
Non-fusible disconnect switches for photovoltaic applications

from 25 to 45 A, up to 1000 VDC

Dimensions (continued)

DIN-rail mounting - External operation





sirco-mc_040_b_1_us_cat

1. Terminal shrouds 3P.

2. Auxiliary contact.

A. MC1 handle.

Dimensions for external handles (in/mm)

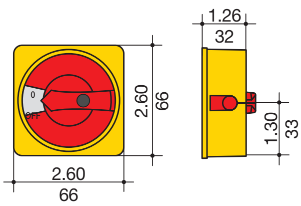
DIN-rail or back plate mounting

Handle type

Front operation
Direction of operation

Door drilling

MC1 type



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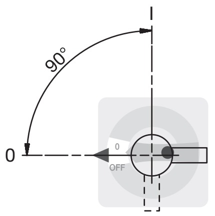
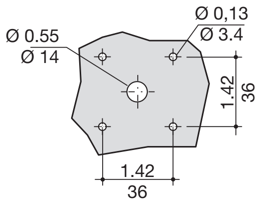


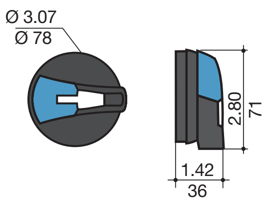


Handle type

Front operation
Direction of operation

Door drilling

S00 type



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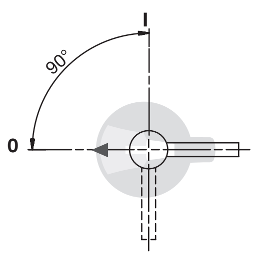
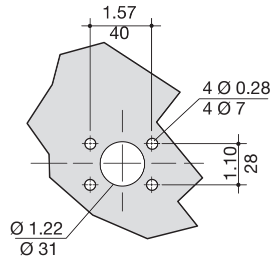
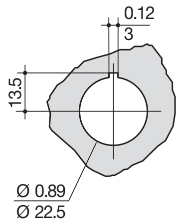


With 4 fixing screws

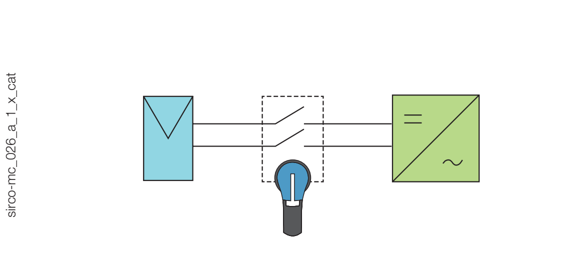
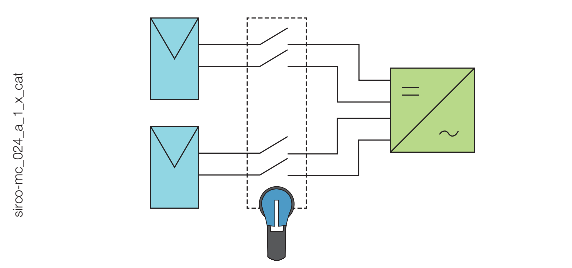


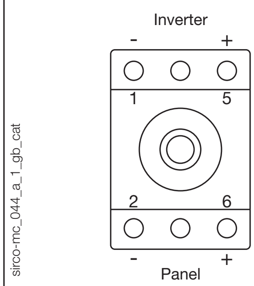
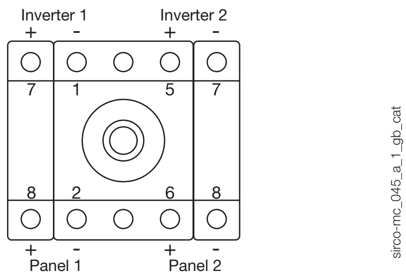
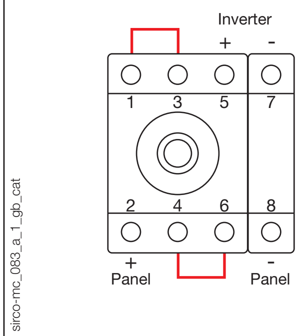
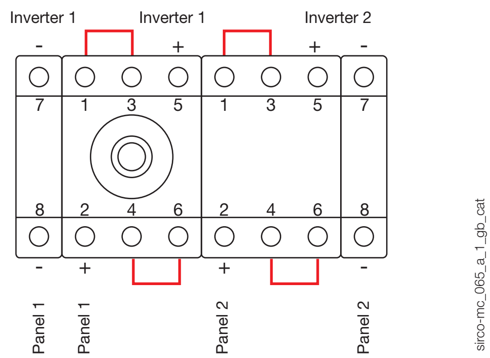
With fixing nut



Poles connections

Switching of polarities + and - (1)

Single PV circuit	Dual PV circuit
 	

Rating	Single PV circuit	Dual PV circuit
25 A - 600 VDC	21PV **2102-UL**  	21PV **5102-UL** 
45 A - 600 VDC 32 A - 1000 VDC	21PV **4144**  	21PV **8144** 

(1) For grounded systems, single polarity switching, a bridge shall be added.
For spare bridging bars, please consult us.

INOSYS LBS UL 98B

Load Break Switches for DC & PV applications

from 100 to 600 A, up to 1500 VDC

inosy_158.psd

INOSYS LBS
2-poles

The solution for

- Combiner box
- Recombiner box
- Rapid shutdown systems
- Solar Inverter
- Energy Storage Inverter
- Battery Energy Storage Systems
- DC Drives

Strong points

- High-performance switching in a compact frame
- Safe & reliable operation
- Easy to install
- Modular solution
- Visible contact indication

Conformity to standards

- UL 98B
  Guide WHVA
  File E346418
- IEC 60947-3
  DC-21B & DC-PV2

Compatible with requirements:

- IEC 60364-7-712

Function

INOSYS LBS are load break switches available in manual operation. They can be operated using the handle to disconnect all or part of the electrical installation.
They make and break under all load conditions, provide safety isolation for any low voltage circuits up to 1500 VDC and are suitable for emergency switching. They are available for DC-PV2 utilization category.

Advantages

High-performance switching in a compact frame

INOSYS LBS switches integrate a patented technology that offers high switching capacity. The 500 and 750 VDC per pole provides 1500 VDC in 2 poles only with optimum arc containment and significant power loss reduction - all within a compact device.

Safe & reliable operation

- Reliable position indication through visible contacts.
- The opening and closing of the switch is fully independent from the speed of operation, ensuring safe operation under all conditions.
- High temperature withstand: no derating up to 131° F (55 °C), functional from -40 to +122 °F (-40 to +50 °C).

Designed for harsh environments

- Vibration testing (from 13.2 to 100 Hz at 0.7 g).
- Shock testing (15 g during three cycles).
- Humid temperature testing (2 cycles, 131 °F/55 °C with 95% humidity level).
- Salt mist testing (3 cycles with humidity storage, 104 °F/40 °C, 93% humidity after each cycle).

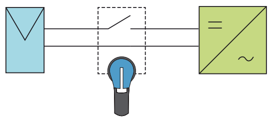
Easy to install

- Wiring: as the switch is non-polarized all types of wiring and connections are possible.
- Easy access without tools to integrate auxiliary contacts (located within the switch footprint).
- Mechanism can be centered or left aligned (in the factory) to accommodate installation requirements.

Modular solution for a flexible configuration

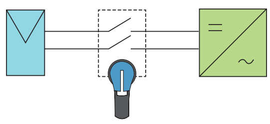
- Single or dual polarity switching
  The same switch can be used for installation with either grounded or floating networks by choosing the wiring configuration.

sirco-mc_084_a



Single polarity switching

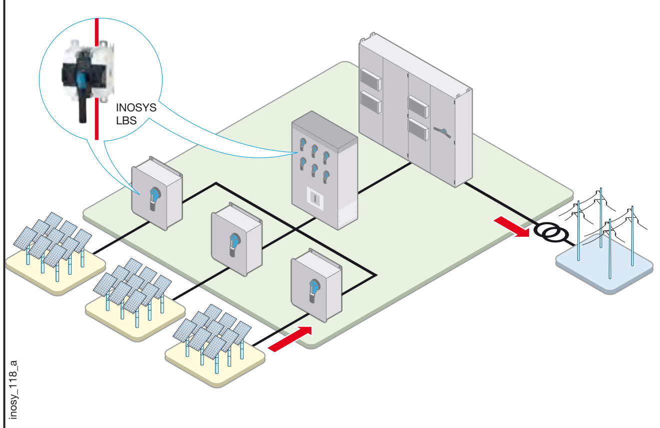
sirco-mc_026_a



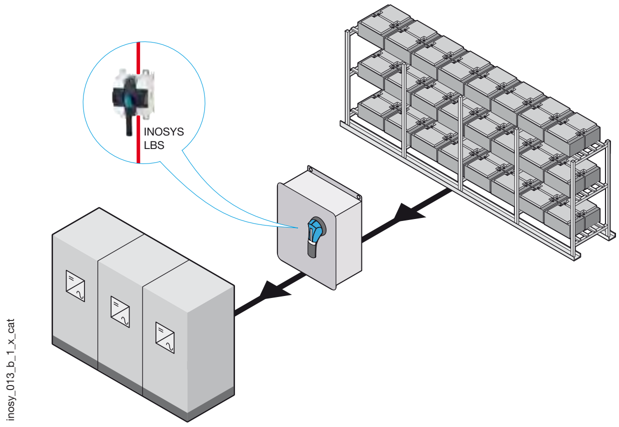
Dual polarity switching

Typical applications: local and remote safe disconnection for DC and PV applications

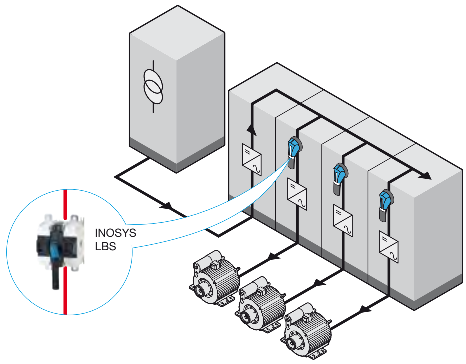
PV installation: Combiner box, Recombiner box or Inverter



Battery protection



Isolation of DC processes



The SOCOMEC solutions

SIRCO PV
Manual operation PV switches

up to 2000 A at 1000 VDC
up to 400 A at 1500 VDC
up to 4 circuits

INOSYS LBS
Up to 1500 VDC with visible contact indication

up to 500 A at 1000 VDC
up to 600 A at 1500 VDC

Overview

1. INOSYS LBS 400 A - 1500 VDC
2. Door interlocked external operation handle
3. Shaft for external handle
4. Auxiliary contact
5. Inter-phase barrier
   (shipped with the switches)
6. Terminal screens
7. Bridging bars for connecting poles in series
8. Captive nut
9. Holding insert
10. Terminal lugs

References

INOSYS LBS

1000 VDC - 1 circuit

Rating (A)	Frame size	No. of poles per circuit	Switch body [1]	External operation	Aux. Contact	Bridging Bar [2]
100 A	F2	2 P	87P0 **2010**	Shaft 12.6 inches 320 mm 1400 **1032**	NO/NC 8499 **0001**	8409 **0016**
250 A	F2	2 P	87P0 **2025**	S2 type handle Black 3R,12 - 4,4X 742D **2111**		
400 A	F3	2 P	87P0 **2040**	Shaft 12.6 inches 320 mm 1400 **1032**		8409 **0040**
500 A	F3	2 P	87P0 **2050**	S2L type handle Black 3R,12 - 4,4X 14AD **2111**		8409 **0041**

(1) The switches are supplied without accessories.
(2) For grounded network, single polarity switching.

1500 VDC - 1 circuit

Rating (A)	Frame size	No. of poles per circuit	Switch body [1]	External operation	Aux. Contact	Bridging Bar [2]
100 A	F2	2 P (1 P+, 1 P-)	87P0 **2011**	Shaft 12.6 inches 320 mm 1400 **1032** S2 type handle Black 3R, 12 - 4, 4X 742D **2111**	NO/NC 8499 **0001**	8409 **0016**
			87P1 **1011** [3]			8409 **0024**
200 A	F2	2 P (1 P+, 1 P-)	87P0 **2021**			8409 **0016**
			87P1 **1021** [3]			8409 **0024**
250 A	F2	2 P (1 P+, 1 P-)	87P0 **2026**			8409 **0016**
			87P1 **1026** [3]			8409 **0024**
		3 P (2 P+, 1 P-)	87P0 **3025**			2x 8409 **0025**
400 A	F3	2 P (1 P+, 1 P-)	87P0 **2041**	Shaft 12.6 inches 320 mm 1400 **1032** S2L type handle Black 3R, 12 - 4, 4X 14AD **2111**		8409 **0040**
			87P1 **1041** [3]			8409 **0039**
500 A	F3	2 P (1 P+, 1 P-)	87P0 **2051**			8409 **0039**
			87P1 **1051** [3]			8409 **0041**
600 A	F3	2 P (1 P+, 1 P-)	87P0 **2061**			8409 **0063**
			87P1 **1061** [3]			

1500 VDC - 2 circuits

Rating (A)	Frame size	No. of poles per circuit	Switch body [1]	External operation	Aux. Contact	Bridging Bar [2]
400 A	F3	2 P (1P+, 1P-)	87P2 **2041** [3]	Shaft 12.6 inches 320 mm 1400 **1032** S2L type handle Black 3R, 12 - 4, 4X 14AD **2111**	NO/NC 8499 **0001**	8409 **0041** **8409 0063** [4]
500 A			87P2 **2051** [3]			8409 **0063**
600 A			87P2 **2061** [3]			

(1) The switches are supplied without accessories.
(2) For isolated networks.
(3) Centered mechanism.
(4) In side mounting.

Accessories

Door interlocked external operation handle

Use
Door interlocked external operation handles include an escutcheon and are padlockable. External handles must be utilized with an extension shaft.

Example
As the handle is interlocked in the "ON" position the operator must safely disconnect and isolate the circuit prior to accessing the panel for maintenance procedures.
Opening the door when the switch is in the "ON" position can only be done by defeating the interlocking function with the use of a dedicated tool (authorized personnel only).
The interlocking function is restored when the door is re-closed.


acces_150.eps
S2 type handle

Frame size	Handle type	Handle colour	Degree of protection	Front operation	Lateral operation
				Reference	Reference
F2	S2	Black	3R,12	742F **2111**	
F2	S2	Black	4,4X	742D **2111**	142J **6111**
F2	S2	Red	4,4X	742E **2111**	
F3	S2L(1)	Black	3R,12	14AF **2111**	
F3	S2L(1)	Black	4,4X	14AD **2111**	14AJ **2111**
F3	S2L(1)	Red	4,4X	14AE **2111**	

(1) S2L handles have an extended grip; please refer to the dimensions section.

Direct operation handle available, consult us.

Shaft for external handle

Frame size	Handle type	Length (in/mm)	Reference
F2 - F3	S2, S2L	7.87/200	1400 **1020**
F2 - F3	S2, S2L	12.6/320	1400 **1032**
F2 - F3	S2, S2L	15.75/400	1400 **1040**

Other lengths: please consult us.


acces_401_a_1_cat
Shaft for S2 and S2L type handle

Auxiliary contact

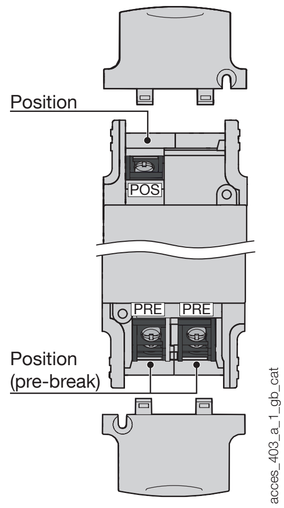
Use

The function of the auxiliary contact depends on where it is mounted on the mechanism.

Characteristics

Changeover type: NO/NC,
IP2X with front operation (cover tap screwed).
10,000 operations.
Maximum 3 per switch.

Frame size	Connection type	Type	Reference
F2 - F3	Screw	NO/NC standard	8499 **0001**
F2 - F3	Screw	NO/NC low level	8499 **0002**
F2 - F3	Screw	NC > 600 V	8499 **0003**



Characteristics

Auxiliary contact type	Min. current (A)	I_{th} (A)	Electrical characteristics per UL 60947-5-1
Standard	12.5 mA / 24 V	10	A300 - R300 - Q150
Low level	1 mA / 4 V	10	A300 - R300 - Q150
> 600 V	10 mA / 24 V	10	A600

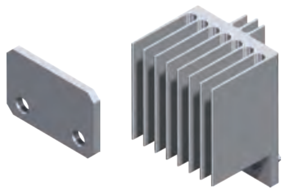
Accessories (continued)

Bridging bar for poles in series

Use

The bridging bars enable the poles to be connected in series, allowing the following configurations for 1500 VDC.

Connection diagrams, see “Pole series connection” pages.


acce_410_a_1_cat acce_411_a_1_cat

1000 VDC - 1 circuit

Frame size	Rating (A)	No. of poles	Quantity to be ordered	Reference
F2	100	2 P	1	8409 **0016**
F2	250	2 P	1	8409 **0016**
F3	400	2 P	1	8409 **0040**
F3	500	2 P	1	8409 **0041**
F3	600	2 P	1	8409 **0063**

1500 VDC - 1 circuit

Frame Size	Rating (A)	No. of poles	Quantity to be ordered	Reference
F2	100	3 P	2	8409 **0016**
F2	100 ... 250	2 P	1	8409 **0024** (1)
F2	250	3 P	2	8409 **0025**
F3	400 ... 600	2 P	1	8409 **0039** (1)
F3	400	2 P	1	8409 **0040**
F3	500 ... 600	2 P	1	8409 **0041** 8409 **0063**

1500 VDC - 2 circuits

Frame Size	Rating (A)	No. of poles	Quantity to be ordered	Reference
F3	400	2 P	2	8409 **0041** 8409 **0063**
F3	500 ... 600	2 P	2	8409 **0063**

(1) Centered mechanism.

Terminal screen

Use

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

Advantages

Small holes in the screen to allow for thermographic inspection. Mounting requires holding inserts (supplied with the terminal screens).


acces_408_a_1_cat

Frame size	No. of poles	Position	Reference(1)(2)
F2	2 P	Top and bottom	8499 **3222**
F2	3 P	Top and bottom	8499 **3232**
F3	2 P	Top and bottom	8499 **3722**

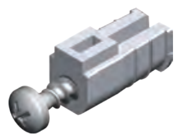
(1) Each reference comprises 2 terminal screens for top and bottom protection.
(2) When used with interphase barriers, please consult us.

Holding insert

Use

Used to secure terminal shrouds / inter-phase barriers on the switch.

Frame size	Pack (unit)	Reference
F2 - F3	10	8499 **6220**
F2 - F3	100	8499 **6221**

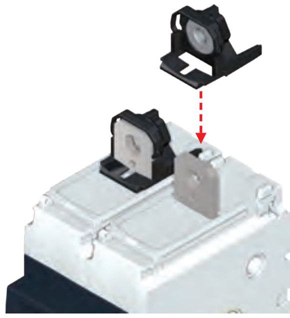

acces_409_a_1_cat

Captive nut

Use

This accessory enables simple one-handed connection to the power terminals. It can be mounted on either side of the terminal for front or rear connection.

Frame size	Pack (unit)	Reference
F2	12	8499 **6120**
F2	120	8499 **6121**
F3	12	8499 **6130**
F3	120	8499 **6131**



acce_399_a_1_cat

Voltage tap

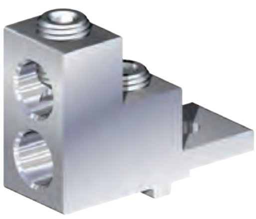
Use

Allows connection of voltage sensing or power cables, with fast-on connection.

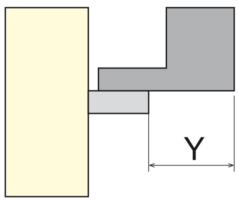
Frame size	Pack (unit)	Reference
F2	12	8499 **9012**
F3	12	8499 **9013**

acce_412_a_1_cat

Terminal lugs



inosy_130_a_1_cat.psd



inosy_042_a_1_x_cat

Frame size	Number and size (min. - max.) of cables	Type of cable	Openings per lug	Quantity per reference	Dimension "Y" (mm/in)	Type	Reference (1)
F2		Cu / Al		2			3954 **2023** (1)
F2	2 conductors (#12 - 2/0)	Cu / Al	2	3	32,5 / 1.29	IHI 2S2-0-TP-STK-34-49-HEX	3954 **3023** (1)
F2		Cu / Al		4			3954 **4023** (1)
F3		Cu / Al		2			3954 **2060** (1)
F3	2 conductors (#2 - 600 KCMIL)	Cu / Al	2	3	69,7 / 2.74	CMC PV2-600	3954 **3060** (1)
F3		Cu / Al		4			3954 **4060** (1)

(1) Captive nut 84996xxx is mandatory.

INOSYS LBS UL 98B

Load Break Switches for DC & PV applications

from 100 to 600 A, up to 1500 VDC

Characteristics

Characteristics according to UL 98B

Rated current In	100 A	200 A	250 A	400 A	500 A	600 A
Frame size	**F2**	**F2**	**F2**	**F3**	**F3**	**F3**
Number of poles(s) in series per polarity - 1000VDC	2 P	2 P	2 P	2 P	2 P	2 P
Number of poles(s) in series per polarity - 1500VDC	2 P / 3 P	2 P / 3 P	2 P / 3 P	2 P	2 P	2 P
Number of pole(s) of the device - 1000VDC	2 P	2 P	2 P	2 P	2 P	2 P
Number of pole(s) of the device - 1500VDC	2 P / 3 P	2 P / 3 P	2 P / 3 P	2 P	2 P	2 P
Short-circuit capacity at 1000 & 1500VDC (with protection)						
Prospective short-circuit current (kA rms DC)	10(1)	10(1)	10(1)	10(1)	10(1)	10(1)
Mechanical characteristics						
Durability (number of operating cycles)	8,000	8,000	8,000	8,000/6,000(2)	8,000/6,000(2)	8,000/6,000(2)
Power loss/pole (W/Pole)	2	5,1	11,2	13	21,6	29,3

(1) Without fuse during 50 ms.
(2) 8,000 for LBS.

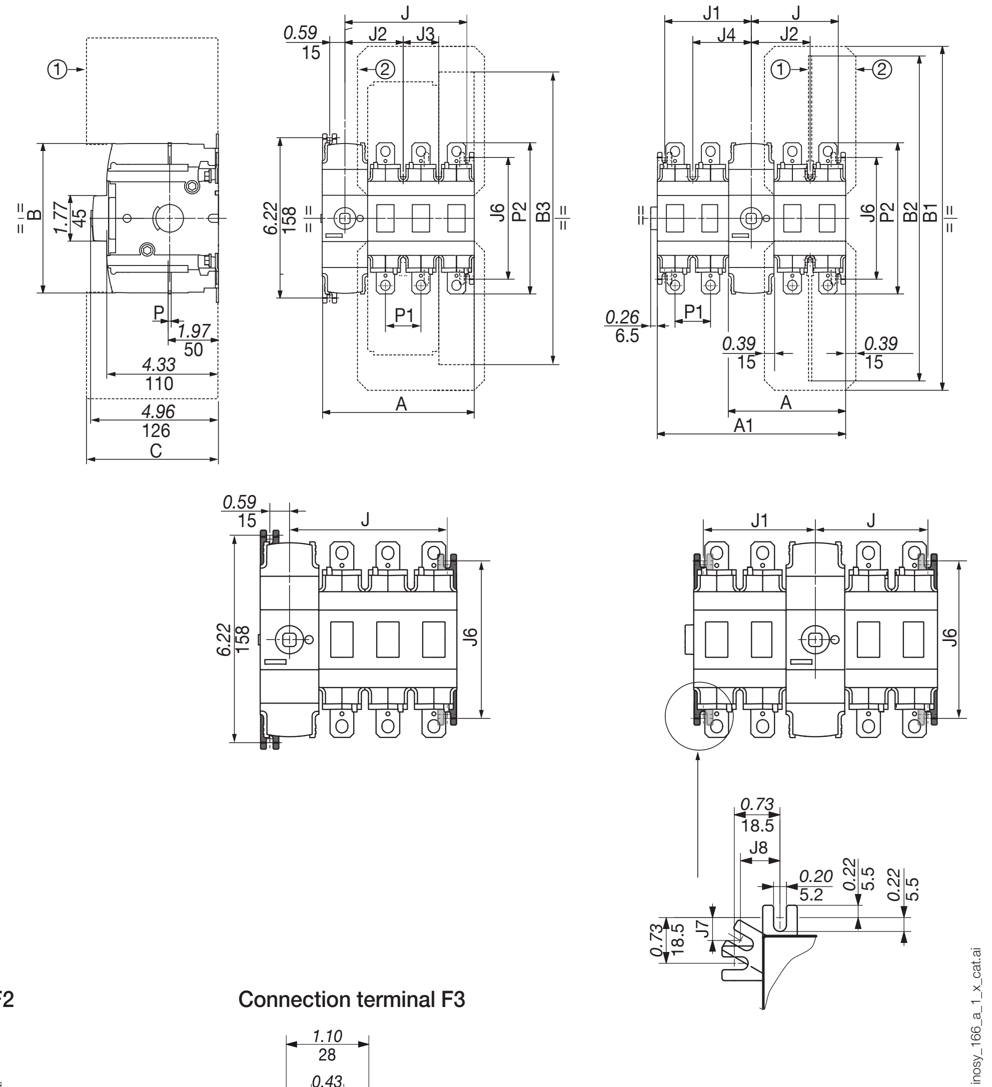
Characteristics

Characteristics according to IEC 60947-3

Rated current I_n			160 A	250 A	315 A	400 A	630 A	800 A
Frame size			**F2**	**F2**	**F2**	**F3**	**F3**	**F3**
Thermal current at 40°C (A)			160	250	315	400	630	800
Thermal current at 50°C (A)			160	250	315	400	630	760
Thermal current at 60°C (A)			160	250	315	400	570	685
Rated insulation voltage U (V)			1500	1500	1500	1500	1500	1500
Rated impulse withstand voltage U_{imp} (kV)			12	12	12	12	12	12
Number of circuits	**Rated voltage**	**Utilization category**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**
1 circuit	1000 VDC(1)	DC-21 B	160	250	315	400	630	800
1 circuit	1500 VDC(2)	DC-21 B	160	250	315	400	630	-
Number of circuits	**Rated voltage**	**Utilization category**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**
1 circuit	1000 VDC(1)	PV2	-	-	-	-	-	-
1 circuit	1500 VDC(2)	PV2	160	250	315	400	630	-
2 circuits	1500 VDC(2)	PV2	-	-	-	400	630	-
Short-circuit capacity at 1000 & 1500VDC (without protection)								
Rated short-time withstand current I_{cw} 1s (kA eff.)			5	5	5	8	8	8
Rated short-circuit making capacity I_{cm} (kA peak) - 60 ms			10	10	10	10	10	10
Connection								
Recommended Cu rigid cable cross-section (mm^2)(3)			70	120	185	240	2 X 185	2X 240
Recommended Cu busbar width (mm)(3)			20	20	20	25	25	25
Mechanical characteristics								
Durability (number of operating cycles)			8,000	8,000	8,000	8,000/6,000(4)	8,000/6,000(4)	8,000/6,000(4)
Power loss/pole (W/Pole)			4.5	11.2	13	13	30.2	50

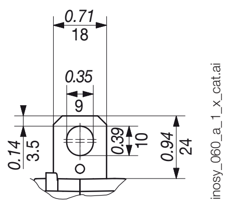
(1) 2 poles in series.
(2) 2 or 3 poles in series.
(3) For aluminium connection, please consult us.
(4) 8000 for LBS.

INOSYS LBS

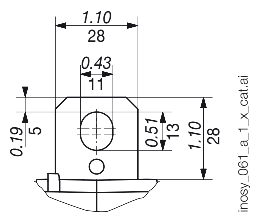


1. Inter-phase barrier.
2. Terminal screens..

Connection terminal F2



Connection terminal F3

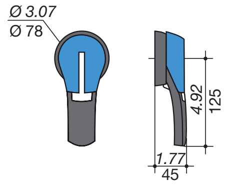
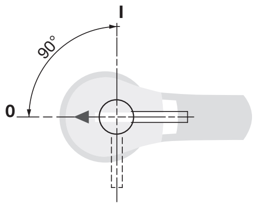
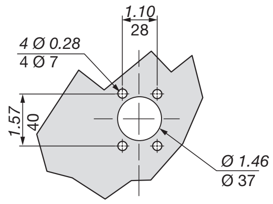


			A		A1	J	J1	J	
Rating (A)	**Frame size**	**Units**	**2 P**	**3 P**	**1+1 P / 2+2 P**	**1+1 P / 2+2 P**	**1+1 P / 2+2 P**	**2 P**	**3 P**
100 … 250	F2	in	4.60	5.98	4.60 / 7.36	1.97 / 3.37	2.05 / 3.44	3.35	4.72
		mm	117	152	117 / 187	50.5 / 85.5	52.5 / 87.5	85.5	120.5
400 … 600	F3	in	5.40	7.17	5.40 / 8.94	2.36 / 4.15	2.44 / 4.23	4.13	-
		mm	137	182	137 / 227	60.5 / 105.5	62.5 / 107.5	105.5	-

Rating (A)	Frame size	Units	B	B1	B2			B3	C		J2	J3	J4	J6	P1	P2
					IEC short	IEC long	UL		IEC	UL						
100 … 250	F2	in	5.90	13.35	7.85	12.61	10.31	11.64	4.33	4.33	2.26	1.38	2.34	4.72	1.38	5.87
		mm	154	339	199	320	262	296	110	110	57,5	35	59,5	120	35	149
400 … 600	F3	in	5.90	16.28	9.35	14.11	15.5	14.12	4.33	5.31	2.64	1.77	2.72	6.22	1.77	7.87
		mm	154	414	237	358	394	359	110	135	67.5	45	69.5	158	45	200

Dimensions for external handles (in/mm)

F2 frame size

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

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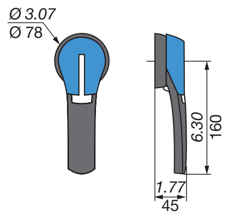
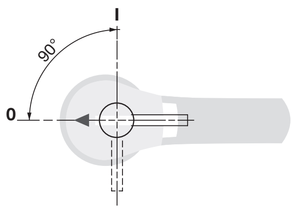
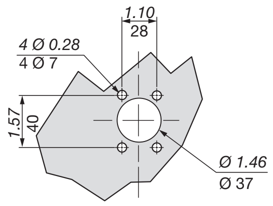
F3 frame size

Handle type	Front operation Direction of operation	Door drilling
S2L type 		

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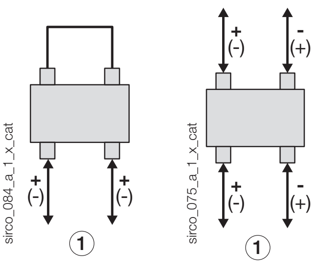
Pole series connections

1 PV circuit - 1000 & 1500 VDC

F2-F3 - 2 P

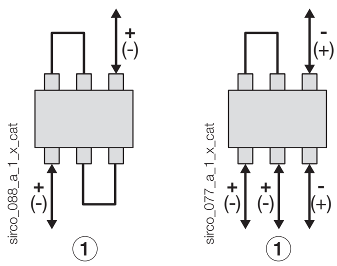
Grounded network　　Floating network



1 PV circuit - 1500 VDC

F2 - 3 P

Grounded network　　Floating network

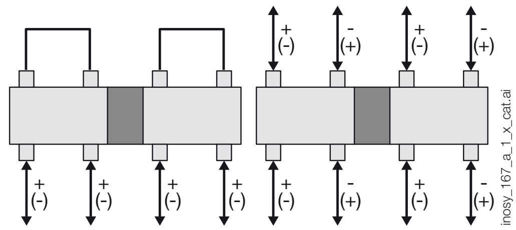


1. Circuit 1
2. Circuit 2

2 PV circuits - 1500 VDC

F3 - 2 P

Grounded network　　Floating network

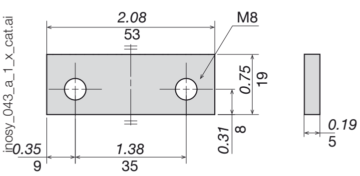


Bridging bars (in/mm)

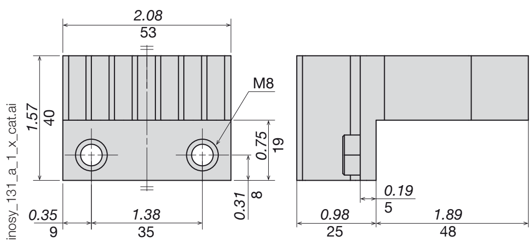
F2

8409 0016 (1)

(1) Kit comprises 2 identical bars.



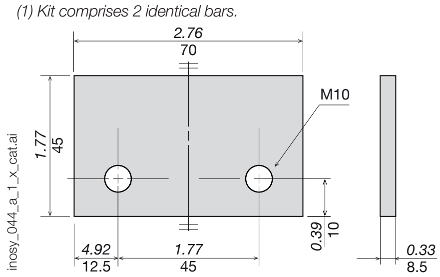
8409 0025



F3

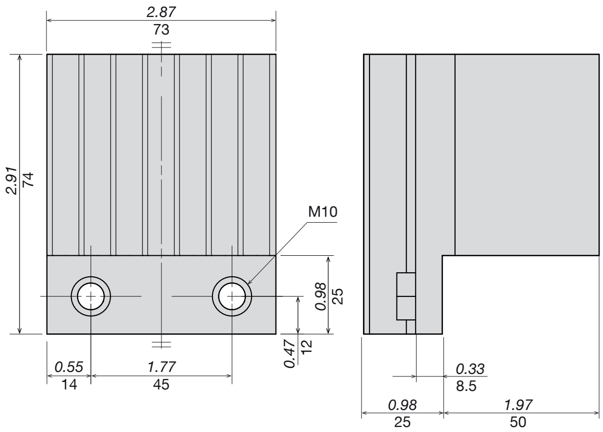
8409 0040 (1)

(1) Kit comprises 2 identical bars.

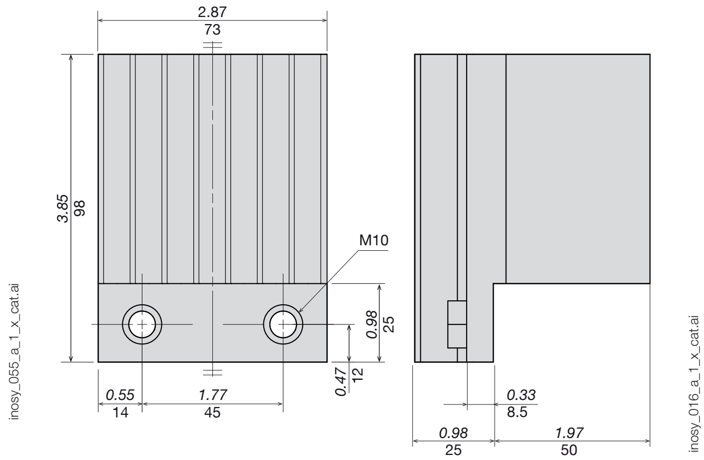


F3

8409 0041



8409 0063



Mounting orientation

F2 - F3

All mounting orientations are possible. Derating may apply - please consult us.

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A, up to 1500 VDC

sirco-pv_058_a_1_cat

sirco-pv_059_a_1_cat

The solution for

- Combiner box
- Recombiner box
- Solar Inverter
- Energy Storage Inverter
- Battery Energy Storage System

Function

SIRCO PV UL 98B are manually operated multipolar disconnect switches. They make and break under load conditions and provide safety isolation for any PV circuit up to 1500 VDC. They comply with NEC Article 690 (US National Electrical Code) concerning photovoltaic installations. They are compliant for use within solar inverters and systems governed by standard UL 1741.

SIRCO PV are extremely durable switches that have been tested and approved for use in the most demanding environments.

They have been designed and tested for all types of applications: grounded, ungrounded and bipolar.

Advantages

Performance

A glass fiber reinforced polyester break chamber with an arc extinguishing system provides a patented safety disconnection system offering rapid extinguishing of the electric arc up to 1500 VDC and current interruption up to 2000 A.

Back-to-back double disconnect switch

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

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

Strong points

- Patented switching technology
- Positive break indication
- Up to 1500 VDC as per characteristics by UL 98B
- Suitable for use in accordance with NEC Article 690

Conformity to standards

- UL 98B
  Guide WHVA
  File E346418
- CSA-C22.2 No. 4
  Class 4651-02
  File 112964
- IEC 60947-3

Approvals and certifications(1)

(1) Product reference on request.

References

1000 VDC - Back plate mounting

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle
		1 PV circuit			
100 A	B4	2 P	27PV **2009**	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)	7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**(2)
200 A	B4		27PV **2019**		
250 A	B4		27PV **2024**		
325 A	B5		27PV **2032**		
400 A	B5		27PV **2039**		
600 A	B6	4 P	27PV **4060**	S3 type Black 4, 4X 143D **3111**(1) Red/Yellow 4, 4X 143E **3111**(1)	7.9 inches 200 mm 1401 **1520** 12.6 inches 320 mm 1401 **1532** 15.7 inches 400 mm 1401 **1540**(2)
800 A	B7		27DC **4081**	S4 type Black 4, 4X 144D **3111**(1) Red/Yellow 4, 4X 144E **3111**(1)	
1200 A	B7		27DC **4121**		
2000 A	B7$_{DS}$	8 P	27DC **4201**	V1 type Black 3R, 12 2799 **7145**	12.6 inches 320 mm 4199 **3018**
		2 PV circuits			
100 A	B4$_{DS}$	4 P	27PV **5009**	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)	7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**(2)
250 A	B4$_{DS}$		27PV **5024**		
325 A	B5		27PV **4032**		
400 A	B5		27PV **4039**		
600 A	B6$_{DS}$	8 P	27PV **8060**	V1 type Black 3R, 12 2799 **7145**	12.6 inches 320 mm 4199 **3018**
800 A	B7$_{DS}$		27DC **8081**		
1000 A	B7$_{DS}$		27DC **8101**		
		4 PV circuits			
350 A	B5$_{DS}$	8 P	27PV **8039**	S3 type Black 4, 4X 143D **3111**(1) Red/Yellow 4, 4X 143E **3111**(1)	7.9 inches 200 mm 1401 **1520** 12.6 inches 320 mm 1401 **1532** 15.7 inches 400 mm 1401 **1540**(2)

(1) Defeatable handle.
(2) Shaft guide reference 1429 0000 is required required for a shaft length over 12.6 in / 320 mm.

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

1500 VDC - Back plate mounting

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle
1 PV circuit					
275 A	B5	3 P	27PV **3026**	S2 type Black 1, 3R, 12 142F **2111**[2] Red/Yellow 1, 3R, 12 142G **2111**[2] Black 4, 4X 142D **2111**[2] Red/Yellow 4, 4X 142E **2111**[2]	7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**[3]
325 A	B5		27PV **3032**		
400 A	B5		27PV **3039**		
600 A[1]	B6$_{DS}$	8 P	27PV **8060**	V1 type Black 3R, 12 2799 **7145**	12.6 inches 320 mm 4199 **3018**
800 A [1]	B7$_{DS}$		27DC **8081**		
1000 A [1]	B7$_{DS}$		27DC **8101**		
2 PV circuits					
275 A	B5$_{DS}$	6 P	27PV **6026**	S3 type Black 4, 4X 143D **3111**[2] Red/Yellow 4, 4X 143E **3111**[2]	7.9 inches 200 mm 1401 **1520** 12.6 inches 320 mm 1401 **1532** 15.7 inches 400 mm 1401 **1540**[3]
350 A	B5$_{DS}$		27PV **6039**		

(1) Not UL.
(2) Defeatable handle.
(3) Shaft guide reference 1429 0000 is required for a shaft length over 12.6 in / 320 mm.

Accessories

External operation

Use

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.

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

Example

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

S2 type handle

Reinforced S2 type handle

Frame size	Handle type	Handle color	Nema degree of protection	Reference
B4 … B5 B4$_{DS}$	S2	Black	1, 3R, 12	142F **2111**
		Red/Yellow		142G **2111**
		Black	4, 4X	142D **2111**
		Red/Yellow		142E **2111**
B5$_{DS}$ B6	S3	Black		143D **3111**
		Red/Yellow		143E **3111**
B7	S4	Black		144D **3111**
		Red/Yellow		144E **3111**
B6$_{DS}$ … B7$_{DS}$	V1	Black	1, 3R, 12	2799 **7145**

Front handle heavy duty I - 0 with metallic lever

Frame size	Handle type	Color	Nema type	Reference
B4 … B5 B4$_{DS}$	S2	Black	4, 4X	142D **2911**
		Red/Yellow	4, 4X	142E **2911**
B5$_{DS}$ B6	S3	Black	4, 4X	143D **3911**
		Red/Yellow	4, 4X	143E **3911**
B7	S4	Black	4, 4X	144D **3911**
		Red/Yellow	4, 4X	144E **3911**

S3 type handle

S4 type handle

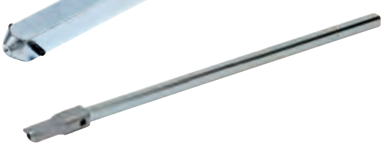
V1 type handle

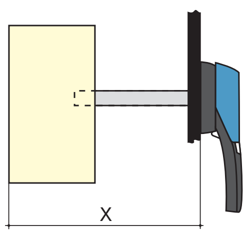
Shaft for external handle

Use

Standard lengths:
- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: please consult us.
19.69 in / 500 mm available.





Frame size	Handle type	Dimension (inches)	Dimension X (mm)	Length (inches)	Length (mm)	Reference
B4	S2	6 … 11.6	150 … 295	7.9	200	1400 **1020**
		6 … 16.3	150 … 415	12.6	320	1400 **1032**
		6 … 19.4	150 … 495	15.7	400	1400 **1040**
B5		8 … 12.9	203 … 328	7.9	200	1400 **1020**
		8 … 17.6	203 … 448	12.6	320	1400 **1032**
		8 … 20.7	203 … 525	15.7	400	1400 **1040**
B6	S3	8.70 … 13.50	220 … 343	7.9	200	1401 **1520**
		8.70 … 18.23	220 … 463	12.6	320	1401 **1532**
		8.70 … 21.38	220 … 543	15.7	400	1401 **1540**
B7	S4	12 … 14.4	305 … 366	7.9	200	1401 **1520**
		12 … 19.1	305 … 485	12.6	320	1401 **1532**
		12 … 22.2	305 … 564	15.7	400	1401 **1540**
B4$_{DS}$	S2	12 … 14.3	305 … 363	7.9	200	1400 **1020**
		12 … 19	305 … 483	12.6	320	1400 **1032**
		12 … 22.10	305 … 561	15.7	400	1400 **1040**
B5$_{DS}$	S3, S4	16 … 18.4	406 … 467	7.9	200	1401 **1520**
		16 … 23.1	406 … 589	12.6	320	1401 **1532**
		16 … 26.3	406 … 668	15.7	400	1401 **1540**
B6$_{DS}$	V1	20 … 28.1	508 … 714	12.6	320	4199 **3018**
		20 … 31.3	508 … 795	15.7	400	4199 **3019**
B7$_{DS}$		20 … 28.1	508 … 714	12.6	320	4199 **3018**
		20 … 39.4	508 … 795	15.7	400	4199 **3019**

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

S-type handle adapter

Use

For handles S2, S3 and S4.

Dimensions

Increases the distance between the handle grip and the door by 0.47 in / 12 mm, for better handling.

Color	Nema degree of protection	To be ordered in multiples of	Reference
Black	1, 3R, 12	10	1493 **0000**

acces_187_a_3_cat

Alternative S-type handle cover colors

Use

For handles S2, S3 and S4.

Other colors: please consult us.

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

acces_198_a_3_cat

Auxiliary contact

Use

Pre-break and signaling of positions 0 and I:

- 1 to 2 NO/NC auxiliary contacts,
- 1 to 2 low level NO/NC auxiliary contacts.

Electrical characteristics

A300.

To have 2 NO/NC contacts per switch, please order 1st and 2nd auxiliary contacts per switch.

acces_076_a_1_cat

NO/NC contact

These auxiliary conctacts are for an application of 125-250VAC, 60Hz, general use 10A, 1A 1/2 HP.

Frame size	Position AC	Type	Reference
B4 … B7	1st	NO/NC	2799 **0021**
	2nd		2799 **0022**
$B4_{DS}$ … $B7_{DS}$	1st		4159 **0021**

Low level NO/NC auxiliary contacts

Low level auxiliary contacts are for an application of 125VAC, 60Hz, general use 1A.

Frame size	Position AC	Type	Reference
B4 … B7	1 contact	NO/NC	2799 **0121**
	2 contacts		2799 **0122**
$B4_{DS}$ … $B7_{DS}$	1 contact		4159 **0022**

Terminal screen

Use

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

Frame size	No. of poles	Position	Pack	Reference
B4	2 P	Top	1 unit	2798 **3021**
	2 P	Bottom	1 unit	2798 **8021**
B5	3 P	Top	1 unit	2798 **3041**
	3 P	Bottom	1 unit	2798 **8041**
B5	4 P	Top or bottom	1 unit	2798 **4041**
B6	4 P	Top or bottom	1 unit	2798 **4061**
$B4_{DS}$	2 P	Top or bottom	1 unit	4158 **3021**
$B5_{DS}$	6 P	Top or bottom	1 unit	4158 **3041**
	8 P	Top or bottom	1 unit	4158 **4041**
$B6_{DS}$	8 P	Top and bottom	2 units	2798 **8061**
$B7_{DS}$	8 P	Top or bottom	1 unit	2798 **4121**

acces_079_a_1_cat

Jumpers for connecting poles in series

1 PV circuit - 1000 VDC

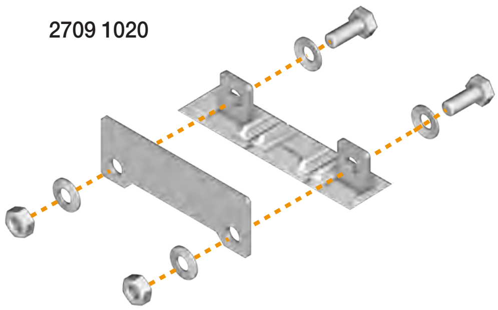
Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Jumper kit Reference
			Ungrounded	Grounded	
27PV **2009**	B4	100	N/A	1	2709 **1020**
27PV **2019**	B4	200	N/A	1	2709 **1020**
27PV **2024**	B4	250	N/A	1	2709 **1020**
27PV **2032**	B5	325	N/A	1	2709 **1041**
27PV **2039**	B5	400	N/A	2	2709 **1041**
27DC **4060**	B6	600	2	3	2709 **0062**
27DC **4081**	B7	800	2	3	2709 **0081**
27DC **4121**	B7	1200	2	3	2709 **0121**
27DC **4201**	$B7_{DS}$	2000	6	6[1]	2709 **0121**

Use

The jumpers will make easy the connection of the poles in series, allowing the following configurations[1].

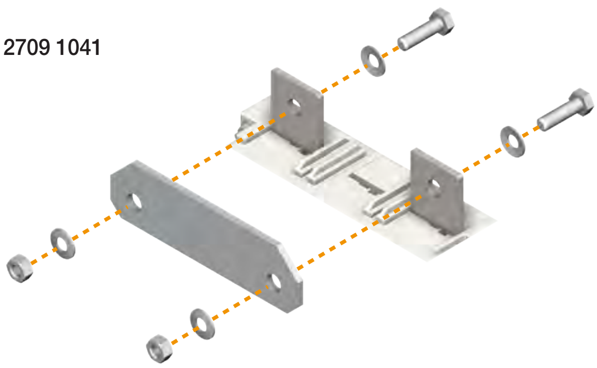
(1) Other connections: refer to mounting instructions.

2709 1020



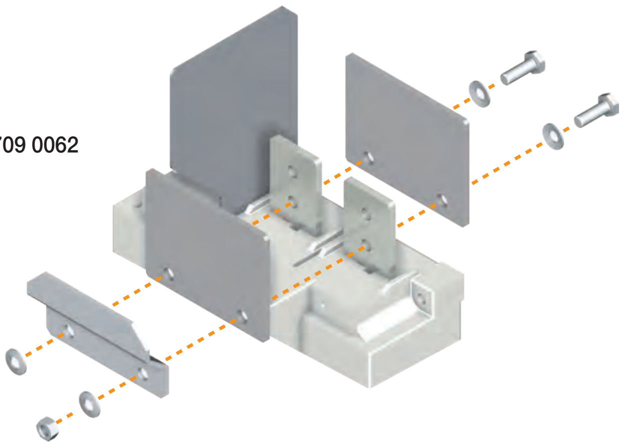
acces_391_b_1_x_cat

2709 1041



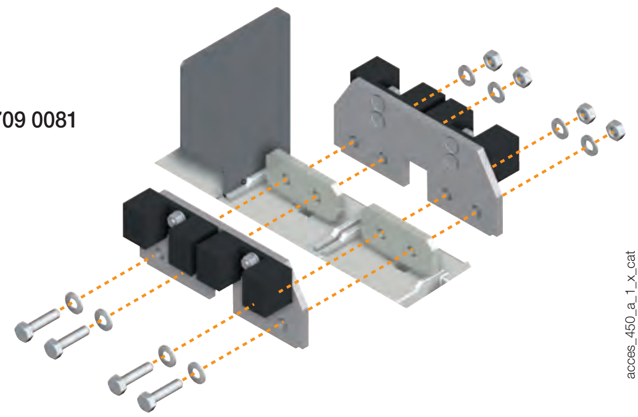
acces_381_a_1_x_cat

2709 0062



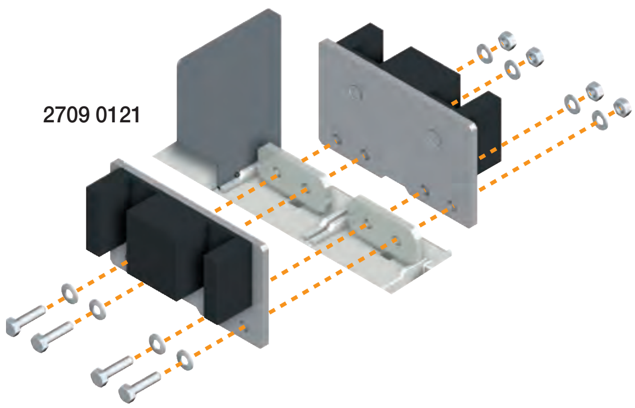
acces_383_a_1_x_cat

2709 0081



acces_449_a_1_x_cat

2709 0121



acces_450_a_1_x_cat

SIRCO PV UL 98B

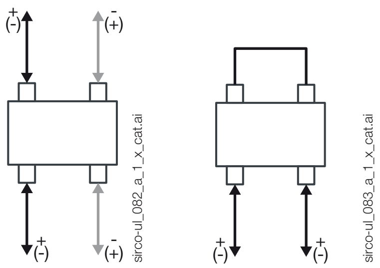
Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

1 PV circuit - 1000 VDC

27PV 2009 - 27PV 2019 - 27PV 2024

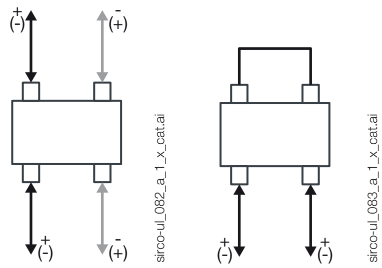
Ungrounded | Grounded



No jumper kit | 1 x 2709 1020 jumper kit

27PV 2032

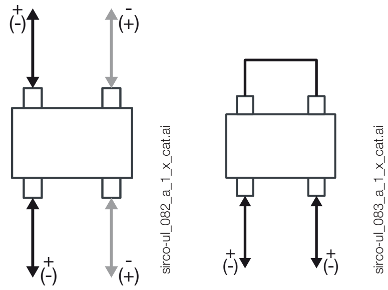
Ungrounded | Grounded



No jumper kit | 1 x 2709 1041 jumper kit

27PV 2039

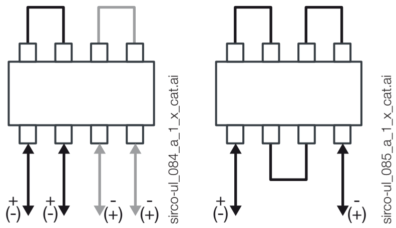
Ungrounded | Grounded



No jumper kit | 2 x 2709 1041 jumper kits

27PV 4060

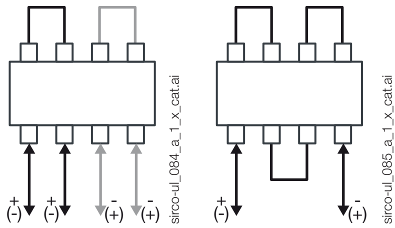
Ungrounded | Grounded



2 x 2709 0062 jumper kits | 3 x 2709 0062 jumper kits

27DC 4081

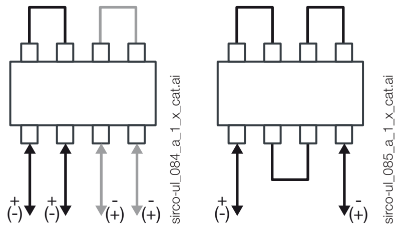
Ungrounded | Grounded



2 x 2709 0081 jumper kits | 3 x 2709 0081 jumper kits

27DC 4121

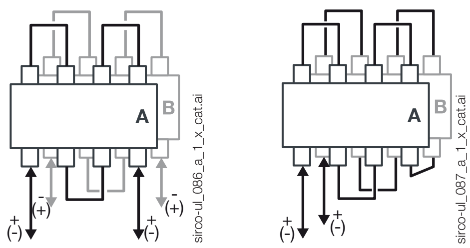
Ungrounded | Grounded



2 x 2709 0121 jumper kits | 3 x 2709 0121 jumper kits

27DC 4201

Ungrounded | Grounded



6 x 2709 0121 jumper kits

3 x 2709 0121 jumper kits and one paralleling kit (2729 1200 or 2729 1201 or 2729 1202)

Jumpers for connecting poles in series (continued)

2 PV circuits - 1000 VDC

Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Jumper kit Reference
			Ungrounded	Grounded	
2 PV circuits					
27PV **5009**	B4$_{DS}$	100	N/A	2	2709 **1020**
27PV **5024**	B4$_{DS}$	250	N/A	2	2709 **1020**
27PV **4032**	B5	325	N/A	2	2709 **0027**
27PV **4039**	B5	400	N/A	2	2709 **0038**
27PV **8060**	B6$_{DS}$	600	4	6	2709 **0062**
27DC **8081**	B7$_{DS}$	800	4	6	2709 **0121**
27DC **8101**	B7$_{DS}$	1000	4	6	2709 **0121**

4 PV circuits - 1000 VDC

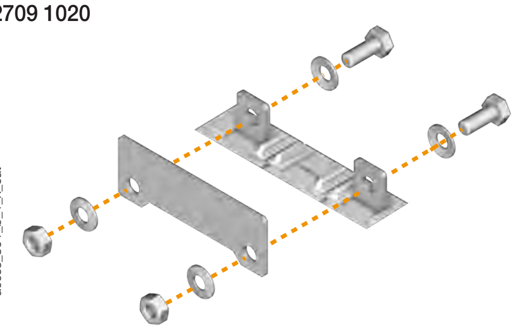
Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Jumper kit Reference
			Ungrounded	Grounded	
27PV **8039**	B5$_{DS}$	350	N/A	4	2709 **0038**

Use

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

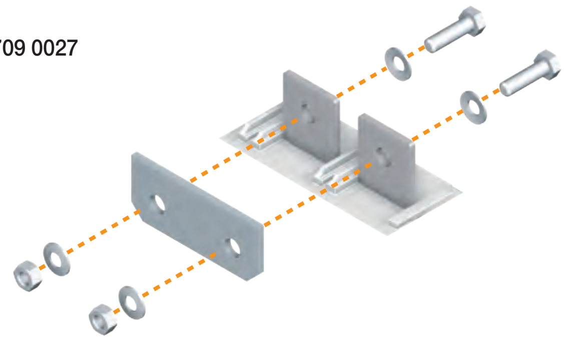
(1) Other connections: refer to mounting instructions.

2709 1020



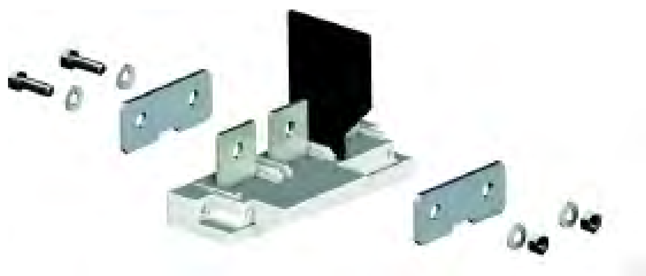
acces_391_b_1_x_cat

2709 0027



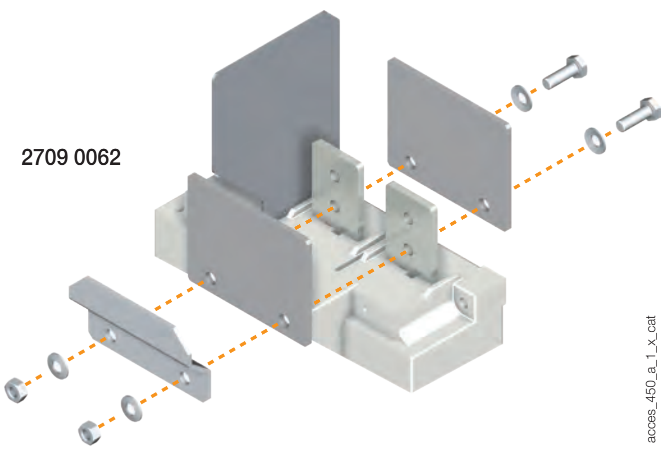
acces_451_a_1_x_cat

2709 0038



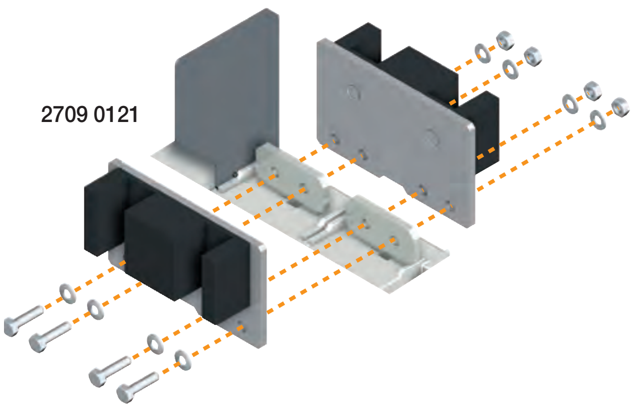
acces_378_a_1_x_cat

2709 0062



acces_383_a_1_x_cat

2709 0121

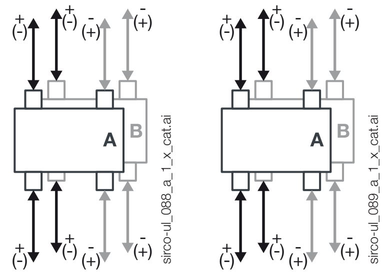


acces_450_a_1_x_cat

2 PV circuits - 1000 VDC

27PV 5009 - 27PV 5024

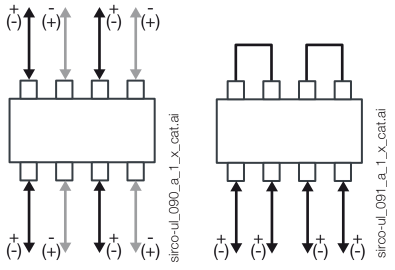
Ungrounded | Grounded



No jumper kit required | 2 x 2709 1020 jumper kits

27PV 4032

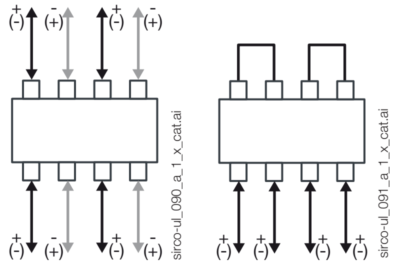
Ungrounded | Grounded



No jumper kit required | 1 x 2709 0027 jumper kit

27PV 4039

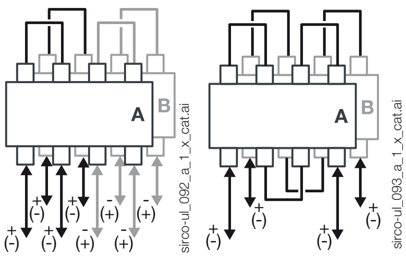
Ungrounded | Grounded



No jumper kit required | 2 x 2709 0045 jumper kits

27PV 8060

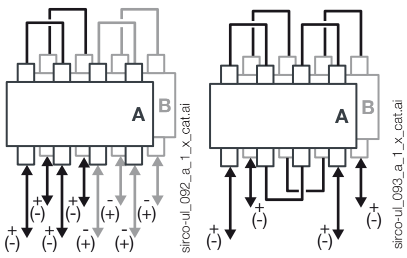
Ungrounded | Grounded



4 x 2709 0062 jumper kits | 6 x 2709 0062 jumper kits

27DC 8081 - 27DC 8181

Ungrounded | Grounded

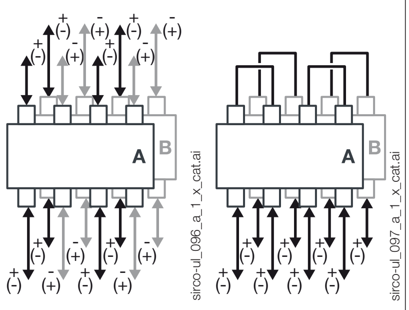


2 x 2709 0121 jumper kits | 6 x 2709 0121 jumper kits

4 PV circuits - 1000 VDC

27PV 8039

Ungrounded | Grounded



No jumper kit required | 4 x 2709 0046 jumper kits

Jumpers for connecting poles in series (continued)

1 PV circuit - 1500 VDC

Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Fig. of one jumper kit	Jumper kit Reference
			Ungrounded	Grounded		
1 PV circuit						
27PV **3026**	B5	275	1	2	3	2709 **0027**
27PV **3032**	B5	325	1	2	3	2709 **0027**
27PV **3039**	B5	400	1	2	4	2709 **0038**
27PV **8060**	B6$_{DS}$	600	6	6(2)	6	2709 **0062**
27DC **8081**	B7$_{DS}$	800	6	6(1)	8	2709 **0121**
27DC **8101**	B7$_{DS}$	1000	6	6(1)	8	2709 **0121**
2 PV circuits						
27PV **6026**	B5$_{DS}$	275	2	4	3	2709 **0027**
27PV **6039**	B5$_{DS}$	350	2	4	4	2709 **0038**

(1) Please order paralleling kit to connect back and front switches, see paralleling connection kit.
(2) Paralleling kit is needed to connect back and front switches, please consult us

Use

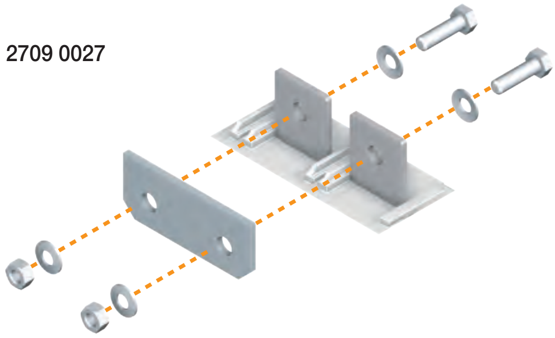
The jumpers will make easy the connection of the poles in series, allowing the following configurations(1).

(1) Other connections: refer to mounting instructions.

2 PV circuits - 1500 VDC

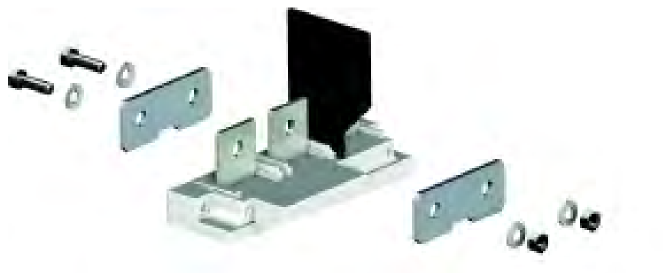
Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Fig. of one jumper kit	Jumper kit Reference
			Ungrounded	Grounded		
27PV **6026**	B5$_{DS}$	275	2	4	3	2709 **0027**
27PV **6039**	B5$_{DS}$	350	2	4	4	2709 **0038**

2709 0027



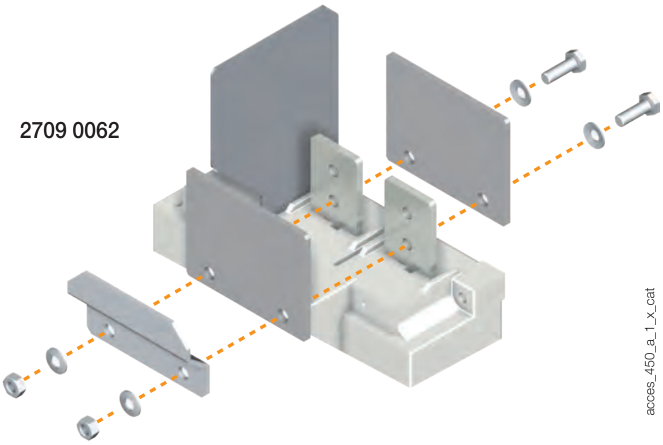
acces_451_a_1_x_cat

2709 0038



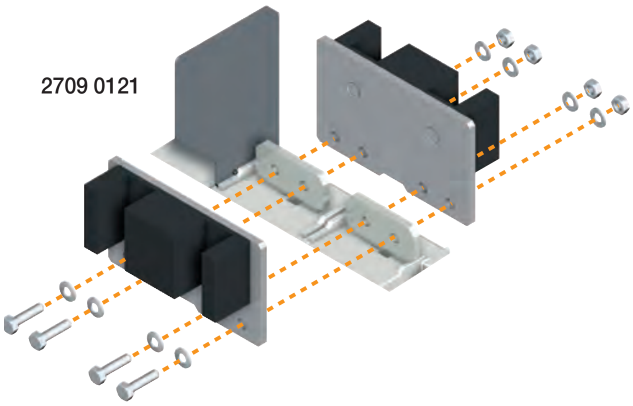
acces_378_a_1_x_cat

2709 0062



acces_383_a_1_x_cat

2709 0121



acces_450_a_1_x_cat

SIRCO PV UL 98B

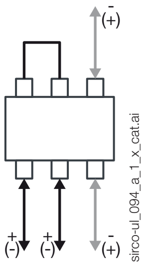
Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

1 PV circuit - 1500 VDC

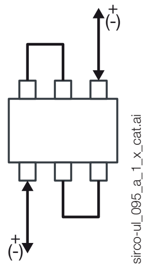
27PV 3026 - 27PV 3032

Ungrounded



1 x 2709 0027 jumper kit

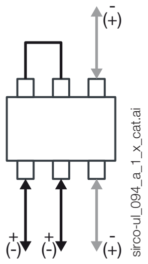
Grounded



2 x 2709 0027 jumper kits

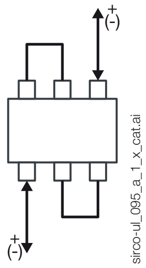
27PV 3039

Ungrounded



1 x 2709 0038 jumper kit

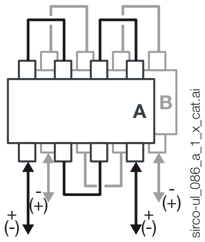
Grounded



2 x 2709 0038 jumper kit

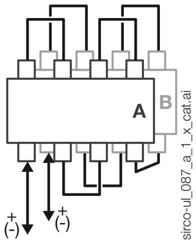
27PV 8060

Ungrounded



2 x 2709 0062 jumper kits

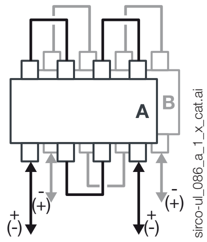
Grounded



6 x 2709 0062 jumper kits and one paralleling kit (272 1200 or 2729 1201 or 2729 1202)

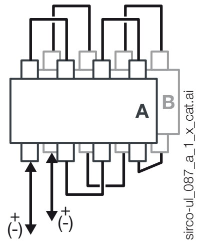
27DC 8081 - 27DC 8101

Ungrounded



6 x 2709 0121 jumper kits

Grounded

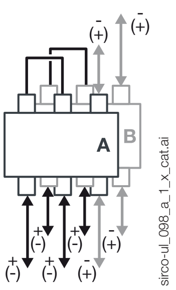


6 x 2709 0121 jumper kits and one paralleling kit (272 1200 or 2729 1201 or 2729 1202)

2 PV circuits - 1500 VDC

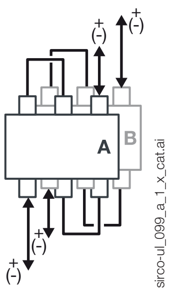
27PV 6026

Ungrounded



2 x 2709 0027 jumper kits

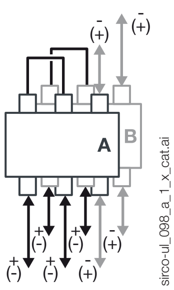
Grounded



4 x 2709 0027 jumper kits

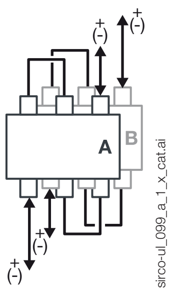
27PV 6026

Ungrounded



2 x 2709 0038 jumper kits

Grounded



4 x 2709 0038 jumper kits

Accessories (continued)

Terminal lugs

Use

Connection of bar copper cables onto the terminals (without lugs).
Optional fan out kit for ratings of 800 to 1200 A for connecting several cables to the switch.

Frame size	Rating max (A)	Numbrer and size of cables	Max. number of connections per terminal	Type of cable	Quantity	Reference
B4 - B4$_{DS}$	100 … 250	1 conductor (#6-300MCM)	1	Cu / Al	2 lugs	3954 **2020**
		2 conductors (#4-2/0)	1	Cu / Al	2 lugs	3954 **2025**
B5 - B5$_{DS}$	325 … 400	1 conductor (#4-600MCM)	1	Cu / Al	2 lugs	3954 **2040**
		2 conductors (#6-350MCM)	1	Cu / Al	2 lugs	3954 **2041**
B6 - B6$_{DS}$	600	2 conductors (#2-600MCM)	1	Cu / Al	2 lugs	3954 **2060**
B7	800 … 1200	2 conductors (#2-600MCM)	2	Cu / Al	2 lugs	3954 **2060**
		2 conductors (#2-600MCM)	3(1)	Cu / Al	3 lugs	3954 **3060**
B7$_{DS}$	2000	2 conductors (#2-600MCM)	2(2)	Cu / Al	2 lugs	3954 **2060**
		2 conductors (#2-600MCM)	3(3)	Cu / Al	3 lugs	3954 **3060**


ul_032_a

(1) Order a fan out kit reference 2709 1203 for connecting 3 connectors per terminal (6 in total for the switch).
(2) 2 connectors per terminal with the connection kit 2729 1200.
(3) 3 connectors per terminal with the connection kits 2729 1201 and 2709 1202.

Paralleling connection kit

Use

Allows connection of double stack switches to increase current or voltage characteristics from 800 to 2000 A.
For 600 A double stack switches, please consult us.

Top or bottom flat connection

Frame size	Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
B7$_{DS}$	800 … 1000	1	1	2	2729 **1200**
		2	1	3	2729 **1202**
	2000	1	1	2	2729 **1200**
		2	1	3	2729 **1202**

Top or bottom edgewise connection

Frame size	Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
B7$_{DS}$	800 … 2000	3	1	3	2729 **1201**

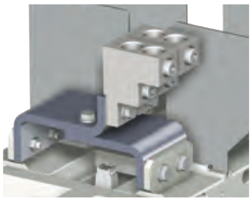
Fig. 1

acces_312_b_1_x_cat

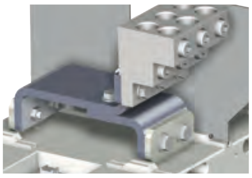
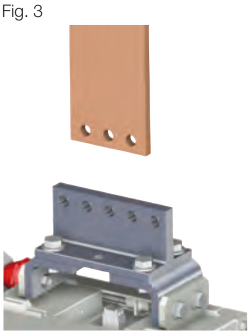
Fig. 2

acces_313_b_1_x_cat

Fig. 3

acces_314_b_1_x_cat

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

Characteristics

Compliance to UL 98B, CSA-C22.2 No. 4 and IEC 60947-3 standards

SIRCO PV UL 98B switches comply with both UL 98B and IEC 60947-3 standards. As acceptance test criteria are different depending on one or the other standard, the same product can be referred to with two different ratings, identified in the characteristic table as follows:

- "Rating" for characteristics as per standard UL 98B.
- "Rated current" for characteristics as per standard IEC 60947-3.

Rating (A)		100 A				200 A			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	100	2 P	2 P	B4	200	2 P	2 P	B4
2 circuits	600 VDC	100	1 P	2 P	B4	130	1 P	2 P	B4
2 circuits	1000 VDC	100	2 P	4 P	$B4_{DS}$	200	2 P	4 P	$B4_{DS}$
4 circuits	600 VDC	100	1 P	4 P	$B4_{DS}$	130	1 P	4 P	$B4_{DS}$
Short-circuit capacity at 1000 VDC (any circuit breaker)									
Prospective short-circuit current (kA rms DC)		10(1)				10(1)			
Connection terminals									
Min. connection wire range/ AWG		#6				#6			
Max. connection wire range/ AWG		300MCM				300MCM			
Mechanical characteristics									
Durability (number of operating cycles)		10 000				10 000			
Operating effort (lbs.in/Nm)		88.5/10				88.5/10			
Auxiliary contact									
Electrical characteristics		A300				A300			

IEC 60947-3										
Rated current I_n			**160 A**				**250 A**			
Thermal current at 104°F/40°C (A)			**160**				**250**			
Thermal current at 122°F/50°C (A)			**160**				**250**			
Thermal current at 140°F/60°C (A)			**160**				**250**			
Rated insulation voltage U_i (V)			1500				1500			
Rated impulse withstand voltage U_{imp} (kV)			12				12			
Number of circuits	**Rated voltage**	**Utilization category**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	DC-21 B	160	2 P	2 P	B4	250	2 P	2 P	B4
1 circuit	1500 VDC	DC-21 B	160	4 P	4 P	$B4_{DS}$	250	4 P	4 P	$B4_{DS}$
2 circuits	1000 VDC	DC-21 B	160	2 P	4 P	$B4_{DS}$	250	2 P	4 P	$B4_{DS}$
4 circuits	600 VDC	DC-21 B	125	1 P	4 P	$B4_{DS}$	160	1 P	4 P	$B4_{DS}$

(1) Wwithout fuse during 50 ms.

Characteristics (continued)

as per standards UL 98B, CSA-C22.2 No. 4 and IEC 60947-3

Rating		**250 A**				**275 A**			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	250	2 P	2 P	B4	275	2 P	2 P	B5
1 circuit	1500 VDC	-	-	-	-	275	3 P	3 P	B5
2 circuits	600 VDC	130	1 P	2 P	B4	215	1 P	2 P	B5
2 circuits	1000 VDC	250	2 P	4 P	$B4_{DS}$	275	2 P	4 P	B5
2 circuits	1500 VDC	-	-	-	-	275	3 P	6 P	$B5_{DS}$
4 circuits	600 VDC	130	1 P	4 P	$B4_{DS}$	215	1 P	4 P	B5
4 circuits	1000 VDC	-	-	-	-	215	2 P	8 P	$B5_{DS}$
6 circuits	600 VDC	-	-	-	-	215	1 P	6 P	$B5_{DS}$
8 circuits	600 VDC	-	-	-	-	215	1 P	8 P	$B5_{DS}$
Short-circuit capacity at 1000 VDC (any circuit breaker)									
Prospective short-circuit current (kA rms DC)		10(1)				10(1)			
Connection terminals									
Min. connection wire range/ AWG		#6				2x#6			
Max. connection wire range/ AWG		300MCM				600MCM			
Mechanical characteristics									
Durability (number of operating cycles)		10 000				6 000			
Operating effort (lbs.in/Nm)		88.5/10				128.3/14.5			
Auxiliary contact									
Electrical characteristics		A300				A300			

IEC 60947-3										
Rated current I_n			**315 A**				**275 A**			
Thermal current at 104°F/40°C (A)			**315**				**275**			
Thermal current at 122°F/50°C (A)			**315**				**275**			
Thermal current at 140°F/60°C (A)			**315**				**275**			
Rated insulation voltage U_i (V)			1500				1500			
Rated impulse withstand voltage U_{imp} (kV)			12				12			
Number of circuits	**Rated voltage**	**Utilization category**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	DC-21 B	315	2 P	2 P	B4	275	2 P	2 P	B5
1 circuit	1500 VDC	DC-21 B	315	4 P	4 P	$B4_{DS}$	275	3 P	3 P	B5
2 circuits	1000 VDC	DC-21 B	315	2 P	4 P	$B4_{DS}$	275	2 P	4 P	B5
4 circuits	600 VDC	DC-21 B	160	1 P	4 P	$B4_{DS}$	275	1 P	4 P	B5
4 circuits	1000 VDC	DC-21 B	-	-	-	-	275	2 P	8 P	$B5_{DS}$
6 circuits	600 VDC	DC-21 B	-	-	-	-	275	1 P	6 P	$B5_{DS}$
8 circuits	600 VDC	DC-21 B	-	-	-	-	275	1 P	8 P	$B5_{DS}$

(1) Without fuse during 50 ms.

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

as per standards UL 98B, CSA-C22.2 No. 4 and IEC 60947-3

Rating		**325 A**				**350 A**			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	325	2 P	2 P	B5	-	-	-	-
1 circuit	1500 VDC	325	3 P	3 P	B5	-	-	-	
2 circuits	600 VDC	215	1 P	2 P	B5	-	-	-	-
2 circuits	1000 VDC	325	2 P	4 P	B5	350	3 P	6 P	$B5_{DS}$
2 circuits	1500 VDC	-	-	-	-	350	3 P	6 P	$B5_{DS}$
4 circuits	600 VDC	215	1 P	4 P	B5	-	-	-	-
4 circuits	1000 VDC	325	2 P	8 P	$B5_{DS}$	350	2 P	8 P	$B5_{DS}$
6 circuits	600 VDC	215	1 P	6 P	$B5_{DS}$	215	1 P	6 P	$B5_{DS}$
8 circuits	600 VDC	215	1 P	8 P	$B5_{DS}$	215	1 P	8 P	$B5_{DS}$
Short-circuit capacity at 1000 VDC (any circuit breaker)									
Prospective short-circuit current (kA rms DC)		10[(1)]				10[(1)]			
Connection terminals									
Min. connection wire range/ AWG		2x#6				2x#6			
Max. connection wire range/ AWG		600MCM				600MCM			
Mechanical characteristics									
Durability (number of operating cycles)		6 000				6 000			
Operating effort (lbs.in/Nm)		128.3/14.5				128.3/14.5			
Auxiliary contact									
Electrical characteristics		A300				A300			

IEC 60947-3										
Rated current In			**400 A**				**500 A**			
Thermal current at 104°F/40°C (A)			**400**				**500**			
Thermal current at 122°F/50°C (A)			**400**				**500**			
Thermal current at 140°F/60°C (A)			**400**				**500**			
Rated insulation voltage U_i (V)			1500				1500			
Rated impulse withstand voltage U_{imp} (kV)			12				12			
Number of circuits	**Rated voltage**	**Utilization category**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	DC-21 B	400	2 P	2 P	B5	-	-	-	-
2 circuits	1000 VDC	DC-21 B	400	2 P	4 P	B5	500	3 P	6 P	$B5_{DS}$
4 circuits	600 VDC	DC-21 B	275	1 P	4 P	B5				
4 circuits	1000 VDC	DC-21 B	400	2 P	8 P	$B5_{DS}$	500	2 P	8 P	$B5_{DS}$
6 circuits	600 VDC	DC-21 B	275	1 P	6 P	$B5_{DS}$	275	1 P	6 P	$B5_{DS}$
8 circuits	600 VDC	DC-21 B	275	1 P	8 P	$B5_{DS}$	275	1 P	8 P	$B5_{DS}$

(1) Without fuse during 50 ms.

Characteristics (continued)

as per standards UL 98B, CSA-C22.2 No. 4 and IEC 60947-3

Rating		400 A				600 A			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	400	2 P	2 P	B5	600	4 P	4 P	B6
1 circuit	1500 VDC	400	3 P	3 P	B5	600	8 P	8 P	$B6_{DS}$
2 circuits	600 VDC	215	1 P	2 P	B5	600	3 P	6 P	$B6_{DS}$
2 circuits	1000 VDC	400	2 P	4 P	B5	600	4 P	8 P	$B6_{DS}$
4 circuits	600 VDC	215	1 P	4 P	B5	-	-	-	-
Short-circuit capacity at 1000 VDC (any circuit breaker)									
Prospective short-circuit current (kA rms DC)		10(1)				10(1)			
Connection terminals									
Min. connection wire range/ AWG		2x#6				2x#2			
Max. connection wire range/ AWG		600MCM				2 x 600MCM			
Mechanical characteristics									
Durability (number of operating cycles)		6 000				6 000			
Operating effort (lbs.in/Nm)		128.3/14.5				327.5/37			
Auxiliary contact									
Electrical characteristics		A300				A300			

IEC 60947-3										
Rated current In			**500 A**				**800 A**			
Thermal current at 104°F/40°C (A)			**500**				**800**			
Thermal current at 122°F/50°C (A)			**500**				**800**			
Thermal current at 140°F/60°C (A)			**500**				**800**			
Rated insulation voltage U_i (V)			1500				1200			
Rated impulse withstand voltage U_{imp} (kV)			12				12			
Number of circuits	**Rated voltage**	**Utilization category**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	DC-21 B	500	2 P	2 P	B5	800	4 P	4 P	B6
1 circuit	1500 VDC	DC-21 B	500	3 P	3 P	B5	800	8 P	8 P	$B6_{DS}$
2 circuits	1000 VDC	DC-21 B	275	1 P	4 P	B5	800	4 P	8 P	$B6_{DS}$
4 circuits	600 VDC	DC-21 B	275	1 P	4 P	B5	-	-	-	-

(1) Without fuse during 50 ms.
(2) 1200 VDC for B6.

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

as per standards UL 98B, CSA-C22.2 No. 4 and IEC 60947-3

Rating		**800 A**				**1000 A**			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	800	4 P	4 P	B7	1000	8 P	8 P	$B7_{DS}$
1 circuit	1500 VDC	800	8 P	8 P	$B7_{DS}$	1000	8 P	8 P	$B7_{DS}$
2 circuits	600 VDC	800	3 P	6 P	$B7_{DS}$	1000	4 P	8 P	$B7_{DS}$
2 circuits	1000 VDC	800	4 P	8 P	$B7_{DS}$	1000	4 P	8 P	$B7_{DS}$
Short-circuit capacity at 1000 VDC (any circuit breaker)									
Prospective short-circuit current (kA rms DC)		10[1]				10[1]			
Connection terminals									
Min. connection wire range/ AWG		4x#2				4x#2			
Max. connection wire range/ AWG		6x 600MCM[2]				6x 600MCM[2]			
Mechanical characteristics									
Durability (number of operating cycles)		3 500				3 500			
Operating effort (lbs.in/Nm)		495.7/56				495.7/56			
Auxiliary contact									
Electrical characteristics		A300				A300			

IEC 60947-3										
Rated current In			**1000 A**				**1200 A**			
Thermal current at 104°F/40°C (A)			**1000**				**1200**			
Thermal current at 122°F/50°C (A)			**1000**				**1200**			
Thermal current at 140°F/60°C (A)			**1000**				**1200**			
Rated insulation voltage U_i (V)			1200				1200			
Rated impulse withstand voltage U_{imp} (kV)			12				12			
Number of circuits	**Rated voltage**	**Utilization category**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	DC-21 B	1000	4 P	4 P	B7	1200	4 P	4 P	$B7_{DS}$
1 circuit	1500 VDC	DC-21 B	1000	8 P	8 P	$B7_{DS}$	1000	8 P	8 P	$B7_{DS}$
2 circuits	1000 VDC	DC-21 B	1000	4 P	8 P	$B7_{DS}$	1000	4 P	8 P	$B7_{DS}$

(1) Without fuse during 50 ms.
(2) Maximum 6 x 600MCM with fan out kit 2729 1203.
(3) 1200 VDC for B7.

Characteristics (continued)

as per standards UL 98B, CSA-C22.2 No. 4 and IEC 60947-3

Rating		1200 A				2000 A			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	1200	4 P	4 P	B7	2000	8 P	8 P	$B7_{DS}$
1 circuit	1500 VDC								
2 circuits	600 VDC	1200	3 P	6 P	$B7_{DS}$				
2 circuits	1000 VDC	1200	4 P	8 P	$B7_{DS}$				
Short-circuit capacity at 1000 VDC (any circuit breaker)									
Prospective short-circuit current (kA rms DC)		10(1)				10(1)			
Connection terminals									
Min. connection wire range/ AWG		4x#2				4x#2			
Max. connection wire range/ AWG		6x 600MCM(2)				6x 600MCM(2)			
Mechanical characteristics									
Durability (number of operating cycles)		3 500				3 500			
Operating effort (lbs.in/Nm)		495.7/56				663.9/75			
Auxiliary contact									
Electrical characteristics		A300				A300			

IEC 60947-3										
Rated current In			**1400 A**				**2200 A**			
Thermal current at 104°F/40°C (A)			**1400**				**2200**			
Thermal current at 122°F/50°C (A)			**1400**				**1850**			
Thermal current at 140°F/60°C (A)			**1400**				**1600**			
Rated insulation voltage U_i (V)			1200				1200			
Rated impulse withstand voltage U_{imp} (kV)			12				12			
Number of circuits	**Rated voltage**	**Utilization category**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	DC-21 B	1400	4 P	4 P	$B7_{DS}$	2200	8 P	8 P	$B7_{DS}$
1 circuit	1500 VDC	DC-21 B	1000	8 P	8 P	$B7_{DS}$				
2 circuits	1000 VDC	DC-21 B	1000	4 P	8 P	$B7_{DS}$				

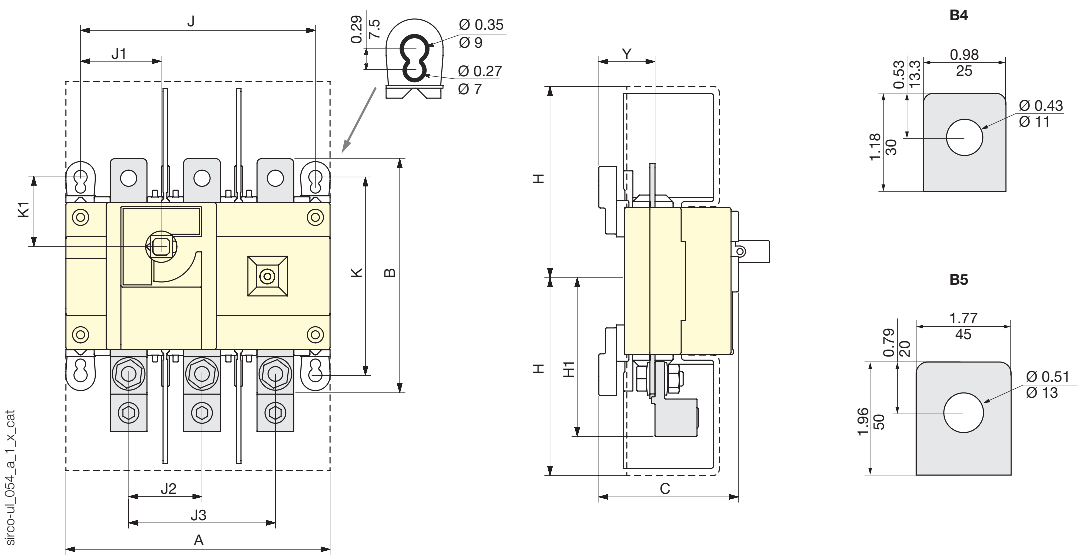
(1) Without fuse during 50 ms.
(2) Maximum 6 x 600MCM with fan out kit 2729 1203.

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications
from 100 to 2000 A - up to 1500 VDC

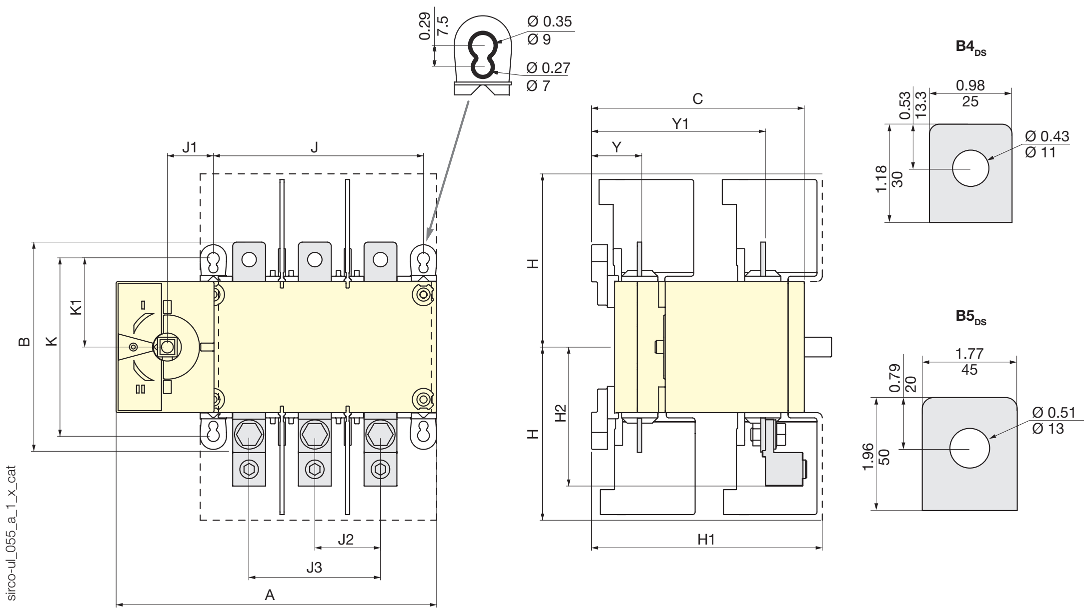
Dimensions (in/mm)

B4-B5



Frame size	No. of poles	Unit	A	B	C	H	H1 max.	J	J1	J2	J3	K	K1	Y
B4	2 P	inches	7.08	6.30	3.74	5.21	4.21	6.30	2.16	-	3.94	5.31	1.89	1.51
		mm	180	160	95	132.5	107	160	55	-	100	135	48	38.5
B5	2 P	inches	9.05	10.23	5.04	8	6.53	8.26	2.95	-	5.12	7.67	2.65	2.08
		mm	230	260	128	203	166	210	75	-	130	195	67.5	53
B5	3 P	inches	9.05	10.23	4.98	8	6.53	8.26	2.95	2.56	-	7.67	2.65	2.02
		mm	230	260	126.5	203	166	210	75	65	-	195	67.5	51.5
B5	4 P	inches	11.41	10.23	4.98	8	6.53	10.63	5.31	2.56	-	7.67	2.65	2.02
		mm	290	260	126.5	203	166	270	135	65	-	195	67.5	51.5

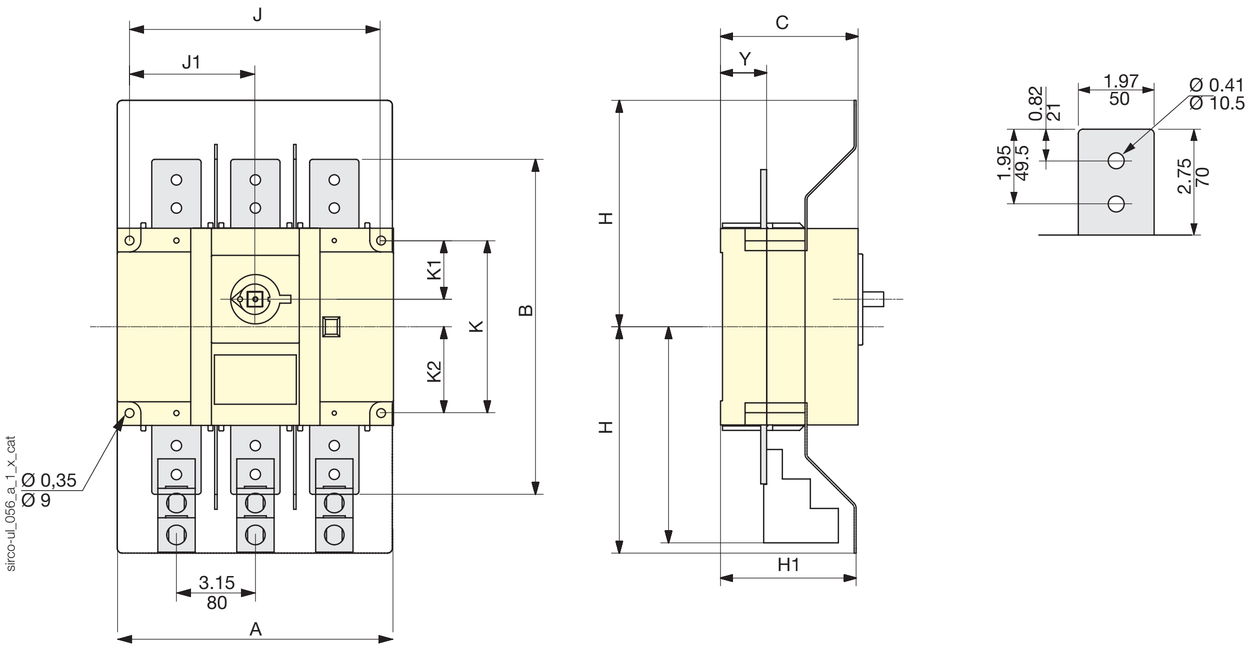
$B4_{DS}$-$B5_{DS}$



Frame size	No. of poles	Unit	A	B	C	H	H1	H1 max.	J	J1	J2	J3	K	K1	Y	Y1
$B4_{DS}$	4 P	inches	9.60	6.30	6.37	5.08	6.93	4.21	6.30	1.37	-	3.93	5.31	2.65	1.51	5.21
		mm	244	160	162	129	176	107	160	35	-	100	135	67.5	38.5	132.5
$B5_{DS}$	6 P	inches	11.85	10.23	9.39	8	6.51	6.53	6.26	1.37	2.56	-	7.67	2.70	2.02	7.44
		mm	301	260	238.5	203	165.5	166	210	35	65	-	195	68.5	51.5	189
$B5_{DS}$	8 P	inches	14.21	10.23	9.39	8	6.51	6.53	10.63	1.37	2.56	-	7.67	2.70	2.02	7.44
		mm	361	260	238.5	203	165.5	166	270	35	65	-	195	68.5	51.5	189

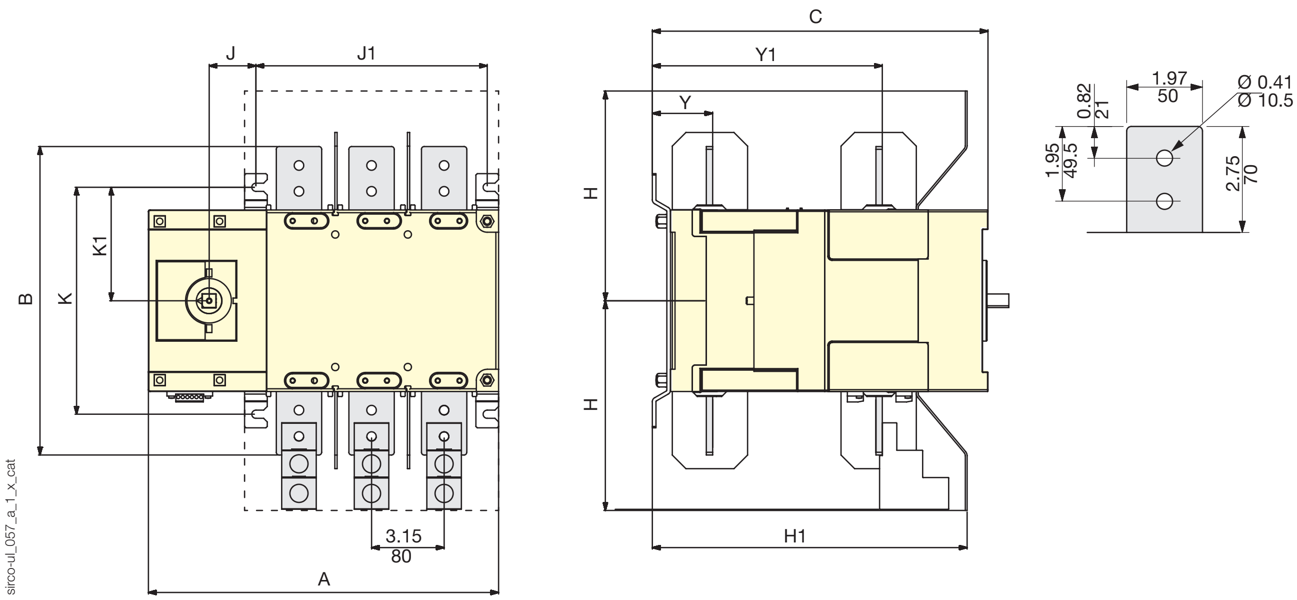
Dimensions (in/mm) (continued)

B6



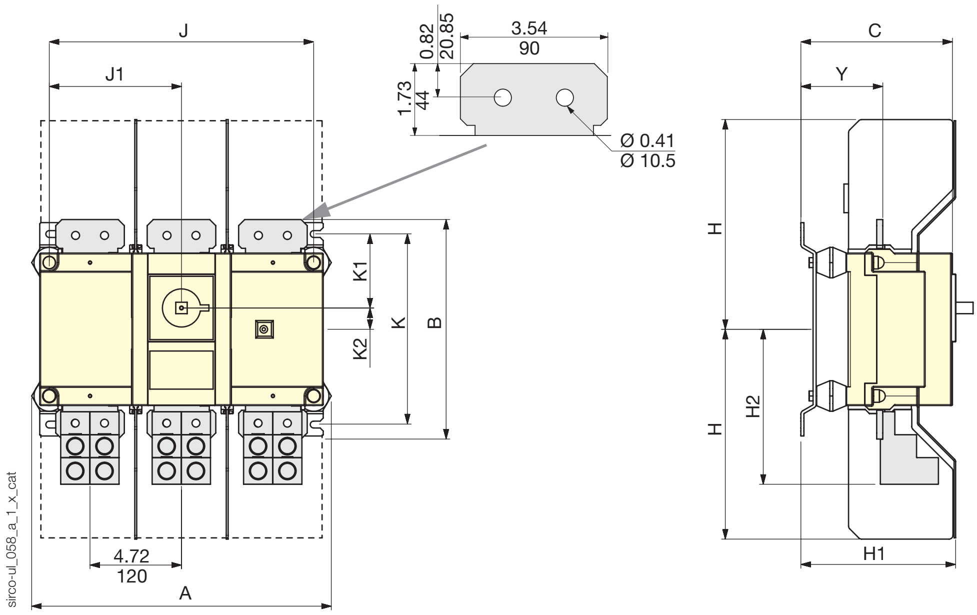
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	K2	Y
B6	4 P	inches	14.17	13.38	5.47	10.63	5.70	13.19	6.59	6.88	2.34	1.10	1.83
		mm	360	340	139	270	145	335	167.5	175	59.5	28	46.5

$B6_{DS}$



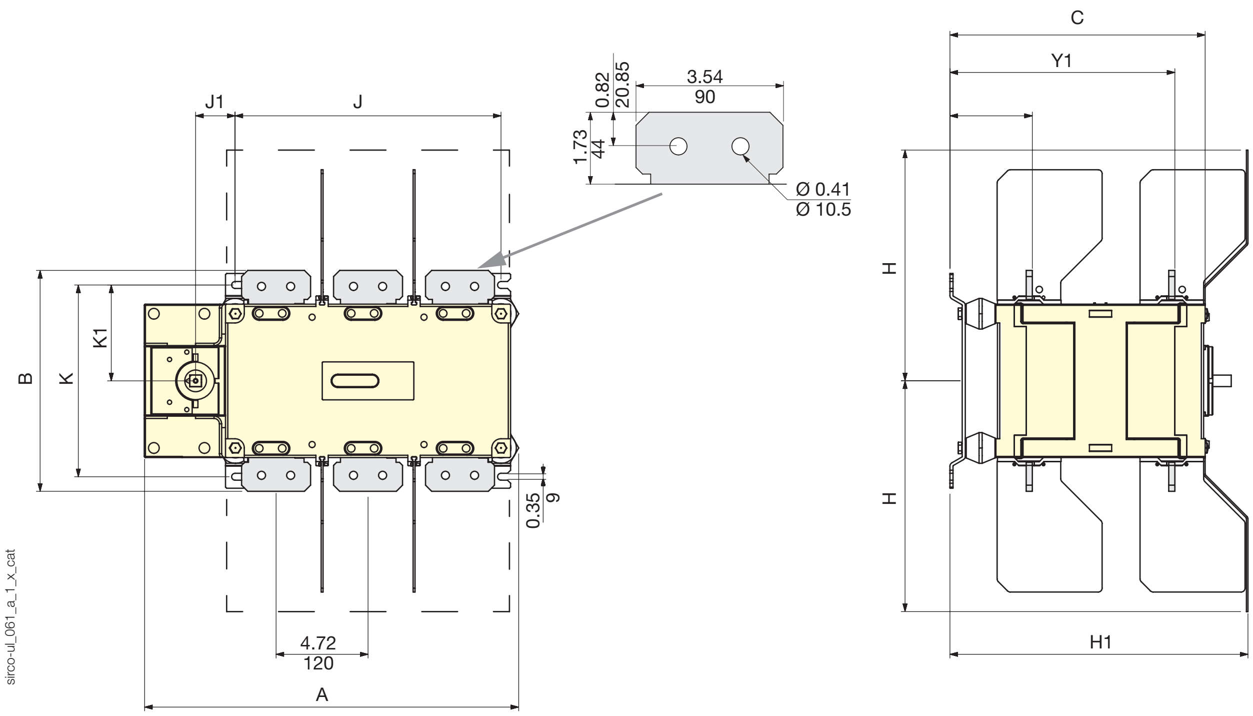
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	Y	Y1
$B6_{DS}$	8 P	inches	18.34	13.38	14.56	10.63	13.66	13.18	2.02	9.84	4.92	2.61	9.98
		mm	466	340	370	270	347	335	51.5	250	125	66.5	253.5

B7



Frame size	No. of poles	Unit	A	B	C	H	H1	H2	J	J1	K	K1	K2	Y
B7	4 P	inches	20.19	11.33	7.97	11.89	8.30	8.01	18.38	9.19	9.84	3.82	1.10	4.23
		mm	513	288	200	302	211	203.5	467	233.5	250	97	28	107.5

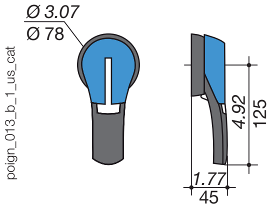
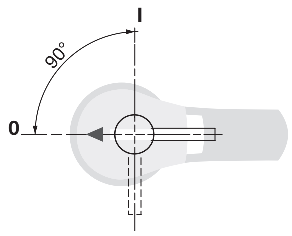
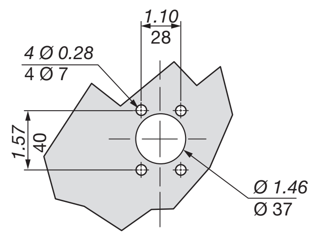
$B7_{DS}$



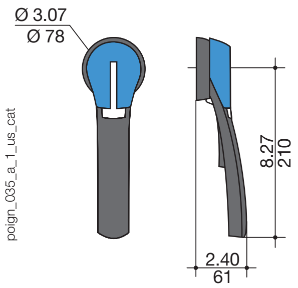
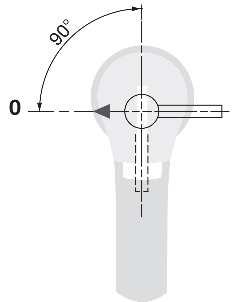
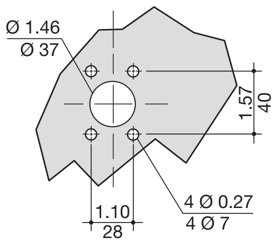
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	Y	Y1
$B7_{DS}$	8 P	inches	23.95	11.33	13.11	11.85	15.31	18.38	2.02	9.84	4.92	4.23	11.55
		mm	608.5	288	333	301	389	467	51.5	250	125	107.5	293.5

Dimensions for external handles (in/mm)

B4 - $B4_{DS}$ - B5

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

$B5_{DS}$ - B6

Handle type	Front operation Direction of operation	Door drilling
S3 type 		

SIRCO PV UL 98B

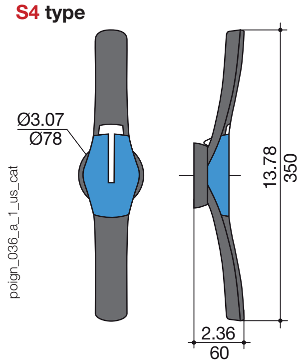
Disconnect switches for photovoltaic applications

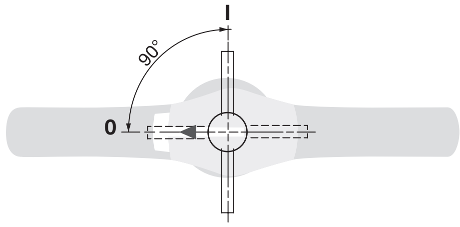
from 100 to 2000 A - up to 1500 VDC

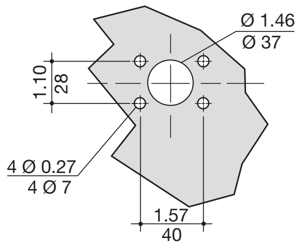
B7

Handle type	Front operation Direction of operation	Door drilling

S4 type



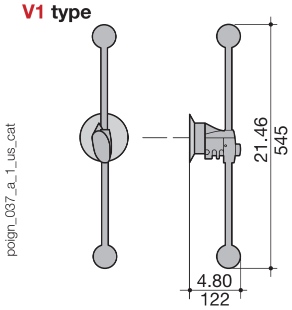


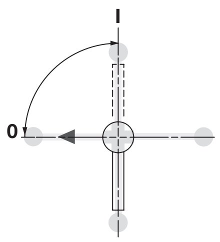


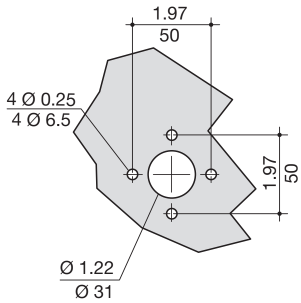
B6$_{DS}$ - B7$_{DS}$

Handle type	Front operation Direction of operation	Door drilling

V1 type



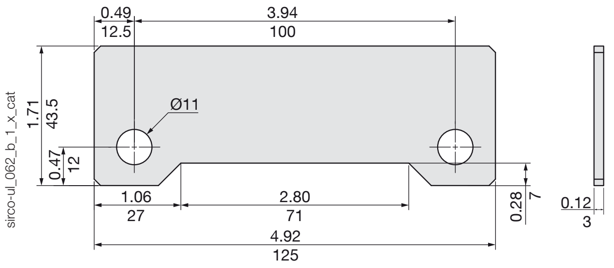




Jumpers (in/mm)

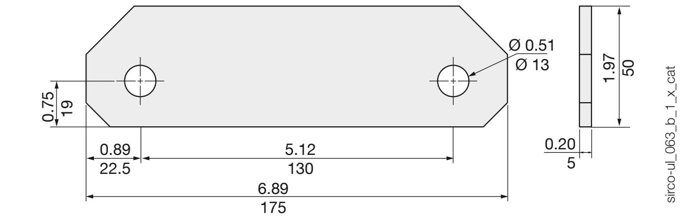
B4 - B4$_{DS}$

2709 1020

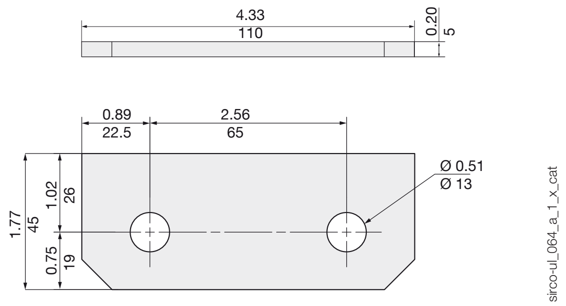


B5 - B5$_{DS}$

2709 1041

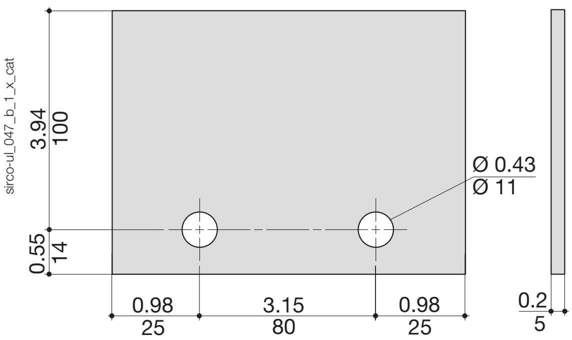


2709 0027

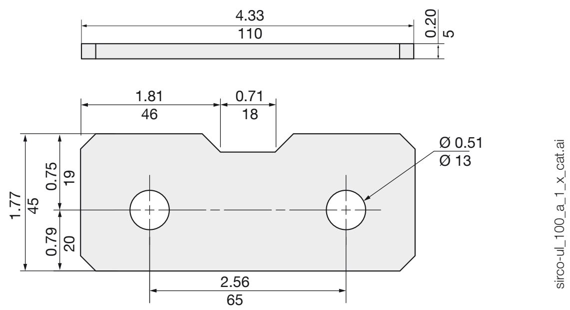


B6 - B6$_{DS}$

2709 0062

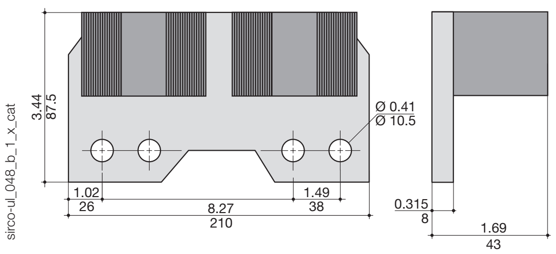


2709 0038



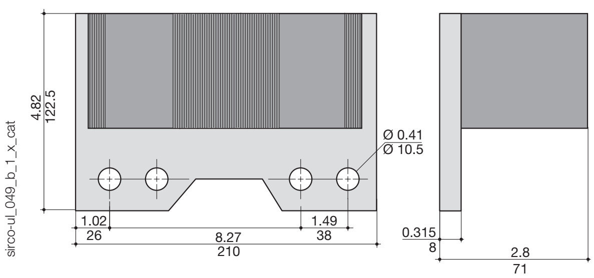
B7

2709 0081



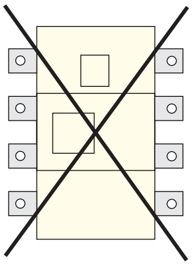
B7 - B7$_{DS}$

2709 0121



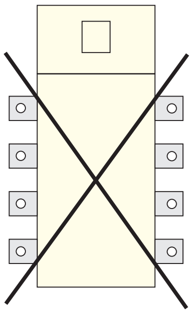
Mounting orientation

All frames



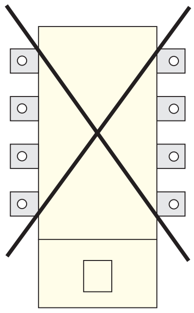
sirco-ul_028_a_1_x_cat

$B4_{DS}$ - $B5_{DS}$



sirco-ul_029_a_1_x_cat

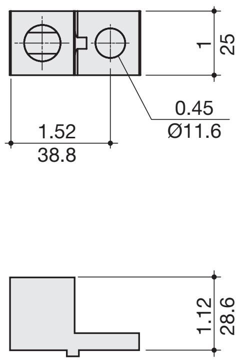
$B6_{DS}$ - $B7_{DS}$



sirco_030_a_1_x_cat

Terminal lugs (in/mm)

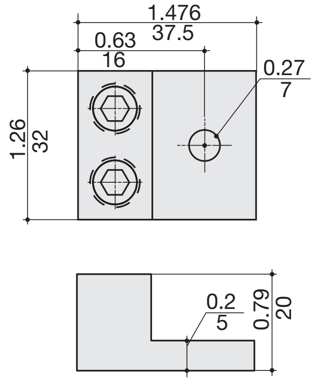
100 to 250 A



sirco_115_b_1_us_cat

300MCM

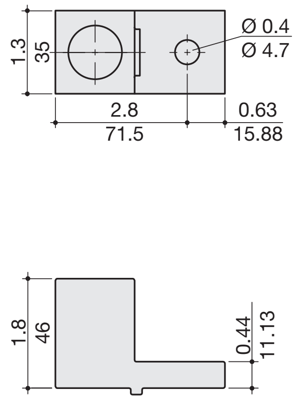
100 to 250 A



sirco-ul_038_a_1_us_cat

2/0

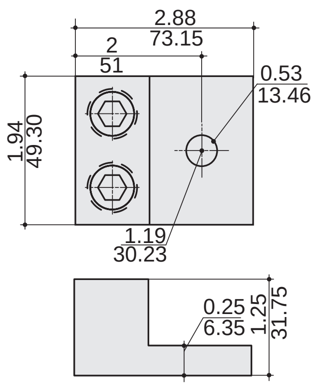
400 A



sirco-ul_010_a_1_us_cat

600MCM

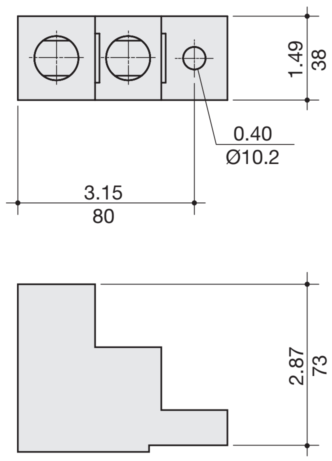
400 A



sirco-ul_026_b_1_us_cat

2 x 350MCM

600 to 2000 A



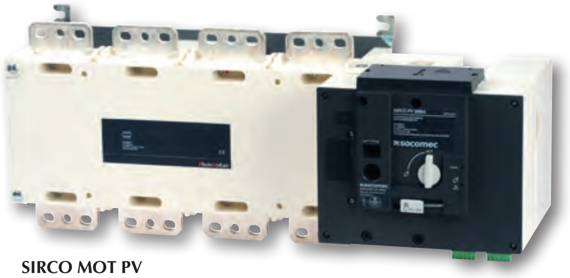
sirco_116_b_1_us_cat

2 x 600MCM

SIRCO MOT PV

Disconnect switches for photovoltaic applications

remotely operated range 2000 A, up to 1000 VDC



sirco-pv_107_a_1_cat

SIRCO MOT PV
4 x 2000 A

The solution for

- Solar Inverter
- Energy Storage Inverter
- Battery Energy Storage Systems

Strong points

- High breaking capacity, load break 1000 VDC / 2000 A
- Remotely operated product
- Manual emergency operation

Conformity to standards

- UL 98B, Guide WHVA, File E346418
- IEC 60947-3

Function

SIRCO PV are remotely operated multipolar load break switches.
They make and break under load conditions and provide safety isolation for any low voltage circuit dedicated to photovoltaic applications up to 1000 VDC.

Advantages

High breaking performance
A glass fiber reinforced polyester break chamber with an arc extinguishing system provides a patented safety disconnection system offering rapid extinguishing of the electric arc up to 1000 VDC and current interruption up to 2000 A.

Remotely operated product
SIRCO MOT PV are intended for use in photovoltaic installations and solar inverters. They can be remotely controlled via volt-free contacts, from either an external automatic controller or a switch.

Manual emergency operation
In addition to its motorized operation, the SIRCO MOT PV also includes a manual operation facility, enabling the switch position to be changed directly on the device if required.

General characteristics
- Up to 1000 VDC / 2000 A.
- Patented switching technology.
- Remotely operated product (motor control).
- Positive break indication.
- 2 stable positions (I, 0).

References

1000 VDC - Back plate mounting

Rating (A) / Frame size	Circuit type	No. of poles	Switch body	Bridging bars for connecting poles in series	Inter phase barrier	Terminal screens
2000 A / B7	Single PV circuit	4 P	19PV **4320**	2 P 2609 **1200**(1)	included	1509 **4200**(2)

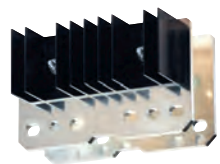
Common accessories - more available on next pages.
(1) Connection in series of 2 or 4 poles of the device.
(2) 2 sets required to fully shroud both line and load terminals.

Accessories

Bridging bars for connecting poles in series

Use
The bridging bars will make easy the connection of poles in series, allowing the following configurations:
- Bottom/Bottom
- Top/Top
- Top/Bottom
- Bottom/Top

Connection diagrams:
see “Pole series connections”



acces_392_a_1_cat

Rating (A) / Frame size	Number of poles of the device in series	Pack	Reference
2000 / B7	2 P	1 piece	2609 **1200**

Accessories (continued)

Auxiliary contact

Use
Pre-break and signalization of position I:
1 to 2 NO/NC auxiliary contacts
(1 as standard).
Low level auxiliary contacts: please consult us.

Connection to the control circuit
By 0.25 in / 6.35 mm fast-on terminal.
Electrical characteristics
30,000 operations.


acces_065_a_1_cat

Characteristics

Rating (A)	Nominal current (A)	Operating current I_e (A) 250 VAC AC-13	400 VAC AC-13	24 VDC AC-13	48 VDC AC-13
2000	16	12	8	14	6


svr_058_a_1_cat

References

NO/NC changeover contact

Rating (A) / Frame size	Contact(s)	Reference
2000 / B7	2nd	1999 **1032**

Terminal screens

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

Rating (A) / Frame size	No. of poles	Position	Reference
2000 / B7	4 P	top or bottom	1509 **4200**


acces_207_a_2_cat

2 position padlocking (I - 0)

Use
Enables padlocking in position I (product can be padlocked in position 0 as standard).
Factory fitted.

Rating (A) / Frame size	Reference
2000 / B7	9599 **0004**


atys_854_a_1_cat

Key handle interlocking system

Use
Motorized and manual operations can be locked in position 0 using a RONIS EL11AP lock.
Factory fitted.

As standard, locking in position 0.
Optional padlocking in 2 positions: Locking in position 0 and I.

Rating (A) /Frame size	Reference
2000 / B7	9599 **1004**


atys_853_a_1_cat

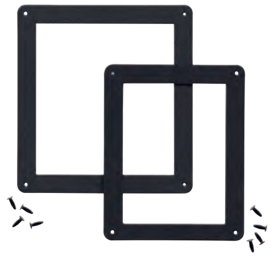
SIRCO MOT PV

Disconnect switches for photovoltaic applications

remotely operated range 2000 A, up to 1000 VDC

Accessories (continued)

Door protective surround



atys_595_a_2_cat

Use

When direct access to the SIRCO MOT front face (mode selection, manual operation, display…) is required, the door surround can be utilized to provide a clean and safe finish to the panel's cut-out.

Rating (A) /Frame size	Reference
2000 / B7	1529 **0080**

Characteristics as per standards UL 98B and IEC 60947-3

2000 A / B7

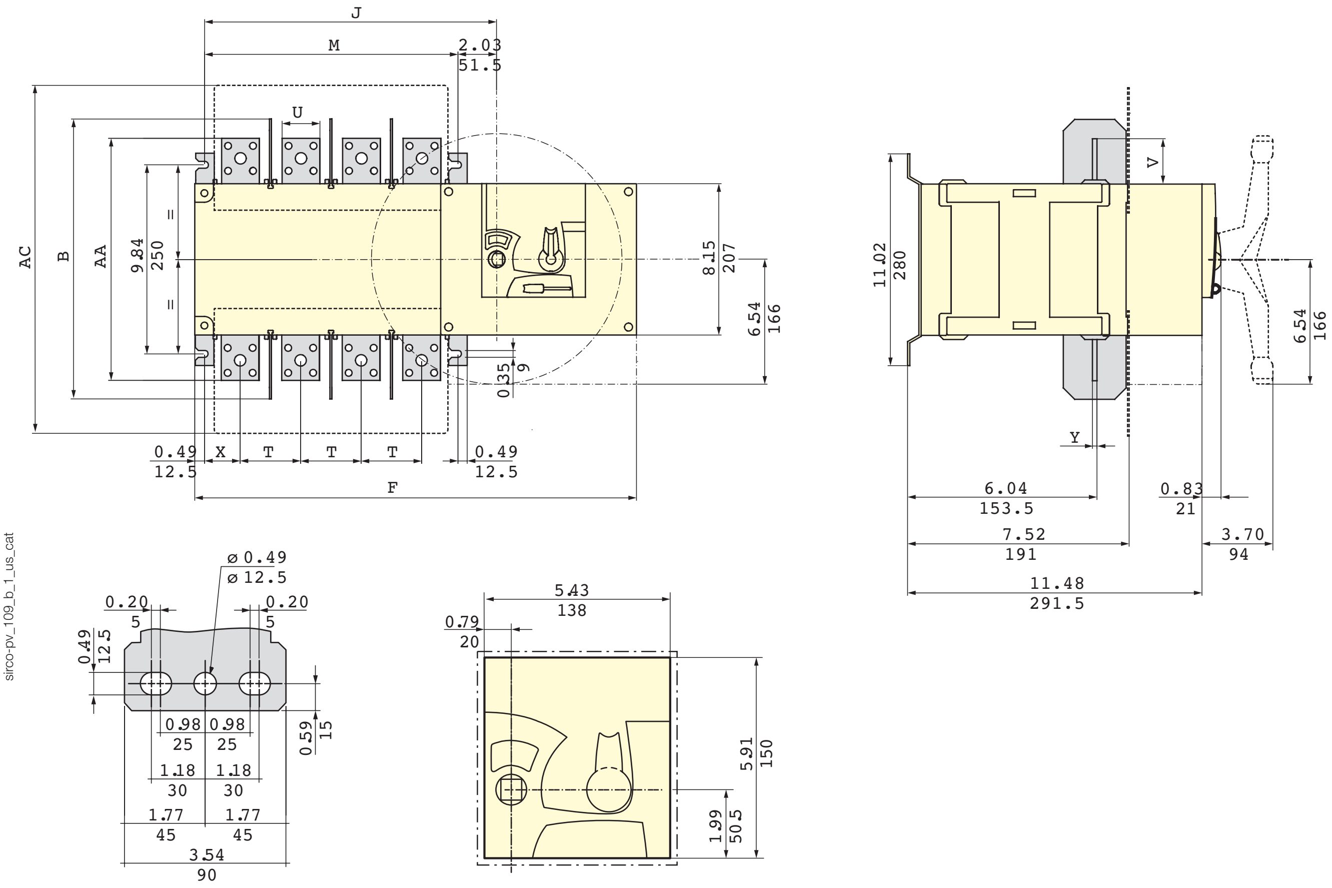
Rating		2000 A			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	2000	4 P	4 P	B7
Short-circuit capacity at 1000 VDC (any circuit breaker)					
Prospective short-circuit current (kA rms DC)	10(1)				
Connection terminals					
Use copper bar min. cross section	2 x 80 x 8				
Maximum bars width Cu	3.94 in (100 mm)				
Mechanical characteristics					
Durability (number of operating cycles)	6 000				
Operating effort min./max. (lbs.in/Nm)	354/398 lb.in (40/45 Nm)				

Thermal current I_{th} at 40°C					2000 A
Rated insulation voltage U_i (V)					1200
Rated impulse withstand voltage U_{imp} (kV)					12
Frame size					B7
Rated operational currents I_e (A)					
Rated voltage	**Utilization category**	**Number of poles of the device**	**Number of pole(s) in series per polarity**	**Ambient temperature (°F / °C)**	**(A)**
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	104 / 40	2000
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	122 / 50	1800
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	140 / 60	1600
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	149 / 65	1520
Switching time					
I - 0					1.60
Power supply					
Power supply. 230 VAC min. / max. (VAC)					166/332
Control supply power demand					
Power supply 230 VAC inrush / nominal (VA)					460/230
Connection					
Rigid Cu cable cross-section (mm^2)					-
Maximum Cu busbar width (mm)					100
Tightening torque min/max (Nm)					40/45
Mechanical characteristics					
Durability (number of operating cycles)(1)					3000
Weight of a 4 pole device (kg)					42

(1) Improved endurances: Please consult us.

Dimensions (in/mm)

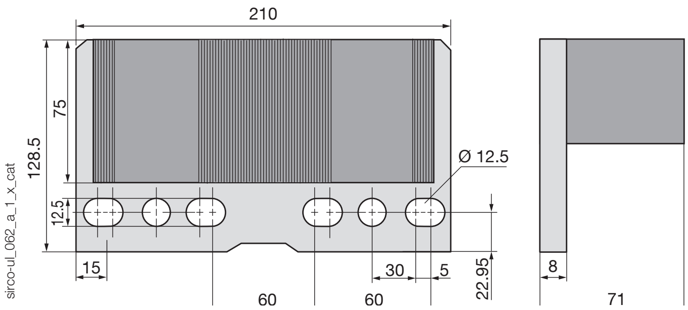
2000 A / B7



Rating (A) / Frame size	Overall dimensions	Terminal shrouds	Switch body		Switch mounting	Connection					
	B	AC	F 4p.	J 4p.	M 4p.	T	U	V	X	Y	AA
2000 / B7	380	531	716	518.5	467	120	90	44	53	8	288

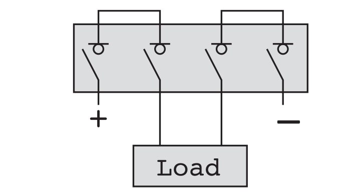
Bridging bar

2000 A / B7



Pole series connections(1)

4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions

RM **PV** UL

Photovoltaic modular fuse holder
for PV Midget and 10x38 fuses

RM PV *Midget / 10x38*
30 A UL / 32 A IEC

The solution for

- Small installations up to large PV farms

Strong points

- Improved safety
- Product dedicated to PV UL and IEC applications
- Features and options

Conformity to standards

- UL 4248-18, Guide IZMR, File E470731
- CSA C22.2 No. 14, Class 3211-37, File 265615
- IEC 60269-2

Function

RM PV UL are modular fuse holders for cylindrical gPV fuses. They provide safety disconnection and protection against overcurrents in photovoltaic applications up to 30 A, 1000 VDC.
RM PV are available with or without blown fuse light indicators.

Advantages

Improved safety
- Rated voltage of 1000 VDC.
- Self-extinguishing thermoplastic material.
- Finger safe, protection IP2X.

Product dedicated to PV UL and IEC applications
Protection against reverse currents due to gPV fuses dedicated to PV applications.

Features and options
- Modular DIN 1.77 in / 45 mm cut-out.
- Blown fuse LED indicator option.
- Front face label slot.
- Rated for use with 140, 167 and 197 °F / 60, 75 and 90 °C copper wire or comb bus bar.
- Sealing with 1.5 mm² wire.

References

No. of poles	30 A Midget, 10x38 Reference
1 P	57PV **0001**
1 P with LED signaling	57PV **0L01**

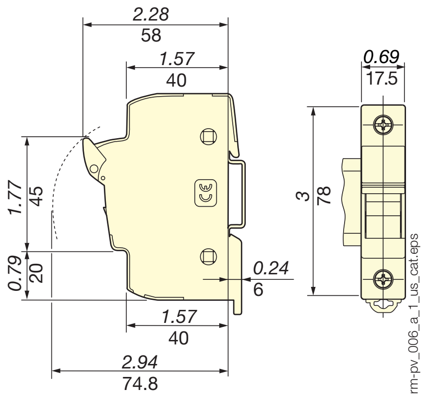
Characteristics according to UL 4248-18 and CSA C22.2 No. 14

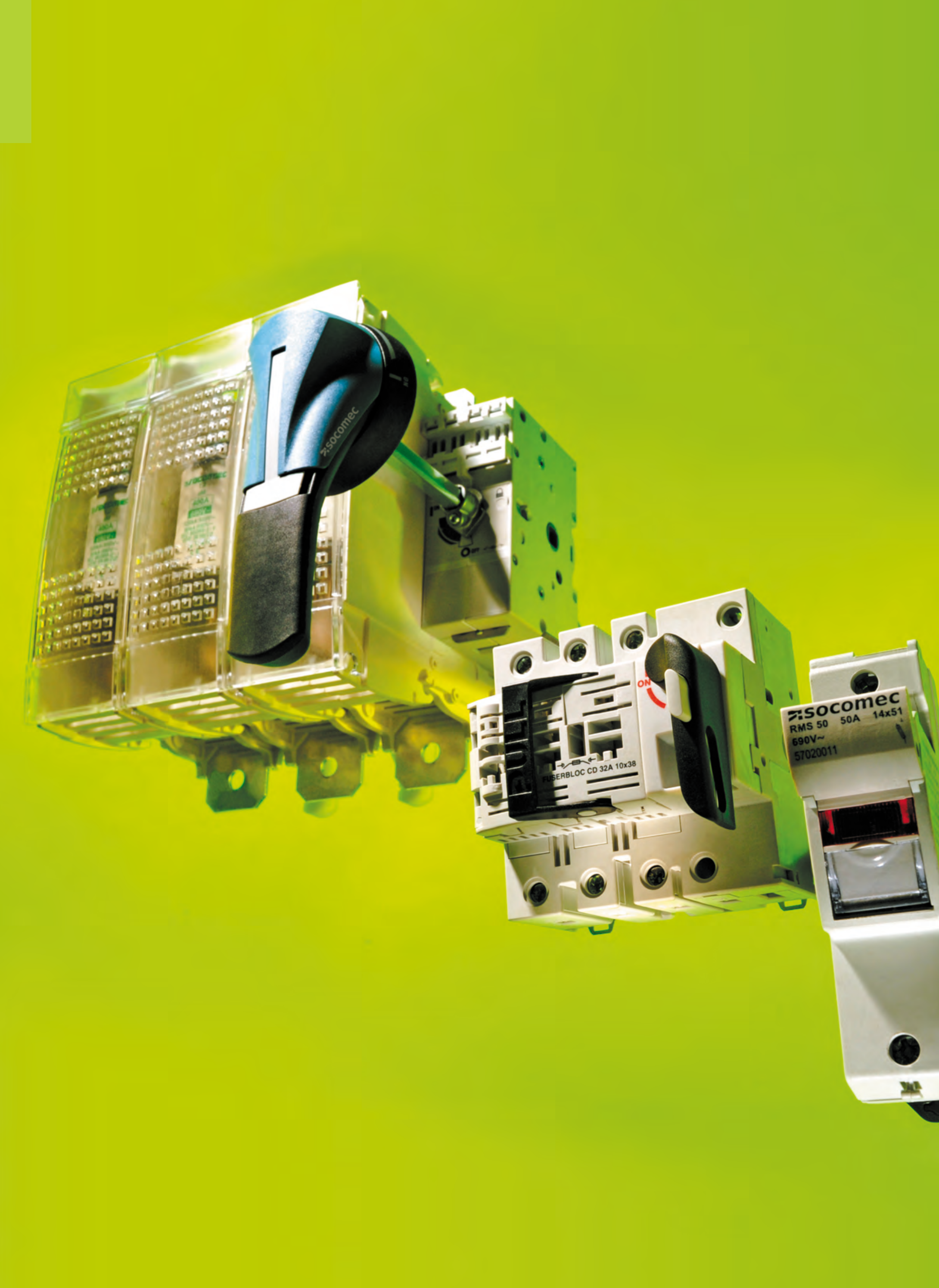
Rated current	**30 A**
Rated insulation voltage U_i	1000 V
SCCR rating	30 kA
Fuse link	
Fuse size	Midget
Fuse rating	1 to 30 A
Max fuse dissipated power	4 W
Connection terminals	
Solid wire	#8 - 18 AWG / 0,75 - 16 mm²
Stranded wire	#8 - 18 AWG / 0,75 - 16 mm²
Tightening torque on terminals	22 lb.in / 2,5 Nm
Mechanical Characteristics	
Weight	0.12 lbs

Characteristics according to IEC 60269-2

Rated current	**32 A**
Rated insulation voltage U_i	1000 V
Rated impulse withstand voltage U_{imp}	6 kV
Protection degree	IP20
Fuse link	
Fuse size	10x38
Fuse holder current derating by number of poles side by side	
N = 1 … 3	1
N = 4 … 6	0.8
N = 7 … 9	0.7
N ≥ 10	0.6

Dimensions




socomec
FUSERBLOC CD 32A 10x38
ON
socomec
RMS 50 50A 14x51
690V~
57020011

Fusible disconnect switches

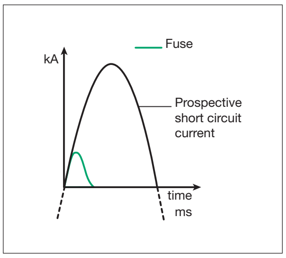
Fusible disconnect switches

Modular fuse holders

Specific products

Fuse solutions: definite advantages over circuit breakers

Fuses: a high performance



fuser_185_e_gb

Due to the high current limiting CC, J and L type fuses, the best protection will be provided to downstream components, such as motor or motor starter.

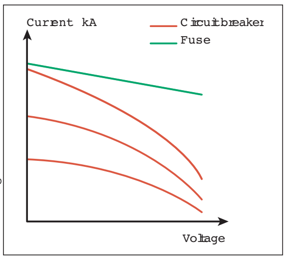
Our disconnects have been designed around this concept to provide 200 kA as a SCCR on most of the range.

Safety

fuser 192 b

The energy released during a short-circuit is contained in the sealed fuse cartridge, there is no release of ionized gases, thus no effect on surrounding equipment in comparison to what happens when circuit-breakers open on short-circuit.

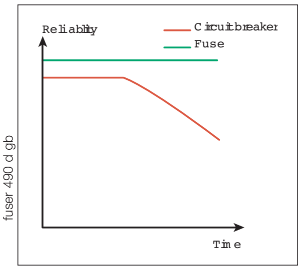
Circuit-breakers: reduced breaking capacity



fuser 487 a gb

Breaking capacity of circuit-breakers reduces dramatically when voltage increases: capacity can decrease from 100 kA at 240 V to 20 kA or even less at 600 V.

Reliability over time



fuser 490 d gb

Fuses are totally sealed products, which guarantee long-term protection without any maintenance.

Circuit-breakers are complex devices including lots of moving parts. Their mechanism is affected by dust, humidity… and needs maintenance.

Re-close or Replace ?

fuser 664 a

Circuit-breakers can be re-closed after a default: that's the biggest argument of their manufacturers.

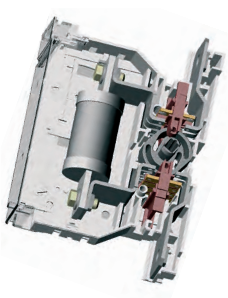
You should however consider that the circuit-breaker should be inspected each time there is a significant short-circuit.

It is hard to know how many times a circuit-breaker has operated…

In contrast, when a fuse blows, it is replaced by a new one, and the installation is as reliable as prior to the fault.

Thus, Re-close or replace ?

Last longer



fuser 610 a

Our FUSERBLOC show 2 main functionalities:

- magneto-thermal protection, made inside the encapsulated fuses,
- disconnection thru moving contacts that stay closed during short-circuit (arc won't destroy them).
- On a circuit-breaker both functionality are on the same mechanical element.

Evolution of NEC® regulation

Requirement of panel sccr
Art 409 of NEC® 2005 & UL 508A

According to NEC® 2005, all industrial control panels must be marked with a Short-Circuit Current Rating (SCCR).

This covers the entire panel and not just the primary rating of the over-current protection device, as commonly done before.

Calculation of this Panel SCCR is easy with Fuse Disconnect Switch, since there is a defined table SB4.1 in UL 508 which specifies Ip (peak value) of feeder fuse that can be used for protection of downstream components, which is not the case on circuit-breakers. Thanks to the high current limiting characteristics of the fuses the SCCR of brauch circuits can be highly enhanced.

Arc flash NEC®2005

The NEC now contains requirements related to arc flash hazards. Section 110-16, Flash Protection, requires markings on switchboard, panel boards, industrial control panels and motor control centers to warn from potential arc flash hazards.

Arc flash mitigation is greatly enhanced by the use of fuses and their current limiting capabilities and fast opening times.

UL/ CSA standards for disconnect switches

UL 98 - Enclosed and dead front switches (equivalent to CSA-C22.2 no 4)

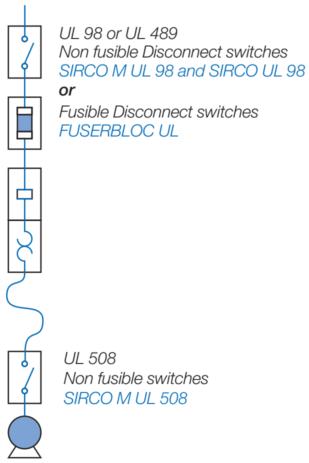
These requirements cover enclosed or dead front Switches, with or without provision for fuses, at 600 V or less.

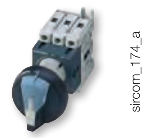
These products are used as disconnecting meanswithout restrictions; they are heavy duty products requiring 2 inches (50 mm) minimum of creepage distance, which gives a maximum safety for users and installation. The short circuit withstand of those products goes up to 200 kA.

UL 489 - Molded case switches (equivalent to CSA-C22.2 no 5)

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

Typical control panel





UL standards for Electrical Machinery

UL 508 - Industrial Control Equipment (equivalent to CSA-C22.2 no 14)

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

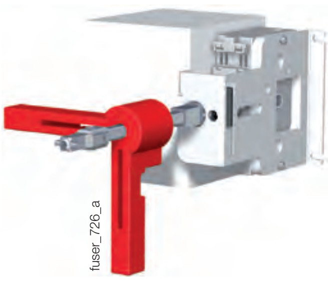
These products are IEC type products, smaller requiring only a creepage distance between phases of 1/2 inch. UL 508 standard requested only 5 kA or 10 kA as short circuit withstand with fuse protection. Their use as a disconnecting mean is therefore limited to local disconnection of motors. These products can only be used as a disconnect mean when they have been additionally tested “suitable as motor disconnect”. This additional testing ensures that the switch as a proper closing capacity on short circuit. UL 508 (switches or Circuit breakers) can not be used as main disconnect of a electrical panel. (i.e. in entrance of control panels).

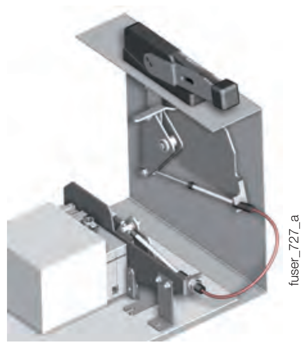
A manual motor controller marked “Suitable as motor disconnect” shall be installed only on the load side of the branch circuit protective device (UL 508A 30.3.3 and NEC 430.109(6)).

NFPA 79 Electrical Standard for industrial machinery

The following types of machines are identified as industrial machinery:

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





FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A


ul_004_a


fuser-ul_006_a


fuser-ul_005_a

The solution for

- OEM/Machine Builders
- Industrial Control Panels Manufacturers (UL 508A)
- Switchboard Manufacturers (UL 891)
- AC Combiners Builders
- Distributors

Strong points

- Improved safety
- High (SCCR) capacity
- A complete range of functions

Conformity to standards

- UL 489
  CSA-C22.2 No. 5
  File E255272
- UL 98
  CSA-C22.2 No. 4
  Guide WHTY
  File E201138
- CSA-C22.2 No. 5
  Class 4652-06
  File 112964
- CSA-C22.2 No. 4
  Class 4651-02,
  File 112964

Enclosures

- Enclosed fusible disconnect switch available, see Enclosed Disconnect Switches

coff-ul_032.psd

Function

FUSERBLOC UL are heavy duty switches that break and make power circuits on and off load. The switches employ double break contacts per pole that ensure complete isolation of the fuse when the switch is in the "OFF" position. These switches are extremely durable and are tested and approved for use in the most demanding applications.
The TEST position function is enabled with handles with the TEST position. This function tests the control circuit auxiliaries without switching the main contacts. It is a simple alternative to a separately wired push button.

Advantages

Improved safety
- On load make and break power circuit applications.
- Double break by phase.
- Touch safe covers.

High breaking capacity.
- Up to 200 kA short circuit rating.

A complet range of functions
- Compact footprints.
- Front or side operation.
- Flange operation.
- NFPA 79 compliant kits.
- Voltage sensing terminals for FMD fuse monitoring device.

References

Fusible disconnect switches

<table>
<tr><th>Rating/Fuse Type
Frame size</th><th>No. of poles</th><th>Switch body</th><th>Direct handle</th><th>Front external handle</th><th>External right side handle[1]</th><th>Shaft external handle</th><th>NFPA 79 kit</th><th>U-type auxiliary contacts</th><th>Terminal shrouds</th></tr>
<tr><td rowspan="3">30A Class CC
Frame Size 1 CD</td><td>3 P</td><td>3710 3003</td><td rowspan="3">Black
3729 4012</td><td rowspan="6">S0 type
Black
I - 0

1, 3R, 12
1493 0111

4, 4X
149D 0111

S1 type
Black
I - 0

1, 3R, 12
141F 2111

4, 4X
141D 2111</td><td rowspan="6"></td><td rowspan="6">S0 type

7.9 inches
200 mm
1405 0620

12.6 inches
320 mm
1405 0632

15.7 inches
400 mm
1405 0640

S1 type
7.9 inches
200 mm
1401 0520

12.6 inches
320 mm
1401 0532

15.7 inches
400 mm
1401 0540</td><td rowspan="6">3729 4532[2]</td><td rowspan="12">1 contact NO
3999 0701
1 contact NC
3999 0702</td><td rowspan="12">not required</td></tr>
<tr><td>3 P + switched neutral</td><td>3710 4003</td></tr>
<tr><td>3 P + solid neutral</td><td>3710 5003</td></tr>
<tr><td rowspan="3">30A CLass J
Frame Size 2 CD</td><td>3 P</td><td>3710 3004</td><td rowspan="3">3729 4014</td></tr>
<tr><td>3 P + switched neutral</td><td>3710 4004</td></tr>
<tr><td>3 P + solid neutral</td><td>3710 5004</td></tr>
<tr><td rowspan="3">30A Class J
Frame Size 4</td><td>2 P</td><td>3861 2004</td><td rowspan="6">Black
3629 7910</td><td rowspan="6">S1 type
Black

I - 0
1, 3R, 12
Defeatable
141F 2111

I - 0
4, 4X
Defeatable
141D 2111

I - 0 - Test
4, 4X
Defeatable
141D 2115</td><td rowspan="6">S1 type
Black

I - 0
4, 4X
141H 6111

S1 type
Red / yellow

I - 0
4, 4X
141I 6111</td><td rowspan="6">S1 type

7.9 inches
200 mm
1400 1020

12.6 inches
320 mm
1400 1032

15.7 inches
400 mm
1400 1040</td><td rowspan="6">3729 7540</td></tr>
<tr><td>3 P</td><td>3861 3004</td></tr>
<tr><td>4 P</td><td>3861 6004</td></tr>
<tr><td rowspan="3">60A Class J
Frame Size 4</td><td>2 P</td><td>3861 2005</td></tr>
<tr><td>3 P</td><td>3861 3005</td></tr>
<tr><td>4 P</td><td>3861 6005</td></tr>
</table>

Common accessories - more available on next pages.
(1) No door interlocking.
(2) Please use with S1 handle

FUSERBLOC UL

Fusible disconnect switches UL and CSA

from 30 to 800 A

References (continued)

Fusible disconnect switches

Rating/Fuse Type Frame size	No. of poles	Switch body	Direct handle	Front external handles	External right side handle(1)	Shaft for external handle	NFPA 79 kit	U-type auxiliary contacts	Terminal shrouds
60A Class J Frame Size 5	2 P	3861 **2006**	Black 3629 **7910**	S2 type Black I - 0 1, 3R, 12 Defeatable 142F **2111** 4, 4X Defeatable 142D **2111**	S2 type Black I - 0 4, 4X 142H **6111** Red / yellow I - 0 4, 4X 142I **6111**	S2 type 7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**	3729 **7540**	1 contact type NO 3999 **0701** 1 contact type NC 3999 **0702**	not required
	3 P	3861 **3006**							
	4 P	3861 **6006**							
100A Class J Frame Size 5	2 P	3861 **2010**							
	3 P	3861 **3010**							
	4 P	3861 **6010**							
200A Class J Frame Size 6	2 P	3861 **2020**							3898 **2020**
	3 P	3861 **3020**							3898 **3020**
	4 P	3861 **6020**							3898 **4020**
400A Class J Frame Size 7	2 P	3851 **2038**					3729 **7544**		3898 **2040**
	3 P	3851 **3038**							3898 **3040**
	4 P	3851 **6038**							3898 **6040**
600A Class J Frame Size 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 7.9 inches 200 mm 1400 **1220** 12.6 inches 320 mm 1400 **1232** 15.7 inches 400 mm 1400 **1240**	3729 **7552**		2 P 3898 **2080** 3 P 3898 **3080** 4 P 3898 **4080**
	3 P	3850 **3060**							
	4 P	3850 **6060**							
800A Class L Frame Size 8	2 P	3850 **2080**							
	3 P	3850 **3080**							
	4 P	3850 **6080**							

Common accessories - more available on next pages.
(1) No door interlocking.

Accessories

Electronic fuse operation indication (FMD)

Use
For fuse cartridge BS88, DIN and UL.
The FMD can be used with all of the Fuserbloc UL except the CD.

Principle
The FMD detects fuse operation using a bistable relay and a signaling LEDs.
It can be mounted on a DIN rail, a back plate, next to the FUSERBLOC, or on the door.

References

For FUSERBLOC 100 to 800 A			
Nb of leds	**Type**	**Operating voltage Ph/Ph**	**Reference**
1	FMD10	120 - 260 VAC	3899 **1120**
1	FMD10	380 - 690 VAC	3899 **1380**
3	FMD30	120 - 260 VAC	3899 **3120**
3	FMD30	380 - 690 VAC	3899 **3380**

Accessories		Reference
Kit for connection accessories	Standard	3819 **9120**
Kit for connection accessories	Door mounted	3829 **9120**

Relay characteristics

Type	Relay operating current I_c (A) AC-15	DC-13
FMD10 and FMD30	2.5 A	0.2

acces_319_a

FMD10
1-led version

acces_310_a

FMD30
3-leds version

NFPA 79 accessories

Flange handle for flange operation

Use
Meets both UL 508A and NFPA 79 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]

For 400 A rating, please consult us.
(1) Defeatable handle.


sirco_246_a_1_us_cat

Cable operator

Use
Link between the flange handle and the switch, please order the flange handle, the mechanism and a cable length of your choice.

Rating (A)	Description	Reference
30 … 200	Cable flange mechanism	3729 **9903**

Cable length (inches)	Cable length (mm)	Reference
36	900	3729 **9992**
60	1500	3729 **9993**
120	3000	3729 **9994**

For 400 A rating, please consult us.


sirco_247_a_1_cat


ul_042_b_1

Rod operator

Use
Link between the flange handle and the switch. The rod flange is an economical solution, please order the flange handle and a rod kit.

Rating 30 … 200 A

For enclosure depth (inches)	For enclosure depth (mm)	Reference
8 … 24	203 … 613	3729 **9904**

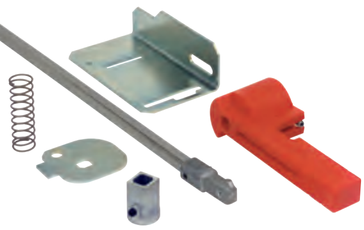
For 400 A rating, please consult us.


ul_043_a

NFPA 79 "Through the door" kit

Use
Meets both UL 508A and NFPA 79 requirements.
Allows retrofit of your installations for ratings from 30 to 800 A.
Please order an S-type external handle separately.

Number of auxiliary contact installed on the switch will be limited to 1 layer (instead of 2).
If more needed please use the S type auxiliary contacts.
Delivered with a 12.6 in / 320 mm shaft.
For longer shafts, please consult us.


ul_121_b

Rating (A)	Frame size	Reference
CD 30	1/2	3729 **4532**[1]
30 … 200	3 … 6	3729 **7540**
400	7	3729 **7544**
600 … 800	8	3729 **7552**

(1) Use with S1 handle.

Accessories

Direct handle

Rating (A)	Color	Fuses	Fig.	Reference
CD 30	Black	CC	1	3729 **4012**
CD 30	Black	J	1	3729 **4014**
30 … 400	Black	J	2	3629 **7910**
600 … 800	Black	J / L	2	3859 **6011**


acces_147_a_2_cat
Fig.1


acces_261_a
Fig. 2

External handle

Use

The locking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position, and when the switch is padlocked in the "OFF" position (S1, S2, S3 and S4 type handles only).

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

Front operation

Rating (A)	Frame size	Handle type	Nema type	Test	Handle color	Reference
CD 30	1/2	S0[1]	1, 3R, 12	I - 0	Black	1493 **0111**
CD 30	1/2	S0[1]	1, 3R, 12	I - 0	Red/Yellow	1494 **0111**
CD 30	1/2	S0[1]	4, 4X	I - 0	Black	149D **0111**
CD 30	1/2	S0	4, 4X	I - 0	Red/Yellow	149E **0111**
CD 30 … 60	1/2/4	S1	1, 3R, 12	I - 0	Black	141F **2111**
CD 30 … 60	1/2/4	S1	1, 3R, 12	I - 0	Red/Yellow	141G **2111**
CD 30 … 60	1/2/4	S1	4, 4X	I - 0	Black	141D **2111**
CD 30 … 60	1/2/4	S1	4, 4X	I - 0	Red/Yellow	141E **2111**
CD 30 … 60	1/2/4	S1	4, 4X	I - 0 - Test	Black	141D **2115**
CD 30 … 60	1/2/4	S1	4, 4X	I - 0 - Test	Red/Yellow	141E **2115**
60 … 200	5 … 7	S2	4, 4X	I - 0 - Test	Black	142D **2115**
60 … 200	5 … 7	S2	4, 4X	I - 0 - Test	Red/Yellow	142E **2115**
60 … 400	5 … 7	S2	1, 3R, 12	I - 0	Black	142F **2111**
60 … 400	5 … 7	S2	1, 3R, 12	I - 0	Red/Yellow	142G **2111**
60 … 400	5 … 7	S2	4, 4X	I - 0	Black	142D **2111**
60 … 400	5 … 7	S2	4, 4X	I - 0	Red/Yellow	142E **2111**
600 … 800	8	S3	1, 3R, 12	I - 0	Black	143F **3111**
600 … 800	8	S3	1, 3R, 12	I - 0	Red/Yellow	143G **3111**
600 … 800	8	S3	4, 4X	I - 0	Black	143D **3111**
600 … 800	8	S3	4, 4X	I - 0	Red/Yellow	143E **3111**

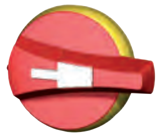
(1) S0: No interlock in the OFF position.

Front handle heavy duty I - 0 with metallic lever

Rating (A)	Frame size	Handle type	Nema type	Test	Handle color	Reference
CD 30 … 60	1/2/4	S1	4, 4X	I - 0	Black	141D **2911**
CD 30 … 60	1/2/4	S1	4, 4X	I - 0	Red/Yellow	141E **2911**
60 … 400	5 … 7	S2	4, 4X	I - 0	Black	142D **2911**
60 … 400	5 … 7	S2	4, 4X	I - 0	Red/Yellow	142E **2911**
600 … 800	8	S3	4, 4X	I - 0	Black	143D **3911**
600 … 800	8	S3	4, 4X	I - 0	Red/Yellow	143E **3911**

Right side operation

Rating (A)	Frame size	Handle type	Nema type	Test	Handle color	Reference
30 … 60	4	S1	4, 4X	I - 0	Black	141H **6111**
30 … 60	4	S1	4, 4X	I - 0	Red/Yellow	141I **6111**
100 … 400	5 … 7	S2	4, 4X	I - 0	Black	142H **6111**
100 … 400	5 … 7	S2	4, 4X	I - 0	Red/Yellow	142I **6111**


acces_263_a_2_cat
S0-type handle


acces_149_a_2_cat
S- type handle


acces_164_a_2_cat
S2-type handle


acces_151_a_1_cat
S3-type handle

S-type handle raiser

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

Dimensions
Increases distance to door by 0.47 in / 12 mm.

Handle color	Pack qty	NEMA type	Reference
Black	10	1, 3R, 12	1493 **0000**

Alternative color S-type handle cover

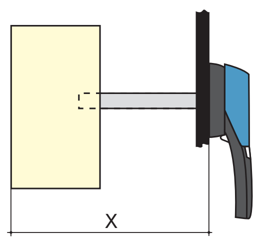
Use
For single lever handle S-type S1, S2, S3.
Other colors: please consult us.

Handle color	Pack qty	Handle type	Reference
Light grey	50	S1, S2, S3	1401 **0001**
Dark grey	50	S1, S2, S3	1401 **0011**

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.



	Dimensions X		Length		
Rating (A)	(in)	(mm)	(in)	(mm)	Reference
CD 30	4.02 … 9.65	102 … 245	7.9	200	1405 **0620**
CD 30	4.02 … 14.37	102 … 365	12.6	320	1405 **0632**
CD 30	4.02 … 17.52	102 … 445	15.7	400	1405 **0640**
CD 30	4.02 … 9.65	102 … 245	7.9	200	1401 **0520**
CD 30	4.02 … 14.37	102 … 365	12.6	320	1401 **0532**
CD 30	4.02 … 17.52	102 … 445	15.7	400	1401 **0540**
30 … 100	5.3 … 9.06	135 … 230	7.9	200	1400 **1020**
30 … 100	5.3 … 13.78	135 … 350	12.6	320	1400 **1032**
30 … 100	5.3 … 16.93	135 … 430	15.7	400	1400 **1040**
30 … 100	5.3 … 20.87	135 … 530	19.7	500	1400 **1050**
200	5.7 … 9.06	145 … 230	7.9	200	1400 **1020**
200	5.7 … 13.78	145 … 350	12.6	320	1400 **1032**
200	5.7 … 16.93	145 … 430	15.7	400	1400 **1040**
200	5.7 … 20.87	145 … 530	19.7	500	1400 **1050**
400	7.87 … 10.24	200 … 260	7.9	200	1400 **1020**
400	7.87 … 14.96	200 … 380	12.6	320	1400 **1032**
400	7.87 … 18.1	200 … 460	15.7	400	1400 **1040**
400	7.87 … 22	200 … 560	19.7	500	1400 **1050**
600 … 800	10.63 … 11.97	270 … 304	7.9	200	1400 **1220**
600 … 800	10.63 … 16.69	270 … 424	12.6	320	1400 **1232**
600 … 800	10.63 … 19.84	270 … 504	15.7	400	1400 **1240**
600 … 800	10.63 … 23.78	270 … 604	19.7	500	1400 **1250**

FUSERBLOC UL

Fusible disconnect switches UL and CSA

from 30 to 800 A

Accessories (continued)

External front operation shaft support accessory

Use

This support maintains shaft position for extension shafts greater than 12.6 in / 320 mm in length.

Rating (A)	Frame size	Reference
30 … 400	4 … 7	3899 **0400**

fuser_698_a_2_cat

Shaft guide for external handle

Use

This accessory enables handle to engage shaft with a misalignment of up to 0.59 in / 15 mm. Required for a shaft length over 400 mm for S1 to S3 handles and for a shaft from 12.6 in / 320 mm for S0 handle.

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

acces_260_a_2_cat

U-type auxiliary contacts

Use

U-type AC can be configured to be operated on both, standard and TEST position switches from CD 30 to 800 A. Each slot can accommodate up to 2 interlocked ACs.

- For CD 30A/CC, a maximum of 4 ACs (8 with an additional holder):
- For CD 30A/J, maximum 2 ACs (6 with an additional holder),
- For 30 to 200A/J, maximum 4 ACs,
- For 400 to 800A/L, maximum 8 ACs.

Electrical characteristics

A600.

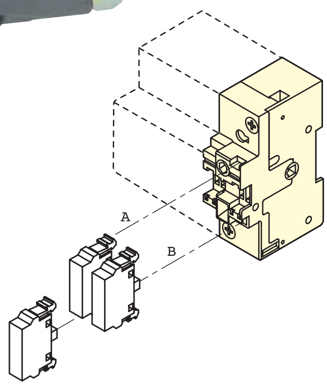
When FUSERBLOC is front operated, ACs are prebreak and signaling position I and 0. When FUSERBLOC is side operated, Acs are signaling positions I and 0.

acces_056_a_1_cat

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**



acces_043_a_1_x_cat

CD 30 : U-type auxiliary contacts cannot be mounted on switches with direct operation handle

S-type auxiliary contacts

Use

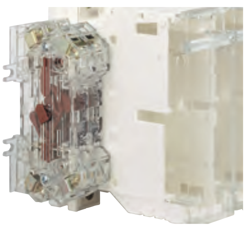
Side operated auxiliary contacts for FUSERBLOC 30 to 800 A, position OFF and ON signalled by 1 to 4 NO + NC auxiliary contacts.

Electrical characteristics

A600/D600.

S-type auxiliary contacts are signaling position I and 0.

acces_051_a_1_cat



acces_083_a_1_cat

NO+NC auxiliary contacts		
Rating (A)	**Number of contacts**	**Reference**
30 … 800	1	3999 **U041**
30 … 800	2	3999 **U042**

Rating (A)	Deescription	Part #
400A	Adapter for installing S type contact	3999**0000**

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.
2 sets required to fully shroud both line and load terminals.

Front and side operation Rating (A)	No. of poles	Reference[1]
30 … 100	2/3/4 P	as standard
200	2 P	3898 **2020**
200	3 P	3898 **3020**
200	4 P	3898 **4020**
400	2 P	3898 **2040**[2]
400	3 P	3898 **3040**[2]
400	4 P	3898 **6040**[2]
600 … 800	2 P	3898 **2080**[3]
600 … 800	3 P	3898 **3080**[3]
600 … 800	4 P	3898 **4080**[3]

(1) Top or bottom. (2) Not compatible with 2 wire lugs (3954x041). (3) Line side delivered as standard.

fuser_314_a_1_cat

Terminals lugs

Use

Connection of cables to the terminals.

Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
CD 30 Size 1	#14 - #10	1		Cu	as standard
30	#14 - #10	1		Cu	as standard
30 … 60 Size 4	#10 - #6	1		Cu	as standard
60 … 100 Size 5	#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 … 800	2 x (#2 - 600MCM)	2	2	Cu / Al	3954 **2060**
600 … 800	2 x (#2 - 600MCM)	2	3	Cu / Al	3954 **3060**
600 … 800	2 x (#2 - 600MCM)	2	4	Cu / Al	3954 **4060**

ul_032_a

Solid links

Rating (A)	Fuses	No of links per kit	Reference
100	J	3	3799 **9010**
200	J	3	3799 **9020**
400	J	3	3799 **9040**
600 … 800	J / L	3	3799 **9080**

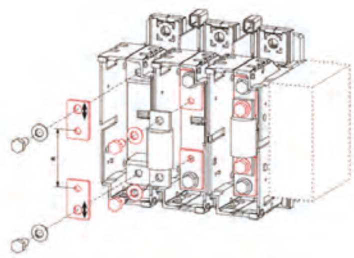
fuser-ul_019_a_1_cat

Class T fuse adapter

Use

The adapter makes it possible to fit class T fuses in the FUSERBLOC fuse switches.

Rating (A)	Size Class T fuse (in)	Size Class T fuse (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**



fuser-ul_014_b_1_cat

FUSERBLOC UL

Fusible disconnect switches UL and CSA

from 30 to 800 A

Characteristics according to UL 498, UL 98, CSA-C22.2 No. 5 and CSA-C22.2 No. 4

CD 30 to 800 A

Characteristics UL and CSA	CD 30 A(3)	CD 30 A(3)	30 A	60 A	60 A	100 A	200 A	400 A	600 A	800 A
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
Max. motor hp / FLA 1 ph motor max.										
120 VAC	2 - 24	2 / 24	2 / 24	5 / 56	5 / 56	7.5 / 80	15 / 135	-	-	-
240 VAC	5 - 28	5 / 28	5 / 28	10 / 50	10 / 50	20 / 88	40 / 176	50 / 216	-	-
Max. motor hp / FLA 3 ph motor max.										
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
Operating torque (lbs.in / Nm)	31 / 3.5	31 / 3.5	71 / 8	71 / 8	71 / 8	71 / 8	90 / 10.2	150 / 17	586 / 66.2	586 / 66.2
Connection										
Min. connection cross-section/ (mm^2)(2)	#14	#14	2 x #12	2 x #10	#10	#10	#6	#2 or 2 x #6	2 x #2	2 x #2
Max. connection cross-section/ (mm^2)(2)	#10	#10	2 x #6	2 x #6	#2/0	#2/0	300MCM	600MCM or 2 x 350MCM	2 x 600MCM	2 x 600MCM

Common accessories - more available on next pages.

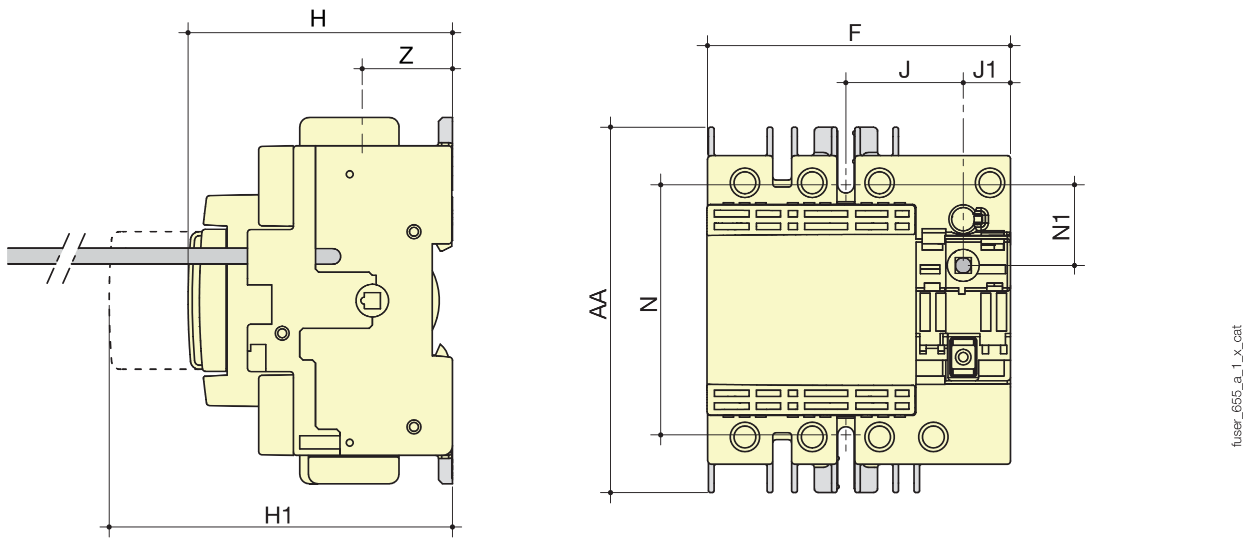
(1) 2 pole in series.

(2) 3 pole in series.

(3) UL 489/CSA22.2 #5.

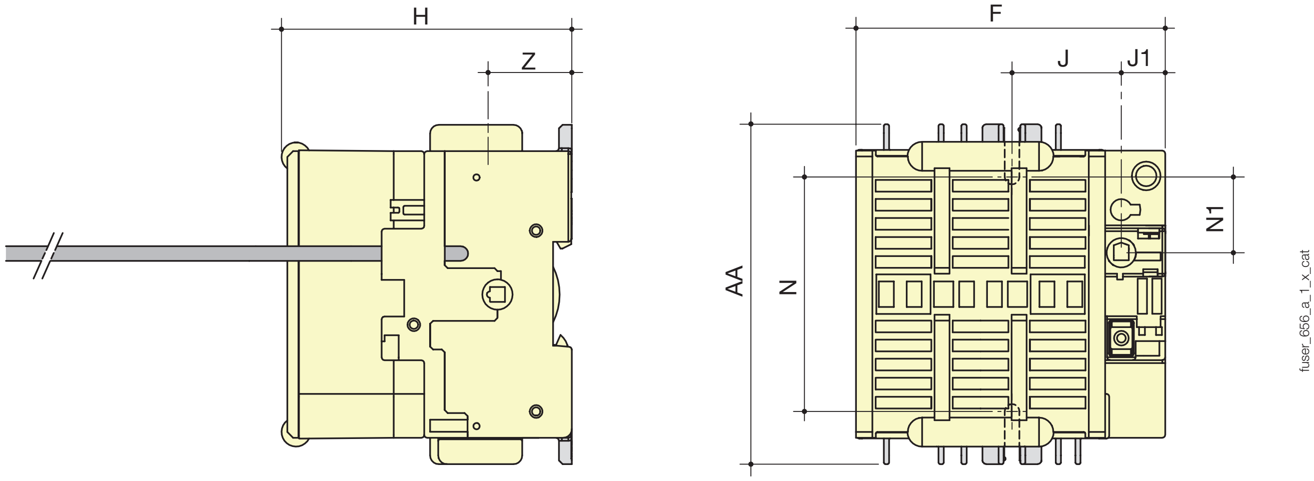
Dimensions (in/mm)

CD 30 A / CC - Frame size 1



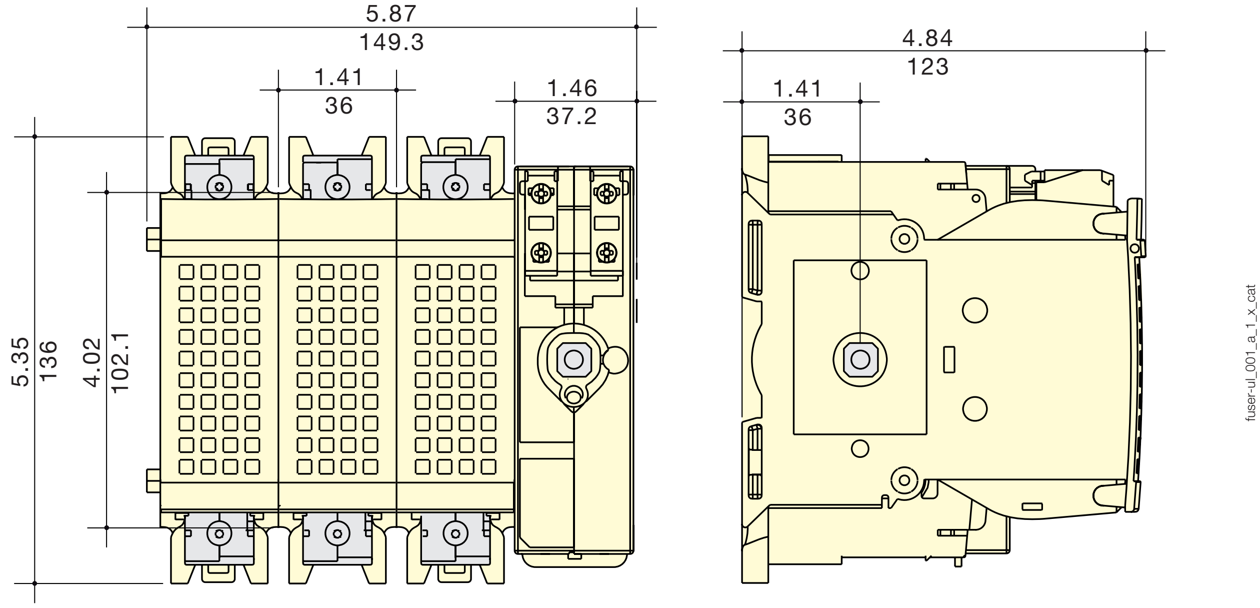
Rating (A) / Fuse	Unit	Switch body					Switch mounting		Connection	
		F	H	H1	J	J1	N	N1	AA	Z
CD 30 A / CC	in	3.78	3.28	5.19	1.47	0.59	3.13	1	4.56	1.12
	mm	96	83.5	132	37.5	15	79.5	25.5	116	28.5

CD 30 A / J - Frame size 2



Rating (A) / Fuse	Unit	Switch body F	Switch body H	Switch body J	Switch body J1	Switch mounting N	Switch mounting N1	Connection AA	Connection 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

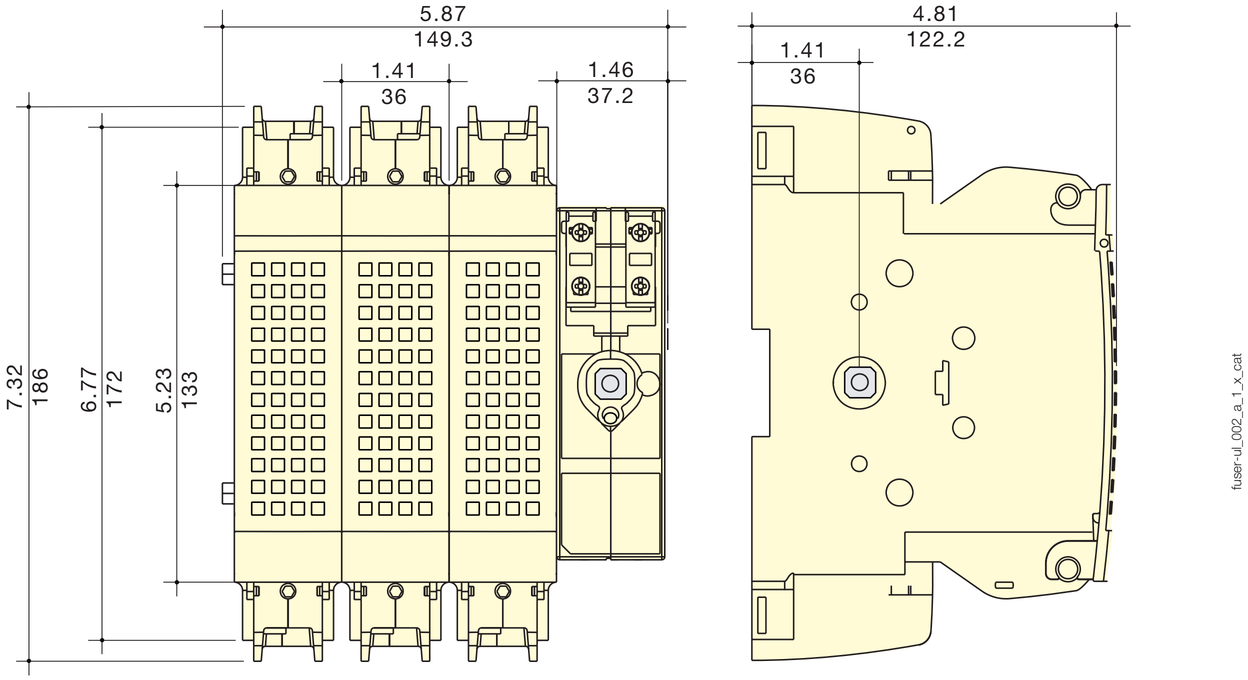
30 to 60 A / J - Frame size 4



Note for width:
For 2 pole device decrease overall width by 1.41 in / 36 mm.
For 4 pole device increase overall width by 1.41 in / 36 mm.

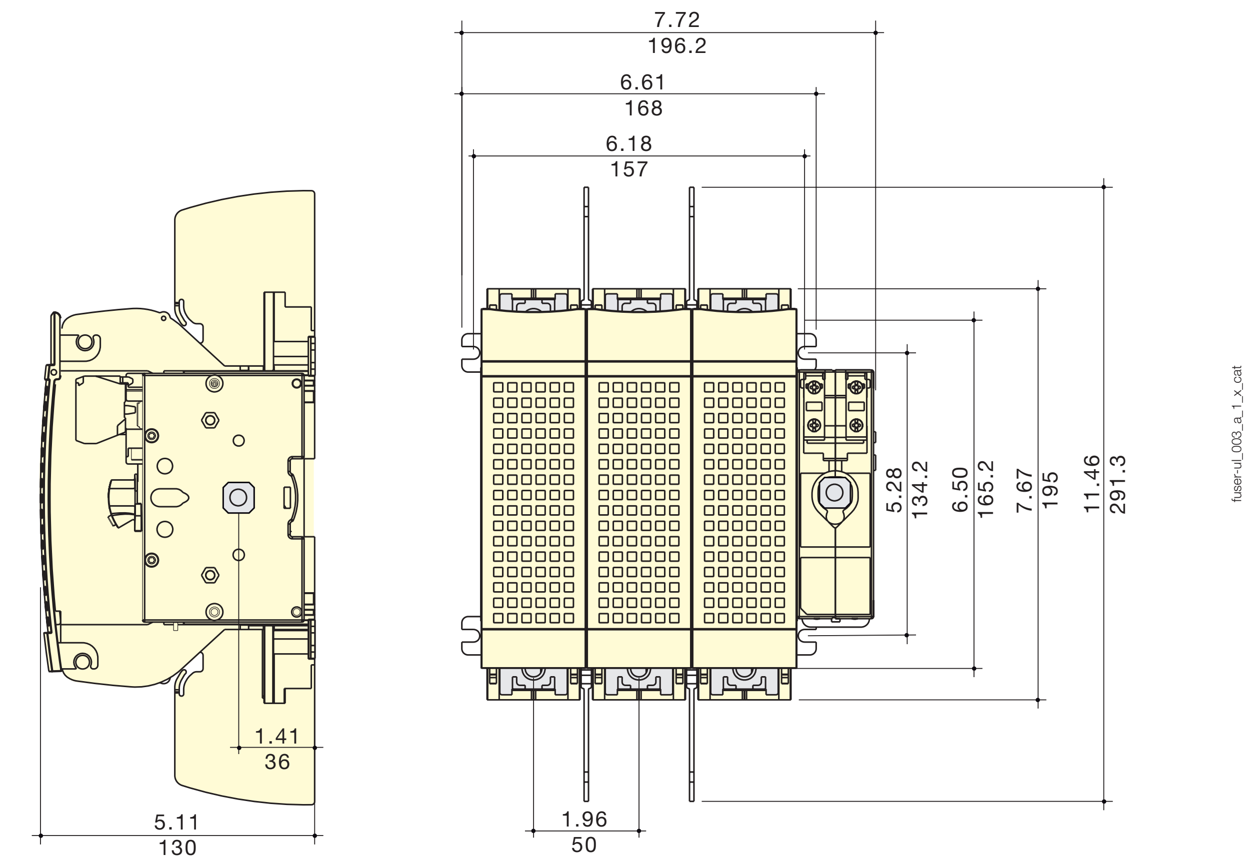
Dimensions (in/mm) (continued)

60 to 100 A / J - Frame size 5



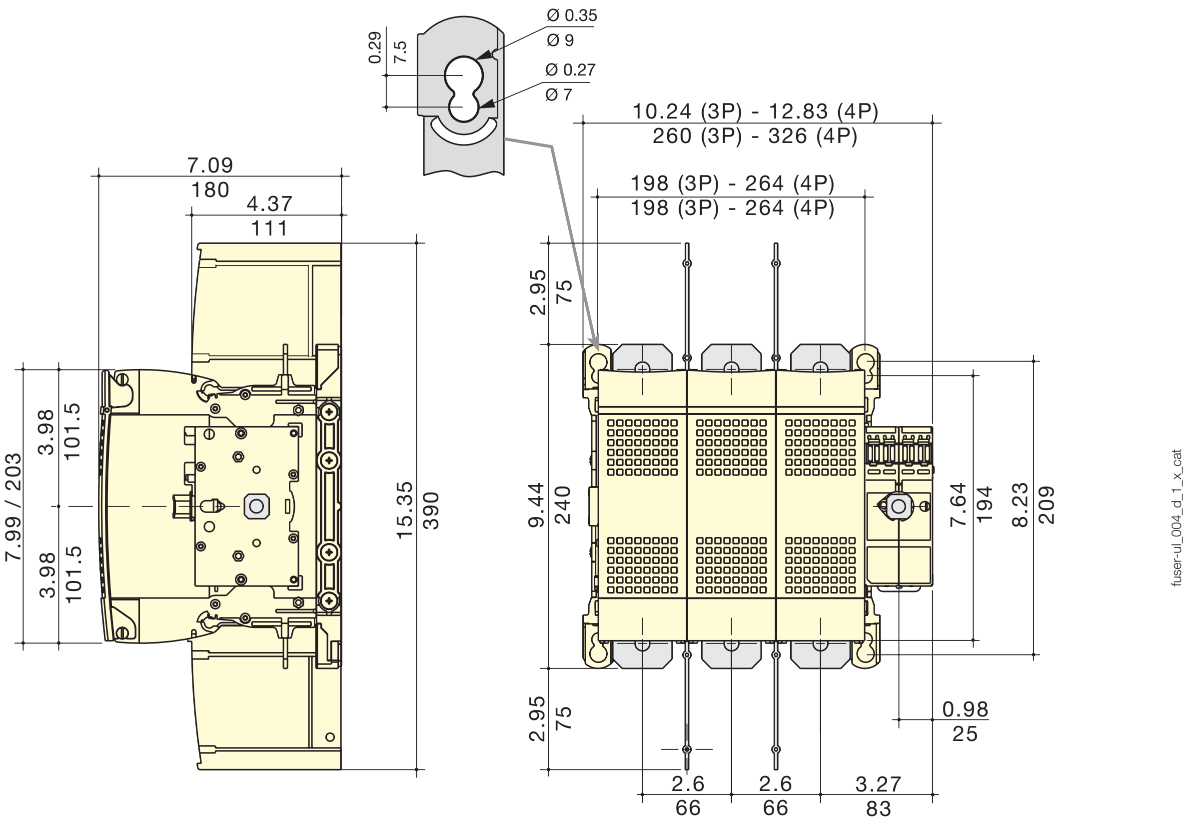
Note for width:
For 2 pole device decrease overall width by 1.41 in / 36 mm.
For 4 pole device increase overall width by 1.41 in / 36 mm.

200 A / J - Frame size 6



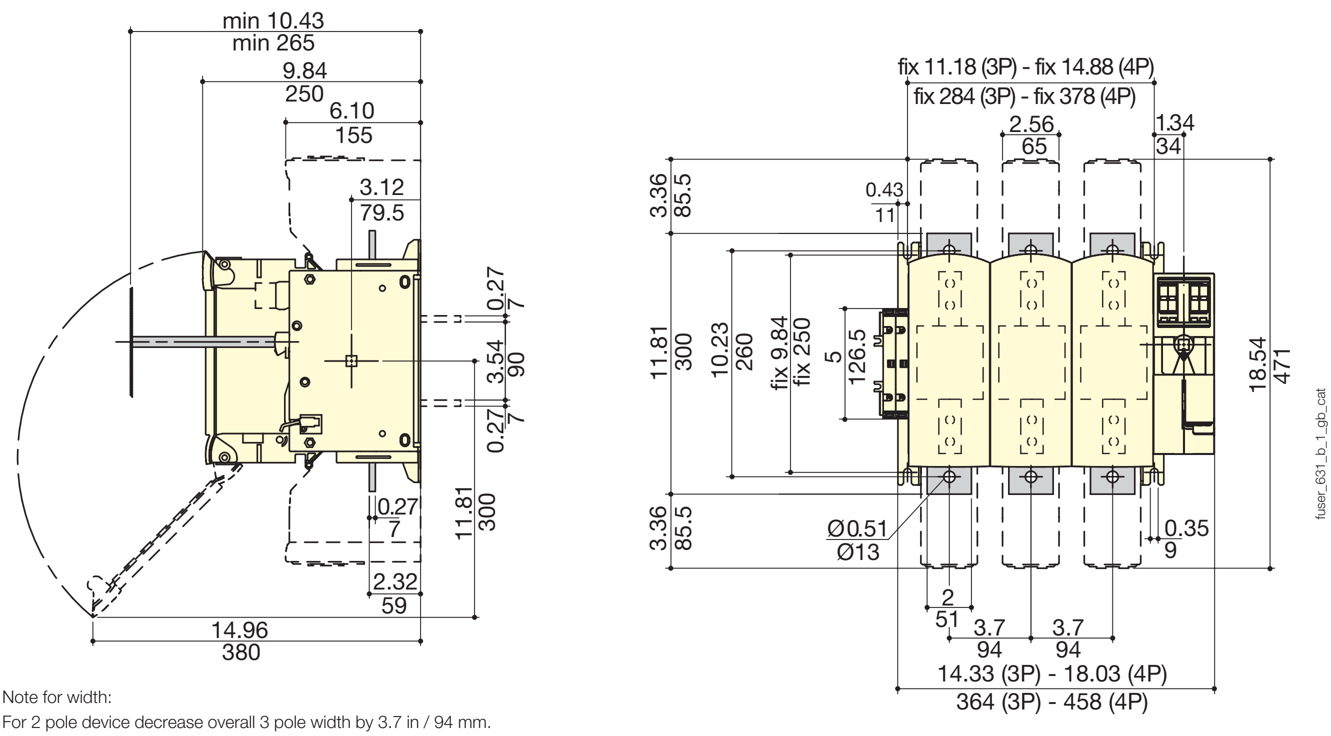
Note for width:
For 2 pole device decrease overall width by 1.96 in / 50 mm.
For 4 pole device increase overall width by 1.96 in / 50 mm.

400 A / J - Frame size 7



Note for width:
For 2 pole device decrease overall 3 pole width by 2.59 in / 66 mm.

600 to 800 A / J & L - Frame size 8

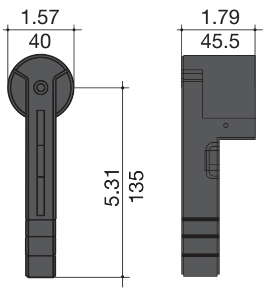


Note for width:
For 2 pole device decrease overall 3 pole width by 3.7 in / 94 mm.

Dimensions (in/mm) (continued)

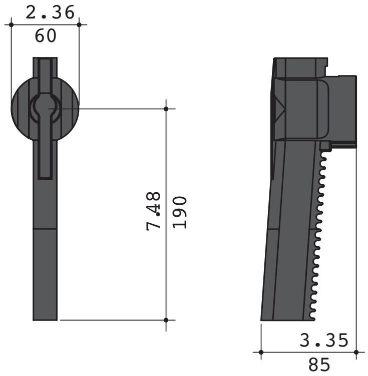
30 to 400 A

Front direct handle



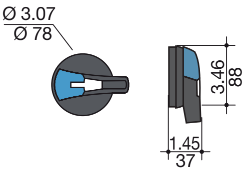
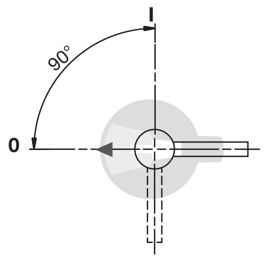
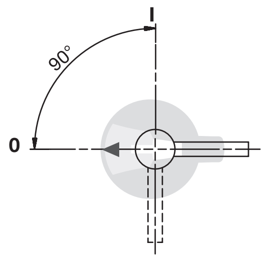
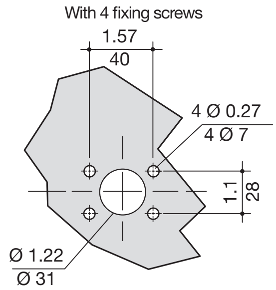
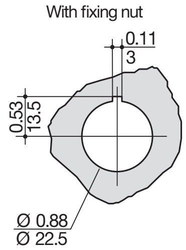
600 to 800 A

Front direct handle

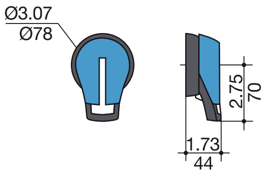
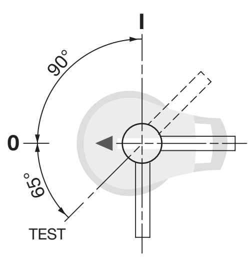
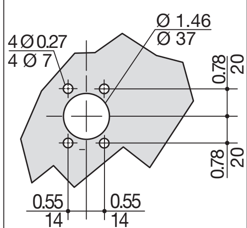
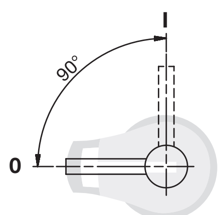
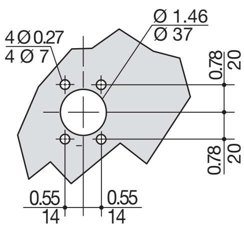


External handle dimensions (in/mm)

CD 30 A - Frame size 1 / 2

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S0 type 			 

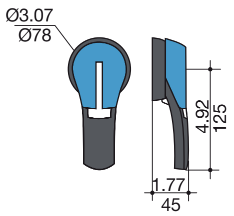
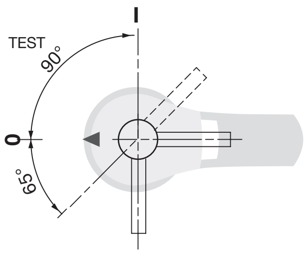
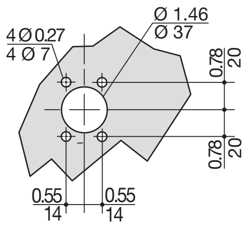
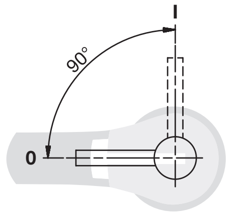
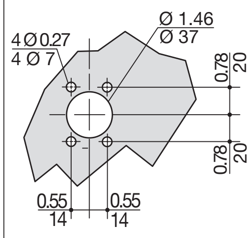
CD 30 to 60 A - Frame size 1 / 2 / 4

Handle type	Front operation Direction of operation	Front operation Door drilling	Side operation(1) Direction of operation	Side operation(1) Door drilling
S1 type 				

(1) Not for frames 1 and 2.

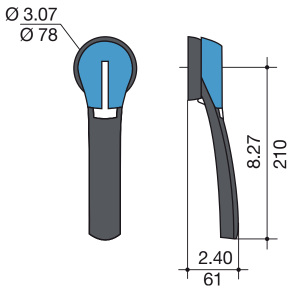
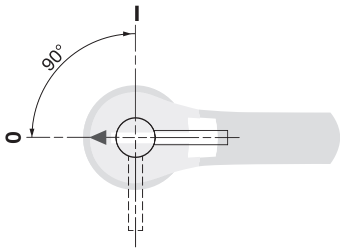
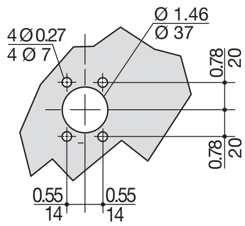
External handle dimensions (in/mm)

60 to 400 A - Frame size 5 / 6 / 7

Handle type	Front operation: Direction of operation	Front operation: Door drilling	Side operation: Direction of operation	Side operation: Door drilling
S2 type 				

fuser-ul_016_b_1_gb_cat

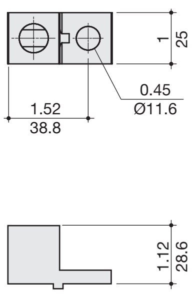
600 and 800 A - Frame size 8

Handle type	Front operation: Direction of operation	Door drilling
S3 type 		

fuser-ul_017_b_1_gb_cat

Terminal lugs (in/mm)

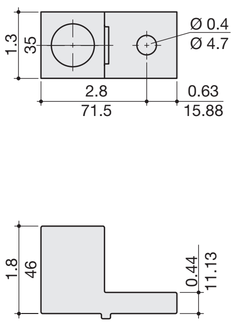
200 A



sirco_115_b_1_us_cat

300 kcmil

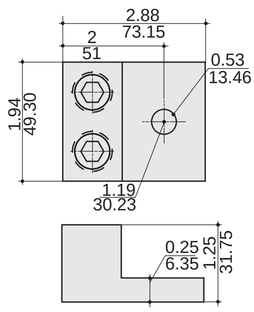
400 A



sirco-ul_010_a_1_us_cat

600 kcmil

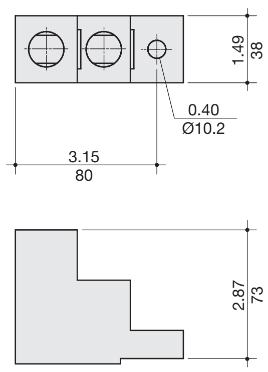
400 A



sirco-ul_026_b_1_us_cat

2 x 350 kcmil

600 to 800 A



sirco_116_b_1_us_cat

2 x 600 kcmil max

RM CC

Modular fuse holders
for CC fuses

RM CC
30 A

RM CC *with LED*
30 A

The solution for
- Industrial control panels
- Motor and control circuits
- Transformers protection
- Measuring devices and multi-function meter protection

Strong points
- Touch Safe
- High breaking capacity (SCCR)
- Modular
- DIN rail mounting
- Non-load disconnect

Compliance with standards
- UL 4248-4
  Guide IZLT
  File E307648
- CSA-C22.2 No. 4248-07
  Class 6225-01
  File 265615

Function

RM CC are modular DIN rail mounted fuse holders for UL Class CC fuses. They are available with and without LED indication in 1, 2 and 3-pole versions. RM CC fuse holders are IP20 protected from touch by fingers and provide safe non-load breaking and isolation of electrical circuits up to 600 V / 30 A.

Advantages

Improved safety
- Multipolar and simultaneous disconnection.
- High dielectric strength.
- Protection IP2X.

High breaking capacity
Protection against overloads and short-circuits due to high breaking capacity fuses (200 kA rms).

Accessories
- Padlocking kits
- Coupling kits

References

RM CC

Basic device Fuse size No. of poles	30 A Class CC To be ordered in multiples of	 Reference	30 A with LED Class CC To be ordered in multiples of	 Reference
1 P	12	5705 **0001**	12	5705 **0011**
2 P	6	5705 **0002**	6	5705 **0012**
3 P	4	5705 **0003**	4	5705 **0013**

Accessories

Key handle padlocking system

Use

Padlocking of the handle (padlock not supplied).

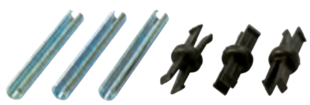
Rating (A)	Quantity (units)	Reference(1)
30	5	5701 **9040**

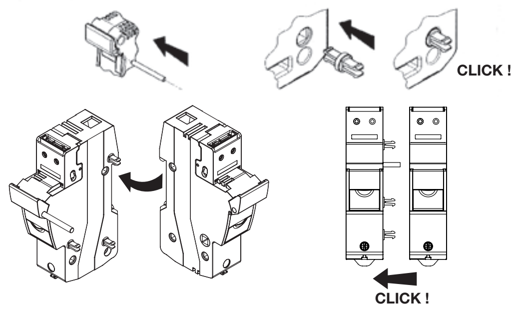
(1) Not UL.

Coupling system

Rating (A)	Quantity (units)	Reference
30	12	5704 **0003**(1)

(1) One coupling to attach two RM/CC.
Also sold in bags containing separate components (bags of 100 pieces) for assembling larger quantities. Please contact us.





Reinforced insulation kit

Rating (A)	Reference
30	5701 **9010**(1)

(1) 1 reference = 1 set of 10 insulation kits

Characteristics

Characteristics according to UL 4248-4 and CSA-C22.2 No. 4248-07

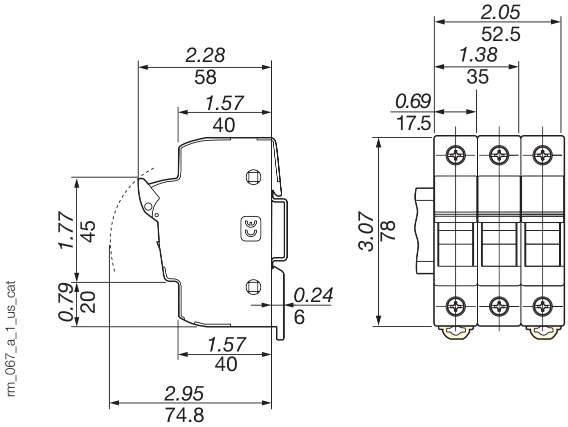
Rated operational current (A)		**30 A**
Fuse size		class CC
Rated operating voltage (V)		600
Dielectric strength (V)		2200
LED working voltage[1]		120 … 600 VAC
Rated power dissipation (W/P)		3
Protection degree		IP20

(1) For fuse holders with LED indicator.

Class CC fuse protected short-circuit withstand		
Prospective short-circuit current (kA rms.)		200
Design current derating coefficient for N poles side by side		
N = 1 … 3		1
N = 4 … 6		0.8
N = 7 … 9		0.7
N ≥ 10		0.6
Connection		
Wire type (solid / stranded Cu)		60 / 75°C
1 wire	Minimum Cu cable cross-section solid / stranded	18 AWG / 0.75 mm²
	Maximum Cu cable cross-section solid / stranded	8 AWG / 16 mm²
2 wires	Minimum Cu cable cross-section solid / stranded	18 AWG / 0.75 mm²
	Maximum Cu cable cross-section solid	8 AWG / 10 mm²
	Maximum Cu cable cross-section stranded	10 AWG / 10 mm²
Wire strip (mm / in)		10 / 0.39
Maximum tightening torque		2.5 Nm / 22 lb.in
Fixing		DIN rail 35 mm DIN 46277/1-3 (EN50022)
Mechanical characteristics		
Weight of 1 P (lb / kg)		0.126 / 0.057
Weight of 2 P (lb / kg)		0.251 / 0.114
Weight of 3 P (lb / kg)		0.375 / 0.170

Dimensions (in / mm)

30 A



RM and **RMS**

Modular fuse holders

for industrial and high speed (uR) for Midget/Ferrule fuses up to 125 A

RM
32 A

RM
50 A

RMS
100 A

Function

RM and **RMS** are modular fuse holders for cylindrical fuses. They safely provide non-load disconnection and protection against overloads and short-circuits in any low voltage electrical circuit.
- RM: Non-signalling fuse holders for fuses without strikers.
- RMS: Fuse disconnect switches with pre-break auxiliary contact, position and blown indication.

Advantages

Improved safety
- Multipolar and simultaneous breaking.
- High dielectric strength
- IP2X protection

Accessories
- Microswitchers for RMS 50 & 100A
- Padlocking capabilities
- Ganging kits to form multipolar from single poles
- Wiring combs

High breaking capacity
Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

The solution for
- Industrial control panels
- Inverters
- Measuring devices and multifuntion meter production
- UPS
- Motor drives

Strong points
- Touch Safe
- High breaking capacity (SCCR)
- Modular
- DIN rail mounting
- Non-load disconnect
- Pre-break capabilities, please consult us

Compliance with standards
- UL 4248-1, CSA-C22.2 No. 4248-1 Guide IZLT File E307648
- IEC 60269-2-1

Approvals and certifications(1)

(1) Product reference on request.

References

RM and RMS - Non-signalling device

Basic device Fuse size No. of poles	32 A 10 x 38 To be ordered in multiples of	Reference	50 A 14 x 51 To be ordered in multiples of	Reference	100 A 22 x 58 To be ordered in multiples of	Reference
1 P	12	5701 **0015**	6	5702 **5001**	6	5703 **5001**
1 P + N (1 module)	12	5701 **5005** (1)				
1 P + N (2 modules)	6	5701 **0017**	3	5702 **5005**	3	5703 **5005**
1 P LED signalling	12	5701 **0011**	6	5702 **0011**	6	5703 **0011**
2 P	6	5701 **0020**	3	5702 **5002**	3	5703 **5002**
3 P	4	5701 **0018**	2	5702 **5003**	2	5703 **5003**
3 P + N	3	5701 **0019**	1	5702 **5004**	1	5703 **5004**
4 P			1	5702 **5006**	1	5703 **5006**
N	12	5701 **0016**	6	5702 **5000**	6	5703 **5000**

(1) This device is not cURus.

RMS - Device with 1 signalling auxiliary contact (AC) (1)

Basic device Fuse size No. of poles	50 A 14 x 51 To be ordered in multiples of	Reference	100 A 22 x 58 To be ordered in multiples of	Reference
1 P	6	5702 **5011**	6	5703 **5011**
2 P	3	5702 **5012**	3	5703 **5012**
3 P	2	5702 **5013**	2	5703 **5013**
3 P + N	1	5702 **5014**	1	5703 **5014**
4 P	1	5702 **5016**	1	5703 **5016**

(1) The signalling auxiliary contact provides the pre-break, fuse presence and also blown fuse signal.

Something to think about

10x38 RMs equipped with 0.5 A Midget fuses to provide effective protection for voltage inputs and auxiliary power supplies for all our electronic devices
(DIRIS, DIRIS Digiware, DIRIS DigiBOX, etc.)

RM and RMS

Modular fuse holders

for industrial and high speed (uR) for Midget/Ferrule fuses up to 125 A

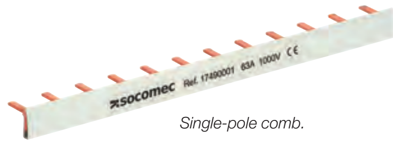
Accessories

Connection accessories for RM 32 A 10 x 38

Comb bridging connection

Designation	Cross-section (mm²)	Reference(1)
Unipolar comb with 12 modules	10	1749 **0001**
Unipolar comb with 13 modules	10	1749 **0011**
Unipolar comb with 57 modules	10	1749 **0021**
Unipolar comb with 12 modules	16	1749 **0031**
Unipolar comb with 13 modules	16	1749 **0041**
Unipolar comb with 57 modules	16	1749 **0051**
Nozzle		1749 **8001**

(1) Not UL.



Single-pole comb.


Insulated neutral terminal.


Nozzle.

Connection terminals

Designation	Reference(1)
Insulated neutral terminal for a 6 to 25-mm² cable, side input	1749 **9001**
Insulated neutral terminal for a 6 to 50-mm² cable, side input	1749 **9002**
Fully insulated power feed terminal for a 6 to 25-mm² cable, side input	1749 **9003**
Right/left insulated terminal, 6 x 25 mm²	1749 **9004**

(1) Not UL.

Auxiliary contact

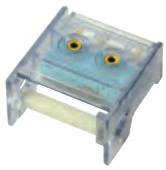
Use

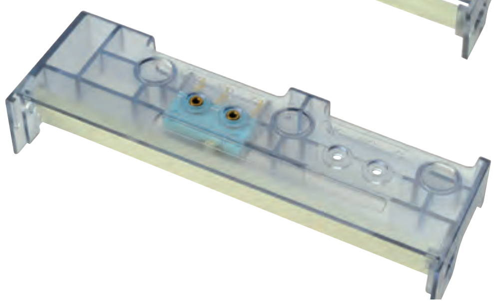
1 or 2 NO/NC auxiliary contacts:

- Pre-break, fuse presence and fuse blown signalling for RMS 50 and 100.

Connection

By 0.25 in / 6.35 mm fast-on terminal.

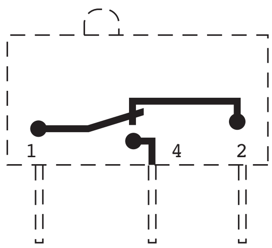




Characteristics Rating (A)	Contact type	Operating current I_e (A) 250 VAC AC-13
50 … 100	NO/NC contact	2.5
50 … 100	Two-level NO/NC contact	0.1

References NO/NC contact Rating (A)	Contact	Reference(1)
50	1 P with 1 AC	5702 **9901**
50	3 P with 1 AC	5702 **9903**
50	3 P with 2 AC	5702 **9030**
100	1 P with 1 AC	5703 **9901**
100	3 P with 1 AC	5703 **9903**
100	3 P with 2 AC	5703 **9030**

(1) Not UL.



Low level NO/NC auxiliary contact Rating (A)	Contact	Reference(1)
50	1 P with 1 AC	5702 **9911**
50	3 P with 1 AC	5702 **9913**
100	1 P with 1 AC	5703 **9911**
100	3 P with 1 AC	5703 **9913**

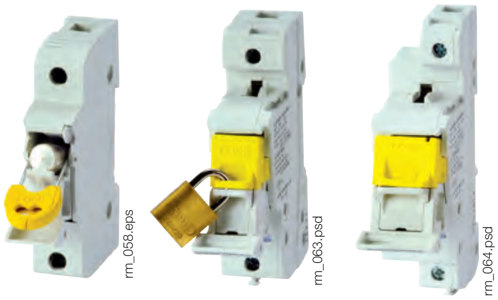
(1) Not UL.

Padlocking adapter

Use
Padlocking of the handle (padlock not supplied).

For RM and RMS Rating (A)	Quantity (units)	Reference[1]
32	5	5701 **9040**
50	5	5702 **9040**
100	5	5703 **9040**

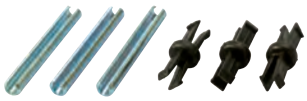
(1) Not UL.

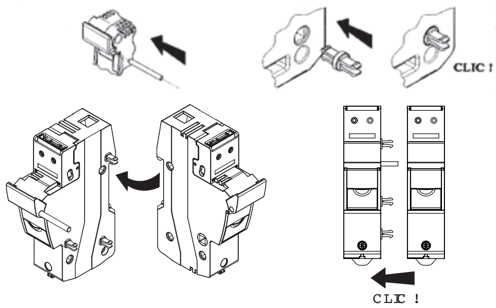


Coupling system for RM

For RM and RMS Rating (A)	Quantity (units)	Reference[1]
32	12	5704 **0003**[2]
50 … 100	12	5702 **9020**[2]

(1) Not UL.
(2) One coupling device allows to link two RM/RMS. Also sold in bags containing separate components (bags of 100 pieces) for assembling larger quantities. Contact us





Reinforced insulation kit

Rating (A)	Reference[1]
32	5701 **9010**[2]

(1) Not UL.
(2) 1 reference = 1 set of 10 couplings.

RM and **RMS**
Modular fuse holders
for industrial and high speed (uR) for Midget/Ferrule fuses up to 125 A

Characteristics according to UL 4248-1 and CSA-C22.2 No. 4248-1

30 to 100 A

Thermal operational current		**30 A**	**50 A**	**100 A**
Fuse size		Midget / 10 x 38	14 x 51	22 x 58
Rated operating voltage (V)		750	750	750
Rated fuse dissipated power (W/P)		3	5	12 W
Protection degree		IP20	IP20	IP20
gG fuse protected short-circuit withstand	**Rated volatge**			
Prospective short-circuit current (kA rms.)(1)	690 VAC	100	100	100
Prospective short-circuit current (kA rms.)(1)	400/500 VAC	120	120	120
Design current derating coefficient for N poles 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
Design current derating coefficient depending on the temperature				
20°C | 68°F		1	1	1
30°C | 86°F		0.95	0.95	0.95
40°C | 104°F		0.90	0.90	0.90
50°C | 122°F		0.80	0.80	0.80
60°C | 140°F		0.70	0.70	0.70
70°C | 158°F		0.60	0.60	0.60
Connection				
Minimum Cu cable cross-section SOLID / STRANDED		0.75 mm² / 18 AWG	1.5 mm² / 16 AWG	1.5 mm² / 16 AWG
Maximum Cu cable cross-section SOLID		16 mm² / 8 AWG	35 mm² / 8 AWG	50 mm² / 1 AWG
Maximum Cu cable cross-section STRANDED		16 mm² / 8 AWG	25 mm² / 6 AWG	35 mm² / 2 AWG
Tightening torque		2.5 Nm / 22 lb.in	3 Nm / 26 lb.in	4 Nm / 35 lb.in
Dimensional data				
Weight of 1 P / N (kg/lb)		0.125 / 0.0132 lb | 0.057 / 0.06 kg	0.22 lb | 0.1 kg	0.342 lb | 0.155 kg
Weight of 1 P + N (kg/lb)		0.258 lb | 0.117 kg	0.473 lb | 0.215 kg	0.721 lb | 0.327 kg
Weight of 3 P + N (kg/lb)		0.505 lb | 0.229 kg	0.915 lb | 0.415 kg	1.393 lb | 0.632 kg

(1) Connection for RM32 1 P + N (1 module).

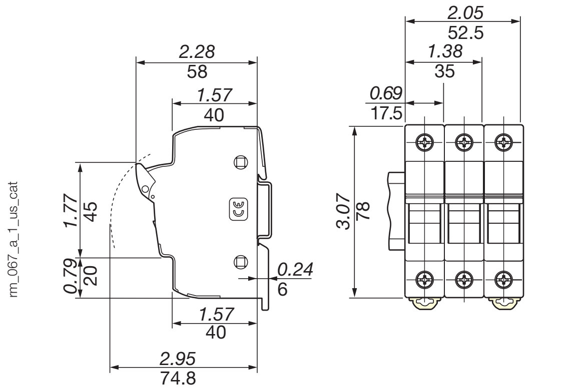
Characteristics according to IEC 60269-2

32 to 100 A

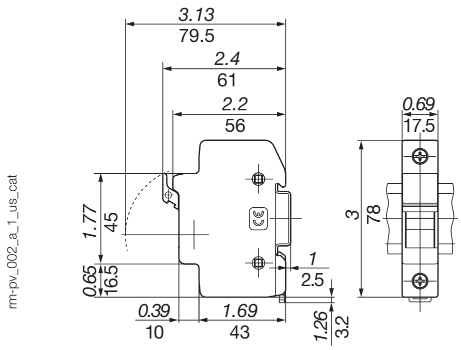
Thermal current I_{th} (20°C/68°F)	**32 A**	**50 A**	**100 A**
Fuse size	10 x 38	14 x 51	22 x 58
Rated insulation voltage U_i (V)	690	690	690
Fuse rating (A)			
at 400 VAC	32	50	125
at 500 VAC	32	50	125
at 690 VAC		50	125

Dimensions

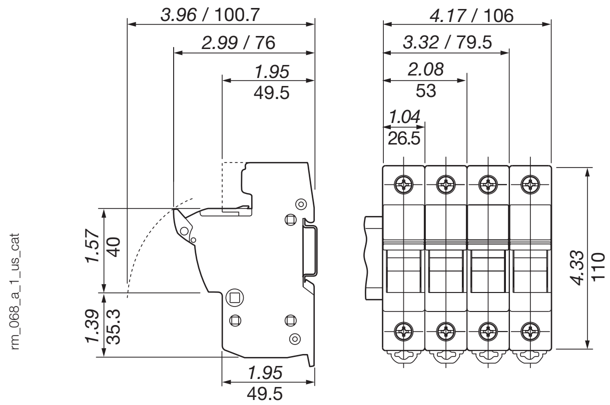
RM 32 A unipolar and multipolar

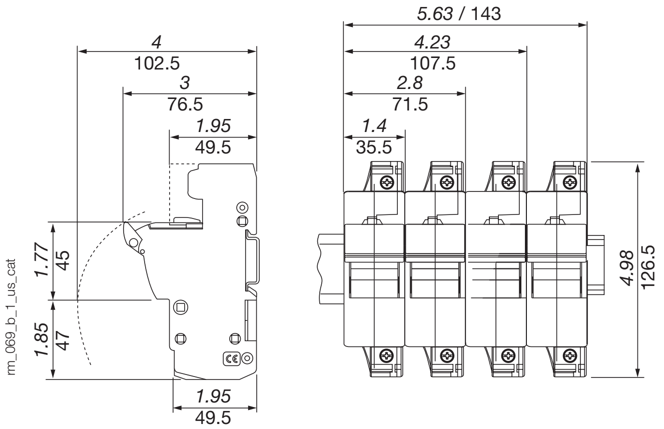


RM 32 A Ref.: 5701 5005



RMS 50/100 A unipolar and multipolar





Fuse combination switches

for specific applications

Despite already offering a wide range of fuse combination switches, SOCOMEC also manufactures specific products suitable for all your requirements and dedicated to specific applications. Some of these products can be seen on these two pages, however this list does not include them all. Please contact us for more information.

Fused changeover switches

fuser_426_a_1_cat.eps

Available from 600[1] to 800 A, the **FUSERBLOC changeover switch** range is a great solution for safe guarding of energy supply, protection and disconnection of stand-by pumps and other sensitive loads.

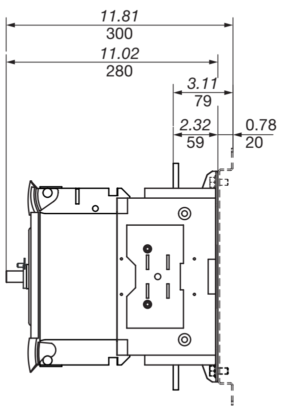
(1) Other ratings: please consult us.

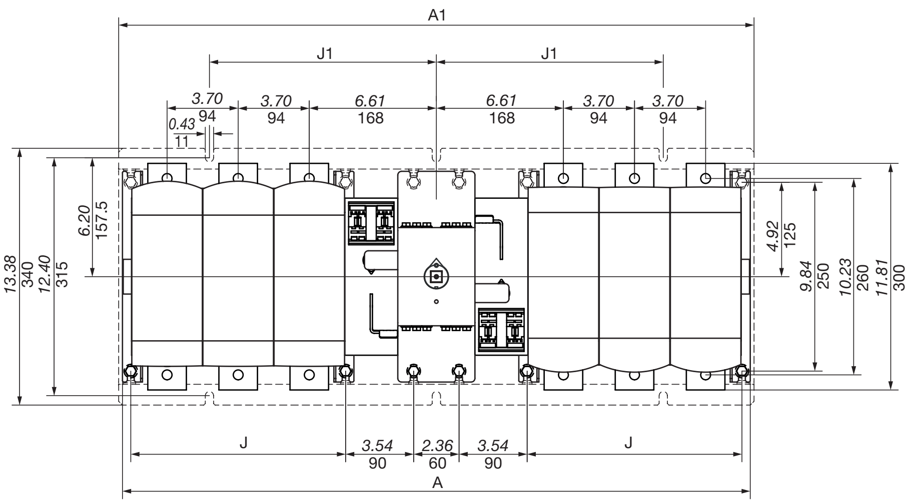
Factory mounted UL 98 certified 600 A and 800 A fusible changeover switches with three stable positions:
I – 0 – II and padlockable in OFF position.

References for UL listed fused changeover switches

Rating (A)	No. of poles	Fuse	Reference	External operation handle	Shaft
600 A	2 P	Class J	3881 **2060**	S4 type, 4,4X, Black 144D **3113**	320 mm 1401 **1532**
	3 P		3881 **3060**		
	4 P		3881 **4060**		
800 A	2 P	Class L	3881 **2080**		400 mm 1401 **1540**
	3 P		3881 **3080**		
	4 P		3881 **4080**		

Dimensions





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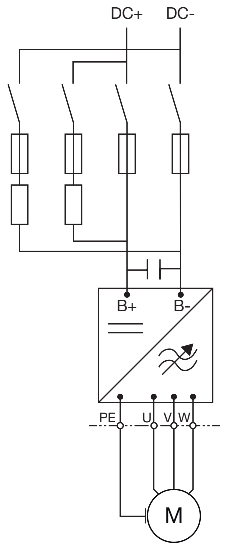
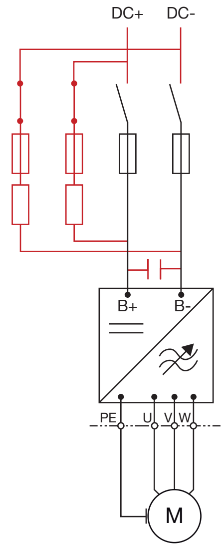
FUSERBLOC LMDC (not UL listed)

FUSERBLOCs LMDC are designed to perform the maintenance of DC/AC speed drives or PV inverters without stopping the entire installation. This multifunctional device for performing maintenance work on a branch of the electrical system while leaving the rest of the equipment energised. FUSERBLOCs LMDC ensure a safe charge of capacitive loads by limiting high inrush current during power-up of the branch and thus reducing stress to components.

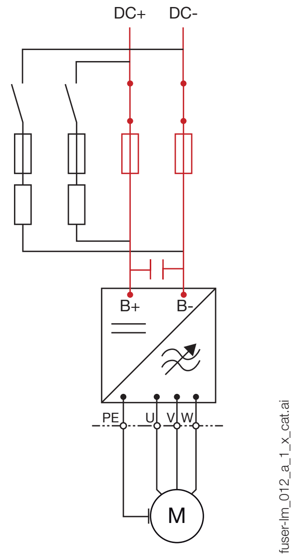
Example: Variable speed drive disconnected from the common DC bus. The inverter capacitors discharge and the direct power up would cause a current draw that could damage the inverter, or even shut down the entire system (voltage drop). This inrush current must be limited.



Disconnected variable speed drive and motor



Manuel interlocking and capacitors charging through the precharge circuit while limiting the current draw.

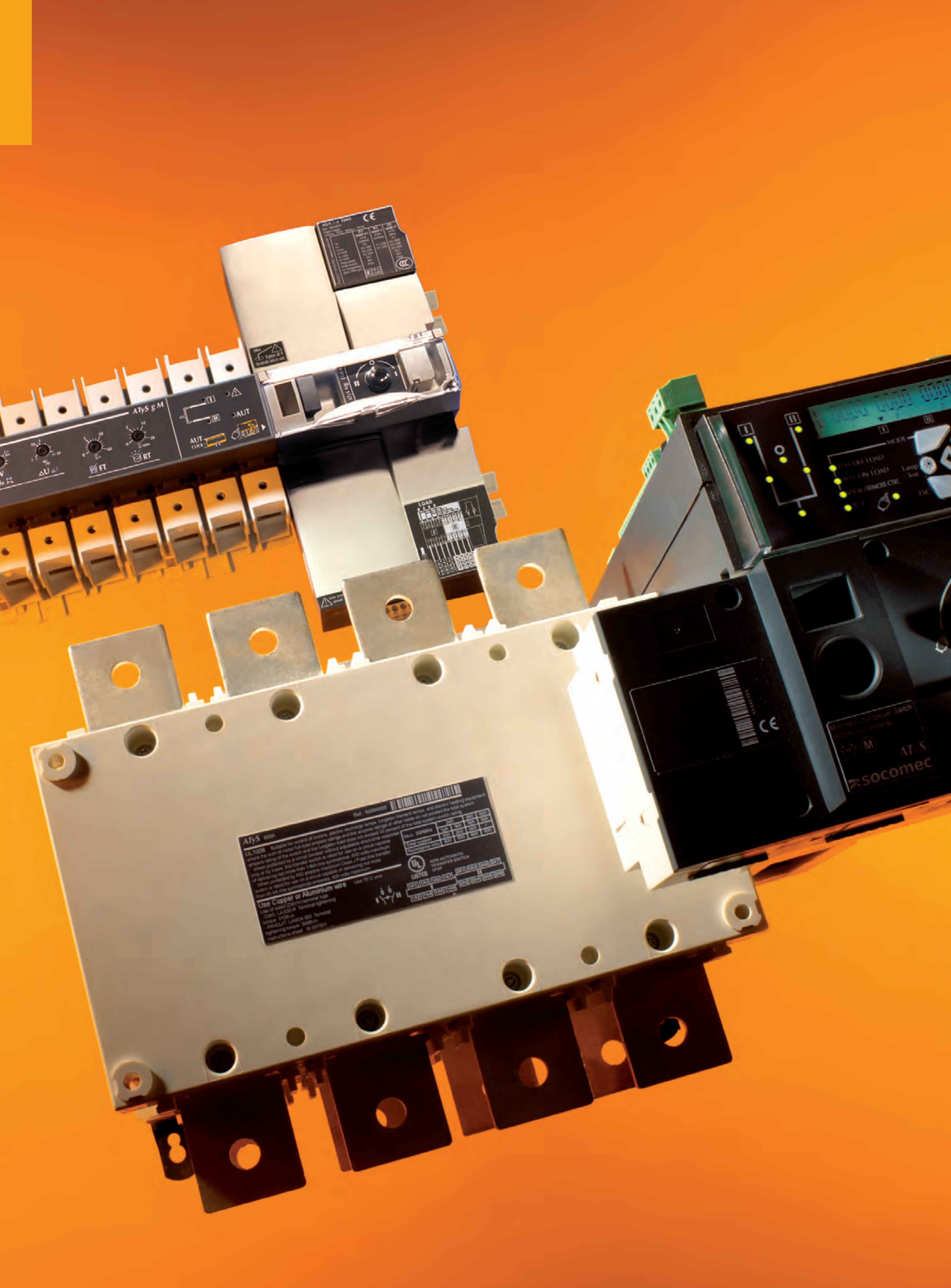


Automatical switching over to the main protection circuit, connecting the VSD to the DC bus.

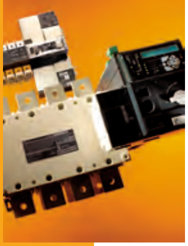
References

Rating (A)	No. of main poles	Fuse size of main poles	Pre-charge poles (DIN 43620)	Reference	External front handle	Direct front handle	Shaft for external front handle
125 A	2	DIN 43620 00	2 x 160 A Size 00	38DR **2012**(1)(2)	S3 type Black IP65 1433 **3111** Red/Yellow IP65 1434 **3111**	Black 3899 **6011**	200 mm 1400 **1220** 320 mm 1400 **1232** 500 mm 1400 **1250**
160 A	2	DIN 43620 1	2 x 160 A Size 00	38DR **2016**(1)(2)			
250 A	2	DIN 43620 2	2 x 160 A Size 00	38DR **2025**(1)(2)			
400 A	2	DIN 43620 3	2 x 160 A Size 00	38DR **2040**(1)(2)		Black 3899 **7011**	
630 A	2	DIN 43620 3	2 x 160 A Size 00	38DR **2063**(1)(2)	S4 type Black IP65 1443 **3111** Red/Yellow IP65 1444 **3111**		
900 A	2	KN/110	2 x 160 A Size 00	38DR **2090**(1)(2)			
1100 A	4 (2 //)	DIN 43620 3	2 x 160 A Size 00	38DR **4110**(1)(2)			
1600 A	4 (2 //)	KN/110	2 x 160 A Size 00	38DR **4160**(1)(2)			

(1) Coil must be ordered separately.
(2) Include standard fuse protection cover. If fuse microswitch is used please use specific fuse protection cover.

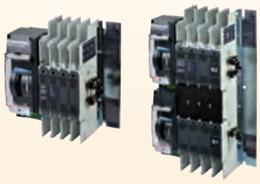

ATyS g M
AUT
socomec

Transfer switches



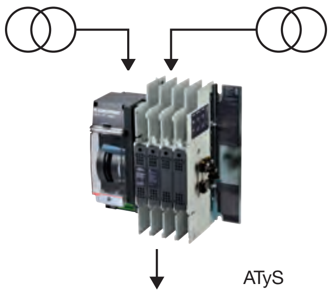
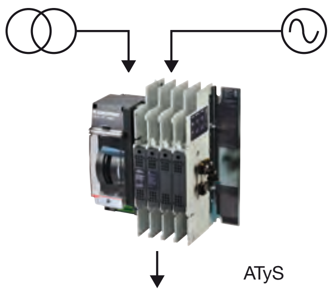
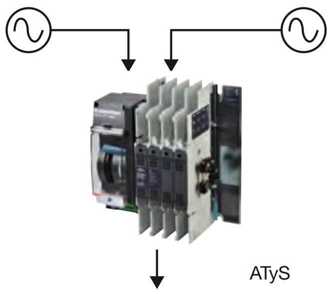
Manual, non-automatic & automatic transfer switches

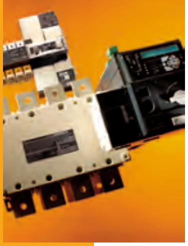
A range of manual, non-automatic and automatic transfer switches up to 1200 A

MTSE (Manual)	RTSE (Remotely operated)	ATSE (Automatically operated)
		
SIRCOVER UL 1008 Manual transfer switching equipment	**ATyS** UL 1008 Non-automatic transfer switching equipment	**ATyS Ft - ATyS DT** Automatic transfer switching equipment

Typical applications

The transfer switches 1008 range provides safe transfer for mains/genset and genset/genset applications.

Mains/Mains	Mains/Genset	Genset/Genset
atys-ul_005_b_1_cat 	atys-ul_006_b_1_cat 	atys-ul_007_b_1_cat 



COMO CS

Manual Cam changeover switches
from 25 to 100 A

COMO CS - *Door mounting*
I-II 3 P 25 A

COMO CS *in enclosure*
I-0-II 3 P 40 A

The solution for

- OEM/Machine Builders
- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- Distributors

Strong points

- Simple installation
- Quick mounting

Compliance with standards

- UL 60947-4-1
  CSA-C22.2 No. 60947-4-1(1)
  Guide NLRV
  File E173959
- UL 60947-4-1
  Guide NRNT
  File E237502
- IEC 60947-3

c UL US LISTED

(1) 25A only.

Function

COMO CS are manually operated multi-pole changeover switches. They ensure switching, transfer of sources or transfer of two low voltage circuits on load as well as their safe disconnection.

Advantages

Simple installation
The "quick fix" allows significant time saving in fixing the handle to the device. The devices sold in enclosed version are ready for installation.

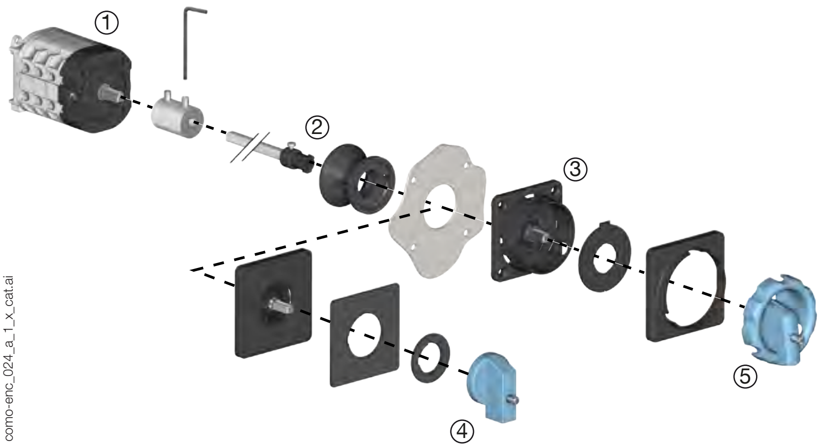
Quick mounting
The accessories offered are common to all the products in the range. The products are designed for installation:
- on the rear of the cabinet on a backplate,
- on the rear of the cabinet on a DIN rail,
- on the door with a direct handle.

Effective in all circumstances
The devices are available with 3 standard switching types that can cover a wide variety of applications:
- I-II
- I-0-II
- I-0-II with bypass

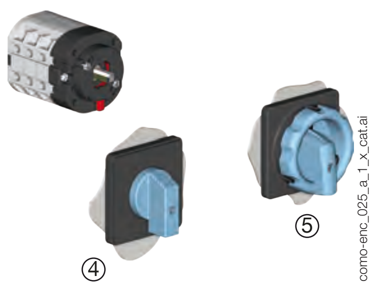
Please consult us for adaptations to specific wiring diagrams.

Configurations

Backplate switch mounted with external handle



Direct quickfixing handle for door or backplate mounted switch



Functional diagram (for further details see the installation instructions supplied with the product).
1. Shaft extension
2. Shaft guide
3. Signalling plate
4. Non padlockable handle
5. Padlockable handle

References

COMO CS

Backplate mounting with direct quickfixing handles or external handles

Rating (A)	N° of poles	Switching type	Switch body rear mounting(1)	Padlockable direct quick fixing handle	Non-padlockable direct quick fixing handle	Padlockable external handle (2)	Non-padlockable external handle (2)
25 A	3 P	I - II	4320 **3002**	Blue/Black 4359 **3042** Red/Yellow 4359 **3043**	Blue/Black 4359 **3022**	Blue/Black 4359 **1042** Red/Yellow 4359 **1043**	Blue/Black 4359 **2022**
	4 P	I - II	4320 **4002**				
	3 P	I - 0 - II	4330 **3002**				
	4 P	I - 0 - II	4330 **4002**				
	3 P	Bypass I - 0 - II	4350 **3002**				
	4 P	Bypass I - 0 - II	4350 **4002**				
40 A	3 P	I - II	4320 **3004**				
	4 P	I - II	4320 **4004**				
	3 P	I - 0 - II	4330 **3004**				
	4 P	I - 0 - II	4330 **4004**				
	3 P	Bypass I - 0 - II	4350 **3004**				
	4 P	Bypass I - 0 - II	4350 **4004**				
63 A	3 P	I - II	4320 **3006**				
	4 P	I - II	4320 **4006**				
	3 P	I - 0 - II	4330 **3006**				
	4 P	I - 0 - II	4330 **4006**				
	3 P	Bypass I - 0 - II	4350 **3006**				
	4 P	Bypass I - 0 - II	4350 **4006**				
100 A	3 P	I - II	4320 **3010**				
	4 P	I - II	4320 **4010**				
	3 P	I - 0 - II	4330 **3010**				
	4 P	I - 0 - II	4330 **4010**				
	3 P	Bypass I - 0 - II	4350 **3010**				
	4 P	Bypass I - 0 - II	4350 **4010**				

(1) Mounting on DIN rail and backplate from 25 to 40 A and mounting on backplate for ratings from 63 to 100 A.
(2) Delivered with shaft and plate for front external operation.

Door mounting with direct quickfixing handles

Rating (A)	N° of poles	Switching type	Switch body mounting on door	Padlockable direct quick fixing handle	Non-padlockable direct quick fixing handle
25 A	3 P	I - II	4320 **3102**	Blue/Black 4359 **3042** Red/Yellow 4359 **3043**	Blue/Black 4359 **3022**
	4 P	I - II	4320 **4102**		
	3 P	I - 0 - II	4330 **3102**		
	4 P	I - 0 - II	4330 **4102**		
	3 P	Bypass I - 0 - II	4350 **3102**		
	4 P	Bypass I - 0 - II	4350 **4102**		
40 A	3 P	I - II	4320 **3104**		
	4 P	I - II	4320 **4104**		
	3 P	I - 0 - II	4330 **3104**		
	4 P	I - 0 - II	4330 **4104**		
	3 P	Bypass I - 0 - II	4350 **3104**		
	4 P	Bypass I - 0 - II	4350 **4104**		
63 A	3 P	I - II	4320 **3106**		
	4 P	I - II	4320 **4106**		
	3 P	I - 0 - II	4330 **3106**		
	4 P	I - 0 - II	4330 **4106**		
	3 P	Bypass I - 0 - II	4350 **3106**		
	4 P	Bypass I - 0 - II	4350 **4106**		
100 A	3 P	I - II	4320 **3110**		
	4 P	I - II	4320 **4110**		
	3 P	I - 0 - II	4330 **3110**		
	4 P	I - 0 - II	4330 **4110**		
	3 P	Bypass I - 0 - II	4350 **3110**		
	4 P	Bypass I - 0 - II	4350 **4110**		

Other solutions with enclosures

General characteristics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Available for switching types I-II and I-0-II

- Different enclosure sizes adapted to your needs.
- Maximum safety during maintenance operations due to triple padlocking of the handle in position 0 (position I for switching type I-II).
- NEMA 4, 4X / IP 65 when installed in an industrial environment, protection degree NEMA 4, 4X / IP 65 ensures that the products are protected against dust and water jets.
- Red-yellow operating handle.

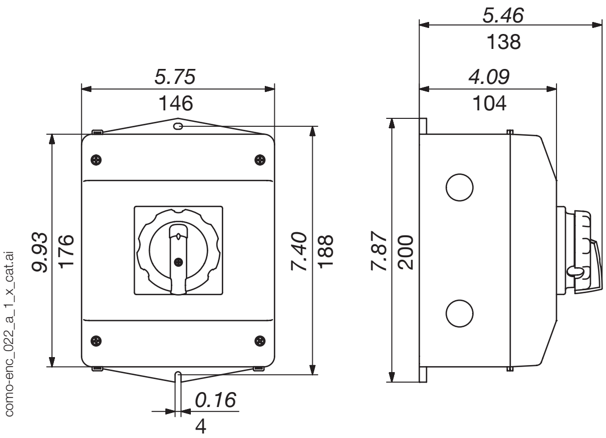
References

Rating (A)	No. of poles	Switching type	Reference
25 A	3 P	I - II	4321 **3C02**
	4 P	I - II	4321 **4C02**
	3 P	I - 0 - II	4331 **3C02**
	4 P	I - 0 - II	4331 **4C02**
40 A	3 P	I - II	4321 **3C04**
	4 P	I - II	4321 **4C04**
	3 P	I - 0 - II	4331 **3C04**
	4 P	I - 0 - II	4331 **4C04**
63 A	3 P	I - II	4321 **3C06**
	4 P	I - II	4321 **4C06**
	3 P	I - 0 - II	4331 **3C06**
	4 P	I - 0 - II	4331 **4C06**
100 A*	3 P	I - II	4321 **3C10**
	4 P	I - II	4321 **4C10**
	3 P	I - 0 - II	4331 **3C10**
	4 P	I - 0 - II	4331 **4C10**

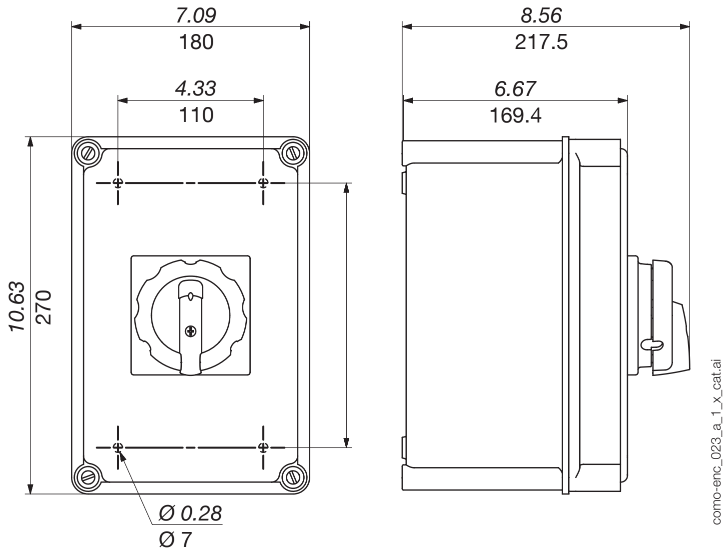
** For an ambient temperature of 95 °F / 35 °C*

Dimensions (in/mm)

25 to 40 A



63 to 100 A



Characteristics according to UL 60947-4-1 and CSA-C22.2 No. 60947-4-1[(1)]

25 to 100 A

General use rating (A)	**25 A**	**40 A**	**63 A**	**100 A**
UL certification file	88EJ		5LM6	
Short circuit rating at 600 VAC (kA)	10	5	/	
Type of fuse	RK5		/	
Max fuse rating (A)	150		/	
Max horsepower rating (HP)				
120 VAC / 1 phase	-	2	/	
120 VAC / 3 phase	-	5	/	
240 VAC / 1 phase	-	3	/	
240 VAC / 3 phase	-	10	/	
480 VAC / 3 phase	-	20	/	
600 VAC / 3 phase	5,2	20	/	
Connection terminals				
Solid wire (AWG)	#14 - #12	#14 - #8	#14 - #4	#10 - #2
Wire stripping distance (in/mm)	0.31 / 8	0.39 / 10	0.51 / 13	0.51 / 13
Mechanical characteristics				
Durability (number of operating cycles)	100 000	100 000	100 000	100 000
Tightening torque (Lb.in / N.m)	8.8 / 1	13.3 / 1.5	22,1 / 2.5	13.3 / 1.5
Weight of a 3 pole device (lb)	0.24	0.4	1	1
Weight of a 4 pole device (lb)	0.28	0.49	1.18	1.18

(1) 25A only.

Characteristics according to IEC 60947-3

25 to 100 A

Conventional free air thermal current I_{th} at 40 °C (A)	**25 A**	**40 A**	**63 A**	**100 A**
Conventional free air thermal current I_{th} at 50 °C (A)	25	34	63	100
Conventional free air thermal current I_{th} (60 °C) (A)	19	24	53	90
Rated insulation voltage U_i (V)	690	690	690	690
Rated impulse withstand voltage U_{imp} (kV)	4	6	6	6
Rated operational currents I_e (A)				
Utilisation category at 400 VAC				
AC-21A	25	40	63	100
AC-22A	20,5	40	63	100
AC-23A	15	29	63	63
AC-3	12	22		
Utilisation category at 690 VAC				
AC-21A	25	40	/	/
AC-22A	20,5	40	/	/
AC-23A	8,5	17	/	/
AC-3	7	12,8	/	/
Operational power in AC-23 (kW)[(1)]				
At 400 VAC without pre-break AC	7,5	15	37	37
At 690 VAC without pre-break AC	4,8	15	/	/
Fuse protected short-circuit withstand with gG DIN fuses				
Prospective short-circuit (kA rms)	7	10	5	5
Associated fuse rating (A)	25	40	63	100
Rated operational voltage (Va.c)	690	690	415	415
Connection				
Minimulm CU cable cross-section (mm^2)	0,5	1	1.5	4
Smaximum CU cable cross-section (mm^2)	4	10	16	35
Tightening torque min - max (Nm)	0.8-1.2	1.2-1.5	2.5	1.5
Mechanical characteristics				
Durability (number of operating cycles)	100 000	100 000	100 000	100 000
Weight of a 3 pole device (lb)	0.24	0.41	0.97	0.97
Weight of a 4 pole device (lb)	0.29	0.49	1.18	1.18

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

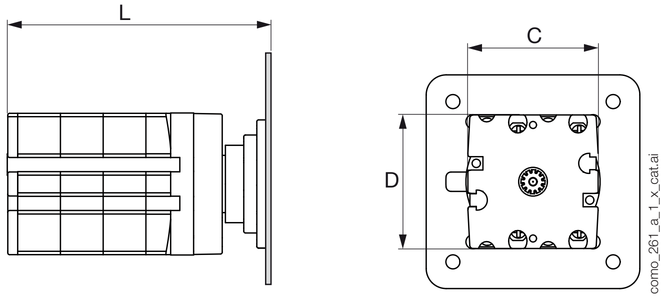
Dimensions (in/mm)

25 to 100A

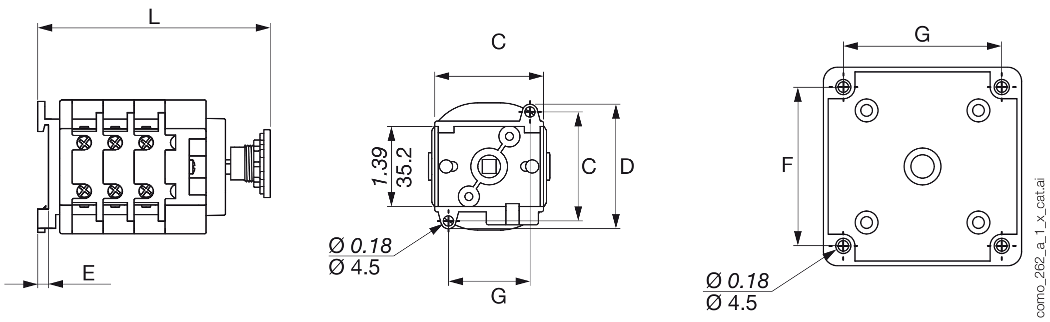
Mounting on door - Fixing with direct handle

Door width		
Unit	**Mini**	**Maxi**
in	0.04	1
mm	0.16	4

		L				C	D
		I-II /I-0-II		Bypass I-0-II			
Rating (A)	**Unit**	**3 P**	**4 P**	**3 P**	**4 P**		
25	in	3.19	3.66	4.13	4.61	1.54	1.57
	mm	81	93	105	117	39	40
40	in	3.31	4.82	4.33	4.84	2.11	2.2
	mm	84	97	110	123	53.6	56
63 - 100	in	4.45	5.28	6.1	6.93	2.91	2.8
	mm	113	134	155	176	74	71



Mounting on backplate / DIN rail - Rear fixing of direct handle

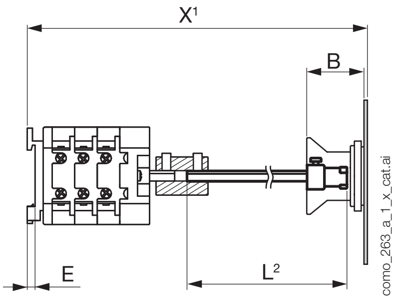


		W				E	C	D	F	G
		I-II /I-0-II		Bypass I-0-II						
Rating (A)	**Unit**	**3 P**	**4 P**	**3 P**	**4 P**					
25	in	3.20	3.68	4.15	4.57	0.18	1.89	2.2	1.65	1.42
	mm	81.4	93.4	105.4	116.1	4.5	48	56	47	36
40	in	3.73	4.28	4.28	5.08	0.18	1.89	2.2	1.65	1.42
	mm	94.7	107.7	120.7	129	4.5	48	56	47	36
63 … 100	in	5.10	5.97	6.83	7.54	-	2.99	2.99	2.68	2.68
	mm	129.5	151.5	173.5	191.5	-	76	76	68	68

Mounting on backplate / DIN rail - Rear fixing of external handle

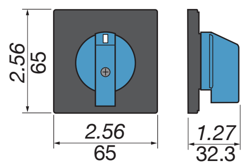
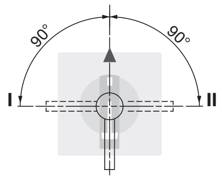
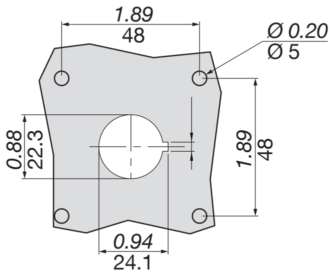
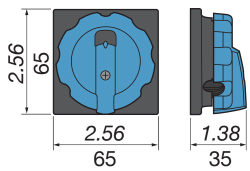
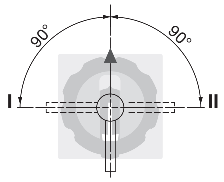
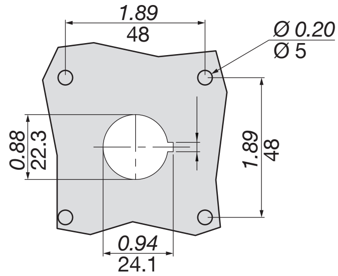
		X-L [3]				C	D
		I-II /I-0-II		Bypass I-0-II			
Rating (A)	**Unit**	**3 P**	**4 P**	**3 P**	**4 P**		
25	in	3.19	3.66	4.13	4.61	1.54	1.57
	mm	81	93	105	117	39	40
40	in	3.31	4.82	4.33	4.84	2.11	2.2
	mm	84	97	110	123	53.6	56
63…100	in	4.45	5.28	6.1	6.93	2.91	2.8
	mm	113	134	155	176	74	71

(1) X is the distance between the inside of the door and the fixing plate
(2) L is the total length of the shaft (max 200 mm)
(3) Minimum distance between the inside of the door and the fixing plate



Dimensions for handles

25 to 100 A

Handle type	Front operation Direction of operation	Door drilling
K1 type non padlockable 	0 or I 	 poign_075_a_1_gb_cat.ai
K1 type padlockable 	0 or I 	 poign_076_a_1_gb_cat.ai

SIRCOVER UL 98/1008

Manually operated transfer switching equipment
from 100 to 1200 A

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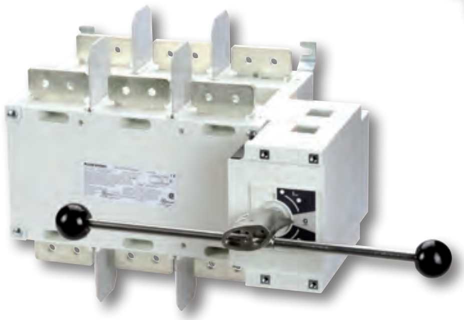

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The solution for

- Standby power builders
- OEM/Machine Builders
- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- Distributors

Strong points

- Stable positions
- Compact design
- On-load switching
- Reliability

Function

SIRCOVER UL 98/1008 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 safe disconnection.
These switches are extremely durable and are tested and approved for use in the most demanding applications, such as resitive load or total system applications.

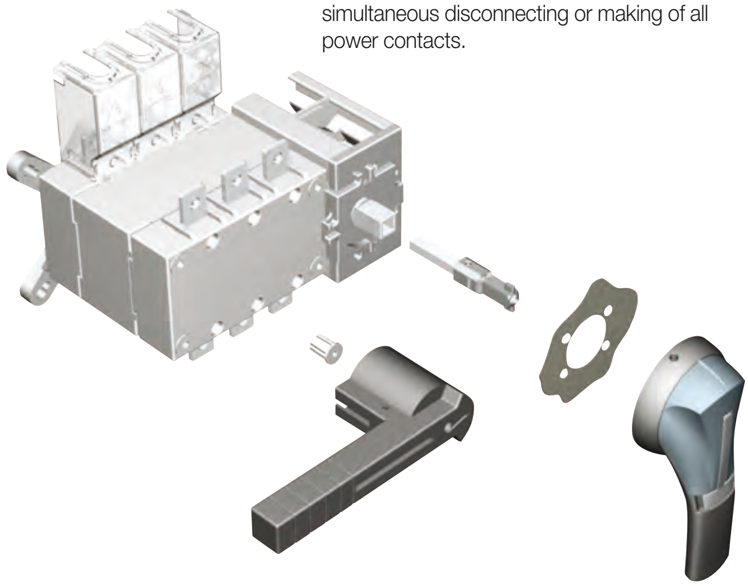
Advantages

Stable positions
SIRCOVER UL has three stable positions which are not affected by voltage drops or vibrations, thus protecting your load against network interference.

Compact design
The SIRCOVER UL is based on a back-to-back switching technology, providing a compact solution.

On-load switching
The SIRCOVER UL enables secure and reliable switching, without the need for pre-breaking upstream.

Reliability
The SIRCOVER UL has double breaking per pole achieved through its sliding bar contacts system.
The quick opening and rapid closure provides simultaneous disconnecting or making of all power contacts.



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Conformity to standards

- UL 1008
  Guide WPYV
  File E317092
- UL 98
  Guide WHTY
  File E201138
- CSA-C22.2 No. 4
  Class 4651-02
  File 112964

UL 98 and CSA from 600-1200 A. Specific reference from 100 to 400 A on request.

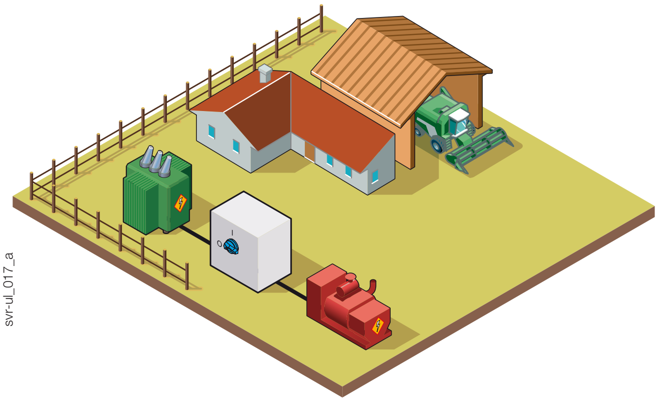
Enclosed solutions

The SIRCOVER UL is also offered enclosed, please consult us for more information.

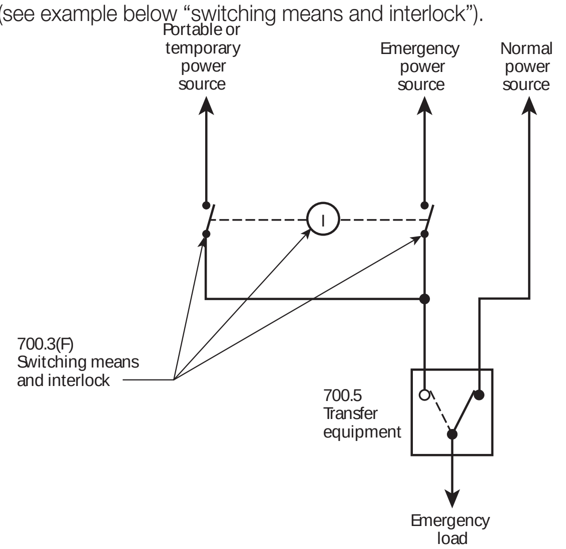
Enclosed **SIRCOVER**

Typical application

The SIRCOVER UL 98/1008 range provides safe transfer and disconnection within your LV installation for optional standby systems (as described in NEC Article 702).
Standard applications also include:
- Transfer from Normal power supply to the backup genset source (emergency supply).
- Safe on load transfer.
- Changing motor phase rotation and equipment grounding connection.



The SIRCOVER UL 98/1008 can also be used as switching means to a temporary power supply in emergency systems (systems needed for human safety) as described in article 700.3(F) of the NEC
(see example below "switching means and interlock").

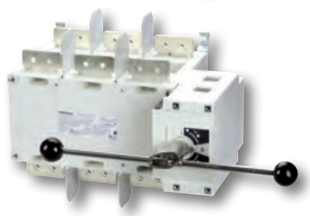


Example of connection for temporary or portable power [1].

(1) National Fire Protection Agency, NFPA 70: National Electrical Code®. 2017 Edition. Quincy, MA: National Fire Protection Agency, 2016, p. 70–581.

SOCOMEC solution up to 1200 A

UL 1008 Manual Transfer Switch
From **100 to 400 A** for resistive and total systems applications.
UL 98 / CSA 22.2 No. 4 versions on request.

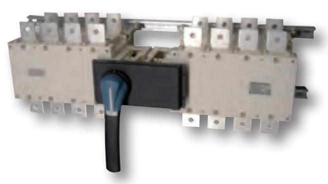


UL 1008 and UL 98 Manual Transfer Switch
From **600 to 1200 A** for resistive and total systems applications.
Has UL 98/CSA 22.2 No. 4 certification.

IEC solution up to 3200 A

The SIRCOVER UL 1008 is part of a large range that includes an IEC products of standalone or enclosed manual transfer switches and manual bypass switches with overlapping options.
Contact us for further information on our complete range.





SIRCOVER UL 98/1008

Manually operated transfer switching equipment
from 100 to 1200 A

References

SIRCOVER UL 98/1008

Rating (A)	Frame size	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contacts	Terminal screens
100 A*	B4	2 P	4150 **2012**	Black 4199 **4012**	S2 type Black I - 0 - II 4, 4X 142D **2113**	S2 type 200 mm 7.9 inches 1400 **1020** 320 mm 12.6 inches 1400 **1032** 400 mm 15.7 inches 1400 **1040**	2 P 4159 **2021** 3 P 4159 **3021** 4 P 4159 **4021**	Contact NO/NC 4159 **0021** Low level 4159 **0022**	2 / 3 P 4158 **3021** 4 P 4158 **4021**
		3 P	4150 **3012**						
		4 P	4150 **4012**						
200 A*		2 P	4150 **2022**						
		3 P	4150 **3022**						
		4 P	4150 **4022**						
260 A*	B5	2 P	4150 **2026**		S2 type Black I - 0 - II 4, 4X 142D **2113** S3 type Black I - 0 - II 4, 4X 143D **3113**	S2 type 200 mm 7.9 inches 1400 **1020** 320 mm 12.6 inches 1400 **1032** 400 mm 15.7 inches 1400 **1040**	2 P 4159 **2041** 3 P 4159 **3041** 4 P 4159 **4041**		2 / 3 P 4158 **3041** 4 P 4158 **4041**
		3 P	4150 **3026**						
		4 P	4150 **4026**						
400 A*		2 P	4150 **2042**						
		3 P	4150 **3042**						
		4 P	4150 **4042**						
600 A	B6	3 P	4150 **3060**	Black 4199 **7012**	S3 type Black I - 0 - II 4, 4X 143D **3113**	S3, S4 type 200 mm 7.9 inches 1401 **1520** 320 mm 12.6 inches 1401 **1532** 400 mm 15.7 inches 1401 **1540**	3 P 4159 **3063** 4 P 4159 **4063**	Contact NO/NC as standard	3 P 1609 **3063** 4 P 1609 **4063**
		4 P	4150 **4060**						
800 A	B7	3 P	4150 **3080**	Black 4199 **7062**	S4 type Black I - 0 - II 4, 4X 144D **3813**(1)		3 P 4159 **3080** 4 P 4159 **4080**		3 P 1609 **3080** 4 P 1609 **4080**
		4 P	4150 **4080**						
1200 A		3 P	4150 **3120**						
		4 P	4150 **4120**						

Common accessories - more available on next pages.
** From 100 to 400 A, UL 98/CSA-C22.2 No. 4 Specific reference upon request.*

Direct handle

Rating (A)	Type	Color	Handle type	Reference
100 … 400	B3	Black	1 lever	4199 **4012**
600	J4	Black	2 levers	4199 **7012**
800 … 1200	V1	Metal	2 levers	4199 **7062**

Type B3

Type C2

Type V1

External handle

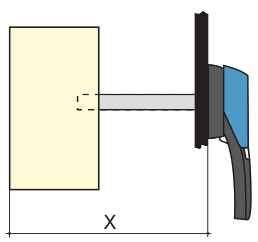
Rating (A)	Handle type	Color	Nema type	Lockable in 3 positions	Reference
100 … 400	S2	Black	4, 4X	no	142D **2113**
100 … 400	S2	Red/Yellow	4, 4X	no	142E **2113**
100 … 400	S2	Black	1, 3R, 12	no	142F **2113**
100 … 400	S2	Red/Yellow	1, 3R, 12	no	142G **2113**
100 … 400	S2	Black	4, 4X	yes	142D **2813**
100 … 400	S2	Red/Yellow	4, 4X	yes	142E **2813**
100 … 400	S2	Black	1, 3R, 12	yes	142F **2813**
100 … 400	S2	Red/Yellow	1, 3R, 12	yes	142G **2813**
260 … 600	S3	Black	4, 4X	no	143D **3113**
260 … 600	S3	Red/Yellow	4, 4X	no	143E **3113**
260 … 600	S3	Black	1, 3R, 12	no	143F **3113**
260 … 600	S3	Red/Yellow	1, 3R, 12	no	143G **3113**
260 … 600	S3	Black	4, 4X	yes	143D **3813**
260 … 600	S3	Red/Yellow	4, 4X	yes	143E **3813**
260 … 600	S3	Black	1, 3R, 12	yes	143F **3813**
260 … 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**

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.

Shaft for external handle

Rating (A)	Handle type	Length (in)	Length (mm)	Dimension X (in)	Dimension X (mm)	Reference
100 … 400	S2	7.9	200	10 … 14.3	254 … 362	1400 **1020**
100 … 400	S2	12.6	320	10 … 19	254 … 482	1400 **1032**
100 … 400	S2	15.7	400	10 … 22.1	254 … 562	1400 **1040**
260 … 400	S3	7.9	200	12 … 18.4	305 … 467	1401 **1520**
260 … 400	S3	12.6	320	12 … 23.1	305 … 587	1401 **1532**
260 … 400	S3	15.7	400	12 … 26.3	305 … 667	1401 **1540**
260 … 600	S3	7.9	200	20 … 23.4	508 … 594	1401 **1520**
260 … 600	S3	12.6	320	20 … 28.1	508 … 714	1401 **1532**
260 … 600	S3	15.7	400	20 … 31.3	508 … 794	1401 **1540**
800 … 1200	S4	7.9	200	20 … 23.4	508 … 594	1401 **1520**
800 … 1200	S4	12.6	320	20 … 28.1	508 … 714	1401 **1532**
800 … 1200	S4	15.7	400	20 … 31.3	508 … 794	1401 **1540**



Accessories (continued)

Bridging bars

Use

Creation of a common point, above or below the switch, between positions I and II.
Please check the numbers of poles needed.

Rating (A)	No. of poles	Reference
100 … 200	2 P	4159 **2021**
100 … 200	3 P	4159 **3021**
100 … 200	4 P	4159 **4021**
260 … 400	2 P	4159 **2041**
260 … 400	3 P	4159 **3041**
260 … 400	4 P	4159 **4041**
600	3 P	4159 **3063**
600	4 P	4159 **4063**
800 … 1200	3 P	4159 **3080**
800 … 1200	4 P	4159 **4080**


acces_205_a_1_cat

Terminal protection screen

Use

Each part number includes top and bottom protection against direct contact with terminals or connecting parts.

Rating (A)	No. of poles	Reference
100 … 200	2/3 P	4158 **3021**
100 … 200	4 P	4158 **4021**
260 … 400	2/3 P	4158 **3041**
260 … 400	4 P	4158 **4041**
600	3 P	1609 **3063**
600	4 P	1609 **4063**
800 … 1200	3 P	1609 **3080**
800 … 1200	4 P	1609 **4080**


acces_207_a_1_cat

Auxiliary contacts

Use

Pre-break and signalization of positions for general applications of 125-250VAC, 60Hz, general use 10A, 1A 1/2 HP.

For low level the application is 125VAC, 60Hz, general use 1A.

Electrical characteristics

A300.

NO/NC auxiliary contact

Rating (A)	Contact (s)	Reference
100 … 400	NO/NC on position 1 and 2	4159 **0021**
100 … 400	Low level NO/NC on position 1 and 2	4159 **0022**
600 … 1200	NO/NC on position 1 and 2	as standard


acces_065_a_1_cat


acces_065_a_1_cat

Terminal lugs

Use

Connection of bar 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**
260 … 400	4 - 600MCM	1	2	Cu / Al	3954 **2040**
260 … 400	4 - 600MCM	1	3	Cu / Al	3954 **3040**
260 … 400	4 - 600MCM	1	4	Cu / Al	3954 **4040**
600	2x (#2 - 600MCM)	2	3	Cu / Al	3954 **3060**
600	2x (#2 - 600MCM)	2	4	Cu / Al	3954 **4060**
800 … 1200(1)	2x 2x(#2 - 600MCM)	2	6	Cu / Al	3954 **3120**
800 … 1200(1)	2x 2x(#2 - 600MCM)	2	8	Cu / Al	3954 **4120**

(1) To be used to connect 4 wires on one terminal. In such a case, 2 lugs are placed side-by-side on one terminal. Please refer to dimensions diagram


ul_032_a

Characteristics

Characteristics according to UL 1008

General use rating (A)	**100 A**	**200 A**	**260 A**	**400 A**	**600 A**	**800 A**	**1200 A**
Frame size	**B4**		**B5**		**B6**	**B7**	
Operation voltage 2 P - 3/4 P	240/600	240/600	240/600	240/600	-/600	-/600	-/600
Short circuit rating at 600 VAC with fuses (kA)							
Short circuit rating at 600 VAC (kA)	100	100	65	65	100	100	100
Type of fuse	J	J	J	J	L	L	L
Max fuse rating (A)	200	400	600	600	800	1000	1600
Short circuit rating at 600 VAC with "Specific Circuit Breaker" (kA)							
Square D JJ breaker 250 A - 2 P 240 VAC - 3/4 P 480 VAC	65	65	-	-	-	-	-
Schneider Electric NSX-F 160 A - 3/4 P 480 VAC	35	-	-	-	-	-	-
Short circuit rating at 600 VAC with "Any Breaker" (kA)							
Short circuit rating (kA)	10	10	14	14	35	35	35
Short circuit capacity (ms)	25	25	50	50	50	50	50
Rated operational current							
240 VAC "Total System" (A)	100	200	260	400	400	700	700
240 VAC resistive load (A)	100	200	260	400	600	800	1200
480 VAC "Total System" (A)	100	100	260	400	350	600	600
480 VAC resistive load (A)	100	200	260	400	600	800	1200
600 VAC "Total System" (A)	100	100	200	200	-	-	-
600 VAC resistive load (A)	100	200	260	400	600	800	1200
Mechanical endurance							
Endurance (number of operating cycles)	6050	6050	6050	4050	3050	3050	3050
Connection terminals							
Min. connection section / AWG	#6	#6	#4 / 2 X 1 /0	#4 / 2 X 1 /0	2 x #2	2 x #2	4 x #2
Max. connection section / AWG	300MCM	300MCM	600MCM / 2 X 250MCM	600MCM / 2 X 250MCM	2x 600MCM	2x 600MCM	4 x 600MCM

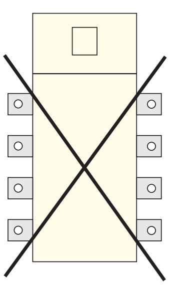
Characteristics according to UL 98 and CSA-C22.2 No. 4

General use rating at 600 VAC and 250 VDC (A)	**Specific reference upon request**				**600 A**	**800 A**	**1200 A**
Frame size					**B6**	**B7**	
Short-circuit rating at 600 VAC (kA)	-	-	-	-	200	100	100
Type of fuse	-	-	-	-	J	L	L
Max. fuse rating (A)	-	-	-	-	600	800	1200
Max. motor, hp / FLA 3 ph motor max.							
220-240 VAC	-	-	-	-	200 / 480	-	-
440-480 VAC	-	-	-	-	400 / 477	-	-
600 VAC	-	-	-	-	500 / 472	-	-
Mechanical characteristics							
Endurance (number of operating cycles)	-	-	-	-	5000	3500	2500
Operating torque (lbs.in/Nm)	-	-	-	-	327.5/37	442.5/50	442.5/50
Auxiliary contacts							
Electrical characteristics	A300	A300	A300	A300	A300	A300	A300

Mounting orientation

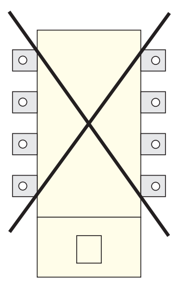
100 to 400 A / B4 - B5

sirco-ul_029_a_1_x_cat



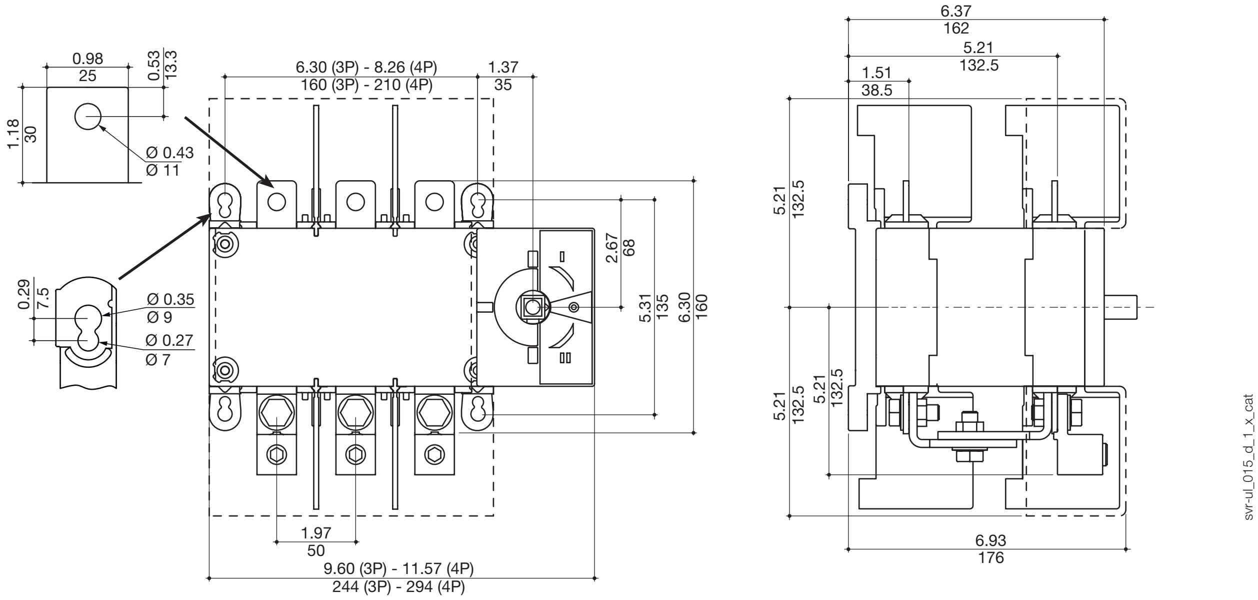
600 to 1200 A / B6 - B7

sirco-ul_030_a_1_x_cat

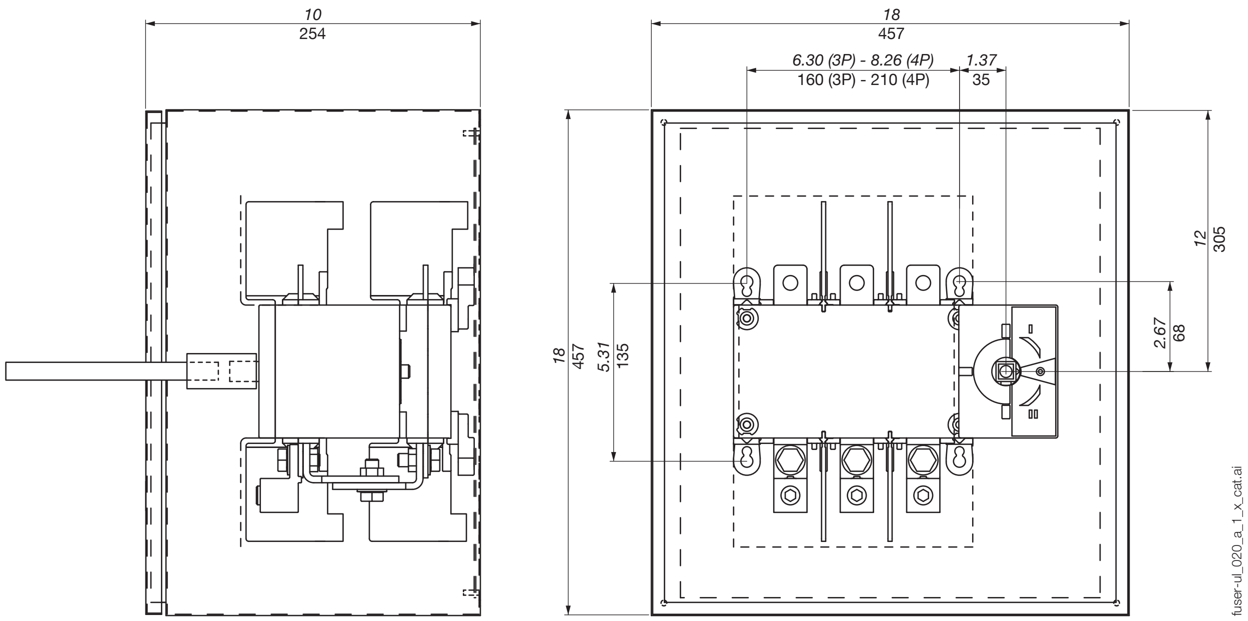


Dimensions (in/mm)

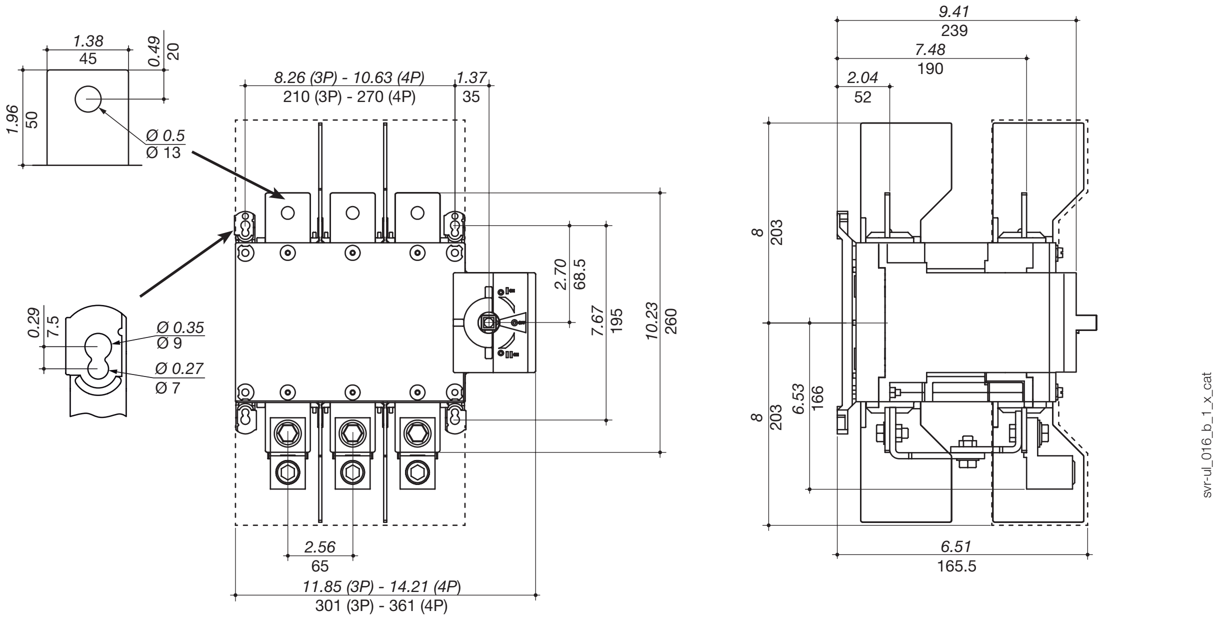
100 to 200 A / B4



Minimum enclosure dimensions



260 to 400 A / B5



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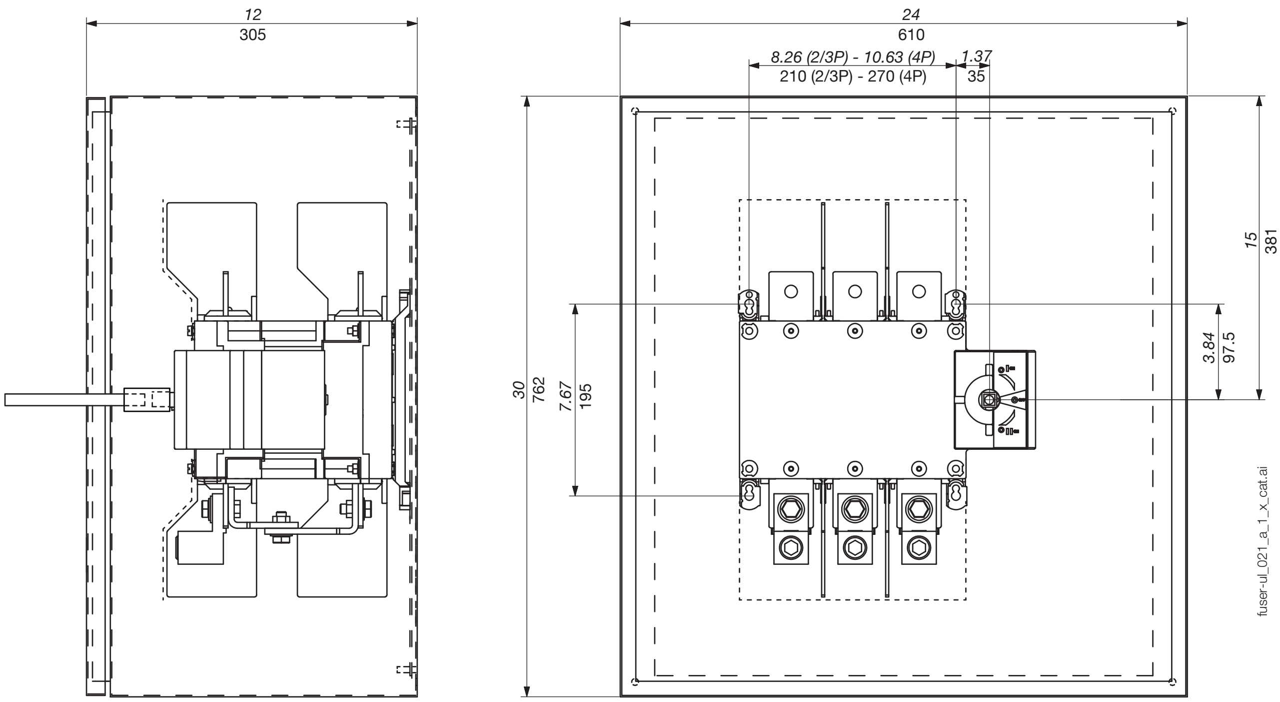
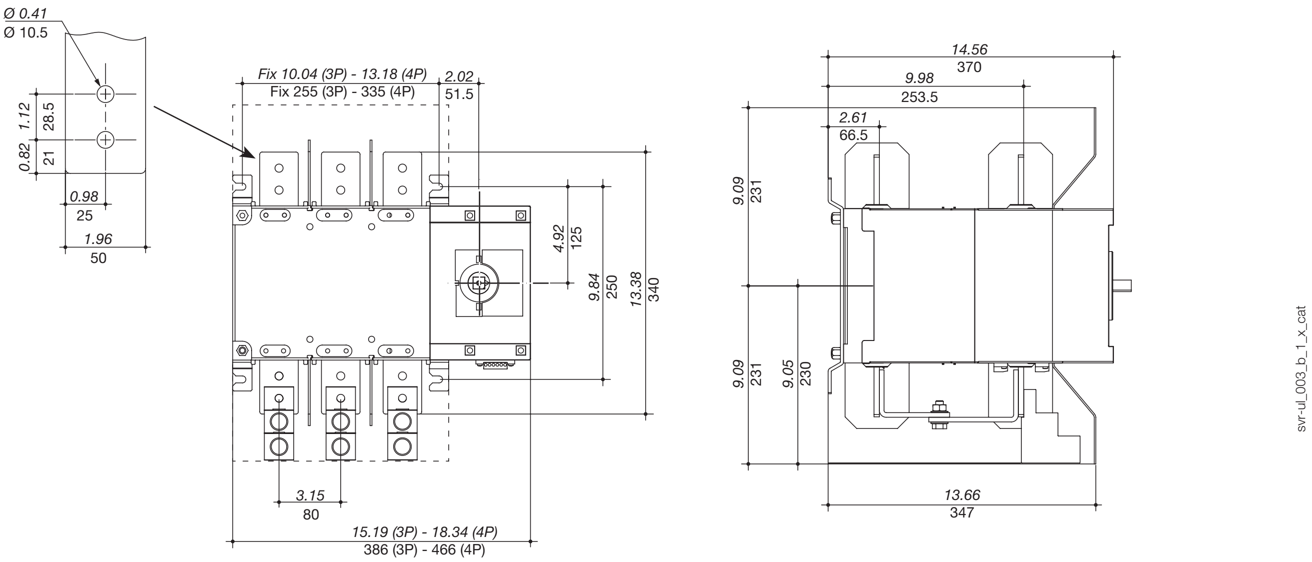


Dimensions (in/mm) (continued)

600 A / B6



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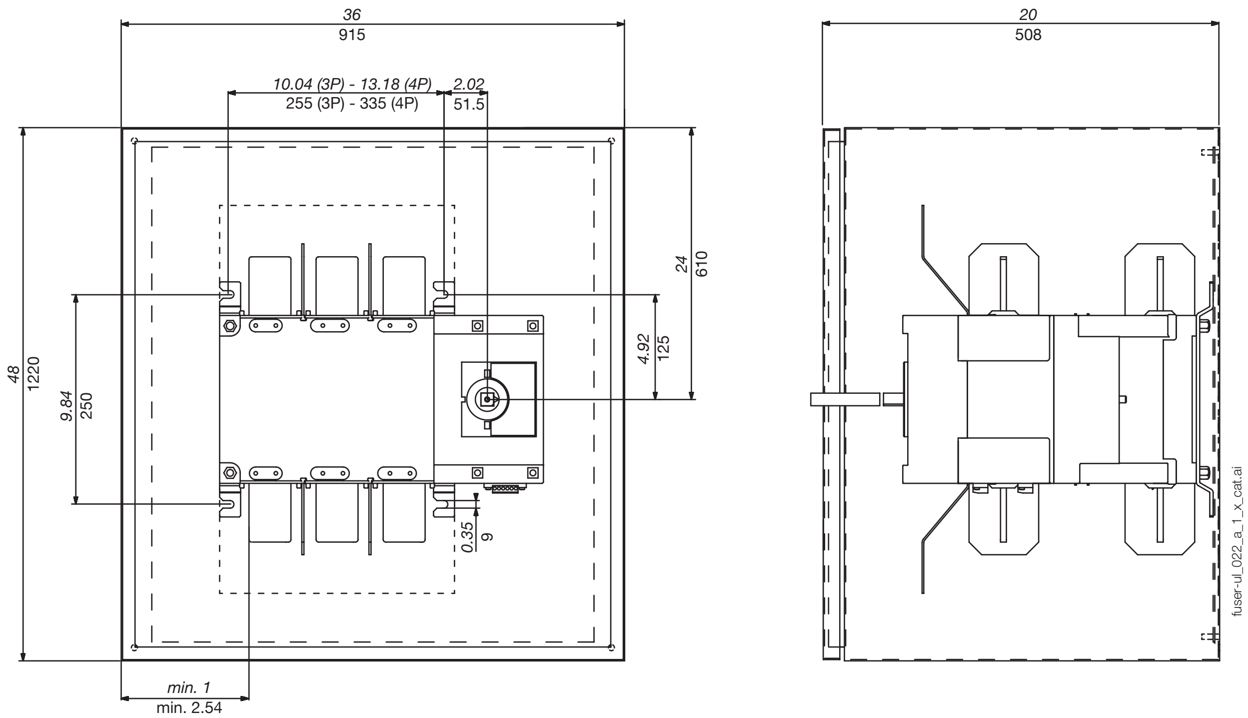
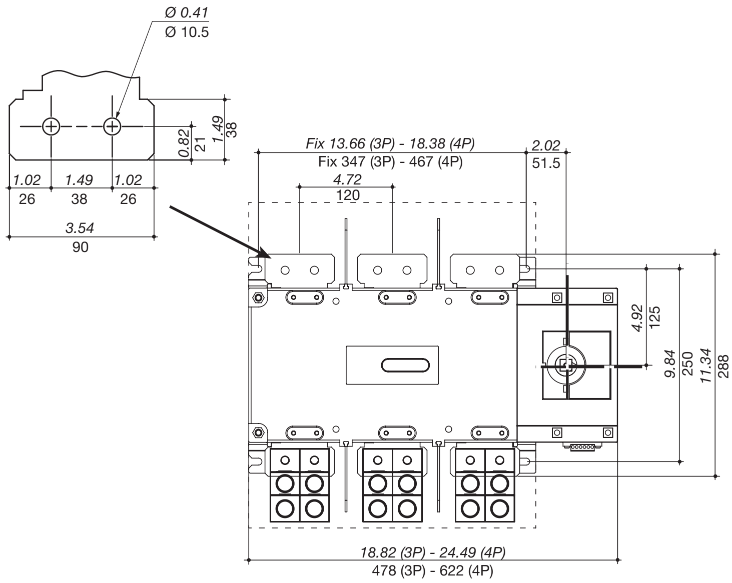
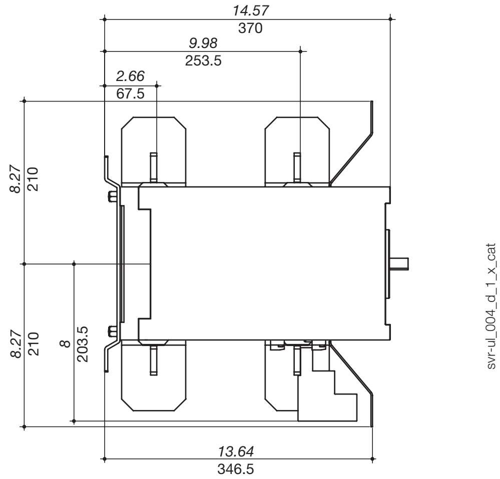
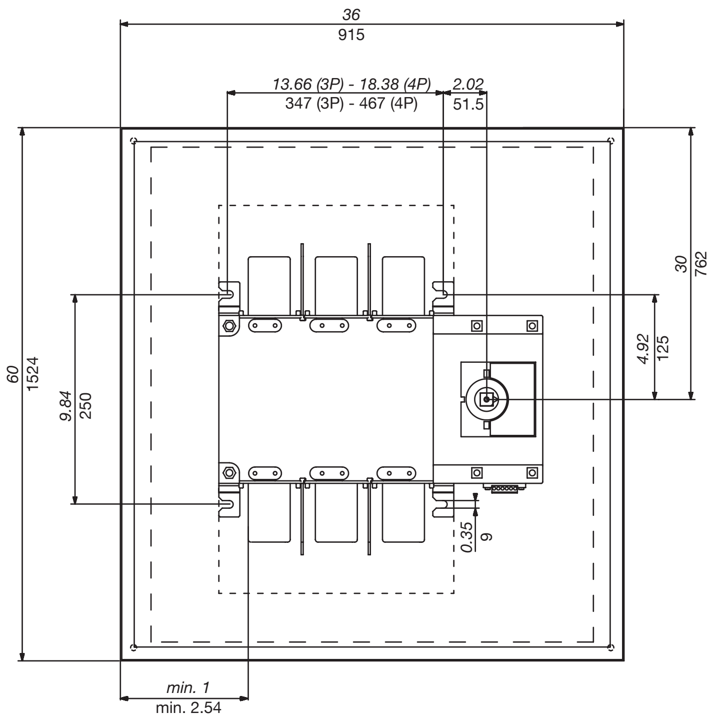


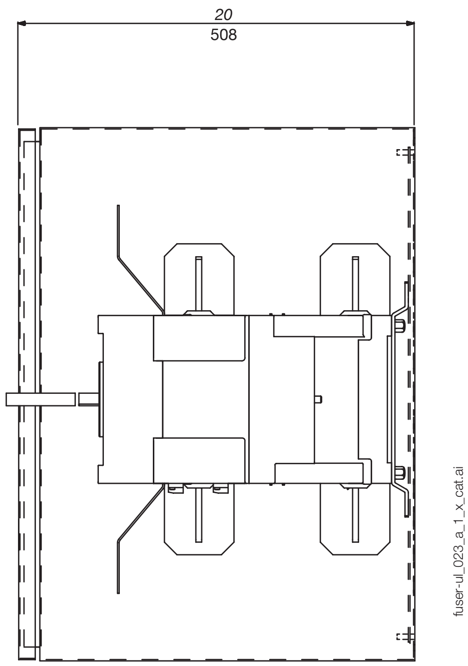
800 to 1200 A / B7





Minimum enclosure dimensions





SIRCOVER UL 98/1008

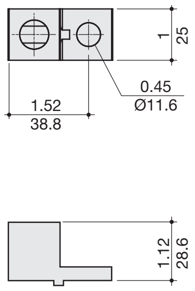
Manually operated transfer switching equipment

from 100 to 1200 A

Terminal lugs (in/mm)

100 to 200 A / B4

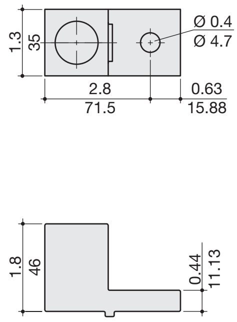
sirco_115_b_1_us_cat



300 kcmil

260 to 400 A / B5

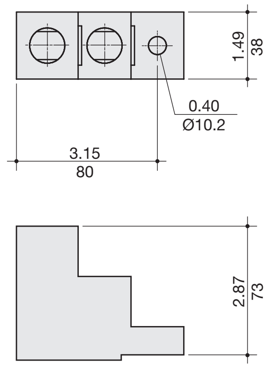
sirco-ul_010_a_1_us_cat



600 kcmil

600 to 1200 A / B6 - B7

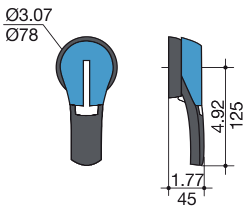
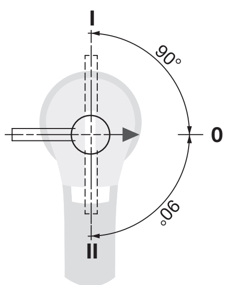
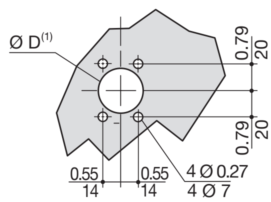
sirco_116_b_1_us_cat



2 x 600 kcmil

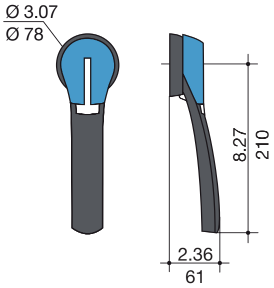
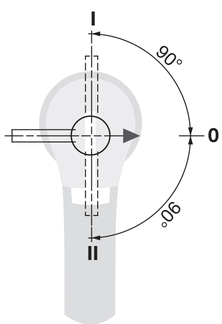
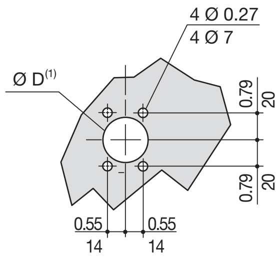
External handles dimensions (in/mm)

100 to 400 A / B4 - B5

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

poign_067_a_1_us_cat

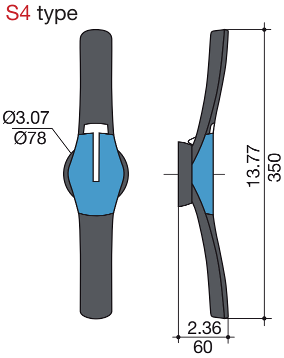
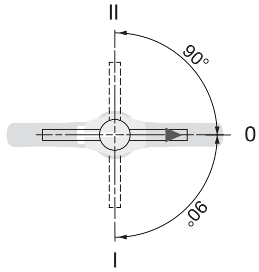
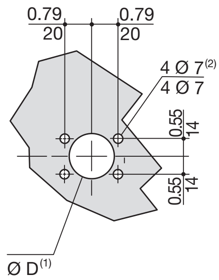
260 and 600 A / B5 - B6

Handle type	Front operation Direction of operation	Door drilling
S3 type 		

poign_064_a_1_fr_cat

External handles dimensions (in/mm) (continued)

800 to 1200 A / B7

<table>
<tr><th>Handle type</th><th>Front operation
Direction of operation</th><th>Door drilling</th></tr>
<tr><td>S4 type

</td><td>
</td><td>
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poign_065_a_1_gb_cat

(1) Ø31 to Ø37: rear screw mounting
Ø37: front clip mounting

ATyS UL 1008

Non-automatic Transfer Switching Equipment

from 100 to 1200 A

The solution for

- Standby power builders
- OEM/Machine Builders
- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- Distributors

Strong points

- Robust and reliable design
- Compatible with virtually any ATS controller
- On-load manual operation
- Maintenance free

Conformity to standards

- UL 1008 guide WPYV File 317092
- IEC 60947-6-1

Your choice of ATS controls

- The Socomec's ATyS C66 or your preferred brand of ATS controller, genset/AMF controller or power/building management system, may easily be paired with the ATyS to provide a complete automatic transfer switch that perfectly suits your needs.

Function

ATyS non-automatic transfer switches are designed for use in total system optional standby applications for the safe transfer between a normal and an alternate power source.

The changeover is done in open transition and with minimum supply interruption during transfer ensuring full compliance with UL 1008. The ATyS is a full on-load disconnector where the main components are based on proven technology also meeting requirements in UL 98 and IEC 60947-3 standards.

Advantages

Robust and Reliable design

ATyS is a remotely operated transfer switch tested in full compliance with UL 1008. The design integrates a failsafe mechanical interlock to ensure that the main source is never inadvertently connected to the alternate. The stable position design ensures that the switch is unaffected by vibration or network voltage perturbation. The ATyS also includes a removable handle for on load manual operation. This is extremely safe and easy to use. The ATyS also includes a fully rated switched neutral pole.

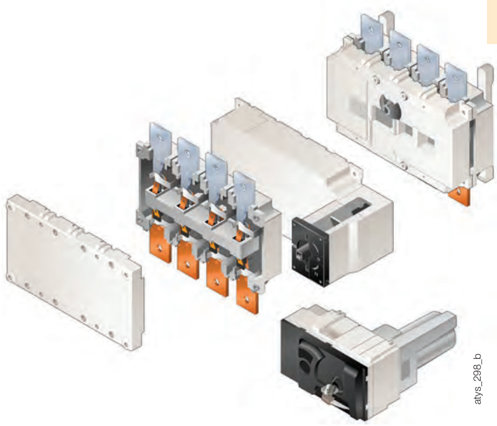
Maintenance free

The self-cleaning contacts of the ATyS allow the power section to be maintenance free. For safe downstream maintenance the ATyS includes a facility for isolation and padlocking in the zero position.

In the unlikely event of a motorization failure, the ATyS is designed in a way that the motorization can be replaced easily and very quickly. Furthermore, the ATyS remains manually operational with or without the motorization in place.

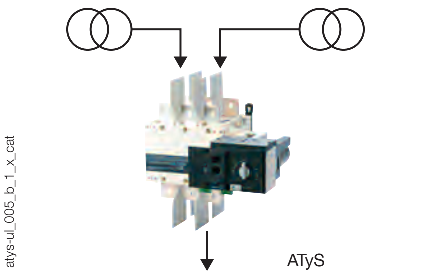
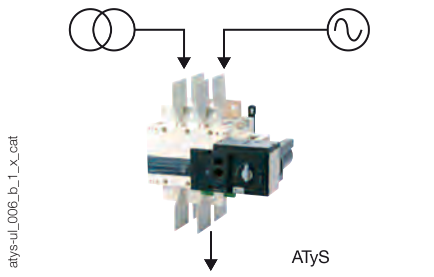
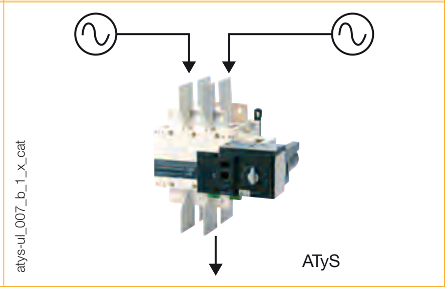
Compatible with virtually any ATS controls

The ATyS is directly compatible with virtually any transfer switching control solution that provides volt free contacts. This allows the ATyS to be combined with most ATS controls available on the market and then used in automatic transfer switch applications.



Typical applications

The ATyS UL 1008 range provides safe transfer for mains/mains, mains/genset and genset/genset applications.

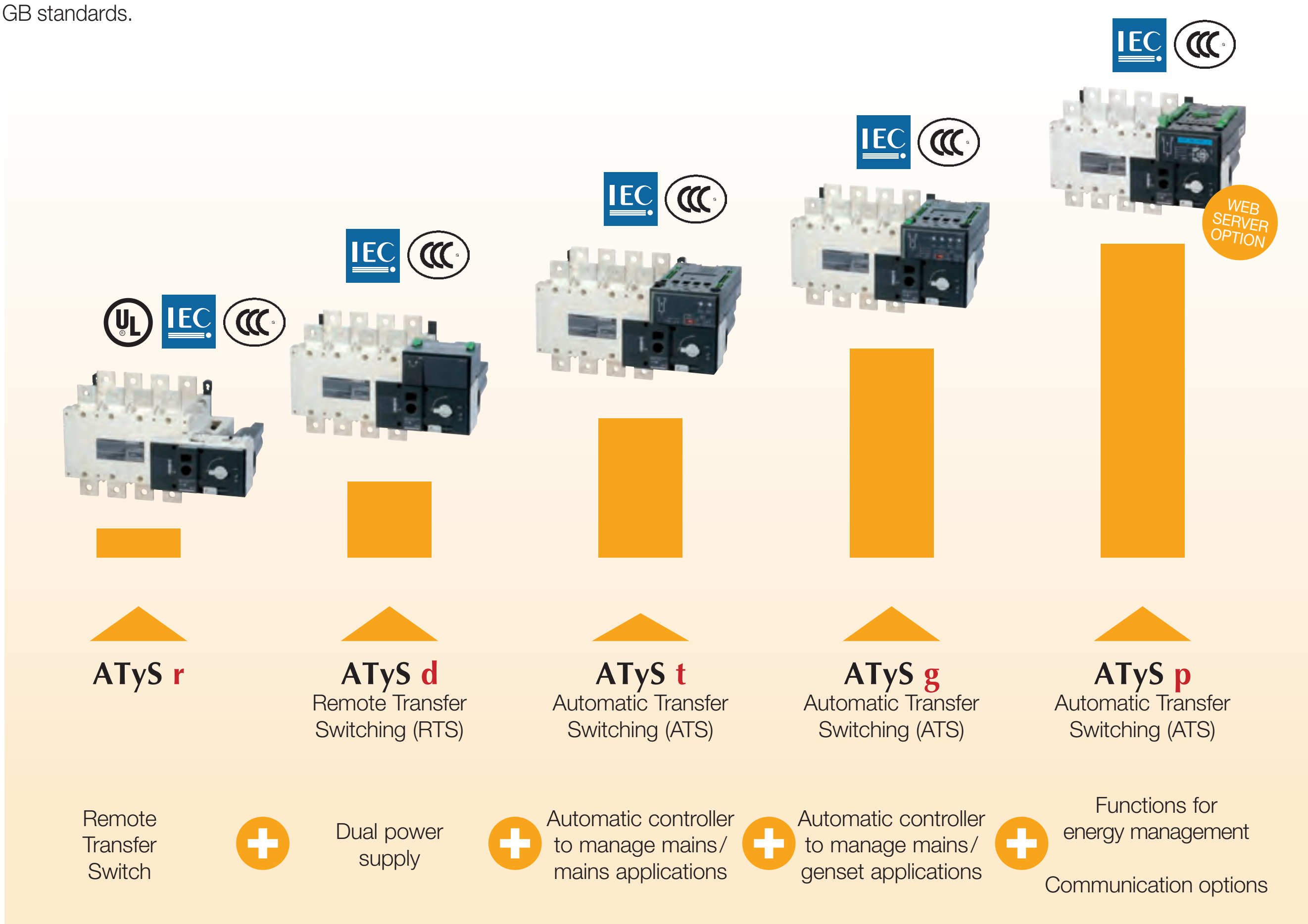
Mains / Mains	Mains / Genset	Genset / Genset
		

Part of a globally recognized range

The ATyS UL 1008 is part of a large family of products including a complete range of remotely operated and fully automatic transfer switches that comply to IEC and GB standards.

The ATyS range is a world renowned product family trusted by some of the largest manufacturers in the genset industry.

The key to success has been through reliable power availability provided by products that are safe and easy to use.



Please don't hesitate to contact SOCOMEC with any questions regarding the IEC ATyS range of products above rated from 125 to 3200 A.

ATyS UL 1008

Non-automatic Transfer Switching Equipment

from 100 to 1200 A

References

ATYS UL 1008

Rating (A)	Frame size	No. of poles	ATyS	Bridging bars	Terminal screens	Auxiliary contact	Lug kits
100 A	B4	2 P	9723 **2010**	2 P 4159 **2021** 3 P 4159**3021** 4 P 4159 **4021**	2/3 P 4158 **3021** 4 P 4158 **4021**	NO/NC 4159 **0021** Low level 4159 **0022**	2 P 3954 **2020** 3 P 3954 **3020** 4 P 3954 **4020**
		3 P	9723 **3010**				
		4 P	9723 **4010**				
200 A		2 P	9723 **2020**				
		3 P	9723 **3020**				
		4 P	9723 **4020**				
260 A	B5	2 P	9723 **2026**	2 P 4159 **2041** 3 P 4159**3041** 4 P 4159 **4041**	2 / 3 P 4158 **3041** 4 P 4158 **4041**		2 P 3954 **2040** 3 P 3954 **3040** 4 P 3954 **4040**
		3 P	9723 **3026**				
		4 P	9723 **4026**				
400 A		2 P	9723 **2040**				
		3 P	9723 **3040**				
		4 P	9723 **4040**				
600 A	B6	3 P	9723 **3060**	4159 **3063**	1609 **3063**	Contact NO/NC as standard	3954 **3060**
		4 P	9723 **4060**	4159 **4063**	1609 **4063**		3954 **4060**
800 A	B7	3 P	9723 **3080**	3 P 4159 **3080** 4 P 4159 **4080**	3 P 1609 **3080** 4 P 1609 **4080**		3 P 3954 **3120** 4 P 3954 **4120**
		4 P	9723 **4080**				
1200 A		3 P	9723 **3120**				
		4 P	9723 **4120**				

Common accessories - more available on next pages.

Accessories

Terminal screens

Rating (A)	No. of poles	Reference
100 … 200	2/3 P	4158 **3021**
100 … 200	4 P	4158 **4021**
260 … 400	2/3 P	4158 **3041**
260 … 400	4 P	4158 **4041**
600	3 P	1609 **3063**
600	4 P	1609 **4063**
800 … 1200	3 P	1609 **3080**
800 … 1200	4 P	1609 **4080**

Use

Each part number includes top and bottom protection against direct contact with terminals or connecting parts.

acces_207_a_2_cat

Bridging bars

Rating (A)	No. of poles	Reference
100 … 200	2 P	4159 **2021**
100 … 200	3 P	4159 **3021**
100 … 200	4 P	4159 **4021**
260 … 400	2 P	4159 **2041**
260 … 400	3 P	4159 **3041**
260 … 400	4 P	4159 **4041**
600	3 P	4159 **3063**
600	4 P	4159 **4063**
800 … 1200	3 P	4159 **3080**
800 … 1200	4 P	4159 **4080**

Use

For bridging power terminals on the top or bottom side of the switch. When ordering one reference is required per switch. Please check numbers of poles needed.

acces_205_a_2_cat

Auxiliary contacts

Use

Pre-break and signalling of positions I and II: each reference provides 1 NO/NC auxiliary contact for positions I and II.
ATyS are supplied with 1 NO auxiliary contact for all three positions as standard.

Rating (A)	Contact (s)	Reference
100 ... 400	NO/NC on position 1 and 2	4159 **0021**
100 ... 400	Low level NO/NC on position 1 and 2	4159 **0022**
600 ... 1200	NO/NC on position 1 and 2	as standard

A maximum of 2 Aux contacts per position may be added.

acces_065_a_1_cat

acces_065_a_1_cat

Terminal lugs

Use

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

Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
100 ... 200	6 - 300MCM	1	2	Cu / Al	3954 **2020**
100 ... 200	6 - 300MCM	1	3	Cu / Al	3954 **3020**
100 ... 200	6 - 300MCM	1	4	Cu / Al	3954 **4020**
260 … 400	4 - 600MCM	1	2	Cu / Al	3954 **2040**
260 … 400	4 - 600MCM	1	3	Cu / Al	3954 **3040**
260 … 400	4 - 600MCM	1	4	Cu / Al	3954 **4040**
600	2x (#2 - 600MCM)	2	3	Cu / Al	3954 **3060**
600	2x (#2 - 600MCM)	2	4	Cu / Al	3954 **4060**
800 … 1200(1)	2x 2x(#2 - 600MCM)	2	6	Cu / Al	3954 **3120**
800 … 1200(1)	2x 2x(#2 - 600MCM)	2	8	Cu / Al	3954 **4120**

(1) To be used to connect 4 wires on one terminal. In such a case, 2 lugs are placed side-by-side on one terminal. Please refer to dimensions diagram

ul_032_a

ATyS UL 1008
Non-automatic Transfer Switching Equipment
from 100 to 1200 A

Spares

Motorization module

Rating (A)	No. of poles	Frame size	Used for ATyS reference	Motorization module References
100	2 / 3 / 4 P	B4	9723 **2010** - 9723 **3010** - 9723 **4010**	9709 **5010**
200	2 / 3 / 4 P		9723 **2020** - 9723 **3020** - 9723 **4020**	9709 **5020**
260	2 / 3 / 4 P	B5	9723 **2026** - 9723 **3026** - 9723 **4026**	9709 **5026**
400	2 / 3 / 4 P		9723 **2040** - 9723 **3040** - 9723 **4040**	9709 **5040**
600	3 / 4 P	B6	9723 **3060** - 9723 **4060**	9709 **5060**
800	3 / 4 P	B7	9723 **3080** - 9723 **4080**	9709 **5080**
1200	3 / 4 P		9723 **3120** - 9723 **4120**	9709 **5120**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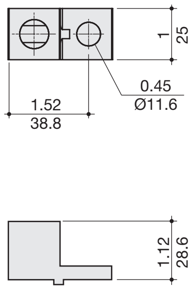
Terminal lugs (in/mm)

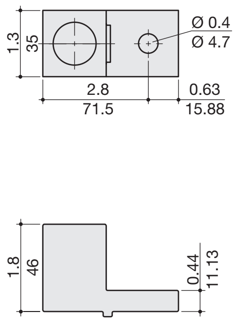
100 and 200 A / B4



300 kcmil

sirco_115_b_1_us_cat

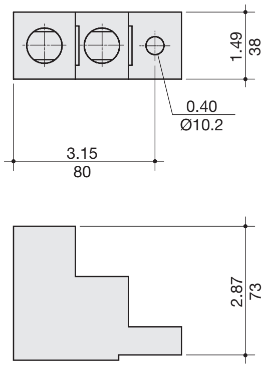
260 and 400 A / B5



600 kcmil

sirco-ul_010_a_1_us_cat

600 to 1200 A / B6 - B7

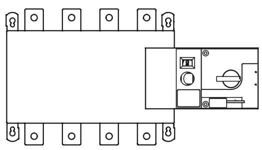
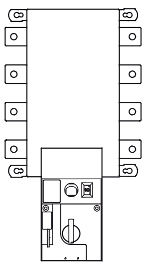
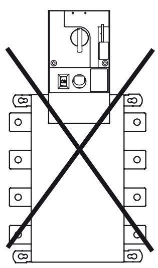
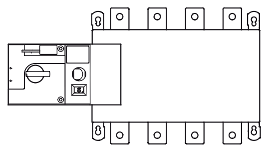


2 x 600 kcmil

sirco_116_b_1_us_cat

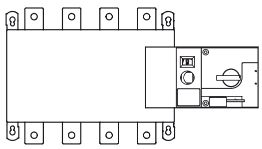
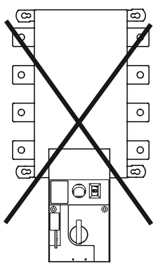
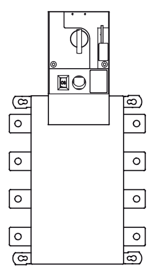
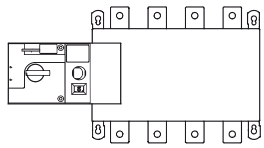
Mounting orientation

100 to 400 A / B4 - B5

			
Recommended	OK	Not Allowed	OK

atys-ul_013 ... 014_a_1_x_cat

600 to 1200 A / B6 - B7

			
Recommended	Not Allowed	OK	OK

atys-ul_013 ... 014_a_1_x_cat

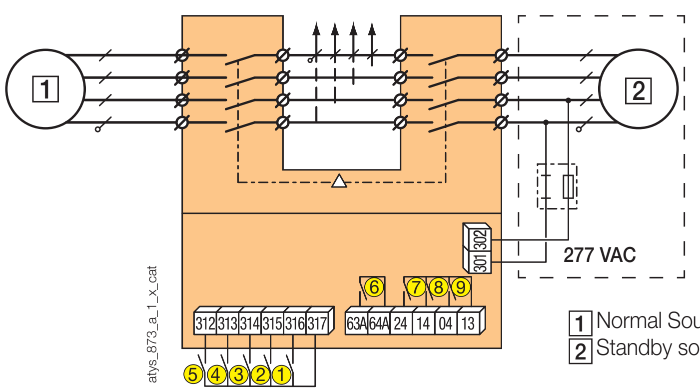
Characteristics

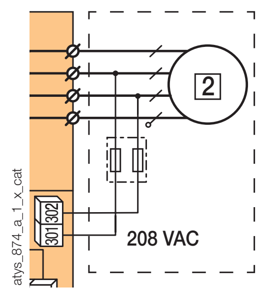
Characteristics according to UL 1008 (Optional standby)

General use rating (A)	100 A	200 A	260 A	400 A	600 A	800 A	1200 A
Frame size	B4		B5		B6	B7	
Operation voltage 2 P - 3/4 P	240/600	240/600	240/600	240/600	-/600	-/600	-/600
Short circuit rating at 600 VAC with fuses (kA)							
Short circuit rating at 600 VAC (kA)	100	100	65	65	100	100	100
Type of fuse	J	J	J	J	L	L	L
Short circuit rating at 600 VAC with "Specific Circuit Breaker" (kA)							
Square D JJ breaker 250 A - 2 P 240 VAC - 3/4 P 480 VAC	65	65	-	-	-	-	-
Schneider Electric NSX-F 160 A - 3/4 P 480 VAC	35	-	-	-	-	-	-
Short circuit rating at 600 VAC with "Any Breaker" (kA)							
Short circuit rating (kA)	10	10	14	14	35	35	35
Short circuit capacity (ms)	25	25	50	50	50	50	50
Rated operational current							
240 VAC “Total System” (A)	100	200	260	400	400	700	700
240 VAC resistive load (A)	100	200	260	400	600	800	1200
480 VAC “Total System” (A)	100	100	260	400	350	600	600
480 VAC resistive load (A)	100	200	260	400	600	800	1200
600 VAC “Total System” (A)	100	100	200	200	-	-	-
600 VAC resistive load (A)	100	200	260	400	600	800	1200
Mechanical endurance							
Endurance (number of operating cycles)	6050	6050	6050	4050	3050	3050	3050
Connection terminals							
Min. connection section / AWG	#6	#6	#4 / 2 X 1 /0	#4 / 2 X 1 /0	2 x #2	2 x #2	4 x #2
Max. connection section / AWG	300MCM	300MCM	600MCM / 2 X 250MCM	600MCM / 2 X 250MCM	2x 600MCM	2x 600MCM	4 x 600MCM
Power supply							
Supply voltage VAC 50/60 Hz	208-277 VAC ± 20%						
Switching time							
I to II or II to I (s)	1.3				3.2		
I to 0 or 0 to II (s)	0.85				1.8		
Duration of electrical blackout (s)	0.6				1.6		

Terminals and connections

Typical wiring for 277/480 VAC and 120/208 VAC networks





1 Normal Source (transformer or generator)
2 Standby source (transformer or generator)

1 : position 0 order input (contactor logic if closed)
2 : position I order input
3 : position II order input
4 : position 0 priority order input
5 : Input to enable or disable inputs 1 to 4

6 : product availability relay, (watchdog)
7 : auxiliary contact, closed when the switch is in position II
8 : auxiliary contact, closed when the switch is in position I
9 : auxiliary contact, closed when the switch is in position 0

ATyS UL 1008

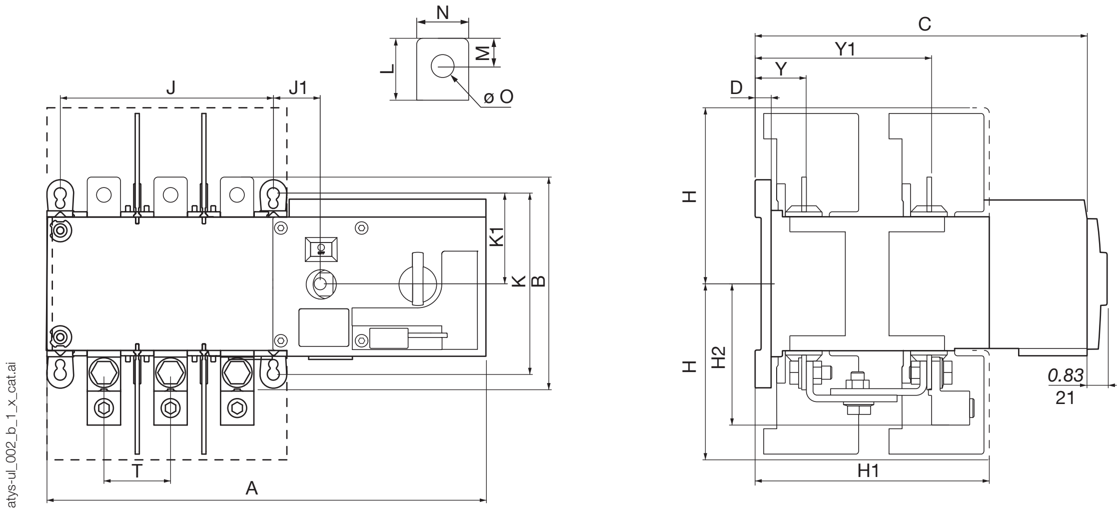
Non-automatic Transfer Switching Equipment

from 100 to 1200 A

Dimensions (in/mm)

100 to 400 A / B4 - B5

Transfer switch dimensions

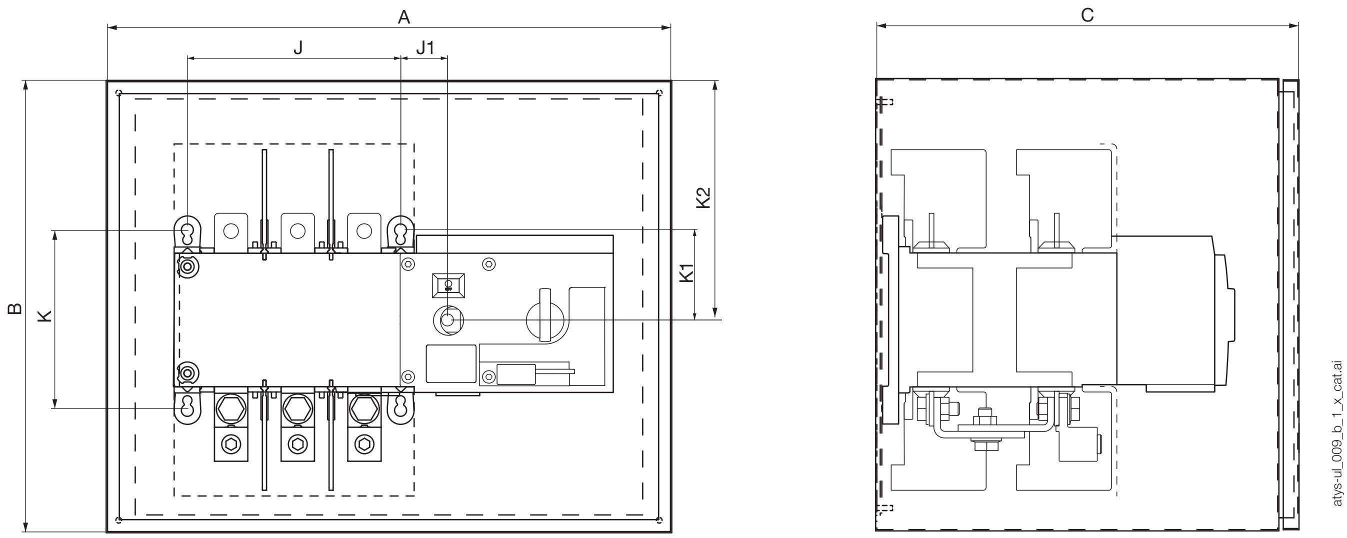


Rating (A)	Frame size	Reference			No. of poles	A in	A mm	B in	B mm	C in	C mm	D in	D mm	H in	H mm	H1 in	H1 mm	H2 in	H2 mm	Y in	Y mm	Y1 in	Y1 mm
100 - 200	B4	9723 **2010**	-	9723 **2020**	2 P	12.91	328	6.30	160	9.60	244	0.41	10.5	5.08	129	6.93	176	4.21	107	1.51	38.5	5.21	132.5
		9723 **3010**	-	9723 **3020**	3 P																		
		9723 **4010**	-	9723 **4020**	4 P	14.88	378																
260 - 400	B5	9723 **2026**	-	9723 **2040**	2 P	14.84	377	10.23	260	12.62	320.5	0.41	10.5	8	203	6.51	165.5	6.53	166	2.04	52	7.48	190
		9723 **3026**	-	9723 **3040**	3 P																		
		9723 **4026**	-	9723 **4040**	4 P	17.20	437																

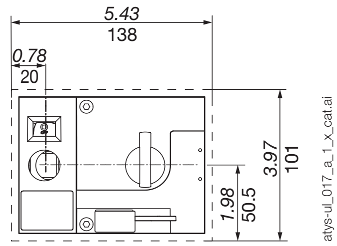
Rating (A)	Frame size	Reference			No. of poles	J in	J mm	J1 in	J1 mm	K in	K mm	K1 in	K1 mm	L in	L mm	M in	M mm	N in	N mm	O in	O mm	T in	T mm
100 - 200	B4	9723 **2010**	-	9723 **2020**	2 P	6.30	160	1.37	35	7.67	195	3.84	97.5	1.18	30	0.53	13.3	0.98	25	0.43	11	2	50
		9723 **3010**	-	9723 **3020**	3 P																		
		9723 **4010**	-	9723 **4020**	4 P	8.26	210																
260 - 400	B5	9723 **2026**	-	9723 **2040**	2 P	8.26	210	1.37	35	7.67	195	3.84	97.5	1.96	50	0.49	20	1.38	45	0.51	13	2.6	65
		9723 **3026**	-	9723 **3040**	3 P																		
		9723 **4026**	-	9723 **4040**	4 P	10.63	270																

100 to 400 A / B4 - B5

Minimum enclosure dimensions



Door cut-out for front panel

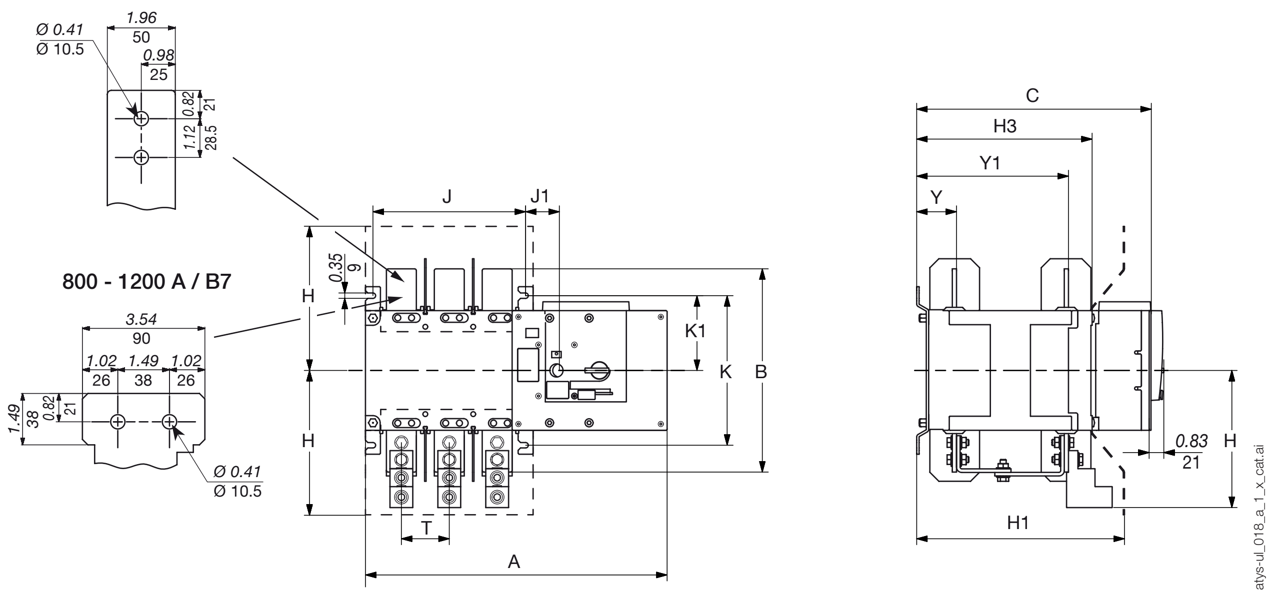


Rating (A)	Frame size	Reference	No. of poles	A		B		C		J		J1		K		K1		K2	
				in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100 - 200	B4	9723 **2010** - 9723 **2020**	2 P	24	610	24	610	12	305	6.30	160	1.37	35	7.67	195	2.67	68	12	305
		9723 **3010** - 9723 **3020**	3 P																
		9723 **4010** - 9723 **4020**	4 P							8.26	210								
260 - 400	B5	9723 **2026** - 9723 **2040**	2 P	32	813	32	813	16	406	8.26	210	1.37	35	7.67	195	3.84	97.5	15	381
		9723 **3026** - 9723 **3040**	3 P																
		9723 **4026** - 9723 **4040**	4 P							10.63	270								

Dimensions (in/mm) (continued)

600 to 1200 A / B6 - B7

Transfer switch dimensions

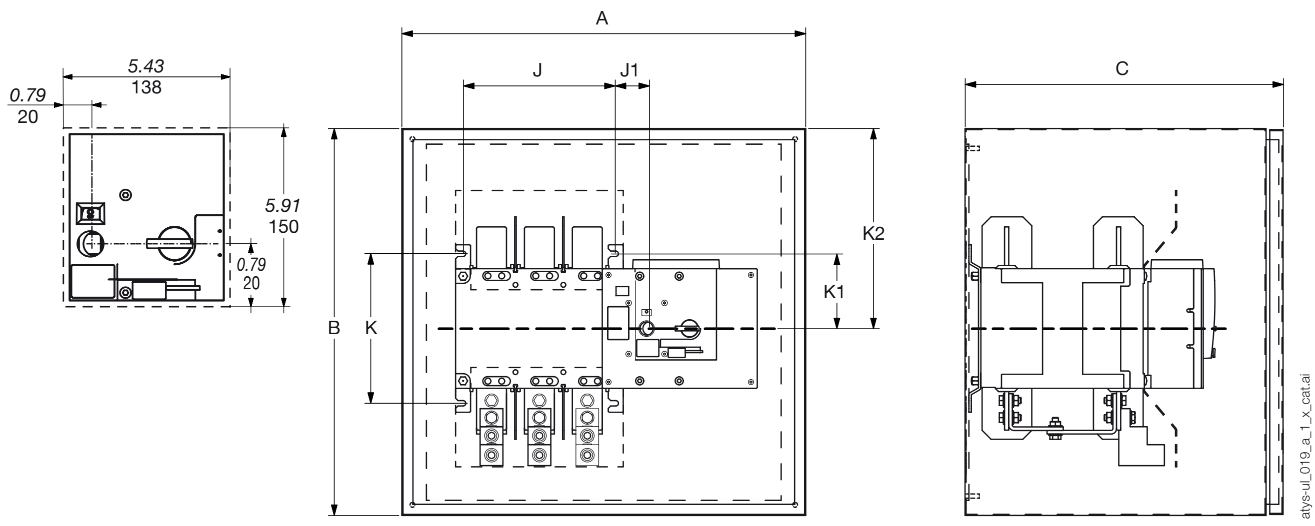


Rating (A)	Frame size	Reference	No. of poles	A		B		C		H		H1		H2		H3	
				in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
600	B6	9723 **3060**	3 P	19.8	504	13.38	340	15.4	392	9.09	231	13.7	347	9.05	230	11.5	293
		9723 **4060**	4 P	22.99	584												
800 - 1200	B7	9723 **3080** - 9723 **3120**	3 P	23.5	596	11.34	288	15.4	392	8.30	211	13.7	347	8.03	204	11.5	293
		9723 **4080** - 9723 **4120**	4 P	28.2	716												

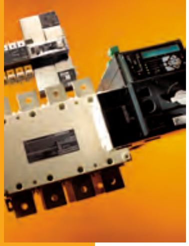
Rating (A)	Frame size	Reference	No. of poles	J		J1		K		K1		T		Y		Y1	
				in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
600	B6	9723 **3060**	3 P	10	255	2.02	51.5	9.84	250	4.92	125	3.15	80	2.61	66.5	9.98	254
		9723 **4060**	4 P	13.2	335												
800 - 1200	B7	9723 **3080** - 9723 **3120**	3 P	13.7	347	2.02	51.5	9.84	250	4.92	125	4.72	120	2.65	67.7	9.98	254
		9723 **4080** - 9723 **4120**	4 P	18.4	467												

600 to 1200 A / B6 - B7

Minimum enclosure dimensions



Rating (A)	Frame size	Reference	No. of poles	A		B		C		J		J1		K		K1		K2	
				in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
600	B6	9723 **3060**	3 P	36	915	48	1220	20	508	10.04	255	2.02	51.5	9.84	250	4.92	125	24	610
		9723 **4060**	4 P							12.18	355								
800 - 1200	B7	9723 **3080** - 9723 **3120**	3 P	36	915	60	1524	20	508	13.66	347	2.02	51.5	9.84	250	4.92	125	30	762
		9723 **4080** - 9723 **4120**	4 P							18.38	467								



ATyS FT - ATyS DT

Automatic Transfer Switching Equipment

from 100 to 400 A

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atys-ul_021_front.eps

The solution for

- Emergency systems
- Legally required standby systems
- Optional standby systems

Strong points

- Robust, reliable and high performing
- Safe manual handle
- Intuitive use and simple installation
- Inspectable contacts

Conformity to standards

- UL 1008
  CSA-C22.2
  No.178.1-14
  Guide WPWR
  File E506172

Function

ATyS FT and **ATyS DT** are fully automatic open transition transfer switches for use in total system emergency, legally required and standby applications for the safe transfer between a normal and an alternate power source.

ATyS FT is a fast transfer switch with no center off position and the ATyS DT is a delayed transfer switch with a center off position allowing full control of the time spent disconnected from both incoming sources.

Advantages

Robust, reliable and high performing
Rated for emergency systems and total system without derating, these switches also include high short-circuit rating with specific breakers or fuses up to 100 kA.

Inspectable contacts
The ATyS FT and ATyS DT are specifically designed to reduce the time it takes to inspect power contacts due to the specific maintenance mode.

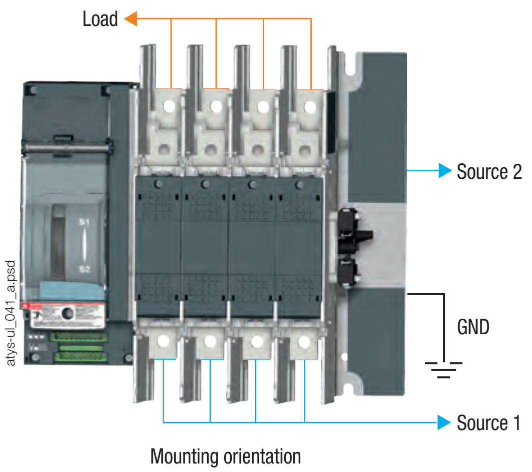
Safe manual handle
The ATyS FT and ATyS DT ensure the safety of your maintenance personnel due to patented safety features.
Access to the manual handle is prohibited by a transparent polycarbonate cover that requires a deliberate action to open. Once the cover is opened, the switch and the controller are both electrically inhibited which prevents any unexpected transfer during maintenance. The power switching characteristics when using the main manual handle are as reliable as when operated automatically ensuring safe transfers in all cases.

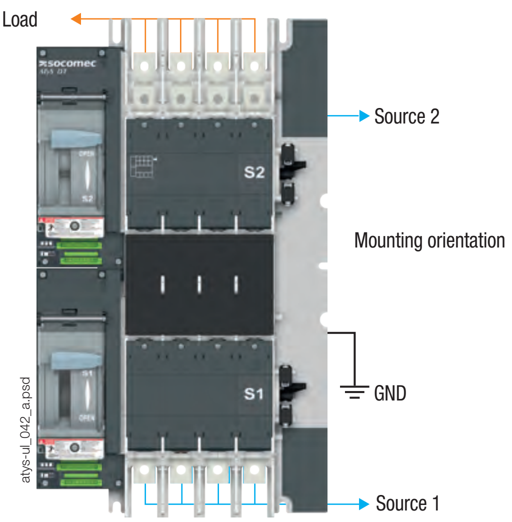
Intuitive use and simple installation
The ATyS FT and ATyS DT include the ATyS C66 controller, designed for simple and intuitive configuration.

atys-ul_043_a.psd

Typical applications

The ATyS FT/DT range provides safe transfer for mains/mains or mains/genset in emergency, legally required and optional standby systems as described in the NEC© (NFPA 70).





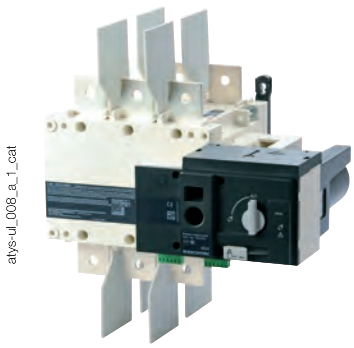
Additional Products

ATyS C66

The ATyS C66 controller is also available as a standalone product (certified to UL 61010) easily configurable for use with all transfer switching technologies (switches, contactors or circuit breakers). The ATyS C66 features intuitive menus, configurable I/O and is NEMA 3R/12 rated.

See the separate catalog pages for more details on the ATyS C66 controller.

ATyS UL 1008



The ATyS UL 1008 is designed to meet the requirements of UL 1008 optional standby applications rated from 100 to 1200 A featuring a field replaceable motor and maintenance free contacts.

See the separate catalog pages for more details on the ATyS UL 1008.

References

ATyS FT: Fast transfer I – II switch & controller

The ATyS FT switches are comprised of a UL 1008 transfer switch, ATyS C66 controller (including a gasket to meet NEMA 3R/12, door mounting screws and back plate mounting feet), 2 NO/NC auxiliary contacts mounted on the switch, and a cable harness to connect the ATyS FT switch body to the C66 controller.

<table>
<tr><th>Rating (A)</th><th>Frame size</th><th>N° of poles [1]</th><th>ATyS FT Reference</th><th>ATyS FT spare switch Reference</th><th>ATyS FT Spare harness Reference</th><th>Terminal screens</th><th>Additional auxiliary contacts</th></tr>
<tr><td rowspan="6">100</td><td rowspan="12">F1</td><td>2 P</td><td>96A0 2010</td><td>9600 2010</td><td rowspan="3">9696 4000</td><td>9698 2020</td><td rowspan="24">9699 0021</td></tr>
<tr><td>2 P+SN</td><td>96A1 2010</td><td>9601 2010</td><td rowspan="3">9698 3020</td></tr>
<tr><td>3 P</td><td>96A0 3010</td><td rowspan="2">9600 3010</td></tr>
<tr><td>3 P[2]</td><td>9680 3010</td><td>9697 4000</td></tr>
<tr><td>3 P+SN</td><td>96A1 3010</td><td>9601 3010</td><td rowspan="5">9696 4000</td><td rowspan="2">9698 4020</td></tr>
<tr><td>4 P</td><td>96A0 4010</td><td>9600 4010</td></tr>
<tr><td rowspan="6">200</td><td>2 P</td><td>96A0 2020</td><td>9600 2020</td><td>9698 2020</td></tr>
<tr><td>2 P+SN</td><td>96A1 2020</td><td>9601 2020</td><td rowspan="3">9698 3020</td></tr>
<tr><td>3 P</td><td>96A0 3020</td><td rowspan="2">9600 3020</td></tr>
<tr><td>3 P[2]</td><td>9680 3020</td><td>9697 4000</td></tr>
<tr><td>3 P+SN</td><td>96A1 3020</td><td>9601 3020</td><td rowspan="5">9696 4000</td><td rowspan="2">9698 4020</td></tr>
<tr><td>4 P</td><td>96A0 4020</td><td>9600 4020</td></tr>
<tr><td rowspan="6">260</td><td rowspan="12">F2</td><td>2 P</td><td>96A0 2026</td><td>9600 2026</td><td>9698 2040</td></tr>
<tr><td>2 P+SN</td><td>96A1 2026</td><td>9601 2026</td><td rowspan="3">9698 3040</td></tr>
<tr><td>3 P</td><td>96A0 3026</td><td rowspan="2">9600 3026</td></tr>
<tr><td>3 P[2]</td><td>9680 3026</td><td>9697 4000</td></tr>
<tr><td>3 P+SN</td><td>96A1 3026</td><td>9601 3026</td><td rowspan="5">9696 4000</td><td rowspan="2">9698 4040</td></tr>
<tr><td>4 P</td><td>96A0 4026</td><td>9600 4026</td></tr>
<tr><td rowspan="6">400</td><td>2 P</td><td>96A0 2040</td><td>9600 2040</td><td>9698 2040</td></tr>
<tr><td>2 P+SN</td><td>96A1 2040</td><td>9601 2040</td><td rowspan="3">9698 3040</td></tr>
<tr><td>3 P</td><td>96A0 3040</td><td rowspan="2">9600 3040</td></tr>
<tr><td>3 P[2]</td><td>9680 3040</td><td>9697 4000</td></tr>
<tr><td>3 P+SN</td><td>96A1 3040</td><td>9601 3040</td><td rowspan="2">9696 4000</td><td rowspan="2">9698 4040</td></tr>
<tr><td>4 P</td><td>96A0 4040</td><td>9600 4040</td></tr>
</table>

(1) Switches with "+SN" include a solid neutral pole, all other configurations include fully rated switched poles.
(2) Product references include specific harness for 480 V.a.c networks without neutral connector.
The 2 transformers are not included and must be purchased separately contact us.

ATyS DT: Delayed transition I – II switch with center off switch & controller

The ATyS DT switches are comprised of a UL 1008 transfer switch, ATyS C66 controller (including a gasket to meet NEMA 3R/12, door mounting screws and back plate mounting feet), 2 NO/NC auxiliary contacts mounted on the switch, and a cable harness to connect the ATyS DT switch body to the C66 controller.

Rating (A)	Frame size	N° of poles [1]	ATyS DT	ATyS DT spare switch	ATyS DT spare harness	Terminal screens	Additional auxiliary contacts
100	F1	3 P	98A0 **3010**	9800 **3010**	9896 **4000**	9698 **3020**	9699 **0021**
		3 P[2]	9880 **3010**		9897 **4000**		
		3 P+SN	98A1 **3010**	9801 **3010**	9896 **4000**	9698 **4020**	
		4 P	98A0 **4010**	9800 **4010**			
200		3 P	98A0 **3020**	9800 **3020**		9698 **3020**	
		3 P[2]	9880 **3020**		9897 **4000**		
		3 P+SN	98A1 **3020**	9801 **3020**	9896 **4000**	9698 **4020**	
		4 P	98A0 **4020**	9800 **4020**			
260	F2	3 P	98A0 **3026**	9800 **3026**		9698 **3040**	
		3 P[2]	9880 **3026**		9897 **4000**		
		3 P+SN	98A1 **3026**	9801 **3026**	9896 **4000**	9698 **4040**	
		4 P	98A0 **4026**	9800 **4026**			
400		3 P	98A0 **3040**	9800 **3040**		9698 **3040**	
		3 P[2]	9880 **3040**		9897 **4000**		
		3 P+SN	98A1 **3040**	9801 **3040**	9896 **4000**	9698 **4040**	
		4 P	98A0 **4040**	9800 **4040**			

(1) Switches with "+SN" include a solid neutral pole, all other configurations include fully rated switched poles.
(2) Product references include specific harness for 480 V.a.c networks without neutral connector. Transformer is not included and must be purchased separately contact us.

ATyS FT - ATyS DT

Automatic Transfer Switching Equipment

from 100 to 400 A

Accessories

Terminal screens

Use

Top and bottom terminal screens to protect from direct contact to the terminals. These protection screens can be locked and secured on the switch, are pre-cut for all compatible wire sizes and include holes for voltage and heat sensing.

Rating (A)	No. of poles	Reference [1]
100 ... 200 A	2 P	9698 **2020**
	3 P / 2 P + N	9698 **3020**
	4 P / 3 P + N	9698 **4020**
260 ... 400 A	2 P	9698 **2040**
	3 P / 2 P + N	9698 **3040**
	4 P / 3 P + N	9698 **4040**

(1) Top and bottom.

atys-ul_022.eps

Additional auxiliary contact kit

Use

The ATyS FT and the ATyS DT ship with 2 NO/NC auxiliary contacts already mounted on the switch. If additional auxiliary contacts are needed this kit includes 2 additional auxiliary contacts as well as a polycarbonate protection cover to protect from direct contact on auxiliary contact terminals.

These additional auxiliary contacts are installed on top of the existing auxiliary contacts.

atys-ul_023.eps

Electrical characteristics		Reference
Rated current (125-480 VAC)	22 A	9699 **0021**
Rated current (125 VDC)	0.5 A	
Rated current (250 VDC)	0.25 A	
Rated horse power up to 250 VAC	½ HP	
Rated horse power up to 480 VAC	¼ HP	
Recommended wire section	10 AWG 4 mm²	

Characteristics according to to UL 1008 and CSA-C22.2 No. 178.1-14

100 to 400 A

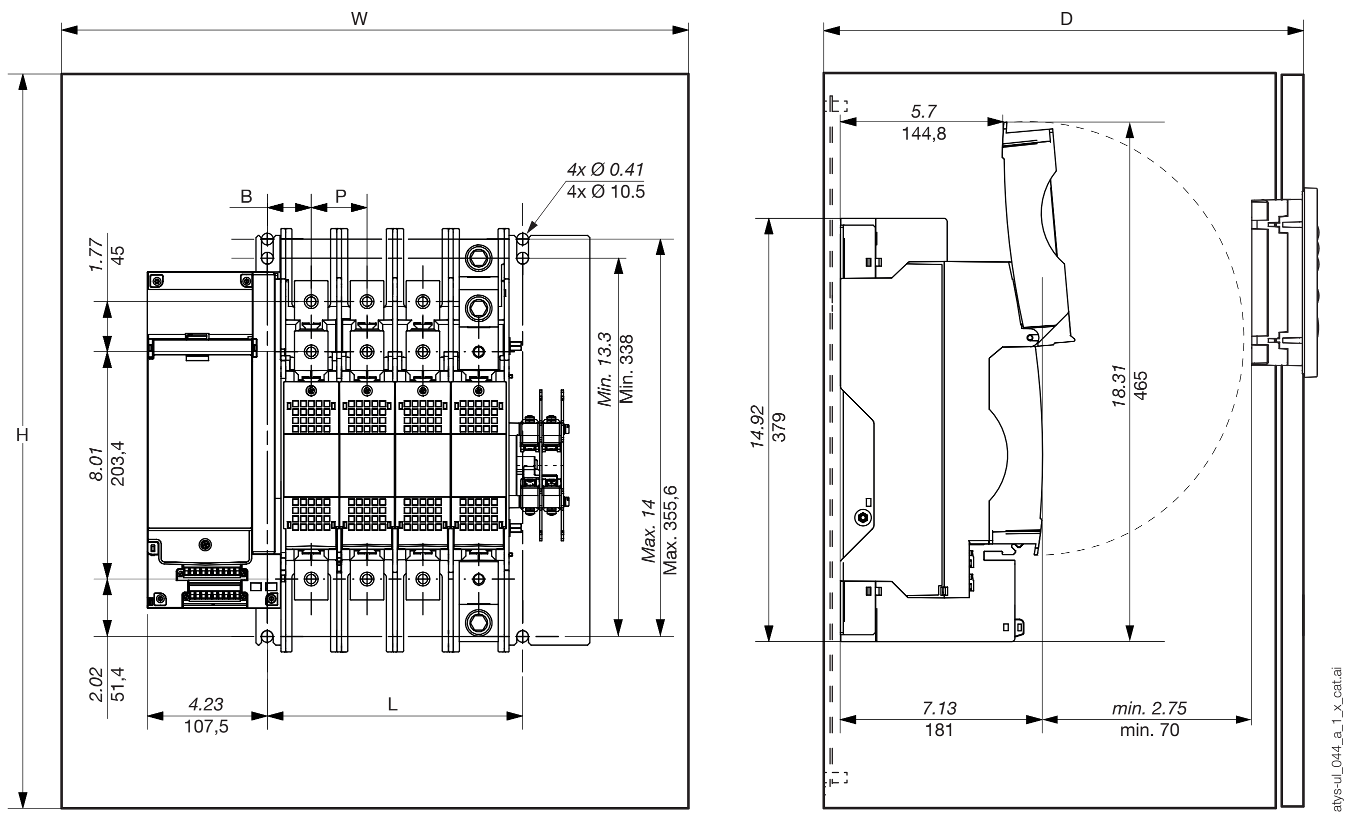
General use rating (A)	**100**	**200**	**260**	**400**
Frame size	**F1**		**F2**	
Compatible voltage networks	240 V 2 wires, 208 V 3 wires, 120 V 2 wires , 120/240 V 3 wires, 120/208 V 4 wires, 277/480 4 wires , 480 V 3 wires			
Short circuit rating at 480 VAC with fuses (kA)				
Short circuit current (kA)	100	100	100	100
Fuse link	J	J	J	J
Fuse rating (A)	400	400	600	600
Short circuit rating three phase at 480 VAC with “specific breaker” (kA)				
Square D : DC , FI , HD , HG ,HJ , HL 100 A	50	50	-	-
Square D : JD, JG , JJ , JL 250 A	50	50	-	-
Square D : JJ, JL, JR 250 A	-	-	100	100
Schneider Electric NSX 400 A	-	-	65	65
Siemens 3VA5 100 A	50	50	-	-
Siemens 3VA5 , 3VA6 150 A	50	50	-	-
Siemens 3VA5 , 3VA6 250 A	50	50	65	65
Eaton FCL , JGS , JGH , JGC 250 A	35	35	-	-
Eaton LGH 400 A	-	-	50	50
GE SFL 250 A	-	-	65	65
Short circuit rating single phase at 240 VAC with “specific breaker” (kA)				
Square D : DC , FI , HD , HG , HJ , HL 100 A	50	50	-	-
Square D : JD, JG , JJ , JL 250 A	50	50	-	-
Siemens 3VA5 , 3VA6 250 A	-	-	65	65
Eaton LGH 400 A	-	-	50	50
GE SFL 250 A	-	-	100	100
Rated operational current (A)				
Up to 480 VAC “Resistive load”	100	200	260	400
Up to 480 VAC “Total system”	100	200	260	400
Mechanical endurance				
Endurance (number of operating cycles)	6050			
Connection terminal				
Min. connection section (AWG)	#6, 14 AWG	#6	#4	#4
Max. connection section (AWG)	1/0	250 KCMIL	300 KCMIL	600KCMIL
Associated lugs	CMC LA300R , ILSCO D0957	CMC LA300R , ILSCO D2831	CMC LA630R, ILSCO D3096-22	
Power supply				
Switch Supply voltage (VAC)	194-304			
Controller supply voltage (VAC)	84-575			
Minimum Switching time(1) (ms)				
Contact transfer time Normal to Alternate(2)	24	24	30	30
Contact transfer time Alternate to Normal(2)	21	21	27	27
Total transfer time Normal to Alternate(3)	100	100	100	100
Total transfer time Alternate to Normal(3)	410	410	410	410

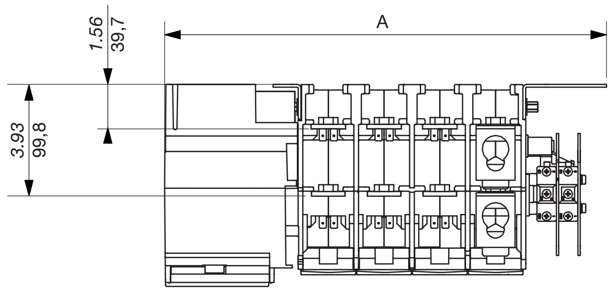
(1) All switching time measured offload, with 240 VAC networks may vary according to network voltage and load type.
(2) Time for which load is disconnected from both source 1 and source 2 with both sources available.
(3) Total time to transfer including detection of source failure and transfer times (all customer adjustable timers set to 0 and specific functions disabled).

Dimensions

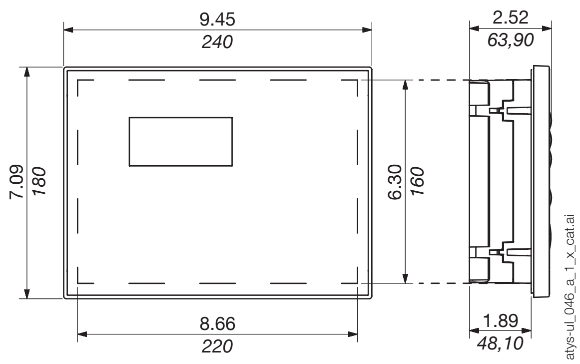
ATyS FT : Fast transfer I – II switch & controller

Switch dimensions





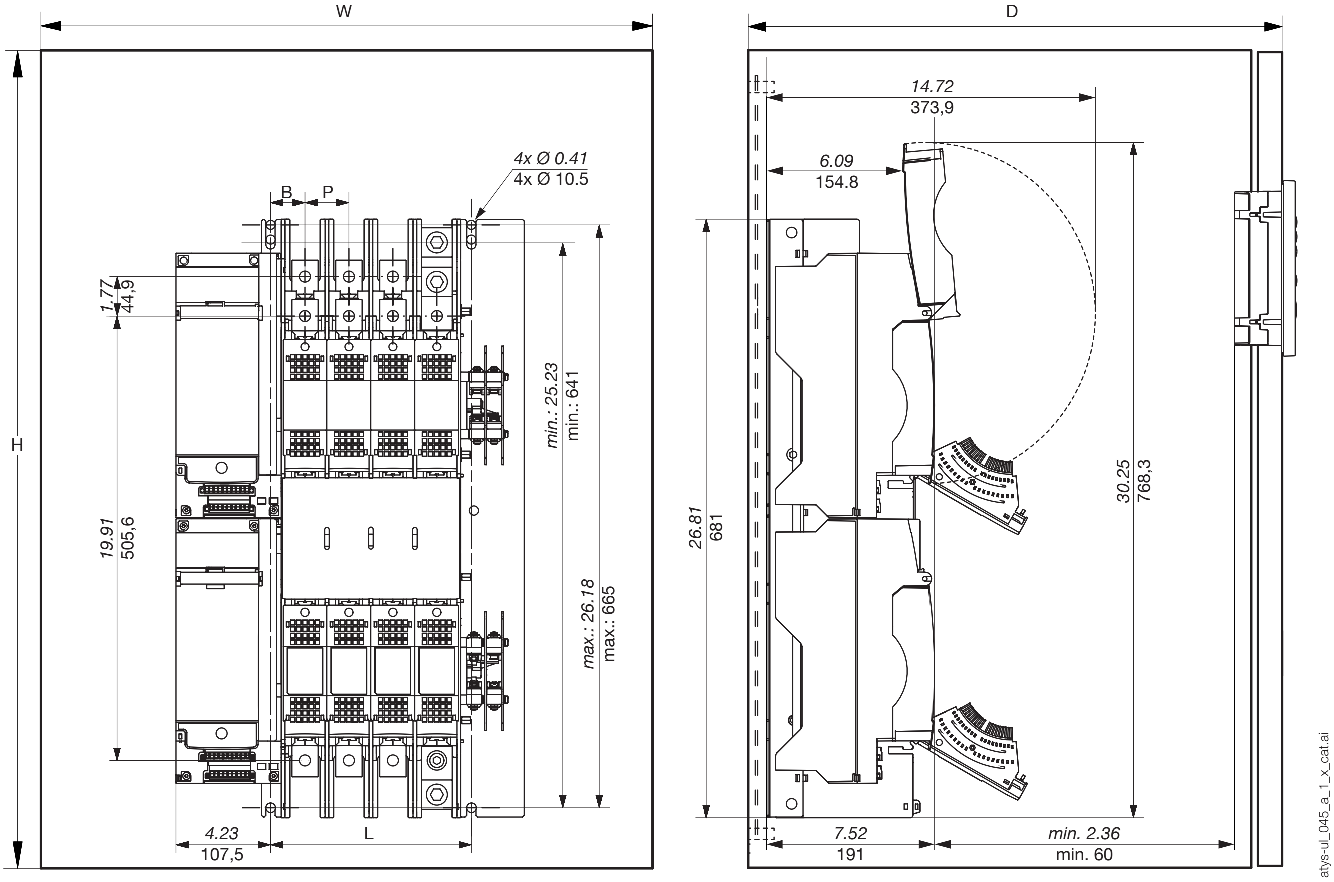
Controller dimensions

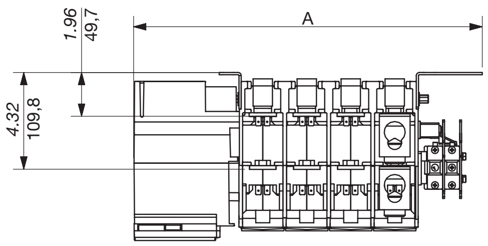


Rating (A)	Nb Poles	A		B		L		P		H		W		D	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100-200A	2 P	10.47	266,30	1.25	31,80	3.85	98,70	1.38	35	20	508	16	406	12	305
	2 P + N / 3 P	11.85	301,30	1.25	31,80	5.49	133,70	1.38	35	20	508	16	406	12	305
	3 P + N / 4 P	13.24	336,30	1.25	31,80	6.60	168,70	1.38	35	20	508	16	406	12	305
260-400A	2 P	11.67	296,30	1.55	39,30	5	128,60	1.97	50	48	1220	24	610	12	305
	2 P + N / 3 P	13.63	346,30	1.55	39,30	7	178,60	1.97	50	48	1220	24	610	12	305
	3 P + N / 4 P	15.60	396,30	1.55	39,30	8.97	228,60	1.97	50	48	1220	24	610	12	305

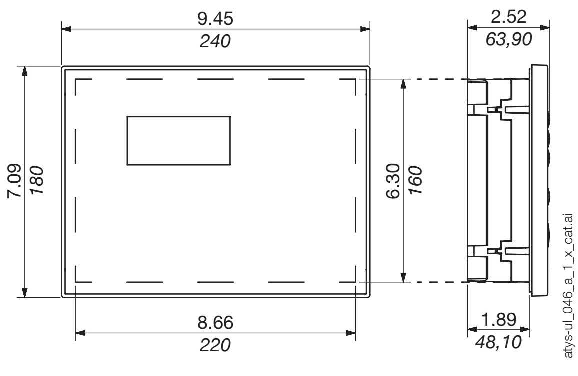
ATyS DT : Delayed transition I – II switch with center off switch & controller

Switch dimensions

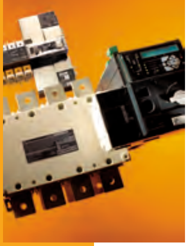




Controller dimensions



Rating (A)	Nb Poles	A		B		L		P		H		W		D	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100-200A	2 P + N / 3 P	11.85	301,30	1.25	31,80	5.49	133,70	1.38	35	36	915	16	407	12	305
	3 P + N / 4 P	13.24	336,30	1.25	31,80	6.60	168,70	1.38	35	36	915	16	407	12	305
260-400A	2 P + N / 3 P	13.63	346,30	1.55	39,30	7	178,60	1.97	50	60	1524	24	610	12	305
	3 P + N / 4 P	15.60	396,30	1.55	39,30	8.97	228,60	1.97	50	60	1524	24	610	12	305



ATyS C66

UL ATS Controller
for Open and Delayed Transition

ATyS C66

The solution for

- > Standy power builders
- > OEM/Machine builders
- > Industrial Control Panels Manufacturers (UL 508A)
- > Switchboards Manufacturers (UL 891)
- > Distributors

Function

ATyS C66 is an ATSE controller designed to control all types of emergency system, legally required and optional standby transfer switching equipment. The ATyS C66 is cULus 1008 listed with ATyS FT* and ATyS DT* power contactor switches as well as cURus 1008 and cULus 61010 listed for use with circuit breakers or contractors. ATyS C66 ensures automatic and manual transfer from one source to another with fully configurable timers and thresholds.

** ATyS FT Fast Transfer, ATyS DT Delayed Transfer.*

Advantages

Fast commissioning

On initial power up, the ATyS C66's smart wizard will guide the operator through the commissioning process.

User customizable

Front panel LEDs, load shedding, engine exercisers and the elevator control signal are just some of the customizable features available on ATyS C66.

Intuitive operation

- The high-resolution LCD screen provides several dashboards enabling easy monitoring of all parameters, including power and energy consumption of the loads.
- The integrated energy backup provides transitional power to the product enabling status indication (switch position, timer status, fault notifications) and communication to remain active with no supply present.
- Quick and easy access to main functions through the front panel with direct key input.

Strong points

- > Self-powered
- > Built-in advanced features
- > Intuitive menus & Dashboards
- > NEMA 3R/12

Conformity to standards

- > UL 61010
  CSA-C22.2 No. 61010-1
  Guide NRAQ
  File E206136
- > UL 1008
  CSA-C22.2 No.
  Guide WPWR
  178.1-14
  File E506172
- > IEC 60947-6-1

General characteristics

- Self-powered from voltage sensing.
- Wide voltage range (88 - 576 VAC).
- 24 VDC aux power supply (for optional use).
- 6 x 8A programmable dry contact Form C outputs (SPDT) (2 latching relays).
- 6 x programmable inputs.
- DIN rail mountable I/O extension, up to 30 inputs and 18 outputs (accessory).
- Power & Energy metering with 1 or 5A current transformers.
- Up to 30 second energy backup.
- Smart wizard.
- 3000 Alarms and Events.
- Built-in engine exerciser with 4 independent programs.
- Associated Webserver software.
- In-phase transfer.
- Tiered access levels of password protection.
- UV tested.

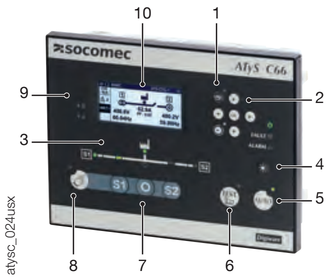
Communication gateways

DIRIS Digiware M-70 & D-70

References

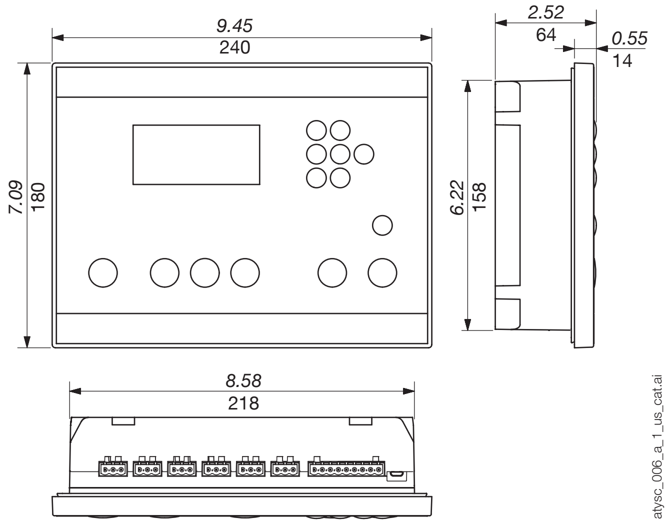
Description	Reference
ATyS C66 controller	1600 **0066**
DIRIS Digiware IO-10 (4 input/2 output) DIN-rail extension	4829 **0140**
DIRIS Digiware M-70 communications gateway for Ethernet & Webserver	4829 **0222**
DIRIS Digiware D-70 communication gateway for Ethernet & Webserver and multi-product display	4829 **0202**
Current Transformers	Consult us
ATyS FT / ATyS DT and cable harnesses	Consult us

Front panel



1. Dashboard displays.
2. Navigation keypad.
3. Mimic LED indication.
4. Lamp test button / LED info.
5. AUTO mode select.
6. TEST button.
7. CONTROL mode select.
8. Position orders
   (only in CONTROL mode).
9. Customizable LED.
10. Hi-res LCD screen.

Dimensions (in/mm)



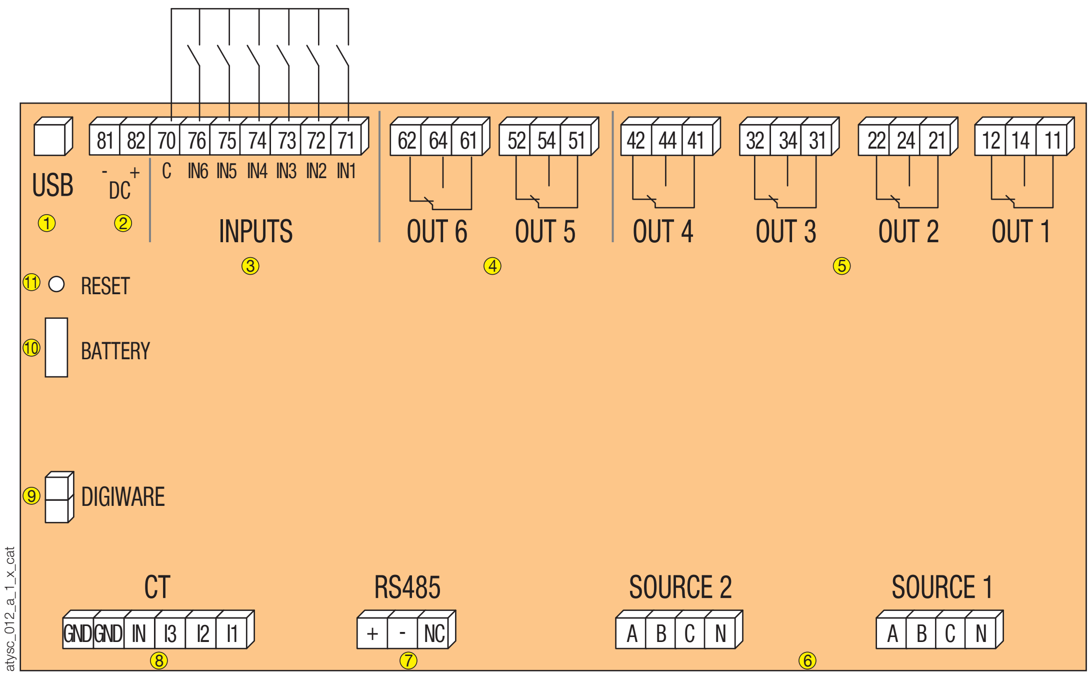
Characteristics

Electrical characteristics	
Operating AC limits	110 - 480 VAC ±20%
Optional DC supply	24 VDC
Frequency limits	45 - 65 Hz
Power consumption	< 10 W
Current transformers	1 or 5A
Measurement type	True RMS (TRMS)
Inputs	6 x fully programmable
Outputs	6 x form C, fully programmable
Output relays	8A general use
I/O Extension (IO10)	Up to 30 inputs and 18 outputs
Overvoltage category	CAT III
Impulse withstand	8/6 kV (1)

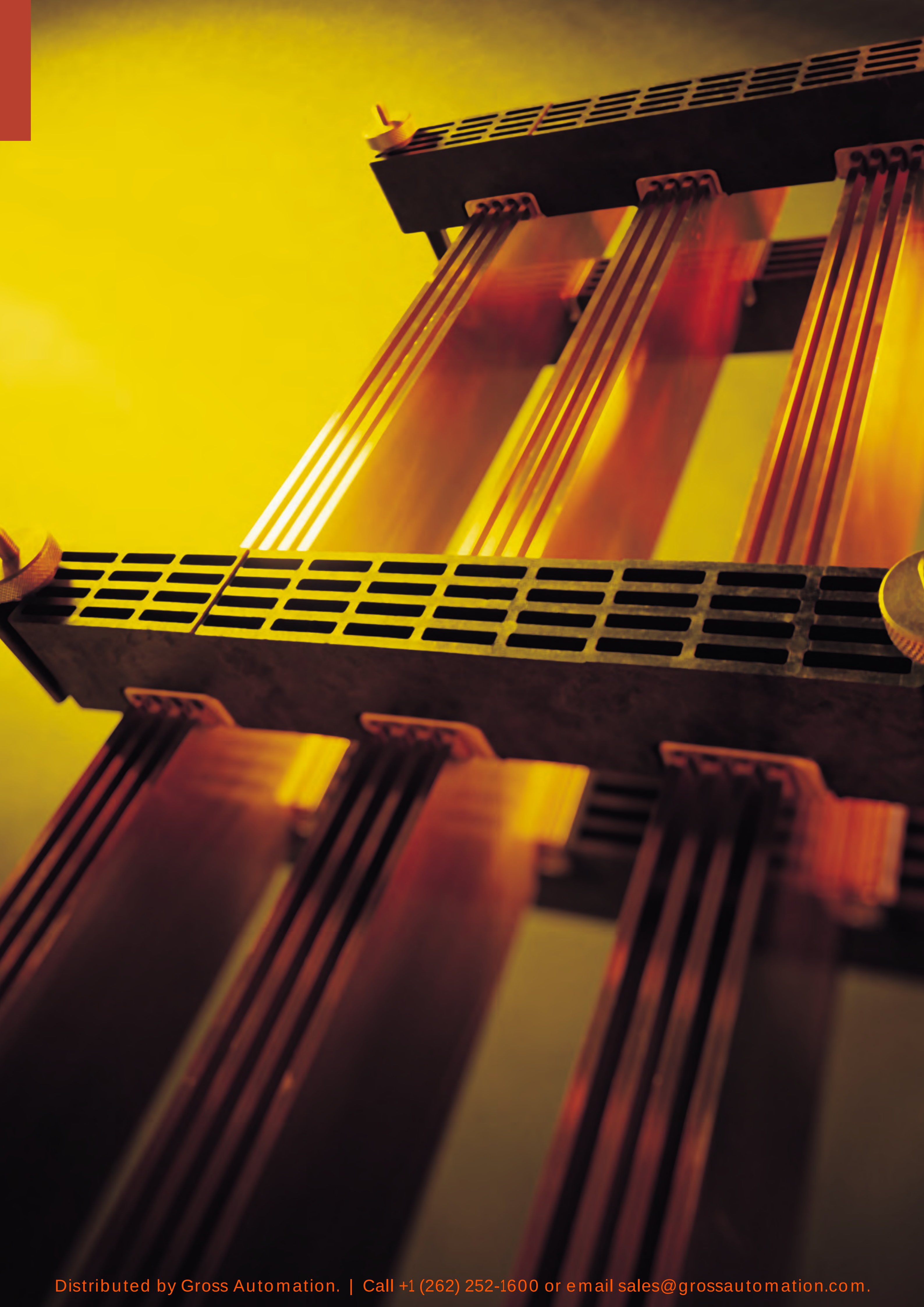
Mechanical characteristics	
Weight	2.38 lb / 1080 gr
Door cutout	8.66 x 6.3 in / 220 x 160 mm
Protection degree	NEMA 3R/12, IP65
Operating temperature	-22 … +158 °F / -30 … +70 °C
Communications	
Interface type	RS485. 2 to 3 half duplex wires
Protocol	MODBUS RTU
Baudrate	Programmable 1200 - 115200 bps
Digiware bus cable	RJ45 specific cable
Display	
Screen resolution	350 x 160 pixels
Event recorder	3000 events

(1) 8 kV tested between phases of a different source and 6 kV tested between phases of the same source.

Terminals



1. Configuration USB
2. 24 VDC aux power supply (for optional use)
3. 6 x inputs
4. 2 x latching relay outputs
5. 4 x relay outputs
6. Source sensing (110-480 ±20%)
7. RS485 communication
8. Current transformers (1 or 5A)
9. Digiware RJ45 connectors
10. Replaceable RTC battery
11. Hard reset button

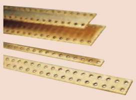


Mounting, cabling & accessories

Accessories

Power distribution blocks
p. 183

Busbar



Rigid copper bars
p. 187

Flexible copper bars
p. 189

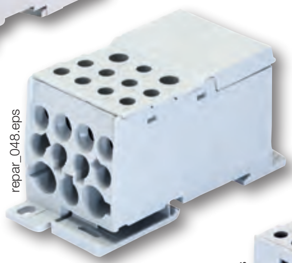
Insulated copper braids
p. 191

Edgewise mounting busbar supports
p. 193

Power distribution blocks

Distribution

Power distribution blocks single pole UL



Power distribution blocks single pole UR

Power distribution blocks three-pole UR

The solution for

- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- Distributors
- OEM/Machine Builders
- PV Combiner/Re-Combiner Box Manufacturers

Strong points

- IP20 finger safe protection
- Wide range
- Easy integration
- Flexibility of wiring
- UL listed

Conformity to standards

- UL 1953
  Guide QPQS
  File E500778
- UL 1059
  CSA-C22.2 No. 128
  Guide XCFR
  File E500524
- IEC 61439-1
- IEC 60947-7-1

Function

SOCOMEC **Power distribution blocks** allow for easy connection of conductors to distribute power from one load into multiple smaller loads. They are installed downstream of a disconnect switch, transfer switch or circuit breaker.

Advantages

IP20 finger safe protection

- IP20 rated.
- Finger-safe design provides touch safe protection from live parts.

Wide range

The extent of the range makes it possible to find the distribution system adapted to its needs:

- 5 single pole power distribution blocks UL,
- 4 single pole power distribution blocks UR,
- 1 multipolar power distribution blocks UR.

Easy integration

The compact design of the different distribution blocks allows an easier integration into the equipment and allows for either DIN rail mounting on direct panel mounting.

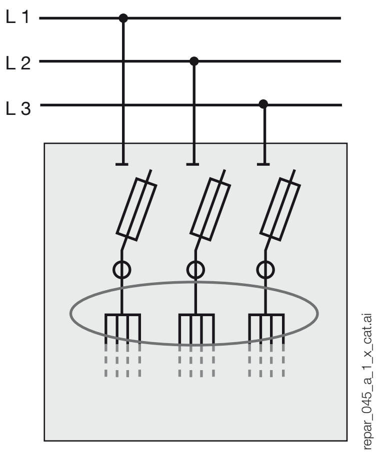
Flexibility of wiring

Allows use of standard solid, stranded and fine wire strands with use of compression sleeve.

UL & IEC range

The range of distribution blocks comply to the UL standards & the IEC standards.

Application



Power distribution blocks UL 1953

General characteristics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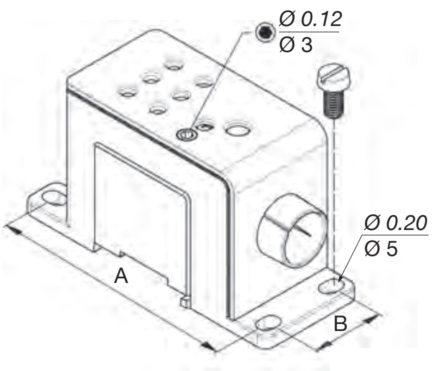
- Material: tin plated aluminum
- Suitable conductors: aluminum or copper.
- IP20 finger-safe.
- Adjustable Dial allows for Selection of L1–L2–L3 phase designation.
- Simple and secure DIN rail locking clip allows easy mounting on DIN Rail.
- Panel mounting.
- Included connection clip allows to join multiple poles together.
- Voltage Ratings: 1000 VAC/DC UL

References

Type	Rating (A) Cable Cu	Cable Al	References
Type 1	85	65	54UL **1008**
Type 2	115	90	54UL **1012**
Type 3	175	135	54UL **1017**
Type 4	255	205	54UL **1025**
Type 5	380	310	54UL **1040**

Dimensions (in/mm)



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Type	Units	H x W x D	Mounting A	B
Type 1	in	1.93 x 1.417 x 3.524	3.118	0.914
	mm	49 x 36 x 89.5	79.2	23.2
Type 2	in	1.93 x 1.417 x 3.524	3.118	0.914
	mm	49 x 36 x 89.5	79.2	23.2
Type 3	in	2.09 x 1.417 x 3.898	3.492	0.914
	mm	53 x 36 x 99	88.7	23.2
Type 4	in	2.39 x 2.126 x 4.488	4.063	1.622
	mm	60.7 x 54 x 114	103.7	41.2
Type 5	in	2.39 x 2.126 x 4.488	4.063	1.622
	mm	60.7 x 54 x 114	103.7	41.2

Connections & electrical characteristics

Type	For connection	Number of holes	Solid / stranded wired Connection	Fine wire with sleeve Connection	1953 Voltage Max. AC (V)	DC (V)	Short circuit withstanding I_{cw} (kA)	I_{pk} (kA)	SCCR (kA)	Max. Fuse rating (A) Class RK5	Class RK1	Class J
Type 1	Line	1	3 - 14 AWG	3 - 14 AWG	1000	1000	3	35	100	100	200	250
	Load	6	8 - 14 AWG	10 - 14 AWG								
Type 2	Line	1	1 - 14 AWG	2 - 14 AWG			6	36.1		100	200	250
	Load	6	4 - 14 AWG	6 - 14 AWG								
Type 3	Line	1	2/0 - 14 AWG	1/0 - 14 AWG			8.4	40.8		100	200	250
	Load	4	4 - 14 AWG	6 - 14 AWG								
Type 4	Line	1	250 - 2 kcmil	4/0 - 2 AWG			14.4	47.7		200	400	450
	Load	6	2 - 14 AWG	4 - 14 AWG								
Type 5	Line	1	500 - 2/0 kcmil	400 - 2/0 kcmil			28.8	57.2		200	400	450
	Load	6	8 - 14 AWG	4 - 14 AWG								

Power distribution blocks

General characteristics


repar_048.eps

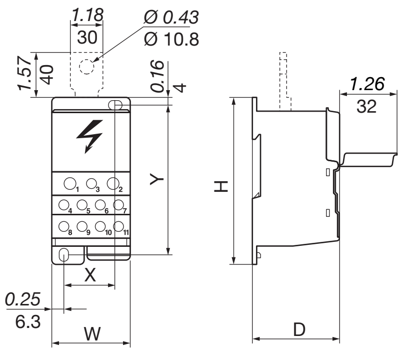

repar_051.eps

- Material: tin plated aluminum.
- Suitable conductors: aluminum or copper.
- IP20 finger-safe.
- DIN Rail mounting.
- Panel mounting.
- Voltage Ratings: 600 VAC/DC

References

Type	Nb poles	Rating (A) Cable Cu	Rating (A) Cable Al	References
Type 1	1 P	115	90	5411 **1012**
Type 2	1 P	115	90	5411 **1013**
Type 3	1 P	175	135	5411 **1017**
Type 4	1 P	255	-	5411 **1025**
Type 5	3 P	175	135	5411 **3017**
Accessorie				**References**
Type 4 connection for devices				5410 **0025**

Dimensions (in/mm)



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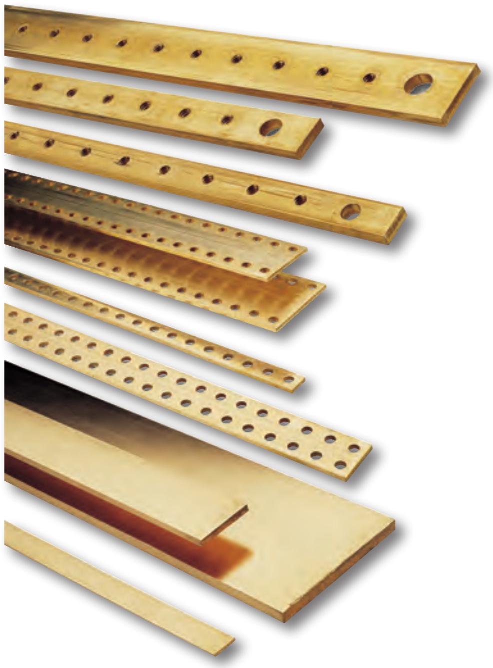
Type	Units	Dimensions H x W x D	Mounting A	Mounting B
Type 1	in	2.91 x 1.06 x 1.81	2.44	0.157
	mm	74 x 27 x 46	62	4
Type 2	in	2.80 x 1.77 x 1.69	2.386	0.685
	mm	71 x 45 x 43	60.6	17.4
Type 3	in	2.80 x 1.77 x 1.69	2.386	0.685
	mm	71 x 45 x 43	60.6	17.4
Type 4	in	3.74 x 1.75 x 1.93	3.836	1.165
	mm	95 x 44.5 x 49	86	29.6
Type 5	in	2.8 x 3.15 x 1.93	2.382	2.07
	mm	72 x 80 x 43	60.6	52.5

Direct or cable connection distribution blocks, IP20 which can be clipped onto a symmetric DIN rail.

Connections & electrical characteristics

Type	For connection	Number of holes	Solid / stranded wired	Fine wire with sleeve	1059 Voltage Max.		Short circuit withstanding	
			Connection	Connection	AC (V)	DC (V)	I_{cw} (kA)	I_{pk} (kA)
Type 1	Line	1	2 - 8 AWG	2 - 8 AWG	600	600	4.2	30
	Line	1	4 - 14 AWG	6 - 14 AWG				
	Load	6	4 - 14 AWG	6 - 14 AWG				
Type 2	Line	1	2 - 8 AWG	2 - 8 AWG			4.2	30
	Load	10	4 - 14 AWG	6 - 14 AWG				
Type 3	Line	1	2/0 - 8 AWG	1/0 - 8 AWG			11	30
	Load	10	4 - 14 AWG	6 - 14 AWG				
Type 4	Line	1	250 - 2 kcmil	4/0 - 2 AWG			21	51
	Load	2	2 - 14 AWG	4 - 14 AWG				
	Load	5	6 - 14 AWG	6 - 14 AWG				
	Load	4	8 - 14 AWG	8 - 14 AWG				
Type 5	Line	1	2/0 - 8 AWG	1/0 - 8 AWG			11	30
	Load	6	4 - 14 AWG	6 - 14 AWG				

Rigid copper bars
Busbar



barre_001

The solution for

- > Industrial Control Panel Manufacturers (UL 508A)
- > Switchboards Manufacturers (UL 891)
- > Distributors
- > OEM/Machine Builders

Function

The SOCOMEC **rigid copper bars** are suitable for providing main or distribution connections.

Composition of the range

Solid bars
- Thickness: 4.5 and 10 mm.
- Width: 20 to 160 mm.
- Length: 1750, 2900, 5800 mm.

Pre-punched bars
- Thickness: 5 and 10 mm.
- Width: 25 to 125 mm.
- Length: 1750 mm.

Pre-punched and threaded bars
- Thickness: 5 mm.
- Width: 15 to 32 mm.
- Length: 990 mm.

Solid bars
- Determination of the admissible current I_z (A) for solid bars, in usual use conditions (Temperature ambient 113°F / 45°C, admissible warming of the bars 95°F / 35°C, 50 Hz current).

Pre-punched copper bars
- For the pre-punched bars of same dimensions as the solid bars: pre-punched I_z = 0.9 I_z solid.

Aluminium bars
- For the aluminium bars of same dimensions as the solid bars: I_z aluminium = 0.78 I_z solid copper.

Connector for drill-free connection on the busbar
- Bars for thickness 10 mm.

Connection Earth / Neutral
- Corner piece for Earth / Neutral connection, L = 1750 mm.
- Earth bar, L = 470 mm and L = 120 mm.

Amperage per number of bars

Edgewise mounting

Bar section l x e (mm)	Number of bars per phase I	II	III	IIII
20 x 4	240	430	600	750
15 x 5	220	390	540	650
25 x 5	330	590	800	1000
32 x 5	410	700	1000	1250
40 x 5	500	850	1200	1500
50 x 5	600	1050	1450	1850
63 x 5	700	1250	1800	2250
80 x 5	900	1550	2200	2750
100 x 5	1100	1900	2650	3350
125 x 5	1300	2350	3250	4100
30 x 10	600	1050	1450	1800
50 x 10	850	1550	2150	2700
60 x 10	1000	1800	2400	3150
80 x 10	1300	2300	3200	4000
100 x 10	1550	2750	3850	4850
125 x 10	1900	3350	4650	5900
160 x 10	2350	4150	5800	7300

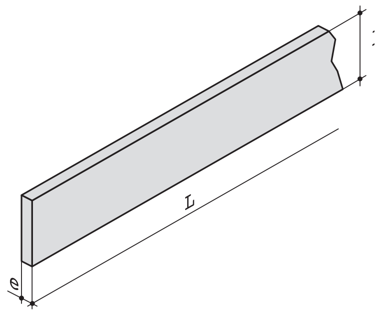
Flat mounting

Bar section l x e (mm)	Number of bars per phase I	II	III	IIII
20 x 4	210	340	460	570
15 x 5	190	310	420	510
25 x 5	280	470	600	750
32 x 5	350	580	750	950
40 x 5	420	700	900	1150
50 x 5	510	850	1100	1400
63 x 5	620	1000	1350	1700
80 x 5	750	1250	1700	2100
100 x 5	900	1500	2050	2550
125 x 5	1100	1850	2500	3050
30 x 10	490	800	1100	1350
50 x 10	750	1200	1650	2050
60 x 10	850	1400	1900	2350
80 x 10	1100	1800	2450	3000
100 x 10	1350	2200	2950	3650
125 x 10	1600	2700	3600	4400
160 x 10	2000	3300	4450	5500

References

Solid bars

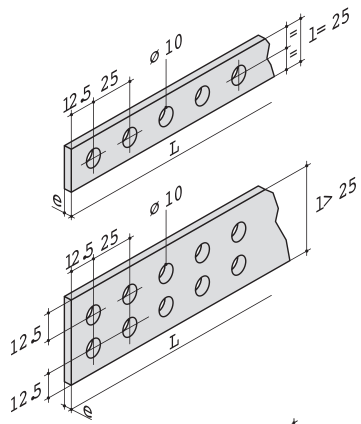
		L = 1750 mm To be ordered in multiples of 1 bar	L = 2900 mm To be ordered in multiples of 1 bar	L = 5800 mm To be ordered in multiples of 5 or 10 bars
l x e (mm)	**Weight (kg/ml)**	**Reference**	**Reference**	**Reference**
20 x 4	0.71	4510 **2004**	4513 **2004**	4514 **2004**(1)
25 x 5	1.11	4510 **2505**	4513 **2505**	4514 **2505**(1)
32 x 5	1.42	4510 **3205**	4513 **3205**	4514 **3205**(1)
40 x 5	1.78	4510 **4005**	4513 **4005**	4514 **4005**(1)
50 x 5	2.22	4510 **5005**	4513 **5005**	4514 **5005**(1)
63 x 5	2.80	4510 **6305**	4513 **6305**	4514 **6305**(1)
80 x 5	3.56	4510 **8005**	4513 **8005**	4514 **8005**(2)
100 x 5	4.45	4510 **9005**	4513 **9005**	4514 **9005**(2)
125 x 5	5.56	4510 **9205**	4513 **9205**	4514 **9205**(2)
30 x 10	2.67	4510 **3010**	4513 **3010**	4514 **3010**(2)
50 x 10	4.45	4510 **5010**	4513 **5010**	4514 **5010**(2)
60 x 10	5.33	4510 **6010**	4513 **6010**	4514 **6010**(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

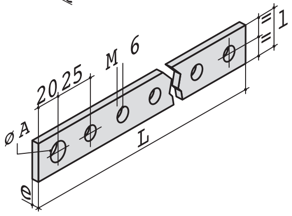
Pre-punched bars

l x e (mm)	W (mm)	Weight (kg/ml)	No. of rows	To be ordered in multiples of	Reference
25 x 5	1750	1.11	1	5	4511 **2505**
50 x 5	1750	2.22	2	5	4511 **5005**
63 x 5	1750	2.80	2	5	4511 **6305**
80 x 5	1750	3.56	2	5	4511 **8005**
100 x 5	1750	4.45	2	5	4511 **9005**
125 x 5	1750	5.56	2	5	4511 **9205**
50 x 10	1750	4.45	2	5	4511 **5010**
60 x 10	1750	5.33	2	5	4511 **6010**
80 x 10	1750	7.11	2	5	4511 **8010**
100 x 10	1750	8.89	2	5	4511 **9010**
125 x 10	1750	10.70	2	5	4511 **9210**



Pre-punched and threaded bars

l x e (mm)	W (mm)	Weight (kg/ml)	Ø A (mm)	To be ordered in multiples of	Reference
15 x 5	990	0.67 kg	8.2	5	4512 **1505**
20 x 5	990	0.89 kg	10.2	5	4512 **2005**
32 x 5	990	1.42 kg	12.2	5	4512 **3205**

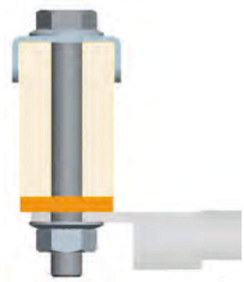


Accessories

Drill-free connection accessories

Use

- Allows the drill-free connection of flexible bars or cables onto a busbar.
- Connection across 2 bars, 10 mm thick, placed side by side, 10 mm apart.
- Compatible with busbar supports in the SBC range.
- For terminals or flexible bars with widths greater than 40 mm, use 2 connection accessories.
- Secured with M10 screws, tightening torque 45Nm.
- To make a connection: 1 securing clamp and 1 screw adapted to the height of the bars are required.



Type	Bar (mm)	To be ordered in multiples of	Reference
Securing clamp M10	all	12	5119 **4423**
Screw M10	30	100	5119 **4503**
Screw M10	50	100	5119 **4505**
Screw M10	60	100	5119 **4506**
Screw M10	80	100	5119 **4508**
Screw M10	100	100	5119 **4510**
Screw M10	125	100	5119 **4512**

Insulated flexible copper bars

Busbar

barre_011_a_1_cat

Function

SOCOMEC **insulated flexible** copper bars are mainly used for providing the power connections between busbars and the disconnection devices within an electrical panel.

The insulated layered copper allows the flexible copper bar to be easily formed to provide a customised solution.

Advantages

Easy to install

- Compact version.
- High level of flexibility enabling easy manipulation of the busbar.
- Reduced installation time with the elimination of terminal lugs and their crimping.

Increased safety by the elimination of crimped connections

- Better behavior under short-circuit conditions.
- Decreased number of heating points.
- More reliable connections.

Characteristics

- Width of 9 to 100 mm.
- Copper layer thickness from 0.8 to 1 mm.
- Length of 6.56 ft / 2 m.

Conductor

- Layers of electrolytic copper Cu/ETP, final annealing state.

Insulator

- High temperature co-extruded vinyl compound on the copper strips (insulation thickness: 1.5 to 2 mm).
- Self-extinguishing: NFC 32200 and UL 94 V0.
- Continuous temperature withstand: 221 °F / 105 °C.
- Shore hardness A: 89 +/- 2.
- Module 100 % elongation: 16 Mpa.
- Resistance to elongation: < 15 % mini.
- Breaking stress: 20 Mpa.
- Transversal volume resistivity: 6.1015 Ω.
- Oxygen index: 29.5 %.
- Scratch and tear resistant.

Insulated flexible busbar

- Operating-temperature range: from -40 °F / -40 °C to + 221 °F / +105 °C.
- Maximum operating voltage: 1000 VAC / 1500 VDC.
- Alternating voltage withstand (10 minute test):
  - between core and insulation: 16.5 kV,
  - between two insulating elements in contact: 33 kV,
  - Conductivity: 100 IACS,
  - HV < 50,
  - Resistance to traction Rm > 200 N/cm²,
  - Stretch before break 35 %,
  - Resistivity: 1.724 micro Ω/cm at 68 °F / 20 °C.

The solution for

- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- Distributors
- OEM/Machine Builders

Strong points

- Easy to install
- Increased safety by the elimination of crimped connections

Conformity to standards

- UL 67 and UL 891
  CSA-C22.2
  No. 29 and 244
  Guide QUEY
  File E495516

Available on request

- Specific lengths
- Halogen-free
- Please consult us

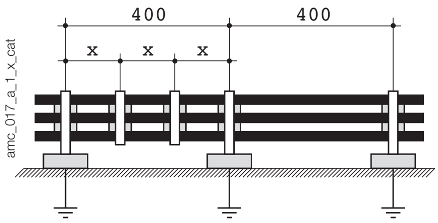
References

I x N x e (mm)	L (mm)	Permissible amperage for ΔT (°C) [1] 104°F / 40°C (A)	122°F / 50°C (A)	140°F / 60°C (A)	To be ordered in multiples of	Reference
9 x 2 x 0.8	2000	113	129	143	1	4518 0902
9 x 3 x 0.8	2000	140	160	178	1	4518 0903
9 x 4 x 0.8	2000	165	188	209	1	4518 0904
9 x 5 x 0.8	2000	187	214	238	1	4518 0905
9 x 6 x 0,8	2000	208	238	264	1	4518 0906
13 x 3 x 0.5	2000	142	162	180	1	4518 1303
13 x 4 x 0.5	2000	165	189	210	1	4518 1304
13 x 5 x 0.5	2000	186	213	237	1	4518 1305
13 x 6 x 0.5	2000	206	235	261	1	4518 1306
15.5 x 2 x 0.8	2000	167	191	212	1	4518 1502
15.5 x 3 x 0.8	2000	207	237	263	1	4518 1503
15.5 x 4 x 0.8	2000	242	277	308	1	4518 1504
15.5 x 6 x 0.8	2000	304	347	386	1	4518 1506
15.5 x 8 x 0.8	2000	358	409	455	1	4518 1508
15.5 x 10 x 0.8	2000	408	466	519	1	4518 1510
20 x 2 x 1	2000	228	261	290	1	4518 2002
20 x 3 x 1	2000	283	324	360	1	4518 2003
20 x 4 x 1	2000	331	378	421	1	4518 2004
20 x 5 x 1	2000	374	428	476	1	4518 2005
20 x 6 x 1	2000	415	474	527	1	4518 2006
20 x 8 x 1	2000	488	558	621	1	4518 2008
20 x 10 x 1	2000	556	635	705	1	4518 2010
24 x 2 x 1	2000	263	301	335	1	4518 2402
24 x 3 x 1	2000	326	373	414	1	4518 2403
24 x 4 x 1	2000	380	435	483	1	4518 2404
24 x 5 x 1	2000	429	491	546	1	4518 2405
24 x 6 x 1	2000	475	542	603	1	4518 2406
24 x 8 x 1	2000	557	636	708	1	4518 2408
24 x 10 x 1	2000	632	722	803	1	4518 2410
32 x 2 x 1	2000	331	379	421	1	4518 3202
32 x 3 x 1	2000	409	468	520	1	4518 3203
32 x 4 x 1	2000	476	544	605	1	4518 3204
32 x 5 x 1	2000	536	612	681	1	4518 3205
32 x 6 x 1	2000	591	675	751	1	4518 3206
32 x 8 x 1	2000	689	787	876	1	4518 3208
32 x 10 x 1	2000	777	887	987[1]	1	4518 3210
40 x 2 x 1	2000	398	455	506	1	4518 4002
40 x 3 x 1	2000	490	560	623	1	4518 4003
40 x 4 x 1	2000	569	650	723	1	4518 4004
40 x 5 x 1	2000	639	730	812	1	4518 4005
40 x 6 x 1	2000	703	803	893	1	4518 4006
40 x 8 x 1	2000	815	932	1036	1	4518 4008
40 x 10 x 1	2000	915	1045	1163	1	4518 4010
50 x 3 x 1	2000	589	673	749	1	4518 5003
50 x 4 x 1	2000	682	780	867	1	4518 5004
50 x 5 x 1	2000	764	873	971	1	4518 5005
50 x 6 x 1	2000	838	957	1062	1	4518 5006
50 x 8 x 1	2000	967	1105	1229	1	4518 5008
50 x 10 x 1	2000	1080	1234	1373	1	4518 5010
63 x 3 x 1	2000	715	816	908	1	4518 6303
63 x 4 x 1	2000	825	943	1048	1	4518 6304
63 x 5 x 1	2000	921	1052	1171	1	4518 6305
63 x 6 x 1	2000	1041	1187	1324	1	4518 6306
63 x 8 x 1	2000	1157	1321	1470	1	4518 6308
63 x 10 x 1	2000	1286	1469	1634	1	4518 6310
80 x 3 x 1	2000	874	998	1110	1	4518 8003
80 x 4 x 1	2000	1006	1149	1278	1	4518 8004
80 x 5 x 1	2000	1119	1279	1422	1	4518 8005
80 x 6 x 1	2000	1220	1393	1550	1	4518 8006
80 x 8 x 1	2000	1393	1592	1771	1	4518 8008
80 x 10 x 1	2000	1543	1763	1961	1	4518 8010
100 x 4 x 1	2000	1211	1383	1538	1	4518 9004
100 x 5 x 1	2000	1343	1534	1707	1	4518 9005
100 x 6 x 1	2000	1460	1668	1855	1	4518 9006
100 x 8 x 1	2000	1660	1897	2110	1	4518 9008
100 x 10 x 1	2000	1833	2094	2329	1	4518 9010
100 x 12 x 1	2000	1993	2277	2531	1	4518 9012

(1) For ambient air temperature of 104 °F / 40 °C.
Important: max. busbar temperature = 221 °F / 105 °C.

L: length of bar in metres.
I: width of bare busbar in mm.
N: number of copper layers.
e: copper layer thickness in mm.

Implementation



Flexible bars should be mounted on insulated supports with a maximum distance of 400 mm. Bars should also be held together with straps, as shown in the above diagram. The distance between successive straps depends on the electro-dynamic constraints in the event of a short-circuit. The table below gives the recommended distances between straps.

I_{cc} max. (kA rms)	Distance x between straps (mm)[1]
20	350
25	200
35	100
45	70

(1) 9 mm straps, load 176 lbs / 80 kg.

Parallel systems

Putting bars in parallel increases the temperature of the air near the bar, which forms a reduction coefficient

No. of barres in parallel	Aamperage at ΔT 104°F/40°C	Correction factor
I	any intensity	1
II	< 900A	1,72
II	> 900A	1,65
III	< 900A	2,25
III	> 900A	2,12

Insulated copper braids

Busbar

barre_023.eps

barre_022.eps

The solution for

> Industrial Control Panels Manufacturers (UL 508A)
> Switchboards Manufacturers (UL 891)
> Distributors
> OEM/Machine Builders

Strong points

> Easy to install
> Wide range of applications
> Compatibility

Customised solutions

> For any other length, please contact us

Function

SOCOMEC **insulated copper braids** are mainly utilized for providing the power connections between distribution busbars and the devices within an electrical panel.
Their flexibility is particularly suited to complex and diverse connections in confined spaces.

Technical characteristics

- Electrolytic copper, annealing state
- Operating voltage 1000 VAC - 1500 VDC
- Dielectric strength 20 KV / mm
- Operating temperature: -40°F/-40°C | +221°F/+105°C
- Self-extinguishing: UL 94 V0
- Contact surface: Bare copper

Advantages

Easy to install
- Compact design.
- Length and orientation are easily adapted.
- Prewired.

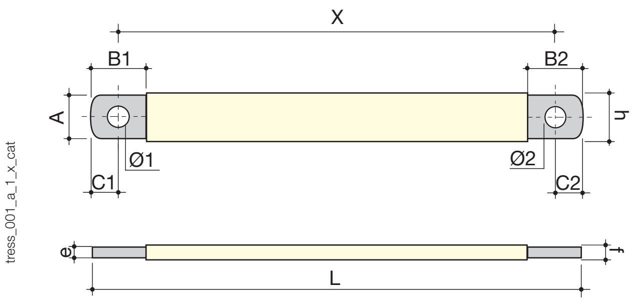
Wide range of applications
- Amperage up to 1000 A.
- Suitable for various connection ranges.
- Lengths from 7.87 in / 200 mm to 31.5 in / 800 mm.

Compatibility
- With SOCOMEC devices.
- With most commercial circuit breakers.

Part numbers and dimensions

Current rating at ambient temperature of 630 to 7000 A					Dimensions										Range		
95°F / 35°C (A)	Nominal rating 113°F / 45°FC (A)	131°F / 55°C (A)	Reference	Section mm^2	A Width (mm)	e Thickness (mm)	X Distance (mm)	L Length (mm)	Ø 1 (mm)	Ø 2 (mm)	C1 (mm)	C2 (mm)	h Width (mm)	f Thickness (mm)	B1 (mm)	B2 (mm)	Weight (lb)
180	**160**	140	4516 **1620**	25	20	1.5	200	220	8.5	10.5	8	12	22	3.5	25	30	0.17
180	**160**	140	4516 **1625**	25	20	1.5	250	270	8.5	10.5	8	12	22	3.5	25	30	0.19
180	**160**	140	4516 **1630**	25	20	1.5	300	320	8.5	10.5	8	12	22	3.5	25	30	0.24
180	**160**	140	4516 **1635**	25	20	1.5	350	370	8.5	10.5	8	12	22	3.5	25	30	0.26
180	**160**	140	4516 **1640**	25	20	1.5	400	420	8.5	10.5	8	12	22	3.5	25	30	0.31
180	**160**	140	4516 **1650**	25	20	1.5	500	520	8.5	10.5	8	12	22	3.5	25	30	0.37
280	**250**	220	4516 **2520**	50	20	3	200	220	8.5	10.5	8	12	22	5	25	30	0.31
280	**250**	220	4516 **2525**	50	20	3	250	270	8.5	10.5	8	12	22	5	25	30	0.35
280	**250**	220	4516 **2530**	50	20	3	300	320	8.5	10.5	8	12	22	5	25	30	0.42
280	**250**	220	4516 **2535**	50	20	3	350	370	8.5	10.5	8	12	22	5	25	30	0.49
280	**250**	220	4516 **2540**	50	20	3	400	420	8.5	10.5	8	12	22	5	25	30	0.55
280	**250**	220	4516 **2550**	50	20	3	500	520	8.5	10.5	8	12	22	5	25	30	0.66
440	**400**	320	4516 **4020**	120	32	5	200	222	10.5	10.5	10	12	34	7	25	30	0.66
440	**400**	320	4516 **4025**	120	32	5	250	272	10.5	10.5	10	12	34	7	25	30	0.79
440	**400**	320	4516 **4030**	120	32	5	300	322	10.5	10.5	10	12	34	7	25	30	0.95
440	**400**	320	4516 **4035**	120	32	5	350	372	10.5	10.5	10	12	34	7	25	30	1.08
440	**400**	320	4516 **4040**	120	32	5	400	422	10.5	10.5	10	12	34	7	25	30	1.23
440	**400**	320	4516 **4050**	120	32	5	500	522	10.5	10.5	10	12	34	7	25	30	1.52
440	**400**	320	4516 **4060**	120	32	5	600	622	10.5	10.5	10	12	34	7	25	30	1.81
440	**400**	320	4516 **4080**	120	32	5	800	822	10.5	10.5	10	12	34	7	25	30	2.36
690	**630**	560	4516 **6325**	240	32	10	250	274	12.5	10.5	12	12	34	12	35	30	1.57
690	**630**	560	4516 **6330**	240	32	10	300	324	12.5	10.5	12	12	34	12	35	30	1.85
690	**630**	560	4516 **6335**	240	32	10	350	374	12.5	10.5	12	12	34	12	35	30	2.12
690	**630**	560	4516 **6340**	240	32	10	400	424	12.5	10.5	12	12	34	12	35	30	2.40
690	**630**	560	4516 **6350**	240	32	10	500	524	12.5	10.5	12	12	34	12	35	30	2.98
690	**630**	560	4516 **6360**	240	32	10	600	624	12.5	10.5	12	12	34	12	35	30	3.53
690	**630**	560	4516 **6380**	240	32	10	800	824	12.5	10.5	12	12	34	12	35	30	4.63

Dimensions



Parallel systems

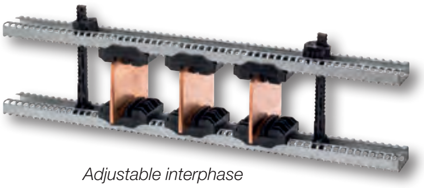
Putting braids in parallel increases the temperature of the air near the braid, which forms a reduction coefficient

Correction factor	
	Current
	2 x current x 0.8
	3 x current x 0.65

Busbar supports

Busbar

sb_195_a_1_cat



Adjustable interphase

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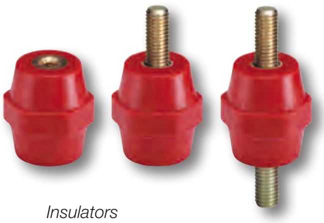

Insulators

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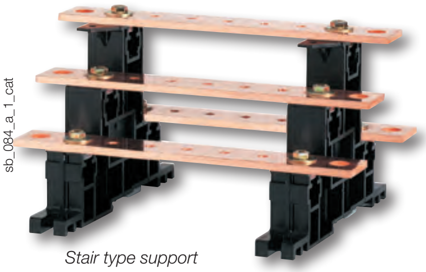


Stair type support

The solution for

- Industrial Control Panels Manufacturers (UL 508A)
- Switchboards Manufacturers (UL 891)
- Distributors
- OEM/Machine Builders

Approvals and certifications [1]

- ASEFA/LCIE

KEMA KEUR

Lloyd's Register

(1) Product references on request.

Available on request

- Please contact us

Function

SOCOMEC **insulating busbar supports** enable the fixing of copper or aluminium busbars.

Characteristics

Insulators

- Polyester without halogen.
- UL94 VO self-extinguishing.
- Color red RAL 3002.
- Operating temperature from -40 to + 266°F.
- Deformation under load temperature (ASTM D643): > 392°F / 200°C.
- Dielectric constant (ASTM D150): 4/5.
- Arc resistance (ASTM D495): > 180 s.
- Water absorption (ASTM D570): < 0.3%.

Busbar supports

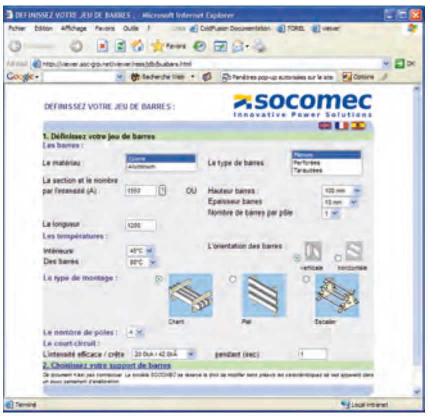
- High dielectric strength.
- High mechanical resistance.
- Non-magnetic assembly parts.
- High resistance to damp heat (supplied "with a conformal coating").

Stair type supports

- Thermoplastic material.
- UL 94 VO self-extinguishing.
- Insulating voltage: 1000 V.

Software tool for size selection

Mechanical Systems is a software that can be utilized to size bar sets. It defines the configuration of the busbar system, including bar section and distance between supports, according to the required electrical characteristics of the panel in compliance with standard IEC 61439-1. The software runs on Windows® 7 and 10.
Visit our website www.socomec.us.



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Selection guide

Edgewise mounting

100 A | 400 A | 500 A | 630 A | 1000 A | 1600 A | 2500 A | 4000 A | 5800 A | 7000 A

Nominal current I_n

SB C ER Power

I_{cc} up to **80 kA**

Busbar supports with **adjustable interphase**

Flat mounting

Unipolar busbar supports

SB 205

SB 306

I_{cc} up to 80 kA

100 A | 400 A | 500 A | 630 A | 1000 A | 1600 A | 2500 A | 4000 A | 5800 A | 7000 A

Nominal current I_n

SB 7500

I_{cc} up to **50 kA**

SB P 30

I_{cc} up to **80 kA**

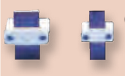
Multipolar busbar supports

Other supports

Unipolar busbar supports

I_{cc} up to **50 kA**

(1)



(2)

(3)

1. Hexagonal insulators
2. *SB 1 and SB 2*
3. *SB 3*

100 A | 400 A | 500 A | 630 A | 1000 A | 1600 A | 2500 A | 4000 A | 5800 A | 7000 A

Nominal current I_n

(4)

(5)

4. *SB E 44*
5. *SB P 10*
6. *SB P 44*

I_{cc} up to **30 kA**

(6)

I_{cc} up to **40 kA**

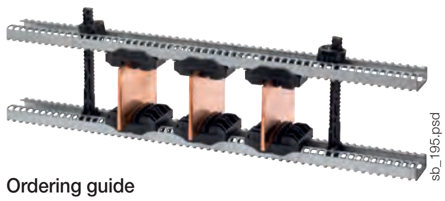
4 Pole busbar supports

SB C ER P multipolar edgewise mounting busbar supports with adjustable interphase

References

Complete busbar support

Designation	Thickness of bar (mm)	Width of bar (mm)	No. of bars	No. of poles	Reference
Complete support	10	480	1 … 3	4	5025 **5135**



Ordering guide
- For three poles, order: 6 x insetrs, 2 x studs, 2 x profiles.
- For four poles, order: 8 x inserts, 2 x studs, 2 x profiles.

Insert

Designation	Thickness of bar (mm)	No. of bars	No. of poles	Quantity	To be ordered in multiples of	Reference
Insert for 5 mm bars	5	3	3 P	6 (1)	8	5025 **5205**
Insert for 5 mm bars	5	3	4 P	8 (1)	8	5025 **5205**
Insert for 10 mm bars	10	2	3 P	6 (1)	4	5025 **5210**
Insert for 10 mm bars	10	2	4 P	8 (1)	4	5025 **5210**
Insert for 10 mm bars	10	3	3 P	6 (1)	1	5025 **5111**
Insert for 10 mm bars	10	3	4 P	8 (1)	1	5025 **5111**

Mounting accessories

Designation	Length (mm)	Quantity	To be ordered in multiples of	Reference
Stud kit (bar height 25 to 200 mm)		2 (1)	4	5025 **5100**
Stud kit metal (bar height 0 to 100 mm)		2	2	5025 **5101**
Stud kit metal (bar height 0 to 200 mm)		2	2	5025 **5102**
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 enclosure (2)	525	1 (1)	1	5025 **5130**

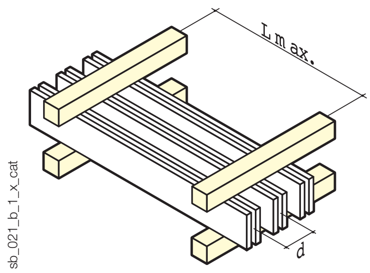
(1) Quantity required for 1 busbar support inserts.
(2) Kit of 2 profiles and 4 brackets.

Characteristics

5 mm inserts for up to 3 bars and 10 mm inserts for up to 2 bars

	L max. (support bars in mm) for						
peak I_{sc}	82 kA	114 kA	152 kA	165 kA	187 kA		
rms I_{sc}	39 kA	52 kA	69 kA	75 kA	85 kA		
Bar x qty						d min. (mm)	Iz (A) (1)
50 x 5 x 1	500	325	175	150		75	600
50 x 5 x 2	500	325	175	150	100	75	1050
50 x 5 x 3	500	325	175	150	100	75	1450
63 x 5 x 1	525	350	200	175		75	700
63 x 5 x 2	525	350	200	175	125	75	1250
63 x 5 x 3	525	350	200	175	125	75	1800
80 x 5 x 1	525	350	200	175	125	75	900
80 x 5 x 2	525	350	200	175	125	75	1550
80 x 5 x 3	525	350	200	175	125	75	2200
100 x 5 x 1	550	375	225	200	175	75	1100
100 x 5 x 2	550	375	225	200	175	75	1900
100 x 5 x 3	550	375	225	200	175	75	2650
125 x 5 x 1	575	400	250	225	200	75	1300
125 x 5 x 2	575	400	250	225	200	75	2350
125 x 5 x 3	575	400	250	225	200	75	3250
80 x 10 x 1	1000	750	350	300	200	75	1300
80 x 10 x 2	1000	750	350	300	200	75	2300
100 x 10 x 1	1000	750	375	325	225	75	1550
100 x 10 x 2	1000	775	375	325	225	75	2750
125 x 10 x 1	1000	775	375	325	225	75	1900
125 x 10 x 2	1000	775	375	325	225	75	3350
160 x 10 x 1	1000	775	400	350	250	75	2350
160 x 10 x 2	1000	800	400	350	250	75	4150

(1) Admissible busbar nominal current with a temperature inside the panel of between 113°F and 176°F.
For other mounting configurations, please contact us.



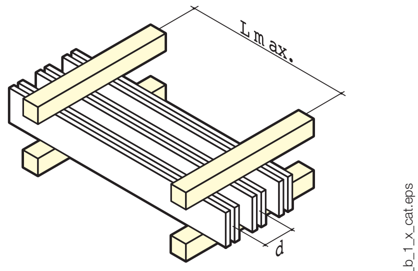
Adhering to the **maximum distance** between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.

Characteristics (continued)

10 mm insert / 3 bars

	L max. (bar supports in mm)							
peak I_{sc}	**63 kA**	**82 kA**	**114 kA**	**152 kA**	**165 kA**	**187 kA**		
rms I_{sc}	**30 kA**	**39 kA**	**52 kA**	**69 kA**	**75 kA**	**85 kA**		
Bar x qty							**d (mm)**	**Iz (A) (1)**
50 x 10 x 1	1000	1000	650	250	200	150	70	850
50 x 10 x 2	1000	1000	650	250	200	150	70	1550
50 x 10 x 3	1000	1000	650	250	200	150	70	2150
63 x 10 x 1	1000	1000	675	275	225	175	70	1050
63 x 10 x 2	1000	1000	675	275	225	175	70	1850
63 x 10 x 3	1000	1000	675	275	225	175	70	2600
80 x 10 x 1	1000	1000	700	300	250	175	70	1300
80 x 10 x 2	1000	1000	700	300	250	175	70	2300
80 x 10 x 3	1000	1000	700	300	250	175	70	3200
100 x 10 x 1	1000	1000	725	325	275	175	70	1550
100 x 10 x 2	1000	1000	725	325	275	175	70	2750
100 x 10 x 3	1000	1000	725	325	275	175	70	3250
125 x 10 x 1	1000	1000	725	350	275	200	70	1900
125 x 10 x 2	1000	1000	725	350	275	200	70	3350
125 x 10 x 3	1000	1000	725	350	275	200	70	4650
160 x 10 x 1	1000	1000	750	350	300	200	70	2350
160 x 10 x 2	1000	1000	750	350	300	200	70	4150
160 x 10 x 3	1000	1000	750	350	300	200	70	5800

(1) Admissible busbar nominal current with a temperature inside the panel of between 113°F and 176°F.
For other mounting configurations, please contact us.



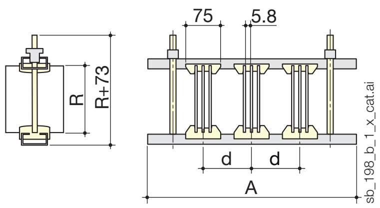
Adhering to the **maximum distance** between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.

Dimensions

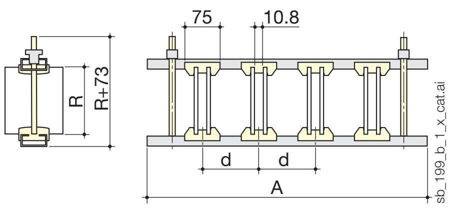
Mounting

- 1 to 3 bars of 5 mm thickness, per phase.
- 1 to 3 bars of 10 mm thickness, per phase.
- Interphase distance: min. 70 mm and max. 200 mm.
- Use 2 studs positioned symmetrically on the extremity of the poles or between the outermost poles.

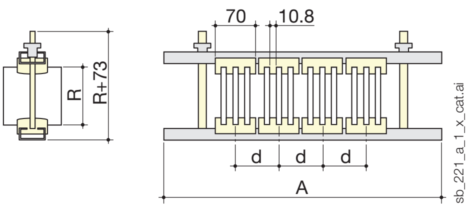
A (mm)	Enclosure (mm)
380	400
480	500
580	600
780	800



5 mm insert / 3 bars



10 mm insert / 2 bars



10 mm insert / 3 bars

SB 205 - SB 306 unipolar flat mounting busbar supports

References

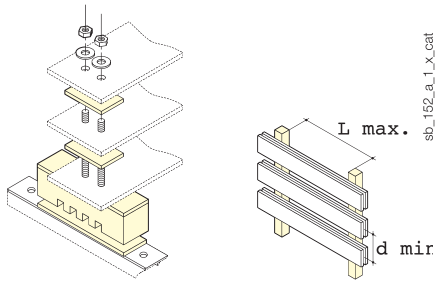
Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 205	1,000	1 - 3	100	6	5022 **5110**
SB 306	1,000	1 - 3	160	6	5023 **6110**


sb_117.psd

Characteristics

Support	peak I_{sc} / rms I_{sc} / Bar x qty	L max. (support bars in mm) for 48 kA / 23 kA	63 kA / 30 kA	82 kA / 39 kA	114 kA / 52 kA	152 kA / 69 kA	165 kA / 75 kA	d min. (mm)	Iz (A) (1)
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

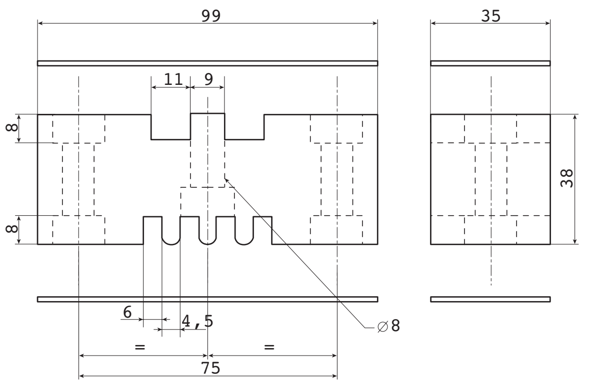
(1) Admissible busbar nominal current with a temperature inside the panel of between 113°F and 176°F.
For other mounting configurations, please contact us.



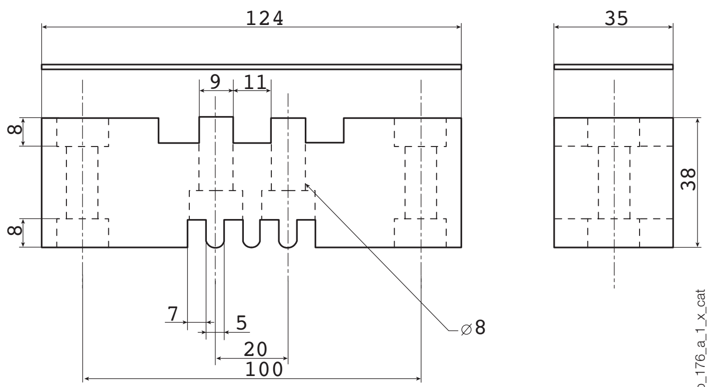
sb_152_a_1_x_cat

Mounting
- SB 205: 1 to 3 bars of max. recommended width 100 mm.
- SB 306: 1 to 3 bars of max. recommended width 160 mm.

Dimensions



sb_175_a_1_x_cat



sb_176_a_1_x_cat

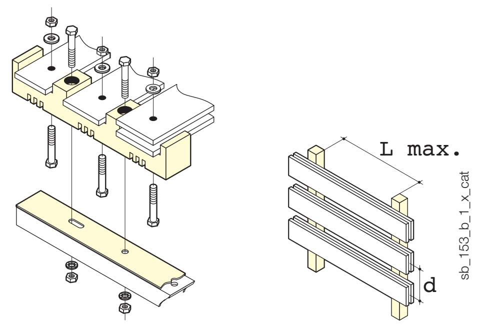
SB 7500 multipolar flat mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3 P	1,000	40 -50	1	5027 **5310**
4 P	1,000	40 -50	1	5027 **5410**

Characteristics

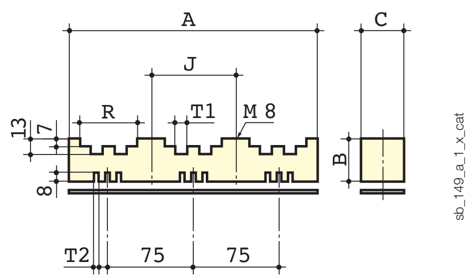
	L max. (support bars in mm) for							
peak I_{sc}	24 kA	48 kA	63 kA	82 kA	114 kA	152 kA		
rms I_{sc}	12 kA	23 kA	30 kA	39 kA	52 kA	69 kA		
Bar x qty							d (mm)	Iz (A)
50 x 5 x 1	1000	1000	950	725	525	450	75	600
50 x 5 x 2	1000	1000	1000	1000	975	850	75	1,050



Mounting: SB 7500: 1 to 2 bars of max. width 50 mm per pole. Fixed interphase of 75 mm.

Dimensions

No. of poles	A	B	C	J	R	T_1	T_2
3 P	220	38	35	75	52.5	11	6
4 P	295	38	35	75	52.5	11	6

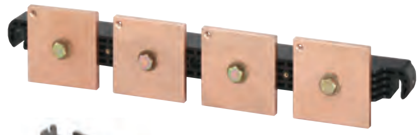


Busbar supports
Busbar

■ **SB P 30** multipolar flat mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3 P	1000	50 -100	1	5023 **0310**
4 P	1000	50 -80	1	5023 **0410**


sb_123.eps

Mounting bracket Accessories	To be ordered in multiples of	Reference
2 mounting brackets for SB P 30	1	5024 **9002**


sb_211_a_1_cat

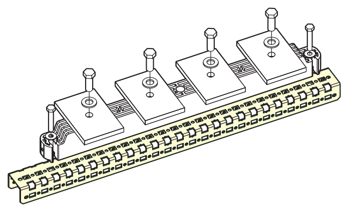
Bar fixing screws Accessories	To be ordered in multiples of	Reference
Grub screws for mounting 1 bar	25	5119 **4601**
Grub screws for mounting 2 bars back-to-back	25	5119 **4602**
Grub screws for mounting 3 back-to-back bars	25	5119 **4603**

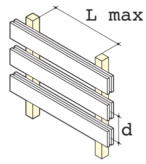

sb_210_a_1_cat

Characteristics

d = 123 mm

	L max. (support bars in mm) for									
peak I_{sc}	**63 kA**	**84 kA**	**110 kA**	**143 kA**	**165 kA**	**176 kA**	**187 kA**	**220 kA**		
rms I_{sc}	**30 kA**	**40 kA**	**50 kA**	**65 kA**	**75 kA**	**80 kA**	**85 kA**	**100 kA**		
Bar x qty									**d (mm)**	**Iz (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


sb_160_a_1_x_cat



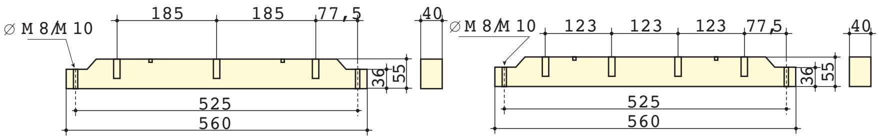
sb_200_a_1_x_cat

d = 185 mm

	L max. (support bars in mm) for									
peak I_{sc}	**63 kA**	**84 kA**	**110 kA**	**143 kA**	**165 kA**	**176 kA**	**187 kA**	**220 kA**		
rms I_{sc}	**30 kA**	**40 kA**	**50 kA**	**65 kA**	**75 kA**	**80 kA**	**85 kA**	**100 kA**		
Bar x qty									**d (mm)**	**Iz (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

Mounting
- 3 poles: 1 to 3 bars of max. width 100 mm per pole, fixed interphase of 185 mm
- 4 poles: 1 to 3 bars of max. width 80 mm per pole, fixed interphase of 123 mm

Dimensions



sb_154_c_1_x_cat

■ **Hexagonal insulators** unipolar flat mounting busbar supports

Female to female hexagonal insulator

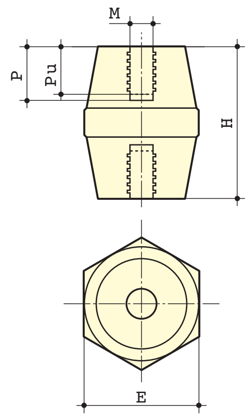
References

Height H (mm)	Threading M	Depth P (mm)	Depth Pu (mm)	Diameter E (mm)	Pack qty	Reference
20	M4	8	5.5	19	1	5031 **2004**
20	M6	8	5.5	19	1	5031 **2006**
25	M6	10	7	21	1	5031 **2506**
30	M6	10	7	33	1	5031 **3006**
30	M8	12	9	33	1	5031 **3008**
35	M6	12	9	33	1	5031 **3506**
35	M8	12	9	33	1	5031 **3508**
35	M10	12	9	33	1	5031 **3510**
40	M8	15	12	40	1	5031 **4008**
40	M10	15	12	40	1	5031 **4010**
45	M8	15	12	41	1	5031 **4508**
45	M10	15	12	41	1	5031 **4510**
50	M8	20	17	46	1	5031 **5008**
50	M10	20	17	46	1	5031 **5010**
50	M12	20	17	46	1	5031 **5012**
60	M10	20	17	50	1	5031 **6010**
65	M10	20	17	55	1	5031 **6510**
70	M12	25	21	55	1	5031 **7012**

sb_104_a_2_cat

Characteristics

Height H (mm)	Threading	Voltage Nominal (V) AC/DC	Insulation voltage (VAC) 50 Hz 1 min	Insulation voltage (VAC) Peak	Mechanical characteristics (daN) Flexion	Mechanical characteristics (daN) Traction	Tightening torque max. (Nm)
20	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



sb_105_c_1_x_cat

■ **Hexagonal insulators** unipolar flat mounting busbar supports (continued)

Male to female hexagonal insulator

References

Height H (mm)	Threading M	Depth P (mm)	Pu (mm)	Diameter E (mm)	Length W (mm)	Pack qty	Reference
16	M4	6	5	14	26	1	5038 **1604**
16	M5	6	5	14	26	1	5038 **1605**
25	M5	10	7	20	35	1	5038 **2505**
25	M6	10	7	20	35	1	5038 **2506**
35	M8	12	9	32	50	1	5038 **3508**
35	M10	12	9	32	65	1	5038 **3510**
50	M8	15	17	46	75	1	5038 **5008**
50	M10	20	17	46	80	1	5038 **5010**
60	M10	20	17	50	85	1	5038 **6010**


sb_106_a_2_cat

Male to male hexagonal insulator

References

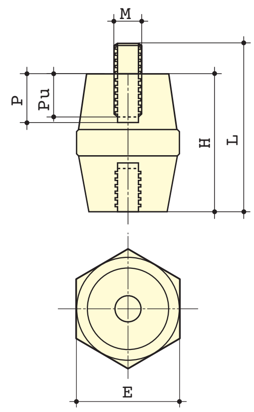
Height H (mm)	Threading M	Depth P (mm)	Pu (mm)	Diameter E (mm)	Length W (mm)	Pack qty	Reference
16	M4	6	5	14	26	1	5038 **1604**
16	M5	6	5	14	26	1	5038 **1605**
25	M5	10	7	20	35	1	5038 **2505**
25	M6	10	7	20	35	1	5038 **2506**
35	M8	12	9	32	50	1	5038 **3508**
35	M10	12	9	32	65	1	5038 **3510**
50	M8	15	17	46	75	1	5038 **5008**
50	M10	20	17	46	80	1	5038 **5010**
60	M10	20	17	50	85	1	5038 **6010**


sb_107_a_2_cat

Male to female and male to male hexagonal insulator

Characteristics

Height H (mm)	Threading	Voltage Nominal (V) AC/DC	Insulating voltage (VAC) 50 Hz 1 min	Peak	Mechanical characteristics (daN) Flexion	Traction	Tightening torque max. (Nm)
16	M4	500	3000	5500	100	150	3
16	M5	500	3000	5500	100	150	6
25	M5	500	3000	11000	180	400	6
25	M6	500	3000	11000	180	400	12
35	M8	1400	9000	16000	380	900	42
35	M10	1400	9000	16000	320	800	44
50	M8	2000	12000	21500	650	1800	60
50	M10	2000	12000	21500	650	1700	70
60	M10	2400	12000	27000	560	1600	85



sb_058_d_1_x_cat

Grub screw

References

Length (mm)	Thread	To be ordered in multiples of	Reference
20	M6	20	5032 **2006**
20	M8	20	5032 **2008**
25	M6	20	5032 **2506**
25	M8	20	5032 **2508**
30	M6	20	5032 **3006**
30	M8	20	5032 **3008**
40	M8	20	5032 **4008**
40	M10	20	5032 **4010**
50	M12	20	5032 **5012**


sb_121_a_2_cat

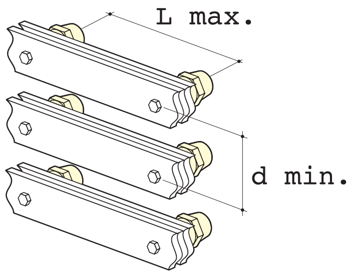
Define your exact busbar

> For your busbar, fitted with hexagonal insulators, to be mechanically resistant to a short-circuit, it must correspond to the table below.
Values according to IEC 61439-1.

General characteristics

			L max. (support bars in mm) for						
		peak I_{sc}	24 kA	48 kA	63 kA	82 kA	114 kA		
		rms I_{sc}	12 kA	23 kA	30 kA	39 kA	52 kA		
Height H (mm)	**Threading**	**Bar x qty**						**d min. (mm)**	**Iz (A) (1)**
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 x1	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 busbar nominal current with a temperature inside the panel of between 113°F and 176°F.
For other mounting configurations, please contact us.



sb_164_a_1_x_cat

SB 1 - SB 2 multipolar flat mounting busbar supports

References

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 1	690	1	20 -25	6	5021 **0110**
SB 2	690	1	32 -40	6	5022 **0110**

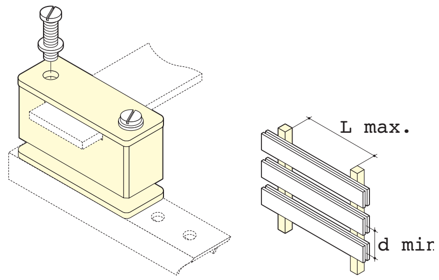

sb_108.psd

Ordering guide
SB 1: bar of max. width 25 mm
SB 2: bar of max. width 40 mm

Characteristics

Support		L max. (support bars in mm) for						
	peak I_{sc}	24 kA	48 kA	63 kA	82 kA	114 kA		
	rms I_{sc}	12 kA	23 kA	30 kA	39 kA	52 kA		
	Bar x qty						d min. (mm)	Iz (A) (1)
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

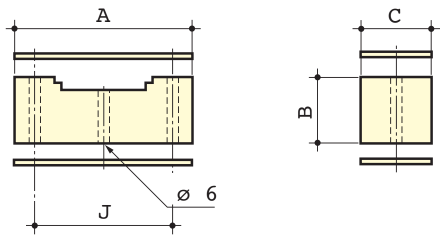
(1) Admissible busbar nominal current with a temperature inside the panel of between 113°C and 176°C.
For other mounting configurations, please contact us.



sb_150_a_1_x_cat

Dimensions

Support	A	B	C	J
SB 1	50	23	20	34
SB 2	68	23	23.5	50



sb_014_c_1_x_cat

SB 3 multipolar flat mounting busbar supports

References

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 3 without screws	690	1 - 2	32 -63	6	5023 **0111**
SB 3 with screws (1)	690	1 - 2	32 -63	6	5023 **0110**

(1) SB 3 bars and with screws.

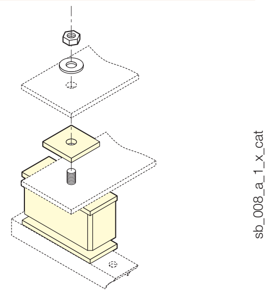
Ordering guide

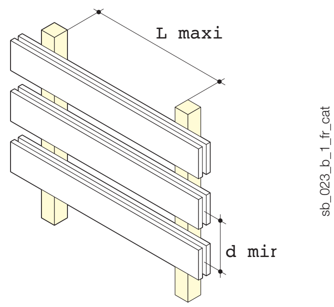
SB 3: 1 to 2 bars of max. recommended width 63 mm.

Characteristics

	L max. (support bars in mm) for						
peak I_{sc}	**24 kA**	**48 kA**	**63 kA**	**82 kA**	**114 kA**		
rms I_{sc}	**12 kA**	**23 kA**	**30 kA**	**39 kA**	**52 kA**		
Bar x qty						**d min. (mm)**	**Iz (A) (1)**
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

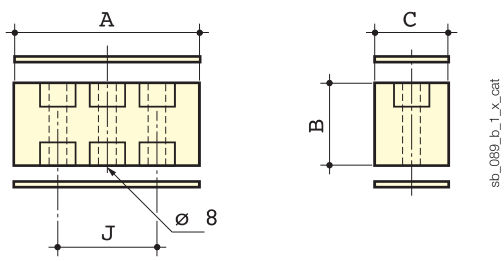
(1) Admissible busbar nominal current with a temperature inside the panel of between 113°F and 176°F.
For other mounting configurations, please contact us.





Dimensions

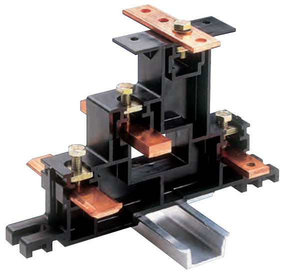
Support	A	B	C	J
SB 3 without screws	65	32	28	36
SB 3 with screws	65	32	28	36



SB E 44 four pole stair type supports

References

No. of poles	Pack qty	Reference
4 P	1	5028 **0410**
Accessories	**Pack qty**	**Reference**
270 mm long protection screen kit	1	5028 **0411**
420 mm long protection screen kit	1	5028 **0412**
620 mm long protection screen kit	1	5028 **0413**
Set of 20 protection screen adaption spacers	1	5028 **0415**

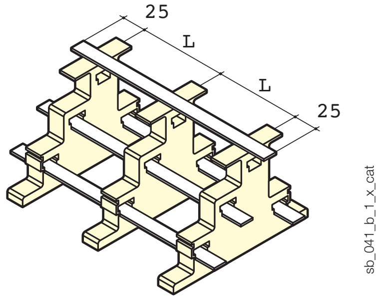

sb_038.eps

Characteristics

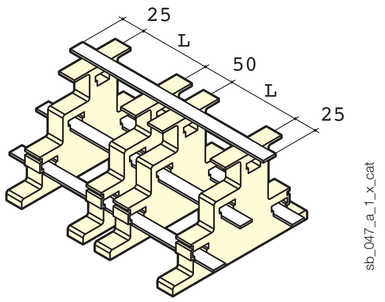
	L max. (support bars in mm) for							
	peak I_{sc}	10 kA	15 kA	24 kA	38 kA	48 kA	63 kA	
	rms I_{sc}	6 kA	9 kA	12 kA	19 kA	23 kA	30 kA	
Support	**Bar x qty**							**Iz (A)** [(1)]
Type 1	15 x 3 x 1	950	625	400	250	175		160
Type 1	15 x 5 x 1	1000	825	500	300	175		220
Type 1	15 x 6 x 1	1000	900	550	300	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 busbar nominal current with a temperature inside the panel of between 113°F and 176°F.
For other mounting configurations, please contact us. **N.B.:** *Iz indicated is for a solid (undrilled) busbar.*

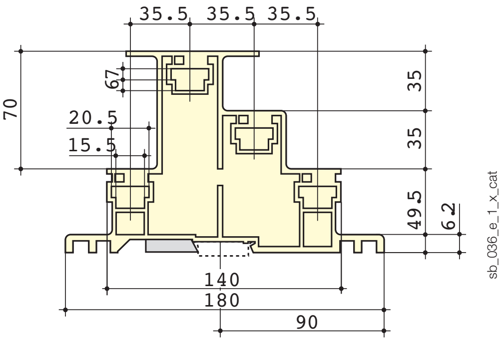
Dimensions



Type 1: Busbars including 3 (or more) equally spaced SB E 44 supports.



Type 2: Busbars with 3 (or more) SB E 44 supports with doubled intermediary supports.



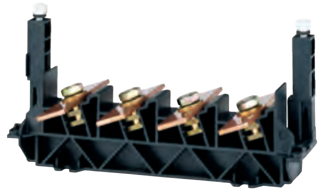
Mounting with eliptical holes: 150 to 170 mm.

■ **SB P 44** four pole flat mounting busbar support with fixed interphase, for mounting angled bars

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
4 P	1,000	20 -32	1	5026 **0450**

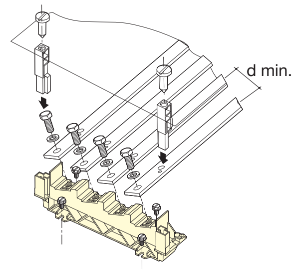
SB P 44: 1 bar of 5 or 10 mm thickness with a width of 20, 25, 30 or 32 mm.
Please note: protection cover not supplied.



sb_170.psd

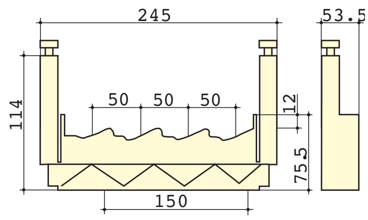
Characteristics

	L max. (support bars in mm) for							
peak I_{sc}	**10 kA**	**15 kA**	**24 kA**	**48 kA**	**63 kA**	**82 kA**		
rms I_{sc}	**6 kA**	**9 kA**	**12 kA**	**23 kA**	**30 kA**	**39 kA**		
Bar x qty							**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



sb_165_c_1_x_cat

Dimensions



sb_147_b_1_x_cat


socomec
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ON
OFF
DANGER / PELIGRO
ABUS

Enclosed disconnect solutions

Enclosed disconnect switches

Enclosed non-fusible disconnect switches, fusible switches & transfer switches

UL / NEMA 3R/12
Painted steel
p. 209

UL / NEMA 4, 4X
Fiberglass
p. 209

UL / NEMA 4, 4X
Stainless steel (304)
p. 209

UL / NEMA 1, 3, 3R, 12, 4, 4X
Polycarbonate
p. 209

Enclosed disconnect switches

Non-fusible disconnect switches, fusible disconnect switches & transfer switches up to 1200 A

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UL / NEMA 1, 3, 3R, 12, 4, 4X
Polycarbonate
Ref. 2214 3503

coff-ul_004.psd

UL / NEMA 4, 4X
Fiberglass
Ref. 221E 3903

coff-ul_034.eps

UL / NEMA 4, 4X
Stainless steel
Ref. 221X 3903

coff-ul_032.psd

UL / NEMA 3R, 12
Painted steel
Ref. 30VC 3003

Function

Enclosed disconnect switches range are used as:

- The NEC required motor disconnect upstream from the motor.
- Main disconnecting means, fusible and non-fusible.
- OSHA Lock Out / Tag Out devices to isolate a load for maintenance, service or repair.
- Transferring low voltage circuits on load.

Advantages

A flexible range

- Designed for normal as well as difficult or harsh environnements (wash down, mechanical impacts, corrosion…).
- UL / NEMA rated enclosures up to 1, 3R, 12, 4, 4X.
- Metallic and nonmetallic enclosures.
- Compact design.
- For applications up to 1200 A.

High switching performance, simple wiring

- High short-circuit rating.
- Reliable switching technology.
- Large terminals.

Robust and ergonomic handle

- Red/Yellow handle (available in black).
- Painted steel enclosure are equipped with heavy duty handle with metallic padlock hasp.
- Clear On - Off positions indication.
- 3 padlocks capability.
- Door interlocking in ON position and padlocked in OFF position.
- Defeatable door interlock in ON position. (The interlocking is automatically reactivated when the door is closed, except for polycarbonate boxes up to 60A).

The solution for

- OEM/Machine Builders
- Industrial Control Panels Manufacturers
- Switchboard Manufacturers (UL 891)
- Distributors

Strong points

Suitable for use as:

- Manual motor controller
- OSHA Lockout/Tagout disconnects
- Safety switches
- Emergency power electrical installations

Conformity to standards(1)

- cULus 508A
- UL 60947-4-1*
  CSA-C22.2 No. 14
  Guide NLRV
  File E173959
- UL 489
  CSA-C22.2 No. 5
  File E255272
- UL 98
  CSA-C22.2 No. 4
  Guide WHTY
  File E201138
- UL 1008
  Guide WPYV
  File E317092
- CSA-C22.2 No. 4
  Class 4651-02
  File 112964
- CSA-C22.2 No. 5
  Class 4652-06
  File 112964
- CSA-C22.2 No. 14
  Class 3211-05
  File 112964

*replaces UL 508

Applications and range overview

Heavy duty industry

Food and beverage processing

Machinery and safety


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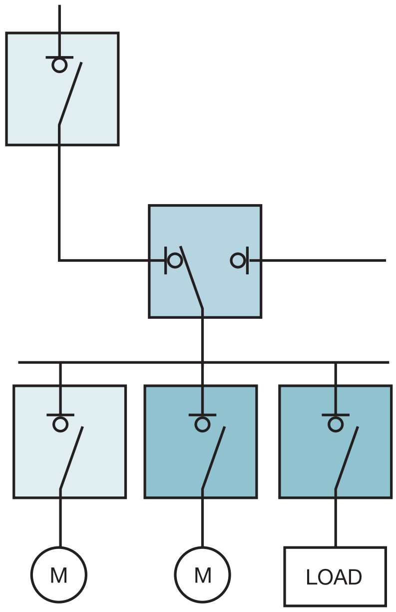
site_712_a.eps


corpo_207_a.eps



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	Rating (A)	Switch	Enclosure	UL / NEMA
Service Entrance Disconnect or Branch Disconnect	100 A non-fusible	SIRCO M (UL 98)	Polycarbonate	1, 3, 3R, 12, 4, 4X
			Fiberglass	4, 4X
			Stainless steel	4, 4X
	Up to 1200 A non-fusible	SIRCO (UL 98)	Painted steel	3R, 12
	Up to 800 A fusible	FUSERBLOC (UL 98)		
Transfer switch	Up to 400 A non-fusible	SIRCOVER (UL 1008)	Painted steel	3R, 12
	Up to 1200 A non-fusible	SIRCOVER (UL 98)		
Manual motor Disconnect	Up to 60 A non-fusible	SIRCO M (UL 60947-4-1)(1)	Painted steel	3R, 12
			Polycarbonate	1, 3, 3R, 12, 4, 4X
			Fiberglass	4, 4X
			Stainless steel	4, 4X

(1) Meets the requirements of the standard UL 508.

Enclosed disconnect switches

Non-fusible disconnect switches, fusible disconnect switches and transfer switches

up to 1200 A

References

Non-fusible disconnect switch, suitable for use as motor disconnect and service entrance disconnect

UL / NEMA enclosure, 3-pole, 600 VAC, non-fusible

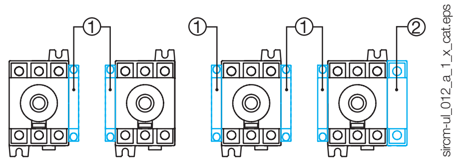
					
Approvals	**Rating (A)**	UL / NEMA 3R, 12[2] **Painted steel** color ANSI 61 gray	UL / NEMA 1, 3R, 12, 4, 4X **Fiberglass** color RAL 7035 light-gray	UL / NEMA 1, 3R, 12, 4, 4X **Stainless steel (304)** brushed finish	UL / NEMA 1, 3, 3R, 12, 4, 4X **Polycarbonate** color RAL 7035 light-gray
cULus 60947-4-1	30[1]	221M **3703**	221E **3903**	221X **3903**	2214 **3503**
	60[1]	222M **3706**	222E **3906**	222X **3906**	2224 **3506**
cULus 508A	100	30UC **3010**	30UL **3010**	30UF **3010**	30UJ **3010**
	200	30UC **3020**	-	-	-
	400	30UC **3040**	-	-	-
	600	30UC **3060**	-	-	-
	800	30UC **3080**	-	-	-
	1200	30UC **3120**	-	-	-

(1) Suitable for motor disconnect.
(2) Handle with metallic padlocking hasp.
(3) UL 98.
(4) 30 A in large 60 A enclosure.

Accessories sold separately

					
Rating (A)	**Auxiliary contacts**	**Unswitched neutral pole**	**Switched fourth pole**	**Terminal shrouds / screens**	
				3 P	**1 P**
30	1 AC NO + NC 2299 **0001**[6]	2200 **5005**	2200 **1003**	2294 **3005**[2]	2294 **1005**[2]
60		2200 **5009**	2200 **1006**[1]	2294 **3009**[2]	2294 **1009**[2]
100	1 AC 2 NC 2299 **0011**[6]	2200 **5011**	2200 **1010**	2294 **3016**[2]	2294 **1011**[2]
200	1st AC NO + NC 2799 **0021**	30AC **0102**[7]	-	2798 **3021**[3] **2798 8021**[4]	
400		30AC **0104**[7]		2798 **3041**[3] **2798 8041**[4]	
600	2nd AC NO + NC 2799 **0022**	30AC **0106**[7]		2798 **3060**[5]	
800		30AC **0108**[7]		2798 **3120**[5]	
1200					

(1) Not UL.
(2) Top or bottom.
(3) Top.
(4) Bottom.
(5) Load side screen, the line side is included with the switch.
(6) Not UL only for rating 100 A.
(7) UL components



Configuration of the auxiliary contacts for enclosed SIRCO M.
1. M type auxiliary contacts.
2. Additional pole.

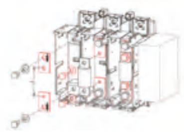
Fusible disconnect switch, fuse class CC, J and L suitable for use as motor disconnect and service entrance disconnect

UL / NEMA enclosure, 3-pole, 600 VAC, fusible[1]

Approvals	Rating (A)	Fuse type	UL / NEMA 3R, 12[2] Painted Steel color ANSI 61 gray
cULus 508A	30	CC	30VC 3A03
	30	J	30VC 3003
	60		30VC 3006
	100		30VC 3010
	200		30VC 3020
	400		30VC 3040
	600		30VC 3060
	800	L	30VC 3080

(1) Fuses not included.
(2) Handle with metallic padlocking hasp.
(3) Top or bottom.
(4) Load side screen, the line side is included with the switch.

Accessories sold separately

Unswitched neutral pole	Class T fuses adapter	U-type auxiliary contacts	Terminal shrouds / screens
-	-	1 AC NO 3999 0701 1 AC NC 3999 0702	As standard
-	-		
-	-		
30AC 0102	3729 8010		
	3729 8020		3898 3020[3]
30AC 0104	3729 8040		3898 3040[3]
30AC 0106	3729 8060		3898 3080[4]
30AC 0108	3729 8080		

Transfer switch

UL / NEMA enclosure, 3-4 poles, 600 V, non-fusible

Approvals	Rating (A)	UL / NEMA 3R, 12[1] Painted Steel color ANSI 61 gray 3 P	4 P
UL 1008	100	30WC 3010	30WC 4010
	200	30WC 3020	30WC 4020
	400	30WC 3040	30WC 4040
cULus 508A	600	30WC 3060	30WC 4060
	800	30WC 3080	30WC 4080
	1200	30WC 3120	30WC 4120

(1) Handle with metallic padlocking hasp.

Accessories sold separately

Unswitched neutral pole	Auxiliary contacts	Terminal screens 3 P	4 P
30AC 0102	1 AC NO/NC on position 1 and 2 4159 0021	4158 3021	4158 4021
30AC 0104		4158 3041	4158 4041
30AC 0106	NO/NC on position 1 and 2 As standard	1609 3063	1609 4063
30AC 0108		1609 3080	1609 4080
30AC 0112			

Enclosed disconnect switches

Non-fusible disconnect switches, fusible disconnect switches and transfer switches
up to 1200 A

Characteristics

Non-fusible disconnect switch - Characteristics according to UL 60947-4-1, UL 98 and CSA-C22.2 No. 4 and No. 14

	Motor disconnect		Service disconnect, non-fusible					
General use rating (A)	**30**	**60**	**100**	**200**	**400**	**600**	**800**	**1200**
Short circuit at 600 VAC (kA)	65	50/65	25 (100)	200	200	200	100	100
Type of fuse	J	J	J	J	J	J	L	L
Max rating (A)	30	100/60	100	200	400	600	800	1200
Max. motor hp / FLA 3 ph motor max.								
208 VAC	7.5 / 24.2	15 / 46.2	-	-	-	-	-	-
220-240 VAC	7.5 / 22	20 / 54	20 / 54	75 / 192	125 / 312	200 /480	200 / 480	200 / 480
440-480 VAC	20 / 27	40 / 52	50 / 65	150 / 180	250 / 302	400 / 477	500 / 590	500 / 590
600 VAC	25 / 27	40 / 41	50 / 52	200 / 192	350 / 336	350 / 336	500 / 472	500 / 472
Connection terminals								
Min. connection section / AWG	#14 - #14	#14 - #1	#12 -#10	#6 - 300MCM	#2 - 600MCM	#2 - 600MCM	#2 - 600MCM	#2 - 600MCM
Max. connection section / AWG	2x (#14 - #12)	2x (#10 - #6)	-	-	2x (#6-350MCM)	2x (#2-600MCM)	4x (#2-600MCM)	4x (#2-600MCM)
Mechanical characteristics								
Endurance (number of cycles)	10 000	10 000	10 000	8 000	6 000	6 000	3 500	3 500
Operating torque (lbs.in/Nm)	7 / 0.8	8.9 / 1	12.4 / 1.4	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	A600	A600	A600

Fusible disconnect switch - Characteristics according to UL 489, UL 98 and CSA-C22.2 No. 4

General use rating (A)	**30(1)**	**30**	**60**	**100**	**200**	**400**	**600**	**800**
Short circuit at 600 VAC (kA)	100	100	200	200	200	200	200	200
Type of fuse	CC	J	J	J	J	J	J	L
Max rating (A)	30	30	60	100	200	400	600	800
Max. motor hp / FLA 3 ph motor max.								
220-240 VAC	7.5 / 22	7.5 / 22	15 / 42	30 / 80	60 / 154	125 / 312	200 / 480	200 / 480
440-480 VAC	15 / 21	15 / 21	30 / 40	60 / 77	125 / 156	250 / 302	500 / 590	500 / 590
600 VAC	20 /22	20 / 22	50 / 52	75 / 77	150 / 144	350 / 336	500 / 472	500 / 472
Connection terminals								
Min. connection section / AWG	#14 - #10	#14 - #10	#10 - #6	#10 - 2/0	#6 - 300MCM	#2 - 600MCM	#2 - 600MCM	#2 - 600MCM
Max. connection section / AWG	-	-	-	-	-	2x (#6-350MCM)	2x (#2-600MCM)	2x (#2-600MCM)
Mechanical characteristics								
Endurance (number of cycles)	10 000	10 000	10 000	10 000	8 000	6 000	5 000	5 000
Operating torque (lbs.in/Nm)	31 / 3.5	31 / 3.5	71 / 8	71 / 8	90 / 10.2	150 / 17	586 / 66.2	586 / 66.2
Auxiliary contacts								
Electrical characteristics	A600	A600	A600	A600	A600	A600	A600	A600

(1) UL 489.

Transfer switch - Characteristics according to UL 98, UL 1008 and CSA-C22.2 No. 4

General use rating (A)	**100 A**	**200 A**	**260 A**	**400 A**	**600 A**	**800 A**	**1200 A**
Frame size	**B4**		**B5**		**B6**	**B7**	
Operation voltage 2 P - 3/4 P	240/600	240/600	240/600	240/600	-/600	-/600	-/600
Short circuit rating at 600 VAC with fuses (kA)							
Short circuit rating at 600 VAC (kA)	100	100	65	65	200	100	100
Type of fuse	J	J	J	J	J	L	L
Max fuse rating (A)	200	400	600	600	600	800	1200
Short circuit rating at 600 VAC with “Specific Circuit Breaker” (kA)							
Square D JJ breaker 250 A - 2 P 240 VAC - 3/4 P 480 VAC	65	65	-	-	-	-	-
Schneider Electric NSX-F 160 A - 3/4 P 480 VAC	35	-	-	-	-	-	-
Short circuit rating at 600 VAC with “Any Breaker” (kA)							
Short circuit rating (kA)	10	10	14	14	35	35	35
Short circuit capacity (ms)	25	25	50	50	50	50	50
Rated operational current							
240 VAC “Total System” (A)	100	200	260	400	480	-	-
240 VAC resistive load (A)	100	200	260	400	480	-	-
480 VAC “Total System” (A)	100	100	260	400	477	-	-
480 VAC resistive load (A)	100	200	260	400	477	-	-
600 VAC “Total System” (A)	100	100	200	200	500	-	-
600 VAC resistive load (A)	100	200	260	400	500	-	-
Mechanical endurance							
Endurance (number of operating cycles)	6050	6050	6050	4050	5000	3500	2500
Connection terminals							
Min. connection section / AWG	#6	#6	#4 / 2 X 1 /0	#4 / 2 X 1 /0	-	-	-
Max. connection section / AWG	300MCM	300MCM	600MCM / 2 X 250MCM	600MCM / 2 X 250MCM	-	-	-

Enclosed disconnect switches

Non-fusible disconnect switches, fusible disconnect switches and transfer switches

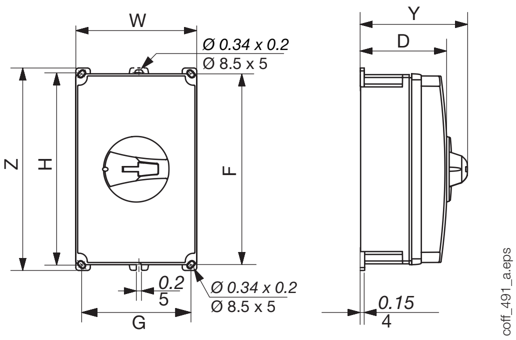
up to 1200 A

Dimensions (in/mm)

UL / NEMA enclosure 1, 3, 3R, 12, 4, 4X - polycarbonate

Non-fusible disconnect switch up to 100 A

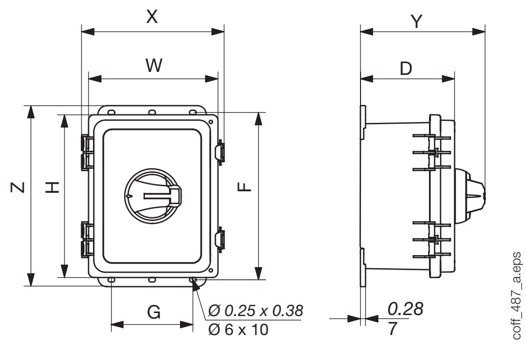
Rating (A)	Unit	H	W	D	G	F	Y	Z	Weight (lbs)
0 … 30	in	5.9	3.9	3.62	0	6	4.37	6.38	4.4
	mm	150	99	92	0	152.5	111	162	
0 … 60	in	7.8	4.94	3.62	4.45	7.32	4.37	8.27	6.6
	mm	198	125.5	92	113	186	111	210	
0 … 100	in	11.81	8.27	5.35	7.44	9.37	7.12	11.81	9
	mm	300	210	136	189	238	181	300	



UL / NEMA enclosure 1, 3R, 12, 4, 4X - fiberglass

Non-fusible disconnect switch up to 100 A

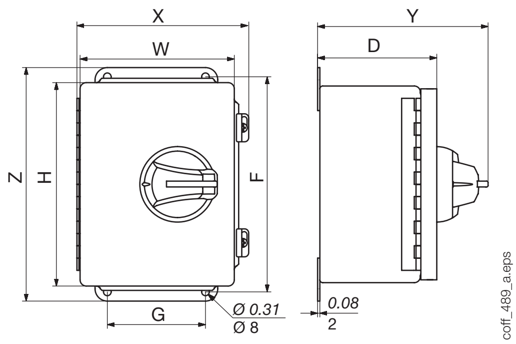
Rating (A)	Unit	H	W	D	G	F	X	Y	Z	Weight (lbs)
0 … 30	in	7.12	7.24	5.27	4.56	7.36	7.99	6.97	8.15	4.4
	mm	181	184	134	116	187	203	177	207	
0 … 60	in	9.13	7.24	5.27	4.56	9.37	7.99	6.97	10.16	6.6
	mm	232	184	134	116	238	203	177	258	
0 … 100	in	12.08	11.23	7.28	8.56	13.34	12.05	8.97	14.08	11
	mm	307	285	185	217	339	306	228	358	



UL / NEMA enclosure 1, 3R, 12, 4, 4X - stainless steel (grade 304)

Non-fusible disconnect switch up to 100 A

Rating (A)	Unit	H	W	D	G	F	X	Y	Z	Weight (lbs)
0 … 30	in	6.29	6.26	4.84	4	6.75	6.97	6.38	7.50	4.4
	mm	159	159	123	102	171	177	162	191	
0 … 60	in	8.26	6.26	4.84	4	8.75	6.97	6.38	9.50	6.6
	mm	210	159	123	102	222	177	162	241	
0 … 100	in	12	10	6	8	12.75	11	8.4	13.5	12
	mm	305	254	152	203	324	280	213	343	



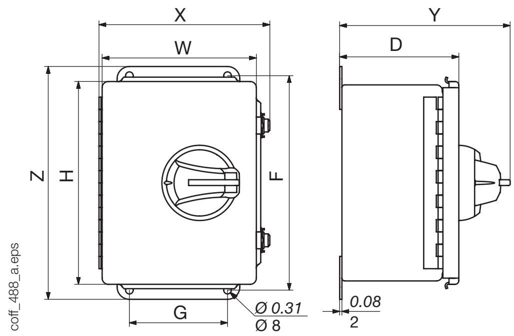
UL / NEMA enclosure 1, 3R, 12 - painted steel

Non-fusible disconnect switch up to 100 A

Rating (A)	Unit	H	W	D	G	F	X	Y	Z	Weight (lbs)
0 … 30	in	6.0	6.0	4.8	4.0	6.8	6.9	6.6	7.5	6
	mm	152.4	152.4	120.7	101.6	171.5	176.3	167.6	190.5	
0 … 60	in	8.0	6.0	4.8	4.0	8.8	6.9	6.6	9.5	7
	mm	203.2	152.4	120.7	101.6	222.3	176.3	167.6	241.3	
0 ... 100	in	12.0	10.0	6.8	8.0	12.8	10.9	8.6	13.5	16
	mm	304.8	254.0	171.5	203.2	323.9	277.9	218.4	342.9	

Fusible disconnect switch up to 100 A

Rating (A)	Unit	H	W	D	G	F	X	Y	Z	Weight (lbs)
0 … 30	in	10.0	8.0	6.8	6.0	10.8	8.9	8.8	11.5	11
	mm	254.0	203.2	171.5	152.4	273.1	227.1	223.5	292.1	
0 … 60	in	12.0	10.0	8.8	8.0	12.8	10.9	10.4	13.5	18
	mm	304.8	254.0	222.3	203.2	323.9	277.9	264.2	342.9	
0 … 100	in	14.0	12.0	8.8	10.0	14.8	12.9	10.4	15.5	24
	mm	355.6	304.8	222.3	254.0	374.7	328.7	264.2	393.7	



UL / NEMA enclosure 1, 3R, 12 - painted steel

Non-fusible disconnect switch > 100 A

Rating (A)	Unit	H	W	D	G	F	X	Y	Z	Weight (lbs)
200	in	24.0	16.0	6.8	14.0	24.8	16.9	8.6	25.5	80
	mm	609.6	406.4	171.5	355.6	628.7	430.3	218.4	647.7	
400	in	30.0	20.0	10.8	18.0	30.8	20.9	12.6	31.5	115
	mm	762.0	508.0	273.1	457.2	781.1	531.9	320.0	800.1	
600	in	42.0	24.0	12.8	22.0	42.8	24.9	15.3	43.5	230
	mm	1066.8	609.6	323.9	558.8	1085.9	633.5	387.9	1104.9	
800 … 1200	in	60.0	36.0	12.8	34.0	60.8	36.9	15.3	61.5	332
	mm	1524.0	914.4	323.9	863.6	1543.1	938.3	387.9	1562.1	

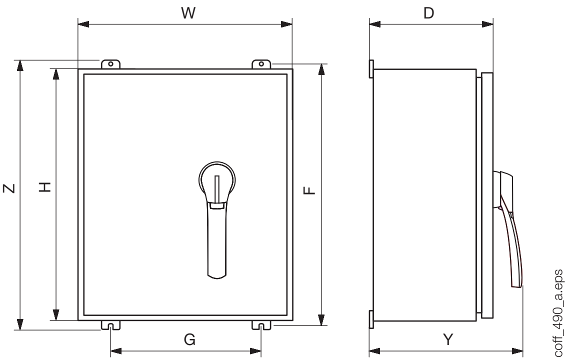
Fusible disconnect switch > 100 A

Rating (A)	Unit	H	W	D	G	F		Y	Z	Weight (lbs)
200 A	in	24.0	20.0	10.8	18.0	24.8	20.9	12.6	25.5	92
	mm	609.6	508.0	273.1	457.2	628.7	531.9	320.0	647.7	
400 A	in	42.0	32.0	12.8	30.0	42.8	32.9	14.6	43.5	200
	mm	1066.8	812.8	323.9	762.0	1085.9	836.7	370.8	1104.9	
600 A	in	48.0	36.0	12.8	34.0	48.8	36.9	15.3	49.5	268
	mm	1219.2	914.4	323.9	863.6	1238.3	938.3	387.9	1257.3	
800 A	in	60.0	36.0	12.8	34.0	60.8	36.9	15.3	61.5	332
	mm	1524.0	914.4	323.9	863.6	1543.1	938.3	387.9	1562.1	

Transfer switch ≥ 100 A

Rating (A)	Unit	H	W	D	G	F		Y	Z	Weight (lbs)
100 … 200	in	24.0	20.0	10.8	18.0	24.8	20.9	12.6	25.5	95
	mm	609.6	508.0	273.1	457.2	628.7	531.9	320.0	647.7	
400	in	30.0	24.0	16.8	22.0	30.8	24.9	19.3	31.5	185
	mm	762.0	609.6	425.5	558.8	781.1	633.5	489.5	800.1	
600	in	48.0	36.0	20.8	34.0	48.8	36.9	23.3	49.5	321
	mm	1219.2	914.4	527.1	863.6	1238.3	938.3	591.1	1257.3	
800 … 1200	in	60.0	36.0	20.8	34.0	60.8	36.9	23.3	61.5	460
	mm	1524.0	914.4	527.1	863.6	1543.1	938.3	591.1	1562.1	

Note: dimensions are subject to change. Please consult us for verification.




socomec
WEBVIEW
DIRIS Digiware D-70
ALARM
COM
ON
+FREQUENCY
CLIM BAT ID:6CAB0B
INST
AVG
MAX
U 1-2 398.5 V
05.03.2014 11:10:00
U 2-3 398.4 V
05.03.2014 11:10:00
U 3-1 398.5 V
05.03.2014 11:10:00
F 60.01 HZ
05.03.2014 11:10:00
IP
E
OK
DIRIS Digiware U-30
DIGIWARE BUS
V1
V2
V3
VN
socomec S-130
ID : 4905A8
P1
P2
I01
I02
I03

Metering, monitoring & power quality

Multi-circuit metering & measurement

DIRIS Digiware AC

DIRIS Digiware D and **C**
p. 235

DIRIS Digiware U
p. 241

DIRIS Digiware S
p. 247

DIRIS Digiware I
p. 243

DIRIS Digiware DC

DIRIS Digiware Udc
p. 265

DIRIS Digiware Idc
p. 269

DIRIS Digiware IO
p. 277

Single-circuit metering, measurement & analysis

DIRIS A-40
p. 289

DIRIS A-30
p. 299

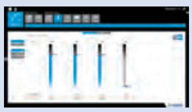
DIRIS A-20
p. 305

DIRIS A-10
p. 309

DIRIS B
p. 281

Software suite

WEBVIEW
Embedded web server
p. 315



Current sensors

AC current sensors
TE, TR, TR/iTR, TF
p. 257

DC current sensors
p. 273

Communication interfaces

Datalogger
p. 313

Enclosed metering solutions

DIRIS DigiBOX M & A
p. 279, 293

Integrated technologies

Groundbreaking technologies for greater simplicity and performance

PreciSense

Products that are setting new standards in measurement accuracy

PreciSense technology ensures 100% reliable accuracy over the entire measuring chain.

Be guaranteed of the accuracy of your measurements:

- For the global measurement chain.
- For reliable measurements.
- For relevant corrective actions.

PreciSense technology offers the best accuracy on the market regardless of the type of current sensors used (closed, split-core, flexible or embedded in the DIRIS Digiware S module).

Discover the video

VirtualMonitor

The simple and cost-saving solution for monitoring your protective devices

Virtual Monitor technology enables a monitoring solution to be installed simply and at all levels of the installation.

Virtual Monitor:

- Detects the position and status of the device.
- Detects tripping of the protective device.
- Meters the number of operations.

VirtualMonitor technology monitors the status of protective devices:

- On your entire electrical installation (without additional space).
- Remotely and in real-time.
- Without additional hardware or wiring (without adding an auxiliary contact).

Discover the video

AutoCorrect

The software that eliminates wiring errors

AutoCorrect technology ensures that the equipment is properly wired at all times, thus avoiding on-site inspections.

AutoCorrect technology ensures the operation of the measuring system thanks to simple and rapid detection of connection errors:

- Automatic wiring control (phase sequence detection and automatic configuration of the direction of the current).
- Correction of errors with a single click.
- Feature available off-load.

Error correction is carried out without any modification to the wiring.

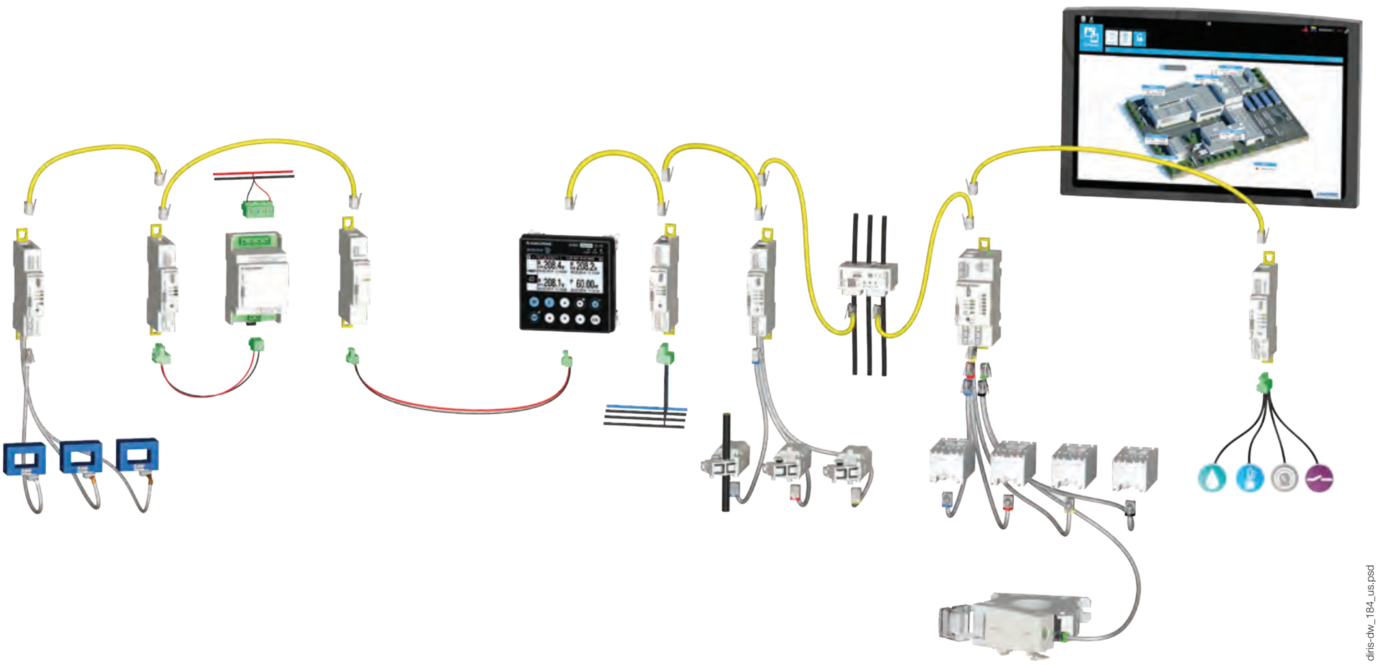
Discover the video

SYDIV_419_A

PreciSense, VirtualMonitor and AutoCorrect technologies are embedded in Socomec's power monitoring devices.

Power metering and monitoring system for AC electrical installations

- DIRIS Digiware S with its 3 integrated sensors and DIRIS Digiware I associated with iTR sensors.



Multifunction meters

- DIRIS A-40 and DIRIS B with iTR sensors.

Selection guide

Power monitoring system for electrical installations

DIRIS Digiware

Build your own AC system

System interface, displays and gateways (24 VDC)

DIRIS Digiware D
display

or

DIRIS Digiware M
gateway

or

DIRIS Digiware C
RS485 interface

+

Voltage acquisition module

DIRIS Digiware U

+

Current acquisition module with integrated sensors

DIRIS Digiware S

+

Current acquisition modules

DIRIS Digiware I-3x
3 inputs

DIRIS Digiware I-4x
4 inputs

DIRIS Digiware I-6x
6 inputs

+

Current sensors

TE
Solid

TR/iTR
Split-core

TF
Flexible

+

Digital and analogue input/output modules

DIRIS Digiware IO

Find the best DIRIS Digiware configuration!

The Socomec Meter Selector is your digital assistant, helping you find the best DIRIS Digiware configuration for your power monitoring projects, and all in just a few clicks!

- Fill in information regarding your project.
- Download the system diagram and bill of material.
- All your projects are archived in your personal account.

Control and power supply interface

Application	Centralization and display of data				Data centralization	Repeater
						
DIRIS Digiware	***M-50***	***M-70***	***D-50***	***D-70***	***C-31***	***C-32***
Function						
Centralizing measurement points	•	•	•	•	•	
High-resolution LCD display (configuration, selection and visualisation display of circuits)			•	•		
Repeater						•
Power supply						
24 VDC	•	•	•	•	•	•
Communication						
RS485 Modbus	Input/Output	Input/Output	Input/Output	Input/Output	Output	
Digiware bus	•	•	•	•	•	•
Ethernet	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP		
Embedded web server	WEB-CONFIG	WEBVIEW-M	WEB-CONFIG	WEBVIEW-M		

Voltage acquisition module

Application	Metering	Monitoring	Analysis
			
DIRIS Digiware U	***U-10***	***U-20***	***U-30***
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Crest factors V1, V2, V3, U12, U23, U31			•
Individual harmonics U & V (up to 63rd)			•
Voltage dips, interruptions and swells (EN50160)			•
Alarms			
On threshold			•
History			
Average values			•
Format			
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1

Selection guide
Power monitoring system for electrical installations
DIRIS Digiware

Current acquisition modules

Application	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
								
DIRIS Digiware I	*I-30*	*I-31*	*I-33*	*I-35*	*I-43*	*I-45*	*I-60*	*I-61*
Number of current inputs	3	3	3	3	4	4	6	6
Metering								
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•
Load curves		•		•		•		•
Multi-tariff		•		•		•		•
Multi-measurement								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•
P, Q, S, PF per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance (Inba, Idir, Iinv, Ihom, Inb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to 63rd)				•		•		
Crest factors I1, I2, I3, In				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/outputs					2/2	2/2		
History								
Average values				•		•		
Format								
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1	18 mm / 1	27 mm / 1.5	27 mm / 1.5	36 mm / 2	36 mm / 2

Current acquisition module with integrated sensors

Application	Metering	Analysis	Monitoring
			
DIRIS Digiware S	*S-130*	*S-135*	*S-Datacenter*
Number of current inputs	3	3	3
Basic current I_b	10 A	10 A	10 A
Maximum current I_{max}	63 A	63 A	63 A
Load type accepted	1P + N 2P / 2P + N 3P / 3P + N	1P + N 2P / 2P + N 3P / 3P + N	1P + N
Metering			
± kWh, ± kvarh, kVAh	•	•	•
Multi-tariff (max 8)		•	
Load curves		•	•
Multi-measurement			
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•
P, Q, S, PF per phase		•	•
Predictive power		•	
Current unbalance (Inba, Inb, Idir, Iinv, Ihom)		•	
Phi, cos Phi, tan Phi		•	•
Quality			
THDi1, THDi2, THDi3, THDin		•	•
Individual harmonics I (up to 63rd)		•	
Crest factors U, V, I		•	
K factor		•	
Overcurrents		•	
Alarms			
Thresholds and combinations		•	•
Load level			•
Wiring errors		•	•
Protective device		•	•
Trends			
Average values		•	•
Format			
Width	54 mm	54 mm	54 mm

Selection guide

Power monitoring system for electrical installations

DIRIS Digiware

Current sensors

Suitable for new installations match the pitch of protective devices

	Solid-core current sensors						
							
	TE-18		TE-25	TE-35	TE-45	TE-55	TE-90
Nominal current I_n (A) 5 … 2000	5 … 20	25 … 63	40 … 160	63 … 250	160 … 630	400 … 1000	600 … 2000
Real range covered (A) 0.1 … 2400	0.1 … 24	0.5 … 75.6	0.8 … 192	1.26 … 300	3.2 … 756	8 … 1200	12 … 2400
Aperture (mm)	Ø 8.4	Ø 8.4	13.5 x 13.5	21 x 21	31 x 31	41 x 41	64 x 64
Dimensions (mm)	28 x 20 x 45	28 x 20 x 45	25 x 32.5 x 65	35 x 32.5 x 71	45 x 32.5 x 86	55 x 32.5 x 100	90 x 126 x 24.6
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12

For currents above 2000 A, the 5A / RJ12 adapter provides compatibility with 1A or 5A secondary CTs.

Suitable for existing installations

	Split-core current sensors			
				
	TR/iTR-10	*TR/iTR-14*	*TR/iTR-21*	*TR/iTR-32*
Nominal current I_n (A) 25 … 600	25 … 63	40 … 160	63 … 250	160 … 600
Real range covered (A) 0.5 … 720	0.5 ... 90	0.64 ... 120	1.26 ... 200	4 ... 720
Aperture (mm)	Ø 10	Ø 14	Ø 21	Ø 32
Dimensions (mm)	26 x 44 x 28	29 x 67 x 28	37 x 65 x 43	53 x 86 x 47
Connection	RJ12	RJ12	RJ12	RJ12

For currents above 600 A, the 5A / RJ12 adapter provides compatibility with 1A or 5A secondary CTs.

Suitable for existing installations with space constraints or with high currents

		Flexible current sensors				
						
	TF-40	*TF-80*	*TF-120*	*TF-200*	*TF-300*	*TF-600*
Nominal current I_n (A) 100 … 6000	140 … 400	150 … 600	400 ... 2000	600 … 4000	1600 … 6000	1600 … 6000
Real range covered (A) 2 … 7200	2 … 480	3 … 720	8 ... 2400	12 ... 4800	32 … 7200	32 … 7200
Aperture (mm)	Ø 40	Ø 80	Ø 120	Ø 200	Ø 300	Ø 600
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12

Input/output modules

Application	Metering / monitoring / control	
		
DIRIS Digiware IO	*IO-10*	*IO-20*
Number of digital inputs/outputs	4 / 2	
Number of analogue inputs		2
Format		
Width/number of modules	18 mm / 1	18 mm / 1

Selection guide

Measurement and monitoring system for DC electrical installations

DIRIS Digiware

Build your own DC system

Control and power supply interface (24 VDC)

or

or

DIRIS Digiware D-x
with display

DIRIS Digiware M
gateway

DIRIS Digiware C
without screen

+

Direct voltage acquisition module

DIRIS Digiware Udc

+

DC voltage adaptors

DIRIS Digiware U500dc/U1000dc/U1500dc

+

DC current acquisition module

DIRIS Digiware Idc
3 current sensor inputs

+

DC current sensors

Solid-core sensors
50 … 5000 A

Split-core sensors
50 … 2000 A

Control and power supply interface

Application	Centralization and display of data				Data centralization	Repeater
						
DIRIS Digiware	*M-50*	*M-70*	*D-50*	*D-70*	*C-31*	*C-32*
Function						
Centralizing measurement points	•	•	•	•	•	•
High-resolution LCD display (configuration, selection and visualisation display of circuits)			•	•		
Repeater						•
Power supply						
24 VDC	•	•	•	•	•	•
Communication						
RS485 Modbus	input/output	input/output	input	input	•	
Digiware Bus	•	•	•	•	•	•
Ethernet	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP		
Embedded web server	WEBVIEW-M	WEBVIEW-M		•		

Direct voltage acquisition module (DC)

Application	DC voltage measurement	
		
DIRIS Digiware Udc	**U-31dc**	**U-32dc**
Nominal voltage range	24 … 48 VDC	60 … 150 VDC
Measuring range (min-max)	19,2 … 60 VDC	48 … 180 VDC
Multi-measurement		
DC voltage (VDC)	•	•
Power quality		
V ripple (voltage ripple)	•	•
V_{rms}	•	•
Alarms		
Thresholds and combinations	•	•
Trends		
Average values	•	•
Format		
Width/number of modules	18 mm / 1	

Application	DC voltage adaptors		
			
DIRIS Digiware Udc	U500dc	U1000dc	U1500dc
Max. voltage range	200 … 600 VDC	400 … 1200 VDC	1200 … 1650 VDC
Association			
U-32dc	•	•	•
Format			
Width/number of modules	54 mm / 3		

Direct current acquisition module (DC)

Application	Direct current (DC) measurement modules	
		
DIRIS Digiware Idc	*I-30dc*	*I-35dc*
Number of current inputs		
	3	3
Metering		
± kWh	•	•
Load curves		•
Multi-measurement		
DC current (I DC)	•	•
DC power (P DC)	•	•
Predictive power		•
Measurement of current quality		
I ripple (current ripple)		•
I rms		•
Alarms		
Thresholds and combinations		•
Trends		
Average values		•
Format		
Width/number of modules	18 mm / 1	

DC current sensors

TORE_104_A_OPEN_FRONT.EPS
TORE_072_A.EPS

DC current sensors measure the load currents of a DC electrical installation and transmit the information to DIRIS Digiware Idc modules via a quick RJ12 connection with color-coded cables for an easy identification of circuits.
The range comprises solid-core and split-core sensors, from 50 to 5000 A in various sizes, suitable for new or retrofit applications.

- Easy connection to prevent wiring errors.
- Up to 3 sensors on each DIRIS Digiware Idc measurement module.

Selection guide

Multifunction meters

DIRIS A

Which application? Which functions?

	Functions	DIRIS A-40 Modbus	DIRIS A-40 Modbus + Profibus	DIRIS A-40 Modbus + Ethernet
		SMART SENSORS		
General characteristics	Remote display			
	Number of loads	1		
	Mounting	96 x 96		
	Power supply	AC		
	All In One	•		
	Optional modules			
	Ethernet (Modbus TCP / Bacnet IP)	- / -	- / -	• / •
	RS485 (Modbus / Bacnet MSTP)	• / -	• / -	• / -
	Profibus DPV1	-	•	• / •
	Webserver / File export	o / -	o / o	• / •
	Max. number of inputs (digital / analogue)	3 / -		
	Max. number of outputs (digital / analogue)	2 / -		
Manage energy consumptions	4-quadrant energy metering (bi-directional)	•		
	Load curves (local memory)	•		
	Rebilling of energy (MID approved)			
	Multi-tariff management	4		
Monitor the electrical installation	Instantaneous, average, min and max values	•		
	Voltage unbalance measurement	•		
	Neutral current (measured / calculated)	- / •		
Check the power quality	Harmonic analysis (THD / Individual)	• / •		
	Dip and swell detection	•		
	Overcurrent detection	•		
Manage the loads	Operating hours	•		
	Number of operations (info / alarm)	• / •		
	Protective device monitoring (on / off / tripped)	•		
	Predictive power analysis and load shedding	•		

•: *integrated in the product.* o: *optional via DIRIS Digiware M-50/M-70 or modules.*

Which dimensions? → Which communication protocol? → Which options?

					
	DIRIS A-30	DIRIS A-20	DIRIS A-10	DIRIS B-30	DIRIS B-10
	CURRENT SENSORS			SMART SENSORS	
				•	•
	1	1	1	1 to 4	1 to 4
	96 x 96	96 x 96	DIN	DIN	DIN
	AC / DC	AC	AC	AC	AC
			•		
	•	•		•	•
	• / o	o / -	o / -	• / o	• / o
	• / -	• / -	• / -	• / o	• / o
	o			o	o
	o / o	o / o	o / -	o / o	o / o
	6 / 4	3 / -	1 / -	2 / 2	
	6 / 4	1 / -	1 / -	2 / 2	
	•	•	•	•	•
	o			•	
			2	8	8
	•	•	•	•	•
	•			•	•
	- / •	- / •	- / •	• / •	• / •
	• / •	• / -	• / -	• / -	• / •
				•	
				•	
	•	•	•	•	•
	• / -		• / -	• / -	• / •
	•	•	•	•	•
	•		•	•	

Selection guide

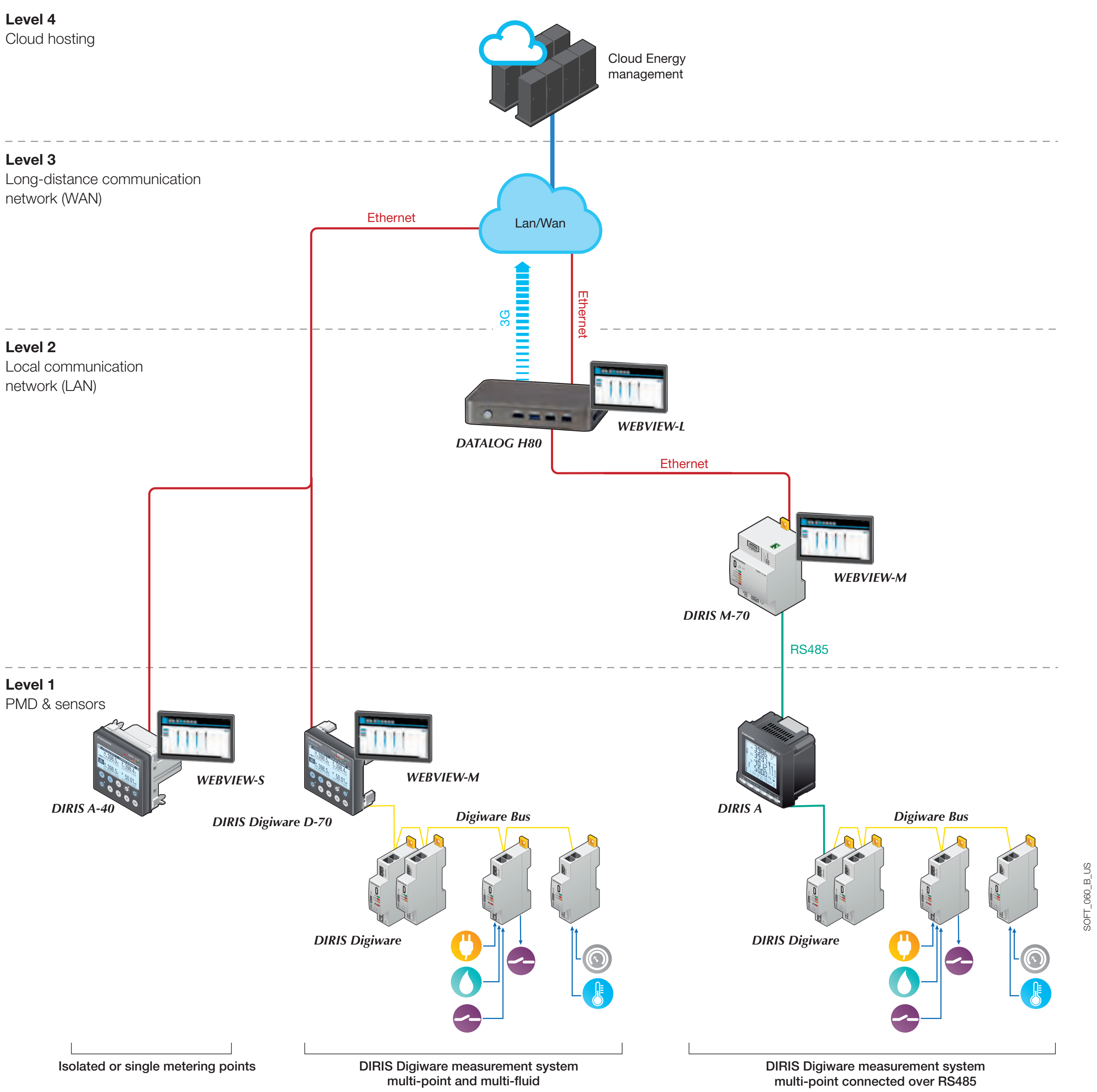
Software solutions for energy monitoring and analysis

What are the features? ▶ For what size of project? ▶ Where is the data stored?

	WEBVIEW-S	WEBVIEW-M		WEBVIEW-L
				
Hosting of the application[(1)]	**DIRIS A-40 Ethernet**	**DIRIS Digiware M-70**	**DIRIS Digiware D-70**	**DATALOG H80/H81**
Data collection				
Maximum number of connected measurement devices	1	32	32	100 (WEBVIEW-L100) 200 (WEBVIEW-L200)
Interfacing to third-party applications				via connector
Export of data in CSV format	•	•	•	•
Real time monitoring				
U/V voltages and currents I	•	•	•	•
Powers P, Q, S, Power factor	•	•	•	•
Quality monitoring THDi, THDu, THDv, K factor, Harmonic analysis up to 63rd	•	•	•	•
Energy metering Ea+, Ea-, Er+, Er-, Es	•	•	•	•
Pulse counting	•	•	•	•
Input/Output monitoring	•	•	•	•
Measurement history U, V, I, P, Q, S,	•	•	•	•
Energy analysis				
Energy consumption analysis	•	•	•	•
Multi-parameter analysis				•
Alarm management				
Product alarms	•	•	•	•
Alarms history	•	•	•	•
Transmission of alarms	e-mail	e-mail	e-mail	e-mail
Reporting management				
Customizable user interface		Photoview	Photoview	Photoview
Hierarchy management		•	•	•

(1) For more information on the hardware please refer to the appropriate catalogue pages.

Architecture



DIRIS Digiware D and C

Display and system interface

DIRIS Digiware D-50/D-70
Centralization and display of data

DIRIS Digiware C-31
Centralization

Configuration with Easy Config System.

Function

DIRIS Digiware D-50 and D-70

DIRIS Digiware D remote displays allow:
- local visualization the data from DIRIS Digiware modules.
- a power supply to the DIRIS Digiware modules.
- access to measurements over RS485 or Ethernet.

DIRIS Digiware D-50 and **D-70** displays also act as a gateway, centralizing measurements from DIRIS Digiware, DIRIS A and DIRIS B devices and making them available over Ethernet.

With the DIRIS Digiware D-70 display, data can be visualized on WEBVIEW-M, the "Power & Energy monitoring" embedded web server.

DIRIS Digiware displays are powered by 24 VDC.

DIRIS Digiware C-31

For applications without a local display

DIRIS Digiware C-31 interfaces centralize all measurements and communicate data over RS485 to an external software or PLC.

DIRIS Digiware C-31 interfaces and C-32 repeaters are 24 VDC powered.

Advantages

DIRIS Digiware D

- High-resolution graphic screen
- Embedded web server (DIRIS Digiware D-70)
- Multi-protocols (Modbus, BACnet, SNMP)
- 24 VDC SELV (Safety Extra Low Voltage) power supply eliminating hazardous voltage on panel doors.
- Ergonomic and easy to use with 10 direct access buttons for:
  - device configuration.
  - circuit selection.
  - display of measurements.

Cyber security

Dedicated cyber security features referring to IEC 62443 to guarantee the confidentiality, integrity and availability of data and reduce the risk of cyber attacks:
- secured HTTPS navigation.
- secured data push (FTPS, SMTPS).
- restriction of certain protocols or services.
- firewall to prevent denial-of-service attacks.

DIRIS Digiware C-31

Compact: Centralize your measurement data on 1 module without a local screen, for a complete system:
- single 24 V power supply (no dangerous voltage on DIRIS Digiware modules for a connection with no interruption).
- a single RS485 communication.

The solution for

- Industry
- Building
- Infrastructure
- Data centers

Strong points

- Centralizing and displaying measurement data
- A single power supply for the entire system
- A single RS485 or Ethernet output for the entire system
- WEBVIEW-M embedded web server

Compliance with standards

- UL 61010-1 CSA-C22.2 61010-1 Guide PICQ File E257746
- IEC 61557-12
- ISO 14025

Create your project

- Find the best DIRIS Digiware configuration: **www.meter-selector.com**

Application	Control and power supply interface		
			
DIRIS Digiware	***C-31***	***D-50***	***D-70***
Digiware input	•	•	•
RS485 input		•	•
RS485 output	•	•	•
Ethernet output		Modbus BACnet IP SNMP v1, v2, v3	Modbus BACnet IP SNMP v1, v2, v3
Webserver		WEB-CONFIG	WEBVIEW-M

Functions

soft_073_b

WEBVIEW-M
Embedded web server in the DIRIS Digiware D-70 display

WEBVIEW-M allows the display and remote monitoring of all the electric parameters measured by up to 32 devices. They are displayed in the form of overview screens, graphs or tables for clear and user-friendly analysis.

Access to WEBVIEW is made by a web browser on a PC or tablet and offers multiple features such as the automatic export of data via FTPS or e-mail notification in the presence of alarms (SMTPS).

The Photoview application is available via the WEBVIEW interface embedded in the DIRIS Digiware D-70 display. It allows the display of electrical quantities on a customized background picture such as a cabinet, a wiring diagram or the map of a site.

Accessories

DIN rail mounting kit
The accessory allows you to install the DIRIS Digiware D-50/D-70 display on a DIN rail.
This kit is not included with the displays and must be ordered separately.

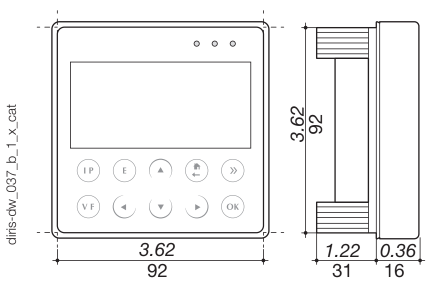
diris-dw_162_a.psd

DIRIS Digiware D and C

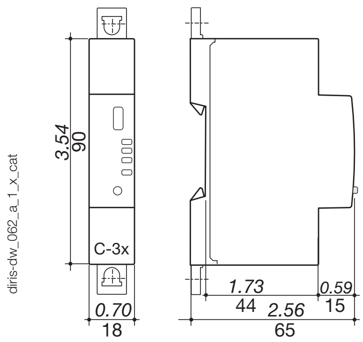
Display and system interface

Dimensions (in/mm)

DIRIS Digiware D-50/D-70



DIRIS Digiware C-31



Configuration

Equipment consumption

Product	Power delivered (W)	Power consumed (W)
Power supply		
P15 100-240 VAC / 24 VDC	15	
P30 100-240 VAC / 24 VDC	20	
Cables		
164 feet / 50 meter package		1.5
System interfaces		
DIRIS Digiware D-50/D-70		2.5
DIRIS Digiware C-31		0.8
Module voltage		
DIRIS Digiware U-xx		0.72
DIRIS Digiware U-3xdc		0.6
Current modules		
DIRIS Digiware I-3x		0.52
DIRIS Digiware I-4x		1.125
DIRIS Digiware I-6x		0.7
DIRIS Digiware I-3xdc (+ 3 DC current sensors)		2
DIRIS Digiware S-xx		0.35
Input/output modules		
DIRIS Digiware IO-10/IO-20		0.5
Repeater		
DIRIS Digiware C-32		1.5

Calculation rules for the max. number of products on the Digiware Bus

The total power consumed by the equipment connected to the Digiware Bus must not exceed the power from the 24 VDC supply.
The power supply must not exceed 20 W/168°F/70°C or 27 W/104°F/40°C.

Size with P15 power supply (ref: 4829 0120) delivering 15 W

For example, it is possible to use

- 1 DIRIS Digiware D-50 display (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 164 feet / 50 meters of cable (1.5 W)

and

- 19 DIRIS Digiware current modules I-3x (19 x 0.52 = 9.9 W)
  ⇨ Total power = 14.845 W

or

- 9 DIRIS Digiware current modules I-4x (9 x 1.125 = 10.125 W)
  ⇨ Total power = 14.345 W.

Size with a 24 VDC power supply delivering a maximum of 20 W (Power supply P30 ref: 4729 0603)

For example, it is possible to use

- 1 DIRIS Digiware D-50 display (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 164 feet / 50 meters of cable (1.5 W)

and

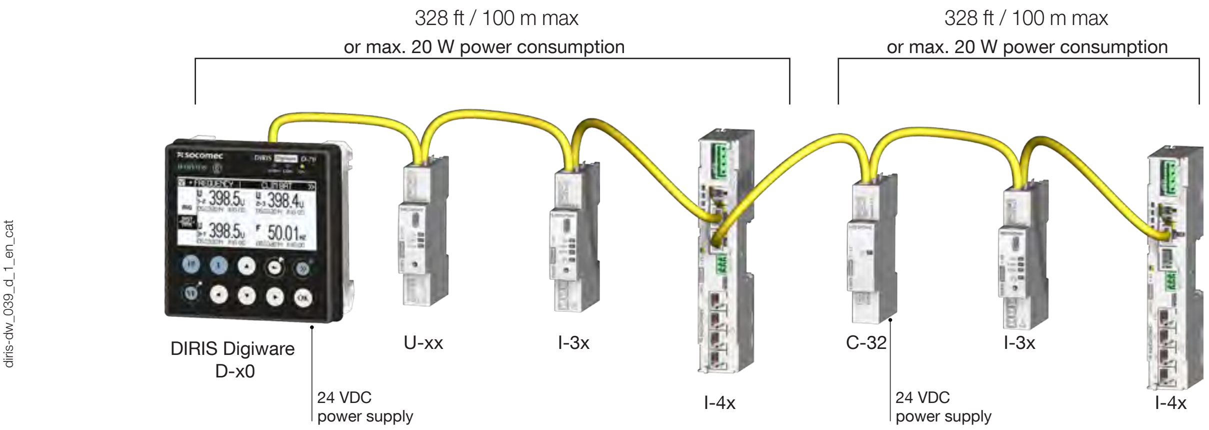
- 29 DIRIS Digiware current modules I-3x (29 x 0.52 = 15.1 W)
  ⇨ Total power = 19.82 W

or

- 13 DIRIS Digiware current modules I-4x (13 x 1.125 = 14.63)
  ⇨ Total power = 19.35 W.

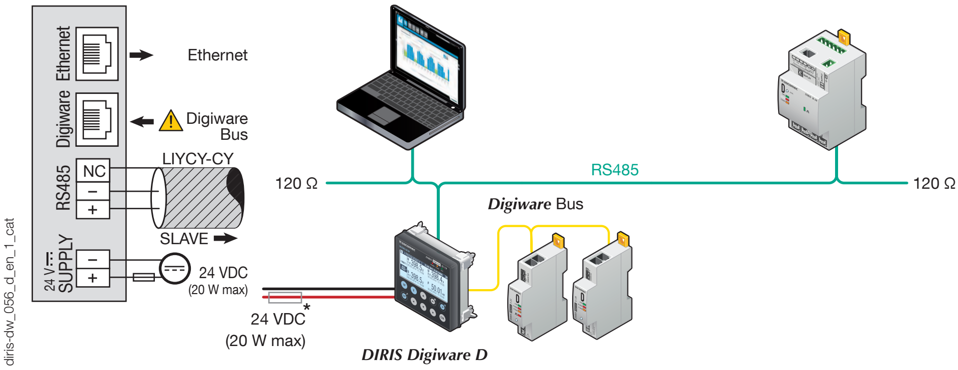
Repeater

Whenever the power consumption is higher than 20 W or the distance is greater than 328 ft / 100 m, a DIRIS Digiware C-32 repeater is required.
In a DIRIS Digiware system, a maximum of 2 repeaters may be used.



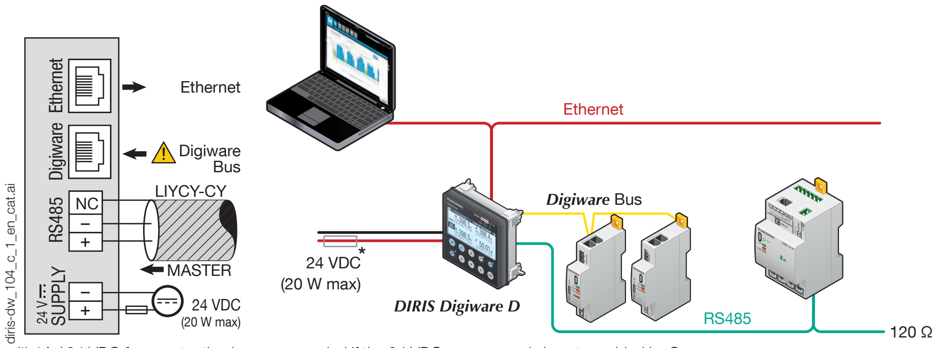
Connections

RS485 slave mode



(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

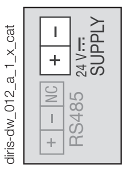
RS485 master mode



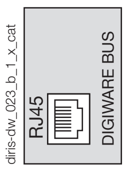
(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

DIRIS Digiware C-31

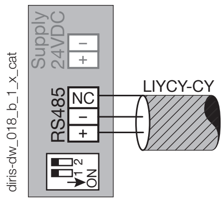
Power supply

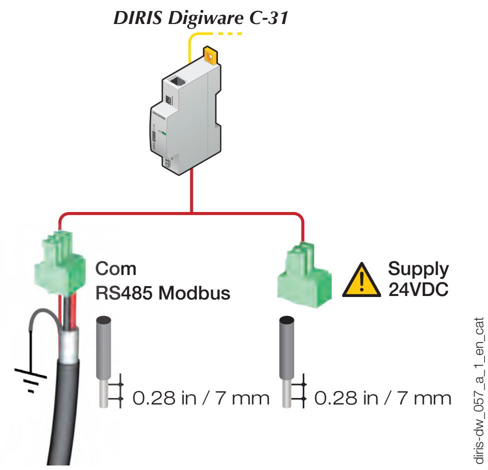


Digiware bus



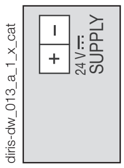
Communication



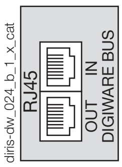


DIRIS Digiware C-32

Power supply



Digiware bus



DIRIS Digiware D and C
Display and system interface

Technical characteristics

Electrical characteristics

DIRIS Digiware C-31	
Input voltage	24 VDC ± 20 % - 20 W max
Connection	Removable screw terminal block, 2 positions, stranded or solid 0.2-2.5 mm² cable
P15 power supply	Characteristics: 100-240 VAC/ 24 VDC - 0.63 A - 15 W Modular format - Dimensions (H x L): 3.54 x 1.42 in / 90 x 36 mm

Communication specifications

Digiware Bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections
RS485	
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baudrate	9600 to 115 200 bauds
Function	Data configuration and reading
Location	Single-point on DIRIS Digiware C

Mechanical features

Casing type	DIN-rail mounting module and base
Casing protection index	IP20 / IK06
Front panel protection index	IP40 on the nose in modular assembly / IK06

Environmental specifications

Ambient operating temperature	+14 to +158 °F / -10 to +70 °C
Storage temperature	-13 to +158 °F / -25 to +70 °C
Operating humidity	131 °F / 55 °C / 97% HR
Operating altitude	< 2000 m

DIRIS Digiware D-50/D-70 features

Mechanical characteristics	
Type of screen	Capacitive touch-screen technology, 10 keys
Screen resolution	350 x 160 pixels
Front panel protection index	IP65
Communication	
Ethernet RJ45 10/100 Mbs	Gateway function (D-50/D-70): Modbus TCP BACnet IP SNMP v1, v2, v3
RJ45 Digiware	Control and power supply interface function
RS485 2-3 wires	Modbus RTU communication function Configurable as input or output
USB	Upgrade and configuration via type B micro USB connector
Electrical characteristics	
Power supply	24 VDC +10 % / -20%
Power consumption	2.5 VA
Battery lifetime	10 years

Environmental specifications	
Storage temperature	-4 to +158 °F / -20 to +70°C
Operating temperature	+14 to +131°F / -10 to +55°C
Humidity	95% at 104°F / 40°C
Installation category, degree of pollution	CAT III, 2
Ports	
Digiware	Input
RS485	Input/Output
Ethernet	Output

References

DIRIS Digiware		Reference
D-50	Multipoint display, Ethernet & RS485 output + WEB-CONFIG	4829 **0204**
D-70	Multipoint display, Ethernet & RS485 output + WEBVIEW-M	4829 **0203**
C-31	System interface - no display, RS485 output	4829 **0101**
C-32	Repeater	4829 **0103**
Power supply		**Reference**
P15	Power supply 100-240 VAC/ 24 VDC 15 W	4829 **0120**
P30	Power supply 100-240 VAC/ 24 VDC 20 W	4729 **0603**
Digiware connection cables		**Reference**
RJ45 cables for Digiware Bus	Length 0.2 ft / 0.06 m	4829 **0189**
	Length 0.33 ft / 0.10 m	4829 **0181**
	Length 0.66 ft / 0.20 m	4829 **0188**
	Length 1.64 ft / 0.50 m	4829 **0182**
	Length 3.28 ft / 1 m	4829 **0183**
	Length 6.56 ft / 2 m	4829 **0184**
	Length 9.84 ft / 3 m	4829 **0190**
	Length 16.4 ft / 5 m	4829 **0186**
	Length 32.8 ft / 10 m	4829 **0187**
	164.04 ft / 50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**
Single-point display		**Reference**
DIRIS D-30(1)	Single-point display for DIRIS Digiware I-4x and DIRIS B	4829 **0200**

Accessories	To be ordered in multiples of	Reference
Fuse holder Class CC to protect voltage inputs 2 pole	4	5705 **0002**
Class CC 0.5 A fuses	10	6CC0 **5000**
DIN rail mounting kit for D-50 and D-70 displays	1	4829 **0230**
Panel mounting kit DIN 472.44 x 314.96 in / 144 x 96 mm		4729 **0990**
IP 65 flexible cover for 472.44 x 314.96 in / 144 x 96 mm panel mounting frame		4729 **0991**

(1) DIRIS D-30 display characteristics, see page "DIRIS B".

Expert Services

Require integration onto your network?
No problem for our "Expert Services" team. They will fully integrate all your SOCOMEC devices, **audit** your system, **commission** selected equipment and **train** your staff on its use.
For further information, please contact your nearest SOCOMEC branch.

DIRIS Digiware U

Voltage measurement module

diris-dw_005_a_cat

DIRIS Digiware U-10/U-20/ U-30

Configuration with EasyConfig System.

Function

The **DIRIS Digiware U** module measures voltage for the entire system.
This pools together all voltage measurements.
The Digiware RJ45 Bus allows you to pass voltage measurements as well as power supply and communication to all connected products.

Advantages

- Single voltage measurement point for the entire system
- Single point of protection for voltage measuring
- A complete, dedicated solution:
  - metering
  - monitoring voltage
  - quality analysis of the supplied voltage
- No hazardous voltage on enclosuren doors.
- Adapted to all types of network:
  - single phase
  - three-phase

The solution for

> Industry
> Building
> Infrastructures
> Data center

Strong points

> Single voltage measurement point for the entire system
> Plug & Play
> Compact

RJ45 (Digiware Bus) cables are available.

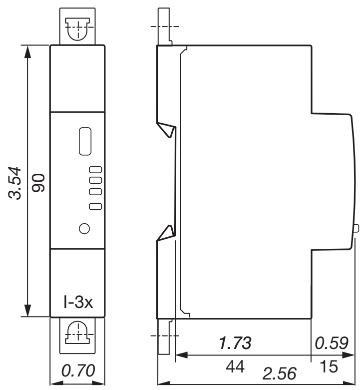
Conformity to standards

> UL 61010, CSA-C22.2 61010-1, Guide PICQ, File E257746
> IEC 61557-12
> ISO 14025
> CEC compliant

Application	Voltage measurement module – Metering	Voltage measurement module – Monitoring	Voltage measurement module – Analysis
			
DIRIS Digiware U	**U-10**	**U-20**	**U-30**
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Individual harmonics U & V (up to rank 63)			•
Voltage dips, cutoffs and surges (EN 50160)			•
Alarms			
On threshold			•
History of average values			
45 days (max)			•
Format			
Width/number of modules	0.71 in / 1		

Dimensions (in/mm)

DIRIS Digiware U



Specifications

Measuring characteristics

Voltage measurement - DIRIS Digiware U	
Characteristics of the network measured	50-300 VAC (Ph/N) - 87-520 VAC (Ph/Ph) - CAT III
Frequency range	45 … 65 Hz
Frequency accuracy	Class 0.02
Network type	Single-phase / Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Permanent overload	300 VAC Ph/N
Accuracy of voltage measurement	Class 0.2
Connection	Removable screw terminal block, 4 positions, stranded or solid AWG 10 to AWG 32 or 0.2 … 2.5 mm² cable

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measurement module
Connection	Type B micro USB connector

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.20 feet / 0.06 m	4829 **0189**
	Length 0.32 feet / 0.10 m	4829 **0181**
	Length 0.66 feet / 0.20 m	4829 **0188**
	Length 1.64 feet / 0.50 m	4829 **0182**
	Length 3.28 feet / 1 m	4829 **0183**
	Length 6.56 feet / 2 m	4829 **0184**
	Length 9.84 feet / 3 m	4829 **0190**
	Length 16.4 feet / 5 m	4829 **0186**
	Length 32.8 feet / 10 m	4829 **0187**
	164 feet 50 m + 100 connectors	4829 **0185**
Replacement reference: Digiware bus terminating resistor (supplied with C and D devices)		4829 **0180**
USB configuration cable		4829 **0050**

DIRIS Digiware		Reference
U-10	Metering	4829 **0105**
U-20	Monitoring	4829 **0106**
U-30	Analysis	4829 **0102**

Accessories Description of accessories	To be ordered in multiples of	Reference
Fuse holder Class CC to protect voltage inputs 3 pole	4	5705 **0003**
Class CC 0.5 A fuses	10	6CC0 **5000**

DIRIS Digiware I

Current acquisition modules

DIRIS Digiware I-3x

DIRIS Digiware I-4x

DIRIS Digiware I-6x

Configuration with EasyConfig System.

Function

DIRIS Digiware I modules measure consumptions and monitor the system at the closest point to the loads. The flexibility of these modules allow you to allocate the loads to be measured or monitored through independent current inputs. The DIRIS I modules can measure and monitor single phase or three phase loads.

For example:

- 1 three-phase load

OR

-3 single-phased loads

Plug & Play RJ45 and RJ12 connections allow you to:

- quickly provide power to additional modules via RJ45 daisy chain connections
- quickly connect current sensors to current module via RJ12 cables
- detect automatic configuration of the current sensors inluding:
  - communication address
  - load type
  - sensor type and ratio
  - automatic rating detection and verification of current flow direction
- eliminates wiring errors simplifying installation

Advantages

- RJ45 and RJ12 rapid connection
- Available with 3, 4 or 6 inputs
- Single-output or multi-output for maximum optimization of the number of products
- Compact format: 1 or 2 modules sized for integration at the closest point to the loads
- A complete, dedicated solution for a variety of metering, monitoring, and quality analysis applications:
  - metering
  - monitoring
  - power quality analysis
- Bi-directionnal metering
- Compliant with standard ANSI C12.20 and IEC 61557-12 standards, guaranteeing the quality and accuracy of the system:
  - Class 0.2 for the meter alone
  - Class 0.5 from 2% to 120% of the rated current (full scale), for the global measurement chain (with TE/iTR/ TF current sensors)

The solution for

> Industry
> Building
> Infrastructure
> Data center

Strong points

> Multi-point
> Plug and Play
> Compact
> High-precision measurement chain

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.us

Conformity to standards

> UL 61010-1, CSA-C22.2 61010-1, Guide PICQ, File E257746

c UL us LISTED

> IEC 61557-12
> ISO 14025
> CEC compliant

Create your project

> Find the best DIRIS Digiware configuration: **www.meter-selector.com**

METER SELECTOR DIGITAL TOOL AVAILABLE

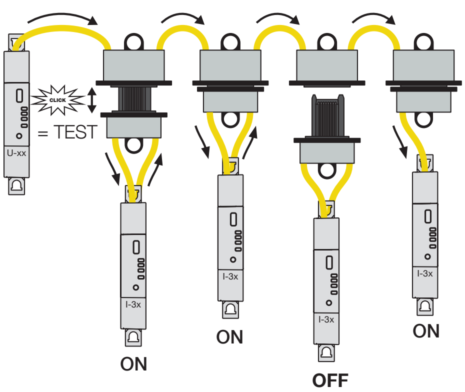
Application	Current measurement modules							
	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
								
DIRIS Digiware I	**I-30**	**I-31**	**I-33**	**I-35**	**I-43**	**I-45**	**I-60**	**I-61**
Number of current inputs								
	3	3	3	3	4	4	6	6
Metering								
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•
Demand profiles		•		•		•		•
Multi-tariff		•		•		•		•
Multi-measurement								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•
P, Q, S, PF per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance (Inba, Idir, Iinv, Ihom, Inb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to 63rd)				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/outputs					2/2	2/2		
History								
Average values				•		•		
Format								
Width/number of modules	0.71 in / 1	0.71 in / 1	0.71 in / 1	0.71 in / 1	1.06 in / 1.5	1.06 in / 1.5	1.42 in / 2	1.42 in / 2

Accessories

Digiware plug-in connector

With the Digiware plug-in connector you can disconnect a DIRIS Digiware module form the digiware bus while ensuring the DIRIS Digiware system continues to run downstream. This accessory is particularly useful in applications with retractable drawers or critical applications such as data centers.

diris-o_025.eps



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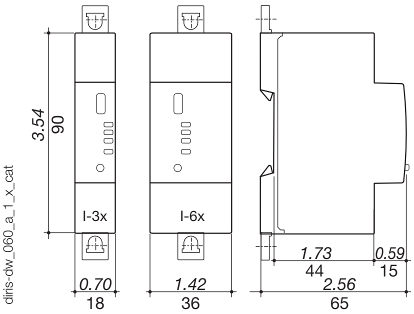
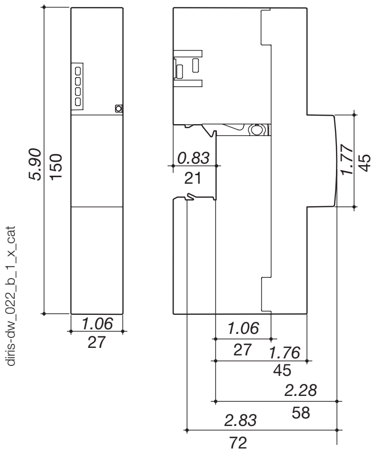
Dimensions (in/mm)

DIRIS Digiware I-3x / I-6x



DIRIS Digiware I-4x



Connections

Associated current sensors

Various types of current sensors are connected to the DIRIS Digiware: solid core (TE), split core (TR/iTR) or Rogowski (TF). This range of sensors can be adapted to all types of new or existing installations. A rapid RJ12 connection makes wiring easy, reliable, and error-free. The DIRIS Digiware system automatically recognizes the sensor size and type. This guarantees the overall accuracy of the DIRIS Digiware + current sensor measurement chain.

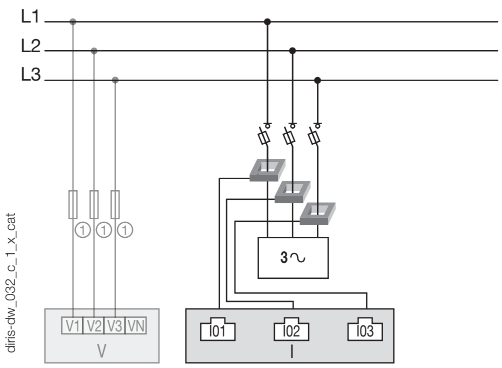
For more information see "TE, TR and TF sensors" pages.

Network and connection examples

I-3x

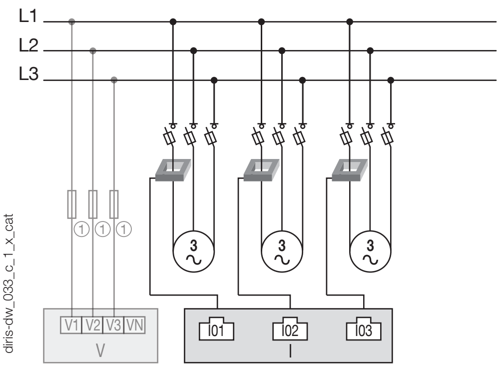
Three-phase

3P - 3CT (1 three-phase load)



Three-phase

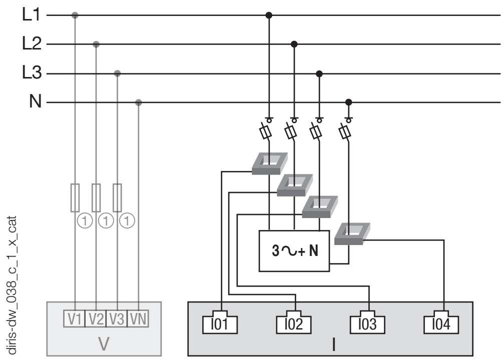
3P - 1CT (3 balanced, three-phase loads)



I-4x

Three phase + neutral

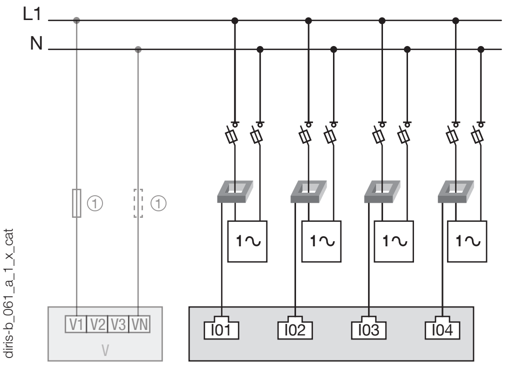
3P+N - 4CT (1 three-phase load + Neutral measured)



1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase

1P+N-1CT (4 single-phase loads)



CT: Current sensor 3~ Load

Specifications

Measuring characteristics

Current measurement - DIRIS Digiware I	
Number of current inputs	I-3x: 3 / I-45: 4 / I-6x: 6
Associated current sensors	Solid core TE, split-core TR/iTR, flexible TF current sensors
Accuracy of current measurement	Class 0.2 DIRIS Digiware class only Class 0.5 with TE, iTR or TF sensors Class 1 with TR sensors
Connection	Specific Socomec cable with RJ12 connectors

Inputs - DIRIS Digiware I-45	
Number of inputs	2
Type / Power supply	Non-insulated input, internal polarization 12 VDC max, 1mA
Input functions	Logical status, pulse meter, multi-tariff
Connection	Removable screw terminal block, stranded or solid AWG 15 to AWG 35 or 0.14 to 1.5 mm² cable

Outputs - DIRIS Digiware I-45	
Number of outputs	2
Relay type	230 VAC ±15 % - 1 A 30 VDC - 3 A
Function	Configurable alarm (current, power, etc.) when a threshold is exceeded or remote controlled status
Connection	Removable screw terminal block, stranded or solid AWG 10 to AWG 32 or 0.2 to 2.5 mm² cable

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measurement module
Connection	Type B micro USB connector

References

DIRIS Digiware		Reference
I-30	Metering - 3 current inputs	4829 **0110**
I-31	Metering + demand profiles - 3 current inputs	4829 **0111**
I-33	Monitoring - 3 current inputs	4829 **0128**
I-35	Analysis - 3 current inputs	4829 **0130**
I-43	Monitoring - 2 inputs/ 2 outputs - 4 current inputs	4829 **0129**
I-45	Analysis - 2 inputs/ 2 outputs - 4 current inputs	4829 **0131**
I-60	Metering - 6 current inputs	4829 **0112**
I-61	Metering + demand profiles - 6 current inputs	4829 **0113**
Accessories		**Reference**
Digiware x 5 plug-in connector		4829 **0605**

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.20 feet / 0.06 m	4829 **0189**
	Length 0.32 feet / 0.10 m	4829 **0181**
	Length 0.64 feet / 0.20 m	4829 **0188**
	Length 1.64 feet / 0.50 m	4829 **0182**
	Length 3.28 feet / 1 m	4829 **0183**
	Length 6.56 feet / 2 m	4829 **0184**
	Length 9.84 feet / 3 m	4829 **0190**
	Length 16.4 feet / 5 m	4829 **0186**
	Length 32.8 feet / 10 m	4829 **0187**
	Length 164 feet / 50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

DIRIS Digiware S

Current measurement module with integrated sensors

DIRIS Digiware S

Configuration with EasyConfig System.

The solution for

Panelboards in:

- Data center
- Building
- Industry
- Infrastructure

Strong points

- Plug & Play
- Multi-circuit
- Compact

RJ45 (Digiware Bus) cables are available.

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.com

Conformity to standards

- UL 61010-1
CSA-C22.2
61010-1
Guide PICQ
File E257746
- IEC 61557-12
- ISO 14025

Function

DIRIS Digiware S current acquisition modules have 3 integrated current sensors for the measurement of electrical circuits up to 63 A.
Positioned directly above or below the protective devices, they are powered by the DIRIS Digiware U voltage measurement module to measure consumption, and to monitor the electrical installation and the quality of the power supply.

Advantages

Plug & Play

- Save wiring time: the current sensors are integrated in the module
- Quick RJ45 connection between modules
- Positioning possible upstream or downstream of the protective device

Multi-circuit

Multiple DIRIS Digiware S modules can be used within the measurement system enabling the monitoring of a large number of loads

Compact

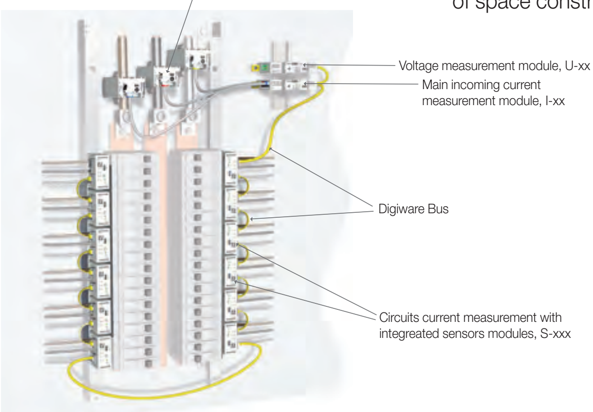
- A measurement module offering the best compactness/performance ratio on the market
- Current inputs spaced at 3/4" center intervals to align appropriately with the panelboard branch circuit breakers

Accurate

- Better than revenue grade: Class 0.5 for active energy (kWh) for the global measurement chain and on the full scale
- Bi-directional metering

DIRIS Digiware S modules can be mounted directly on protective devices, on the left side or right side of the panelboard, solving issues of space constraints.

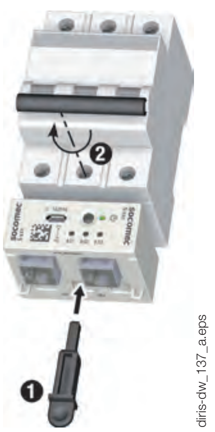
Functional diagram



Application	Current measurement module with integrated sensors		
	Metering	Analysis	Monitoring
			
DIRIS Digiware S	*S-130*	*S-135*	*S-Datacenter*
Number of current inputs	3	3	3
Basic current I_b	10 A	10 A	10 A
Maximum current I_{max}	63 A	63 A	63 A
Load type accepted	1P + N 2P / 2P + N 3P / 3P + N	1P + N 2P / 2P + N 3P / 3P + N	1P + N
Metering			
± kWh, ± kvarh, kVAh	•	•	•
Multi-tariff (max 8)		•	
Demand profiles		•	•
Multi-measurement			
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•
P, Q, S, PF per phase		•	•
Predictive power		•	
Current unbalance (Inba, Inb, Idir, Iinv, Ihom)		•	
Phi, cos Phi, tan Phi		•	•
Quality			
THDi1, THDi2, THDi3, THDin		•	•
Individual harmonics I (up to 63rd)		•	
Crest factors U, V, I		•	
K factor		•	
Overcurrents		•	
Alarms			
Thresholds and combinations		•	•
Load level			•
Wiring errors		•	•
Protective device		•	•
Trends			
Average values		•	•
Format			
Width	2.12 in		

Mounting accessories

Temporary MCB insert
(for use during panel assembly)



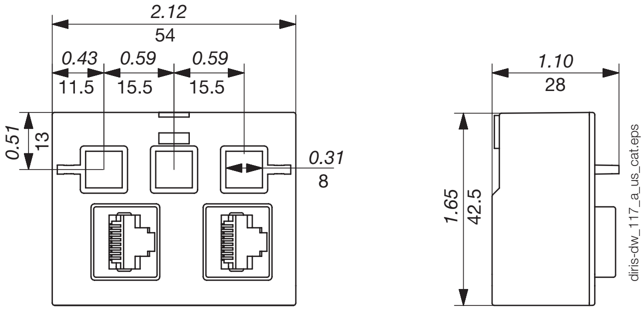
DIN rail and back plate mounting

Cable tie tether

DIRIS Digiware S

Current measurement module with integrated sensors

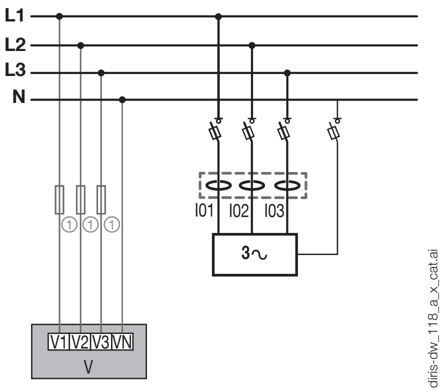
Dimensions (in/mm)



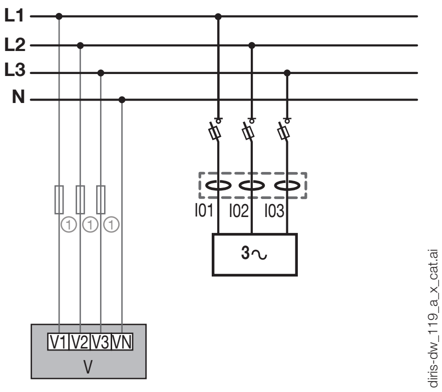
Connections

Current is measured by the integrated inputs I01, I02 and I03 on the DIRIS Digiware S module.

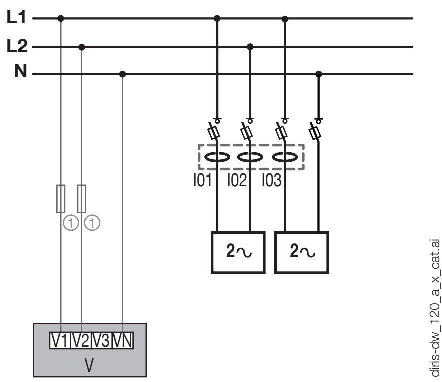
3P+N - 3CT



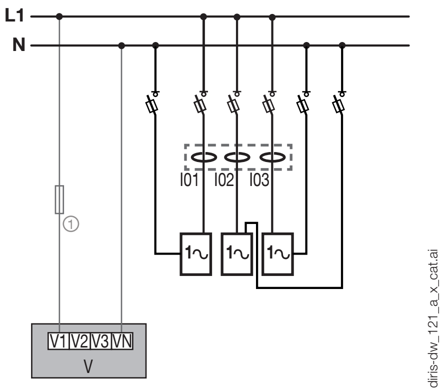
3P - 3 CT



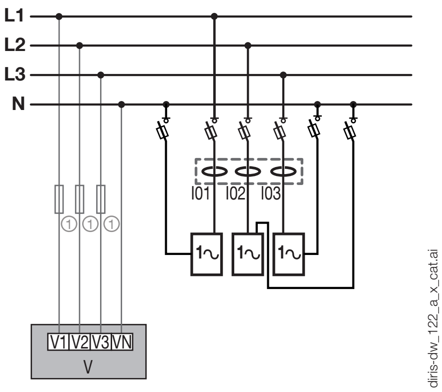
2P+N - 2CT & 2P+N - 1CT



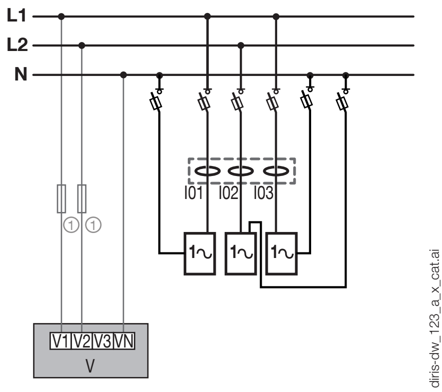
1P+N - 1 CT (3x)



3P+N - 1CT (3x)



2P+N - 1CT (3x)



I01 I02 I03 DIRIS Digiware S 3∿ Load Fuses: 0.5 A gG/BS 88 2 A gG/0.5 A class CC

Technical characteristics

Measurement characteristics

Measurement of current	
Number of current inputs	3
Associated current sensors	Integrated in the product
Basic current Ib	10 A
Maximum current I_{max}	63 A
Current measurement accuracy	Class 0.5 IEC 61557-12
Measurement of energy	
Accuracy of active energy	Class 0.5 IEC 61557-12
Accuracy of reactive energy	Class 1 IEC 61557-12

Mechanical characteristics

Casing type	DIN rail or back plate mounting
Casing protection index	IP20 / IK08
Weight	2.22 oz / 63 g
Module power consumption	0.35 VA

Communication specifications

Digiware BUS	
Function	Connection between DIRIS Digiware S, U, I modules and system interfaces
Cable type	Specific Socomec cable with RJ45 connections
USB	
Protocol	MODBUS RTU on USB
Function	Configuration of DIRIS Digiware modules
Location	On each DIRIS Digiware module
Connection	Type B micro USB connector

Environmental specifications

Ambient operating temperature	+14 … +131 °F / -10 … +55 °C
Storage temperature	-13 … + 158 °F / -25 … +70 °C
Operating humidity	104 °F / 40 °C / 95% RH
Operating altitude	< 6560 feet / 2000 m

References

DIRIS Digiware S		Reference
S-130	Metering - 3 integrated current inputs	4829 **0160**
S-135	Analysis - 3 integrated current inputs	4829 **0161**
S-Datacenter	Single-phase monitoring - 3 integrated current inputs	4829 **0162**
Accessories		**Reference**
DIN rail and back plate mounting clip (x10)		4829 **0195**
Temporary MCB insert (x10)		4829 **0196**

Digiware connection cables		Part number
RJ45 cables for Digiware Bus	Length 0.20 feet / 0.06 m(1)	4829 **0189**
	Length 0.32 feet / 0.10 m	4829 **0181**
	Length 0.64 feet / 0.20 m	4829 **0188**
	Length 1.64 feet / 0.50 m	4829 **0182**
	Length 3.28 feet / 1 m	4829 **0183**
	Length 6.56 feet / 2 m	4829 **0184**
	Length 9.84 feet / 3 m	4829 **0190**
	Length 16.4 feet / 5 m	4829 **0186**
	Length 32.8 feet / 10 m	4829 **0187**
	164 feet / 50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

(1) The RJ45 0.20-ft cables can be used on 3-pole or 4-pole protective devices.

Expert Services

Do you require services for your metering system?
No problem for our local team. They will fully integrate all your Socomec devices, **audit** your system, **commission** selected equipment and **train** your staff on its use.
For further information, please contact us.

See page xxx

DIRIS Digiware M

Multi-protocol communication gateways

DIRIS Digiware M-50 - M-70 *gateway*

Configuration
with *EasyConfig System.*

Function

The **DIRIS Digiware M-50 and M-70** communication gateways are the access point for the DIRIS Digiware system, centralizing the 24 VDC power supply and communication in one single point
The M-50 and M-70 act as the Ethernet gateway for all the devices connected on the Digiware or RS485 bus, and integrate a web server to configure the network parameters and to remotely display measurement data

The M-50 and M-70 gateways offer a wide range of functionalities, including:
- memory extension for connected devices
- automatic export of logged consumption and data to an FTP(S) server
- notification emails if there is an alarm on one of the connected devices (SMTPS)
- automatic time synchronization of all connected devices via SNTP

Advantages

Plug & Play
- Direct Digiware and RS485 to Ethernet gateway
- Automatic detection of connected devices.
- Easy setup using the embedded web server
- Safe extra low voltage, 24 VDC, power supply

Advanced connectivity
- Ethernet output for communication using multiple protocols: Modbus TCP, BACnet IP and SNMP v1, v2, v3 (encrypted) to suit any metering and power monitoring application
- Possible to configure as RS485 slave, for example to communicate measurement data to a second PLC

Embedded web server
WEBVIEW-M embedded in the M-70 and available without license fees, allows users to visualize and analyze real-time and logged data due to graphical tools that are user-friendly and easily accessible to all

Cyber security
The M-50 and M-70 gateways allow users to secure the transmission of data and reduce the risk of cyber attacks with special IEC 62443 compliant cyber security features:
- secured HTTPS navigation by uploading TLS/SSL certificates,
- secured data push (FTPS, SMTPS)
- possible to block or restrict certain protocols or services to reduce attack potential
- implementation of a firewall to guard against denial-of-service attacks

The solution for

- Building
- Industry
- Infrastructure
- Data Center

Strong points

- Plug & Play
- Advanced connectivity
- Embedded web server
- Cyber security

RJ45 (Digiware bus) cables are available.

Compliance with standards

- UL 61010, CSA-C22.2 No. 61010, Guide PICQ, File E257746
- IEC 62974-1 (Energy Server standard)
- IEC 62443 (Cyber security)

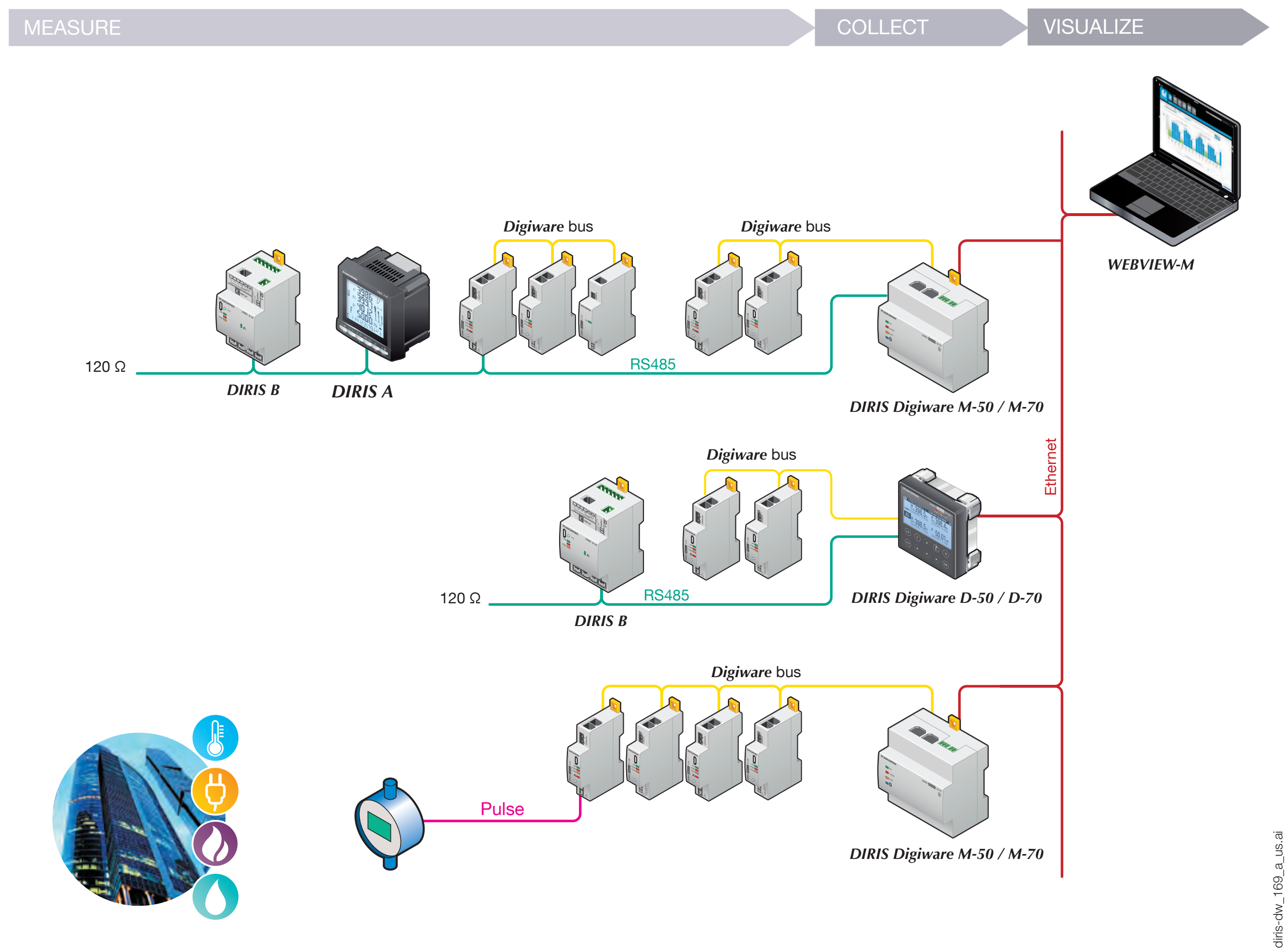
Create your project

- Find the best DIRIS Digiware configuration: **www.meter-selector.com**

Application	Multi-protocol communication gateway	
		
DIRIS Digiware M	**M-50**	**M-70**
Digiware bus input	•	•
RS485	Input/output (1)	Input/output (1)
Ethernet output	•	•
Compatible protocols	Modbus RTU Modbus TCP BACnet IP SNMP v1, v2, v3, Traps	Modbus RTU Modbus TCP BACnet IP SNMP v1, v2, v3, Traps
FTP(S) (automatic data export)	•	•
SMTP(S) (email notifications in case of alarm)	•	•
SNTP (time synchronization)	•	•
Web Server	WEB-CONFIG	WEBVIEW-M

(1) The gateways can be configured as Modbus master (RS485 input) or slave (RS485 output).

Architecture



Embedded webserver

WEB-CONFIG (M-50)

The M-50 gateway includes a WEB-CONFIG allowing you to:

- configure the device hierarchy and data access
- block or restrict access to certain peripherals, protocols or services

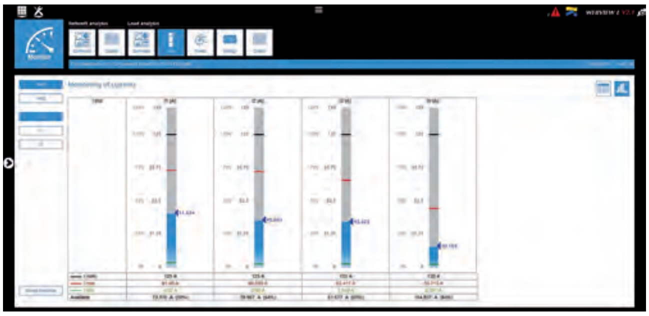
WEBVIEW-M (M-70)

In addition to the WEB-CONFIG, the M-70 gateway allows a remote visualization of data on the embedded WEBVIEW-M software, available without license fees.

- Real-time measurements
- On-going and terminated alarms
- Consumption curves and load curves per load or usage
- Photoview: displays electrical parameters on a customized background such as a site map, an electrical diagram or a panel picture to provide an overview of your electrical installation

Data storage

These gateways extend the memory of connected devices so you can log a year's worth of measurements, load curves and consumption curves.



Configuration

Device consumption

Device	Power supplied (W)
Power supply	
P15 100-240 VAC / 24 VDC	15
P30 100-240 VAC / 24 VDC	20
Device	**Power consumed (W)**
Cables	
50-meter package	1.5
System interfaces	
DIRIS Digiware C-31	0.8
DIRIS Digiware D-50/D-70	2.5
DIRIS Digiware M-50/M-70	2.5
Voltage module	
DIRIS Digiware U-xx	0.72
DIRIS Digiware U-3xdc	0.6
Current modules	
DIRIS Digiware I-3x	0.52
DIRIS Digiware I-4x	1.125
DIRIS Digiware I-6x	0.7
DIRIS Digiware I-3xdc (+ 3 DC current sensors)	2
DIRIS Digiware S-xx	0.35
Input/output modules	
DIRIS Digiware IO-10/IO-20	0.5
Repeater	
DIRIS Digiware C-32	1.5

Calculation rules for the max. number of devices on the Digiware bus

The total power consumed by the devices connected to the Digiware bus must not exceed the power from the 24 VDC supply.
The power supply must not exceed 20 W / 158 °F / 70 °C or 27 W / 104 °F / 40 °C.

Size with P15 power supply (ref: 4829 0120) delivering 15 W

For example, it is possible to use
- 1 DIRIS Digiware M-50 gateway (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 164 ft / 50 m of cable (1.5 W)

and
- 29 DIRIS Digiware current modules S-xx (29x 0.35 = 10.15 W)
  ⇨ Total power = 14.87 W

or
- 9 DIRIS Digiware current modules I-4x (9 x 1.125 = 10.125 W)
  ⇨ Total power = 14.845 W.

Size with a 24 VDC power supply delivering a maximum of 20 W (P30 ref. 4729 0603)

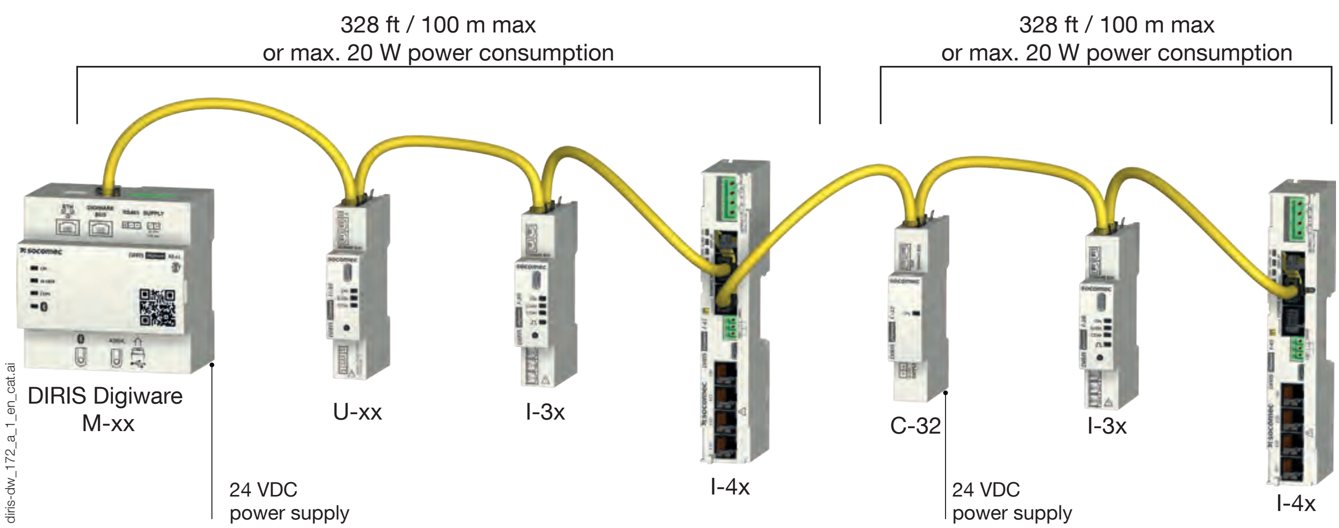
Possible options include:
- 1 DIRIS Digiware M-50 gateway (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 164 ft / 50 m of cable (1.5 W)

and
- 29 DIRIS Digiware current modules I-3x (30 x 0.52 = 15.08 W)
  ⇨ Total power = 19.8 W

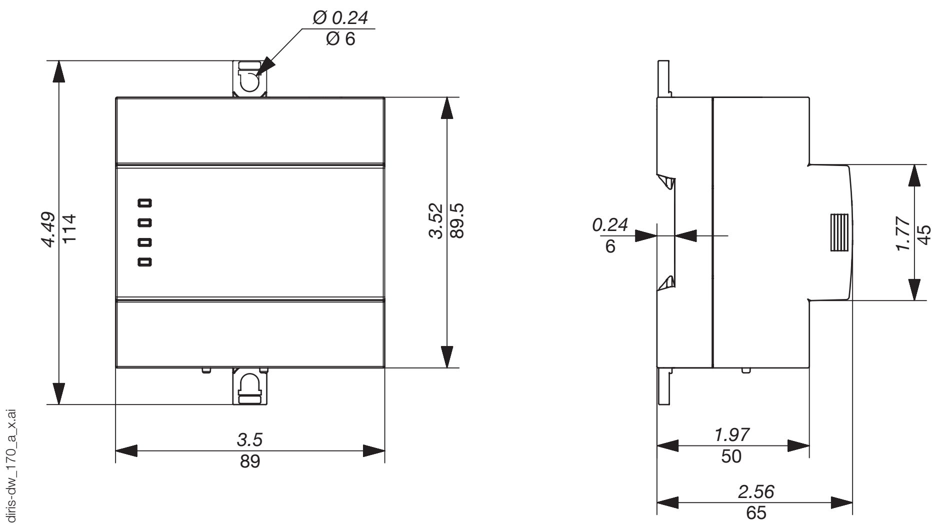
or
- 14 DIRIS Digiware current modules I-4x (13 x 1.125 = 15.72)
  ⇨ Total power = 19.345 W.

Repeater

With power consumptions higher than 20 W or distances greater than 328 ft / 100 m, a DIRIS Digiware C-32 repeater is required.
In a DIRIS Digiware system, a maximum of 2 repeaters may be used.



Dimensions (in/mm)



Technical characteristics

Electrical characteristics

Power supply	24 VDC ± 10 % - 20 W max
Power consumption	2.5 W
Battery life	10 years

Mechanical characteristics

Casing type	DIN-rail or back plate mounting
Weight	0.14 lb / 166 g
Protection degree	IP40 on the nose in modular assembly

Environmental characteristics

Ambient operating temperature	14 ... 131 °F / -10 … +55°C
Storage temperature	-13 ... 158 °F / -25 … +70°C
Operating humidity	95% at 104 °F / 40 °C
Operating altitude	< 6560 ft / 2000 m

Communication characteristics

Ethernet RJ45 10/100 Mbs	Gateway function (M-50/M-70): Modbus TCP BACnet IP SNMP v1, v2, v3, Traps
Digiware bus	
Function	2 to 3 half duplex wires
Cable type	Specific Socomec cable with RJ45 connection
RS485	
Connection type	24 VDC +10 % / -20%
Protocol	Modbus RTU
Baudrate	9600 bds (max. 10 devices) 38400 bds - 115200 bds (max. 32 devices)
Function	Communication with PMD and meters or energy management systems (in RS485 slave mode)
USB	
Protocol	Modbus RTU over USB
Function	Configuration of gateway and connected PMDs/meters

References

DIRIS Digiware			Reference
M-50	Multi-protocol Ethernet gateway		4829 **0221**
M-70	Multi-protocol Ethernet gateway with embedded WEBVIEW-M web server		4829 **0222**
Power supply			**Reference**
P15	Power supply 100-240 VAC/ 24 VDC 15 W		4829 **0120**
P30	Power supply 100-240 VAC/ 24 VDC 20 W		4729 **0603**
Digiware connection cables			**Reference**
RJ45 cables for Digiware bus	Length 0.2 ft / 0.06 m		4829 **0189**
	Length 0.32 ft / 0.10 m		4829 **0181**
	Length 0.64 ft / 0.20 m		4829 **0188**
	Length 1.64 ft / 0.50 m		4829 **0182**
	Length 3.28 ft / 1 m		4829 **0183**
	Length 6.56 ft / 2 m		4829 **0184**
	Length 9,85 ft / 3 m		4829 **0190**
	Length 16.4 ft / 5 m		4829 **0186**
	Length 32.8 ft / 10 m		4829 **0187**
	Length 164 ft / 50 m reel + 100 connectors		4829 **0185**
Terminal for Digiware bus (spare part ref. only as already supplied with M-50 and M-70 gateways)			4829 **0180**
USB configuration cable			4829 **0050**
Accessories		**Available for order in multiples of**	**Reference**
Fuse holder class CC to protect voltage input 3 pole		4	5705 **0003**
Class CC 0.5 A fuse		10	6CC0 **5000**

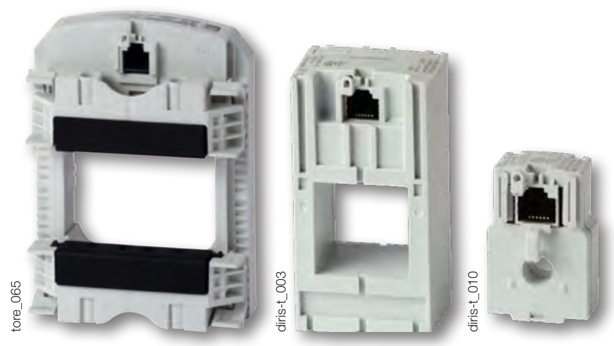
Expert Services

Need help to integrate this sytem in your network?
No problem for our "Expert Services" team. They will fully integrate all your SOCOMEC devices,
audit your system, **commission** selected equipment and **train** your staff on its use.
For further information, please contact your nearest SOCOMEC branch.

TE sensors

Solid current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B



TE *solid sensors*

Function

TE smart **current sensors** measure the load currents of an electrical system and send the data to meters and measurement hubs via an RJ12 plug-and-play output. Featuring a wide measurement range, TE current sensors cover the full current range of 5 to 2000 A, with 7 references. TE solid current sensors can be connected to DIRIS Digiware, DIRIS A-40, or DIRIS B Power Monitoring Devices via a rapid RJ12 connection.

Numerous accessories are available to aid the installation of sensors in any type of cabinet.

Advantages

Plug & Play

- A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors
- This also allows automatic detection of the sensor type and size/transformation ratio
- The sensors can be installed in both directions

Accuracy as per standard IEC 61557-12

- Class 0.5 for the global measuring chain (measurement hub + TE current sensors) from **2 to 120%** of the nominal current In

Installation

- The TE core sensor range is specially designed for new installations, and has the same pitch as the most common protective devices

The solution for

- Industry
- Building
- Infrastructure
- Data center

Strong points

- Plug & Play
- Class 0.5
- Accuracy as per standard IEC 61557-12
- Easy Installation

Conformity to standards

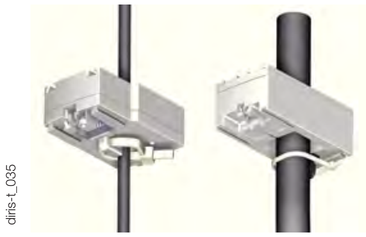
- UL 61010-1, CSA-C22.2 61010-1, Guide PICQ, File E257746
- IEC 61557-12
- ISO 14025

Mounting

Linear assembly with the protective devices
TE-25 / TE-35 / TE-45 / TE-55 / TE-90

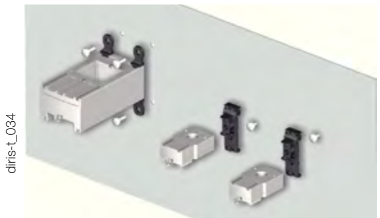
Staggered assembly
TE-18 / TE-35 / TE-45 / TE-55

Cable mounting

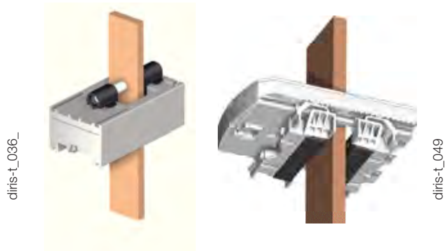


DIN rail mounted

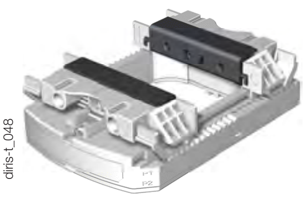
Back-plate mounting



Busbar mounting

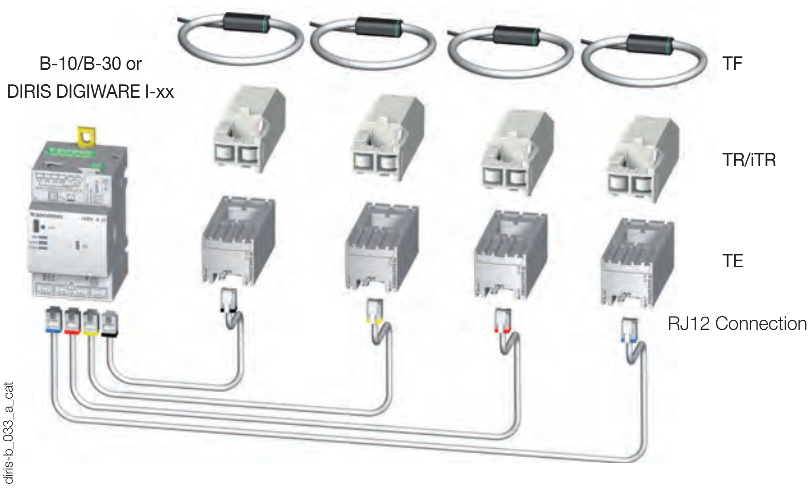


TE-90 clamps



Other Connection Options

TE / TR / TF current sensors



TE sensors

Solid current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B

Mounting accessories

Mounting accessories delivered with TE sensors:

Switch mounting		TE-18	TE-25	TE-35 TE-45 TE-55	TE-90
	DIN rail and back-plate	1 pc			2 pcs
	DIN rail		2 pcs	2 pcs	
	Back-plate		4 pcs	4 pcs	6 pcs
	Busbar			2 pcs	

diris-t_042_a - 043_a - 044_a - 045_a

Compatible accessories

Adapter for CT with 5A secondary

diris-t_041_a_1_cat

- With this adapter you can use a current transformer with a 5A output on the DIRIS Digiware and DIRIS B-30.
For use with standard 5A sensors for measuring applications of > 2000A.
The dimensions are the same as the TE-18.

Coupling link

- Associated with the TE range, this accessory is for inter-connecting the sensors when linear or staggered mounted.

diris-t_020_a_1_cat

Sealable cover

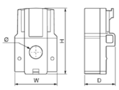
- Using a sealable cover guarantees the immunity of the sensor connection on TE/TR/iTR/TF current sensors.

diris-t_046_a_1_cat

Dimensions (in/mm)

TE - Solid current sensors

TE-18



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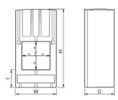
TE-25 / TE-35 / TE-45 / TE-55



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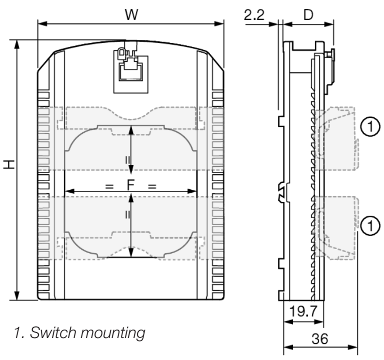
TE-90



1. Switch mounting

diris-t_047_b_1_gb_cat.png

Model	Nominal current range (A)	Actual coverage range (A)	Pitch (in/mm)	H x W x D (in/mm)	F (in/mm)	T (in/mm)
TE-18	5 … 20/25 … 63	0.1 … 24/0.5 … 75	0.7/18	1.77 x 1.10 x 0.79/45 x 28 x 20	Ø 0.33/8.6	-
TE-25	40 … 160	0.8 … 192	0.98/25	2.56 x 0.98 x 1.28/65 x 25 x 32.5	0.53 x 0.53/13.5 x 13.5	0.69/17.5
TE-35	63 … 250	1.26 … 300	1.37/35	2.79 x 1.37 x 1.28/71 x 35 x 32.5	0.82 x 0.82 / 21 x 21	0.69/17.5
TE-45	160 … 630	3.2 … 756	1.77/45	3.38 x 1.77 x 1.28/86 x 45 x 32.5	1.22 x 1.22 / 31 x 31	0.77/19.5
TE-55	400 … 1000	8 … 1200	2.16/55	3.93 x 2.16 x 1.28/100 x 55 x 32.5	1.61 x 1.61 / 41 x 41	0.85/21.5
TE-90	600 … 2000	12 … 2400	3.54/90	4.96 x 3.54 x 0.97/126 x 90 x 24.6	2.52 x 2.52 / 64 x 64	-

Specifications

TE - Solid current sensors

Model	TE-18	TE-18	TE-25	TE-35	TE-45	TE-55	TE-90
Nominal current range I_n (A)	5 … 20	25 … 63	40 … 160	63 … 250	160 … 630	400 … 1000	600 … 2000
Actual coverage range (A)	0.1 … 24	0.5 … 75	0.8 … 192	1.26 … 300	3.2 … 756	8 … 1200	12 … 2400
Max. current (A)	24	75.6	192	300	756	1200	2400
Weight (oz/g)	0.84/24	0.84/24	2.4/69	3.1/89	4.9/140	6.6/187	5.75/163
Max. voltage (phase/neutral)	300 V					600 V	
Rated withstand voltage	3 kV						
Frequency	50/60 Hz						
Intermittent overload	10 x I_n over 1 sec						
Measurement category	CAT III						
Protection degree	IP30 / IK06						
Operating temperature	+14 °F … +158 °F / -10 … +70 °C						
Storage temperature	-13 °F … +185 °F / -25 … +85 °C						
Relative humidity	95 % non-condensing						
Altitude	< 6560 feet / 2000 m						
Connection	SOCOMEC cable or equivalent RJ12 straight, twisted pair, unshielded 300 V cat. III UL 61010 cable. -40 °F … +185 °F / -40 °C … +85 °C						

References

Model	Nominal current range (A)	Actual coverage range (A)	Pitch (in/mm)	Reference
TE-18	5 … 20	0.1 … 24	0.7/18	4829 **0500**
TE-18	25 … 63	0.5 … 75	0.7/18	4829 **0501**
TE-25	40 … 160	0.8 … 192	0.98/25	4829 **0502**
TE-35	63 … 250	1.26 … 300	1.37/35	4829 **0503**
TE-45	160 … 630	3.2 … 756	1.77/45	4829 **0504**
TE-55	400 … 1000	8 … 1200	2.16/55	4829 **0505**
TE-90	600 … 2000	12 … 2400	3.54/90	4829 **0506**

Accessories	Reference
Coupling link (20 linear assembly parts and 10 for staggered assembly)	4829 **0598**
CT/5A adapter (measurements of >2000 A) (max primary current 10000 A/5/A)	4829 **0599**
Sealable caps (20 pieces)	4829 **0600**

RJ12 connection cables	Cable length (ft/m)									
	0.32/0.1	0.64/0.2	0.96/0.3	1.64/0.5	3.3/1	6.5/2	9.84/3	16.4/5	32.8/10	164/50 + 100 connectors
Number of cables	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**
1	-	-	-	-	-	-	-	4829 **0602**	4829 **0603**	4829 **0601**
3	4829 **0580**	4829 **0581**	4829 **0582**	4829 **0595**	4829 **0583**	4829 **0584**	4829 **0606**	-	-	-
4	-	-	-	4829 **0596**	4829 **0588**	4829 **0589**	-	-	-	-
6	4829 **0590**	4829 **0591**	4829 **0592**	4829 **0597**	4829 **0593**	4829 **0594**	-	-	-	-

TR/iTR sensors

Split-core AC current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B

TR *Split-core current sensors*

Function

The range of **TR** and **iTR split-core current sensors** measures the current of electrical installations. Used with DIRIS Digiware, DIRIS A-40, or DIRIS B Power Monitoring Devices, they can measure currents between 25 and 600 A, with the same guaranteed accuracy. The quick RJ12 connection and the integrated intelligence prevent any configuration errors.

The range of iTR current sensors revolutionizes the world of measurement and provides access to VirtualMonitor (monitoring of protective devices) and AutoCorrect (automatic wiring control) technologies.

Advantages of the TR and iTR ranges

Smart sensors

- Sensors with an extended operational range.
- Automatic rating detection.
- Safe on-load disconnection.
- Quick connection via RJ12 color-coded identification of cable.

Accurate

- Measurement accuracy is guaranteed according to the most demanding standard (IEC 61557-12): class 0.5 (iTR) or class 1 (TR) for the global measuring chain and on the full scale (from **2%** to **120%** of In)

Unique advantages of the iTR range

VirtualMonitor technology

The VirtualMonitor technology provides monitoring of protective devices:

- Across the entire electrical installation.
- Remotely and in real-time.
- Without additional hardware or wiring.

AutoCorrect technology

The AutoCorrect technology guarantees that the measurement system is working correctly, with:

- Automatic identification of wiring errors (verification of phase associations and current flow direction).
- Software correction of errors.
- Available even off-load.

The solution for

- > Retrofit applications
- > Industry
- > Building
- > Infrastructure
- > Data centers

Strong points

- > Smart sensors
- > PreciSense technology: Global accuracy in accordance with the IEC 61557-12 standard
- > Easy installation and configuration

Integrated technologies(1)

PreciSense **Auto**Correct **Virtual**Monitor

For more information see our website www.socomec.us

(1) AutoCorrect and VirtualMonitor are only available with iTR sensors.

Compliance with standards

- > UL 61010-1, CSA-C22.2, 61010-1, Guide PICQ, File E257746
- > IEC 61557-12
- > ISO 14025

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Create your project

- > Find the best DIRIS Digiware configuration: **www.meter-selector.com**

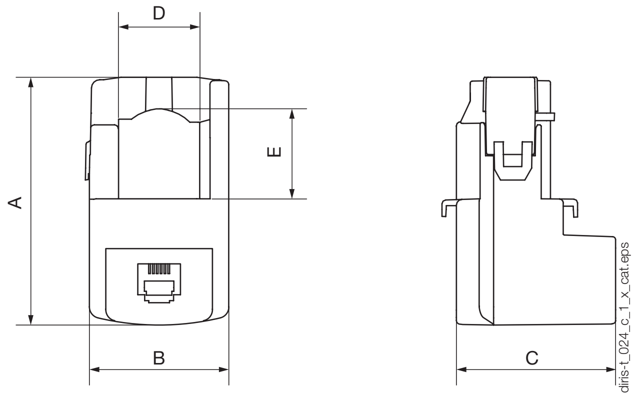
METER SELECTOR DIGITAL TOOL AVAILABLE

Installation

Cable mounting

Dimensions (in/mm)

TR/iTR-10 / TR/iTR-14 / TR/iTR-21 / TR/iTR-32



Model	Nominal current range (A)	Actual coverage range (A)	A (in/mm)	B (in/mm)	C (in/mm)	D (in/mm)	E (in/mm)	Ø (in/mm)
TR/iTR-10	25 ... 63	0.5 ... 75.6	1.73/44	1.02/26	1.10/28	-	-	0.39/10
TR/iTR-14	40 ... 160	0.8 ... 192	2.64/67	1.14/29	1.10/28	0.55/14	0.59/15	0.55/14
TR/iTR-21	63 ... 250	1.26 ... 300	2.56/65	1.46/37	1.69/43	0.83/21	0.91/23	0.83/21
TR/iTR-32	160 ... 600	3.2 ... 720	3.39/86	2.09/53	1.85/47	1.26/32	1.30/33	1.26/32

Technical characteristics

Model	TR-10	iTR-10	TR-14	iTR-14	TR-21	iTR-21	TR-32	iTR-32
Nominal current range I_n (A)	25 ... 63		40 ... 160		63 ... 250		160 ... 600	
Actual coverage range (A)	0.5 ... 75.6		0.8 ... 192		1.26 ... 300		3.2 ... 720	
Max. current (A)	75.6		192		300		720	
Weight (oz/g)	2.6/74		4.1/117		7.4/211		10.9/311	
Max. voltage (phase/neutral)	300 V							
Rated withstand voltage	3 kV							
Frequency	50/60 Hz							
Intermittent overload	10 x I_n for 1 s							
Measurement category	CAT III							
Global class used with Diris Digiware I / A-40 / B-10 / B-30	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5
Protection degree	IP20 / IK07							
Operating temperature range	+14 °F … +158 °F / -10 … +70 °C						+14 °F … +131 °F / -10 … +70 °C	
Storage temperature range	-13 °F … +185 °F / -25 to +85°C							
Relative humidity	95% RH non-condensing							
Altitude	< 6560 feet / 2000 m							
Connection	SOCOMEC RJ12 cable, straight, twisted pair, unshielded, 600 V, +14 °F ... +158 °F / -10 °C ... +70 °C							

References

Model	Nominal current range (A)	Actual coverage range (A)	Ø (in/mm)	Part number
TR-10	25 … 63	0.5 … 75	0.39/10	4829 **0555**
TR-14	40 … 160	0.8 … 192	0.55/14	4829 **0556**
TR-21	63 … 250	1.26 … 300	0.83/21	4829 **0557**
TR-32	160 … 600	3.2 … 720	1.26/32	4829 **0558**

Model	Nominal current range (A)	Actual coverage range (A)	Ø (in/mm)	Part number
iTR-10	25 … 63	0.5 … 75	0.39/10	4829 **0655**
iTR-14	40 … 160	0.8 … 192	0.55/14	4829 **0656**
iTR-21	63 … 250	1.26 … 300	0.83/21	4829 **0657**
iTR-32	160 … 600	3.2 … 720	1.26/32	4829 **0658**

RJ12 connection cables	Cable length (ft/m)									
	0.32/0.1	0.64/0.2	0.96/0.3	1.64/0.5	3.3/1	6.5/2	9.84/3	16.4/5	32.8/10	164/50 + 100 connectors
Number of cables	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	-	4829 **0602**	4829 **0603**	4829 **0601**
3	4829 **0580**	4829 **0581**	4829 **0582**	4829 **0595**	4829 **0583**	4829 **0584**	4829 **0606**	-	-	-
4	-	-	-	4829 **0596**	4829 **0588**	4829 **0589**	-	-	-	-
6	4829 **0590**	4829 **0591**	4829 **0592**	4829 **0597**	4829 **0593**	4829 **0594**	-	-	-	-

TF sensors

Flexible TF current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B

TF *Flexible current sensors*

The solution for

- Industry
- Building
- Infrastructure
- Data centers

Strong points

- Plug & Play
- Accuracy according to IEC 61557-12
- Ideal solution for retrofit applications
- Simplified installation

Integrated technologies

PreciSense

For more information see our website www.socomec.us

Compliance with standards

- UL 61010-1, CSA-C22.2 No 61010-1, Guide PICQ, IEC 61557-12
- IEC 61557-12
- ISO 14025

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IEC

PEP ecoPASSPORT®

Create your project

- Find the best DIRIS Digiware configuration: **www.meter-selector.com**

METER SELECTOR DIGITAL TOOL AVAILABLE

Function

TF flexible **current sensors** measure the load currents of an electrical circuit and send the data to the meters and Power Monitoring Devices or current modules via an RJ12 plug-and-play connection. With a wide measurement range, TF current sensors cover a broad current range from 150 to 6000 A, with only 5 references. TF flexible current sensors can be used with DIRIS Digiware I modules, DIRIS A-40 and DIRIS B.

Advantages

Plug & Play

- A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. This also allows automatic detection of the sensor type and rating.
- The sensors can be installed in both directions.

Accuracy according to IEC 61557-12

- Class 0.5 for the global measuring chain (PMD + TF current sensors) from 2 to 120% of the nominal current I_n.
- Accuracy is guaranteed regardless of the position of the conductor in the loop.

Safe locking mechanism

- The locking system prevents the loop from opening, guaranteeing continuous functioning and accuracy even under harsh conditions.

Ideal solution for retrofit applications

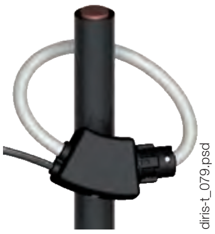
- The TF flexible sensor range is specially designed for existing installations with strict integration constraints or with high-intensity currents.

Simplified installation

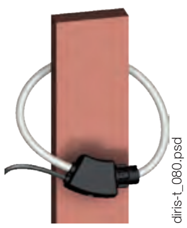
- The Rogowski integrator is built into the RJ12 cable enabling a quick and compact integration (no DIN rail assembly required) inside electrical panels.
- The integrator is self supplied by the PMD through the RJ12 cable and does not need any external power supply.

Installation

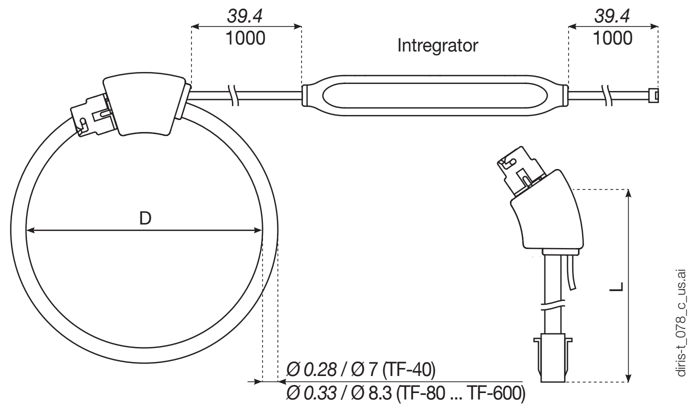
Cable mounting



Bar mounting



Dimensions (in / mm)



Model	Nominal current range (A)	Real range covered (A)	D = Ø loop (in/mm)	L = Loop length (in/mm)
TF-55	150 ... 600	3 ... 720	2.16 / 55	6.81 / 173
TF-80	150 ... 600	3 ... 720	3.15 / 80	2.88 / 251
TF-120	400 ... 2000	8 ... 2400	4.72 / 120	14.84 / 377
TF-200	600 ... 4000	12 ... 4800	7.87 / 200	24.72 / 628
TF-300	1600 ... 6000	32 ... 7200	11.81 / 300	37.09 / 942
TF-600	1600 ... 6000	32 ... 7200	23.62 / 600	74.21 / 1885
Integrator dimensions (in / mm): 5.04 x 0.75 x 0.59 / 128 x 19 x 15				

Technical characteristics

Model	TF-55	TF-80	TF-120	TF-200	TF-300	TF-600
Nominal current range I_n (A)	150 ... 600	150 ... 600	400 ... 2000	600 ... 4000	1600 ... 6000	1600 ... 6000
Actual range covered (A)	3 ... 720	3 ... 720	8 ... 2400	12 ... 4800	32 ... 7200	32 ... 7200
Weight (oz/g)	4/114	4.85/130	5/142	5.78/164	6.81/193	9.67/274
Max. voltage (phase/neutral)	600 V					
Rated withstand voltage	3.6 kV					
Accuracy class	Class 0.5 in association with DIRIS Digiware I, DIRIS A-40, DIRIS B					
Frequency	50 / 60 Hz					
Intermittent overload	10 x In for 1 s					
Measurement category	CAT III					
Protection degree	IP30 / IK07					
Operating temperature	+ 14°F ... + 158°F / -10°C to +70°C					
Storage temperature	- 13°F ... +185°F / -25°C to +85°C					
Relative humidity	95% RH non-condensing					
Altitude	< 2000 m					
Connection	SOCOMEC RJ12 cable, straight, twisted pair, unshielded, 600 V, + 14°F ... + 158°F / - 10°C ... + 70°C					

References

Model	Nominal current range (A)	Real range covered (A)	D = Ø loop (mm)	L = Loop length (mm)	Reference
TF-55	150 ... 600	3 ... 720	55	173	4829 **0570**
TF-80	150 ... 600	3 ... 720	80	251	4829 **0574**
TF-120	400 ... 2000	8 ... 2400	120	377	4829 **0575**
TF-200	600 ... 4000	12 ... 4800	200	628	4829 **0576**
TF-300	1600 ... 6000	32 ... 7200	300	942	4829 **0577**
TF-600	1600 ... 6000	32 ... 7200	600	1885	4829 **0578**
Accessories					**Reference**
Female/female connector for extension of the RJ12 connection between PMD and TF sensor.					4829 **0670**

RJ12 connection cables	Cable length (ft/m)									
	0.32/0.1	0.64/0.2	0.96/0.3	1.64/0.5	3.3/1	6.5/2	9.84/3	16.4/5	32.8/10	164 / 50 reel + 100 connectors
Number of cables	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**	**Reference**
1	-	-	-	-	-	-	-	4829 **0602**	4829 **0603**	4829 **0601**
3	4829 **0580**	4829 **0581**	4829 **0582**	4829 **0595**	4829 **0583**	4829 **0584**	4829 **0606**	-	-	-
4	-	-	-	4829 **0596**	4829 **0588**	4829 **0589**	-	-	-	-
6	4829 **0590**	4829 **0591**	4829 **0592**	4829 **0597**	4829 **0593**	4829 **0594**	-	-	-	-

DIRIS Digiware Udc

DC voltage measurement module

diris-dw_116_a

DIRIS Digiware U-31dc/U-32dc

diris-dw_005_a_cat

DIRIS Digiware U500dc/U1000dc/U1500dc adaptor

Configuration with EasyConfig System.

Function

The **DIRIS Digiware U-3xdc** module measures DC voltage for the entire system.
It measures up to 180 VDC with a direct connection and is therefore compatible with typical nominal voltages (24 VDC, 48 VDC, etc.).
The voltage adaptors make the system compatible with all voltage levels up to 1650 VDC to respond to the needs of all applications.
The RJ45 Digiware Bus transmits voltage measurements along with power supply and communication to all connected products.

Advantages

Single voltage measurement
- Single voltage measurement point for the entire system.
- Single point of protection for the voltage measurement.
- No hazardous voltage on panel doors.

Flexible
- The voltage adaptors make the measurement system compatible with all DC electrical networks.

Plug & Play
- Easy to configure from DIRIS Digiware D interfaces or from the Easy Config configuration software.

The solution for

- Data center
- Telecommunication
- Renewable power
- Transportation

Strong points

- Centralization of voltage measurement
- Flexible
- Plug & Play

RJ45 (Digiware Bus) cables are available.

Conformity to standards

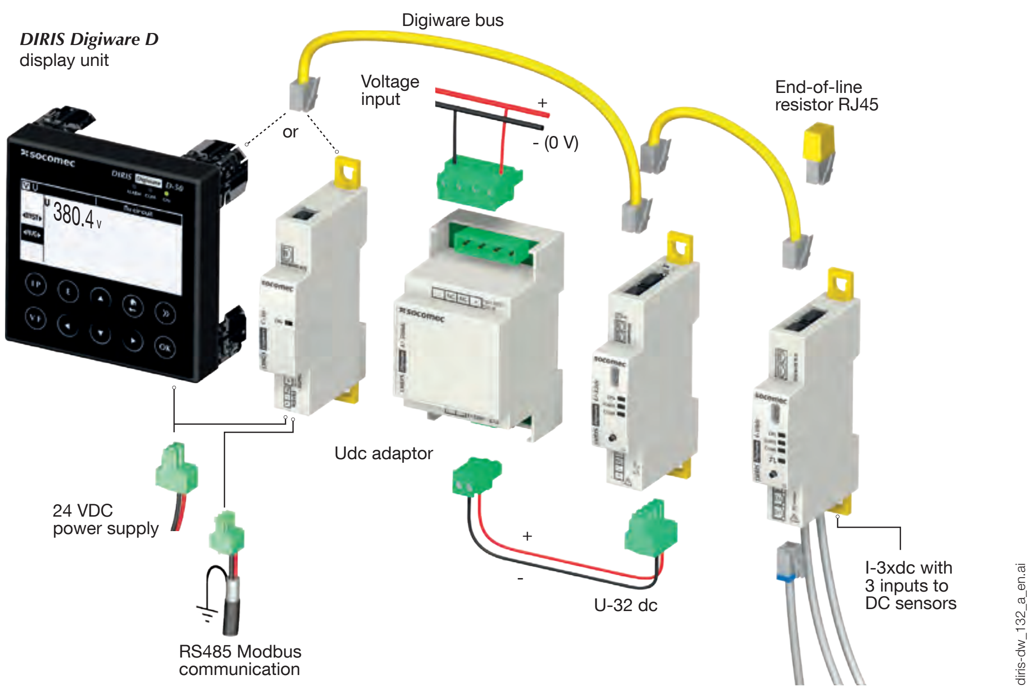
- UL 61010-1, CSA-C22.2 No. 61010-1, Guide PICQ, File E257746
- IEC 61557-12
- ISO 14025

Application	DC voltage measurement	
		
DIRIS Digiware Udc	**U-31dc**	**U-32dc**
Nominal voltage range	24 … 48 VDC	60 … 150 VDC
Measuring range (min-max)	19.2 … 60 VDC	48 … 180 VDC
Multi-measurement		
DC voltage (VDC)	•	•
Power quality		
V ripple (voltage ripple)	•	•
V_{rms}	•	•
Alarms		
Thresholds and combinations	•	•
Trends		
Average values	•	•
Format		
Width/number of modules	0.71 in / 1	

Application	DC voltage adaptors		
			
DIRIS Digiware Udc	U500dc	U1000dc	U1500dc
Max. voltage range	200 … 600 VDC	400 … 1200 VDC	1200 … 1650 VDC
Association			
U-32dc	•	•	•
Format			
Width/number of modules	2.13 in / 3		

Connections

DIRIS Digiware DC wiring with optional Udc voltage adaptors

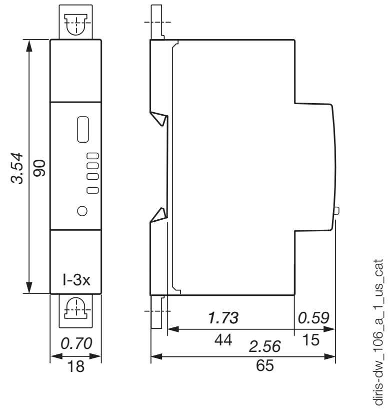


DIRIS Digiware Udc

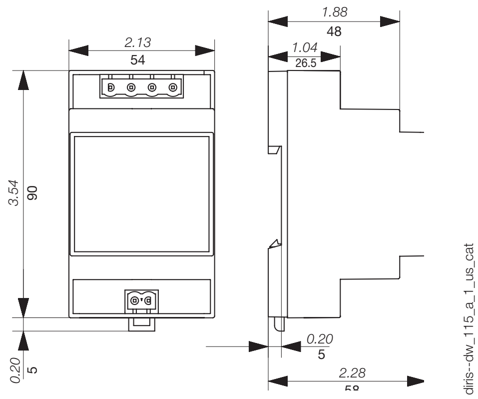
DC voltage measurement module

Dimensions (in/mm)

DIRIS Digiware U-3xdc



DIRIS Digiware adaptors
U500dc / U1000dc / U1500dc



Technical characteristics

Measurement characteristics

DC voltage measurement - DIRIS Digiware U	
Features of the network measured (min-max)	Without adaptors: U-31dc : 19.2 - 60 VDC U-32dc : 48 - 180 VDC
	With adaptor: U-32dc + adaptor U500dc : 200 - 600 VDC U-32dc + adaptor U1000dc : 400 - 1200 VDC U-32dc + adaptor U1500dc : 1200 - 1650 VDC
Voltage measurement accuracy without adaptor	Class 0.5
Voltage measurement accuracy with adaptor	Class 1
Connection without adaptor	Removable screw terminal block, 2 positions, AWG 10 … AWG 32 or 0.2 … 2.5 mm² stranded or solid cable
Connection with adaptor	Adaptor input: Removable screw terminal block, 2 positions, AWG 10 … AWG 32 or 0.2 … 2.5 mm² stranded or solid cable Adaptor output: Removable screw terminal block, 2 positions, AWG 10 … AWG 32 or 0.2 … 2.5 mm² stranded or solid cable
Module power consumption	0.6 VA

Mechanical features

Casing type	DIN-rail mounting module and base
Casing protection index	IP20 / IK06
Front panel protection index	IP40 front face in modular assembly / IK06
Weight	2.26 oz / 64 g

Environmental specifications

Ambient operating temperature	+14 °F … +158 °F / -10 … +70 °C
Storage temperature	-13 °F … + 158 °F / -25 … +70 °C
Operating humidity	131 °F / 55 °C / 97% relative humidity
Operating altitude	6560 feet / < 2000 m

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware modules
Location	On each DIRIS Digiware measurement module
Connection	Type B micro USB connector
Digiware bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections

References

Digiware connection cables		Part number
RJ45 cables for Digiware Bus	Length 0.20 feet / 0.06 m	4829 **0189**
	Length 0.32 feet / 0.10 m	4829 **0181**
	Length 1.64 feet / 0.50 m	4829 **0182**
	Length 3.28 feet / 1 m	4829 **0183**
	Length 6.56 feet / 2 m	4829 **0184**
	Length 9.84 feet / 3 m	4829 **0190**
	Length 16.4 feet / 5 m	4829 **0186**
	Length 32.8 feet / 10 m	4829 **0187**
	Length 164 feet / 50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

DIRIS Digiware		Part number
U-31dc	Voltage measurement 19.2 … 60 VDC	4829 **0150**
U-32dc	Voltage measurement 48 … 180 VDC	4829 **0151**
U500dc	Voltage adaptor 200 … 600 VDC	4829 **0153**
U1000dc	Voltage adaptor 400 … 1200 VDC	4829 **0154**
U1500dc	Voltage adaptor 1200 … 1650 VDC	4829 **0155**

DIRIS Digiware **Idc**

Direct current measurement module

DIRIS Digiware I-30dc/I-35dc

Configuration with EasyConfig System.

The solution for

> Data center
> Telecommunication
> Renewable power
> Transportation

Strong points

> Multi-circuit
> Plug & Play
> Flexible
> Compact

RJ45 (Digiware Bus) cables are available.

Conformity to standards

> UL 61010-1, CSA-C22.2 No. 61010-1, Guide PICQ, File E257746
> ISC 61557-12
> ISO 14025

Function

DIRIS Digiware Idc modules measure consumption and monitor the DC electrical installation. Several of these modules can be used within the same system, allowing the measurement of a large number of DC circuits. They are powered with DIRIS Digiware Udc voltage measurement modules.

Direct current is measured using external sensors connected by RJ12-Molex cables, available in multiple lengths. These cables are color coded (brown, orange, white) to easily identify circuits.

The associated DIRIS Digiware D screen and the embedded webserver Webview can display electrical measurements from both DIRIS Digiware AC and DC systems simultaneously.

Advantages

Multi-circuit

- Measurement of up to 3 DC circuits per Idc module.
- Multiple Idc modules can be connected together which allows the measurement of a large number of DC loads simultaneously.

Flexible

- Adapted to suit metering and quality analysis of the direct current.
- A complete range of solid core and split core DC current sensors from 16 to 6000 A.

Plug & Play

- Quick RJ45 connection between modules and RJ12-Molex to current sensors.
- Easy to configure from DIRIS Digiware D interfaces or from the Easy Config System.

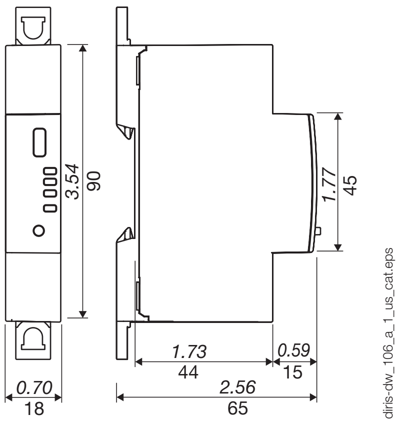
Compact

One module wide to address space constraints inside electrical panels.

Application	Direct current (DC) measurement modules	
		
DIRIS Digiware Idc	***I-30dc***	***I-35dc***
Number of current inputs		
	3	3
Metering		
± kWh	•	•
Demand profiles		•
Multi-measurement		
DC current (I DC)	•	•
DC power (P DC)	•	•
Predictive power		•
Measurement of current quality		
I ripple (current ripple)		•
I rms		•
Alarms		
Thresholds and combinations		•
Trends		
Average values		•
Format		
Width/number of modules	0.71 in / 1	

Dimensions (in/mm)

DIRIS Digiware Idc

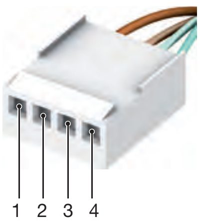


DIRIS Digiware Idc
Direct current measurement module

Connections

DC current is measured by external sensors connected to the DIRIS Digiware I-3xdc modules via RJ12-Molex cables. Connection of the current sensors is quick and error free. A wide range of current sensors is available from Socomec to suit all installations and applications including split-core current sensors for retrofit applications.

- Open-loop Hall effect sensors
- Solid core or split core.
- Power supply voltage: ± 15 V.
- Power supply current: ± 25 mA depending on sensor.
- Output voltage: ± 4 V.
- 4-point male Molex terminal strip.
- Measuring range: 16 to 6000 A.
- Category III overvoltage.

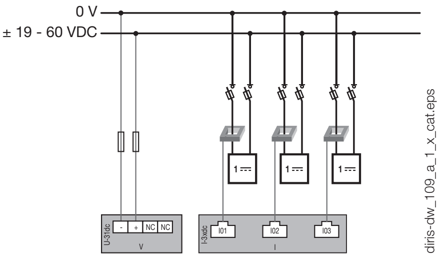


- PIN 1: + 15 V (+ Vc)
- PIN 2: - 15 V (- Vc)
- PIN 3: sensor input (M)
- PIN 4: 0 V sensor (0)

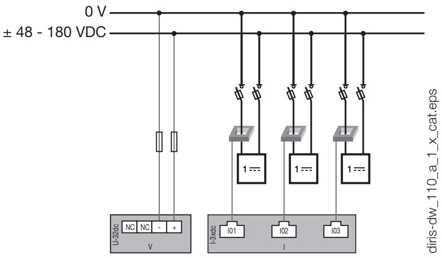
Network and connection examples

Measurement of 3 DC loads

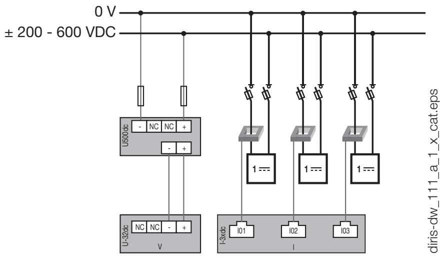
DIRIS Digiware U-31dc
Voltage (VDC): 19 - 60 V



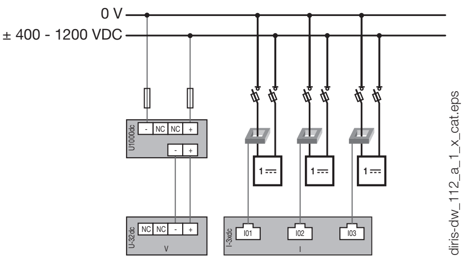
DIRIS Digiware U-32dc
Voltage (VDC): 48 - 180 V



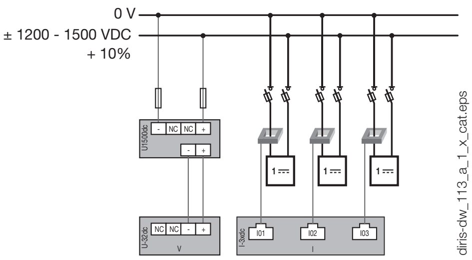
DIRIS Digiware U-32dc + adaptor U500dc
Voltage (VDC): 200 - 600 V



DIRIS Digiware U-32dc + adaptor U1000dc
Voltage (VDC): 400 - 1200 V



DIRIS Digiware U-32dc + adaptor U1500dc
VDC voltage: 1200 - 1500 V +10%



1. Fuse: 2A gPV

DC current sensor

1 ⎓ DC load

Technical characteristics

Measurement characteristics

DC current measurement - DIRIS Digiware Idc	
Number of current inputs	3
Associated current sensors	Open-loop Hall effect
Accuracy of current measurement	Class 0.5
Precision measurement of power and energy	With U-31dc/U-32dc only: class 1 With U-32dc + adaptor: class 2
Connection	Specific Socomec cable with RJ12-Molex connectors
Power consumption of module	2 VA

Mechanical features

Casing type	DIN-rail mounting module and base
Casing protection index	IP20 / IK06
Front panel protection index	IP40 front face in modular assembly / IK06
Weight	2.43 oz / 69 g

Environmental specifications

Ambient operating temperature	+14 °F … +158 °F / -10 … +70 °C
Storage temperature	-4 °F … +158 °F / -20 … +70 °C
Operating humidity	131 °F / 55 °C / 97% relative humidity
Operating altitude	< 6560 feet / 2000 m

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measurement module
Connection	Type B micro USB connector
Digiware bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections

References

DIRIS Digiware I-3xdc		Part number
I-30dc	Metering - 3 current inputs	4829 **0156**
I-35dc	Analysis - 3 current inputs	4829 **0157**
RJ12-Molex cables		
Number of cables	**Length of cables**	**Part number**
3	0.98 feet / 0.3 m	4829 **0782**
3	1.64 feet / 0.50 m	4829 **0783**
3	3.28 feet / 1 m	4829 **0784**
3	6.56 feet / 2 m	4829 **0785**
1	16.4 feet / 5 m	4829 **0786**

Digiware connection cables		Part number
RJ45 cables for Digiware Bus	Length 0.20 feet / 0.06 m	4829 **0189**
	Length 0.32 feet / 0.10 m	4829 **0181**
	Length 1.64 feet / 0.50 m	4829 **0182**
	Length 3.28 feet / 1 m	4829 **0183**
	Length 6.56 feet / 2 m	4829 **0184**
	Length 9.84 feet / 3 m	4829 **0190**
	Length 16.4 feet / 5 m	4829 **0186**
	Length 32.8 feet / 10 m	4829 **0187**
	Length 164 feet / 50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

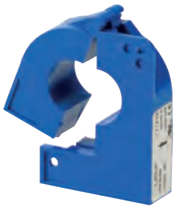
Expert Services

Do you require services for your metering system?
No problem for our local team. They will fully integrate all your Socomec devices, **audit** your system, **commission** selected equipment and **train** your staff on its use.
For further information, please contact us.

DC current sensors

Associated with DIRIS Digiware DC

Solid-core sensors 50 … 600 A



Split-core sensors 50 … 500 A

Solid-core sensors 850 ... 5000 A

Split-core sensors 800 … 2000 A

The solution for

- > Data center
- > Telecommunication
- > Renewable power
- > Transportation

Strong points

- > Plug & Play
- > Wide selection of ratings
- > Simplified installation

Compliance with standards

- > UL 508, CSA-C22.2 No. 14, Guide NMTR, File E189713
- > IEC 61010-1

Function

The **DC current sensors** measure the DC load currents of an electrical installation and transmit information to the DIRIS Digiware Idc measurement modules via an RJ12 cable.

The range consists of solid-core and split-core sensors ranging from 50 to 5000 A in various sizes allowing them to be used in new or existing electrical installations.
Up to 3 different DC sensors can be connected to the same DIRIS Digiware Idc module.

Advantages

Plug & Play
- A quick RJ12 connection makes wiring easy and reliable.
- Fast configuration of the current sensors.

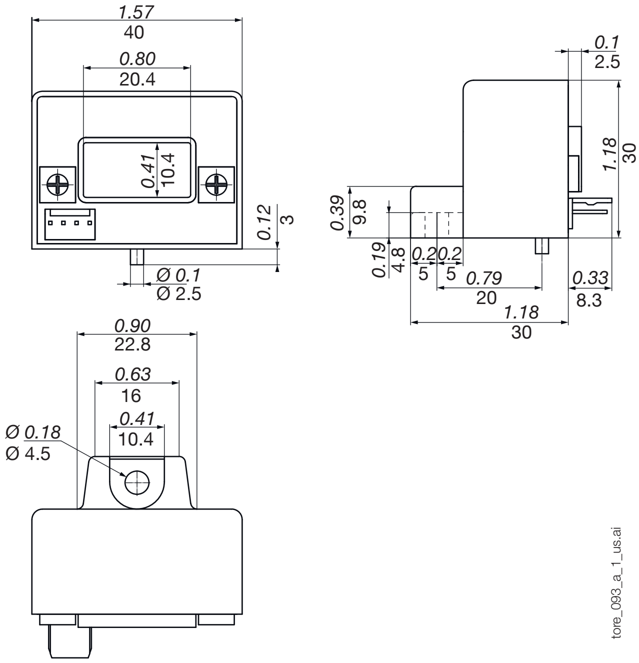
Flexible
- A complete range of solid-core and split-core sensors from 50 to 5000 A designed for new or existing electrical installations.

Installation
- Easy to install.
- Ideal for installations with limited space available.
- Only 4 different frame sizes cover a wide measurement range.
- Color-coded cables for ease of identification, and to prevent wiring errors.

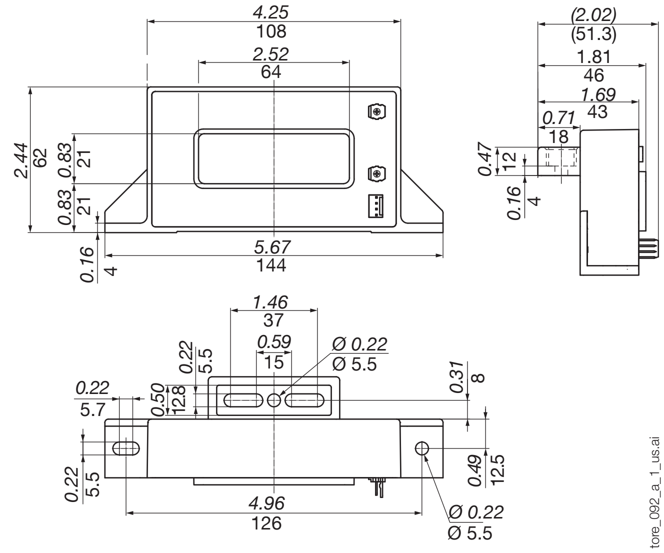
Bi-Directional Metering
- DIRIS Digiwar DC measure the flow of electricity in both directions.

Dimensions (in/mm)

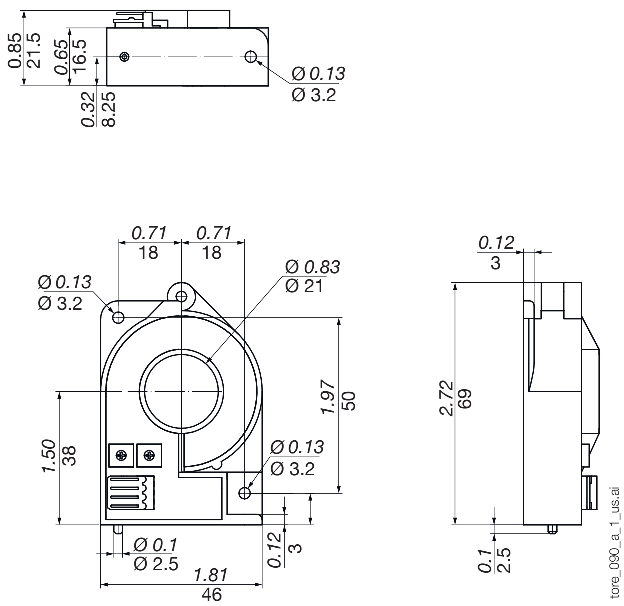
Solid-core sensors 50 … 600 A (frame size 1)



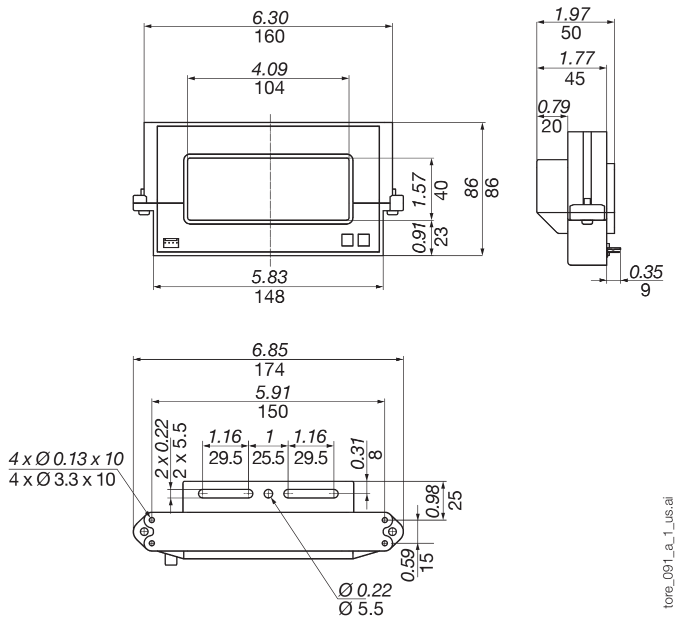
Solid-core sensors 850 … 5000 A (frame size 2)



Split-core sensors 50 … 500 A (frame size 1)



Split-core sensors 800 … 2000 A (frame size 2)



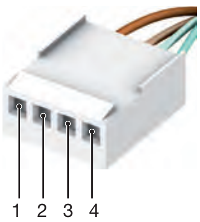
DC current sensors

Associated with DIRIS Digiware DC

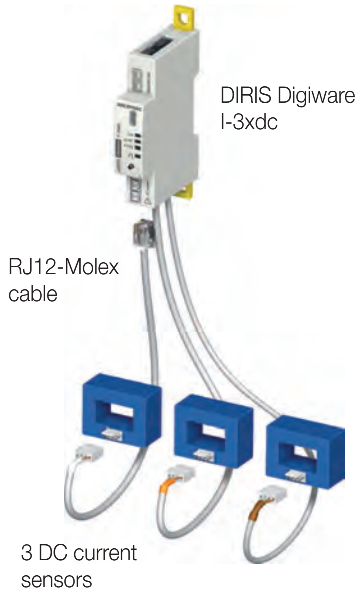
Connections

DC current is measured by external sensors connected to the DIRIS Digiware I-3xdc modules via RJ12-Molex cables. Connection of the current sensors is quick and error-free. A wide range of current sensors is available from Socomec to suit all installations and applications including split-core current sensors for retrofit applications.
The DC current sensors have the following technical characteristics:

- Open-loop Hall effect sensors.
- Solid-core or split-core.
- Power supply voltage: ± 15 V.
- Power supply current: ± 25 mA depending on the sensor.
- Output voltage: ± 4 V.
- 4-point male Molex terminal strip.
- Measurement range: 16 to 5000 A.
- Category III overvoltage.



- PIN 1: + 15 V (+ Vc)
- PIN 2: - 15 V (- Vc)
- PIN 3: sensor input (M)
- PIN 4: 0 V sensor (0)



Technical characteristics

Type of current sensor	Open-loop Hall effect
Connection	Specific Socomec cable with RJ12-Molex connectors
Accuracy of current measurement	Solid-core sensors: 50 ... 600 A: < 1% Solid-core sensors: 850 ... 5000 A: < 1% Split-core sensors: 50 ... 500 A: < 2% Split-core sensors: 800 ... 2000 A: < 2%

Weight	Solid-core sensors 50 … 600 A	2.12 oz / 60 g
	Solid-core sensors 850 … 5000 A	15.87 oz / 450 g
	Split-core sensors 50 … 500 A	2.82 oz / 80 g
	Split-core sensors 800 … 2000 A	20.8 oz / 590 g
Operating temperature	Solid-core sensors 50 … 600 A	+14 °F … +176 °F / -10 … +80 °C
	Solid-core sensors 850 … 5000 A	-13 °F … +185 °F / -25 … +85 °C
	Split-core sensors 50 … 500 A	+14 °F … +158 °F / -10 … +70 °C
	Split-core sensors 800 … 2000 A	+14 °F … +158 °F / -10 … +70 °C
Storage temperature	Solid-core sensors 50 … 600 A	-13 °F … +176 °F / -25 … +80 °C
	Solid-core sensors 850 … 5000 A	-13 °F … +185 °F / -25 … +85 °C
	Split-core sensors 50 ... 500 A	-4 °F … +185 °F / -20 … +85 °C
	Split-core sensors 800 … 2000 A	-13 °F … +185 °F / -25 … +85 °C

References

DC current sensors	Reference
Solid-core sensors (frame size 1)	
50 A	4829 **0700**
100 A	4829 **0701**
200 A	4829 **0702**
300 A	4829 **0703**
400 A	4829 **0704**
500 A	4829 **0705**
600 A	4829 **0706**
Solid-core sensors (frame size 2)	
850 A	4829 **0707**
1000 A	4829 **0708**
1500 A	4829 **0709**
2000 A	4829 **0710**
2500 A	4829 **0711**
5000 A	4829 **0712**
Split-core sensors (frame size 1)	
50 A	4829 **0750**
100 A	4829 **0751**
200 A	4829 **0752**
300 A	4829 **0753**
400 A	4829 **0754**
500 A	4829 **0755**
Split-core sensors (frame size 2)	
800 A	4829 **0756**
1000 A	4829 **0757**
1500 A	4829 **0758**
2000 A	4829 **0759**

RJ12-MOLEX cables		
Number of cables	**Length of cables**	**Reference**
3	0.98 feet / 0.3 m	4829 **0782**
3	1.64 feet / 0.50 m	4829 **0783**
3	3.28 feet / 1 m	4829 **0784**
3	6.56 feet / 2 m	4829 **0785**
1	16.4 feet / 5 m	4829 **0786**

DIRIS Digiware IO

Digital and analog input/output modules

DIRIS Digiware IO-10
4 digital inputs/2 digital outputs

DIRIS Digiware IO-20
2 analog inputs

Configuration with EasyConfig System,

Function

DIRIS Digiware IO modules enrich the measurement system with multiple features:

- DIRIS Digiware IO-10 modules have 4 digital inputs and 2 digital outputs.
  The 4 digital inputs can be used to monitor the status of protection devices and removable drawers (ON/OFF, trip counter) or to collect pulses from multi-fluid meters.
  The 2 digital outputs allow the remote control of switching devices by sending a binary output signal. Alarms can be configured and assigned to the digital outputs.
- Due to the modules 2 analog inputs, DIRIS Digiware IO-20 modules can collect the data from analog sensors (pressure, humidity, temperature...).
- All the information reported by the IO-10 and IO-20 modules

All the information reported by the IO-10 and IO-20 modules can be viewed on DIRIS Digiware D-xx displays and on Webview, the web server embedded in DIRIS M gateways and in the DIRIS Digiware D-70 display unit.

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center

Strong points

- > Plug & Play
- > Multifunction
- > Connected
- > Compact

Compliance with standards

- > UL 61010-1, CSA-C22.2 No. 61010-1, Guide PICQ, File E257746
- > IEC 61557-12
- > ISO 14025

Advantages

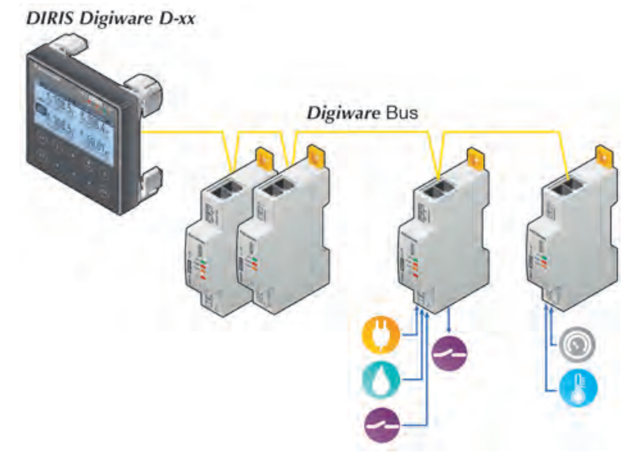
Plug & Play
The IO modules can be easily added anywhere within the measurement system due to a quick RJ45 connection.

Multifunction
The combination of voltage measuring modules, current measuring modules, and input/output modules makes DIRIS Digiware a complete and versatile system.

Connected
All the reported information is accessible from the displays, from Webview or any other centralized management software.

Compact
The modular format allows the quick connection of a large number of IO-10 and IO-20 modules.

Application diagram

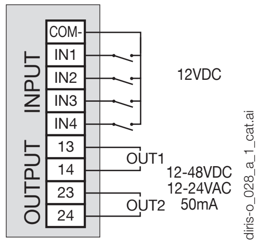


diris-o_027_a_1_cat.eps

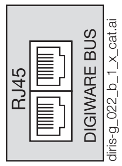
Connections

DIRIS Digiware IO-10

Digital inputs/outputs

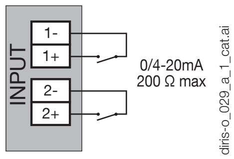


Digiware Bus

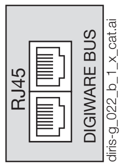


DIRIS Digiware IO-20

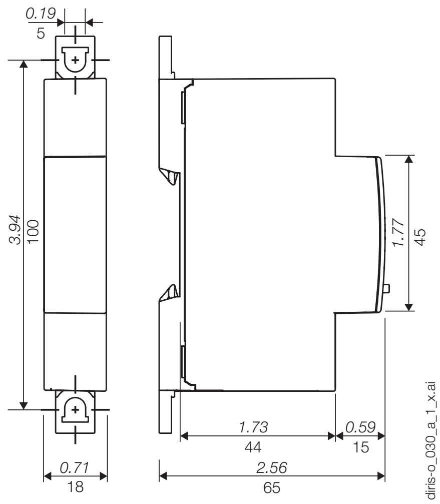
Analog inputs



Digiware Bus



Dimensions (in/mm)



Technical characteristics

Measuring characteristics

Digital inputs/outputs- DIRIS Digiware IO-10	
Number of inputs	4
Type/power supply	Insulated input, internal polarisation 12 VDC max., 3 mA
Input function	- Logical status - Status of the circuit breaker, of the drawer (ON/OFF, trip counter) - Pulse counter
Number of outputs	2
Type	Insulated output, 48 VDC max., 50 mA and 24 VAC max.
Output function	- Remote control of status - Alarm signal linked to the inputs (exceeding threshold, status...)
Input/output connection	Removable screw terminal block, 9 positions (5 dedicated to inputs, 4 dedicated to outputs) Stranded or solid 0.14 to 1.5 mm² cable
Analog inputs - DIRIS Digiware IO-20	
Number of inputs	2
Type/power supply	0/4-20 mA, 200 Ω max
Accuracy	0.5% full scale
Function	Connection of analog sensors (pressure, humidity, temperature...) with choice of interpolation (linear or quadratic)
Input connection	Removable screw terminal block 2x2 positions, AWG 15 to AWG 35 or 0.14 to 1.5 mm² stranded or solid cable

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.32 feet / 0.10 m	4829 **0181**
	Length 0.66 feet / 0.20 m	4829 **0188**
	Length 1.64 feet / 0.50 m	4829 **0182**
	Length 3.28 feet / 1 m	4829 **0183**
	Length 6.56 feet / 2 m	4829 **0184**
	Length 4.84 feet / 3 m	4829 **0190**
	Length 16.4 feet / 5 m	4829 **0186**
	Length 32.8 feet / 10 m	4829 **0187**
	Length 164 feet / 50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

DIRIS Digiware input/output modules		Reference
IO-10	4 digital inputs/2 outputs module	4829 **0140**
IO-20	2 analog input module	4829 **0145**

DIRIS DigiBOX M

Enclosed multi-point metering solution for retrofit applications

DIRIS DigiBOX 8
Centralization and display of data

Configuration
with *EasyConfig System.*

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center

Strong points

- > Plug & Play
- > Accurate
- > Safe & reliable

Conformity to standards

- > cULus 508A
- > UL 61010-1, CSA-C22.2 No. 61010-1, Guide PICQ, File E257746
- > IEC 61557-12

Function

Socomec's enclosed metering line **DIRIS DigiBOX** is designed to offer a complete and modular metering solution in NEMA1,3R enclosures for indoor and outdoor use. With ease of installation for retrofit applications and factory pre-wired Plug & Play technology, DIRIS DigiBOX solutions provide considerable savings in installation costs. The solution offers the benefits of the Digiware technology.

Advantages

Plug & Play

- Factory pre-wired.
- RJ12 current sensor connection.
- Automatic detection of ratings and verification of current flow direction.
- Disconnection of the current sensor secondary under load.

Accurate

Accuracy of measurements guaranteed according to ANSI C12.20 and IEC standard 61557-12:

- Better than revenue grade: class 0.5 from 2 % to 120 % of rated current for the global measurement chain (associated with TE / TF current sensors).
- Class 0.2 for the meter alone.

Safe & reliable

- Durable NEMA 1,3R.
- cULus listed enclosures and components.
- cULus 508A assembly facility.
- Fused voltage connections.
- Reliable detailed wiring instructions.

Bi-Directional Metering

DIRIS Digiware measures the flow of electricity in both directions.

Specifications

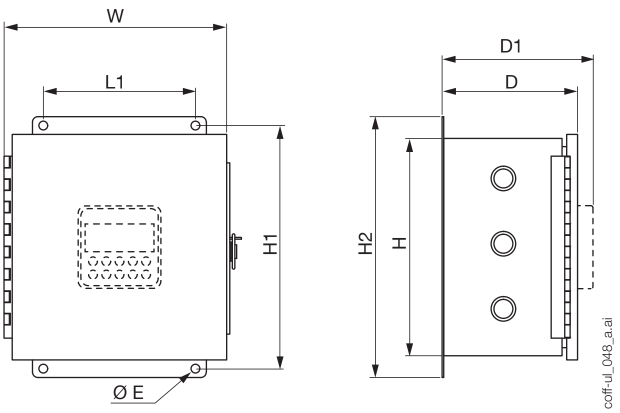
	DigiBOX				*DigiBOX Pro*				*DigiBOX Flex*
Number of metered points	2	4	6	8	2	4	6	8	Customized solution
Number of current inputs	8	12	18	24	8	12	18	24	
Metering modules	DIRIS Digiware	DIRIS Digiware	DIRIS Digiware	DIRIS Digiware	DIRIS Digiware	DIRIS Digiware	DIRIS Digiware	DIRIS Digiware	
Multi-measurement									
Currents, voltages (ph/ph and ph/n), active/reactive/apparent powers, power factor, frequency	•	•	•	•	•	•	•	•	
Voltage/current unbalance					•	•	•	•	
Power factor, cos Phi, tan Phi					•	•	•	•	
Metering									
kWh(+/-), kvarh (+/-), kVAh	•	•	•	•	•	•	•	•	
Multi-tariff	•				•	•	•	•	
Load curves					•	•	•	•	
Power Quality									
THDV, THDU, THDI	•				•	•	•	•	
Individual harmonics V, U & I (up to rank 63)					•	•	•	•	
Voltage dips, cut-offs and surges (EN50160)					•	•	•	•	
Overcurrents					•	•	•	•	
Alarms					•	•	•	•	
Communication	RS485/Ethernet								
Enclosure rating	NEMA 1/3R								
Display & gateway	Optional								
Dimensions									
H x W x D (inches)	12 x 12 x 6.6	12 x 12 x 6.6	12 x 12 x 6.6	12 x 12 x 6.6	12 x 12 x 6.6	12 x 12 x 6.6	12 x 12 x 6.6	12 x 12 x 6.6	
References									
No display	USDBB02ND0	USDBB04ND0	USDBB06ND0	USDBB08ND0	USDBP02ND0	USDBP04ND0	USDBP06ND0	USDBP08ND0	
With display	USDBB02D50	USDBB04D50	USDBB06D50	USDBB08D50	USDBP02D50	USDBP04D50	USDBP06D50	USDBP08D50	
Display & gateway	USDBB02D70	USDBB04D70	USDBB06D70	USDBB08D70	USDBP02D70	USDBP04D70	USDBP06D70	USDBP08D70	
Customized metering and communication solution	Made to order - contact us								

600V rated available, please consult us.

DigiBOX accessory enclosures

Description	Reference
12 x 12 x 6.6 - NEMA 3R - Enclosure only with back-plate and 2 DIN rails	USDBENC-001
12 x 10 x 6.2 - NEMA 3R - Polycarbonate Enclosure with display cutout	USDBENC-003

Dimensions (in)



	H	H1	H2	D	D1	L1	W	Ø E
DigiBOX and DigiBOX Pro 2, 4, 6 & 8 with display	12	13.5	14.6	6.6	-	3	12	0.25
DigiBOX and DigiBOX Pro 2, 4, 6 & 8 without display	12	13.5	14.6	6.6	7	3	12	0.25

DIRIS B

Multifunction power monitoring devices

diris-b_038.psd

DIRIS B-10 / B-30
RS485

Configuration with *EasyConfig System.*

Function

The **DIRIS B** is a power monitoring device in a modular format that communicates via RS485. The four RJ12 independent current inputs of the device allow it to manage several types and number of circuits: for example, 4 single-phase loads or 1 three-phase load + 1 single-phase load.

The DIRIS B is connected to current sensors (RJ12 connection) that are suitable for all types of installation: solid-core TE, split-core TR /iTR, and Rogowski TF current sensors.

Advantages

Plug & Play
A rapid RJ12 connection makes wiring easy and reliable to prevent wiring errors. Automatically addressing and configuring the product (communication address, load type, type and ratio of current sensor) simplifies implementation and saves time.

Better than revenue grade
- Class 0.2 for the meter alone according to ANSI C12.20.
- Class 0.5 according to IEC 61557-12 from 2 to 120% of nominal current for the global measurement chain (associated with TE/iTR/TF current sensors).

Bi-Directional Metering
DIRIS Digiware measures the flow of electricity in both directions.

Multi-circuit
- Four current measurement inputs allow you to configure multiple circuits in order to optimize the number of measurement devices per installation.

Communication
- The DIRIS B can be connected to:
  - a remote DIRIS D-30 screen for displaying measurement and metering data.
  - DIRIS Digiware M-50/M-70 gateways for centralization and communication of data via Ethernet. DIRIS Digiware M-70 embeds WEBVIEW-M, a webserver for remote visualization of measurement data.
  - optional digital or analog input/output modules, as well as temperature input modules can also be connected.

The solution for

> Industry
> Building
> Infrastructure

Strong points

> Plug & Play
> Revenue grade accuracy ANSI C12.20
> Multi-circuit
> Communication

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.us

Conformity to standards

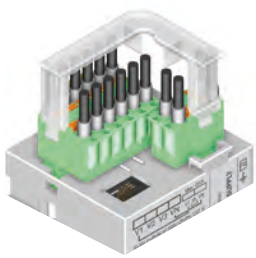
> UL 61010-1, CSA-C22.2 No. 51010-1, Guide PICQ, File E257746
> IEC 61557-12
> ISO 14025
> CEC Compliant

Application	Local metering	Local analysis
		
DIRIS B	***B-10*** RS485	***B-30*** RS485
Number of current inputs		
	4	4
Metering		
± kWh, ± kvarh, kVAh	•	•
Load curves		•
Multi-tariff (demand)	•	•
Multi-measurement		
U12, U23, U31, V1, V2, V3, f	•	•
U system, V system	•	•
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•
P, Q, S, PF per phase	•	•
Predictive power	•	•
Ph/N unbalance	•	•
Ph/Ph unbalance	•	•
Current unbalance (Inba, Idir, Iinv, Ihom, Inb)	•	•
Phi, cos Phi, tan Phi	•	•
Power quality analysis		
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31	•	•
THDi1, THDi2, THDi3, THDin	•	•
Individual harmonics U & V (up to 63rd)		•
Individual harmonics I (up to 63rd)		•
Crest factor I1, I2, I3, In		•
Crest factor V1, V2, V3, U12, U23, U31		•
Voltage sags, interruptions, swells (EN 50160)		•
Overcurrents		•
Alarms		
On threshold		•
Inputs/outputs	•	•
History of average values		
45 days (max)		•
Communication		
RS485 Modbus	•	•
2 inputs (status/pulse)	•	•

Accessories

DIRIS B sealing cover

- Prevents access to the cabling of the monitoring device.



diris-b_039_a.eps

USB configuration cable (6.56 ft / 2 m)

- Advanced configuration of DIRIS B gateways can be achieved using the EASY CONFIG System via Ethernet or direct USB connection.

DIRIS B
Multifunction power monitoring devices

DIRIS D-30 display

DIRIS D-30

diris-d_001_a_1_cat

Connection

diris-d_004_b_1_x_cat

Optional modules

DIRIS O

diris-b_031_a

Optional module DIRIS B

Optional modules (4 max.)*
- Digital inputs/outputs
- Analog inputs/outputs
- Temperature inputs

** maximum 4 optional modules with maximum 1 temperature module.*

diris-o_019_a

DIRIS O-iod
- 2 digital inputs centralizes the metering pulses or the input status changes of the auxiliary contacts.
- 2 digital outputs can be connected to configurable alarms warning of exceeded thresholds (power, current, etc.) or can be piloted remotely.

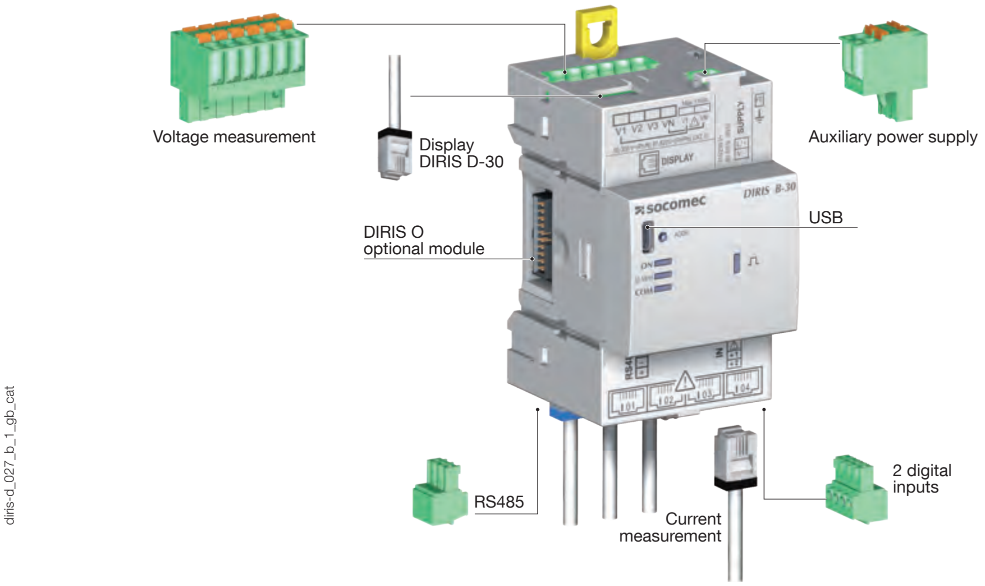
diris-o_018_a

DIRIS O-ioa
- 2 inputs (4-20 mA) centralize analog sensors (pressure, humidity, temperature, etc.)
- 2 outputs (4-20 mA) report the measurements (power, currents, etc.) to PLCs.

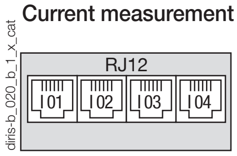
diris-o_020_a

DIRIS O-it
- 3 temperature inputs to be connected to PT100 or PT1000 sensors.
- Ambient air temperature:

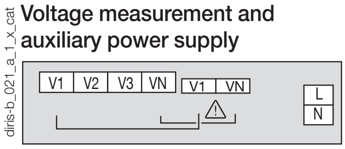
DIRIS B terminals



Current measurement

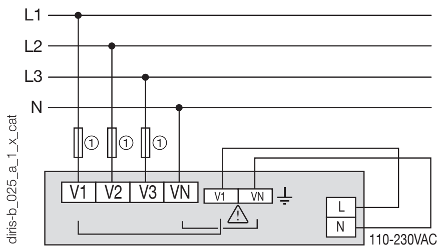


Voltage measurement and auxiliary power supply



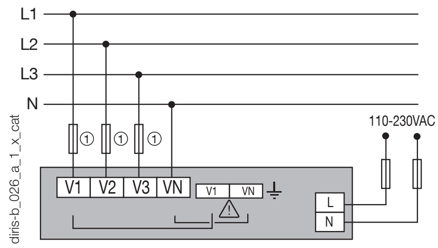
Self supply

Easy connection of the power supply from the measurement terminal (specific terminals)



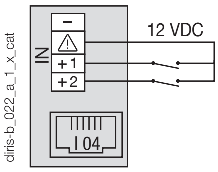
1. Fuses 0.5 A class CC.

Separate power supply

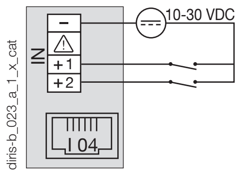


1. Fuses 0.5 A class CC.

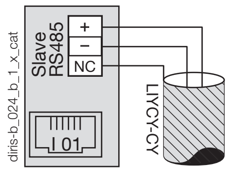
2 inputs supplied by the product



2 inputs with external power supply

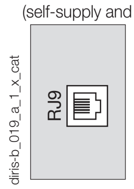


RS485



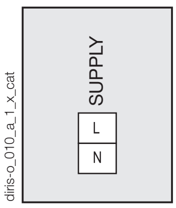
RJ9 for DIRIS D-30

(self-supply and data)

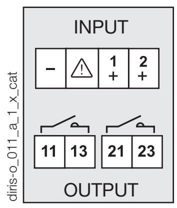


Terminals of optional DIRIS O modules

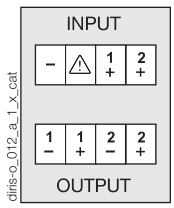
Optional module power supply



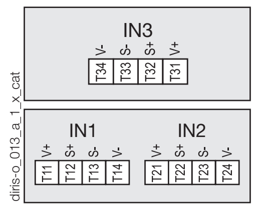
DIRIS O-iod



DIRIS O-ioa



DIRIS O-it



Connections

Associated current sensors

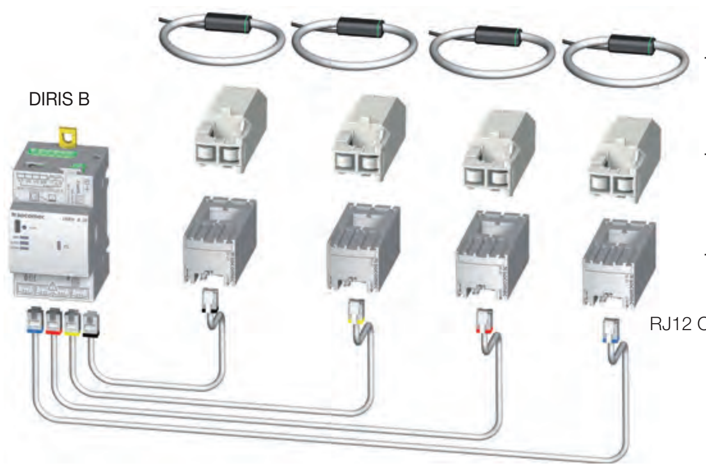
Various types of current sensors can be connected to the DIRIS B: Solid-core TE , split-core TR/iTR , flexible TF current sensors. This range of sensors can be adapted to all types of new or existing installations. A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS B automatically recognizes the type of sensor used and its current rating. This guarantees the overall accuracy of the DIRIS B + current sensor measurement chain.

For more information: see "current sensor" pages.

TE solid-core current sensors

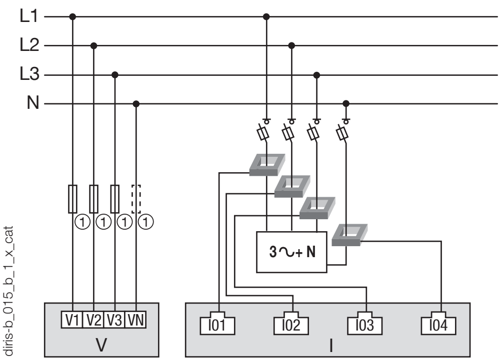
TR/iTR split-core current sensors

TF flexible current sensors

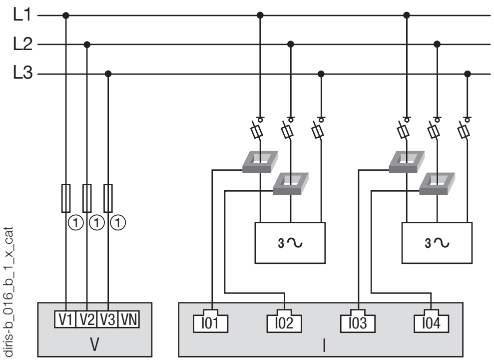


Network and connection examples

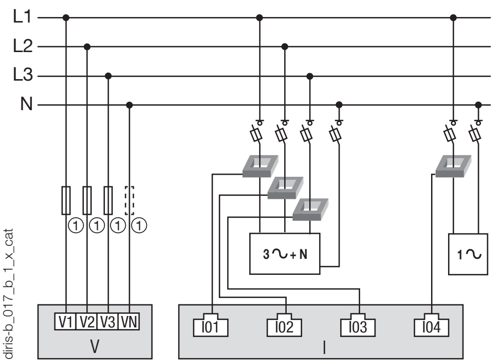
Three phase + neutral
3P+N - 4CTs (measurement for 1 three-phase load + Neutral)



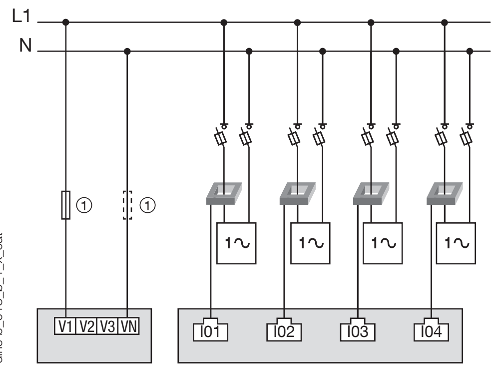
Three-phase
3P - 2CTs (2 three-phase loads without neutral)



Three-phase
3P+N - 3CTs & 1P+N - 1CT (1 three-phase load & 1 single-phase load)



Single-phase
1P+N-1CT (4 single-phase loads)

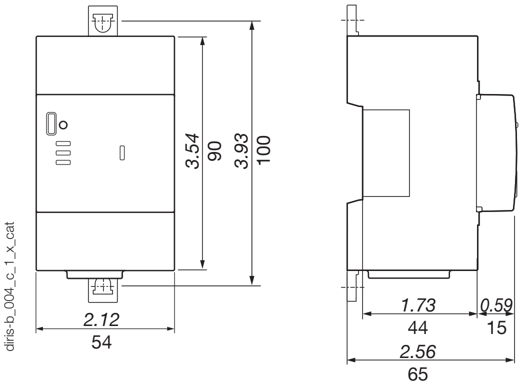


1. Fuses 0.5 A class CC.
In case of self-supply, a fuse must be added on the neutral.

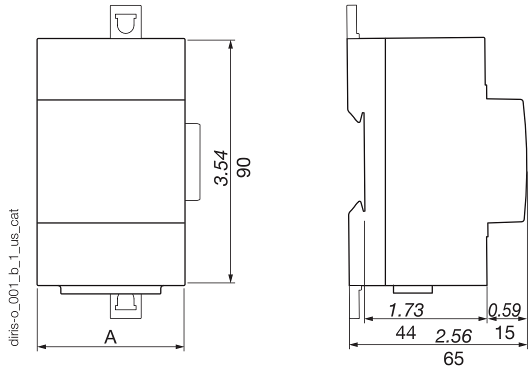
CT: Current sensors   3∿ Load

Dimensions (in/mm)

DIRIS B

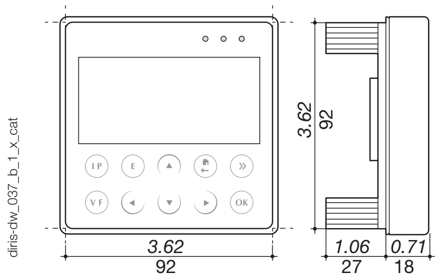


DIRIS O optional modules



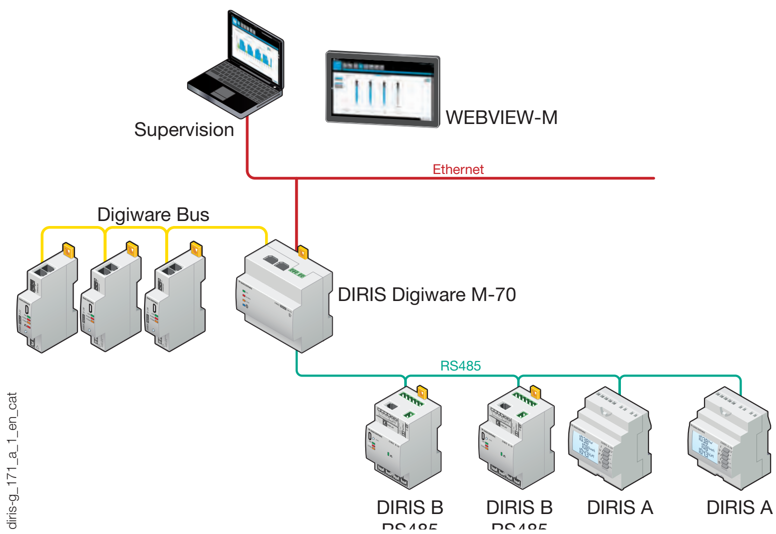
DIRIS O optional modules	A (in / mm)
DIRIS O-iod - DIRIS O-ioa - DIRIS O-it	1.77 / 45

DIRIS D-30



Communication architecture

Example of communication architecture with DIRIS Digiware M-70 gateway and WEBVIEW-M embedded web server.



DIRIS B characteristics

Electrical characteristics

Auxiliary power supply	
AC voltage	110-230 VAC ±15 % (Ph/N ou Ph/Ph) Cat III
Frequency	50/60 Hz
Consumption	< 2 VA without display < 6 VA with display
Connection	Removable spring-cage terminal, 2 x 2 positions, AWG 10 … 24 / 0.5 … 2.5 mm² solid cable or AWG 15 … 30 / 0.25 … 1.5 mm² stranded cable with ferrule

Measurement characteristics

Energy and power measurement	
Accuracy Active energy and active power	Class 0.2 DIRIS B alone Class 0.5 with TE, iTR or TF current sensors Class 1 with TR current sensors
Reactive energy accuracy	Class 2 with TE, TR/iTR or TF current sensors
Power factor measurement	
Accuracy	Class 0.5 with TE, iTR or TF current sensors Class 1 with TR current sensors
Voltage measurement	
Network characteristics measured	50-300 VAC (Ph/N) - 87-520 VAC (Ph/Ph) - CAT III
Frequency range	45 … 65 Hz
Frequency accuracy	Class 0.02
Network type	Single-phase / Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Permanent overload	300 VAC Ph/N
Voltage measurement accuracy	Class 0.2
Connection	Removable spring-cage terminal,2 x 6 positions, AWG 10 … 24 / 0.5 … 2.5 mm² solid cable or AWG 15 … 30 / 0.25 … 1.5 mm² stranded cable with ferrule
Current measurement	
Number of current inputs	4
Associated current sensors	Solid TE , split-core TR/iTR , flexible TF current sensors
Accuracy	Class 0.2 DIRIS B alone Class 0.5 with TE, iTR or TF current sensors Class 1 with TR current sensors
Connection	RJ12 connectors with specific SOCOMEC cable

Input characteristics

Number	2
Type / Power supply	Optocoupler internal polarisation (12 VDC ± 10 %) or external polarisation (10-30 VDC ± 10%)
Input function	Logic status, pulse meter or synchronization pulse status (input 1)

Communication characteristics

DIRIS B RS485	
Link	RS485
Connection type	2 … 3 half duplex wires
Protocol	Modbus RTU
Speed	1200 … 115200 bauds
USB	DIRIS B RS485 configuration

Environment characteristics

Operating temperature	+14 … +158 °F / -10 … +70 °C
Storage temperature	-13 … +185 °F / -25 … +85 °C
Operating humidity	131 °F / 55 °C / 97% relative humidity
Operating altitude	6560 feet / 2000 m
Vibration	1G from 10 to 100Hz

DIRIS D-30 display characteristics

Mechanical characteristics	
Screen type	Capacitive touch-screen technology, 10 keys
Screen resolution	350 x 160 pixels
Single product connection	
RJ9	Self-supply and data
Micro-USB	Updating
Degree of protection	IP65 (front face)
Environment	
Storage temperature (°C)	-4 … +158 °F / -20 … +70°C
Operating temperature (°C)	-4 … +158 °F / -20 … +70°C
Humidity	95 % at 104 °F / 40°C
Installation category	CAT III
Degree of pollution	2

DIRIS O optional modules characteristics

Power supply(1)	
AC voltage	110-230 VAC ±15 %
Frequency	50/60 Hz

(1) No power supply on DIRIS O-it.

DIRIS O-iod - 2 digital inputs/2 digital outputs	
Number of inputs	2 per optional modules - max. 4 optional modules
Type	Optocoupler internal polarisation (12 VDC ± 10 %) or external polarisation (10-30 VDC ± 10%)
Function	Logic status or pulse meter
Number of outputs	2 per optional modules - max. 4 optional modules
Type	Relay / 230VAC ±15 % - 1 A
Function	Configurable alarm (current, power,…) on threshold overruns or remote controlled status
Inputs/Outputs connection	Removable screw terminal, 4 positions, AWG 15 … 35 / 0.14 to 1.5 mm² stranded or solid cable
DIRIS O-ioa - 2 analog inputs/2 analog outputs	
Number of inputs	2 per optional modules - max. 4 optional modules
Type	4-20 mA
Function	Connection of analog sensors (pressure, humidity, temperature…)
Number of outputs	2 per optional modules - max. 4 optional modules
Type	4-20 mA
Function	Transmission of measurement image (current, power…) to PLCs
DIRIS O-it - 3 temperature inputs	
Number of inputs	3 external inputs + 1 measurement for ambient temperature
Dynamic	-4 … 302 °F / -20 … 150 °C
Type	PT100 or PT1000
Function inputs 1, 2 and 3	Temperature measurement

References

DIRIS B monitoring devices		Reference
DIRIS B-10	RS485 - Modbus - 230 VAC	4829 **0010**
DIRIS B-30	RS485 - Modbus - 230 VAC	4829 **0000**
DIRIS O optional modules		**Reference**
DIRIS O-iod	2 digital inputs / 2 digital outputs	4829 **0030**
DIRIS O-ioa	2 analog inputs/2 analog outputs 4-20 mA	4829 **0031**
DIRIS O-it	3 temperature inputs PT 100 / PT 1000	4829 **0032**
Accessories		**Reference**
DIRIS D-30 - Single-point display		4829 **0200**
RJ9 cable for DIRIS D-30 display - 4.92 ft / 1.5 m		4829 **0280**
RJ9 cable for DIRIS D-30 display - 9.84 ft / 3 m		4829 **0281**
DIRIS B sealing cover for I/O terminals		4829 **0049**
USB configuration cable		4829 **0050**

DIRIS A-40

Multi-function meters

DIRIS A-40

Configuration
with *EasyConfig Systems.*

The solution for

- Industry
- Building
- Infrastructure
- Data center

Strong points

- Assisted configuration
- Connected to the cloud
- High-precision measurment chain
- Smart sensors

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

Conformity to standards

- UL 61010-1
  CSA-C22.2
  61010-1
  File E257746
- IEC 61557-12
- ISO 14025
- CEC compliant

Function

The **DIRIS A-40** is a panel-mounted power monitoring device (PMD). It is designed for measuring, monitoring and reporting electrical energy.

The DIRIS A-40 offers a range of functions for measuring voltage, current, power, energy and quality.
It allows the analysis of one single-phase or three-phase load.

Advantages

Assisted configuration

The configuration wizard guides the user in a step by step process to configure the DIRIS A-40. It also detects and corrects configuration errors. This cuts the commissioning time in half and always delivers a reliable result.

Smart sensors

Three current sensor formats (solid-core TE, split-core TR/iTR and Rogowski coil TF) allow integration of the DIRIS A-40 into new and existing electrical installations.

Connected to the Cloud

The range comprises IoT ready connected products that enable data to be exported automatically for remote operation without any limit on time, distance and time in storage.

Better than revenue grade

Compliant with the IEC 61557-12 standard, guaranteeing the quality and accuracy of the Power Meter:

- Class 0.2 for the meter alone.
- Class 0.5 from 2% to 120% of the rated current (full scale), for the global measurement chain (with TE/iTR/TF current sensors).

Functions

Multi-measurement
- Currents
  - I1, I2, I3, In, Isystem
- Voltages & frequency
  - V1, V2, V3, VN, Vsystem, U12, U23, U31, Usystem, f
- Powers
  - P1, P2, P3, ΣP, Q1, Q2, Q3, ΣQ, S1, S2, S3, ΣS
  - Predictive powers ΣP, ΣQ, ΣS
- Power factor
  - PF1, PF2, PF3, ΣPF
- Cos ϕ & tangent ϕ
  - Instantaneous values per phase

Metering
- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Multi-tariff (8 max.)
- Hour Meter

Quality
- Voltage Unbalance
  - Vdir, Vinv, Vhom, Udir, Uinv, Unba, Vnba, Vnb, Unb
- Current unbalance
  - Idir, Iinv, Ihom, Inba, Inb
- Total harmonic distortion
  - Currents THDi1, THDi2, THDi3,THDiN, TDDI
  - Phase-to-neutral voltage THDv1, THDv2, THDv3
  - Phase-to-phase voltage THDu12, THDu23, THDu31
- Individual harmonics up to 63rd
  - Currents: I1h, I2h, I3h, INh
  - Phase-to-neutral voltage: V1h, V2h, V3h
  - Phase-to-phase voltage: U12h, U23h, U31h
- Quality events
  - Voltage sags, interruptions and swells EN50160
  - K factor & Crest factor
- Events according to EN 50160
  - Voltage sags, interruptions, voltage swells

Monitoring of protective devices
- Auxiliary contact monitoring
- Report and alarm on trips
- Number of operations

Demand profiles and historical records
- Active, reactive and apparent power
- Currents, voltages and frequency

Alarms
- Alarms for all electrical values, events and input status changes, boolean combinations of multiple alarms
- Time-stamping of events

Communication
- DIRIS A-40 RS485 Modbus as standard
- DIRIS A-40 Ethernet Modbus
- DIRIS A-40 PROFIBUS DPV1

Inputs
- 3 digital inputs
  - Power supplied from DIRIS A-40 or an external source
  - Function: logical status, status of circuit breaker, pulse metering of multifluid meters.
- 2 logical outputs
  - Function: Command, energy pulse output, load shedding, alarm

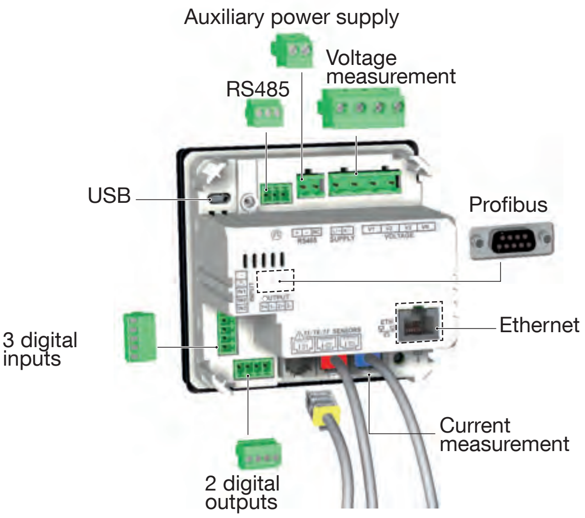
Functions

Monitoring
- Real-time measurement of electrical values.
- View data as graphs or tables.
- Power quality analysis of the utility supply and of loads.

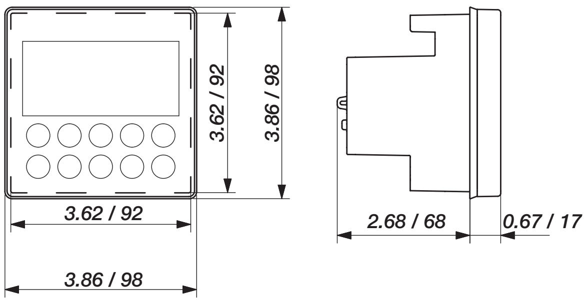
Metering
- Measurement of active, reactive and apparent energies.
- Historical record of measurements.
- Graphic display on monthly, weekly, daily or hourly basis.

Alarming
- Display of alarms.
- History of alarms.

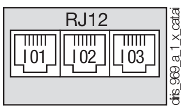
Terminals



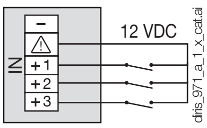
Dimensions (in/mm)



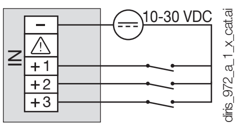
Current measurement



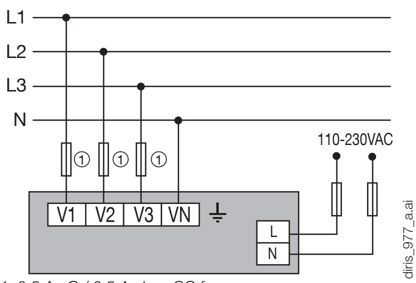
3 inputs supplied by the product



3 inputs with external power supply

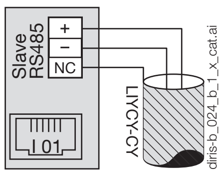


Voltage connections inc auxiliary power supply

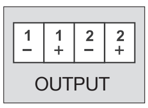


1. 0.5 A gG / 0.5 A class CC fuses.

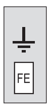
RS485



2 outputs



Earth



DIRIS A-40
Multi-functions meters

Connections

Associated current sensors

Various types of current sensors can be connected to the DIRIS A-40: solid-core (TE), split-core (TR/iTR) or Rogowski (TF). This range of sensors is suitable for all types of new or existing installations. A quick RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS A-40 automatically recognizes the sensor type and rating. This guarantees the overall accuracy of the DIRIS A-40 + current sensor measurement chain.

TE solid-core current sensors

diris-t_001.psd

diris-t_003.psd

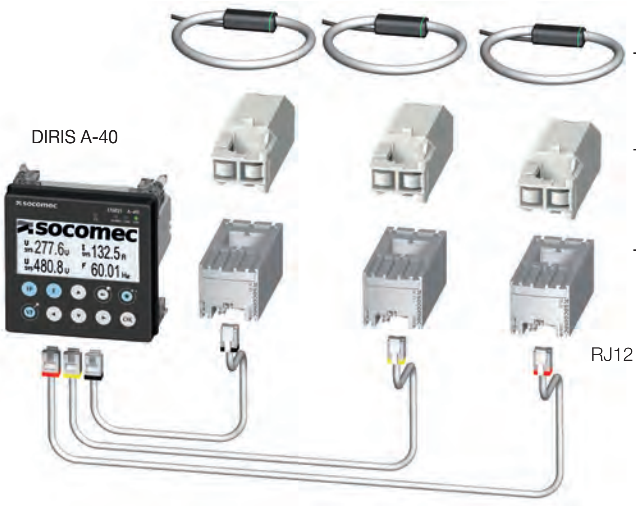
TR/iTR split-core current sensors

tore_082_a.eps

TF Rogowski current sensors

diris-t_016.psd

TE / TR/iTR / TF current sensors

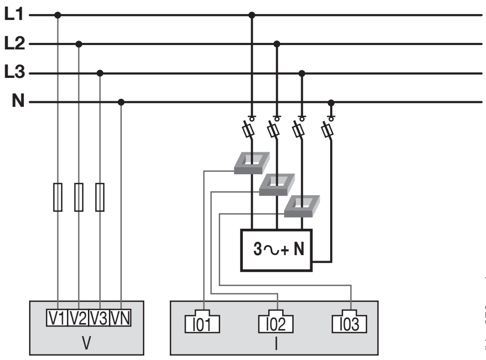


diris_991_a_us.eps

Network and connection examples

Three phase + Neutral

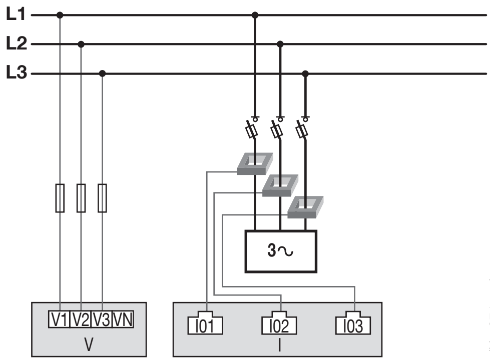
3P+N - 3 CT (1 three-phase load + calculated Neutral)



diris_973_a.ai

Three-phase

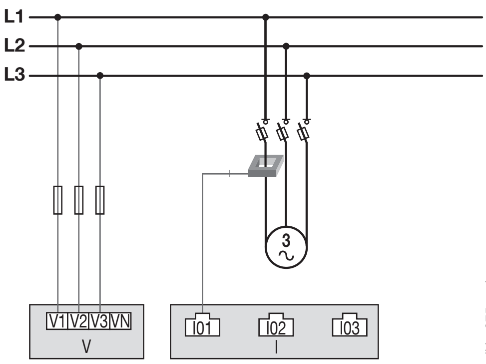
3P - 3CT (1 three-phase load)



diris_974_a.ai

Three-phase

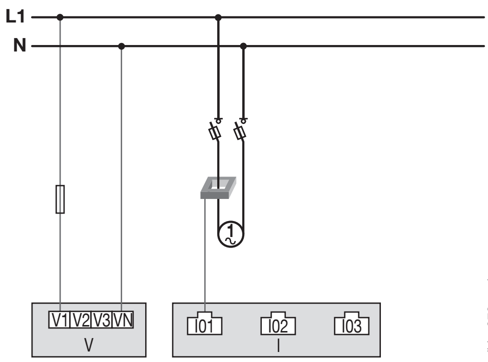
3P - 1CT (1 balanced three-phase load)



diris_975_a.ai

Single-phase

1P+N - 1CT (1 single-phase load)



diris_976_a.ai

1.0.5 A class CC fuses.
If self-supplied, a fuse must always be added to the Neutral.

CT: Current sensor

3∿ Load

DIRIS A-40 characteristics

Electrical characteristics

Auxiliary power supply	
Alternative voltage	110/400 VAC or 120/300 VDC - Cat III
Frequency	50/60 Hz
Power consumption	5 VA AC / 1.5 VA DC (4825 0500) 8 VA AC / 2.5 VA DC (4825 0501 & 4825 0502)
Connection	Removable spring-cage terminal block, 2 x 2 positions, AWG 10 … 24 / 0.5 … 2.5 mm² solid cable or AWG 15 … 30 / 0.25 … 1.5 mm² stranded cable with ferrule

Measurement characteristics

Power and energy measurement	
Accuracy Active energy and active power	Class 0.2 for the DIRIS A-40 stand alone Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Accuracy of reactive energy	Class 2 with TE, TR or TF sensors

Power factor measurement	
Accuracy	Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors

Voltage measurement	
Characteristics of the network measured	50-300VAC (Ph/N) - 87-520VAC (Ph/Ph) - CAT III
Frequency range	45 to 65Hz
Frequency accuracy	Class 0.02
Network type	Single-phase/ Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400,000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Accuracy of voltage measurement	Class 0.2
Connection	Removable spring-cage terminal block, 4 positions, AWG 10 … 24 / 0.5 … 2.5 mm² solid cable or AWG 15 … 30 / 0.25 … 1.5 mm² stranded cable with ferrule

Current measurement	
Number of current inputs	3
Associated current sensors	Solid TE, split-core TR/iTR, flexible TF current sensors
Accuracy	0.2 DIRIS A-40 class only Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Connection	Specific Socomec cable with RJ12 connectors

Input characteristics

Number	3
Type / Power supply	Optocoupler with internal (12 VDC ± 10%) or external (12-24 VDC ± 20%) polarisation
Input function	Logical status, protective device monitoring, pulse metering of multifluid meters.
Connection	Removable screw terminal block, 5 positions, AWG 15 … 35 / 0.14 to 1.5 mm² stranded or solid cable

Output characteristics

Number	2
Type	Optocoupler 30 Vd.c. max 20mA max - SELV
Output function	Command, energy pulse output, load shedding, alarm
Connection	Removable screw terminal block, 4 positions, AWG 15 … 35 / 0.14 to 1.5 mm² stranded or solid cable

Communication characteristics

Communication	
Ethernet RJ45 10/100 Mbs	Gateway function Modbus TCP BACnet IP SNMP v1, v2, v3
RS485 2-3 wires	Modbus RTU communication function Configurable as input or output
USB	Upgrade RTU communication function Configurable as input or output

Environmental specifications	
Storage temperature	-4 ... +158 °F / -20 °C ... +70 °F
Operation temperature	+14 ... +131 °F / -10 °F ... +55 °F
Humidity	95% at 104 °F / 40 °C
Installation category, degree of pollution	CAT III, 2

References

DIRIS A-40 monitoring devices		Reference
DIRIS A-40	RS485 Modbus - 3 inputs / 2 outputs	4825 **0500**
DIRIS A-40	Ethernet Modbus TCP or Bacnet IP - webserver - RS485 Modbus - 3 inputs / 2 outputs	4825 **0501**
DIRIS A-40	Profibus DPV1 - RS485 Modbus - 3 inputs / 2 outputs	4825 **0502**

Expert Services

> Our local team offers complete support to ensure the success of your project, from consultation to implementation of your metering system.

DIRIS DigiBOX A

Enclosed single-point metering solution for retrofit applications

Configuration
with *EasyConfig Systems.*

The solution for

- Industry
- Infrastructure
- Buildings

Strong points

- Easy to order
- RJ12 current sensor connection
- Class 0.5 system accuracy

Conformity to standards

- cULus 508A
- UL 61010-1
  CSA-C22.2 No. 61010-1
  Guide PICQ
  File E257746
- ANSI C12.20
- IEC 61557-12

Function

DIRIS DigiBOX A is an easy-to-install enclosed single-point metering solution. It provides users all they need for installation at site right out of the box, just select the type and the range of CTs from our wide plug and play CT selection. With just three part numbers for the meters you are able to address most of your metering needs.

Manufactured in a UL508 A shop with utmost care for quality and reliability. Factory voltage wiring is clean and safe for installations.

DigiBOX A is powered by our DIRIS A-40 meters packed with advanced features, design and performance.

Advantages

Easy to order

- Same part number for indoor or outdoor installations (NEMA 3R, 12, 4, 4X)
- Universal system voltage and power supply
- The meter itself comes with features such as I/Os and various communication protocols onboard
- Kits are available that include the DigiBOX A, current sensors and RJ12 cables

cULus rated electrical design

- cULus listed enclosures and components
- cULus 508 A assembly facility
- Fused voltage connections
- Reliable detailed wiring instructions

RJ12 current sensor connection

- Fast: automatic detection of ratings and verification of current flow direction
- Reliable: identification of cables by color-coding and wiring control by the system
- Disconnection of the current sensor secondary under load
- Auto-configuration of parameters

Accurate

Accuracy of measurements guaranteed according to ANSI C12.20 and IEC 61557-12 standards:

- Class 0.5 from 2% to 120% of rated current for the global measurement chain (associated with TE/iTR/TF current sensors).
- Class 0.2 for the meter alone

Simple integration

The three current sensor technologies, solid-core, split-core and flexible (TE, TR/iTR & TF) allow the ability to implement a monitoring solution in new or existing installations.

Assisted configuration

The configuration wizard guides the user step-by-step and detects and corrects configuration errors, cutting the commissioning time in half and guaranteeing a reliable monitoring system.

Connected

The DIRIS A-40 power meter can automatically export logged data for remote processing without any limits on time or storage.

Factory pre-wired

Fused voltage terminations

DIRIS DigiBOX A Kits

DIRIS DigiBOX A Kits have DigiBOX A meter with current sensors and connecting cables ready to be installed. DigiBOX A kits come in various current ratings covering 5 A to 2000 A rated loads. This covers most loads from main to sub feeders in a typical commercial and industrial electrical distribution system.

DIRIS DigiBOX A

Enclosed single-point metering solution
for retrofit applications

Functions

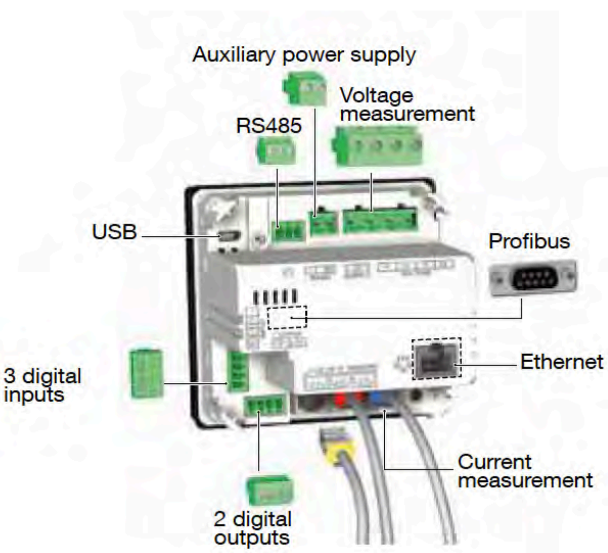
Monitoring
- Real-time measurement of electrical values.
- View data as graphs or tables.
- Power quality analysis of the utility supply and of loads.

Metering
- Measurement of active, reactive and apparent energies.
- Historical record of measurements.
- Graphic display on monthly, weekly, daily or hourly basis.

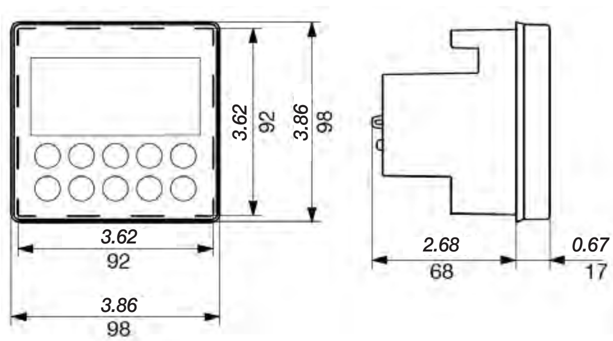
Alarming
- Display of alarms.
- Alarm logs.



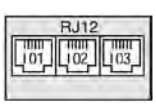
Terminals



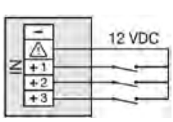
Dimensions (in/mm)



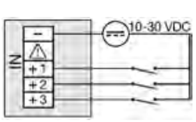
Current measurement



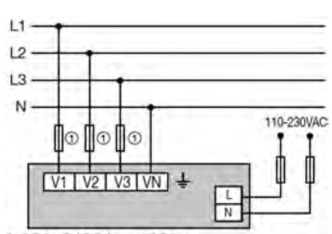
3 inputs supplied by the product



3 inputs with external power supply

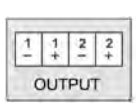


Voltage connections
inc auxiliary power supply



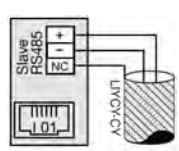
1. 0.5 A gG / 0.5 A class CC fuses.

2 outputs



Earth

RS485

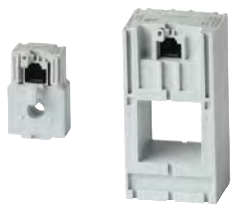


Connections

Associated current sensors

Various types of current sensors can be connected to the DIRIS A-40: solid-core (TE), split-core (TR/iTR) or Rogowski (TF). This range of sensors is suitable for all types of new or existing installations. A quick RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS A-40 automatically recognizes the sensor type and rating. This guarantees the overall accuracy of the DIRIS A-40 + current sensor measurement chain.

TE solid-core current sensors



TE / TR/iTR / TF current sensors

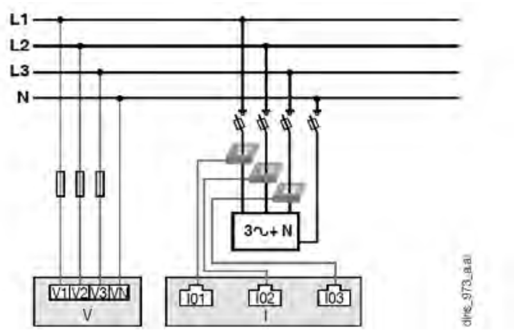
TR/iTR split-core current sensors

TF Rogowski current sensors

Network and connection examples

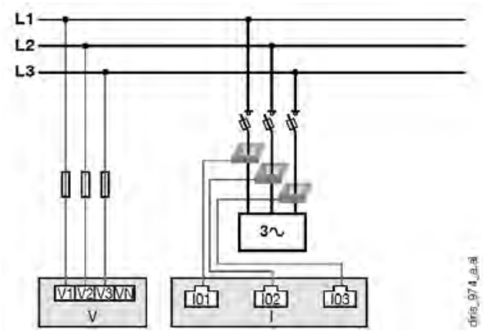
Three-phase + Neutral

3P+N - 3 CT (1 three-phase load + calculated Neutral)



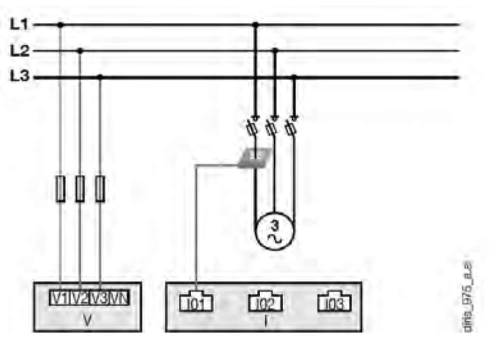
Three-phase

3P - 3CT (1 three-phase load)



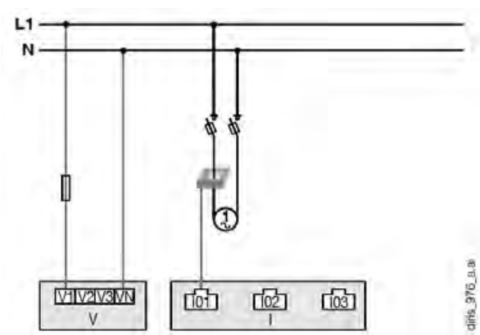
Three-phase

3P - 1 CT (1 balanced three-phase load)



Single-phase

1P+N - 1CT (1 single-phase load)



1. 0.5 A gG / 0.5 A class CC fuses.
If self-supplied, a fuse must always be added to the Neutral.

CT: Current sensor   3~ Load

DIRIS DigiBOX A

Enclosed single-point metering solution
for retrofit applications

Characteristics

Electrical characteristics

Auxiliary power supply	
Alternative voltage	110/400 VAC or 120/300 VDC - Cat III
Frequency	50/60 Hz
Power consumption	5 VA AC / 1.5 VA DC (4825 0500) 8 VA AC / 2.5 VA DC (4825 0501 & 4825 0502)
Connection	Removable spring-cage terminal block, 2 x 2 positions, AWG 10 … 24 / 2.5 … 0.5 mm² solid cable or AWG 15 … 30 / 1.5 … 0.25 mm² stranded cable with ferrule

Measurement characteristics

Power and energy measurement	
Accuracy Active energy and active power	Class 0.2 for the DIRIS A-40 only Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Accuracy of reactive energy	Class 1 with TE, iTR or TF sensors
Power factor measurement	
Accuracy	Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Voltage measurement	
Characteristics of the network measured	50-300VAC (Ph/N) - 87-520VAC (Ph/Ph) - CAT III
Frequency range	45 to 65Hz
Frequency accuracy	Class 0.02
Network type	Single-phase / Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Accuracy of voltage measurement	Class 0.2
Connection	Removable spring-cage terminal block, 4 positions, AWG 10 … 24 / 0.5 … 2.5 mm² solid cable or AWG 15 … 30 / 0.25 … 1.5 mm² stranded cable with ferrule
Current measurement	
Number of current inputs	3
Associated current sensors	Solid TE, split-core TR/iTR, flexible TF current sensors
Accuracy	Class 0.2 DIRIS A-40 alone Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Connection	Specific Socomec cable with RJ12 connectors

Input characteristics

Number	3
Type / Power supply	Optocoupler with internal (12 VDC ± 10%) or external (12-24 VDC ± 20%) polarisation
Input function	Logical status, protective device monitoring, pulse metering of multifluid meters.
Connection	Removable screw terminal block, 5 positions, AWG 15 … 35 / 0.14 to 1.5 mm² stranded or solid cable

Output characteristics

Number	2
Type	Optocoupler 30 Vd.c. max 20mA max - SELV
Output function	Command, energy pulse output, load shedding, alarm
Connection	Removable screw terminal block, 4 positions, AWG 15 … 35 / 0.14 to 1.5 mm² stranded or solid cable

Communication characteristics

Communication	
Ethernet RJ45 10/100 Mbs	Gateway function Modbus TCP BACnet IP SNMP v1, v2, v3
RS485 2-3 wires	Modbus RTU communication function Profibus DPV1 communication interface
USB	Upgrade and configuration via type B micro USB connector

DigiBOX A References

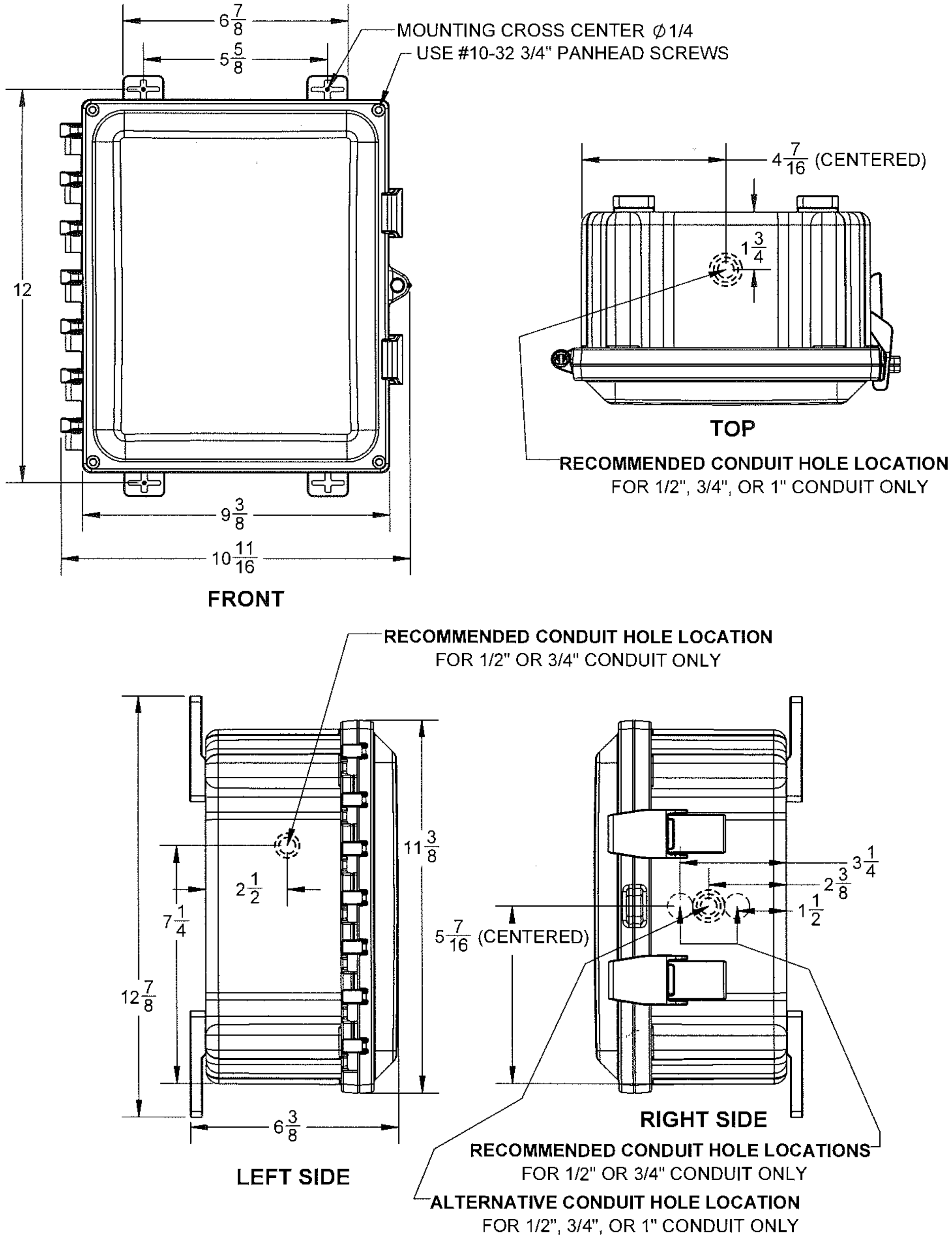
Description	**Reference**
DIRIS A40 Multifunction Meter with Modbus RS485 output Enclosed in NEMA 4X Enclosure prewired with fused voltage connections - 120-480 LL Volt 3Ph 4W Wye	USDBPA40RS
DIRIS A40 Multifunction Meter with Modbus RS485& TCP/IP output with built-in web server Enclosed in NEMA 4X Enclosure prewired with fused voltage connections - 120-480 LL Volt 3Ph 4W Wye	USDBPA40ET

*For 3Ph 3W Delta connections please contact Socomec for ordering.

Kit References

Description	**Reference**
DIRIS A40 Multifunction Meter Kit with Part # USDBPA40RS, 3x 250 amp split core current sensors and 3x 6.5' RJ12 cables	USDBPA40RS250_KIT
DIRIS A40 Multifunction Meter Kit with Part # USDBPA40RS, 3x 600 amp split core current sensors and 3x 6.5' RJ12 cables	USDBPA40RS600_KIT
DIRIS A40 Multifunction Meter Kit with Part # USDBPA40RS, 3x 2000 amp rogowski coil current sensors and 3x 6.5' RJ12 cables	USDBPA40RS2000_KIT
DIRIS A40 Multifunction Meter Kit with Part # USDBPA40ET, 3x 250 amp split core current sensors and 3x 6.5' RJ12 cables	RSDBPA40ET250_KIT
DIRIS A40 Multifunction Meter Kit with Part # USDBPA40ET, 3x 600 amp split core current sensors and 3x 6.5' RJ12 cables	USDBPA40ET600_KIT
DIRIS A40 Multifunction Meter Kit with Part # USDBPA40ET, 3x 2000 amp rogowski coil current sensors and 3x 6.5' RJ12 cables	USDBPA40ET2000_KIT

Dimensions


6 7/8
5 5/8
MOUNTING CROSS CENTER Ø1/4
USE #10-32 3/4" PANHEAD SCREWS
12
9 3/8
10 11/16
FRONT
4 7/16 (CENTERED)
1 3/4
TOP
RECOMMENDED CONDUIT HOLE LOCATION
FOR 1/2", 3/4", OR 1" CONDUIT ONLY
RECOMMENDED CONDUIT HOLE LOCATION
FOR 1/2" OR 3/4" CONDUIT ONLY
2 1/2
7 1/4
12 7/8
11 3/8
6 3/8
LEFT SIDE
5 7/16 (CENTERED)
3 1/4
2 3/8
1 1/2
RIGHT SIDE
RECOMMENDED CONDUIT HOLE LOCATIONS
FOR 1/2" OR 3/4" CONDUIT ONLY
ALTERNATIVE CONDUIT HOLE LOCATION
FOR 1/2", 3/4", OR 1" CONDUIT ONLY

DIRIS A-30

Multifunction power metering & monitoring device - PMD

DIRIS A-30

The solution for

- > Industry
- > Building
- > Infrastructures

Strong points

- > User-friendly operation
- > Detects wiring errors.
- > Customizable
- > Compliant with ANSI C12.20

Compliance with standards

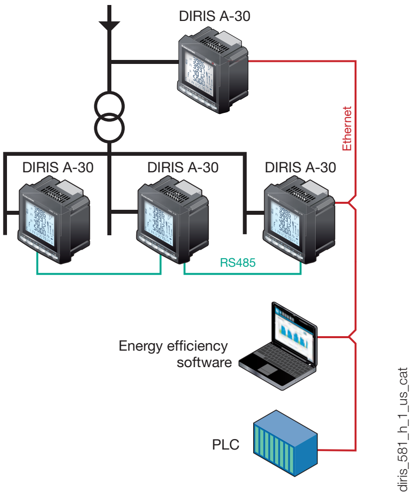
- > UL 61010-1
  CSA-C22.2 No. 61010-1
  Guide PICQ
  File E257746
- > ANSI C12.20
- > IEC 61557-12

Function

The **DIRIS A-30** is a power metering and monitoring device that provides the user with all of the measurements needed to complete energy efficiency projects and to ensure the monitoring of electrical distribution.

All the information can be used and analyzed remotely with energy efficiency software packages.

Functional diagram



Advantages

User-friendly operation

With its large backlit multiple-display screen and 6 pushbuttons, the DIRIS A-30 is easy to use.

Detects wiring errors.

The DIRIS A-30 is provided with a correction function for CT wiring errors.

Customizable

The DIRIS A-30 can be equipped with additional modules that give the user flexibility throughout the service life of the product. Communication modules and additional digital or analog inputs/outputs can be used to increase its range of functionality.

Compliant with ANSI C12.20

Reference standard for PMDs (Power metering & monitoring devices), IEC 61557-12 guarantees performance levels and satisfactory performance from the PMDs under the environmental conditions typical of industrial and building applications.

Bi-directional metering

DIRIS A-30 can measure the flow of electricity in both directions.

Functions

Multi-measurement

- Currents
  - instantaneous: I1, I2, I3, In, Isystem
  - average/max average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Usystem
  - average/max average: V1, V2, V3, U12, U23, U31, F
- Powers
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - max average: ΣP, ΣQ, ΣS
  - predictive: (ΣP), (ΣQ), (ΣS)
- Power factors
  - instantaneous: 3PF, ΣPF
  - average/max average: ΣPF
- Kfactor

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Effective power: kVAh
- Time table: ⏲

Harmonic analysis

- Total Harmonic Distortion
- Currents: thd I1, thd I2, thd I3, thd In
- Phase-to-neutral voltage: thd V1, thd V2, thd V3

Phase-to-phase voltage: thd U12, thd U23, thd U31

- Individual harmonics up to 63rd
- Currents: HI1, HI2, HI3, HIn
- Phase-to-neutral voltage: HV1, HV2, HV3,
- Phase-to-phase voltages: HU12, HU23, HU31

Demand profiles

- Active & reactive power: ΣP+/-; ΣQ+/-
- Voltages & frequency: V1, V2, V3, U12, U23, U31, F

Events (1)

- Alarms on all electrical parameters.

Communications

- RS485 (Modbus & Profibus-DP)
- Ethernet (Modbus/TCP or Modbus RTU)
- Ethernet with RS485 Modbus RTU gateway over TCP

Inputs/Outputs

- Pulse metering
- Remote control/command
- Alarm report
- Pulse report

Analog output

- Analog 0/4- 20 mA

Front panel

1. Backlit LCD display.
2. Pushbutton for currents and for connection correction function.
3. Pushbutton for voltages and frequency.
4. Pushbutton for active, reactive and effective powers and for power factor.
5. Pushbutton for maximum and average values for currents and power levels.
6. Pushbutton for harmonics.
7. Pushbutton for electrical energy meters, timers and impulse counters.

Hot swappable modules

DIRIS® A-30

Pulse outputs

2 configurable pulse outputs (type, weight and run) on ±kWh, ±kvarh and kVAh.

MODBUS® communication

RS485 link with MODBUS® protocol (speed up to 38400 baud).

PROFIBUS® DP communication

SUB-D9 link with PROFIBUS® DP protocol (speed up to 12 Mbaud).

Analogue outputs

You can connect a maximum of 2 modules, i.e. 4 analogue outputs.
2 outputs can be allocated to:
3I, In, 3V, 3U, F, ±ΣP, ±ΣQ, ΣS, ΣPFL/C, Isys, Vsys, Usys, Ppred, Qpred, Spred, T°C internal, T°C 1, T°C 2, T°C3 and to 30 VDC power supply.

2 inputs - 2 outputs

You can connect a maximum of 3 modules, i.e. 6 inputs / 6 outputs.
2 outputs can be allocated to:
- monitoring: 3I, In, 3V, 3U, F, ±ΣP, ±ΣQ, ΣS, ΣPFL/C, THD 3I, THD In, THD 3V, THD 3U, Ppred, Qpred, Spred, T°C internal, T°C 1, T°C2, T°C3 and of time counter,
- remote control,
- timed remote control,
- 2 inputs for pulse counting.

Storage capability

- Memory function up to max. 62 days for P+, P-, Q+, Q- with a TOP for internal or external synchronisation of 5, 8, 10, 15, 20, 30 and 60 minutes.
- Memory function for the last 10 timed and dated alarms.
- Memory function for the last min and max instantaneous values for 3U, 3V, 3I, In, F, ΣP±, ΣQ±, ΣS, THD 3U, THD 3V, THD, 3U, THD, 3V, THD, 3I, THD In.
- Memory function of average values 3U, 3V and F as a function of synchronisation (maximum 60 days).

Ethernet communication

- Ethernet link with MODBUS/TCP or MODBUS RTU over TCP.

Ethernet communication with RS485 MODBUS gateway

- Ethernet link with MODBUS/TCP or MODBUS RTU over TCP.
- Connect 1 to 247 RS485 MODBUS slaves.

DIRIS A-30

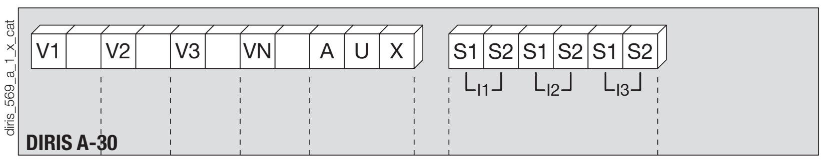
Multifunction power metering & monitoring device - PMD

Accessory

IP65 protection

Terminals

DIRIS A-30

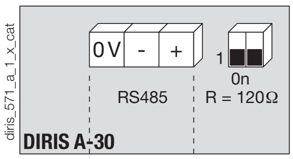


S1 - S2: current inputs

AUX: auxiliary power supplies U_s

V1 - V2 - V3 - VN: voltage inputs

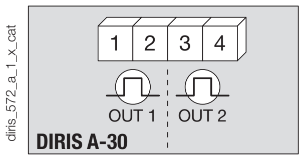
Communication module



RS485 link.

R = 120 Ω : internal resistance for the RS485 end of line termination.

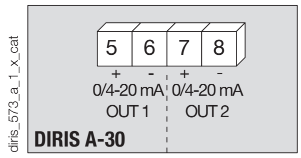
Pulse output module



1 - 2: pulse output n°1.

3 - 4: relay output n°2.

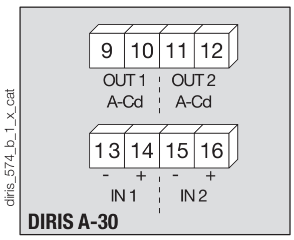
Analog output module



5 - 6: analog output n°1.

7 - 8: analog output n°2.

2 input / 2 output module



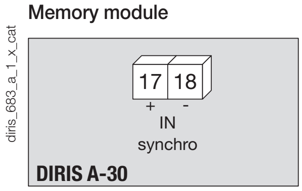
9 - 10: relay output n°1.

11 - 12: relay output n°2.

13 - 14: optical input n°1.

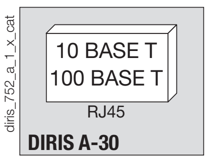
15 - 16: optical input n°2.

Memory module

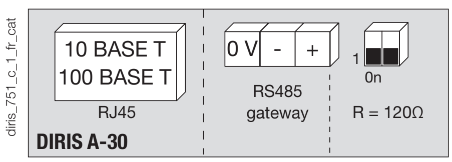


17 - 18: synchronization input.

Ethernet module



Ethernet module + RS485 MODBUS gateway



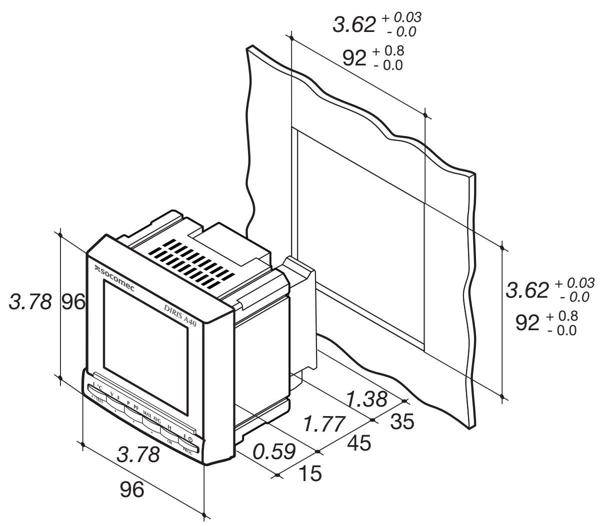
Electrical characteristics

Measurement of currents on insulated inputs (TRMS)	
Via CT primary	9,999 A
Via CT secondary	1 or 5 A
Measurement range	0 … 11 kA
Input consumption	≤ 0,1 VA
Measurement updating period	1 s
Accuracy	0.2%
Permanent overload	6 A
Intermittent overload	10 I_n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 … 500 VAC
Direct measurement between phase and neutral	28 … 289 VAC
VT primary measurement	500,000 VAC
VT secondary measurement	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0,1 VA
Measurement updating period	1 s
Accuracy	0.2%
Current - voltage product	
Limitation for CT 1 A	10,000,000
Limitation for CT 5 A	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	
Alternative voltage	110 …400 VAC
AC tolerance	± 10 %
Direct current	120 … 350 VDC / 12 … 48 VDC
DC tolerance	± 20 % / - 6 … + 20 %
Frequency	50 / 60 Hz
Power consumption	≤ 10 VA

Module 2 inputs - 2 outputs: outputs (alarms / control)	
Number of relays	2(1)
Type	250 VAC - 5 A - 1150 VA
Module 2 inputs - 2 outputs: optical coupler inputs	
Number	2(1)
Power supply	10 … 30 VDC
Minimum width of signal	10 ms
Minimum length between 2 pulses	18 ms
Type	Optical couplers
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of manoeuvres	≤ 10^8
Analog output module	
Number of outputs	2(2)
Type	Insulated
Scale	0 / 4 … 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 to 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS® speed	4800 to 38400 baud
PROFIBUS DP communication module	
Link	SUB-D9
Protocol	PROFIBUS® DP
PROFIBUS® speed	9.8 kbaud … 12 Mbaud
Ethernet communication module	
Connection technology	RJ45
Baud rate	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU on TCP
Operating conditions	
Operating temperature range	+14 … +131 °F / - 10 … + 55 °C
Storage temperature	-4 … +185 °F / - 20 … + 85 °C
Relative humidity	95%

(1) Max. 3 modules per DIRIS A-30.
(2) Max. 2 modules per DIRIS A-30.

Dimensions (in/mm)



diris_582_f_1_x_cat

Type	Panel mounting
Dimensions W x H x D	3.78 x 3.78 x 2.36 in / 96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD display
Type of terminal strips	Fixed or detachable
Section of connection for voltages and other terminals	AWG 34 … 10 / 0.2 … 2.5 mm^2
Section of connection for currents	AWG 20 … 9 / 0.5 … 6 mm^2
Weight	14.11 oz / 400 g

DIRIS A-30

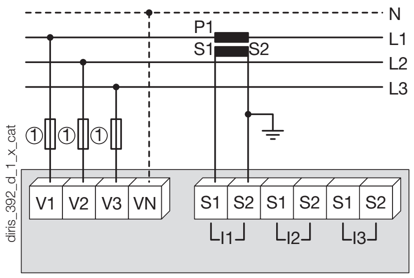
Multifunction power metering & monitoring device - PMD

Connections

Balanced low-voltage network for DIRIS A-30

Recommendation: When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. In TNC mode, it is advisable to connect the DIRIS A-30 to earth using the functional earth module.

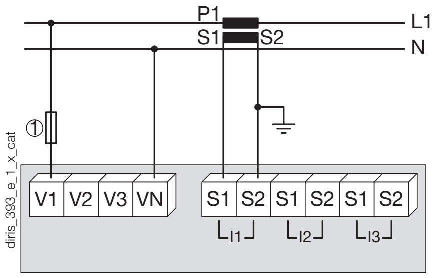
3/4 wires with 1 CTs



The use of 1 CT reduces by 0.5% the accuracy of the phases, the current for which is worked out by vector calculation.

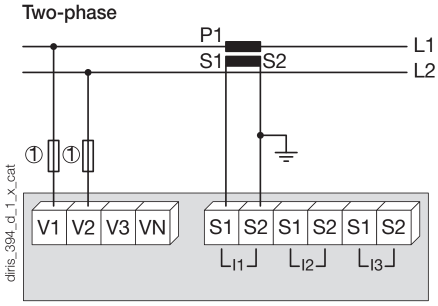
1. 0.5 A class CC fuses.

Single-phase



1. 0.5 A class CC fuses.

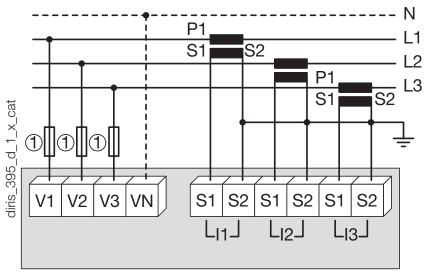
Two-phase



1. 0.5 A class CC fuses.

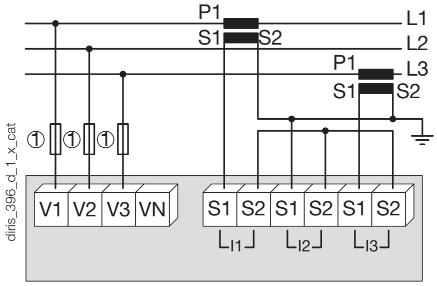
Balanced low-voltage network for DIRIS A-30

3/4 wires with 3 CTs



1. 0.5 A class CC fuses.

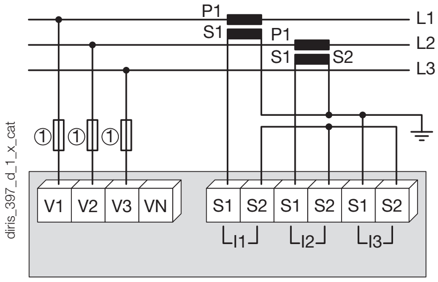
3 wires with 2 CTs



The use of 2 CTs reduces by 0.5% the accuracy of the phase, the current for which is worked out by vector calculation.

1.0.5 A class CC fuses.

3 wires with 2 CTs

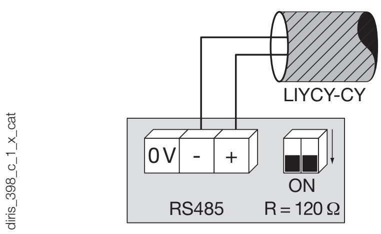


The use of 2 CTs reduces by 0.5% the accuracy of the phase, the current for which is worked out by vector calculation.

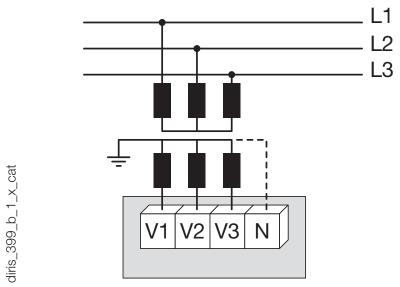
1. 0.5 A class CC fuses.

Additional information

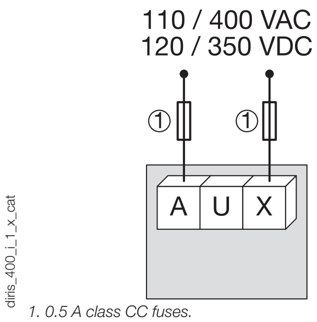
Communication via RS485 link



Connection of potential transformer for HV networks



AC and DC auxiliary power supply



1. 0.5 A class CC fuses.

References

Basic device Auxiliary power supply U_s	DIRIS A-30 Part number
110 ... 400 VAC / 120 ... 350 VDC	4825 **0403**
12 ... 48 VDC	4825 **0405**

Options Plug-in modules(1)	Part number
Pulse outputs	4825 **0090**
RS485 MODBUS® communication	4825 **0092**
PROFIBUS® DP communication	4825 **0205**
Analog outputs	4825 **0093**
2 inputs - 2 outputs	4825 **0094**
Storage capability	4825 **0097**
Ethernet communication (integrated web server function)(2)	4825 **0203**
Ethernet communication + RS485 gateway (integrated web server function)(2)	4825 **0204**

(1) Ease of integration of additional functions (maximum 4 slots on A-30).
(2) Dimensions: 2 slots.

Accessories	To be ordered in multiples of	Part number
IP65 protection.	1	4825 **0089**
Integration kit for 5.67 x 3.78 in cutout	1	4825 **0088**
Fuse holder Class CC to protect voltage inputs 3 pole	4	5705 **0003**
Class CC 0.5 A fuses	10	6CC0 **5000**

Expert Services

> Our local team offers complete support to ensure the success of your project, from consultation to implementation of your metering system.

DIRIS A-20

Multifunction power metering & monitoring device - PMD

Multi-measurement

DIRIS A-20

The solution for

- Industry
- Infrastructures
- Building

Strong points

- User-friendly operation
- Compliant with ANSI C12.20 and IEC 61557-12
- Detects wiring errors
- Customizable

Compliance with standards

- UL 61010-1 CSA-C22.2 No. 61010-1 Guide PICQ File E257746
- ANSI C12.20
- IEC 61557-12

Related software

- To use Socomec PMDs effectively, we can offer you several dedicated software tools.

See page xxx.

Function

DIRIS A-20 units are power metering and monitoring devices that provide the user with all of the measurements needed to complete energy efficient projects successfully and to provide assured monitoring of electrical distribution.

All of this information can be used and analyzed remotely with the help of energy efficiency software programs.

Advantages

User-friendly operation

With its large backlit multiple-display screen with 4 pushbuttons, the DIRIS A-20 is easy to use.

Compliant with ANSI C12.20 and IEC 61557-12

References standard for PMDs (Performance metering & monitoring devices), IEC 61557-12 guarantees performance levels and high performance from the PMDs under the environmental conditions typical of industrial and building applications.

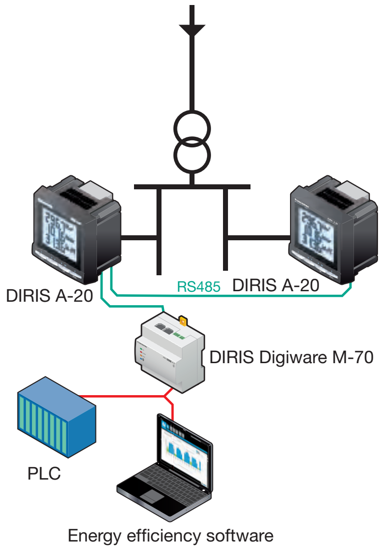
Detects wiring errors

The DIRIS A-20 is equipped with an error correction function for current transformer connection.

Customizable

Additional communication and input/output modules can extend the basic functional scope of this product. Equipped with additional modules, the DIRIS A-20 can provide the user with flexibility and expandability throughout the service life of the product.

Functional diagram



Bi-directional metering

DIRIS A-20 can measure the flow of electricity in both directions.

Functions

Multi-measurement

- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F
- Powers
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - maximum average: ΣP, ΣQ, ΣS
- Power factors
  - instantaneous: 3PF, ΣPF

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Time table: ⏲

Harmonic analysis

- Total harmonic distortion (rank 51)
  - Currents: thd I1, thd I2, thd I3
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3 Phase-to-phase voltage: thd U12, thd U23, thd U31

Events

Alarms on all electrical parameters

Communications (1)

RS485 with MODBUS protocol

Output

- Equipment control
- Alarm report
- Pulse report

Input

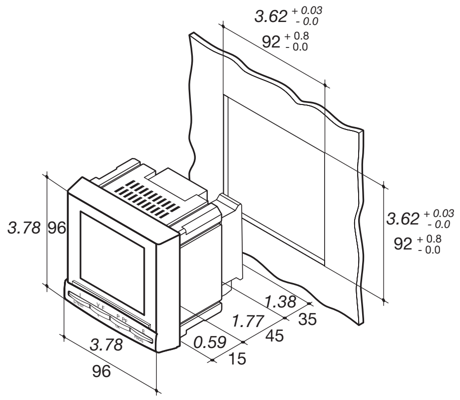
- Information report from a dry external contact

(1) Available as an option (see the following pages).

Front panel

1. Backlit LCD display
2. Pushbutton for currents (instantaneous and maximum), THD currents and the connection correction function.
3. Pushbutton for voltages, frequency and THD voltages.
4. Pushbutton for power (instantaneous and maximum), active, reactive and effective, power factor.
5. Pushbutton for energy sources and timer counter.

Dimensions (in/mm)



Type	Panel Mounting
Dimensions L x H x P	3.78 x 3.78 x 2.36 in / 96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD
Type of terminal strips	Fixed or removable
Section for connection of voltages and other terminals	AWG 34 … 10 / 0.2 … 2.5 mm^2
Section for connection of currents	AWG 34 … 10 / 0.2 … 2.5 mm^2
Weight	14.11 oz / 400 g

Plug-in optional modules

DIRIS® A-20

1 output

1 output that can be configured for:

- pulses: configurable (type, weight, duration) to kWh or kVarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer meter.
- Equipment control

Communication

RS485 link with MODBUS protocol (speed up to 38400 baud).

3 inputs , 1 output

3 inputs can be configured into:

- Information report from an external contact.

1 output that can be configured for:

- Pulses: configurable (type, weight, duration) to kWh or kVarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer meter.
- Equipment control

Accessories

IP65 protection

DIRIS A-20

Multifunction power metering & monitoring device - PMD

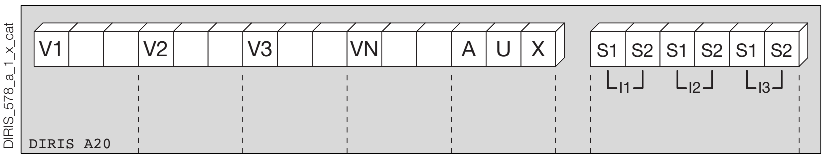
Multi-measurement

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 … 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2%
Permanent overload	6 A
Intermittent overload	10 I_n over 1 sec
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%
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	
Alternative voltage	110 … 400 VAC
AC tolerance	± 10%
DC voltage	120 … 289 VDC
DC tolerance	± 20%
Frequency	50 / 60 Hz
Power consumption	10 VA
Pulse or alarm output	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of manoeuvres	≤ 10^8
Inputs	
Number	3
Power supply	10 … 30 VDC
Minimum width of signal	10 ms
Minimum length between 2 pulses	18 ms
Type	Optical couplers
Communication	
Link	RS485
Type	2 to 3 half duplex wires
Protocol	MODBUS® in RTU mode
MODBUS® speed	1400 … 38400 baud
Operating conditions	
Operating temperature range	+14 … +131 °F / - 10 … + 55 °C
Storage temperature	-4 … +158 °F / - 20 … + 70 °C
Relative humidity	95%

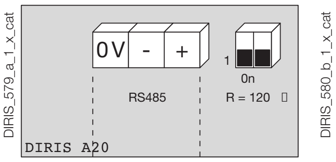
Terminals



S1 - S2: current inputs.

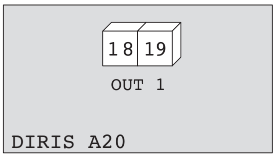
AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.

Module communication



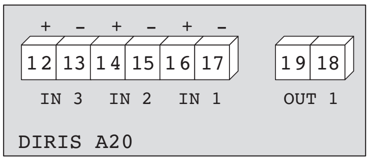
RS485 link.
R = 120 Ω : internal resistance for the RS485 link.

Output or alarm module



18 - 19: output n°1

Module with 3 inputs, 1 output



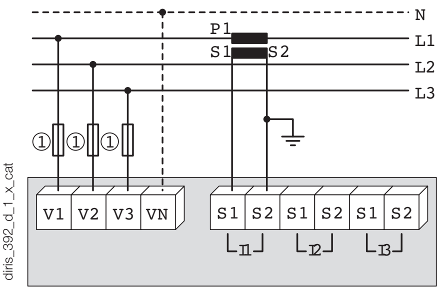
Connection

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 secondary of each current transformer must be short-circuited.

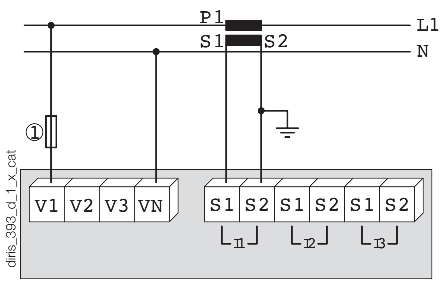
3/4 wires with 1 CT



The 1CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.

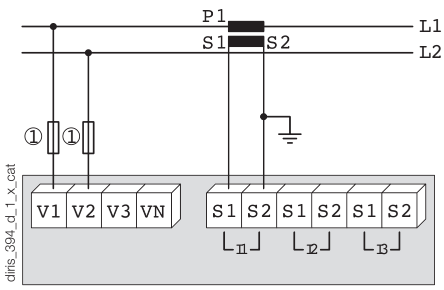
1. 0.5 A class CC fuses.

Single-phase



1.0.5 A class CC fuses.

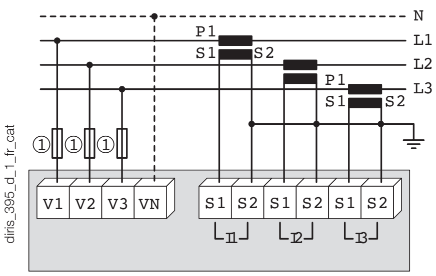
Two-phase



1. 0.5 A class CC fuses.

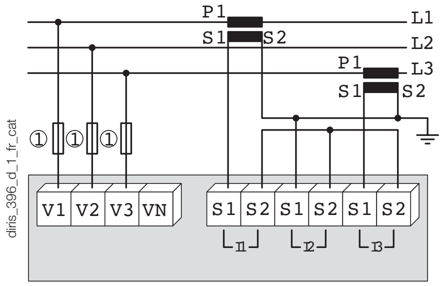
Low voltage unbalanced network

3/4 wires with 3 CTs



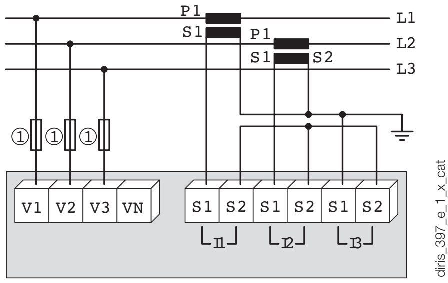
1. 0.5 A class CC fuses.

3 wires with 2 CTs



The 2CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.
1. 0.5 A class CC fuses.

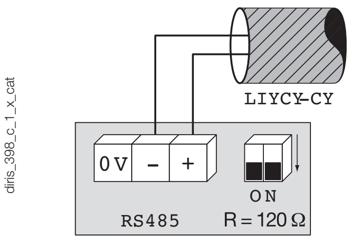
3 wires with 2 CTs



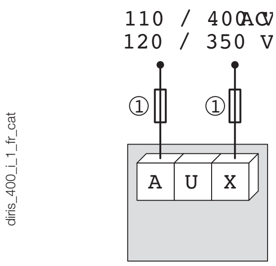
The 2CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.
1. 0.5 A class CC fuses.

Additional information

Communication via RS485 link



AC and DC auxiliary power supply



1. 0.5 A class CC fuses.

References

Basic device		DIRIS A-20
Auxiliary power supply U_s		**Part number**
110 … 400 VAC / 120 … 350 VDC		4825 **0402**
Options		
Plug-in optional modules		**Part number**
On/Off output.		4825 **0080**
RS485 MODBUS® communication		4825 **0082**
3 inputs, 1 output		4825 **0083**
Accessories		
Designation of accessories	**To be ordered in multiples of**	**Part number**
Protection IP65	1	4825 **0089**
Plug-in kit for cutout 144 x 96 mm	1	4825 **0088**
Fuse holder Class CC to protect voltage inputs 3 pole	4	5705 **0003**
Class CC 0.5 A fuses	10	6CC0 **5000**
Ferrite for use with communication modules	1	4899 **0011**

Expert Services

> Our local team offers complete support to ensure the success of your project, from consultation to implementation of your metering system.

See page xxx.

DIRIS A-10

Multifunction meters - PMD

modular multifunction meter

DIRIS A-10

The solution for

- Industry
- Infrastructures
- Building

Strong points

- Easy to use
- Integrated temperature sensor
- Detects wiring errors
- Compliant with ANSI C12.20 and IEC 61557-12

Conformity to standards

- UL 61010-1 CSA-C22.2 No. 61010-1 Guide PICQ File E257746
- ANSI C12.20
- IEC 61557-12
- CEC compliant

Function

The **DIRIS A-10** is a modular multifunction meter for measuring electrical values in low voltage networks.

It allows all electrical parameters to be displayed and utilized for communication and/or output functions.

Advantages

Easy to use

Five direct access pushbuttons enable all measurements to be clearly viewed on the backlit LCD display.

Integrated temperature sensor

It allows variations in temperature to be detected.

Detects wiring errors

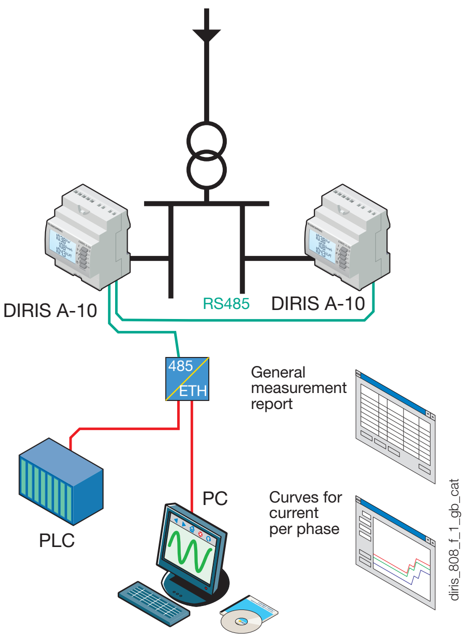
An integrated test function can be utilized to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with ANSI C12.20 and IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, as well as mechanical and environmental aspects (EMC, temperature, etc.).

Principle diagram



Bi-Directional Metering

DIRIS A-10 can measure the flow of electricity in both directions.

Functions

Multi-measurement

- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - maximum average: ΣP, ΣQ, ΣS
- Power factors
  - instantaneous: 3PF, ΣPF

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kVarh
- Hours: ⏲

Harmonic analysis

- Total harmonic distortion (level 51)
  - Currents: thd I1, thd I2, thd I3
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3
  - Phase-to-phase voltage: thd U12, thd U23, thd U31

Dual tariff function

Selection of one out of 2 billing tariffs

Events

Alarms on all electrical values

Communications[1]

RS485 with MODBUS protocol

Input

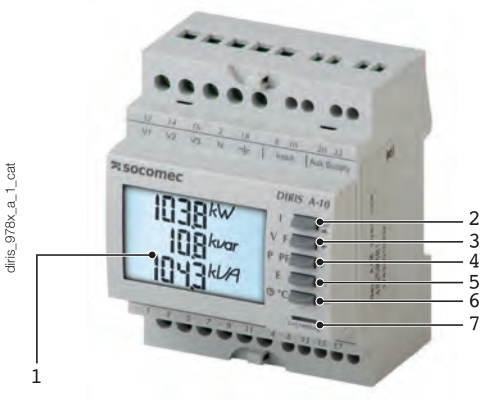
- Tariff selection
- Remote device status

Output

- Remote command of device
- Alarm report
- Pulse report

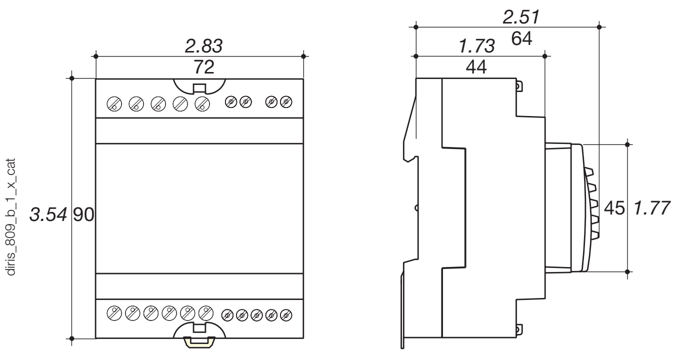
(1) Available on specific version (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instant and maximum), current THD and test function.
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.
6. Pushbutton for hour meter, temperature and programming menu access.
7. Metrological LED.

Dimensions (in/mm)



Type	Modular
Number of modules	4
Dimensions W x H x D	2.83 x 3.54 x 2.51 in / 72 x 90 x 64 mm
Case degree of protection	IP 30
Front degree of protection	IP 52
Display type	Backlit LCD display
Voltage and current connection cross-section	AWG 6 / 4 mm^2
Connection cross-section for AUX supply, input, output and comms.	AWG 10 / 2.5 mm^2
Weight	7.23 oz / 205 g (4825 0400) 7.58 oz / 215 g (4825 0401)

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 … 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I_n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 … 500 VAC
Direct measurement between phase and neutral	28 … 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 … 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 … 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	< 3 VA
Digital output (pulses or on/off)	
Number	1
Type	20 / 30 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8
Input (tariff)	
Number	1
Type	0 VAC: T1 / 200-277 VAC: T2
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	2400 … 38400 bauds
Operating conditions	
Operating temperature	+14 °F … +131 °F / - 10 … + 55 °C
Storage temperature	-4 °F … +158 °F / - 20 … + 70 °C
Relative humidity	85 %

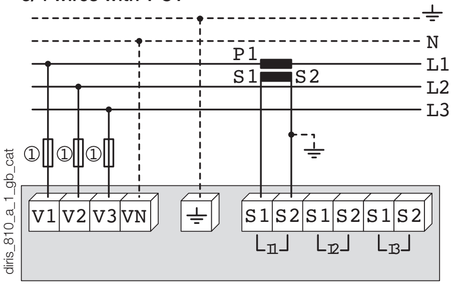
DIRIS A-10
Multifunction meters - PMD
modular multifunction meter

Connection

Recommendation:
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited.
- It is recommended that the earthing point for the DIRIS A-10 and the current transformer secondaries are not earthed at the same time.

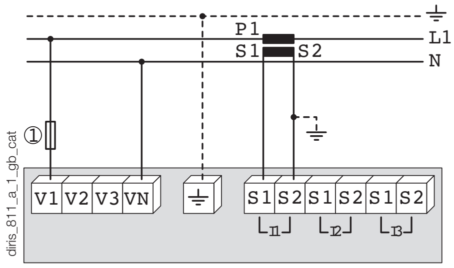
Low voltage balanced network

3/4 wires with 1 CT



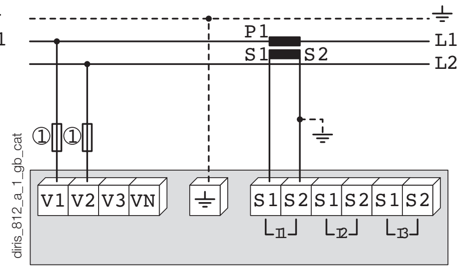
1. 0.5 A class CC.

Single-phase



1. 0.5 A class CC.

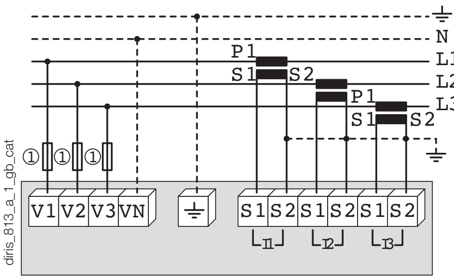
Two-phase



1. 0.5 A class CC.

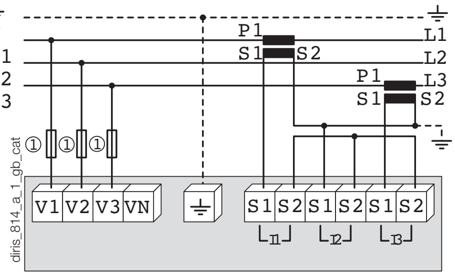
Low voltage unbalanced network

3/4 wires with 3 CTs



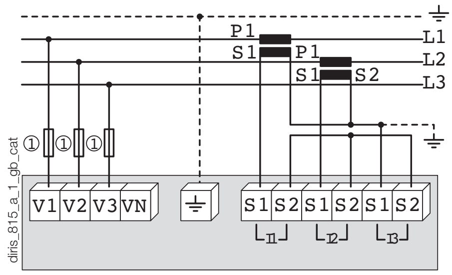
1. 0.5 A class CC.

3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. 0.5 A class CC.

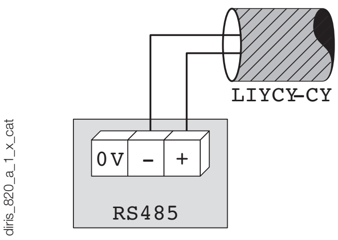
3 wires with 2 CTs



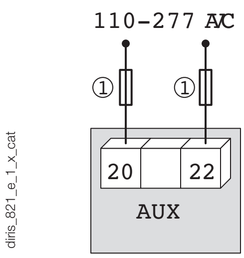
Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. 0.5 A class CC.

Additional information

Communication via RS485 link

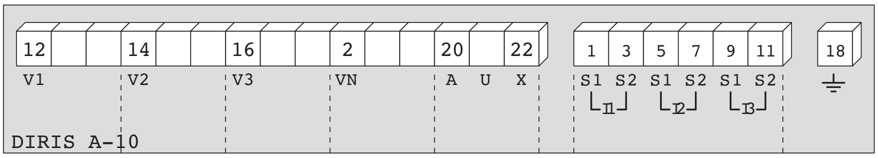


AC auxiliary power supply



1. 0.5 A class CC.

Terminals

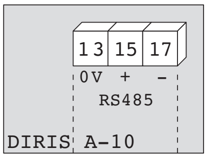


diris_816_a_1_x_cat

AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.

S1 - S2: current inputs.

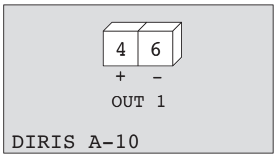
Communication terminals



diris_816_a_1_x_cat

RS485 link.

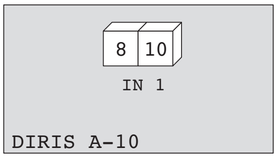
Pulse or alarm output terminals



diris_819_b_1_x_cat

4 - 6: output n°1

Input terminals



diris_818_a_1_x_cat

8 - 10: input n°1

References

Basic device		**DIRIS A-10**
Description		**Reference**
DIRIS A-10		4825 **0400**
DIRIS A-10 with RS485 MODBUS communication		4825 **0401**
Description of accessories	**To be ordered in multiples of**	**Reference**
Fuse holder Class CC to protect voltage inputs 3 pole	4	5705 **0003**
Class CC 0.5 A fuses	10	6CC0 **0500**

Expert Services

> Our local team offers complete support to ensure the success of your project, from consultation to implementation of your metering system.

See page xxx.

Datalogger

Communication interfaces

DATALOG H80

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority

Strong points

- > Easy to install
- > Reliable collection and transmission
- > Advanced functions

Expert Services

- > Study, definition, advice, commissioning, maintenance and training. Our “Expert Services” offer complete support for the success of your project.

Function

DATALOG H80 dataloggers associated with Socomec wireless interfaces enable you to create a smart energy data communication network in order to:

- Remotely and automatically read multi-fluid energy meters and multi-function meters, isolated or not.
- Pool, secure, store and provide the data to a computer application.
- Connect your meters and multi-function measurement units in a 2G/3G/GPRS network.

Advantages

Easy to install

- Quick installation on DIN rail or door mounting.
- Compact.
- Remote configuration.
- Configuration services (SOCOMEC services).

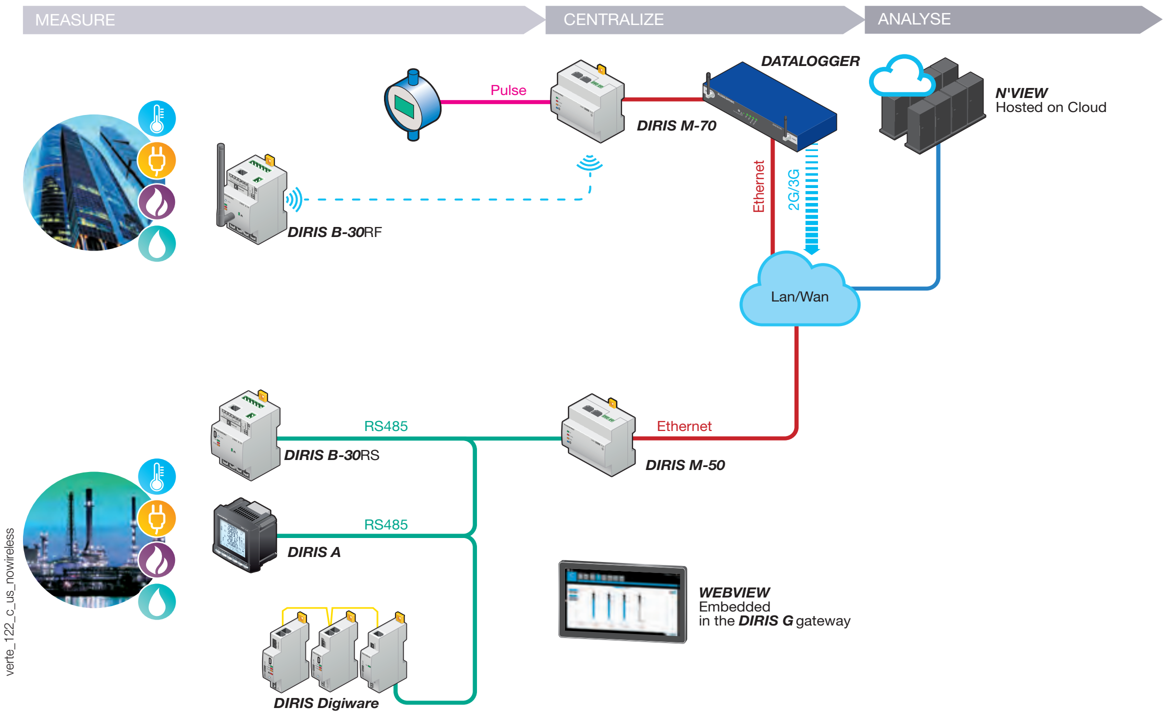
Reliable collection and transmission

- Configurable collection frequency for each energy and multi-function meter.
- Secure, regular transmission (daily, weekly, etc.).
- Multiple communication protocols (Modbus RTU/TCP, Wireless M-Bus, HTTP(s), FTP(s)).
- Collection interfaces: Ethernet - RS232/485 or Wireless.
- Transmission interface: Ethernet or 2G/3G/GPRS.

Advanced functions

- Extended data storage capacity (1 year for index data and 2 months for load curves).
- Auto-detects meters and measuring equipment.
- Sends regular activity reports.
- Event alerts (communication errors, data quality, remote server connection).

The SOCOMEC communicating energy-efficiency solution



Specifications

	DATALOG H80
Input/output interfaces	
Input	
Output	
Serial interfaces	
Input	
Output	
Wireless interface	
Wireless M-Bus	
Network interface	
Ethernet	2 10/100/1000 Mb port
GSM/GPRS	850/900/1800/1900 MHz
3G	900/2100 MHz
Protocols	
Data collection	Ethernet/Modbus TCP:
Data transmission	FTP(s)/ HTTP(s)
Configuration	
Local	Yes
Distant	by FTP

References

Datalogger	Reference
DATALOG H80 (without 3G connection)	4854 **0010**
DATALOG H81 (with 3G connection)	4854 **0011**

DATALOG H60 accessory description	Reference
16 ft / 5 m remote antenna extension	4854 **0105**
32 ft / 10 m remote antenna extension	4854 **0110**
65 ft / 20 m remote antenna extension	4854 **0120**

WEBVIEW

Embedded software for power monitoring and energy management

soft_076

Function

WEBVIEW is a web based software embedded in DIRIS A-40 power monitoring devices, DIRIS Digiware D-70 displays, DIRIS Digiware M-70 communication gateways and DATALOG H80/H81 dataloggers delivering real-time monitoring of all measurements up to 200 devices and displaying the breakdown of energy consumptions.

Uncover the causes of electrical disturbances and anticipate maintenance requirements due to historical records of multiple electrical parameters.

Pre-set alarms defined by the user can be sent by e-mail. Users can access WEBVIEW via a web browser on a PC or a tablet.

Strong points

Plug & Play

Quickly configure WEBVIEW due to the automatic detection of Socomec devices. Create geographical and electrical hierarchies to reflect your installation and your processes.

Easy to use

WEBVIEW centralizes measurements from all downstream devices via a single clear and user friendly interface. The ergonomics of each screen allow users to easily and quickly analyze the parameters and the behavior of the installation.

Various functions

Very easy to configure and to use, WEBVIEW offers a wide range of features including real-time monitoring, alarm management and notification by e-mail, multi-utility analysis (electricity, water, gas), power parameter logging and allocation of consumption by end-use and location.

The solution for

- Industry
- Building
- Infrastructure
- Data center

Strong points

- Plug & Play
- Easy to use
- Various functions

Compliance with standards

- IEC 62974-1(1)

(1) Energy Server standard applicable to WEBVIEW-M and L versions embedded in DIRIS Digiware M-70/D-70 and DATALOG H80.

Characteristics

Type	Hosting	Functions	Number of measurement devices
WEBVIEW-S	DIRIS A-40	Monitor, Alarm, Analyse	1
WEBVIEW-M	DIRIS Digiware M-70	Monitor, Alarm, Analyse, Photoview	32
	DIRIS Digiware D-70	Monitor, Alarm, Analyse, Photovieww	32
WEBVIEW-L	DATALOG H80/H81	Monitor, Alarm, Analyse, Photoview	100/200

Functions

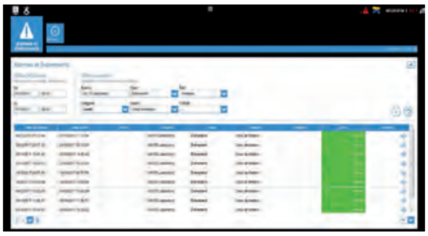
Monitor

- Automatic detection of connected devices
- Summary of the parameters measured for the electrical network and loads
- Display of voltage, current, power, power factor, total harmonic distortion (THD) and harmonics per rank
- Display of average/instantaneous values with min/max limits depending on the devices
- Total and partial energy consumption per load
- Input/output status
- Synchronisation of device clocks
- Graphical or table representation


soft_076.eps

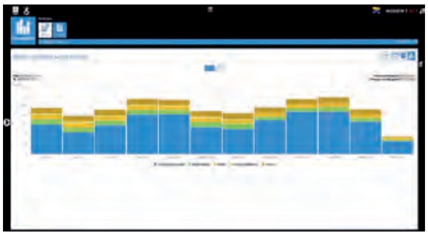
Alarm

- Alarms for overloads, events and input status changes
- Display of alarms history
- Sorting by type, nature, criticality or state
- Alarms displayed on the main page
- Alarm notification by e-mail (SMTP)


soft_074.eps

Analyze

- Historical measurements and consumption
- Historical records of multiple electrical parameters
- Breakdown of consumption by location, by end-use and by utility type (water, gas, electricity, etc.)
- Export of consumption data in a CSV format


soft_075.eps

Photoview

- Photoview: customised dashboard of the WEBVIEW environment via the upload of graphical files (building plans, electrical circuit diagrams, production processes, etc.)
- Real time monitoring via drag and drop of parameters on the background pictures (measurement points, alarms, text, etc.)
- Display of the mapping of the measurement plan by cascading of several images


soft_064.eps

References

Type	Host device	Reference
WEBVIEW-S	DIRIS A-40	4825 **0501**
WEBVIEW-M	DIRIS Digiware M-70	4829 **0222**
	DIRIS Digiware D-70	4829 **0203**
WEBVIEW-L 100	DATALOG H80	4854 **0020**
	DATALOG (3G network)	4854 **0021**
WEBVIEW-L 200	DATALOG H80	4854 **0030**
	DATALOG (3G network)	4854 **0031**

Easy Config System

Configuration software

soft_122_a

soft_124_a

Strong points

> Faster

> More reliable

> More flexible

Compatible with

> DIRIS Digiware power monitoring system

> DIRIS A & B power monitoring devices

> ATyS C66 and AtyS FT/DT

Free download Easy Config System

https://www.socomec.com/easy-config-system_en.html

Function

With the **Easy Config System**, you can configure your Socomec power monitoring and load-breaking equipment while visualizing all electrical measurements in real time.

Its speed and simplicity make the Easy Config System software an essential tool for:

- Panel builders and system integrators who want to provide correctly configured electrical panels for their customers
- Operators who want to configure their devices on their own or change specific settings

***The bonus**: you can easily save and modify your configurations and also duplicate them from one device to another or from one system to another.*

Advantages

Quick configuration

Easy Config System is a quick and easy way for system integrators and panel builders to configure their installations:

- Automatic discovery of connected devices
- Configuration of multiple devices at the same time
- Duplication of configurations between devices.

Local or remote access

You can access Easy Config System either locally by connecting it to devices via a USB cable, or remotely with an Ethernet connection. This system provides great flexibility taking into account the constraints of your facility. With the remote access option, you can change settings and correct any configuration or wiring errors, without having to physically return to site.

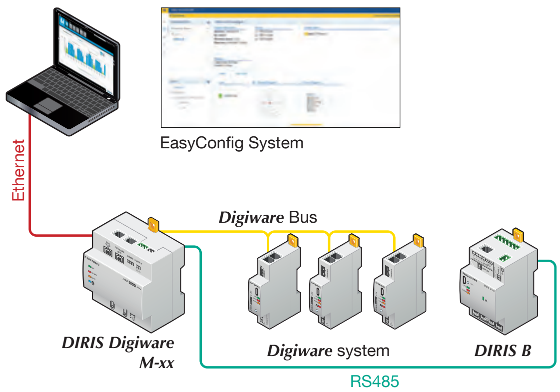
Reliable data

Easy Config System has a dynamic dashboard (see next page) which adapts to the type of device and can display the phasor diagram, the alarms in progress or detected sensors and their ratings. It also provides an overview of the topology, listing the connected devices, with their firmware versions and internal clock, and the quality of communication.

This ensures the user that the wiring and configuration are correct and, as a result, data is reliable.

Configuration options

Configure the entire system with an Ethernet connection to a DIRIS Digiware M-xx gateway



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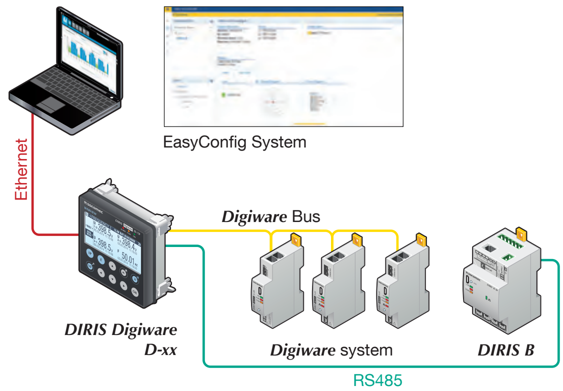
Configure the entire system with an Ethernet connection to a DIRIS Digiware D-xx display



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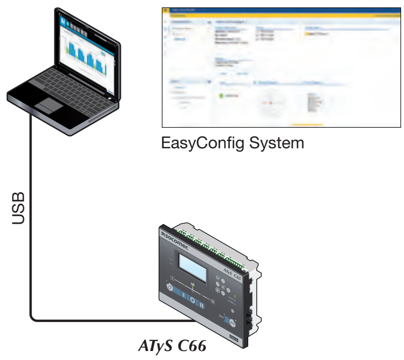
Configure the equipment via USB only



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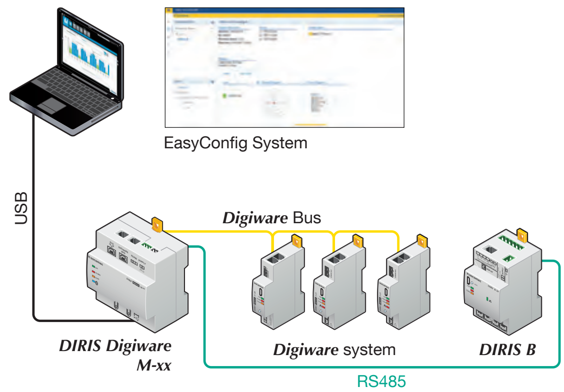
Configure the entire system with a USB connection to a DIRIS Digiware M-xx gateway



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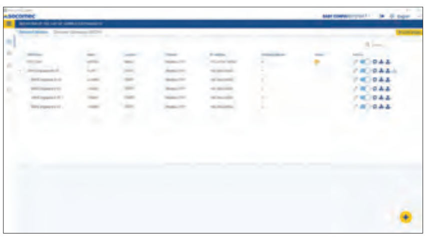
A dashboard adapted to each type of device



soft_126_a

soft_125_a

soft_123_a

D-xx displays and M-xx gateways
- List of products in the topology
- Firmware versions of connected devices
- Internal clock for connected devices
- Enabled services
- Communication diagnostics

Multifunction meters
- U/I phasor diagram
- Main electrical readings
- AutoCorrect wiring diagnostics
- Connected sensors and their ratings
- Alarms in progress

Transfer switches
- Electrical data on each source
- Status of primary and secondary sources
- Input/output state
- Alarms in progress
- Operating modes (AUTO/MANU/TEST)
- Timers


socomec
Bidirectional
Power Converter
SUNSYS PCS²

Power Conversion

Three-phase UPS

MODULYS GP-UL
25 to 100 + 25 kVA/kW
p. 321

Static transfer power unit

STATYS Integrable
200 A to 600 A
p. 327

On-Grid Energy Storage

Power Conversion System for energy storage

SUNSYS PCS²
33 kW up to MW
p. 329

Smart Grid LV Energy Storage

Energy Storage System architecture

SUNSYS Xtend ESS
33 kW up to MW
p. 331

MODULYS GP-UL

Unique, fully modular and redundant solution

from 25 to 100 + 25 kVA/kW

View our video
to discover more

With its flexible modularity providing seamless and risk-free power scalability up to 100 + 25 kW, the MODULYS GP-UL range is the ideal solution for unscheduled site upgrades or incremental power evolutions. The installed power can be increased up to 100 + 25 kW by adding hot-swap plug-in power modules for incremental steps of 25 kW.
Designed with no single point of failure, the MODULYS GP-tUL offers all the advantages of the Green Power 2.0 technology.

Fully modular system

- Plug-in power module.
- Plug-in battery module.
- Plug-in auxiliary mains bypass module.
- Top or bottom connection.
- Top-air exhaust module.

'Forever Young' concept

- Exclusive life cycle extension program.
- Eliminates end-of-life criticality.
- Based on an electronics-free cabinet and a set of plug-in parts.
- Module compatibility guaranteed for 20+ years.
- Allows for the implementation of future module technology.
- Company declaration of 20+ year compatibility.

Totally redundant design

- N+1, N+x redundancy level.
- Designed for no single point of failure.
- No centralized parallel control.
- Totally independent power modules.
- Redundant parallel bus connection (ring configuration).

Enhanced serviceability performance

- Power module automatic firmware alignment.
- Fast & safe maintenance based on hot-swap parts (power modules, auxiliary mains bypass, electronic boards).
- Load fully protected in online double conversion mode (VFI) during power module replacement.
- 3-color LED bar for quick and easy detection of the power module status.
- Battery can be hot-swapped without shutting down the connected equipment.
- Ready for concurrent maintenance.

The solution for

- > Computer rooms
- > Dacenters
- > Banks
- > Healthcare facilities
- > Insurance
- > Telecom
- > Transport

Advantages

- > Ensures absolute business continuity
- > Aligns capacity to business demand
- > Optimizes costs over the full life cycle

Certifications and attestations

Green Power 2.0 MODULYS GP is certified by MET with regard to product safety (UL 1778 and CSA-C22.2 No. 107.3-05).

SERMA TECHNOLOGIES

Green Power 2.0 MODULYS GP power module MTBF is calculated and verified higher than 1,000,000 hours by SERMA TECHNOLOGIES (IEC 62380)

MODULYS GP has been tested by CESI in compliance with the standard test procedure for the seismic qualification of electrical cabinets. MODULYS GP has successfully passed severe tests to verify its resistance to withstand Zone 4 seismic events.

RoHS COMPLIANT

MADE IN EUROPE

Advantages

- > 3-level technology
- > 96% efficiency
- > Power factor = 1
- > Ready for use with Lithium Ion batteries
- > 1,000,000 hours of MTBF

Standard electrical features

- Dual input mains.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.
- Auto battery test.
- Battery temperature sensor.
- Energy saver mode.

Electrical options

- External battery cabinet.
- High capacity battery charger.
- Internal backfeed isolation device.

Standard communication features

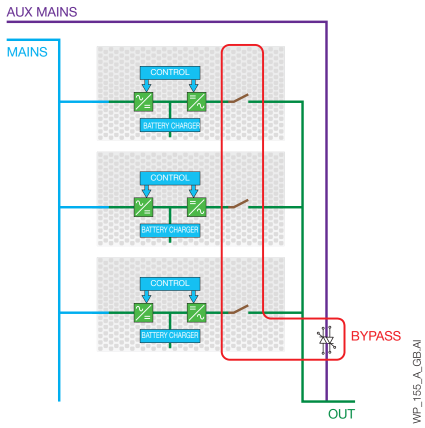
- User-friendly 7" touch-screen multilingual color graphic display.
- 2 slots for communication options.
- USB port to download UPS report and log file.
- Ethernet port for service purpose.
- Commissioning wizard.

Communication options

- Dry-contact interface (configurable voltage-free contacts).
- MODBUS RTU RS485 or MODBUS.
- BACnet/IP interface.
- NET VISION: professional WEB/SNMP Ethernet interface for secure UPS monitoring and remote automatic shutdown

Hybrid bypass architecture

- Distributed Inverter bypasses in parallel to segregated centralized Aux Mains bypass creating a redundant solution.



Technical data

	MODULYS GP-UL						
UPS MODEL	MODULYS GP-UL 40 KW		MODULYS GP-UL 25-100 KW				
Number of power modules	1	2	1	2	3	4	5[5]
Power (Sn)	25 kVA	40 kVA	25 kVA	50 kVA	75 kVA	100 kVA	100 kVA (N+1)
Power (Pn)	25 kW	40 KW	25 kW	50 kW	75 kW	100 kW	100 kW (N+1)
INPUT							
Voltage	480 V 3ph (±15%) up to -40 @ 50% of nominal load		3ph 480 V (±15%) up to -40% @ 50% of nominal load				
Frequency	60 Hz ± 10%						
Input power factor	> 0.99[1]						
Total harmonic input current distortion (THDi)	< 3% (@: Pn, Resistive load, Mains THDv < 1%)						
OUTPUT							
Voltage	400 V 3ph+N		480 V 3ph				
Frequency	60 Hz						
Total output voltage distortion (THDv)	< 1% (@ Pn, Resistive load)						
Overload[2]	125% for 10 minutes, 150% for 1 minute						
Crest Factor	> 2.7	> 3.3	> 2.7				> 3.3
STATIC BYPASS[3]							
Bypass input voltage	rated output voltage ± 15%						
Bypaass input frequency	60 Hz ± 2% selectable (±8% if Genset is used)						
STORED ENERGY MODE OF OPERATION							
Number of battery blocks (VRLA)	from 18+18 to 24+24						
ENVIRONMENT							
Operating temperature	32 to 104 °F[3][4] / 0 to +40 °C[3][4]						
Storage Temperature	23 to 122 °F / -5 to +50 °C						
Relative humidity	95 % without condensation						
Altitude (max)	3,300 ft (9,840 ft. with derating) / 1,000 m (3,000m with derating)						
Acoustic level at 1 m	< 56 dBA		< 58a dBA				
Required air capacity	470 CFM		1178 CFM				
Dissipated power (max)	3,500 W @ Pn / 11,950 BTU @ Pn		5,200 W @ Pn / 17,750 BTU @ Pn				
DIMENSIONS AND WEIGHT							
Dimensions (W x D x H)	2' 2" 5/8 x 2' 2" 17/64 x 6' 6" 5/64 676 x 895 x 1983 mm						
Empty cabinet	1,380 lbs / 626 kg		1,043 lbs / 473 kg				
UPS module	75 lbs / 34 kg						
Battery module	220.5 lbs / 100 kg		modular battery cabinet				
STANDARD							
Safety	UL1778, CSA-C22.2 No. 107.3-05, MET File E114654						
EMC	FCC part 15 Class A						
Performance	IEC 62040-3 (VFI-SS-111)						
Degree of protection standard	NEMA 1 (IP20)						
SEISMIC	OSHPD (available as option)						

(1) Pout > 50% Sn.
(2) Initial Condition Pout < 80% Pn.
(3) The UPS is not compatible with the use of an external bypass system.
(4) Suggested temperature range for best battery lifetime: 59 to 77 °F
(5) According to IEC 62040-3.
(6) 5th module is for redundancy.

Best practice award

Frost & Sullivan has has awarded SOCOMEC with its prize for Innovation & Excellence in Developing Scalable, Best-in-Class Products and Solutions.

SOCOMEC's vast expertise and technological know-how in modular UPS solutions have enabled it to develop a new modular, three-phase UPS that employs the latest cutting-edge technology combined in a unique design and architecture.

Our dedicated Expert Services for UPS

We offer services to ensure your UPS highest availability:

> Commissioning
> On-site intervention
> Preventive maintenance visits
> Maintenance packages
> Training
> Remote monitoring service

www.socomec.com/services

MODULYS GP-UL

Three-phase UPS

from 25 to 100 + 25 kVA/kW

The benefit of a fully modular system

Easy to manage

- Totally modular system for power scaling or for quickly adapting to business changes.
- Standardised system and modules covering a wide range of power and back-up times.
- Repeatable and standardised scalable architecture for time-saving design for different configuration & architecture requirements.

Pay as you need

- No prior expenditure for unpredictable future extensions in power and back-up time.
- Space saving thanks to reduced footprint and front access.
- Eliminates installation rework costs when new capacity is required from IT physical infrastructure.
- No risk of design oversizing due to project data uncertainty.

Everything front-access

- Connections, switches, manual bypass, auxiliary mains static bypass, power modules and all the electric parts have front-access.
- Total footprint is not increased as rear extra clearance for maintenance is not needed.
- Easy, quick, comfortable, safe and risk-free installation and maintenance.
- More reliable system.

The benefit of a totally redundant design

Total resilience

- Electronics-free (failure-free) cabinet.
- Totally independent and self-sufficient modules.
- Real module selective disconnection (automatic inverter bypass with galvanic separation).
- No centralized control for parallel and load sharing management.
- Totally segregated, fully sized and centralized auxiliary mains bypass.
- Configurable N+1 to N+x redundancy (power & battery).
- No single point of failure.
- Redundant parallel bus connection (ring configuration).

Optimum reliability

- Power module designed for superior robustness proved by an independent body (MTBF > 1,000,000 hr).
- Hybrid bypass architecture with distributed module's bypass and centralized mains bypass for ultimate reliability and robustness.
- Highly robust auxiliary mains bypass (MTBF > 10,000,000 hr).
- Acid leak-proof modular battery box.

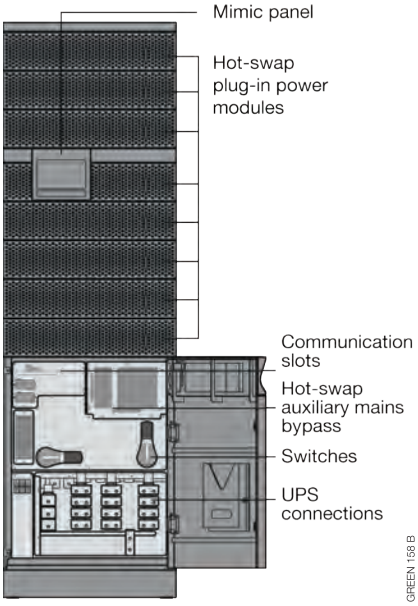
Maximum availability

- Fast recovery of lost redundancy thanks to minimum MTTR (Mean Time To Repair).
- No risk of downtime during power upgrading and maintenance.
- No risk of failure propagation.

Cost-effective redundancy

- No need to duplicate the system hardware to get redundancy.
- Redundancy achievable simply by adding one more power and battery module.
- Redundancy can be easily combined with power scalability.
- Upgrading and/or power module replacement can be done by simple plug-in without any commands to the system.

A flexible modular UPS system



25-200 kW

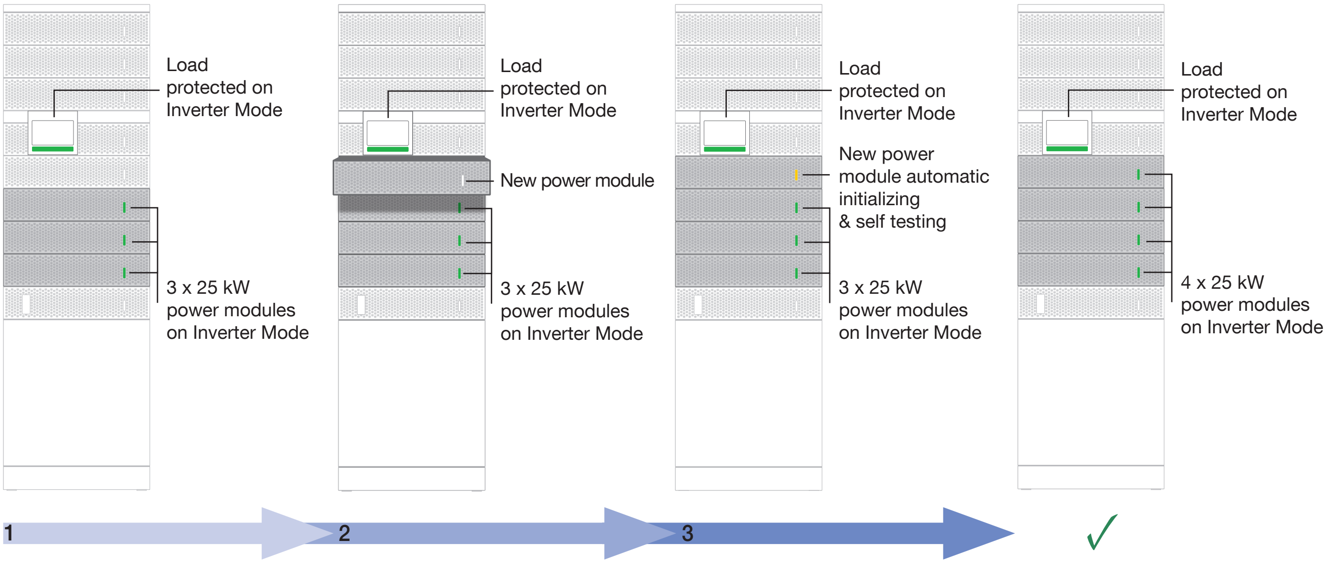
View our video to discover more

Seamless and risk-free scalability & upgrading

- MODULYS GP-UL protects critical loads in all conditions, including power upgrading and maintenance procedures.
- No risk of human error and downtime.

On-line power scalability

- MODULYS GP-UL allows you to increase power scalability and redundancy while keeping the load protected on inverter mode simply by plugging-in a new power module and waiting for its automatic self-configuration, without any human intervention.

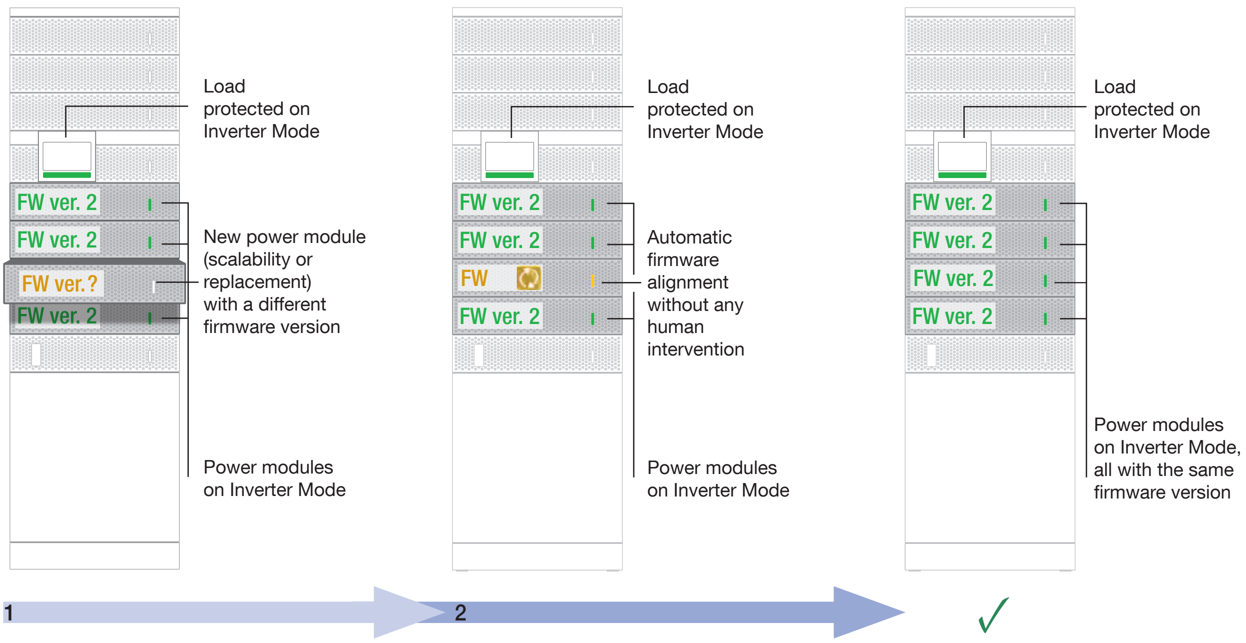


Power module automatic firmware alignment

- Even the power module firmware alignment is totally risk free.
- When a new power module is plugged in, the system checks what firmware version is embedded and if it is different automatically aligns it to one of the other modules. The load is protected at all times while running on inverter mode.

On-line global firmware update

- It is also possible to upgrade the global firmware without switching to bypass to keep the load protected on Inverter mode.
- Automatic procedure for a risk-free firmware upgrade.



MODULYS GP-UL

Three-phase UPS

from 25 to 100 + 25 kVA/kW

Flexible and modular back-up times

MODULYS GP-UL offers modular solutions to meet all your requirements for back-up times (whether a few minutes or several hours) without compromising flexibility and scalability.

Internal hot swap battery

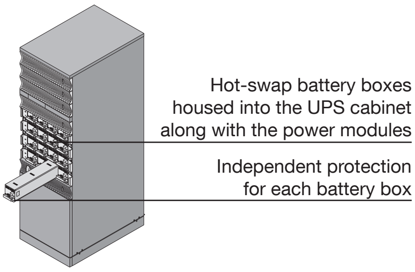
- Designed for short back-up time.
- Long-Life batteries available as standard.
- Compact solution with a small footprint.

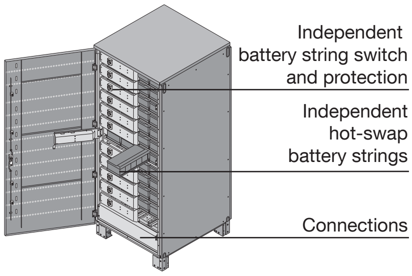
Modular hot-swap battery cabinets

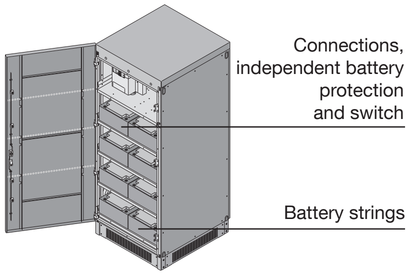
- Designed for medium and long back-up times.
- Long-Life batteries available as standard.
- Vertical and horizontal modularity ensuring flexible back-up times.

Modular battery cabinet

- Designed for long back-up times.
- Long-Life batteries available as standard.
- Horizontal modularity ensuring flexible back-up times.





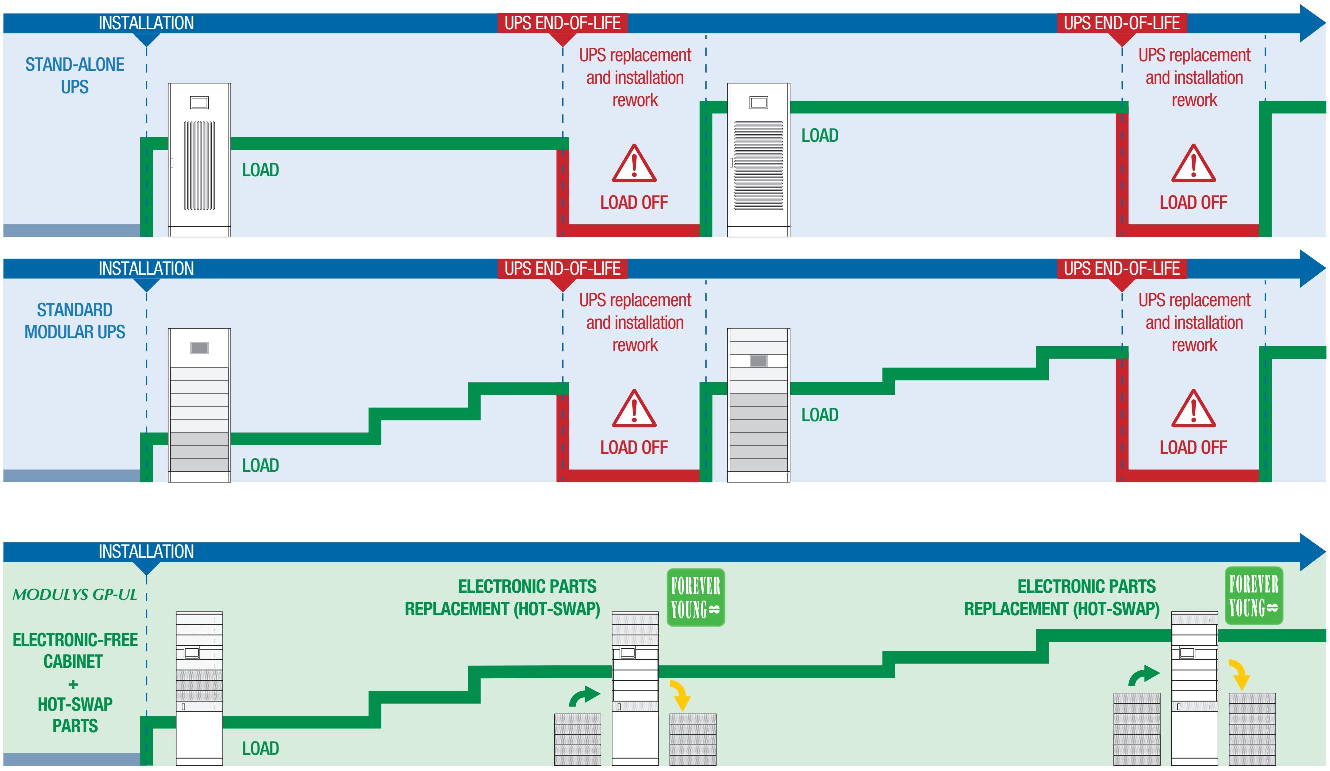


MODULYS GP-UL "Forever Young" concept

- MODULYS GP-UL excels not only in efficiency, flexibility, capacity management and sustainability - five aspects that are crucial for optimum performance.
- It employs an exclusive concept called 'Forever Young' which allows the life-cycle extension of MODULYS GP-UL and eliminates the criticality of system end-of-life.
- It also keeps the system open for the implementation of future technology improvements without modifying the infrastructure.

The 'Forever Young' concept:

- Is based on electronic-free (failure-free) cabinets where the components that are subject to ageing are all plug-in and therefore quick and easy to replace.
- Allows life-cycle extension via periodic replacement of power modules before they start ageing.
- Provides an always up-to-date system that uses the latest technology.
- Assures power modules and spare part compatibility and availability for more than 20 years.



STATYS Integrable

Redundant design for power availability and site maintainability

from 200 A to 600 A

STATY_091

The solution for

- > Integration in switchboard and PDU
- > Data center
- > Finance, banking and insurance
- > Healthcare sector
- > Telecom & Broadcasting
- > Industry
- > Power generation plants
- > Transport

Advantages

NON-STOP

SUSTAINABILITY

HOT-SWAP

Conformity to standard

- > UL 1008 S recognized File number: E513909
- > IEC 62310-2 (EMC Immunity & Emission)

Function

STATYS Integrable is a fully integrated Static Transfer Power Unit for integration into a cabinet or a power distribution unit (PDU).

Supplied by two independent sources, STATYS Integrable increases the overall electrical infrastructure availability during abnormal events and programmed maintenance.

Easy integration

- Pre-engineered mechanical and electrical connections for ease of integration into cabinets or PDUs.
- Installed simply by one operator with no special tools required.
- STATYS Integrable is operated by any HMI via a single connection bus using Modbus protocol.

Unparalleled serviceability

- During preventative maintenance the STATYS Integrable remains fully operational and the load is kept protected.
- STATYS Integrable can be easily integrated or swapped with a new one, without the need of kept specific tools.

Best resiliency

- Full redundant internal design ensuring no single point of failure.
- Internal segregation between critical functions to prevent a fault propagation.
- Load protection ensured even during an internal fault.

Robust design

- Compatible with all types of electrical infrastructure and applications.
- Fully rated SCR ensures no restriction to the continuation of operation.

High reliability - Internal redundant design

Main features:
- Triple redundant power supplies.
- Full redundant DC power bus.
- Redundant microcontroller.
- Redundant SCR drivers.
- Cooling redundancy up to 104 °F/ 40 °C .
- Equipped with an “auto-hold” feature to ensure load continuity in case of internal failure.
- Real-time SCR fault sensing.
- Separation of main functions to prevent internal fault propagation.
- Robust internal field communication bus.
- Internal monitoring of sensors to ensure maximum system reliability.

Hot maintainability

- Fully functional STATYS Integrable during preventive maintenance.
- Hot replacement of the power supplies.
- Hot replacement of fans with no derating.
- Cold swap of the entire STATYS Integrable power unit.

Standard features

- A smart and flexible transfer system that can be configured according to the type of load.
- Synchronized and non-synchronized sources compatibility (configurable synchronization tolerance and switching management).
- Output fault current sensing.
- Full breaker management.
- ATSM (Advanced Transformer Switching Management).
- Available in switched and non-switched neutral.

Standard communication features

- Dry-contact interface (configurable voltage-free contacts).
- Ethernet interface for STATYS Integrable monitoring via WEB pages.
- MODBUS TCP.
- Full digital configuration and setting.
- Single point access for manufacturer HMI.

Communication options

- Additional dry-contact interface. (configurable voltage-free contacts).
- MODBUS RTU RS485.

Technical data

	STATYS INTEGRABLE		
Rating [A]	200	400	600
ELECTRICAL SPECIFICATIONS			
Rated voltage	208-220/380-415/480/600 V		
Voltage tolerance	± 10% (configurable)		
Non-synchronized sources management	configurable up to ±180		
Frequency	50 Hz or 60 Hz ± 5 Hz (configurable)		
Number of phases	3ph+N or 3ph (+ PE)		
Number of poles switching	3 or 4-pole switching		
Maintenance bypass (cabinet version)	monitoring up to 6 breakers		
Overload	150% for 2 minutes - 110% for 60 minutes		
Efficiency	99 %		
Admissible power factor	no restrictions		
ENVIRONMENT			
Operating ambient temperature	32-104 °F / 0-40 °C		
Relative humidity	95%		
Maximum altitude	3280 ft / 1000 m a.s.l. without derating		
Acoustic level at 3.28 ft / 1m (ISO 3746)	≤ 60 dBA		
STANDARDS			
Safety	UL 1008 S		
EMC	C2 category IEC 62310-2, FCC part 15		

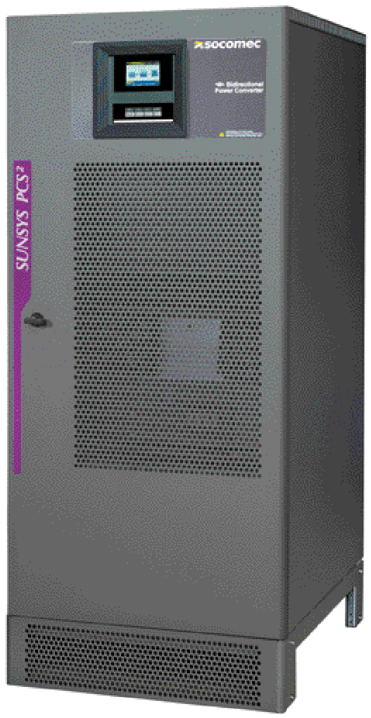

APPLI_1002

Pre-engineered solution for easy integration into the cabinet.

SUNSYS PCS²

Power Conversion System for energy storage

from 33 kW up to MW - UL 1741 SA



SUNSYS_194_A

The SUNSYS PCS² is a modular bidirectional power converter for energy storage.
Due to its modular parallel configuration, several MW can be reached.

High performance

- The SUNSYS PCS² modular design provides high output efficiency even with low power due to its Dynamic Power Control function.

Total flexibility

- The SUNSYS PCS² is a modular and scalable solution making it easy to adapt to future evolution. The design also enables it to be used to update existing photovoltaic installations.
- Its compatibility with multiple battery technologies provides ample flexibility to the installation.

Maximum availability

- The modular design enables fully secure "hot swapping" of conversion modules, allowing extra space after installation. This operation can be performed without special clearance.

Easy to manage and maintain

- The SUNSYS PCS² is a full front access solution allowing quick and easy, comfortable, safe and risk-free installation and maintenance.
- Due to its display on the front face, it also enables ergonomic operation and monitoring.

The solution for

MV/LV grids with:
> A high proportion of renewable energy
> High peak demands

Strong points

> High performance
> Total flexibility
> Maximum availability
> Easy to manage and maintain

Compliance with specifications

> UL 1741 SA

Grid code & rules compliance

> IEEE 1547
> HECO Rule 14H
> California rule 21

Complementary solutions

We can also offer you SUNSYS XTEND ESS, UL 9540 certified Energy Storage System Architecture including batteries and AC and DC distribution modules.

The manufacturer's guarantee

We offer a comprehensive support service package: commissioning, on-site testing, preventive maintenance visits, 24-hour call out and rapid on-site repairs, genuine spare parts, etc.

References

www.socomec.com/references-smart-solutions_en.html

Technical data

	SUNSYS PCS²					
Configuration	With transfomer			Without transformer		
Model	SUN-ES33KTR20UL	SUN-ES66KTR20UL	SUN-ES100TR20UL	SUN-ES33KET20UL	SUN-ES66KET20UL	SUN-ES100ET20UL
INPUT (DC)						
Battery voltage	Full power from 450 to 800 VDC - 350 to 850 VDC possible with derating					
Number of independent power modules	1	2	3	1	2	3
Maximum discharging current	80 A	160 A	240 A	80 A	160 A	240 A
Maximum recharging current	80 A	160 A	240 A	80 A	160 A	240 A
OUTPUT (AC)						
Rated power	33.0 kW	66.0 kW	100.0 kW	33.0 kW	66.0 kW	100.0 kW
Maximum power	36.3 kW	72.6 kW	110.0 kW	36.3 kW	72.6 kW	110.0 kW
Rated apparent power	33.0 kVA	66.0 kVA	100.0 kVA	33.0 kVA	66.0 kVA	100.0 kVA
Maximum apparent power	36.3 kVA	72.6 kVA	110.0 kVA	36.3 kVA	72.6 kVA	110.0 kVA
Rated voltage	480 Vrms(1) 3ph			280 Vrms(1) 3ph		
Voltage tolerance	423 to 528 Vrms(1) 3ph			252 - 308 Vrms(1) 3ph		
Rated frequency	60 Hz					
Frequency range	59.3 - 60.5 Hz					
Rated current	40 Arms	80 Arms	120 Arms	69 Arms	137 Arms	206 Arms
Maximum current	46 Arms	91 Arms	137 Arms	78 Arms	157 Arms	235 Arms
THDI (%)	< 3%					
Topology	Single conversion					
EFFICIENCY						
Maximum efficiency	96.0%	96.2%	96.3%	97.6%		
ENVIRONMENT						
Environment category	Non air-conditioned indoor space					
Degree of protection	NEMA 1					
Operating ambient temperature	23 to 122 °F / -5 to +50 °C					
Rated temperature	32 to 104 °F / 0 to +40 °C					
Storage temperature	23 °F to 140 °F / -5 °C to +60 °C					
Relative humidity	5 % to 95 % without condensation					
Cooling system	Smart cooling					
Acoustic level at 3.28 ft / 1 m	< 60 dB	< 64 dB		< 60 dB	< 64 dB	
Altitude	0 to 3300 ft. (full power) / 0 to 1000 m (full power)					
MECHANICAL SPECIFICATIONS						
Dimensions (W x D x H) in.	23.62 x 31.30 x 55.12		47.24 x 31.30 x 55.12	23.62 x 31.30 x 55.12		
Dimensions (W x D x H) mm	600 x 795 x 1400		1200 x 795 x 1400	600 x 795 x 1400		
Weight lbs.	782.64	1168.45	1798.97	326.28	390.22	454.15
Weight kg	355	530	816	148	177	206

(1) Depending on the specific country and regulations.

SUNSYS Xtend ESS

UL 9540 certified Energy Storage System architecture

SUNSYS XTEND ESS - UL 9540 certified Energy Storage System architecture - combines lithium ion batteries with Socomec's Power Converters to offer a completely integrated Energy Storage System, optimized for use in commercial and industrial applications. This architecture can be combined with third-party software to provide the widest range of energy services.

Extendable installation

SUNSYS XTEND ESS enables modular flexibility later on. This solution may evolve and extend at a later date by adding additional SUNSYS PCS² and/or batteries with their associated protection equipment.
With UL 9540 certification, the architecture will not require further certifications in case of future growth.

Compact design

SUNSYS XTEND ESS is designedto have compact installation, either indoors, or in a weather-tight outdoor enclosure.
The complete system includes:

- SUNSYS PCS² bidirectional power converters,
- Batteries,
- AC distribution cabinet,
- String Battery Coupling Panel (SBCP).

Customer oriented services

SUNSYS XTEND ESS offers services dedicated to commercial and industrial installations.
This system is a fundamental component in providing peak shaving, load shifting and photovoltaic self-consumption functionalities in association with a third party EMS.

The solution for

- Commercial applications
- Industrial applications

Strong points

- Extendable installation
- Compact design
- Customer oriented services
- Simplified logistics

Conformity to standards

- UL 1741 SA: Standard for Grid Support Inverters
- UL 1642: Standard for Lithium Batteries
- UN 38.3: Transport of Dangerous Goods – Lithium-ion batteries
- UL 1973RU: Standard for Batteries for Use in Light Electric Rail Applications and Stationary Applications
- UL 9540 certified solution: Standard for Energy Storage Systems and Equipment
- IEEE 1547: Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces

E113907

Simplified logistics

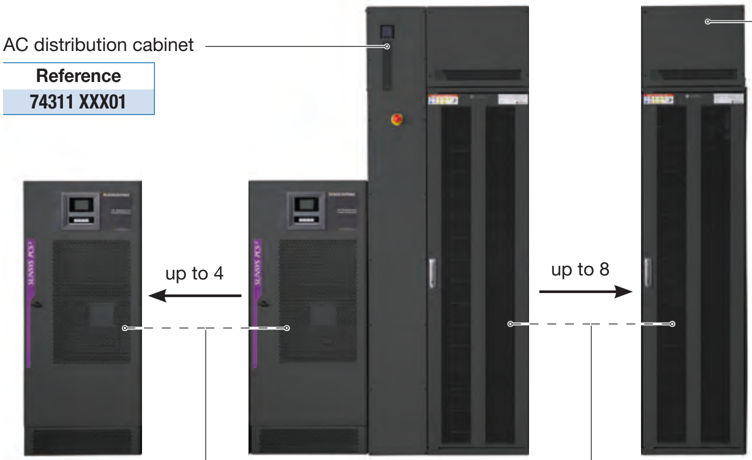
SUNSYS XTEND ESS creates a complete solution with a limited number of references for easy ordering and covering a wide range of configurations, power and back-up time.

AC distribution cabinet

Reference
74311 XXX01

String Battery Coupling Panel (SBCP)

Type of cabinet	Reference
Master protection cabinet	74401 00000
Slave protection cabinet	74421 00000



Bidirectional Power Converters - SUNSYS PCS²

Power (kW)	Architecture	Reference
33	With transformer	SUN-ES33KTR20UL
	Transformerless	SUN-ES33KET20UL
66	With transformer	SUN-ES66KTR20UL
	Transformerless	SUN-ES66KET20UL
100	With transformer	SUN-ES100TR20UL
	Transformerless	SUN-ES100ET20UL

Batteries

Energy (kWh)	Battery type	Reference
137	Energy	8ES_BE137_UL

Possible SUNSYS Xtend ESS architectures

		Batteries							
		1 x 137 kWh	2 x 137 kWh	3 x 137 kWh	4 x 137 kWh	5 x 137 kWh	6 x 137 kWh	7 x 137 kWh	8 x 137 kWh
SUNSYS PCS²	1 x 33 kW	3.5 hours	-	-	-	-	-	-	-
	1 x 66 kW	1.5 hours	3.5 hours	-	-	-	-	-	-
	2 x 66 kW	-	1.5 hours	2.5 hours	3.5 hours	-	-	-	-
	3 x 66 kW	-	1 hour	1.5 hours	2.5 hours	3 hours	3.5 hours	4 hours	-
	4 x 66 kW	-	-	1 hour	1.5 hours	2 hours	2.5 hours	3 hours	3.105 hours
	1 x 100 kW	1 hour	2 hours	3.5 hours	4.5 hours	-	-	-	-
	2 x 100 kW	-	1 hour	1.5 hours	2 hours	3 hours	3.5 hours	4 hours	-
	3 x 100 kW	-	-	1 hour	1.5 hours	2 hours	-	2.5 hours	3 hours
	4 x 100 kW	-	-	-	1 hour	1.5 hours	-	2 hours	-

Characteristics

Architecture based on	SUNSYS PCS² 33TR	SUNSYS PCS² 66TR	SUNSYS PCS² 100TR	SUNSYS PCS² 33TL	SUNSYS PCS² 66TL	SUNSYS PCS² 100TL
INPUT (DC)						
Battery chemistry	Lithium-Ion					
Number of independent power modules	1	2	3	1	2	3
OUTPUT (AC)						
Rated apparent power	33.000 VA	66.000 VA	100.000 VA	33.000 VA	66.000 VA	100.000 VA
Rated voltage (Un)	480 V rms 3ph			288 V rms 3ph		
Voltage range	423 - 528 V rms 3ph			252 - 308 V rms 3ph		
Rated frequency (Fn)	60 Hz					
Frequency range	59.3 - 60.5 Hz					
Efficiency	-					
Maximum efficiency	≥ 96 %					
ENVIRONMENT						
Environmental category	Non-air-conditionned indoor space					
Degree of protection	NEMA 1					
Operating ambiant temperature	0 to + 104 °F / 40 °C					
CERTIFICATIONS						
Power converter	UL1741 SA - IEEE 1557					
Battery	UL 1642- UN 38.3 - UL 1973 RU					
Product certification	UL 9540					

Dimensions

Number of SUNSYS PCS²	Number of batteries	Dimensions (W x D x H) (inch)
1	1	55.9 x 36.6 x 90.5
1	2	76.3 x 36.6 x 90.5
1	3	96.8 x 36.6 x 90.5
1	4	117.3 x 36.6 x 90.5
2	2	100 x 36.6 x 90.5
2	3	120.5 x 36.6 x 90.5
2	4	141 x 36.6 x 90.5
2	5	161.4 x 36.6 x 90.5
2	6	181.9 x 36.6 x 90.5
2	7	202.4 x 36.6 x 90.5
3	2	123.6 x 36.6 x 90.5
3	4	164.6 x 36.6 x 90.5
3	5	185 x 36.6 x 90.5
3	6	205.5 x 36.6 x 90.5
3	7	226 x 36.6 x 90.5
3	8	246.5 x 36.6 x 90.5
4	3	167.8 x 36.6 x 90.5
4	4	188.2 x 36.6 x 90.5
4	5	208.7 x 36.6 x 90.5
4	6	229.2 x 36.6 x 90.5
4	7	249.6 x 36.6 x 90.5
4	8	270.1 x 36.6 x 90.5


USB
AUX MAINS SWITCH
Q4
MAINS SWITCH
Q1
WARNING : HIGH VOLTAGE INSIDE
OUTPUT SWITCH
Q6
socomec
TÜV SÜD

Experts at your service

Socomec is committed to delivering a wide range of value-added services to ensure the reliability and optimisation of end-users' equipment during its lifecycle:

- prevention and service operations to lower the risk and enhance the efficiency of equipment,
- measurement and analysis of a wide range of electrical parameters leading to recommendations for power quality improvement,
- consulting, deployment and training from the project engineering stage to the final procurement stage.

Specialists at your service

Our Services team comprises qualified engineers whose mission is to ensure the correct operation of your equipment.

We offer a comprehensive support service package which gives you complete peace of mind: commissioning, on-site testing, preventive maintenance visits, 24-hour call out and rapid on-site repairs, original spare parts, power quality and energy efficiency audits, consultancy, design and implementation of installation modifications and updates, etc.

Our Services team is the most reliable partner to advise you on the maintenance of Socomec equipment and to resolve any problems in accordance with current environmental standards and procedures.

Professional tools

Our Services team use the:

- Personal Protective Equipment (protective goggles, helmet, insulated gloves, fireproof jacket, safety shoes, earplugs…) they are provided with.
- laptop embedding all the softwares required for the performance of the equipment,
- measuring equipment calibrated annually by our metrology department (multimeter, digital scope, current clamps, infra-red camera, power analyser).

Reports

For each intervention an extensive report (commissioning, preventive maintenance, troubleshooting, etc.), is automatically generated, sent to the customer and synchronized with our systems.

Remote diagnostics

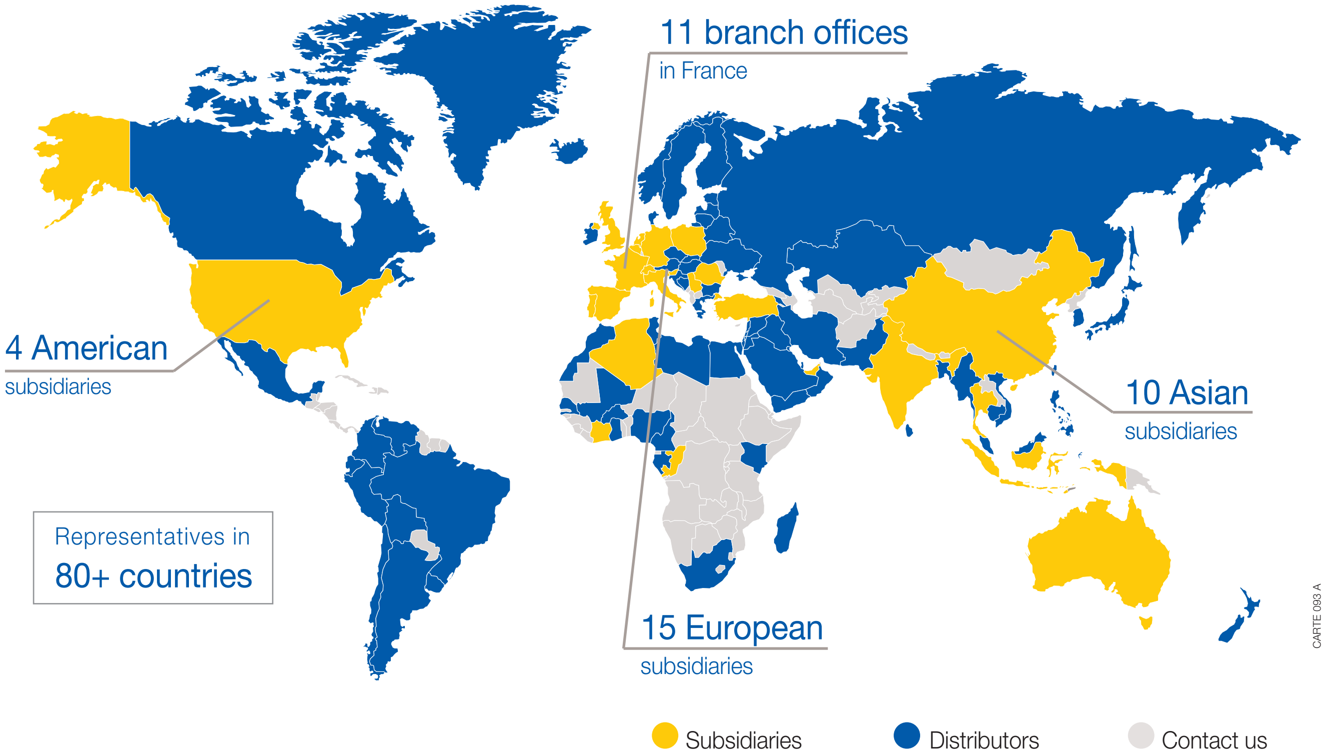
In case of any anomaly, an automatic notification is sent to a local call centre for proactive online troubleshooting.

Availability of original spare parts

The various original parts and components that we stock ensure that any faulty equipment can be rapidly brought back online, whilst maintaining its original performance and reliability.

Key figures

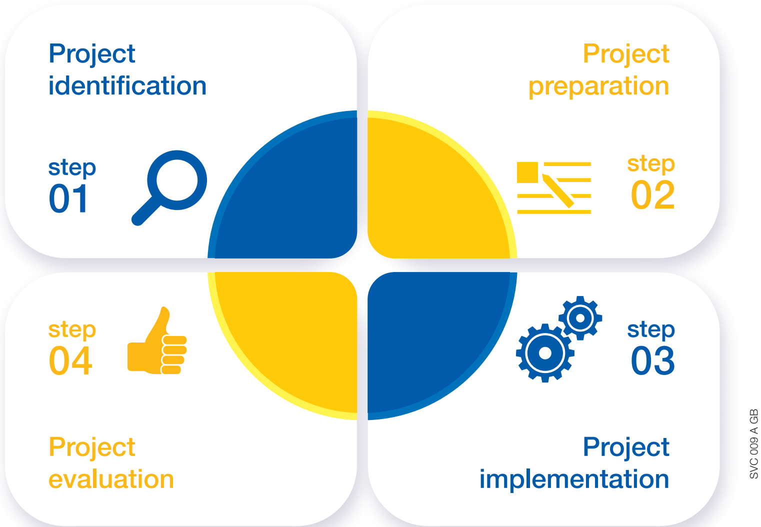
Nearly 400 Socomec experts supported by 250 engineers and technicians from our distributors, drive the solutions to your specific needs.



ON-SITE SERVICE MANAGEMENT	TECHNICAL HOTLINE NETWORK	CERTIFIED EXPERTISE
		
110,000 service operations per year (mainly preventive visits)	**25+** languages spoken	**8,000** hours of technical training deployed per year (product, methodology and safety)
98 % Service Level Agreement compliance rate	**3** advanced technical support centres	
	110,000+ incoming calls handled per year	

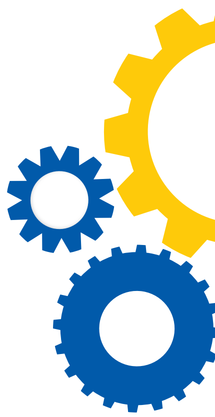
Maintenance and professional services

Project consultancy



Continuous improvement approach

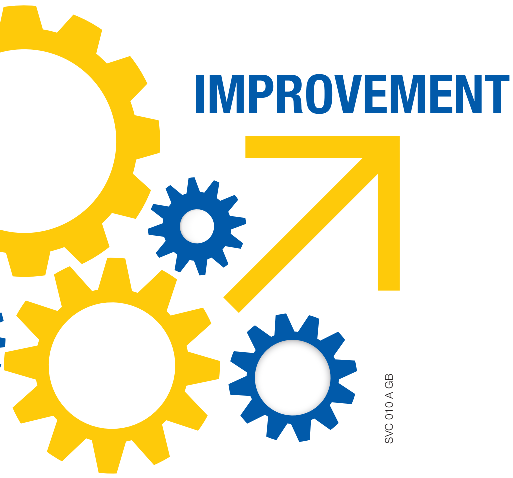
Upon request every year our specialist engineers will draw up a complete report with the summary of all activities performed by our field service engineers, this includes an in-depth analysis of equipment performance in terms of the operating conditions and usage of your installation, as well as key recommendations for improvement.
This report will help to improve your maintenance process and optimize resources and costs during the entire lifecycle of your electrical installation. Socomec will give you advice to maintain your system integrity over the years.



End of life (Eol) management

End of life in the context of manufacturing and product lifecycles, is the final stage of a product's existence.
For product users, Eol also concerns the responsible disposal of the existing product, transitioning to a different product and ensuring that disruption will be minimal.
Socomec experts can manage all of these critical tasks in a secured and efficient way, from the diagnostic phase through to the responsible disposal and recycling phase.

From design through to operation of your system, we can manage complexity in a quick, reliable and cost efficient way.
We offer site audit, analysis, design and implementation for reliable, safe and effective power facilities in order to fully ensure the productivity of the customer's business… anytime and anywhere.
With its teams of highly skilled design engineers, Socomec offers its manufacturing expertise to provide a range of consultancy services to support customers to achieve their project objective.



Product renewal

Having a product renewal process is essential in order to support sustainable growth and to avoid or anticipate operational downtime while always benefiting from the latest technology.
Socomec is on hand to support you in the evolution of your business and provide you with the best advice in order for your critical installation to benefit from a seamless transition or upgrade.

Respect for the environment

As a manufacturer, we are committed to protecting the environment and actively participate in the development of related legislation and standards.
This guarantees that we will always respond to the demands of legislation concerning the responsible disposal of used components and respect recycling procedures.
Socomec can help you plan for the safe removal and disposal of old products (including recycling of batteries) following the applicable environmental standards (e.g. ISO 14001, WEEE, etc.).

Selection guide

Installation

			 UPS Three-phase UPS	 MODULYS Modular UPS system	 STATYS Static Transfer Switch	 SUNSYS Xtend ESS Energy Storage System
Commissioning	On-site	p. 14	•	•	•	•
	Remote assistance	p. 20				

Operation

			UPS				MODULYS			STATYS				SUNSYS Xtend ESS			
			Silver	Gold	Platinum	Platinum +	Regular	Premium	Evo Pack	Silver	Gold	Platinum	Platinum +	Silver	Gold	Platinum	Platinum +
Maintenance contracts	Type of contract	p. 26	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Services for maintenance contracts	Preventive maintenance	p. 36	Included 1/year				Included 1/year			Included 1/year				Included 1/year			
	Emergency service 24/7	p. 37	o	o	o	•	o	o	•	o	o	o	o	o	o	o	•
	Link-UPS	p. 38	o	o	o	o	•	•	•					o	o	o	o
	Battery care	p. 40	o	o	o	o	o	o	o					o	o	o	o
	Battery replacement	p. 42	o	o	o	o	o	o	o					o	o	o	o
	Consumables replacement	p. 44	o	o	o	o	o	•	•	o	o	o	o	o	o	o	o
	Thermal imaging	p. 45	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
Inspection visit	Inspection visit	p. 46															
Customer training	On-site (Socomec or customer's site)	p. 49	o				o			o				o			

•: included.
o: optional.

DIRIS DIRIS Digiware
Multi-function meter and power metering system
•
•

Installation

Commissioning

Commissioning

for single-phase and three-phase Uninterruptible Power Supply (UPS)

The commissioning of a UPS covers start-up of the equipment, verification of its functions according to its design specifications, and to ensure that it is compatible with the customer's working environment.

Socomec performs the commissioning service within a quality process standard by ensuring that your equipment will be delivered in a safe, reliable and operational condition.

socomec
Innovative Power Solutions

PLACE YOUR CERTIFICATION HERE

CERTIFICATION OF "SAFE AND RELIABLE INSTALLATION"

TECHNICAL SUPPORT

HOT LINE

CONTRACT Nb

UPS TYPE
POWER
SERIAL NUMBER
CONFIGURATION (single/parallel)
COMMISSIONING DATE (UPS)
COMMISSIONING DATE (Battery)
VALIDITY OF THE CERTIFICATE (check renewal)

SOCOMEC (www.socomec.com) declares the system has been checked and certified for high quality and availability supply and reserves the right to limit the responsibility in case the start up and the maintenance is not performed by authorised personnel*. The present certificate should be renewed on yearly basis.

** Personnel is authorised only if trained by the manufacturer and enabled by a certificate released by the manufacturer. Only authorised personnel can insure Competence, Original spare parts, global diagnostic through appropriate tools, Update of the unit according to new releases.*

Key points

- > Work environment inspection
- > Electrical installation check (isolator switch, cabling, circuit breakers etc.)
- > UPS internal and external check
- > System power on and set up
- > Operating test on single UPS and/or parallel system
- > Load bank test (on request)

Benefits

- > Compliance with the various installation standards
- > Completes the Factory Acceptance Test
- > Commissioning traceability
- > Conformity certificate

€ Contract special price

Special price for the maintenance contract if signed within six months after commissioning.

Commissioning

for STATYS Static Transfer System (STS)

APPL_712.EPS

The commissioning of an STS covers start-up of the equipment, verification of its functions according to its design specifications, and to ensure that it is compatible with the customer's working environment.

SOCOMEC performs the commissioning service within a quality process standard by ensuring that your equipment will be delivered in a safe, reliable and operational condition

Key points

- Work environment inspection
- Electrical installation check
- STS internal and external check
- System power on and set up
- Ventilation check
- Operating test

Benefits

- Commissioning performed in compliance with applicable quality and safety standards
- Compatibility with your work environment
- Compliance with the various installation standards
- Conformity certificate

Contract special price

Special price for the maintenance contract if signed within six months after commissioning.

Commissioning

for Energy Storage System

APPLI_531_A.EPS

The commissioning of an Energy Storage System covers start-up of the equipment, verification of its functions according to its design specifications, and to ensure that it is compatible with the customer's working environment.

Socomec performs the commissioning service within a quality process standard by ensuring that your equipment will be delivered in a safe, reliable and operational condition.

socomec
Innovative Power Solutions

PLACE YOUR CERTIFICATION HERE

CERTIFICATION OF "SAFE AND RELIABLE INSTALLATION"

TECHNICAL SUPPORT

HOT LINE

CONTRACT Nb

UPS TYPE

POWER

SERIAL NUMBER

CONFIGURATION (single/parallel)

COMMISSIONING DATE (UPS)

COMMISSIONING DATE (Battery)

VALIDITY OF THE CERTIFICATE (check renewal)

SOCOMEC (www.socomec.com) declares the system has been checked and certified for high quality and availability supply and reserves the right to limit the responsibility in case the start up and the maintenance is not performed by authorised personnel*. The present certificate should be renewed on yearly basis.

* Personnel is authorised only if trained by the manufacturer and enabled by a certificate released by the manufacturer. Only authorised personnel can insure Competence, Original spare parts, global diagnostic through appropriate tools, Update of the unit according to new releases.

Key points

- Work environment inspection
- Electrical installation check (isolator switch, cabling, circuit breakers etc.)
- Energy Storage internal and external check
- System power on and set up
- Operating test

Benefits

- Compliance with the various installation standards
- Completes the Factory Acceptance Test
- Commissioning traceability
- Conformity certificate

Commissioning

DIRIS multi-function meter, DIRIS Digiware power metering system

APPLI_771.EPS

To enable you to get your system quickly up and running, we check the installation, carry out communication tests and configure the equipment.

Key points

- Controlling the complete chain (equipment/connection/ magnetic cores)
- Settings and function test
- Communication test
- Information on how to use your installed system
- Service report with overview of installation parameters

Benefits

- Installation compliance
- Reliability of measured data
- Tracking of settings

Maintenance contracts

a broad range of solutions to suit all your needs

APPLI_734.EPS

The Maintenance service contracts are entirely tailored around customers' needs, taking into account individual operating constraints, business activity and the unique level of criticality associated with specific applications.

A variety of contracts suitable for users have been developed to cover all needs: from a simple combined service, to a fully-inclusive package that includes the cost of labour and spare parts and delivers the quickest response time to site.

		SILVER	GOLD	PLATINUM	PLATINUM+	REGULAR	PREMIUM	EVO PACK	PRISM
Three-phase UPS		•	•	•	•				
Modular UPS system						•	•	•	
Static Transfer Switch STATYS		•	•	•	•				
Energy storage system SUNSYS		•	•	•					

Maintenance contracts

for three-phase UPS

APPLI_528_A.EPS

Silver, Gold, Platinum and Platinum+ are the Maintenance service contracts suitable for UPS.

50 years of manufacturing experience is at your disposal to provide you with a comprehensive support package which affords you complete peace of mind.

Key points

- Original spare parts
- Expert engineers equipped with professional tools and software
- Safety procedures

Benefits

- Improves system availability
- Optimizes product lifespan
- On-site service call-outs guaranteed

SERVICE DESCRIPTION	SILVER	GOLD	PLATINUM	PLATINUM+
1 Annual preventive maintenance visit	•	•	•	•
Battery check	•	•	•	•
Battery care	○	○	○	○
Labour & mileage for corrective maintenance		•	•	•
Original spare parts			•	•
Hot-line availability	•	•	•	•
Emergency hot-line 24/7	○	○	○	•
Response time to site within next working day	•	•	•	
Response time to site within 6h*	○	○	○	•
Response time to site within 4h*	○	○	○	○
Preventive replacement of consumables (fans and capacitors, excluding batteries)	○	○	○	○
UPS remote monitoring (Link-UPS) Remote check-up + Proactive troubleshooting + Report	○	○	○	○
Additional preventive maintenance visit	○	○	○	○
Out of hours preventive maintenance visit during night, week-end, bank holidays	○	○	○	○
Thermal imaging	○	○	○	○

•: included.
○: optional.
** Please check the service coverage in your area.*

Maintenance contracts

MODULYS modular UPS system

APPLI 718 A

IT and facility managers, having chosen a modular UPS system to protect their critical applications, are looking for extra services from the manufacturer to optimise their investment throughout the lifecycle of the product.

With REGULAR, PREMIUM and EVOLUTION PACK, Socomec offers unique maintenance contracts to take full advantage of the modular architecture of the UPS system: fast upgrading, cost predictability and no more "end-of-life criticality".

Evolution Pack summary

Evolution Pack delivers the most comprehensive service guarantee:

- 5-year, fully inclusive package,
- Permanent access to the latest technology,
- Regular upgrades with complete module replacement,
- Continuous system care and monitoring based on specific usage conditions.

Evolve with Socomec:

- Control your costs: fixed price guaranteed over a 5-year period,
- Maximise your investment: incorporate cutting edge technology for the ultimate energy efficiency,
- Futureproof your system: eliminate end-of-life criticality.

New service features & key benefits

1 Link-UPS remote monitoring
- Alarm notification to the nearest Socomec Service Centre.
- Remote diagnostic and troubleshooting.
- Regular analysis reports.

2 Smart module management
- Fast hot-swap replacement.
- Load fully protected during maintenance.

3 Full power system upgrade
- Regular upgrades, with complete module replacement using the latest technology.

Maximum operational uptime

Repair time guaranteed

Up-to-date technology… anytime!

	SERVICE DESCRIPTION	REGULAR	PREMIUM	EVOLUTION PACK 5 years
1	UPS remote monitoringg (Link-UPS) Remote check-up + Proactive troubleshooting + Report	•	•	•
2	Module shipment within 3 working days	•		
	Module hot-swap on-site within next working day		•	
	Module hot-swap on-site within 24h*			•
3	1 complete power module replacement per 5-year period (excluding batterie modules)			•
	1 Annual preventive maintenance visit	•	•	•
	Battery check	•	•	•
	Battery care	○	○	○
	Labour & mileage for corrective maintenance		•	•
	Original spare parts		•	•
	Hot-line availability	•	•	•
	Emergency hot-line 24/7	○	○	•
	Response time to site within next working day	•	•	
	Response time to site within 6h*	○	○	•
	Response time to site within 4h*	○	○	○
	Preventive replacement of consumables (fans and capacitors, excluding batteries)	○	•	•
	Additional preventive maintenance visit	○	○	○
	Out of hours preventive maintenance visit during night, week-end, bank holidays	○	○	○
	Thermal imaging	○	○	○

•: included.
○: optional.
** Please check the service coverage in your area.*

Maintenance contracts

for STATYS Static Transfer Switch

APPLI_712.EPS

Silver, Gold, Platinum and Platinum+ are the Maintenance service contracts suitable for standard STS.

50+ years of manufacturer's experience is at your disposal to provide you with a comprehensive support package which affords you complete peace of mind.

SERVICE DESCRIPTION	SILVER	GOLD	PLATINUM	PLATINUM+
1 Annual preventive maintenance visit	•	•	•	•
Labour & Mileage for corrective maintenance		•	•	•
Original spare parts			•	•
Hot-line availability	•	•	•	•
Emergency hot-line 24 / 7	○	○	○	•
Response time to site within next working day	•	•	•	
Response time to site within 6h*	○	○	○	•
Response time to site within 4h*	○	○	○	○
Preventive replacement of consumables (fans and capacitors)	○	○	○	○
Additional preventive maintenance visit	○	○	○	○
Out of hours preventive maintenance visit during night, week-end, bank holidays	○	○	○	○
Thermal imaging	○	○	○	○

•: included.
○: optional.
** Please check the service coverage in your area.*

Key points

- Original spare parts
- Expert engineers equipped with professional tools and software
- Safety procedures

Benefits

- Improves system availability
- Optimises product lifespan
- On-site interventions guaranteed

Maintenance contracts

for Energy Storage System

APPLI_712.EPS

Energy storage is the core element for the transition of the electric utility system to Smart Grids.

The equipment availability is essential to optimize the massive integration of decentralized renewable energy, to reduce peak electricity consumption and to control the production-consumption-storage balance.

Socomec service packages are designed to keep your Smart Grid infrastructure operational and fully maintained to achieve the highest level of energy quality.

SERVICE DESCRIPTION	SILVER	GOLD	PLATINUM
Contract duration (months)	24	24	24
Preventive Maintenance			
1 preventive maintenance visit per annum	•	•	•
Additional preventive maintenance visit/s	○	○	○
Preventive maintenance visit/s to be conducted during normal working hours	•	•	•
Preventive maintenance visit/s to be conducted within WEEK END working hours	○	○	○
Preventive maintenance visit/s to be conducted out of normal weekday working hours	○	○	○
Preventive replacement with original consumable parts: fans and capacitors (excluded batteries)	○	○	○
Preventive maintenance report with recommendation	•	•	•
Software update	•	•	•
Corrective Maintenance			
All labor and mileage	-	•	•
All original spare parts: IGBT, SCR, PCB, fuses, etc. (excluded fans, capacitors and batteries)	-	-	•
Consumables			
All laobr and mileage	-	•	•
Hot-Line & Response time to site			
Access to technical support Hot Line during normal working hour	•	•	•
Guaranteed response to site by the end of the next working day	•	•	•
Guaranteed response to site of 6 hours within normal working hours	○	○	○
Emergency Hot-line 24/7 and guaranteed response to site of 6 hours 24/7	○	○	○
Guaranteed response to site of 4 hours within normal working hours	○	○	○
Emergency Hot-line 24/7 and guaranteed response to site of 4 hours 24/7	○	○	○
Emergency Hot-line 24/7 and guaranteed response to site of 12 hours 24/7	○	○	○
Availibity of SOCOMEC engineer 24/7	○	○	○
MTTR within 12 hours within normal working hours	○	○	○
20% EARLY CONTRACT UPTAKE			
2Y under warranty (commissioning less than 6 months)	○	○	○

•: *included.*
○: *optional.*

References List

Notes

Notes

Notes

Socomec: our innovations supporting your energy performance

1 independent manufacturer

3,600 employees worldwide

10 % of sales revenue dedicated to R&D

400 experts dedicated to service provision

Your power management expert

POWER SWITCHING

POWER MONITORING

POWER CONVERSION

ENERGY STORAGE

EXPERT SERVICES

The specialist for critical applications

- Control, command of LV facilities
- Safety of persons and assets

- Measurement of electrical parameters
- Energy management

- Energy quality
- Energy availability
- Energy storage

- Prevention and repairs
- Measurement and analysis
- Optimization
- Consultancy, commissioning and training

A worldwide presence

12 production sites

- France (x3)
- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x3)

28 subsidiaries and commercial locations

• Algeria • Australia • Belgium • Canada • China
• Dubai (United Arab Emirates) • France • Germany
• India • Indonesia • Italy • Ivory Coast • Netherlands
• Poland • Portugal • Romania • Singapore, Slovenia
• South Africa • Spain • Switzerland • Thailand
• Tunisia, Turkey • UK • USA

80 countries
where our brand is distributed

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