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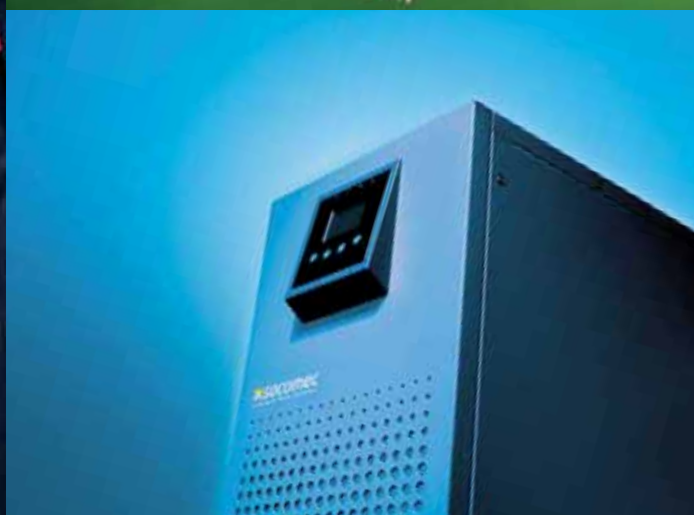
Solutions for Power, Control, Safety & Energy Efficiency

2016



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our expertise

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Innovative Power Solutions

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An independent manufacturer

The benefit of a specialist

3,500 m²
of test platforms

One of the leading independent power testing labs in Europe

50,000
on-site interventions per year

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

10 %
of turnover invested in R&D

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

SYDV 181 B

MADE IN EUROPE

ENERGY SPECIALIST SINCE 1922

THE GLOBAL COMPACT WE SUPPORT

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Your energy, our expertise

Critical Power

Ensuring the availability and storage of high quality power

With its wide range of continuously evolving products, solutions and services, Socomec are recognised 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 stabilisation of the power grid.

© Datadock

Power Control & Safety

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 applications,
- continuity of the power supply to electrical facilities via manual or automatic changeover switching systems,
- protection of persons and assets via fuse-based and other specialist solutions.

APPLI 575A

Energy Efficiency

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.

APPLI 571A

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 optimisation 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,
- optimisation 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.

APPLI 760A

AC
socomec
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ON
OFF

Power Control and Safety

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Fuse protection selection guide ..... p. 34
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Load break switches

SIRCO M/MV
16 to 160 A
p. 10

SIRCO
125 to 3200 A
p. 10

SIRCO PV
100 to 3200 A
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Fuse protection

FUSERBLOC
25 to 1250 A
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Fuse disconnect switches

RM - RMS
32 to 125 A
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Industrial
gG fuses
0.5 to 1250 A
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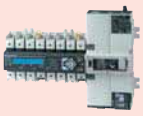
Transfer switches

Manual transfer switches

SIRCO M
25 to 125 A
p. 60

SIRCOVER
125 to 3200 A
p. 64

Modular and motorised transfer switches



ATyS M
40 to 160 A
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Motorised transfer switches

ATyS S
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ATyS
125 to 3200 A
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Universal N/E controller

ATyS C30
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Electronic protection

Earth leakage protection

RESYS M40 / M40R / P40
p. 104

Core balance transformers type A
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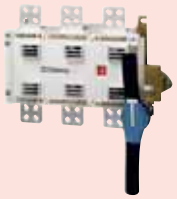
Enclosure & accessories

Busbar supports
p. 108

Specific applications

Load break switches

- ***SIRCO*** range with overrated neutral
- ***SIRCO*** for earthing
- ***SIRCO HW*** high short-circuit performance
- ***SIDERMAT*** remotely trippable switch
- ***SIRCO AC*** for 690 and 1000 V network
- ***SIDER*** public distribution
- ***SIRCO PV*** up to 4 PV circuits
- ***SIRCO M*** UL508
- ***SIRCO V*** UL489
- ***SIRCO*** UL508
- ***SIRCO MOT PV***
- ***SIRCO MOT AT***



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Other products

Transfer switches

- ***COMO C***
- Transfer switches for overlapping contact switching
- Transfer switches for Bypass applications
- Transfer switches with integrated double power supply
- Automatic Transfer switches for Mains/Mains applications
- Transfer switches for UL applications
- Controllers for Mains/Genset & Genset/Genset applications
- ATyS no-break Bypass solution

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Selection guide

Load break switches

Which application? ▶ Which function?

	Machine control	
	SIRCO M **16 to 125 A** *p. 10*	***SIRCO MV*** **100 to 160 A** *p. 10*
Applications		
Main switchboard	•	•
Distribution panel	•	•
Emergency load break	•	•
Genset output	•	•
Network coupling	•	•
Local safety breaking	•	•
Machine control	•	•
Photovoltaic load break		
Enclosed switches	•	•
Functions		
3/4 pole load break switch	•	•
6/8 pole load break switch	•	
3/4 pole changeover switch (I-0-II)	•	
3/4 pole changeover switch (I-I+II-II)	•	
Characteristics		
Operation		
Manual (rotating)	•	•
Manual toggle	•	
Trippable		
Motorised		
Direct operation handle		
Front	•	•
Side		
External operation handle		
Front	•	•
Right side	•	•
Left side	•	•
Shutdown		
Positive break indication	•	•
Visible contacts		•
Switch body		
Modular	•	•

(1) Please consult us.

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Which operation handle? → Which type of breaking? → Which switch body?

	Power distribution	Photovoltaic
	SIRCO **125 to 3200 A** *p. 18*	***SIRCO PV*** IEC **100 to 3200 A** *p. 26*
	•	
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SIRCO M and MV

Universal load break switches
from 16 to 160 A

*4 pole **SIRCO M***
direct operation

*4 pole **SIRCO MV***
direct operation

Function

SIRCO M and **MV** are manually operated modulable and modular multipolar load break switches.
They make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine control circuits.

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

Advantages

Total integration
The SIRCO M and MV fully integrate isolation, breaking and switching functions.
Within a single product, SIRCO M offers front, right side or left side operation. Their highly functional design enables the product to be easily transformed from a load break switch to a changeover switch, offering a highly innovative modular solution for numerous applications.

A wide range of accessories
A single standard module, which can be complemented with a choice of accessories, offers a range of advantages:
- Simplicity when choosing the device.
- Flexibility to adapt to the most varied applications.
- Reduction in the cost of management and storage.

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

Compliance with major certifications and approvals
The SIRCO M and MV range of load break switches have been designed, qualified and tested according to the criteria defined by standards IEC 60947-3, UL508 and UL98.
This process guarantees a high quality level for the product which is fully adapted to arduous operating environments.

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

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

SIRCO MV:
- Visible double breaking based on a sliding contact system (SIRCO type, see page 18).
- Positive break indication.

The solution for
> Main incoming load break
> Distribution load break
> Machine control
> Local safety load break

Strong points
> Total integration
> A wide range of accessories
> Upgradeability
> Compliance with major certifications and approvals
> Specific characteristics

Conformity to standards
> IEC 60947-3

> Other standards available:
See page 32.

Approvals and certifications(1)
(1) Product reference on request.

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

References

SIRCO M

SIRCO M - from 16 to 125 A

Rating (A) / Frame size	No. of poles	Switch body	Direct handle	Door interlocked external front and right side handle[6]	Front external handle for changeover switches[6]	Shaft for external front and side handle[6]	4th pole
16 A / M1	3 P	2200 **3000** ■ [1][2][3]	M00 type Blue 2299 **5012** ■	S00 type I -0 Black IP65 1473 **1111** ■ [4] Red/Yellow IP65 1474 **1111**[4]	S00 type I - 0 - II Black IP65 1473 **1113** [4]	200 mm 1407 **0520** ■ 320 mm 1407 **0532** ■	2200 **1000** ■
20 A / M1	3 P	2200 **3001** [1][2][3]					2200 **1001**
25 A / M1	3 P	2200 **3002** ■ [1][2][3]					2200 **1002** ■
32 A / M1	3 P	2200 **3003** ■ [1][2][3]					2200 **1003** ■
40 A / M1	3 P	2200 **3004** ■ [1][2][3]					2200 **1004** ■
63 A / M2	3 P	2200 **3006** ■ [1][2][3]					2200 **1006** ■
80 A / M2	3 P	2200 **3008** [1][2][3]					2200 **1008**
100 A / M3	3 P	2200 **3010** [1][2][3]	M01 type Blue 2299 **5032** ■	S0 type I -0 Black IP65 1483 **1111** ■ [4] Red/Yellow IP65 1484 **1111** [4]	S00 type I - 0 - II Black IP65 1473 **0113**		2200 **1010**
125 A / M3	3 P	2200 **3011** ■ [1][2][3]					2200 **1011** ■

(1) Front and side operation.
(2) For a 6-pole device in direct operation, order 2 x 3 pole device + conversion kit (for external operation, add the shaft + the handle).
(3) For an 8-pole device in direct operation, order 2 x 3 pole device + 2 x 4th poles + conversion kit (for external operation, add the shaft + the handle).
(4) Defeatable handle.

SIRCO MV

SIRCO MV - from 100 to 160 A

Rating (A)	No. of poles	Switch body	Direct handle	Door interlocked external front and right side handle	Shaft for external front and side handle	Auxiliary signal contact	Terminal shrouds
100 A	3 P	2200 **3110**	M0b type Blue 2299 **5042** ■ [1]	S0 type I -0 Black IP65 1493 **0111** ■ [2] Red/Yellow IP65 1494 **0111**[2]	S0 type 200 mm 1409 **0620** 320 mm 1409 **0632** ■	M type 1 contact NO + NC 2299 **0001** 1 contact 2 NC 2299 **0011**	3 P 2294 **3016**[3] 4 P 2294 **4016**[3]
	4 P	2200 **4110**					
125 A	3 P	2200 **3012**					
	4 P	2200 **4012**					
160 A	3 P	2200 **3016** ■					
	4 P	2200 **4016** ■					

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

Reference in **green** are new products. ■ Stock items.

Accessories

Direct operation handle

For SIRCO M

Frame size	Handle colour	Handle type	Reference
M1 … M2	Blue	M00	2299 **5012** ■ (1)
M3	Blue	M01	2299 **5032** ■ (1)

(1) Standard.

For SIRCO MV

Frame size	Handle colour	Handle type	Reference
MV	Blue	M0b	2299 **5042** ■ (1)

(1) Standard.

M00 handle

acces_347_a

M01 handle

acces_352_a

M0b handle

acces_359_a

External handle operation

For SIRCO M

S00 type handle

Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
M1… M2	Switch	3/4 P(1)	Front and side operation	Black	IP65	yes	1473 **1111** ■
	Switch	3/4 P(1)	Front and side operation	Red/Yellow	IP65	yes	1474 **1111**

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

S00 handle

acces_341_a_1_cat

S0 type handle

Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
M3	Switch	3/4 P	Front and side operation	Black	IP65	yes	1483 **1111** ■
	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	yes	1484 **1111**

S0 handle

access_343_a

For SIRCO MV

S0 type handle

Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
MV	Switch	3/4 P	Front and side operation	Black	IP65	yes	1493 **0111**
MV	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	yes	1494 **0111**

S1 type handle

Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
MV	Switch	3/4 P	Front	Black	IP65	yes	1413 **2111** ■
MV	Switch	3/4 P	Front	Red/Yellow	IP65	yes	1414 **2111**

S1 Handle

acces_284_a_2_cat

Shaft for external handle

For SIRCO M

Frame size	Handle type	Type	Length (mm)	Reference
M1… M3	S00 / S0	3/4 P switch	200	1407 **0520**
	S00 / S0	3/4 P switch	320	1407 **0532** ■
M3	S00	6/8 P switch	200	1409 **0620**
	S00	6/8 P switch	320	1409 **0632** ■

For SIRCO MV

Frame size	Handle type	Type	Length (mm)	Reference
MV	S0	Switch	200	1409 **0620**
	S0	Switch	320	1409 **0632** ■
	S1	Switch	200	1401 **0620**
	S1	Switch	320	1401 **0632**

acces_346_a_1_cat

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

Reference in **green** are new products. ■ Stock items.

Additional pole for SIRCO M

Use

Adds one or two poles and transforms:
- a 3 pole SIRCO M into a 4 pole load break switch,
- a 6 pole SIRCO M into a 8 pole load break switch,
- a 3 pole SIRCO M into a 4 pole changeover switch.

4th pole

Use

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

Neutral pole

Switched fourth pole module

Frame size /Rating (A)	No. of poles	Type	Reference
M1 / 16	1 P	switched	2200 **1000** ■
M1 / 20	1 P	switched	2200 **1001**
M1 / 25	1 P	switched	2200 **1002** ■
M1 / 32	1 P	switched	2200 **1003** ■
M1 / 40	1 P	switched	2200 **1004** ■
M2 / 63	1 P	switched	2200 **1006** ■
M2 / 80	1 P	switched	2200 **1008**
M3 / 100	1 P	switched	2200 **1010**
M3 / 125	1 P	switched	2200 **1011** ■

Neutral pole

Frame size	No. of poles	Type	Reference
M1	1 P	unswitched	2200 **5005**
M2	1 P	unswitched	2200 **5009**
M3	1 P	unswitched	2200 **5011**

Terminal shrouds

Use

Top and bottom protection against direct contact with the terminals or connection parts.
Available in 1 or 3 pole versions for SIRCO M and in 3 or 4 pole versions for SIRCO MV.
An opening on each terminal cover makes it possible to insert a temperature measurement probe.

SIRCO M 3 P

SIRCO M 1 P

For SIRCO M

Frame size	No. of poles	Position	Reference
M1	1 P	top and bottom	2294 **1005** ■
M1	3 P	top and bottom	2294 **3005** ■
M2	1 P	top and bottom	2294 **1009** ■
M1	3 P	top and bottom	2294 **3009** ■
M3	1 P	top and bottom	2294 **1011** ■
M3	3 P	top and bottom	2294 **3016** ■

For SIRCO MV

Frame size	No. of poles	Position	Reference
MV	3 P	top and bottom	2294 **3016** ■
	4 P	top and bottom	2294 **4016** ■

Auxiliary contacts

M type

Use

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

Characteristics

NO+NC auxiliary contacts: IP2 with front operation.

NO + NC

U type

Use

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

For SIRCO M

Frame size	Number of AC	Type of AC	Reference
M1 … M3	1 AC	NO + NC	2299 **0001** ■
	1 AC	2 NC	2299 **0011** ■

For SIRCO MV

Frame size	Number of AC	Type of AC	Reference
MV	1 AC	NO + NC	2299 **0001**
	1 AC	2 NC	2299 **0011**

Characteristics

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

Max 4 auxiliary contacts (2 modules).
Pre-break is not guaranteed on the SIRCO MV.

For SIRCO MV

Frame size	Number of AC	Type of AC	Reference
MV	1 AC	NC	3999 **0701** ■
	1 AC	NO	3999 **0702**

Characteristics

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

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

Reference in **green** are new products. ■ Stock items.

Accessories (continued)

Conversion kit

Use

It must be ordered together with the handle for external control.

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

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

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

Conversion kit for 6 or 8 pole load break switches

Conversion kit for changeover switches I - 0 - II

Frame size	Conversion kit 6/8 P switch Reference	External handle S00 - IP65 6/8 P Reference	Convertion kit changeover switches I - 0 - II Reference	External handle S00 - IP65 I - 0 - II Reference
M1 … M2	2269 **6009** ■ (1)	1473 **1111** ■	2209 **6009** ■ (1)	1473 **1113** ■
M3	2269 **6011**(1)	1473 **0111**	2209 **6011**(1)	1473 **0113**

Door mounting kit(1)

Use

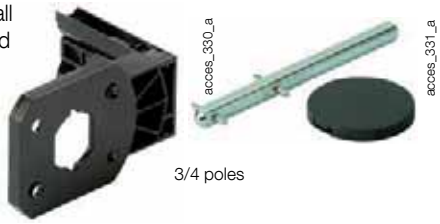
This kit enables a direct mounting of the switch on the door panel, on the right or left side of the panel.

The connection clamps of the switch are always accessible.

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

3 kits are available:

- one for complete protection IP2X
- one with compact design
- one in steel for 6/8 P and 100/125 A.



3/4 poles

For SIRCO M

Frame size	No. of poles	Description	Reference
M1 … M2	3/4 P	Compact version	2299 **3409**
M3	3/4 P	Metallic support	2299 **3609**

For complete protection IP2X, please contacte us.

(1) Kit compatible with S00 type handle only.

Enclosed solutions

References

Polycarbonate enclosed switches

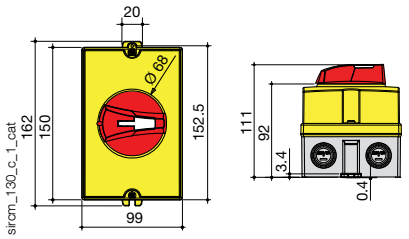
Frame size / Rating (A)	No. of pole	Handle colour	Enclosure colour	Reference
M1 / 25	3 P	Black	Grey	2215 **3302**
M1 / 25	3 P	Red	Yellow	2215 **3402**
M1 / 40	3 P	Black	Grey	2215 **3304**
M1 / 40	3 P	Red	Yellow	2215 **3404**
M2 / 80	3 P	Black	Grey	2215 **3308**
M2 / 80	3 P	Red	Yellow	2215 **3408**
M2 / 100	3 P	Black	Grey	2215 **3309**(1)
M2 / 100	3 P	Red	Yellow	2215 **3409**(1)

(1) No UL.

Empty polycarbonate enclosures

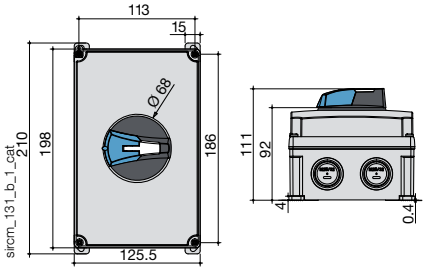
Frame size	No. of pole	Handle colour	Enclosure colour	Reference
M1	3 P	Black	Grey	2215 **9305** ■
M1	3 P	Red	Yellow	2215 **9405** ■
M2	3 P	Black	Grey	2215 **9309** ■
M2	3 P	Red	Yellow	2215 **9409** ■

SIRCO M1 25 and 40 A - 162 x 99 mm



- 4 pre-drilled holes M16 (on the side).
- 4 pre-drilled holes M20 / M25 (top and bottom).
- 4 pre-drilled holes M20 (rear).

SIRCO M2 80 and 100 A - 210 x 125.5 mm



- 4 pre-drilled holes M16 (on the side).
- 4 pre-drilled holes M25 / M32 (top and bottom).
- 2 pre-drilled holes M25 / M32 (rear).

Reference in **green** are new products. ■ Stock items.

Characteristics

Characteristics according to IEC 60947-3

		SIRCO M - from 16 to 125 A									
Thermal current I_{th} (40 °C)		**16 A**	**20 A**	**25 A**	**32 A**	**40 A**	**63 A**	**80 A**	**100 A**	**100 A**	**125 A**
Frame size		**M1**	**M1**	**M1**	**M1**	**M1**	**M2**	**M2**	**M2**	**M3**	**M3**
Rated insulation voltage U_i (V)		800	800	800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	8	8	8	8	8	8
Rated operational currents I_e (A)											
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	100/100	125/125
415 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	100/100	125/125
415 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	100/100	125/125
415 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
500 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
500 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
500 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
500 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	63/63	63/63	63/63	80/80	100/100
690 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
690 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
690 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	32/40	40/63	63/80	63/80	80/100	100/125
690 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	40/40	40/40	40/40	63/63	63/63
110 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	100/100	125/125
110 VDC	DC-21 A / DC-21 B	16/16(2)	20/20(2)	25/25(2)	32/32(2)	40/40(2)	63/63(2)	80/80(2)	80/80(2)	100/100(2)	125/125(2)
250 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
250 VDC	DC-21 A / DC-21 B	16/16(3)	20/20(3)	25/25(3)	32/32(3)	40/40(3)	63/63(3)	80/80(3)	80/80(3)	100/100(3)	125/125(3)
400 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	80/80	100/100	125/125
400 VDC	DC-21 A / DC-21 B	16/16(4)	20/20(4)	25/25(4)	25/25(4)	25/25(4)	40/40(4)	40/40(4)	40/40(4)	63/63(4)	63/63(4)
Operational power in AC-23 (kW)											
400 VAC without pre-break AC(kW)(5)		7.5	9	11	15	18.5	30	37	40	45	55
500 VAC without pre-break AC(kW)(5)		7.5	9	11	15	18.5	30	37	40	45	55
690 VAC without pre-break AC(kW)(5)		7.5	11	15	15	15	30	37	45	45	55
Fuse protected short-circuit withstand (kA rms prospective)(6)											
Prospective short-circuit current (kA rms)		50	50	50	50	50	50	50	50	25	25
Associated fuse rating (A)		16	20	25	32	40	63	80	100	100	125
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s											
Rated short-time withstand current 0.3s. I_{cw} (kA rms)		2.5	2.5	2.5	2.5	2.5	3	3	3	5	5
Short-circuit capacity (without protection)											
Rated short-time withstand current 1s. I_{cw} (kA rms)		1.26	1.26	1.26	1.26	1.26	1.5	1.5	1.5	2.75	2.75
Rated peak withstand current (kA peak)(6)		6	6	6	6	6	9	9	9	12	12
Connection											
Minimum Cu cable cross-section (mm²)		1.5	1.5	1.5	1.5	1.5	2.5	2.5	2.5	10	10
Maximum Cu cable cross-section (mm²)		16	16	16	16	16	35	35	35	70	70
Tightening torque min/max (Nm)		2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	3.5 / 3.85	3.5 / 3.85	3.5 / 3.85	4/4.4	4/4.4
Mechanical characteristics											
Durability (number of operating cycles)		100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000
Operating effort - 3 pole device (Nm)		1	1	1	1	1	1.4	1.4	1.4	1.6	1.6
Operating effort - 4 pole device (Nm)		1.2	1.2	1.2	1.2	1.2	1.6	1.6	1.6	2	2
Weight of a 3 pole device (kg)		0.18	0.18	0.18	0.18	0.18	0.27	0.27	0.27	0.55	0.55
Weight of a 4 pole device (kg)		0.23	0.23	0.23	0.23	0.23	0.33	0.33	0.33	0.72	0.72
Weight of a 6 pole device (kg)		0.40	0.40	0.40	0.40	0.40	0.59	0.59	0.59	1.30	1.30
Weight of a 8 pole device (kg)		0.50	0.50	0.50	0.50	0.50	0.69	0.69	0.59	1.65	1.65

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) One pole per polarity.
(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".
(4) 4-pole device with 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage Ue = 415 VAC.

Characteristics (continued)

Characteristics according to IEC 60947-3

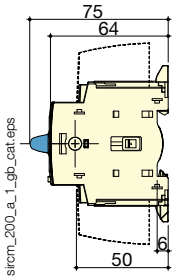
		SIRCO MV - from 100 to 160 A		
Thermal current I_{th} (40 °C)		**100 A**	**125 A**	**160 A**
Rated insulation voltage U_i (V)		800	800	800
Rated impulse withstand voltage U_{imp} (kV)		8	8	8
Rated operational currents I_e (A)				
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
415 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	100/100	125/125	125/160
500 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
500 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
500 VAC	AC-22 A / AC-22 B	100/100	125/125	125/160
500 VAC	AC-23 A / AC-23 B	80/80	100/100	100/100
690 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
690 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
690 VAC	AC-22 A / AC-22 B	63/80	80/100	100/125
690 VAC	AC-23 A / AC-23 B	63/63	80/80	80/80
110 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
110 VDC	DC-21 A / DC-21 B	100/100(2)	125/125(2)	160/160(2)
250 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
250 VDC	DC-21 A / DC-21 B	100/100(3)	125/125(3)	160/160(3)
400 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
400 VDC	DC-21 A / DC-21 B	100/100(4)	125/125(4)	160/160(4)
Operational power in AC-23 (kW)				
400 VAC without pre-break AC(kW)(5)		45	55	75
500 VAC without pre-break AC(kW)(5)		45	55	75
690 VAC without pre-break AC(kW)(5)		45	75	75
Fuse protected short-circuit withstand (kA rms prospective)(6)				
Prospective short-circuit current (kA rms)		100	65	50
Associated fuse rating (A)		100	125	160
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s				
Rated short-time withstand current 0.3s. I_{cw} (kA rms)		7	7	7
Short-circuit capacity (without protection)				
Rated short-time withstand current 1s. I_{cw} (kA rms)		4	4	4
Rated peak withstand current (kA peak)(6)		12	12	12
Connection				
Minimum Cu cable cross-section (mm^2)		10	10	10
Maximum Cu cable cross-section (mm^2)		70	70	70
Tightening torque min/max (Nm)		4 / 4.4	4 / 4.4	4 / 4.4
Mechanical characteristics				
Durability (number of operating cycles)		50 000	50 000	50 000
Operating effort - 3 pole device (Nm)		4	4	4
Operating effort - 4 pole device (Nm)		4.2	4.2	4.2
Weight of a 3 pole device (kg)		0.68	0.68	0.68
Weight of a 4 pole device (kg)		0.85	0.85	0.85

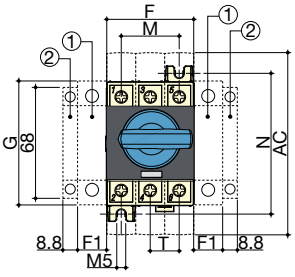
(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) One pole per polarity.
(3) 2 poles in series for the "+" and 1 pole for the "-".
(4) 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage U_e = 415 VAC.

Dimensions (mm)

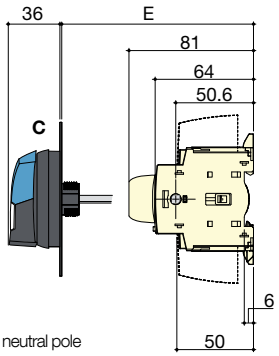
SIRCO M1 and M2 16 to 100 A

Direct operation with handle

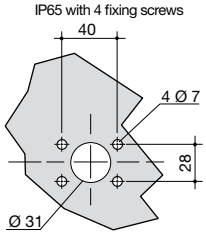




External front operation



Door drilling template



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.

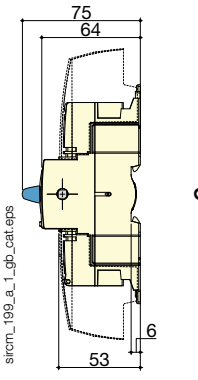
Note: max 2 additional blocks.

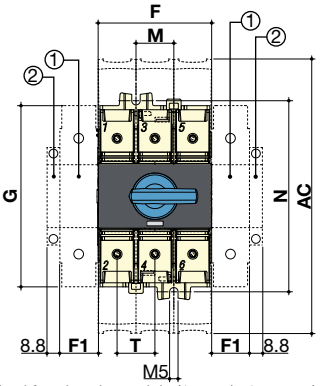
Rating (A) / Frame size	Overall dimensions				Terminal shrouds	Switch body				Switch mounting		Connection
	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
16 … 40 / M1	30	235	100	372	110	45	15	68	15	30	75	15
63 … 100 / M2	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5

For further detail and electronic file please consult product data sheet in www.socomec.com

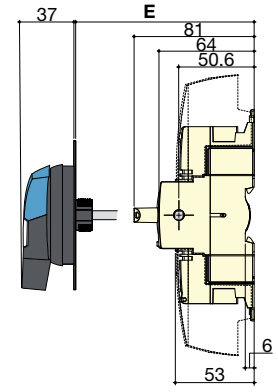
SIRCO M3 100 to 125 A

Direct operation with handle M01

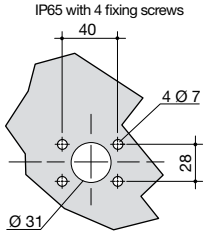




External front operation with handle S0



Door drilling template

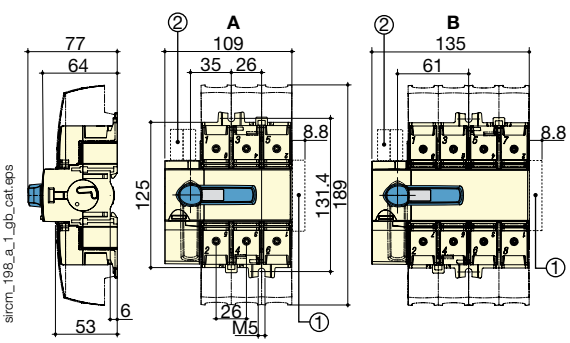


1. Location for: 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 protective earth module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

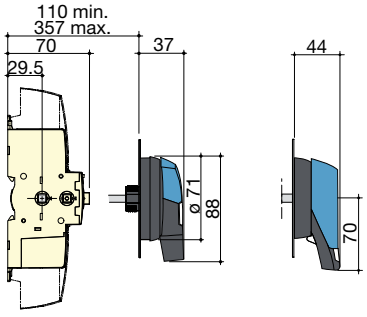
Rating (A) / Frame size	Overall dimensions				Terminal shrouds	Switch body				Switch mounting		Connection
	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
100 … 125 / M3	30	201	100	372	189	78	26	124.6	13	26	131.4	26

SIRCO MV 100 to 160 A

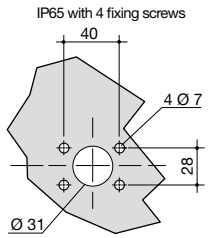
Direct front operation M0b



External front operation



Door drilling template



A. 3 poles
B. 4 poles

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

SIRCO

Load break switches for power distribution

125 to 3200 A

sirco_456_a_1.eps

***SIRCO** 3 x 250 A*
direct handle

The solution for

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

Strong points

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

Conformity to standards

> IEC 60947-3

Enclosures

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

combi_003_a_1_cat.eps

Function

SIRCO are manually operated multipolar load break switches.
They make and break under load conditions and provide safety isolation.
SIRCO are designed for 415 VAC and DC low voltage electrical circuits.

General characteristics

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

Advantages

Reliability and performance

The SIRCO's double breaking per pole, achieved through its sliding bar contact system, is a proven design that offers very high durability and short-circuit withstand.

Safety of property and personnel

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

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

Simplicity

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

- Easy to install.
- Lower stock management costs.

Easy to install

The SIRCO are easy to install thanks to:

- A good centre-to-centre distance (up to 120 mm).
- Connection up to 6x185 mm^2.
- Connection accessories which facilitate connection, both flat and edgewise connections.

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Innovative Power Solutions

References

Standard applications - Front operation - 3 & 4 pole

Rating (A) / Frame size	No. of poles	Switch body only[1]	Direct handle	External handle	Shaft for external handle	Auxiliary contact	Terminal shrouds	Cage terminals
125 A / B3	3 P	2600 **3014**	B1 type Black 2699 **5042** ■ [2]	S2 type Black IP55 1421 **2111**[2] Black IP65 1423 **2111**	200 mm 1400 **1020** 320 mm 1400 **1032** ■ [2]	1st contact NO/NC 2699 **0031** ■ 2nd contact NO/NC 2699 **0032**	3 P 2694 **3014** ■ [3] 4 P 2694 **4014** ■ [3]	3 P 2698 **3012**[3] 4 P 2698 **4012**[3]
	4 P	2600 **4014**						
160 A / B3	3 P	2600 **3017** ■						
	4 P	2600 **4017** ■	B2 type Black 2699 **5052** ■ [2]					
200 A / B4	3 P	2600 **3021**					3 P 2694 **3021** ■ [3] 4 P 2694 **4021** ■ [3]	3 P 5400 **3025**[3] 4 P 5400 **4025**[3]
	4 P	2600 **4021**						
250 A / B4	3 P	2600 **3026** ■						
	4 P	2600 **4026** ■						
315 A / B5	3 P	2600 **3032**					3 P 2694 **3051** ■ [3] 4 P 2694 **4051** ■ [3]	3 P 2698 **3050**[3] 4 P 2698 **4050**[3]
	4 P	2600 **4032**						
400 A / B5	3 P	2600 **3041**						
	4 P	2600 **4041**						
630 A / B5	3 P	2600 **3064** ■						
	4 P	2600 **4064** ■						
800 A / B6	3 P	2600 **3081** ■	C2 type Black 2799 **7012** ■ [2]	S4 type Black IP65 1443 **3111** ■ [2]	200 mm 1401 **1520** 320 mm 1401 **1532** ■ [2]		-	3 P 2698 **3080**[3] 4 P 2698 **4080**[3]
	4 P	2600 **4081** ■						
1000 A / B6	3 P	2600 **3099**						
	4 P	2600 **4099**						
1250 A / B7	3 P	2600 **3121** ■						3 P 2698 **3120**[3] 4 P 2698 **4120**[3]
	4 P	2600 **4121** ■						
1600 A / B7	3 P	2600 **3161**						
	4 P	2600 **4161**						
2000 A / B8	3 P	2600 **3200**		S5 type Black IP65 1453 **8111**[2]	200 mm 2799 **3015** 320 mm 2799 **3018**[2]			3 P 2698 **3200**[3] 4 P 2698 **4200**[3]
	4 P	2600 **4200**						
3200 A / B8	3 P	2600 **3320**						
	4 P	2600 **4320**						

(1) Device available enclosed, please consult us.
(2) Standard.
(3) Top or bottom.

For other specific application like

- Severe utilisation category AC23 690 VAC SIRCO AC from 200 to 4000 A
- 6 & 8 poles from 200 to 1600 A
- External right side operation up to 1800 A

Please consult www.socomec.com

Reference in **green** are new products. ■ Stock items.

Accessories

Direct operation handle

Direct operation handle

Frame size	No. of poles	Handle type	Handle colour	Reference
B3	3/4 P	B1	Black	2699 **5042** ■
B4...B5	3/4 P	B2	Black	2699 **5052** ■ (1)
B6...B8	3/4 P	C2	Black	2799 **7012** ■ (1)

(1) Standard.

B2 type handle

C2 type handle

Door interlocked external operation handle

Use

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

SIRCO external front operation handle

Frame size	No. of poles	Handle type	Handle colour	External IP(1)	Reference
B4 ... B5	3/4 P	S2	Black	IP55	1421 **2111** ■ (2)(3)
			Black	IP65	1423 **2111**
			Red	IP65	1424 **2111**
B6 ... B7	3/4 P	S4	Black	IP65	1443 **3111** ■ (2)(3)
B8	3/4 P	S5	Black	IP65	1453 **8111** (3)

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

S2 type handle

S4 type handle

S5 type handle

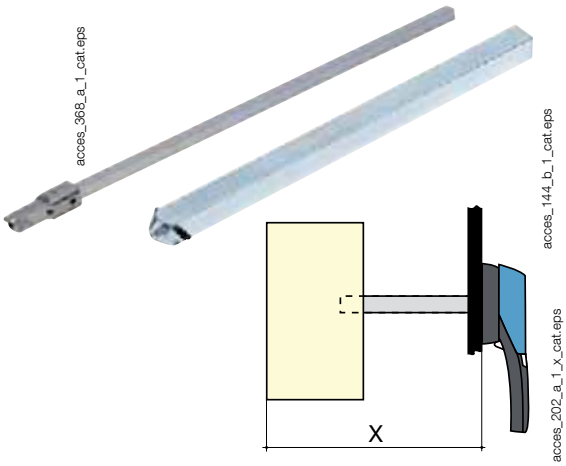
Shaft for external handle

Use

Standard shaft length:
- 200 mm
- 320 mm

Other lengths: please consult us.

Frame size	Dimension X (mm)	Length (mm)	Reference
B3	125 ... 250	200	1400 **1020**
	125 ... 370	320	1400 **1032** ■
B4	135 ... 265	200	1400 **1020**
	135 ... 385	320	1400 **1032** ■
B5	165 ... 295	200	1400 **1020**
	165 ... 415	320	1400 **1032** ■
B6...B7	221 ... 343	200	1401 **1520**
	221 ... 463	320	1401 **1532** ■
B8	415 ... 570	200	2799 **3015**
	415 ... 690	320	2799 **3018**



Auxiliary contact

Use

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

Characteristics

NO/NC AC: IP2 with front and side operation.

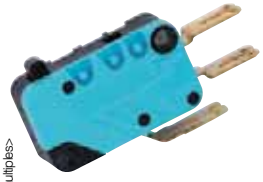
Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

Frame size	Position AC	NO/NC Reference	NO + NC Reference	NO/NC low level Reference
B3 ... B8	1st	2699 **0031** ■	2699 **0141**	2699 **0301** ■
B3 ... B8	2nd	2699 **0032**		



Characteristics

Frame size	Contact type	Nominal current (A)	Operating current I_e (A) 230 VAC AC-12	230 VAC AC-13/15	400 VAC AC-12	400 VAC AC-13/15	24 VDC DC-12	24 VDC DC-13	24 VDC DC-14	48 VDC DC-12	48 VDC DC-13	48 VDC DC-14
B3 ... B8	NO/NC	16	16	4	12	3	2.5	2.5	1	2.5	1.2	0.2

Reference in **green** are new products. ■ Stock items.

Inter phase barrier

Use

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

Frame size	No. of poles	Reference
B3	3 P	2998 **0033**
B3	4 P	2998 **0034**
B4	3 P	2998 **0023**
B4	4 P	2998 **0024**
B5	3 P	2998 **0013**
B5	4 P	2998 **0014**
B6 … B8	3 P	included
B6 … B8	4 P	included

Terminal shrouds

Use

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

Advantage

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

Frame size	No. of poles	Position	Reference
B3	3 P	top or bottom	2694 **3014** ■
B3	4 P	top or bottom	2694 **4014** ■
B4	3 P	top or bottom	2694 **3021** ■ (1)
B4	4 P	top or bottom	2694 **4021** ■ (2)
B5	3 P	top or bottom	2694 **3051** ■ (1)
B5	4 P	top or bottom	2694 **4051** ■ (2)

(1) Reference includes 3 parts for top or bottom protection.
(2) Reference includes 4 parts for top or bottom protection.

Cage terminals

References

Frame size	Tightening capacity (mm²)	No. of poles	Tightening torque (Nm)	Flexible bar width (mm)	Reference
B3	16 … 95	3 P	14	13	5400 **3016**
B3	16 … 95	4 P	14	13	5400 **4016**
B4	16 … 185	3 P	25	18	5400 **3025**
B4	16 … 185	4 P	25	18	5400 **4025**
B5	50 … 240	3 P	45	20	5400 **3040**
B5	50 … 240	4 P	45	20	5400 **4040**
B5	70 … 300	3 P	45	24	5400 **3063**
B5	70 … 300	4 P	45	24	5400 **4063**

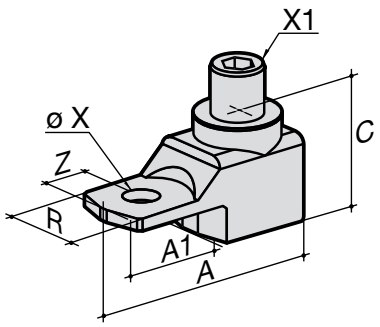
Dimensions

Frame size / Rating (A)	A	A1	C	E	R	T	ØX	X1	Z
B3	47.5	22.5	25	12	20	3.5	8.5	M12	10
B4	62	31.5	31.5	16.5	25	2.5	10.5	M16	14
B5 / 315 … 400	71.5	32	38	9	32	5	10.5	M20	15
B5 / 500 … 630	76.5	37	38	9	40	5	12.5	M20	15

Use

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

Material: tin-plated aluminium.



Reference in **green** are new products. ■ Stock items.

Accessories (continued)

Copper bar connection kits

Use

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

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

Bolt sets must be ordered separately.

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

Fig. 1

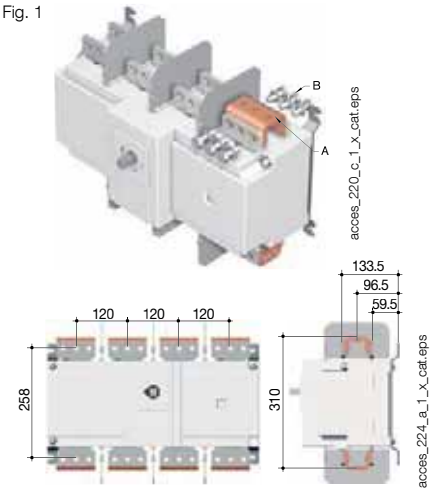
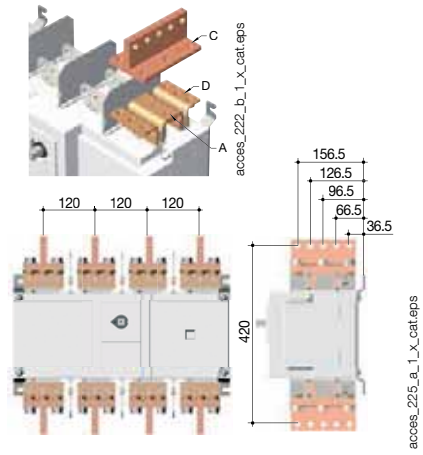


Fig. 2



Top or bottom flat connection - Fig. 1

Frame size / Rating (A)	Piece	Quantity to order per pole(1)	Reference
B8 / 2000 … 2500	Connection - part A	1	2619 **1200**
B8 / 2000 … 2500	Bolt set - part B	1	2699 **1200**
B8 / 3200	Connection - part A		included
B8 / 3200	Bolt set - part B	1	2699 **1200**

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

Top or bottom edgewise connection - Fig. 2

Frame size / Rating (A)	Piece	Quantity to order per pole(1)	Reference
B8 / 2000 … 2500	Connection - part A	1	2619 **1200**
B8 / 2000 … 2500	T piece - part C	1	2629 **1200**(2)
B8 / 2000 … 2500	Bracket- part D	1	2639 **1200**(2)
B8 / 3200	Connection - part A		included
B8 / 3200	T piece - part C	1	2629 **1200**
B8 / 3200	Bracket- part D	1	2639 **1200**

(1) Example for a 3 pole device equipped upstream only: Order 3 times the indicated quantities.
(2) Bolt set is provided with the accessories.

Handle key interlocking accessories

Use

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

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

For 6/8 pole: Please consult us

Locking using RONIS EL11AP lock (not supplied)

Frame size	Operation	Figure	Reference
B3 … B5	front direct	1	2699 **6008**(1)
B6 … B8	front direct	2	2699 **6027**
B3 … B7	external front	3	1499 **7701**

Fig. 1

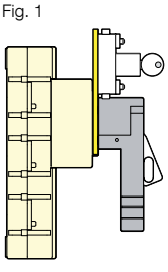


Fig. 2

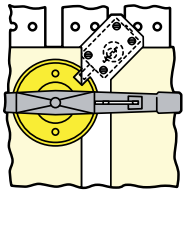
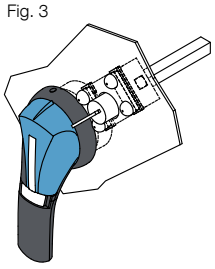


Fig. 3



Other specific accessories

- > Alternative S-type handle cover colours
- > S-type handle adaptater
- > Shaft guide for external operation
- > Distribution block
- > Cage terminals
- > Locking using CASTELL lock (not supplied)
- > Mechanical coupling device for making switches with “n” poles of the same or different ratings
- > Mechanical interlocking device

Reference in **green** are new products. ■ Stock items.

Characteristics according to IEC 60947-3

125 to 800 A

Thermal current I_{th} at 40°C		**125 A**	**160 A**	**200 A**	**250 A**	**315 A**	**400 A**	**630 A**	**800 A**
Frame size		**B3**	**B3**	**B4**	**B4**	**B5**	**B5**	**B5**	**B6**
Rated insulation voltage U_i (V)		800	800	800	800	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	12	12	12	12
Rated operational currents I_e (A)									
Rated voltage	**Utilisation category**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**
415 VAC	AC-20 A / AC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	630/630	800/800
415 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	630/630	800/800
415 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	250/250	315/315	400/400	630/630	800/800
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	800/800
220 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	630/630	800/800
220 VDC	DC-21 A / DC-21 B	125/125	160/160	160/200	250/250	315/315	400/400	630/630	800/800
220 VDC	DC-22 A / DC-22 B	125/125	160/160	160/200	250/250	315/315	400/400	500/500	800/800
220 VDC	DC-23 A / DC-23 B	125/125	125/125	160/160	200/200	315/315	400/400	500/500	800/800
440 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	630/630	800/800
440 VDC	DC-21 A / DC-21 B	125[3]/125[3]	160[3]/160[3]	160[3]/200[3]	200[3]/200[3]	315[3]/315[3]	400[3]/400[3]	500[3]/500[3]	800[4]/800[4]
440 VDC	DC-22 A / DC-22 B	125[3]/125[3]	125[3]/125[3]	160[3]/160[3]	200[3]/200[3]	315[3]/315[3]	400[3]/400[3]	500[3]/500[3]	800[4]/800[4]
440 VDC	DC-23 A / DC-23 B	125[4]/125[4]	125[4]/125[4]	160[4]/160[4]	200[4]/200[4]	315[4]/315[4]	400[4]/400[4]	500/500	800[4]/800[4]
500 VDC	DC-20 A / DC-20 B	125/125	160/160	200/200	250/250	315/315	400/400	630/630	800/800
500 VDC	DC-21 A / DC-21 B	125[3]/125[3]	125[3]/125[3]	160[3]/200[3]	200[3]/200[3]	315[3]/315[3]	400[3]/400[3]	500[3]/500[3]	800[4]/800[4]
500 VDC	DC-22 A / DC-22 B	125[4]/125[4]	125[4]/125[4]	160[4]/160[4]	200[4]/200[4]	315[4]/315[4]	315[4]/400[4]	500[4]/500[4]	800[4]/800[4]
500 VDC	DC-23 A / DC-23 B	125[4]/125[4]	125[4]/125[4]	160[4]/160[4]	200[4]/200[4]	315[4]/315[4]	315[4]/400[4]	500[4]/500[4]	800[4]/800[4]
Operational power in AC-23 A (kW) [1][5]									
At 415 VAC without pre-break in AC[1]		63/63	80/80	100/100	132/132	160/160	220/220	280/280	450/450
Reactive power (kvar)									
At 400 VAC (kvar)[5]		55	75	90	115	145	185	290	365
Fuse protected short-circuit withstand (kA rms prospective)[6]									
Prospective short-circuit current (kA rms)		100	100	80	50	100	100	70	50
Associated fuse rating (A)		125	160	200	250	315	400	630	800
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s									
Rated short-time withstand current 0.3s. I_{cw} (kA rms)		15	15	17	17	25	25	25	50
Short-circuit capacity (without protection)									
Rated short-time withstand current 1s. I_{cw} (kA rms)		7	7	9	9	13	13	13	26
Rated peak withstand current (kA peak)[6][7]		20	20	30	30	45	45	45	55
Connection									
Minimum Cu cable cross-section (mm^2)		35	50	70	95	150	185	2 x 150	2 x 185
Minimum Cu busbar cross-section (mm^2)		-	-	-	-	-	-	2 x 30 x 5	2 x 40 x 5
Maximum Cu cable cross-section (mm^2)		50	95	95	150	240	240	2 x 300	2 x 300
Maximum Cu busbar width (mm)		25	25	32	32	40	40	50	63
Tightening torque min/max (Nm)		9/-	9/-	20/-	20/-	20/-	20/-	20/-	40/45
Mechanical characteristics									
Durability (number of operating cycles)		10000	10000	10000	10000	10000	10000	10000	3000
Operating effort (Nm)		6.5	6.5	10	10	10	14.5	14.5	37
Weight of a 3 pole device (kg)		0.9	0.9	1.42	1.42	3.5	3.5	3.5	9.5
Weight of a 4 pole device (kg)		1.5	1.5	2	2	4.5	4.5	4.5	11.5

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) With terminal shrouds or phase barrier.
(3) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-".
(4) 4-pole device with 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage U_e = 415 VAC.
(7) For coordination tables with circuit-breakers, please consult us.

Characteristics according to IEC 60947 (continued)

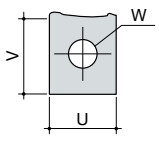
1000 to 3200 A

Thermal current I_{th} at 40°C		**1000 A**	**1250 A**	**1600 A**	**2000 A**	**3200 A**
Frame size		**B6**	**B7**	**B7**	**B8**	**B8**
Rated insulation voltage U_i (V)		1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)		12	12	12	12	12
Rated operational currents I_e (A)						
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	1000/1000	1250/1250	1600/1600	2000/2000	3200/3200
415 VAC	AC-21 A / AC-21 B	1000/1000	1250/1250	1600/1600	2000/2000	3200/3200
415 VAC	AC-22 A / AC-22 B	1000/1000	1250/1250	1600/1600	2000/2000	2500/3200
415 VAC	AC-23 A / AC-23 B	1000/1000	1250/1250	1250/1250	1600/1600	1600/1600
220 VDC	DC-20 A / DC-20 B	1000/1000	1250/1250	1600/1600	2000/2000	3200/3200
220 VDC	DC-21 A / DC-21 B	1000/1000	1250/1250	1250/1600	2000/2000	2000/2500
220 VDC	DC-22 A / DC-22 B	1000/1000	1250/1250	1250/1250	1250/1600	1250/1600
220 VDC	DC-23 A / DC-23 B	1000/1000	1250/1250	1250/1250	1250/1250	1250/1250
440 VDC	DC-20 A / DC-20 B	1000/1000	1250/1250	1600/1600	2000/2000	3200/3200
440 VDC	DC-21 A / DC-21 B	1000(4)/1000(4)	1250(4)/1250(4)	1250(4)/1600(4)	2000(4)/2000(4)	2500(4)/3200(4)
440 VDC	DC-22 A / DC-22 B	1000(4)/1000(4)	1250(4)/1250(4)	1250(4)/1250(4)	1250(4)/1250(4)	1250(4)/1250(4)
440 VDC	DC-23 A / DC-23 B	1000(4)/1000(4)	1250(4)/1250(4)	1250(4)/1250(4)	1250(4)/1250(4)	1250(4)/1250(4)
500 VDC	DC-20 A / DC-20 B	1000/1000	1250/1250	1600/1600	2000/2000	3200/3200
500 VDC	DC-21 A / DC-21 B	1000(4)/1000(4)	1250(4)/1250(4)	1250(4)/1600(4)	1250(4)/1250(4)	1250(4)/1250(4)
500 VDC	DC-22 A / DC-22 B	1000(4)/1000(4)	1250(4)/1250(4)	1250(4)/1250(4)	1250(4)/1250(4)	1250(4)/1250(4)
500 VDC	DC-23 A / DC-23 B	1000(4)/1000(4)	1250(4)/1250(4)	1250(4)/1250(4)	1000(4)/1000(4)	1000(4)/1000(4)
Operational power in AC-23 A (kW) (1)(5)						
At 415 VAC without pre-break in AC(1)		560/560	710/710	710/710	710/710	710/710
Reactive power (kvar)						
At 400 VAC (kvar)(5)		460				
Fuse protected short-circuit withstand (kA rms prospective)(6)						
Prospective short-circuit current (kA rms)		100	100	100	100	
Associated fuse rating (A)		1000	1250	2 x 800	2 x 1000	
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s						
Rated short-time withstand current 0.3s. I_{cw} (kA rms)		65	100	100	100	100
Short-circuit capacity (without protection)						
Rated short-time withstand current 1s. I_{cw} (kA rms)		35	50	50	50	50
Rated peak withstand current (kA peak)(6)(7)		80	110	110	110	120
Connection						
Minimum Cu cable cross-section (mm^2)		2 x 240				
Minimum Cu busbar cross-section (mm^2)		2 x 50 x 5	2 x 60 x 5	2 x 80 x 5	3 x 100 x 5	4 x 100 x 5
Maximum Cu cable cross-section (mm^2)		4 x 185	4 x 185	6 x 185		
Maximum Cu busbar width (mm)		63	100	100	100	100
Tightening torque min/max (Nm)		40/45	40/45	40/45	40/45	40/-
Mechanical characteristics						
Durability (number of operating cycles)		3000	4000	4000	3000	3000
Operating effort (Nm)		37	56	56	75	75
Weight of a 3 pole device (kg)		9.5	12	12	22	22
Weight of a 4 pole device (kg)		11.5	15	15	25	25

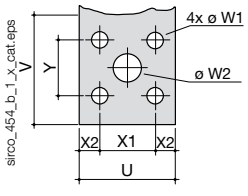
(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) With terminal shrouds or phase barrier.
(3) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-".
(4) 4-pole device with 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage U_e = 415 VAC.
(7) For coordination tables with circuit-breakers, please consult us.

Connection terminal

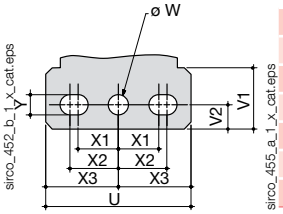
125 to 630 A



800 to 1000 A



1250 to 3200 A

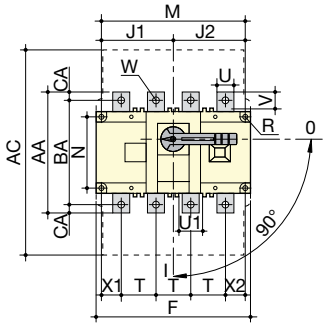


Rating (A)	**U**	**V**	**V1**	**V2**	**W**	**W1**	**W2**	**X1**	**X2**	**X3**	**Y**
125 … 160	20	25	-	-	9	-	-	-	-	-	-
200 … 250	25	21.5	-	-	11	-	-	-	-	-	-
315 … 400	32	29	-	-	11	-	-	-	-	-	-
500	32	29	-	-	13	-	-	-	-	-	-
630	45	41.5	-	-	13	-	-	-	-	-	-
800 … 1000	50	60.5	-	-	-	9	16	28.5	11		33
1250 … 3200	90	-	35.8	15	12.5	-	-	25	30	45	12.5

Dimensions (mm)

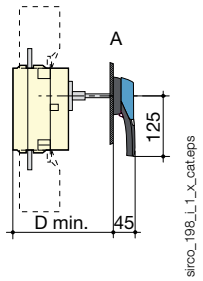
B3 to B5

Direct front operation



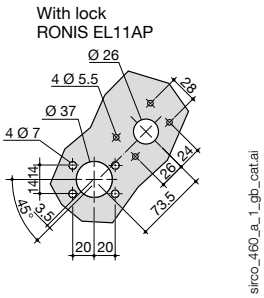
1. Terminal shrouds

External front operation



A. S2 type handle

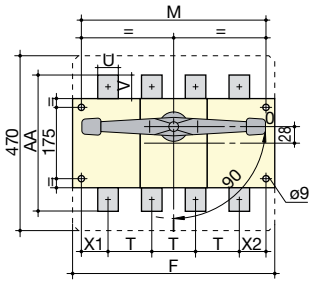
Door driling template



Frame size / Rating (A)	Overall dimensions C	Overall dimensions D min	Terminal shrouds AC	Terminal shrouds AD	Switch body F 3p.	Switch body F 4p.	Switch body G	Switch body H	Switch body J1 3p.	Switch body J1 4p.	Switch body J2	Switch body K	Switch body BC	Switch mounting M 3p.	Switch mounting M 4p.	Switch mounting N	Switch mounting R	Connection T	Connection U	Connection U1	Connection V	Connection W	Connection X1 3p.	Connection X1 4p.	Connection X2	Connection Y	Connection Z	Connection AA	Connection BA	Connection CA
B3	115	125	235	50	140	170	93	65	45	75	75	31.5	80	120	150	65	5.5	36	20	20.5	25	9	28	22	20	3.5	20.5	135	115	10
B4			280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	20	25.5	21.5	11	33	33	27	3.5	22.5	160	130	15
B5	160	165	401	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	32	45.5	29	11	42.5	37.5	37.5	5	36	235	205	15
B5 / 630																			45		41.5	13						260	220	20

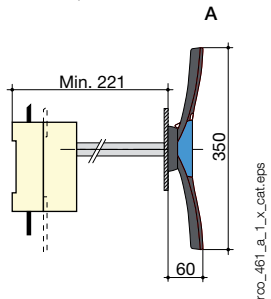
B6 to B7

External front operation



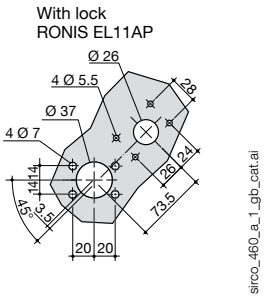
1. Écrans de protection de borne

External front operation



A. Poignée double bras type S4

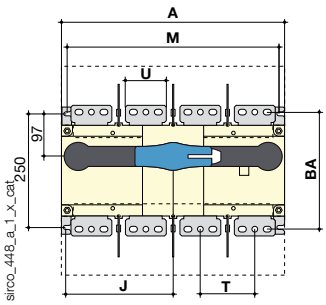
Door driling template

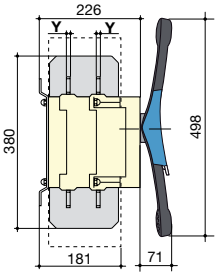


Frame size	Switch body F 3p.	Switch body F 4p.	Switch mounting M 3p.	Switch mounting M 4p.	Connection T	Connection U	Connection V	Connection Y	Connection X1	Connection X2	Connection Z	Connection AA
B6	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321
B7	372	492	347	467	120	90	44	8	53.5	53.5	47.5	288

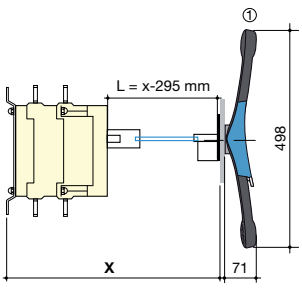
2000 to 3200 A - B8

Direct front operation



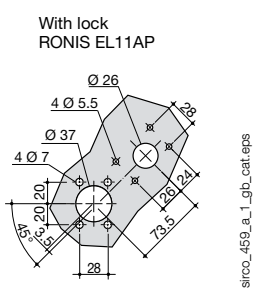


External front operation



1. Double lever S5 type handle

Door driling template



Frame size	Overall dimensions A 3p.	Overall dimensions A 4p.	Switch body J 3p.	Switch body J 4p.	Switch mounting M 3p.	Switch mounting M 4p.	Connection T	Connection U	Connection Y	Connection BA
B8	372	492	173.5	233.5	347	367	120	90	8	258

SIRCO PV IEC 60947-3

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

The solution for

- Combiner box
- Recombiner box
- Inverter

Strong points

- Patented switching technology up to 500 VDC/pole
- Positive break indication
- Up to 1500 VDC as per characteristics by IEC 60947-3
- Up to 4 branch circuits per switch

Conformity to standards

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

(1) See page 32.

Approvals and certifications(1)

(1) Product reference on request.

Function

SIRCO PV are manually operated multipolar load break switches.
Making and breaking capacity under load conditions up to 1500 VDC.
These extremely durable switches have been tested and approved for use in the most demanding applications.
They have been designed and tested for all types of applications: earthing, floating or bipolar.

Advantages

Optimiseyour investment

- Thanks to a reduced number of bridging bars, you can limit your costs and save mounting time.
- A 2 pole SIRCO PV will reduce warming and can be placed in a smaller enclosure.

High quality materials

SIRCO PV is an extremely robust device in a glass fibre reinforced polyester frame.
This material provides:

- high mechanical strength,
- stability to temperature variations (RTI of 130°C),
- high dielectric strength (high CTI / tested as per standard ASTM D 2303).

Take advantage of an innovative design

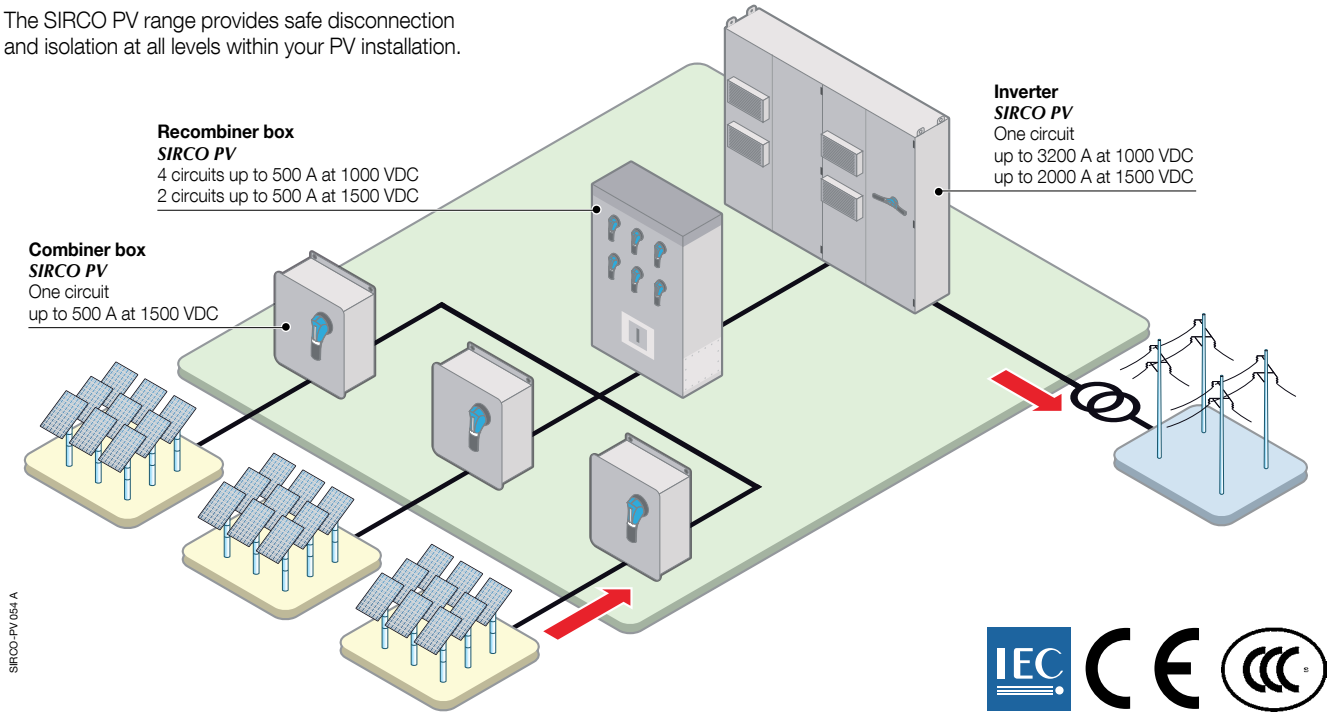
The SIRCO PV can be directly connected to up to four independent PV panel strings. The global solution cost is therefore reduced in comparison with the use of four distinct switches.

Reliability and performance

Our range of SIRCO PV load break switches is compliant to standards UL98B and IEC 60947-3.
SIRCO PV have been tested to critical currents and at a 10 kA short-circuit during 50 ms without specific protection. The type of cable protection against voltage surges can therefore be selected.

Typical PV architecture / The SOCOMEC solutions

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



References

Back plate mounting

Rating (A)	Frame size	Number of poles	Switch body	Direct handle	External handle	Shaft for external handle	Quantity to be ordered to connect 2 poles in series
1000 VDC - 1 PV circuit							
100 A	B4	2 P	26PV **2010**	J1 type Black 1112 **1111**	S2 type (1) Black IP55 1421 **2111** Black IP65 1423 **2111**	200 mm 1400 **1020** 320 mm 1400 **1032** ■	-
160 A	B4	2 P	26PV **2016**				
250 A	B4	2 P	26PV **2025**				
315 A	B4	2 P	26PV **2031**				
400 A	B4	4 P	26PV **4040**				2x 2609 **0025**
630 A	B5	4 P	26PV **4063**				1x 2609 **0080**
800 A	B5	4 P	26PV **4080**				
1250 A	B6	4 P	26PV **4120**	C2 type Black 2799 **7012** ■	S4 type (1) Black IP65 1443 **3111** ■	200 mm 1401 **1520** 320 mm 1401 **1532** ■	1x 2609 **1100**
2000 A	B7	4 P	26PV **4200**				2x 2609 **1200**
3200 A	B8	4 P	consult us				
1500 VDC - 1 PV circuit							
275 A	B5	3 P	27PV **3026**	J2 type Black 1122 **1111**	S2 type (1) Black IP55 1421 **2111** Black IP65 1423 **2111**	200 mm 1400 **1020** 320 mm 1400 **1032** ■	1x 2709 **0027**
400 A	B5	3 P	27PV **3032**				1x 2709 **0045**
500 A	B5	3 P	27PV **3039**				

(1) Defeatable handle.

Multiples circuits

> For applications 2 PV Circuits and 4 PV Circuits

Please consult www.socomec.com

Reference in **green** are new products. ■ Stock items.

Accessories

Direct operation handle

Frame size	Handle type	Handle colour	Reference
B4 ... B7	J1 type	Black	1112 **1111**
B6 ... B7	C2 type	Black	2799 **7012** ■

J1 type handle

C2 type handle

Door interlocked external operation handle

Use

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

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

Example

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

Opening the door when the switch is on "ON" position is possible by defeating the locking function using a tool (authorised persons only).

The interlocking function is restored when the door is re-closed.

Front operation

Frame size	Handle type	Handle colour	Degree of protection	Reference
B4 ... B5	S2	Black	IP65	1423 **2111**
B6 ... B7	S4	Black	IP65	1443 **3111** ■

Reinforced S2 type handle

S4 type handle

V1 type handle

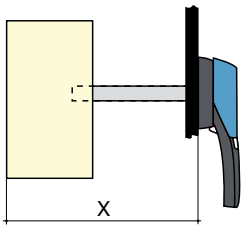
Shaft for external handle

Use

Standard lengths:
- 200 mm,
- 320 mm.

Other lengths: Please consult us.

Frame size	Handle type	Dimension Y (mm)	Length (mm)	Reference
B4	S2	150 ... 295	200	1400 **1020**
B4	S2	150 ... 415	320	1400 **1032** ■
B5	S2	203 ... 328	200	1400 **1020**
B5	S2	203 ... 448	320	1400 **1032** ■
B6	S4	220 ... 343	200	1401 **1520**
B6	S4	220 ... 463	320	1401 **1532** ■
B7	S4	305 ... 366	200	1401 **1520**
B7	S4	305 ... 485	320	1401 **1532** ■



Auxiliary contact

Use

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

Characteristics

NO/NC AC: IP2 with front operation.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

NO/NC changeover auxiliary contacts

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO/NC	2699 **0031** ■
B4 ... B7	2 contacts	NO/NC	2699 **0032**

Low level NO/NC auxiliary contacts

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO/NC	2699 **0301** ■

Reference in **green** are new products. ■ Stock items.

Accessories (continued)

Bridging bars for connecting poles in series

Use

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

(1) Other connections: refer to mounting instructions.

Frame size	Rating (A)	Quantity to be ordered to connect 2 poles in series	Fig.	Reference
1000 VDC - 1 PV circuit				
B4	100	-(1)	-	-(1)
B4	160	-(1)	-	-(1)
B4	250	-(1)	-	-(1)
B4	315	-(1)	-	-(1)
B4	400	2	1	2609 **0025**
B4	500	2	1	2609 **0025**
B5	630	1	2	2609 **0080**
B5	800	1	2	2609 **0080**
B6	1250	1	3	2609 **1100**
B7	2000	1	3	2609 **1200**
B8	3200			Please consult us
1500 VDC - 1 PV circuit				
B5	275	1	5	2709 **0027**
B5	315	1	5	2709 **0027**
B5	400	1	4	2709 **0045**
B5	500	1	4	2709 **0045**

(1) Bridging bars not needed.

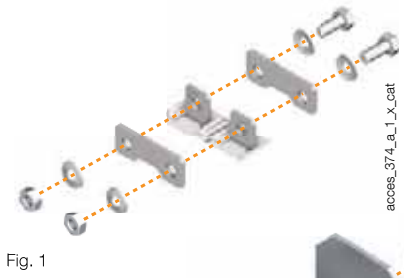


Fig. 1

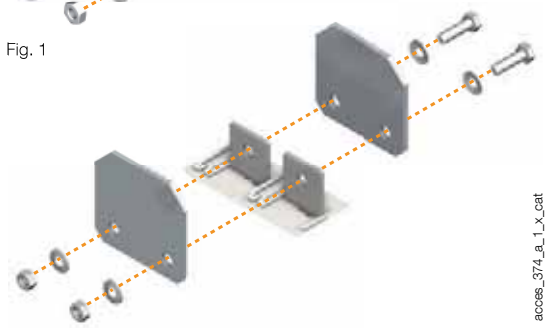


Fig. 2

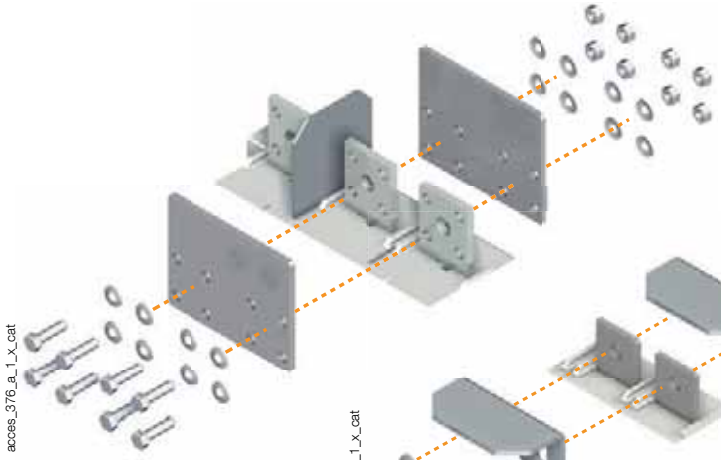


Fig. 3

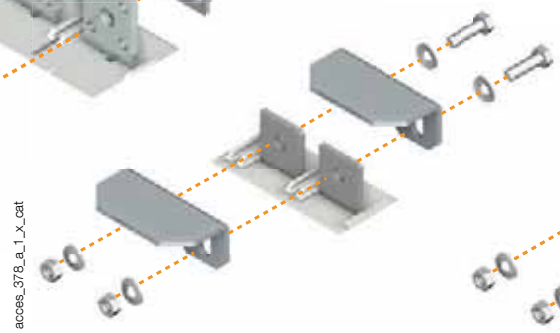


Fig.4

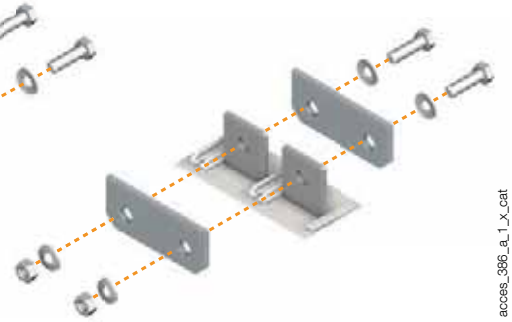
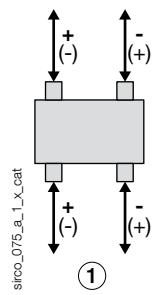


Fig. 5

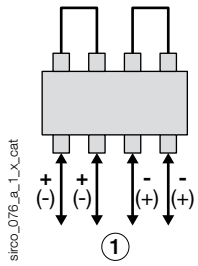
Pole connections in series

1000 VDC

B4-B5 - 2P

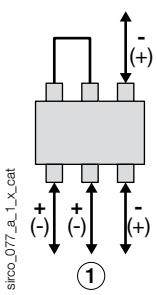


B4-B8 - 4P



1500 VDC

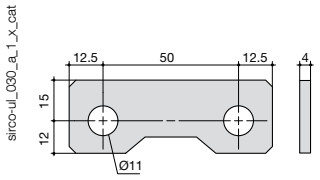
B5 - 3P



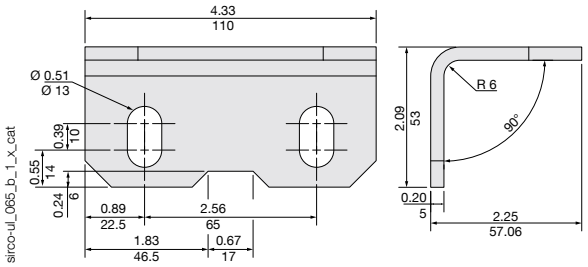
Reference in **green** are new products. ■ Stock items.

Bridging bars (in/mm)

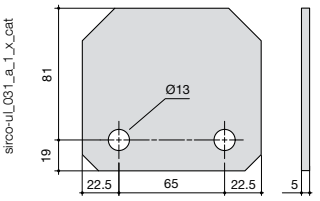
B4 - 2609 0025



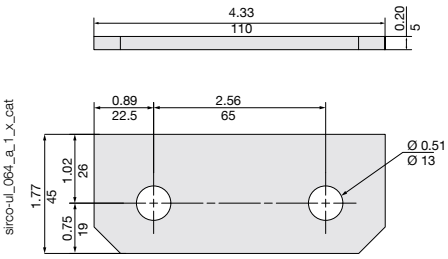
B5 - B5DS - 2709 0045



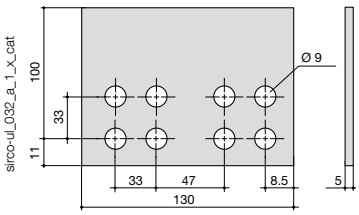
B5 - 2609 0080



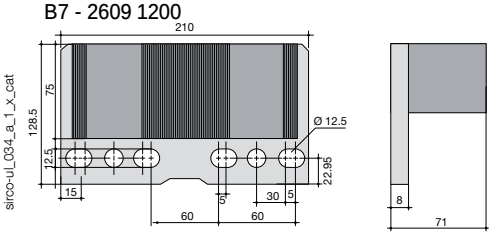
B5 - 2709 0027



B6 - 2609 1100



B7 - 2609 1200



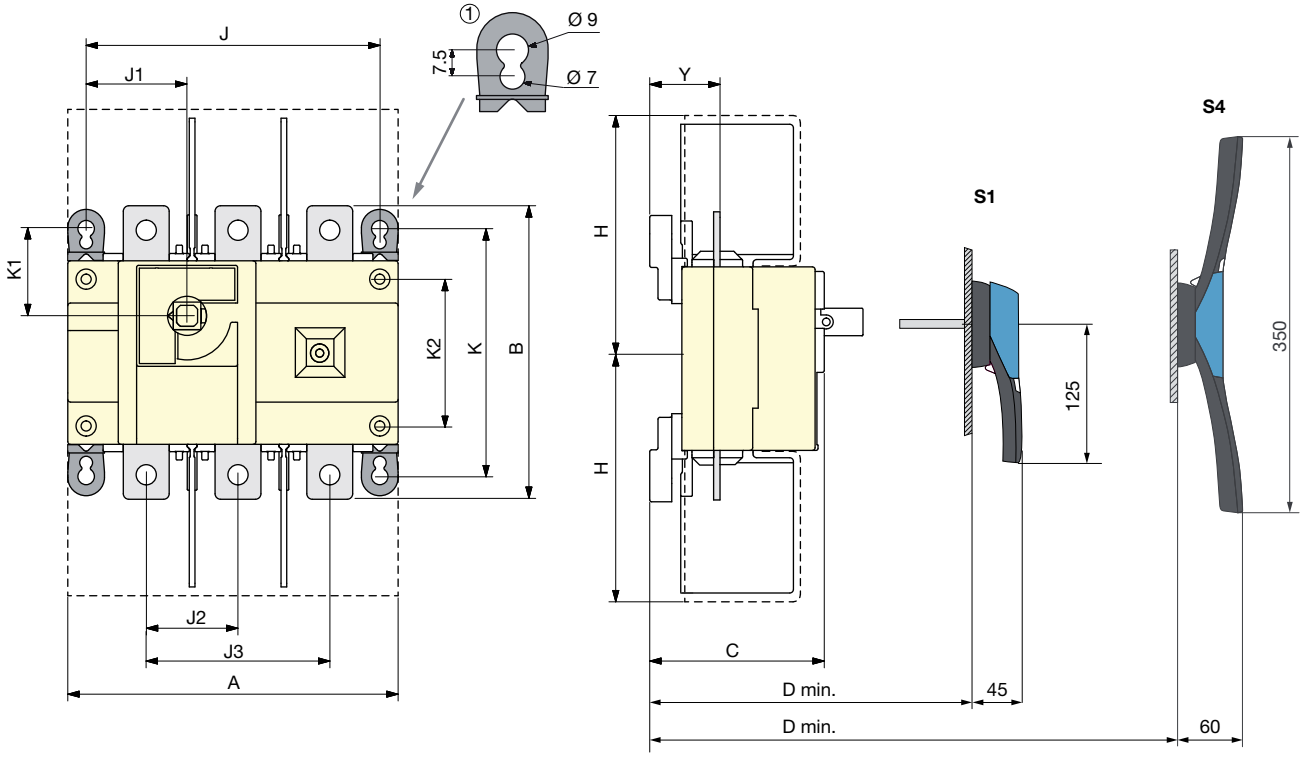
Characteristics

Characteristics according to IEC 60947-3

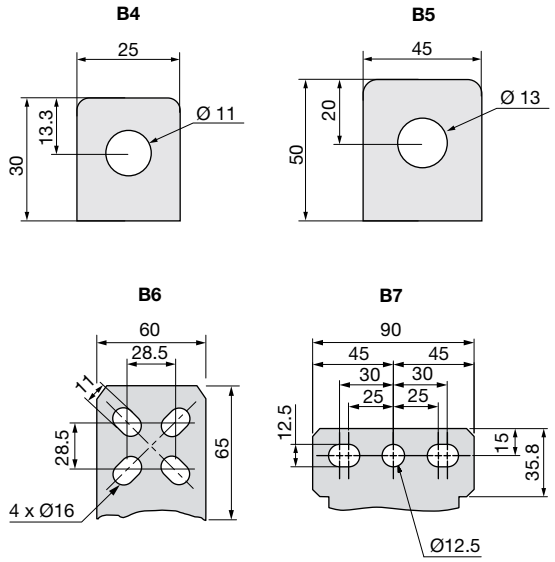
Rated current I_n	**100 A**	**160 A**	**250 A**	**275 A**	**315 A**	**400 A**	**500 A**	**630 A**	**800 A**	**1250 A**	**2000 A**	**3200 A**
Thermal current at 40°C (A)	**100**	**160**	**250**	**275**	**315**	**400**	**500**	**630**	**800**	**1250**	**2000**	**3200**
Thermal current at 50°C (A)	**100**	**160**	**250**	**275**	**315**	**400**	**500**	**630**	**800**	**1250**	**1850**	**3200**
Thermal current at 60°C (A)	**100**	**160**	**250**	**275**	**315**	**400**	**500**	**560**	**650**	**1125**	**1600**	**2700**
Rated insulation voltage U_i (V)	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	-
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12	12	12	12	12	-
Rated operational current I_e (A) - Utilisation category DC21B												
Rated Voltage	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**	**(A)**
1000 VDC - Frame size / Nb of poles of the device	B4/2P	B4/2P	B4/2P	B5/2P	B4/2P	B4/4P	B5/3P	B5/4P	B5/4P	B6/4P	B7/4P	B8/4P
1000 VDC - I_e (A)	100	160	250	275	315	400	500	630	800	1250	2000	3200
1500 VDC - Frame size / Nb of poles of the device	-	-	-	B5/3P	-	B5/3P	B5/3P	-	-	-	-	-
1500 VDC - I_e (A)	-	-	-	275	-	400	500	-	-	-	-	-
Short-circuit capacity (without protection)												
Rated short-time withstand current 0.3 s. (kA eff)	10	10	10	10	10	-	-	-	-	-	-	-
Rated short-time withstand current 1 s. (kA eff)	5	5	5	5	5	10	10	10	10	10	10	10
Connection												
Maximum Cu rigid cable cross-section (mm^2)	35	70	120	185	185	240	2x150	2x185	2x240	2x240	-	-
Maximum Cu busbar width (mm)	32	32	32	32	32	32	32	40	50	63	100	4 x 100 x 5
Tightening torque min (Nm)	20	20	20	20	20	20	20	40	40	40	40	40
Tightening torque max (Nm)	26	26	26	26	26	26	26	40	45	45	45	45
Mechanical characteristics												
Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	5 000	5 000	5 000	5 000	4 000	4000	2000
Operating effort (Nm)	10	10	10	10	10	10	10	14,5	14,5	37	56	75
Weight of a 2 pole device (kg)	1.46	1.46	1.46	-	1.46	-	-	-	-	-	-	-
Weight of a 3 pole device (kg)	-	-	-	3.5	3.5	3.5	3.5	-	-	-	-	-
Weight of a 4 pole device (kg)	2	2	2	-	4,3	2,3	2,3	4.5	4.5	11.5	15	25

Dimensions (mm)

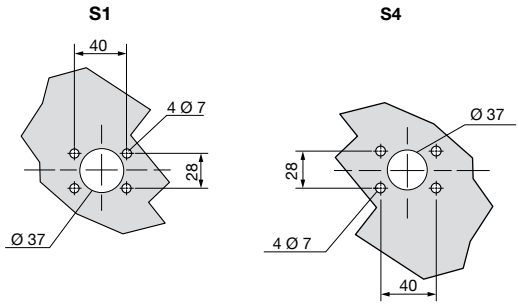
Frame size B4-B5



Connection terminal



Door driling template



Frame size	No. of poles	A	B	C	D min.	H	J	J1	J2	J3	K	K1	K2	Y
B4	2 P	180	160	95	125	132.5	160	55	-	100	135	48	80	38.5
B4	4 P	230	170	79	125	132.5	210	105	50	-	-	-	80	22.5
B5	2 P	230	260	128	165	203	210	75	-	130	195	67.5	80	53
B5	3 P	230	260	126.5	165	203	210	75	65	-	195	67.5	80	51.5
B5	4 P	290	260	126.5	165	203	270	135	65	-	195	67.5	80	51.5
B6	4 P	630	340	139	221	270	335	167.5	80	160	175	59.5	-	46.5
B7	4 P	513	288	200	221	302	467	233.5	120	240	250	97	-	107.5

Load break switches

for specific applications

Despite already offering a wide range of load break switches, SOCOMEC also manufactures specific products suitable for all your requirements. Some of these products can be seen on these two pages, however this list does not include them all. Please, feel free to consult us.

Conformity to standards

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

SIRCO range with overrated neutral

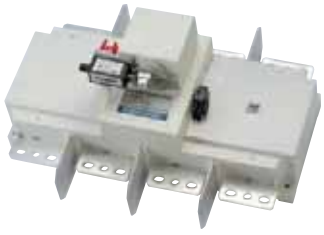
sirco_255_a_1_cat

- From 125 to 1800 A.
- Overrated neutral.
- Against the 3rd order harmonics which are combined in the neutral.

SIRCO 3 x 250 A with neutral at 400 A.

SIRCO for earthing

sirco_363_a_2_cat



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

SIRCO HW high short-circuit performance

sirco_353_a_1_cat

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

SIDERMAT remotely trippable switch

sirco_066_a_1_cat

- Shunt trip coil AC/DC.
- Undevoltage coil AC/DC.

SIRCO AC for 690 and 1000 V network

sirco_256_a_1_cat

- 690 VAC - AC23. from 200 to 400 A.
- 1000 VAC - AC22. 200 and 400 A.

SIDER public distribution

sider_102_a_1_cat

- From 125 to 1600 A safety thanks to visible breaking.

socomec Innovative Power Solutions

SIRCO PV up to 4 PV circuits

svr-pv_003_a_1_cat

- SIRCO PV for 3 and 4 circuits enables connection of 4 independents PV panel strings to a simple switch.
- Up to 500 A - 1000 VDC.
- IEC 60947-3 and UL98B.

SIRCO M UL508

sircm_132_a_2_cat

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

SIRCO V UL489

sirco_092_a_1_cat

- Positive break indication.
- Fully visualised disconnection.
- 3 poles.
- 3 poles + neutral.
- Direct or external operation handle.

SIRCO UL508

sirco_ul_022_b_1_cat

- Positive break indication.
- Fully visualised disconnection.
- Hight thermal and dynamic withshand.
- Severe utilisation categories.
- High electrical and mechanical endurance.

SIRCO MOT PV

atysm_213_a_1_cat

- Up to 1000 VDC from 250 to 3200 A.
- Patented switching technology.
- Remotely operated product (motor control).
- Positive break indication.
- 2 stable positions (I, 0).

SIRCO MOT AT

sirco_310_b

- Motorised multipolar load break switches from 125 to 3200 A.
- One auxiliary contact per position as standard.
- Positive break indication.
- AUTO/MANU selector.
- Manual emergency operation.
- Padlocking in position 0
- (in position I optional).

Selection guide

Fuse protection

Which application? ▶ Which type of operation?

	Industry
	FUSERBLOC BS88 NFC/DIN **20 to 1250 A** *p. 36*
Applications	
Transformer output	
Distribution panels	
Main switchboards	•
Cable ducting	
Semiconductor protection	
Photovoltaic installations	
Operation	
Manual	•
Trippable	
Position of direct operation handle	
Front	•
Side	•
Panel mounting	up to 32 A
Position of external operation handle	
Front	•
Right side	•
Left side	•
Centred operation	Please consult us
Indication of breaking	
Positive break indication	•
Visible contacts	
Fuse	
NFC/DIN	• / •
BS	•
Other	

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Which handle location? → Positive break indication or visible breaking? → Which type of fuse?

	Industry	
	RM - RMS **32 to 100 A** *p. 52*	Industrial gG fuses NFC/DIN **2 to 1250 A** *p. 54*
		•
	•	•
		•
		•
	•	
	• / -	•
		•

FUSERBLOC

Fuse combination switches
for industrial fuses up to 1250 A

fuser_548_a_1_cat

FUSERBLOC
630 to 1250 A

fuser_532_a_1_cat

FUSERBLOC
32 to 400 A

fuser_539_a_1_cat

FUSERBLOC
20 to 32 A

Function

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

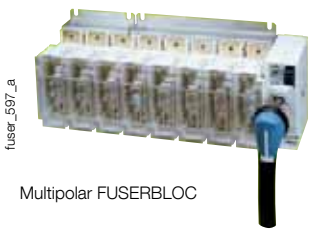
Advantages

Improved safety
- Complete isolation of the fuse with double breaking per pole (top and bottom of fuse).
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

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

Specific functionalities for simplified use
- TEST position for testing control circuits without power using U-type auxiliary contacts. In TEST position, the enclosure door can be opened.
- Mechanical or electronic fuse melting detection system (see DDMM or FMD).

Customised solutions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Multipolar FUSERBLOC

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Centred operation

The solution for
> Motor load break
> Protection of industrial cabinet

Strong points
> Improved safety
> High breaking capacity
> Specific functionalities for simplified use

A complete range
> Centred or left side operation, rear connections, plug-in connections. Please consult us.

Conformity to standards
> IEC 60947-3
> EN 60947-3
> BS EN 60947-3
> NBN EN 60947-3
> IEC 60269-1
> DIN EN 60269-1
> NF EN 60269-1
> IEC 60269-2
> VDE 0636-1
> VDE 0660-107
> Standards UL: see FUSERBLOC UL

Approvals and certifications(1)
(1) *Product reference on request.*

What you need to know

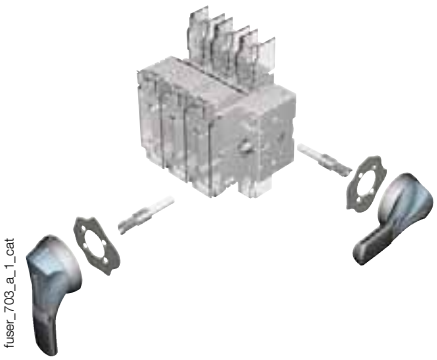
- In addition to the FUSERBLOC rating, product selection also depends on the fuse characteristics and functional specifications, which need to be in accordance with the application.
  SOCOMEC FUSERBLOC are available for utilisation with **NFC, DIN or BS88 fuses.**

- Whether it is 3 pole + switched neutral or 3 pole + solid neutral, the **FUSERBLOC** 20 to 32 A with **direct front operation** and **external operation** is the best suited solution in compact design.

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

- From 630 to 1250 A, the FUSERBLOC allows **direct** and **external front left** or **right** side operation in 2, 3 or 4 poles.

- With external operation, it is possible to operate the device in 3 ways:
  - **Front** operation
  - **Right side** operation
  - **Left side** operation.



- For ratings 20 to 400 A, the **flat mounting kit** provides a compact solution ideally suited to withdrawable applications.

- Maintenance of outputs from the DC common bus. The **FUSERBLOC LMDC** is the most compact solution and the most economical for your maintenance requirements (please consult us).

References

NFC and DIN - External front and right side operation - 25 to 1250 A

Rating (A) / Fuse / Frame size	No. of poles	Switch I-0-TEST	External front handle	External right side handle	Shaft for external handle	Auxiliary contacts[3]	Terminal shrouds[2]
CD 25 A 10 x 38 0	3 P	3631 **3002** ■ [1]	S1 type Black IP65 1413 **2111** ■	S1 type Black IP65 1417 **2111**	320 mm 1401 **0532** ■	U-type 1 contact NO 3999 **0701** ■ 1 contact NC 3999 **0702**	Standard
	3 P + switched neutral	3631 **4002**[1]					
CD 32 A 10 x 38 0	3 P	3631 **3003** ■					
	3 P + switched neutral	3631 **4003**					
32 A 14 x 51 0	3 P	3631 **3004** ■ [1]					
	3 P + switched neutral	3631 **4004**[1]					
50 A 14 x 51 11	3 P	3831 **3005** ■ [1]			320 mm 1400 **1032** ■ [2]		
	4 P	3831 **6005**[1]					
63 A 00C 12	3 P	3831 **3006** ■ [1]					
	4 P	3831 **6006**[1]					
100 A 22 x 58 13	3 P	3831 **3010**[1]	S2 type Black IP65 1423 **2111** ■	S2 type Black IP65 1427 **2111**			3 P 3998 **3016** ■ 4 P 3998 **4016**
	4 P	3831 **6010**[1]					
125 A 22 x 58 13	3 P	3831 **3011**					
	4 P	3831 **6011**					
125 A 00 13	3 P	3831 **3012** ■					
	4 P	3831 **6012**					
160 A 00 13	3 P	3831 **3015** ■					
	4 P	3831 **6015**					
160 A 0 14	3 P	3831 **3016**[1]					
	4 P	3831 **6016**[1]					
250 A 1 15	3 P	3831 **3024** ■ [1]					3 P 3998 **3025** ■ 4 P 3998 **4025**
	4 P	3831 **6024**[1]					
400 A 2 16	3 P	3831 **3038** ■ [1]					3 P 3898 **3040** ■ 4 P 3898 **4040**
	4 P	3831 **6038**[1]					
630 A 3 17	3 P	3811 **3063**[1]	S3 type Black IP65 1433 **3111**	S3 type Black IP65 1437 **3111**	320 mm 1400 **1232**		3 P 3898 **3080** 4 P 3898 **4080**
	4 P	3811 **6063**[1]					
800 A 3 17	3 P	3811 **3080**					
	4 P	3811 **6080**					
800 A 4 18	3 P	3811 **3081**	S4 type Black IP65 1443 **3111**				3 P 3898 **3120** 4 P 3898 **4120**
	4 P	3811 **6081**					
1250 A 4 18	3 P	3811 **3120**					
	4 P	3811 **6120**					

(1) Available enclosed, please consulte us.
(2) Top/bottom.
(3) 4 auxiliary contacts as standard without additional contact holder.

Reference in **green** are new products. ■ Stock items.

NFC and DIN - Direct operation - 25 to 1250 A

Rating (A) Fuse size Frame size	No. of poles	Direct operation	Direct handle	Auxiliary contacts	Terminal shrouds	Cage terminals
CD 25 A 10 x 38 0	3 P	3631 **3002**	Black 3629 **4012** ■ (1)	A-type 1 contact NO/NC 3999 **0001**(2) A-type 2 contacts NO/NC 3999 **0002**(2)	Standard	Standard
	3 P + switched neutral	3631 **4002**				
CD 32 A 10 x 38 0	3 P	3631 **3003** ■				
	3 P + switched neutral	3631 **4003**				
32 A 14 x 51 0	3 P	3631 **3004** ■				
	3 P + switched neutral	3631 **4004**				
50 A 14 x 51 1	3 P	3615 **3005**	Black 3629 **7900** ■ (4)	A-type 1 contact NO/NC 3999 **0021**(2) A-type 2 contacts NO/NC 3999 **0022**(2)		
	4 P	3615 **6005**				
63 A 00C 2	3 P	3615 **3006**				
	4 P	3615 **6006**				
125 A 22 x 58 3	3 P	3615 **3011**	Black 3629 **7901**(4)		3 P 3998 **3016** ■ (3) 4 P 3998 **4016**(3)	3 P 5400 **3016** 4 P 5400 **4016**
	4 P	3615 **6011**				
125 A 00 3	3 P	3615 **3012**				
	4 P	3615 **6012**				
160 A 00 3	3 P	3615 **3015**			3 P 3998 **3016** ■ (3) 4 P 3998 **4016**(3)	3 P 5400 **3016** 4 P 5400 **4016**
	4 P	3615 **6015**				
160 A 0 4	3 P	3615 **3016**				
	4 P	3615 **6016**				
250 A 1 5	3 P	3615 **3024**			3 P 3998 **3025** ■ (3) 4 P 3998 **4025**(3)	3 P 5400 **3025** 4 P 5400 **4025**
	4 P	3615 **6024**				
400 A 2 6	3 P	3615 **3039**				3 P 5400 **3040** 4 P 5400 **4040**
	4 P	3615 **6039**				
630 A 3 17	3 P	3811 **3063**	Black 3899 **6011**(1)	U-type 1 contact NO 3999 **0701** ■ (5) 1 contact NC 3999 **0702**(5)	3 P 3898 **3080**(3) 4 P 3898 **4080**(3)	
	4 P	3811 **6063**				
800 A 3 17	3 P	3811 **3080**				
	4 P	3811 **6080**				
800 A 4 18	3 P	3811 **3081**	Black 3899 **7011**(1)		3 P 3898 **3120**(3) 4 P 3898 **4120**(3)	
	4 P	3811 **6081**				
1250 A 4 18	3 P	3811 **3120**				
	4 P	3811 **6120**				

(1) Direct front operation.
(2) Maximum 2 contacts.
(3) Top/bottom.
(4) Direct right side operation.
(5) Maximum 8 contacts.

Reference in **green** are new products. ■ Stock items.

References (continued)

BS 88 - Front and right side external operation - 20 to 1250 A

Rating (A) Fuse size Frame size	Number of poles	Reference Switch I-0	External front handle I-0	External right side handle I -0	Shaft extensions for handle	Terminal shrouds[3]	U type auxiliary contacts [2]
CD 20 A A1 0	3 P	3641 **3000** ■	Black S1 type IP66 1413 **2111** ■	Black S1 type IP66 1417 **2111**	320 mm 1401 **0532** ■		1 contact NO 3999 **0701** ■ 1 contact NC 3999 **0702**
	3 P + switched neutral	3641 **4000** ■					
CD 32 A A1 0	3 P	3641 **3001** ■					
	3 P + switched neutral	3641 **4001** ■					
	3 P + solid neutral	3641 **5001**					
32 A A1 11	3 P	3841 **3003** ■			320 mm 1400 **1032** ■	Standard	
	4 P	3841 **6003** ■					
63 A A2-A3 12	3 P	3841 **3006** ■					
	4 P	3841 **6006** ■					
100 A A4 [4] 13	3 P	3841 **3010** ■	Black S2 type IP66 1423 **2111** ■	Black S2 type IP66 1427 **2111**		3 P 3998 **3016** ■ 4 P 3998 **4016**	
	4 P	3841 **6010** ■					
CD 160 A A3-A4 [4] 13 A	3 P	3841 **3014**					
	4 P	3841 **6014**					
160 A A4 14	3 P	3841 **3015**					
	4 P	3841 **6015**					
160 A B1-B2 14	3 P	3841 **3016**					
	4 P	3841 **6016**					
CD 200 A A3-A4 [4] 13 A	3 P	3841 **3019**					
200 A B1-B2 15	3 P	3841 **3021**				3 P 3998 **3025** ■ 4 P 3998 **4025**	
	4 P	3841 **6021**					
250 A B1-B2-B3 15	3 P	3841 **3024**					
	4 P	3841 **6024**					
315 A B1-B2-B3 16	3 P	3841 **3031**				3 P 3898 **3040** ■ 4 P 3898 **4040**	
	4 P	3841 **6031**					
400 A B1-B2-B3-B4 16	3 P	3841 **3038**					
	4 P	3841 **6038**					
630 A C1-C2 17	3 P	3821 **3063**	Black S3 type IP65 1433 **3111**[1]	Black S3 type IP65 1437 **3111**[1]	320 mm 1400 **1232**	3 P 3898 **3080** 4 P 3898 **4080**	
	4 P	3821 **6063**					
800 A C1-C2-C3 17	3 P	3821 **3080**					
	4 P	3821 **6080**					
1250 A D1 18	3 P	3821 **3120**	Black S4 type IP65 1443 **3111**[1]			3898 **3120**	
	4 P	3821 **6120**				3898 **4120**	

(1) Standard.
(2) 4 auxiliary contacts as standard without additional contact holder.
(3) Top/bottom.
(4) For fuse size A4: max diameter 31mm

Reference in **green** are new products. ■ Stock items.

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BS 88 - Direct operation - 20 to 1250 A

Rating (A) Fuse size Frame size	Number of poles	Reference Side direct operation	Direct handle	Auxiliary contacts	Terminal shrouds[3]	Cage terminals
CD 20 A A1 0	3 P	3641 **3000** ■	Black 3629 **4012** ■	1 contact NO/NC A-type 3999 **0001**[1] 2 contacts NO/NC A-type 3999 **0002**[1]	Standard	Standard
	3 P + switched neutral	3641 **4000** ■				
CD 32 A A1 0	3 P	3641 **3001** ■				
	3 P + switched neutral	3641 **4001** ■				
32 A A1 1	3 P	3625 **3003**	Black 3629 **7900** ■			
	4 P	3625 **6003**				
63 A A2-A3 2	3 P	3625 **3006**				
	4 P	3625 **6006**				
100 A A4 [4] 3	3 P	3625 **3010**	Black 3629 **7901**	1 contact NO/NC A-type 3999 **0021**[1] 2 contacts NO/NC A-type 3999 **0022**[1]	3 P 3998 **3016** ■ 4 P 3998 **4016**	3 P 5400 **3016** 4 P 5400 **4016**
	4 P	3625 **6010**				
CD 160 A A3-A4 [4] 3 A	3 P	3625 **3014**				
	4 P	3625 **6014**				
160 A A4 4	2 P	3625 **2015**				
	3 P	3625 **3015**				
	4 P	3625 **6015**				
160 A B1-B2 4	3 P	3625 **3016**				
	4 P	3625 **6016**				
CD 200 A A3-A4 [4] 13 A	3 P	3625 **3019**				
	4 P	3625 **6019**				
200 A B1-B2 5	3 P	3625 **3021**				
	4 P	3625 **6021**				
250 A B1-B2-B3 5	3 P	3625 **3024**			3 P 3998 **3025** ■ 4 P 3998 **4025**	3 P 5400 **3025** 4 P 5400 **4025**
	4 P	3625 **6024**				
315 A B1-B2-B3 6	3 P	3625 **3032**				3 P 5400 **3040** 4 P 5400 **4040**
	4 P	3625 **6032**				
400 A B1-B2-B3-B4 6	3 P	3625 **3039**				
	4 P	3625 **6039**				
630 A C1-C2 17	3 P	3821 **3063**	Black 3899 **6011**	1 contact NO U-type 3999 **0701** ■ [5] 1 contact NC U-type 3999 **0702**[5]	3 P 3898 **3080** 4 P 3898 **4080**	
	4 P	3821 **6063**				
800 A C1-C2-C3 17	3 P	3821 **3080**				
	4 P	3821 **6080**				
1250 A D1 18	3 P	3821 **3120**	Black 3899 **7011**		3898 **3120**	
	4 P	3821 **6120**			3898 **4120**	

(1) Max. 2 contacts.
(2) Lock not included.
(3) Top/bottom.
(4) For fuse size A4: max diameter 31 mm.
(5) Max.number of U-type auxiliary contacts is 8.

Reference in **green** are new products. ■ Stock items.

Accessories

Direct operation handle

For front operation

Rating (A)	Frame size	Figure no.	Handle colour	Reference
CD 20 ... CD 32	0	1	Black	3629 **4012** ■
32 ... 63	1/2	4	Black	3629 **7900** ■
100 ... 400	3 ... 6	4	Black	3629 **7901**
630 ... 800	17	2	Black	3899 **6011**
800 ... 1250	18	3	Black	3899 **7011**

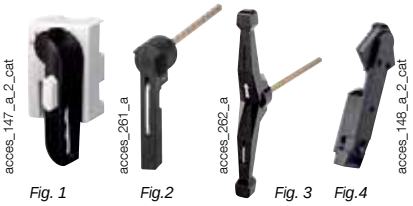

Fig. 1 *Fig.2* *Fig. 3* *Fig.4*

External front operation handle

Padlockable handle in position 0

Rating (A)	Frame size	Handle type	Handle colour	Operation	External IP(1)	Defeatable handle	Reference
CD 25 ... 63	0/11/12	S1	Black	I - 0	IP55	Yes	1411 **2111**
CD 25 ... 63	0/11/12	S1	Black	I - 0	IP65	Yes	1413 **2111** ■
CD 25 ... 63	0/11/12	S1	Black	I - 0 - Test	IP65	Yes	1413 **2115**
100 ... 400	13 ... 16	S2	Black	I - 0	IP55	Yes	1421 **2111**
100 ... 400	13 ... 16	S2	Black	I - 0	IP65	Yes	1423 **2111** ■
100 ... 400	13 ... 16	S2	Black	I - 0 - Test	IP55	Yes	1423 **2115**
630 ... 800	17	S3	Black	I - 0	IP65	Yes	1433 **3111**
800 ... 1250	18	S4	Black	I - 0	IP65	Yes	1443 **3111**

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

S1 type handle
S3 type handle
S4 type handle

External right side operation handle

Rating (A)	Frame size	Handle type	Handle colour	External IP(1)	Reference
CD 25 ... 63	0/11/12	S1	Black	IP65	1417 **2111**
100 ... 400	13 ... 16	S2	Black	IP65	1427 **2111**
630 ... 1250	17/18	S3	Black	IP65	1437 **3111**

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

S1 type handle

Shaft for external front operation handle

Rating (A)	Frame size	Shaft length (mm)	Reference
CD 20 ...CD 32	0	200	1401 **0520**
CD 20 ...CD 32	0	320	1401 **0532** ■
CD 20 ...CD 32	0	400	1401 **0540**(1)
32 ... 400	11 ... 16	200	1400 **1020**
32 ... 400	11 ... 16	320	1400 **1032** ■
32 ... 400	11 ... 16	500	1400 **1050**(2)
630 ... 800	17	200	1400 **1220**
630 ... 1250	17/18	320	1400 **1232**
630 ... 1250	17/18	500	1400 **1250**(1)

(1) Use the shaft guide accessory for external operation reference number 1429 0000.
(2) Use the front operation shaft support accessory reference number 3899 0400..

Use
Standard lengths:
- 200 mm
- 320 mm
- 400 mm
- 500 mm.

Other lengths: consult us.

Shaft extensions for external side operation

Rating (A)	Frame size	Handle type	Reference
CD 25 ...CD 32	0	S	1401 **0520**
50 ... 400	11 ... 16	S	1400 **1020**
630 ... 1250	17/18	S	1400 **1220**

Use
Standard lengths, 200 mm.

Reference in **green** are new products. ■ Stock items.

A-type auxiliary contacts

Use

Pre-break and position 0 and I signalling by 1 or 2 NO /NC auxiliary contacts.
For low level use, specific auxiliary contacts: please consult us.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

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References

NO / NC auxiliary contacts			
Rating (A)	**Frame size**	**Contact(s)**	**Reference**
CD 20 …CD 32	0	1	3999 **0001** ■
CD 20 …CD 32	0	2	3999 **0002**
32 … 400(1)	1 … 6	1	3999 **0021** ■ (2)
32 … 400(1)	1 … 6	2	3999 **0022**(2)

(1) Side direct operation switch only.
(2) A type auxiliary contacts cannot be mounted in conjunction with integrated solid neutral.

Characteristics

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

U-type auxiliary contacts(1)

Use

Compact universal type auxiliary contacts which can be configured for operation in either, or both, ON and TEST positions for CD 20 to 1250 A FUSERBLOC. Each slot can accommodate up to two interlocked A/Cs.

Connection to the control circuit

By terminals with max. section 2 x 2.5 mm².
For FUSERBLOC CD 20 to 400 A. Pre-break and signalling of positions 0, I and TEST.
For FUSERBLOC ≥ 630 A: Pre-break and position 0 and I signalling.

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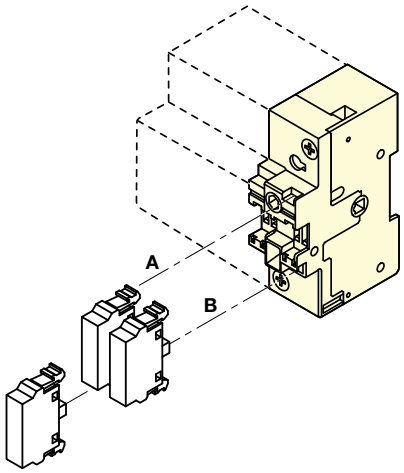

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References

NO auxiliary contacts			
Rating (A)	**Frame size**	**Contact(s)**	**Reference(1)**
CD 20 … 1250	0 … 18	1	3999 **0701** ■ (2)

NC auxiliary contacts			
Rating (A)	**Frame size**	**Contact(s)**	**Reference(1)**
CD 20 … 1250	0 … 18	1	3999 **0702**(2)

(1) Cannot be mounted in direct operation.
(2) 4 auxiliary contacts as standard without additional A/C holder.

Contact holder for additional auxiliary contacts			
Rating (A)	**Frame size**	**Contact(s)**	**Reference**
CD 20 …CD 32	0	4 (2 x 2 max)	3999 **0710**
32 … 400	11 … 16	4 (2 x 2 max)	3999 **0600**

Characteristics

	Operating current I_e (A)			
Rating (A)	**250 VAC AC-15**	**400 VAC AC-15**	**24 VDC DC-13**	**48 VDC DC-13**
CD 20 … 1250	3	1.8	2.8	1.4

(1) CD 20 - CD 32 : U-type auxiliary contacts cannot be mounted with an integrated solid neutral.

Reference in **green** are new products. ■ Stock items.

Accessories (continued)

Electronic worked fuse indication (FMD)

References

For FUSERBLOC 63 to 1250A - size 000 to 4		
Nb of LEDs	**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

	Relay operating current I_c (A)	
Rating (A)	**AC-15**	**DC-13**
63 ... 1250	2.5 A	0.2

Use

Provides fuse blown indication with fuse links without fuse blown indication strikers. Suitable for use with BS88, DIN and UL type fuses.

Principle

The Fuse Melting Device (FMD) detects the operation of a fuse and provides a signal via:
a relay and 1 LED (FMD10) or a bi-stable relay
and 3 LEDs (FMD30).

The FMD can be DIN rail or back plate mounted close to the Fuserbloc, directly mounted on the FUSERBLOC, or it can be door mounted to provide information directly on the front of a panel.

1 LED version (FMD10)

3 LED version (FMD30)

Cage terminals

Use

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

References

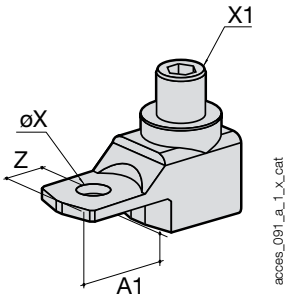
Rating max (A)	Frame size	No. of poles	Reference
CD 20 ... 63	0 ... 12	2 / 3 / 4 P	integrated
100 ... 160	13/14	3 P	5400 **3016**
100 ... 160	13/14	4 P	5400 **4016**
250	15	3 P	5400 **3025**
250	15	4 P	5400 **4025**
400	16	3 P	5400 **3040**
400	16	4 P	5400 **4040**

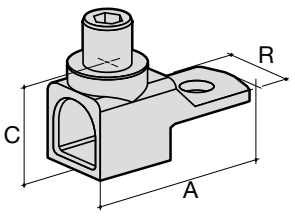
Connections

Rating (A)	Flexible cable cross-section (mm^2)	Rigid cable cross-section (mm^2)	Flexible bar width (mm)	Stripped over (mm)
100 ... 160	16 ... 95	16 ... 95	13	22
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34

Dimensions

Rating (A)	A	A1	C	R	ØX	X1	Z
100 ... 160	47.5	22.5	25	20	8.5	M12	10
250	62	31.5	31.5	25	10.5	M16	14
400	71.5	32	38	32	10.5	M20	15





Terminal shrouds

Use

Top or bottom IP20 protection (on the front) against direct contact with terminals or connection parts.

Two sets required to fully shroud both incoming and outgoing terminals.

Rating (A)	Frame size	Position	No. of poles	Reference
CD 20 ... 63	0 /1/2/12	top / bottom	2 / 3 / 4 P	integrated
100 ... CD 200	3/4/13/14	top / bottom	3 P	3998 **3016** ■
100 ... CD 200	3/4/13/14	top / bottom	4 P	3998 **4016**
200 ... 250	5/6/15/16	top / bottom	3 P	3998 **3025** ■
200 ... 250	5/6/15/16	top / bottom	4 P	3998 **4025**
315 ... 400	6	top / bottom	3 P	3898 **3025**
315 ... 400	6	top / bottom	4 P	3898 **4025**
315 ... 400	16	top / bottom	3 P	3998 **3040** ■
315 ... 400	16	top / bottom	4 P	3998 **4040**
630 ... 800	17	top / bottom	3 P	3898 **3080**
630 ... 800	17	top / bottom	4 P	3898 **4080**
800 ... 1250	18	top / bottom	3 P	3898 **3120**
800 ... 1250	18	top / bottom	4 P	3898 **4120**

Reference in **green** are new products. ■ Stock items.

Characteristics according to IEC 60947-3

25 to 125 A

Thermal current I_{th} (40 °C)		**CD 25 A**	**CD 32 A**	**CD 32 A**	**50 A**	**63 A**	**100 A**	**125 A**	**125 A**
NFC/DIN fuse size		10 x 38	10 x 38	14 x 51	14 x 51	00C	22 x 58	22 x 58	00
Frame size for direct operation		0	0	0	1	2	3	3	3
Switch body size for front and side operation		0	0	0	11	12	13	13	13
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	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
400 VAC	AC-22 A / AC-22 B	25/25	32/32	32/32	50/50	63/63	100/100	125/125	125/125
400 VAC	AC-23 A / AC-23 B	25/25	32/32	32/32	50/50	63/63	100/100	125/125	125/125
690 VAC	AC-22 A / AC-22 B	25/25	32/32	32/32	50/50	63/63	100(2)/100(2)	125(2)/125(2)	125(2)/125(2)
690 VAC	AC-23 A / AC-23 B	25/25	32/32	32/32	50/50	63/63	100(2)/100(2)	100(2)/100(2)	100(2)/100(2)
220 VDC	DC-20 A / DC-20 B	25/25	32/32	32/32	50/50	63/63	100/100	125/125	125/125
220 VDC	DC-21 A / DC-21 B	25/25	32/32	32/32	50/50	63/63	100/100	125/125	125/125
220 VDC	DC-22 A / DC-22 B	-/25	-/32		50/50	63/63	100/100	125/125	125/125
220 VDC	DC-23 A / DC-23 B	-/25(3)			40/40	40/40	100/100	100/100	100/100
440 VDC	DC-20 A / DC-20 B	25/25	32/32	32/32	50/50	63/63	100/100	125/125	125/125
440 VDC	DC-21 A / DC-21 B				50(4)/50(4)	63(4)/63(4)	100(4)/100(4)	125(4)/125(4)	125(4)/125(4)
440 VDC	DC-22 A / DC-22 B				50(4)/50(4)	63(4)/63(4)	100(4)/100(4)	125(4)/125(4)	125(4)/125(4)
440 VDC	DC-23 A / DC-23 B				40(4)/40(4)	40(4)/40(4)	100(4)/100(4)	100(4)/100(4)	100(4)/100(4)
Operational power in AC-23 (kW)									
At 400 VAC without pre-break in AC(1)(5)		11/11	15/15	15/15	25/25	30/30	51/51	63/63	63/63
At 690 VAC without pre-break in AC(1)(5)		22/22	25/25	25/25	45/45	55/55	90/90	90/90	90/90
Reactive power (kvar)									
At 400 VAC (5)		11	15	15	23	28	45	55	55
Fuse protected short-circuit withstand (kA rms prospective)									
Prospective short-circuit (kA rms) (6)		100	100	100	100	100	100	100	100
Associated fuse rating (A)(6)		25	32	32	50	63	100	125	125
Short-circuit capacity (without protection)									
Rated peak withstand current (kA peak)(6)		5.5	5.5	5.5	7.6	10.6	20	20	20
Connection									
Minimum Cu cable cross-section (mm^2)		2.5	2.5	2.5	6	10	25	35	35
Maximum Cu cable cross-section (mm^2)		16	16	16	25	25	95	95	95
Maximum busbar width (mm)							20	20	20
Tightening torque min (Nm)		2	2	2	3	3	9	9	9
Mechanical characteristics									
Durability (number of operating cycles)		20 000	20 000	20 000	10 000	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)		0.48	0.48	0.50	0.80	1	1.5	1.5	1.5
Weight of 4 P switch (kg)		0.50	0.50	0.52	1	1.3	2	2	2
Weight of 1 P extra (kg)					0.2	0.3	0.5	0.5	0.5
Frame pitch (mm)					27	32	36	36	36

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) With terminal shrouds or phase barrier.
(3) 3-pole device with 2 poles in series for the '+' and 1 pole for the '-'.
(4) 4-pole device with 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage U_e = 400 VAC.

Characteristics according to IEC 60947-3 (continued)

160 to 1250 A

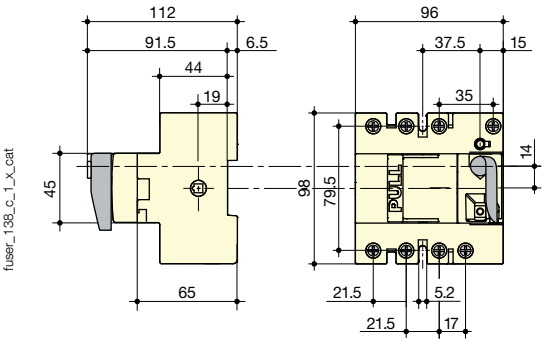
Thermal current I_{th} (40 °C)	**160 A**	**160 A**	**250 A**	**400 A**	**630 A**	**800 A**	**800 A**	**1250 A**
NFC/DIN fuse size	00	0	1	2	3	3	4	4
Frame size for direct operation	3	4	5	6	17	17	18	18
Switch body size for front and side operation	13	14	15	16	17	17	18	18
Rated insulation voltage U_i (V)	800	800	800	1000 / (800*)	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	12 / (8*)	12	12	12	12
Rated operational currents I_e (A)								
Rated voltage / **Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
400 VAC AC-22 A / AC-22 B	160/160	160/160	250/250	400/400	630/630	800/800	800/800	1250/1250
400 VAC AC-23 A / AC-23 B	160/160	160/160	250/250	400/400	630/630	800/800	800/800	1000/1250
690 VAC AC-22 A / AC-22 B	160(2)/160(2)	160(2)/160(2)	250(2)/250(2)	400/400	500/630	800/800	800/800(7)	800/800
690 VAC AC-23 A / AC-23 B	125(2)/125(2)	125(2)/125(2)	250(2)/250(2)	315/400	315/400	630/800	800/800(7)	800/800
220 VDC DC-20 A / DC-20 B	160/160	160/160	250/250	400/400	400/630	800/800	800/800	1250/1250
220 VDC DC-21 A / DC-21 B	160/160	160/160	250/250	315/315	400/630	800/800	800/800	1250/1250
220 VDC DC-22 A / DC-22 B	160/160	160/160	250/250	315/315	315/630	800/800	800/800	1250/1250
220 VDC DC-23 A / DC-23 B	125/125	125/125	200/200	250/315	400/630	800/800	800/800	1250/1250
440 VDC DC-20 A / DC-20 B	160/160	160/160	250/250	400/400	400/630(3)	800/800	800/800	1250/1250
440 VDC DC-21 A / DC-21 B	160(4)/160(4)	160(4)/160(4)	250(4)/250(4)	315/315	400/630(3)	800/800	800/800	1250/1250
440 VDC DC-22 A / DC-22 B	160(4)/160(4)	160(4)/160(4)	250(4)/250(4)	315(3)/315(3)	315/630(3)	800(4)/800(4)	800/800	1250(4)/1250(4)
440 VDC DC-23 A / DC-23 B	125(4)/125(4)	125(4)/125(4)	200(4)/200(4)	250(3)/315(3)	400/400(3)	800(4)/800(4)	800(4)/800(4)	1000(4)/1000(4)
Operational power in AC-23 (kW)								
At 400 VAC without pre-break in AC(1)(5)	80/80	80/80	132/132	220/220	355/355	450/450	450/450	560/560
At 690 VAC without pre-break in AC(1)(5)	110/110	110/110	220/220	220/295	295/400	400/400	400/400	400/475
Reactive power (kvar)								
At 400 VAC (5)	75	75	115	185	290	365	355	460
Fuse protected short-circuit withstand (kA rms prospective)								
Prospective short-circuit (kA rms) (6)	50	100	100	100 / (80*)	100	100	100	100
Associated fuse rating (A)(6)	160	160	250	400	630	800	800	1250
Short-circuit capacity (without protection)								
Rated peak withstand current (kA peak)(6)	20	22.7	32.5	40	70	80	80	90
Connection								
Minimum Cu cable cross-section (mm^2)	35	50	95	185	2 x 150	2 x 185		
Maximum Cu cable cross-section (mm^2)	95	95	240	240	2 x 300	2 x 300	4 x 185	4 x 185
Maximum busbar width (mm)	20	20	32	45	63	63	80	80
Tightening torque min (Nm)	9	9	20	20	40	40	40	40
Mechanical characteristics								
Durability (number of operating cycles)	10 000	10 000	10 000	10 000	8000	8000	5000	5000
Weight of 3 P switch (kg)	1.8	1.8	3.2	4.8	16	17	25	25
Weight of 4 P switch (kg)	2.3	2.3	4.5	6.1	20	21.5	30	30
Weight of 1 P extra (kg)	0.5	0.5	1.3	1.3	3	3	3	3
Frame pitch (mm)	36	50	60	66	94	94	120	120

** 400 A direct operation switch*
(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) With terminal shrouds or phase barrier.
(3) Poles cannot be juxtaposed.
(4) 4-pole device with 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage U_e = 400 VAC.
(7) Fuse 800 A, 690 Vac does not exist, tests conducted with bars.

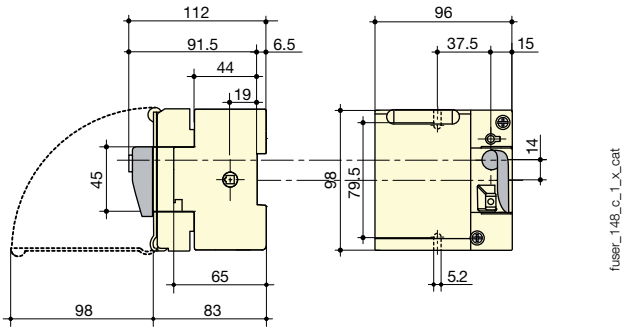
Dimensions - Direct operation

FUSERBLOC CD

NFC CD 25 A (size 10 x 38)

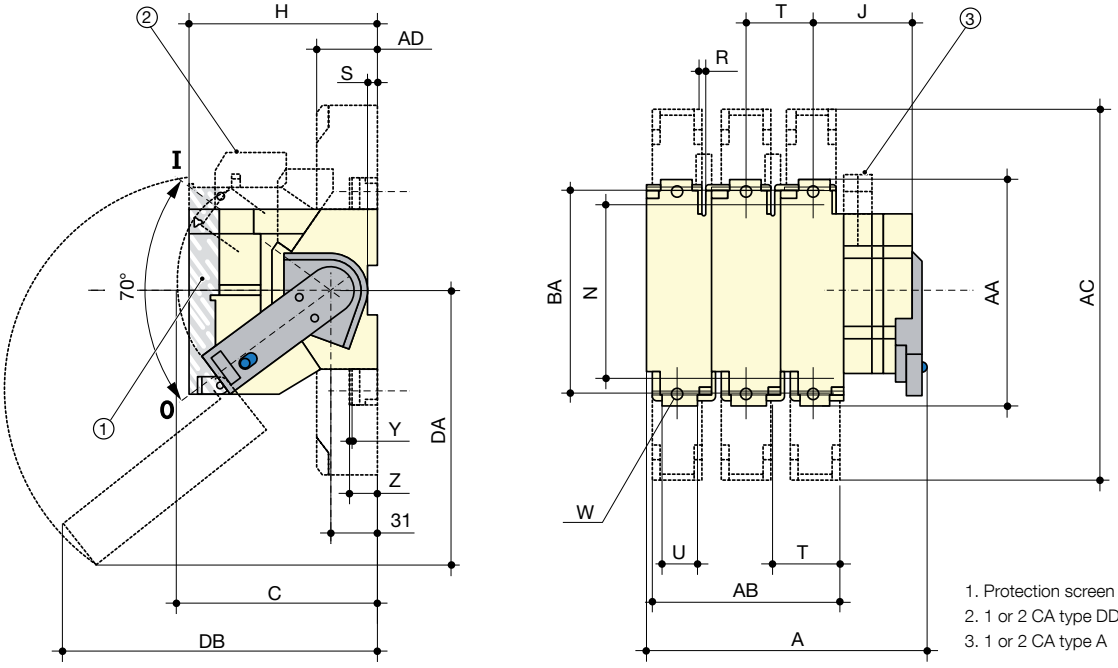


BS88 CD 20 to CD 32 A (size A1) NFC CD 32 A (size 14 x 51)



FUSERBLOC

NFC and DIN 50 to 400 A - BS88 32 to 400 A



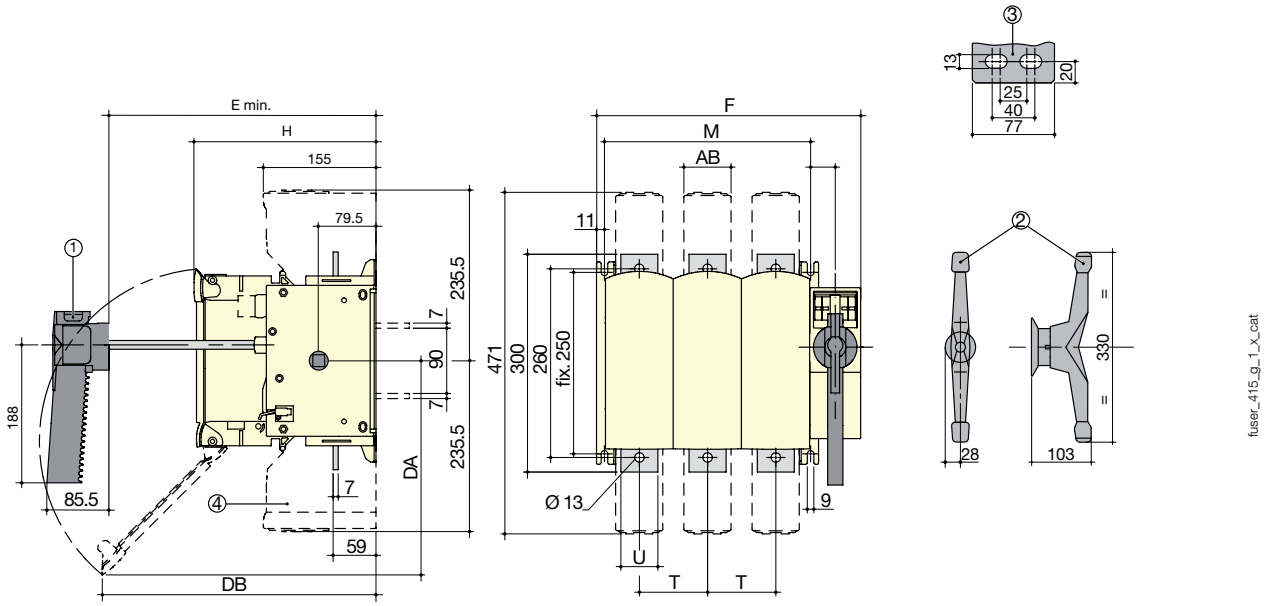
1. Protection screen lockable in position I
2. 1 or 2 CA type DDMM
3. 1 or 2 CA type A

Rating (A)	NFC/DIN Fuse size	BS88 Fuse size	Frame size	Overall dimensions			Terminal shrouds				Switch body				Switch mounting			Connection						
				A 3p.	A 4p.	C	AB 3p.	AB 4p.	AC	AD	H	J	DA	DB	N	R	S	T	U	W	Y	Z	AA	BA
32	-	A1	1	118	145	134	-	-	-	-	87	33.5	-	-	106	5.4	6.5	27	-	-	-	-	118	-
50	14 x 51	-	1	118	145	134	-	-	-	-	87	33.5	-	-	106	5.4	6.5	27	-	-	-	-	118	-
63	00C	A2-A3	2	133	165	134	-	-	-	-	116	36	159	145	106	5.4	6.5	32	-	-	-	-	118	-
100	22 x 58	A4	3	150	186	173	108	144	268	44	116	38	-	-	127	5.4	-	36	20	8.5	2.5	19.5	162	141
125	22 x 58	-	3	150	186	173	108	144	268	44	116	38	-	-	127	5.4	-	36	20	8.5	2.5	19.5	162	141
125	00	-	3	150	186	173	108	144	268	44	126	38	141	193	127	5.4	-	36	20	8.5	2.5	19.5	162	141
160	00	-	3	150	186	173	108	144	268	44	126	38	141	189	127	5.4	-	36	20	8.5	2.5	19.5	162	141
CD 160	-	A3-A4	3A	152	188	173	108	144	268	44	139	38	-	-	130	5.4	-	36	20	8.5	3	19.5	162	141
160	-	A4	4	150	186	173	108	144	268	44	116	38	-	-	127	5.4	4	50	20	8.5	2.5	19.5	162	141
160	0	B1-B2	4	192	242	173	136	172	268	44	136	45	174	229	140	5.4	-	50	20	8.5	2.5	19.5	162	141
CD 200	-	A3-A4	3A	152	188	173	108	144	268	44	139	38	-	-	30	5.4	-	36	20	8.5	3	19.5	162	141
200	-	B1-B2	5	192	242	173	136	172	345	44	123	45	-	-	140	5.4	-	60	32	8.5	2.5	19.5	195	166
250	1	B1-B2-B3	5	253	313	173	180	240	345	65	146	81	185	251	162	6.4	-	60	32	11	2.5	19.5	195	166
315		B1-B2-B3	6	253	313	173	180	240	355	65	146	81	185	251	162	6.4	-	66	32	11	2.5	19.5	195	175
400	2	B1-B2-B3-B4	6	271	337	173	192	258	355	65	149	86	200	260	172	6.4	-	66	50	11	3	20	205	175

Dimensions - Direct operation (continued)

FUSERBLOC (continued)

DIN 630 to 1250 A - BS88 630 to 800 A



1. For handle frame size 17.
2. For handle frame size 18.
3. Connection terminals for frame size 18.
4. Terminal shrouds.

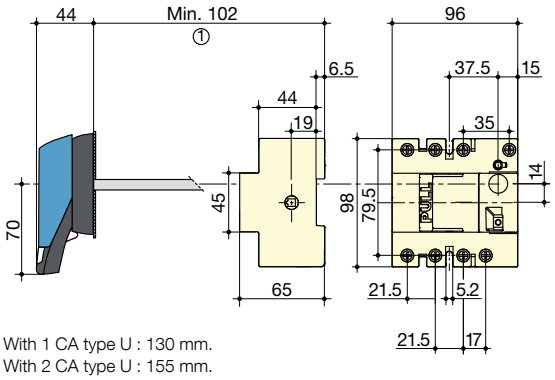
Rating (A)	DIN Fuse size	BS88 Fuse size	Frame size	Overall dimensions	Switch body					Switch mounting		Connection		Terminal shrouds
				E min	F 3p.	F 4p.	H	DA	DB	M 3p.	M 4p.	T	U	AB
630	3	C1-C2	17	265	364	458	250	300	380	284	378	94	51	65
800	3	C1-C2-C3	17	265	364	458	250	300	380	284	378	94	51	65
800	4	-	18	304	442	562	289	355	295	362	482	120	77	88
1250	4	D1	18	304	442	562	289	355	295	362	482	120	77	88

Dimensions - External operation

FUSERBLOC CD

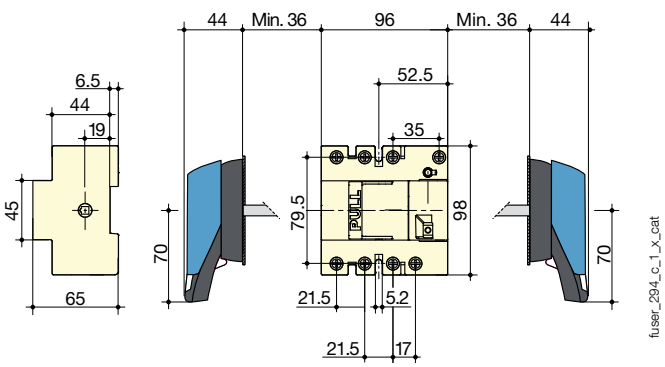
NFC CD 25 to CD 32 A (size 10 x 38)

External front operation



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

External side operation

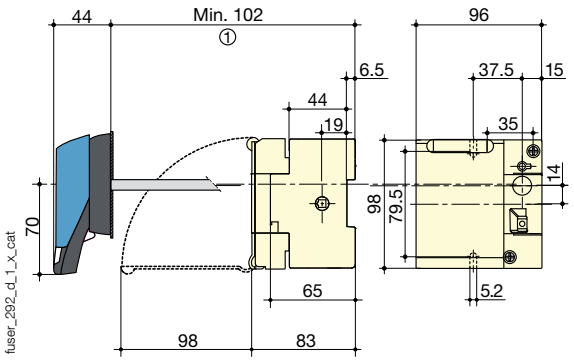


Dimensions - External operation (continued)

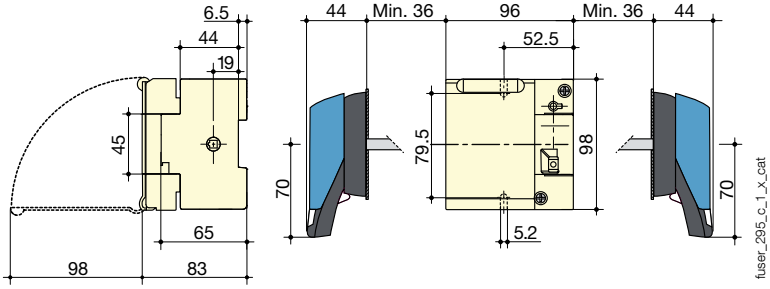
FUSERBLOC CD (continued)

NFC CD 32 A (size 14 x 51) - BS88 CD 20 to CD 32 A (size A1)

External front operation



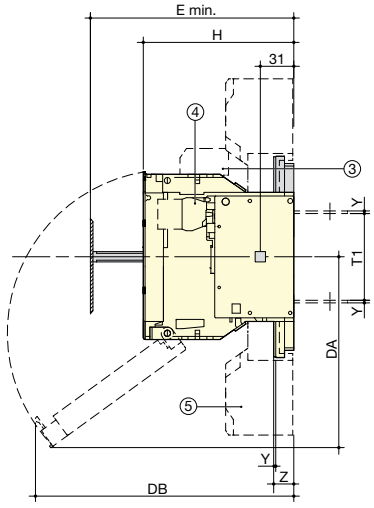
External side operation

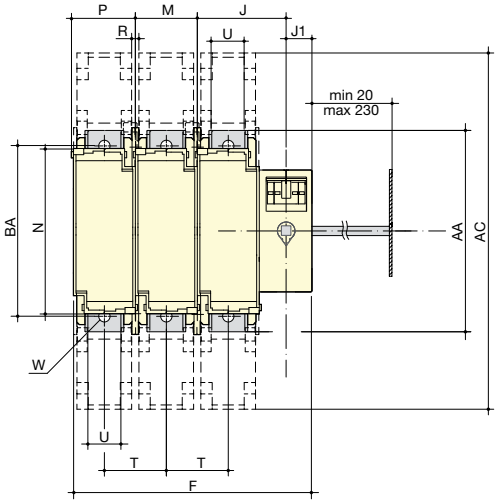


1. With 1 CA type U : 130 mm.
   With 2 CA type U : 155 mm.

FUSERBLOC

NFC and DIN 50 to 250 A - BS88 32 to 250 A





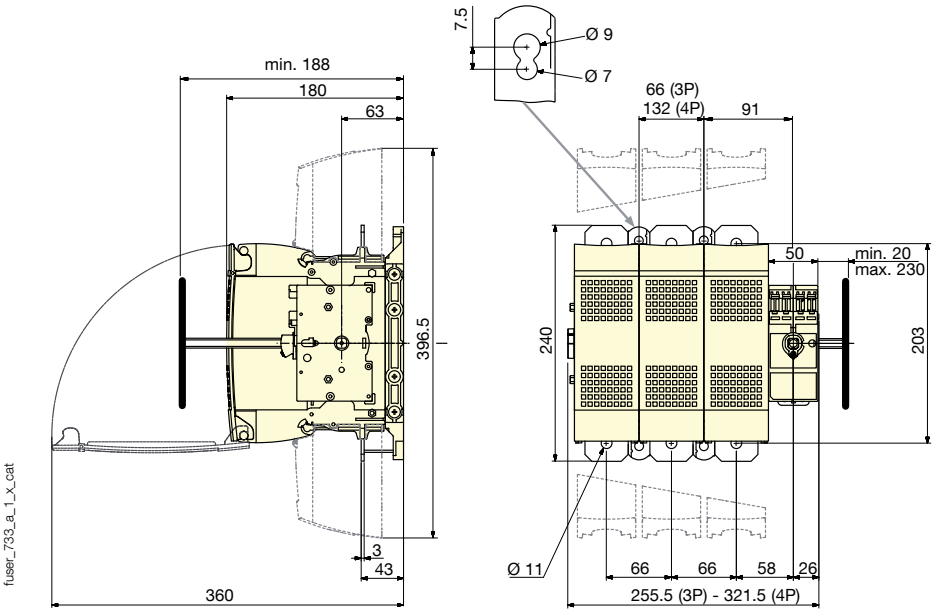
1. Position TEST.
2. Rear connection (option)
3. 1 or 2 CA type DDMM
4. 1 or 8 CA NO/NC pre-break.
5. Terminal shrouds.

Rating (A)	NFC/DIN Fuse size	BS88 Fuse size	Frame size	Overall dimensions E min	Terminal shrouds AC	Switch body F 3p.	F 4p.	H	J	J1	BC	DA	DB	Switch mounting M	N	P	R	Connection T	T1	U	W	Y	Z	AA	BA
32		A1	11	100	-	121	148	87	45	18	70	85	153	27	106	31	6	27	59	12	-	2	-	118	-
50	14 x 51	-	11	100	-	121	148	87	45	18	70	85	153	27	106	31	6	27	59	12	-	2	-	118	-
63	00C	A2-A3	12	125	-	136	168	116	50	18	70	159	145	32	106	36	5.4	32	59	12	-	2	-	118	-
100	22x58	A4	13	135	268	148	184	116	54	18	125	141	187	36	127	40	5.4	36	62	20	8.5	2.5	19.5	162	141
125	22x58	-	13	135	268	148	184	116	54	18	125	141	179	36	127	40	5.4	36	62	20	8.5	2.5	19.5	162	141
125	00	-	13	135	268	148	184	126	54	18	125	141	193	36	127	40	5.4	36	62	20	8.5	2.5	19.5	162	141
160	00	-	13	135	268	148	184	126	54	18	125	141	193	36	127	40	5.4	36	62	20	8.5	2.5	19.5	162	141
CD 160 CD 200	-	A3-A4	13A	145	268	148	184	139	54	18	125	141	-	36	130	40	5.4	36	78	18	8.5	3	20	162	141
160	0	A4-B1-B2	14	145	268	190	240	136	64	18	125	174	229	50	140	54	5.4	50	62	20	8.5	2.5	19.5	162	141
200	-	B1-B2	15	154	345	234	294	146	86	25	125	185	251	60	162	64	6.4	60	84	32	11	2.5	19.5	195	166
250	1	B1-B2-B3	15	154	345	234	294	146	86	25	125	185	251	60	162	64	6.4	60	84	32	11	2.5	19.5	195	166

Dimensions - External operation (continued)

FUSERBLOC (continued)

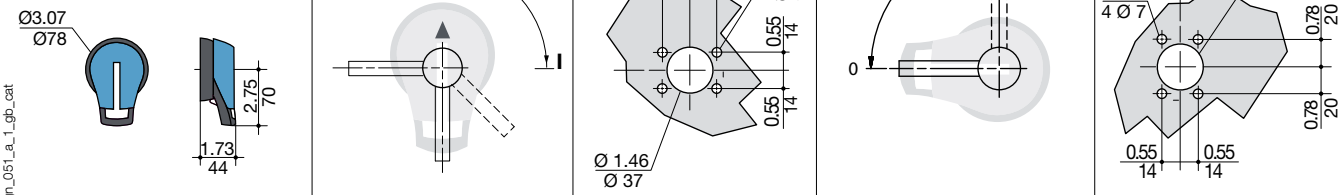
DIN 400 A (size 2) - BS88 315 to 400 A (size B1-B2-B3-B4)



Dimensions for external handles

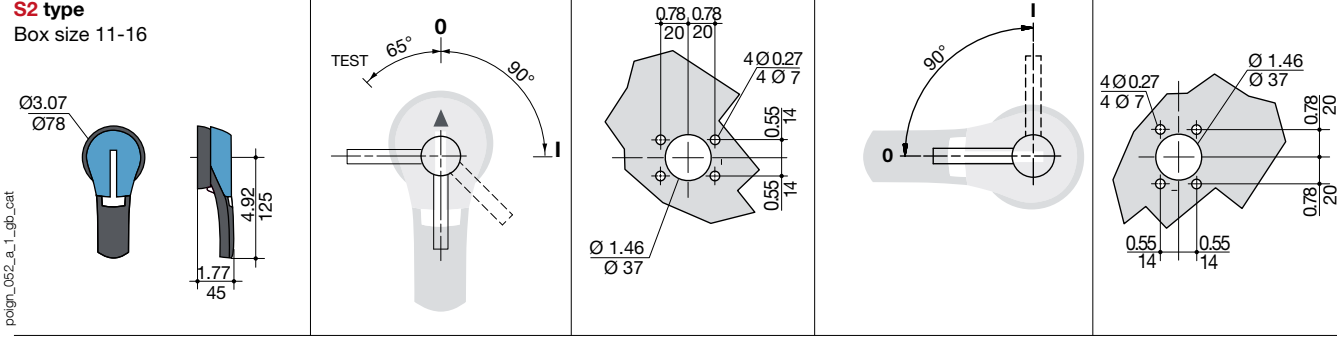
CD 25 to 63 A

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



100 to 400 A

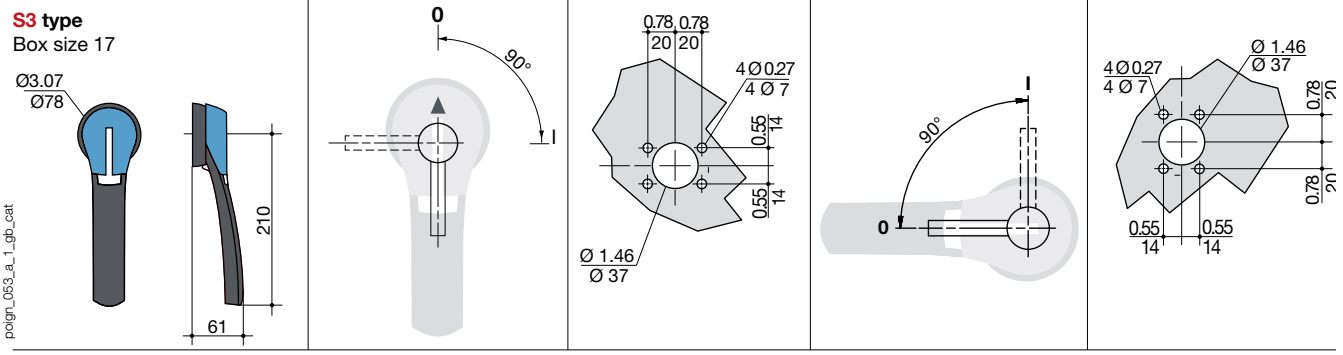
Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S2 type Box size 11-16				



Dimensions for external handles (continued)

630 to 800 A (frame size 17)

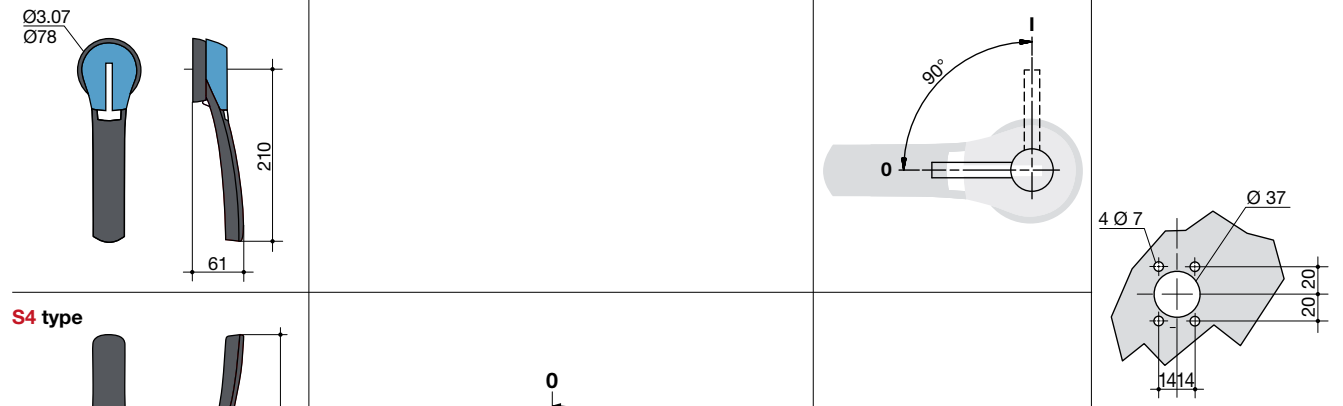
Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S3 type Box size 17				



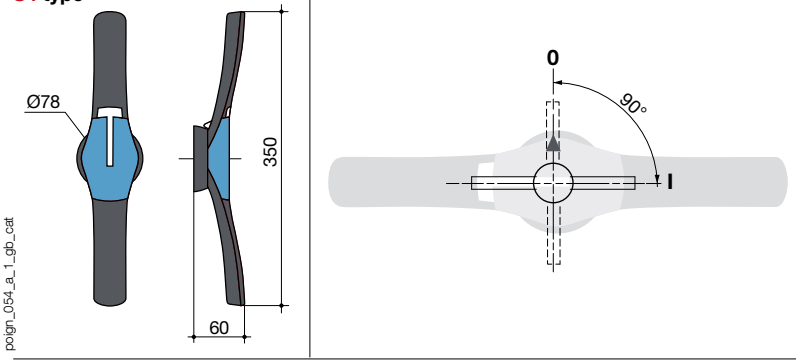
poign_053_a_1_gb_cat

800 to 1250 A (frame size 18)

Handle type	Front operation	Side operation	
	Direction of operation	Direction of operation	Door drilling
S3 type Box size 18			



S4 type			



poign_054_a_1_gb_cat

RM - RMS

Fuse holders

for industrial cylindrical fuses up to 125 A

RM
32 A

RMS
50 A

RMS
100 A

The solution for

> Distribution boards

Strong points

> Improved safety
> High breaking capacity
> Specific format and accessories
> Label holder

Large range

> Pre-break, please consult us

Conformity to standards

> IEC 60269-2-1
> IEC 60269-1
> IEC 60269-2
> NF EN 60269-1
> NF C 63-210
> NF C 63211
> VDE 0636-10
> DIN 43620

Function

RM and **RMS** are modular fuse disconnect switches for cylindrical fuses. They provide safety disconnection and protection against overloads and short-circuits in any low voltage electrical circuit.

- RM: fuse disconnect switches without signalisation (for fuses without striker).
- RMS: fuse disconnect switches with pre-break, position signalisation and blown indication auxiliary contact.

Advantages

Improved safety

- Omnipolar and simultaneous breaking.
- High dielectric strength. Protection IP2X.

High breaking capacity

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

Specific format and accessories

- Modular DIN 45 mm cut-out.
- Interlocking with accessory available.

References

RM - Device without signalisation

Basic device Fuse size	32 A 10 x 38		50 A 14 x 51		100 A 22 x 58	
No. of poles	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
1 P	12	5701 **0015** ■	6	5702 **5001**	6	5703 **5001**
1 P + N (1 module)	12	5601 **5005**				
1 P + N (2 modules)	6	5701 **0017**	3	5702 **5005**	3	5703 **5005**
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**

RMS - Device with 1 signalisation auxiliary contact(1)

No. of poles	To be ordered in multiples of	Reference	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 signalisation auxiliary contact provides the pre-break, fuse presence and also signals a blown fuse.

Reference in **green** are new products. ■ Stock items.

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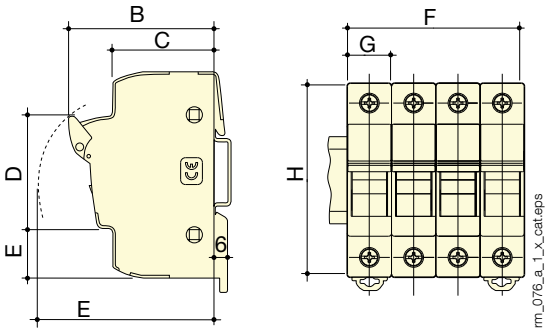
Characteristics according to IEC 60269-2

Thermal current I_{th} (20 °C)	**32 A**	**50 A**	**100 A**
Fuse size	10 x 38	14 x 51	22 x 58
Rated insulation voltage U_i (V)	690	690	690
Fuse rating (A)			
to 400 VAC	32	50	125
to 500 VAC	32	50	125
to 690 VAC		50	125
Fuse protected short-circuit withstand (kA rms prospective)			
Prospective short-circuit (kA rms)(1)	100	100	100
Operating current derating coefficient for N pole side by side			
N = 1 … 3	1	1	1
N = 4 … 6	0.8	0.8	0.8
N = 7 … 9	0.7	0.7	0.7
N ≥ 10	0.6	0.6	0.6
Operating current derating coefficient depending on temperature			
20°C	1	1	1
30°C	0.95	0.95	0.95
40°C	0.90	0.90	0.90
50°C	0.80	0.80	0.80
60°C	0.70	0.70	0.70
70°C	0.60	0.60	0.60
Connection			
Minimum Cu cable cross-section (mm^2), solid or stranded	0.75	1.5	1.5
Maximum Cu cable cross-section (mm^2), solid / stranded	16/16	35/25	50/35
Maximum Cu cable cross-section (mm^2), solid / stranded (2)	16/10		
Tightening torque, Nm	2.5	3	5
Mechanical characteristics			
Weight of 1 P or N (kg)	0.1	0.15	0.21
Weight of 1 P + N (kg)		0.31	0.44
Weight of 3 p + N (kg)		0.70	1.10

(1) For a rated operational voltage U_e = 400 VAC.
(2) Connection for RM32 1pole + N (1 module).

Dimensions



Rating (A)	A	B	C	D	E	F	G	H
32	74.8	40	40	45	20	70	17.5	78
50	100.7	76	49.5	40	35.3	106	26.5	110
100	102.5	76.5	49.5	45	47	143	35.5	126.5

Industrial fuses

NFC-DIN industrial fuselinks gG curves
from 0.5 to 1250 A

gG fuse
from 0.5 to 125 A

gG fuse
from 6 to 1250 A

The solution for
> Motor protection
> Cable and device protection

Strong points
> High level performances
> High reliability
> Improved safety

Conformity to standards
> IEC 60269-1
> DIN EN 60269-1
> NF EN 60269-1
> IEC 60269-2
> NF EN 60269-2

Function

SOCOMEC industrial fuses protect installations and people from overcurrents for any low voltage electrical circuit.

Advantages

High level performances
- High breaking capacity - 120 kA at 400/500 V, 80 kA at 690 V.
- High short-circuit limitation capacity.
- Simple and reliable discrimination.

High reliability
- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).
- No downgrading of fuse characteristics over time.

Improved safety

The energy released whilst eliminating the fault (fuse blowing) is contained within the cartridge (no degassing).

References

Cylindrical fuses (NFC), gG type (in multiples of 10)

Rating (A)	10 x 38 without striker		14 x 51 without striker		14 x 51 with striker		22 x 58 without striker		22 x 58 with striker	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
0.5	500	6012 **0000**								
1	500	6012 **0001**								
2	500	6012 **0002** ■	690	6022 **0002**	500	6052 **0002**				
4	500	6012 **0004** ■	690	6022 **0004**	500	6052 **0004**				
6	500	6012 **0006** ■	690	6022 **0006**	500	6052 **0006**				
8	500	6012 **0008**	690	6022 **0008**	500	6052 **0008**				
10	500	6012 **0010** ■	690	6022 **0010** ■	500	6052 **0010**				
12	500	6012 **0012**	690	6022 **0012**	500	6052 **0012**				
16	500	6012 **0016** ■	690	6022 **0016** ■	500	6052 **0016**	690	6032 **0016**	690	6062 **0016**
20	500	6012 **0020** ■	690	6022 **0020** ■	500	6052 **0020**	690	6032 **0020**	690	6062 **0020**
25	500	6012 **0025** ■	690	6022 **0025** ■	500	6052 **0025**	690	6032 **0025**	690	6062 **0025**
32	400	6012 **0032** ■	500	6022 **0032** ■	500	6052 **0032**	690	6032 **0032**	690	6062 **0032**
40			500	6022 **0040** ■	500	6052 **0040**	690	6032 **0040**	690	6062 **0040**
50			400	6022 **0050** ■	400	6052 **0050**	690	6032 **0050**	690	6062 **0050**
63							690	6032 **0063** ■	690	6062 **0063**
80							500	6032 **0080**	500	6062 **0080**
100							500	6032 **0100**	500	6062 **0100**
125							400	6032 **0125**	400	6062 **0125**

Description of accessories

	Reference		Reference		Reference		Reference		Reference
Solid cylindrical link	6019 **0000** ■		6029 **0000** ■		6029 **0000** ■		6039 **0000** ■		6039 **0000** ■

Knife-edge fuses (NH), gG type

Rating (A)	000/00C without striker (in multiples of 3)		0 without striker (in multiples of 3)		1 without striker (in multiples of 3)		2 without striker (in multiples of 3)		3 without striker (to this unit)		4 without striker (to this unit)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
6	500	6600 **0006**										
10	500	6600 **0010**										
16	500	6600 **0016**										
20	500	6600 **0020**										
25	500	6600 **0025**	500	6702 **0025**								
32	500	6600 **0032**	500	6702 **0032**								
40	500	6600 **0040**	500	6702 **0040**								
50	500	6600 **0050**	500	6702 **0050**								
63	500	6600 **0063**	500	6702 **0063**	500	6712 **0063**						
80	500	6600 **0080**	500	6702 **0080**	500	6712 **0080**						
100	500	6600 **0100**	500	6702 **0100**	500	6712 **0100**						
125	500	6692 **0125***	500	6702 **0125**	500	6712 **0125**						
160	500	6692 **0160***	500	6702 **0160**	500	6712 **0160**						
200			500	6702 **0200**	500	6712 **0200**	500	6722 **0200**				
250					500	6712 **0250**	500	6722 **0250**				
315							500	6722 **0315**				
400							500	6722 **0400**	500	6732 **0400**	500	6746 **0400**
500							500	6722 **0500**	500	6732 **0500**	500	6746 **0500**
630									500	6732 **0630**	500	6746 **0630**
800									500	6732 **0800**	500	6746 **0800**
900											500	6746 **0900**
1000											500	6746 **1000**
1250											500	6746 **1200**

** Fuse size 00.*

Description of accessories

	Reference		Reference		Reference	Reference	Reference	Reference
Neutral bar	6420 **0000**		6421 **0000**		6421 **0001**	6421 **0002**	6421 **0003**	6441 **0005**

Reference in **green** are new products. ■ Stock items.

Industrial fuses

NFC-DIN industrial fuselinks gG curves

from 0.5 to 1250 A

Accessories

Solid cylindrical link

Use

Solid link to be used in conjunction with the neutral pole of cylindrical fused disconnecting switches and with knife-edge fuse bases or fused disconnecting switches, sizes: 10 x 38, 14 x 51, 22 x 58, 000, 00C, 00-0-1-2-3-4.

Rating (A)	Size	To be ordered in multiples of	Reference
32	10 x 38	10	6019 **0000** ■
50	14 x 51	10	6029 **0000** ■
100	22 x 58	10	6039 **0000** ■

fusib_123_a_1_cat

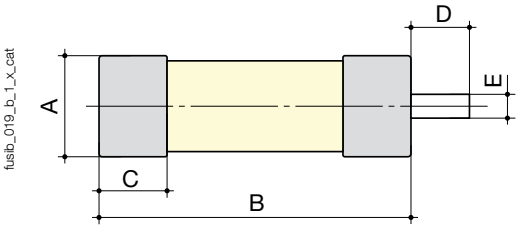
Rating (A)	Size	Tightening	Reference
160	000/00C/00	elastic	6420 **0000**
160	0	elastic	6421 **0000**
315	1	elastic	6421 **0001**
400	2	elastic	6421 **0002**
630	3	elastic	6421 **0003**
1250	4	blocked	6441 **0005**

fusib_124_a_1_cat

Dimensions

Cylindrical fuses (NF)

Without striker - with striker



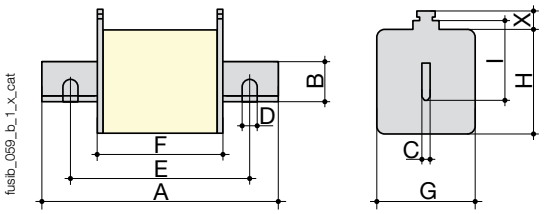
fusib_019_b_1_x_cat

Standard dimensions (mm) as per IEC 60269-2-1

Size	A	B	C	D	E
10 x 38	10.3	38	10.5		
14 x 51	14.3	51	13.8	7.5	3.8
22 x 58	22.2	58	16.2	7.5	3.8

Knife-edge fuses (NH)

without striker



fusib_059_b_1_x_cat

Standard dimensions (mm) as per IEC 60269-2-1

Size	A maxi	B mini	C	D	E mini	F maxi	G maxi	H maxi	I	X mini
000/00C	80	15	6			54	21	41	35	11
00	80	15	6			54	30	48	35	11
0	127.5	15	6			68	40	48	35	11
1	137.5	20	6			75	52	53	40	11
2	152.5	25	6			75	60	61	48	11
3	152.5	32	6			75	75	76	60	11
4	203	49	8	16	150	90	105	110	87	11

Reference in **green** are new products. ■ Stock items.

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Curves characteristic of NF and NH gG type fuses

Cut-off current diagram

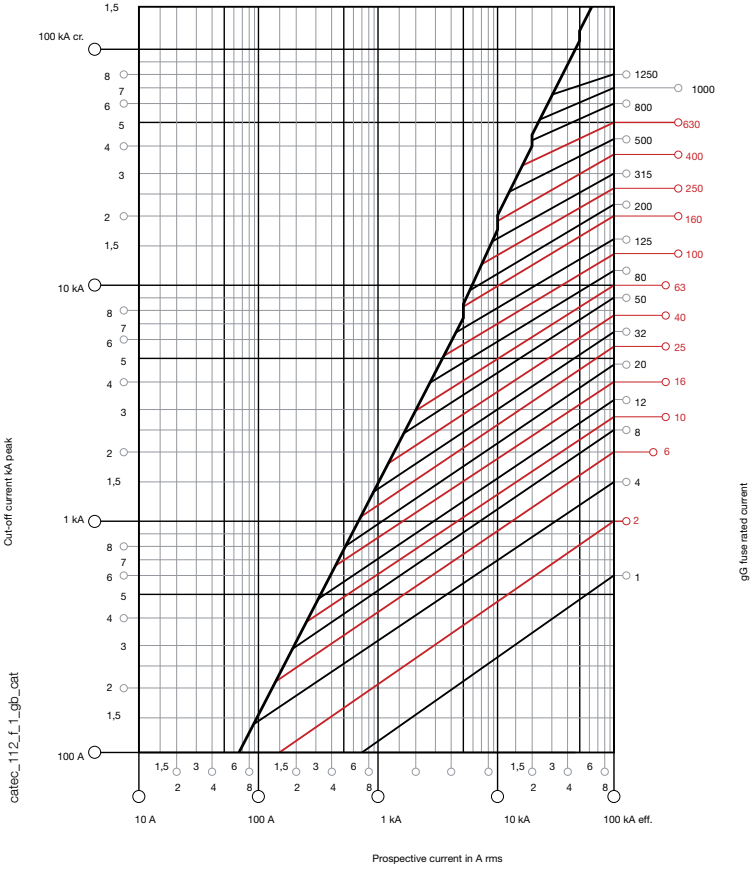
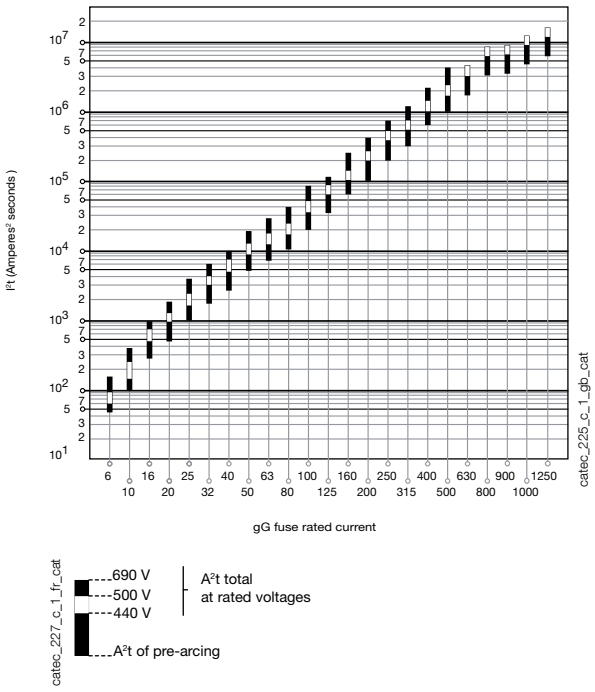
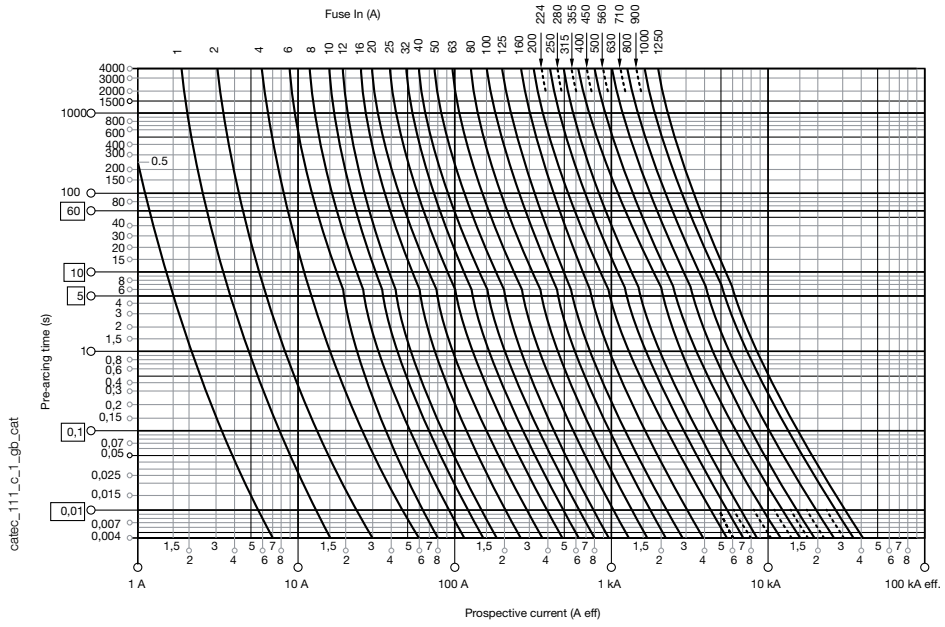


Diagram of thermal constraint limitation



Time/current operation characteristics



Selection guide

Manual transfer switches

How many poles ?

SIRCO M
25 to 125 A
p. 60

Number of poles	
3 P	•
4 P	•
Switch operation	
I-0-II	•
I-I+II-II	•
Bypass	
Indication of breaking	
Positive break indication	•
Operating handle	
Front direct/external operation	•

(1) Depending on the version. From 125 to 3200 A for SIRCOVER I-0-II; from 125 to 1800 A for SIRCOVER I-I+II-II and from 125 to 1600 A for SIRCOVER Bypass.

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What kind of operations ?

What kind of breaking indication ?

	SIRCOVER 125 to 3200 A[1] *p. 64*
	•
	•
	•
	•
	•
	•
	•

SIRCO M

Manual Transfer switching equipment
from 25 to 125 A

The solution for

> Manufacturing industry
> Critical building
> Energy productions

Strong points

> Secured breaking
> Modular device
> On load switching
> Reduced depth

Conformity to standards

> IEC 60947-3

Function

SIRCO M are manually operated three or four pole modular switches with positive break indication.

Advantages

Secured breaking
SIRCO M include contac point technology and double break per phase as standard, enabling safe, optimal operation of LV electrical circuits.

Modular device
Thanks to their modular frame SIRCO M changeover switches can be fixed to a DIN rail, a backplate or a modular panel.

On load switching
SIRCO M changeover switch comprises two mechanically interlocked load break switches which are tested in accordance with IEC 60947-3. Their AC22, AC23 characteristics enable them to perform on load changeover switching.

Reduced depth
With their side-by-side switch arrangement, the SIRCO M changeover can be utilised in panels with a reduced depth.

References ■

25 to 125 A / M1 to M3

Rating (A) / Frame size	No. of poles	Switch body	Direct handle	External handle with 1 position padlocking	Shaft extension for external front handle	Auxiliary contact	Terminal shrouds	Bridging kit
25 A/M1	3 P	2230 **3002**	Blue 2239 **5012** ■	S00 type I - 0 - II Black IP65 1473 **1113** ■ (1)	S00 type 200 mm 1407 **0520** 320 mm 1407 **0532** ■	M type 1 contact NO + NC 2299 **0001** ■	1 P 2294 **1005** ■ (2) 3 P 2294 **3005** ■ (2)	3 P 2299 **3005** 4 P 2299 **4005**
	4 P	2230 **4002**						
40 A/M1	3 P	2230 **3004** ■						
	4 P	2230 **4004** ■						
63 A/M2	3 P	2230 **3006** ■					1 P 2294 **1009** ■ (2) 3 P 2294 **3009** ■ (2)	3 P 2299 **3009** 4 P 2299 **4009**
	4 P	2230 **4006** ■						
80 A/M2	3 P	2230 **3008**						
	4 P	2230 **4008**						
100 A/M3	3 P	2230 **3010**	Blue 2239 **5022** ■	S00 type I - 0 - II Black IP65 1473 **0113**	S00 type 200 mm 1409 **0620** 320 mm 1409 **0632**		1 P 2294 **1011** ■ (2) 3 P 2294 **3016** ■ (2)	
	4 P	2230 **4010**						
125 A/M3	3 P	2230 **3011**						
	4 P	2230 **4011**						

(1) Defeatable handle.
(2) 2 pieces supplied, For upstream or downstream protection on one side of the transfer switch.

Reference in **green** are new products. ■ Stock items.

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Accessories

Direct operation handle

Rating (A) / Frame size	Handle colour	Handle	Reference
16 ... 80 / M1 ... M2	Blue	M00 type	2239 **5012** ■
100 ... 125 / M3	Blue	M01 type	2239 **5022** ■

M00 handle

M01 handle

External operation handle

S00 type handle

Rating (A) / Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
16 ... 80 / M1 ... M2	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1473 **1113** ■
100 ... 125 / M3	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1473 **0113**

S00 handle

Shaft for external handle

Rating (A) / Frame size	Handle type	Length (mm)	Reference
16 ... 80 / M1 ... M2	S00	200	1407 **0520**
		320	1407 **0532** ■
100 ... 125 / M3	S00	200	1409 **0620**
		320	1409 **0632** ■

Use

Standard lengths:
- 200 mm,
- 320 mm.

Other lengths:
Please consult us.

Auxiliary contacts

Use

Pre-break and signalisation of positions 0 and I by NO+NC auxiliary contacts.
They allow to anticipate the switching of the main poles. They can be mounted on the left or on the right side of the device.
Max 4 auxiliary contacts (2 modules).

Characteristics

NO+NC auxiliary contacts: IP2 with front operation.

M type

NO + NC

Rating (A) / Frame size	Numbre of AC	Type of AC	Reference
16 ... 125 / M1 ... M3	1 AC	NO + NC	2299 **0001** ■

Characteristics

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

Terminal shrouds

Use

Top and bottom protection against direct contact with the terminals or connection parts. Available in 1 or 3 pole versions for SIRCO M and in 3 or 4 pole versions for SIRCO MV. An opening on each terminal cover makes it possible to insert a temperature measurement probe.

Rating (A) / Frame size	No. of poles	Position	Reference
16 ... 40 / M1	1 P	top and bottom	2294 **1005** ■
16 ... 40 / M1	3 P	top and bottom	2294 **3005** ■
63 ... 80 / M2	1 P	top and bottom	2294 **1009** ■
63 ... 80 / M2	3 P	top and bottom	2294 **3005** ■
100 ... 125 / M3	1 P	top and bottom	2294 **1011** ■
100 ... 125 / M3	3 P	top and bottom	2294 **3016** ■

SIRCO M 3P

SIRCO M 1P

Reference in **green** are new products. ■ Stock items.

Characteristics according to IEC 60947-3

25 to 125 A / M1 to M3

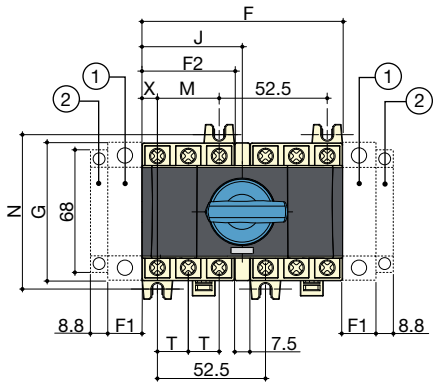
Thermal current I_{th} (40 °C)		**25 A**	**40 A**	**63 A**	**80 A**	**100 A**	**125 A**
Frame size		**M1**	**M1**	**M2**	**M2**	**M3**	**M3**
Rated insulation voltage U_i (V)		800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	8	8
Rated operational currents I_e (A)							
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-22 A / AC-22 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-23 A / AC-23 B	25/25	40/40	63/63	80/80	100/100	125/125
Operational power in AC-23 (kW)							
At 400 VAC without pre-break in AC-23 (kW)(2)		11.3	18	28.4	35.5	45	56.3
Fuse protected short-circuit withstand (kA rms prospective)							
Prospective short-circuit (kA rms)(3)		50	50	50	50	50	25
Associated fuse rating (A)(3)		25	40	63	80	100	125
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s(4)							
Rated short-time withstand current 0.3s I_{cw} (kA rms)		2.3	2.3	2.74	2.74	5	5
Short-circuit capacity (without protection)							
Rated short-time withstand current 1s. I_{cw} (kA rms)		1.26	1.26	1.5	1.5	2.75	2.75
Rated short-circuit making capacity I_{cm} (kA peak)		1.8	1.8	2.1	2.1	3.9	3.9
Connection							
Minimum Cu cable cross-section (mm^2)		1.5	1.5	2.5	2.5	10	10
Maximum Cu cable cross-section (mm^2)		16	16	35	35	70	70
Tightening torque mini / maxi (Nm)		2 / 2.2	2 / 2.2	3.5 / 3.85	3.5 / 3.85	4 / 4.4	4 / 4.4
Mechanical characteristics							
Durability (number of operating cycles)		10000	10000	10000	10000	10000	8000
Weight of a 3 pole device (kg)		0.41	0.41	0.58	0.58	1.1	1.1
Weight of a 4 pole device (kg)		0.51	0.51	0.75	0.75	1.46	1.46

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) The power value is given for information only, the current values vary from one manufacturer to another.
(3) For a rated operational voltage U_e = 400 VAC.
(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

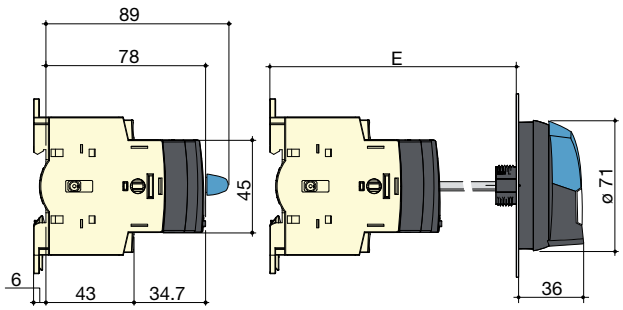
Dimensions

25 to 80 A / M1 to M2

Direct front operation for 3/4 pole changeover switches



External front operation for 3 and 4 pole changeover switches



sirom_182_a_1_x.cat

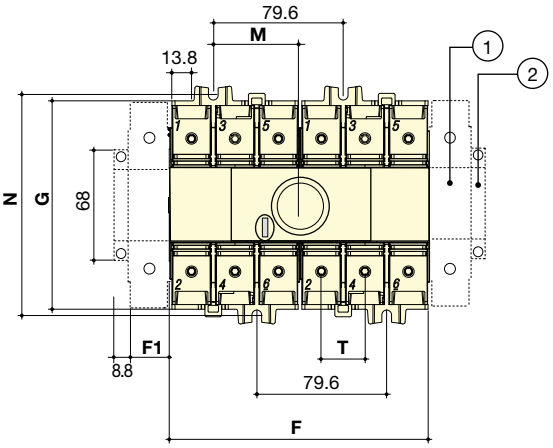
1. Location for: 1 main pole **or** *1 auxiliary contact (See "Accessories" page 13).*
2. Position for 1 auxiliary contact module only.
Note: Maximum of 4 additional blocks (3 pole changeover can be fitted with either one main pole and one A/C block, or two A/C blocks per side; 4 pole changeover can be fitted with only one A/C block per side).

Rating (A)	Frame size	Overall dimensions		Switch body					Switch mounting		Connection	
		E min	E max	F	F1	F2	G	J	M	N	T	X
25 … 40	M1	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 … 80	M2	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

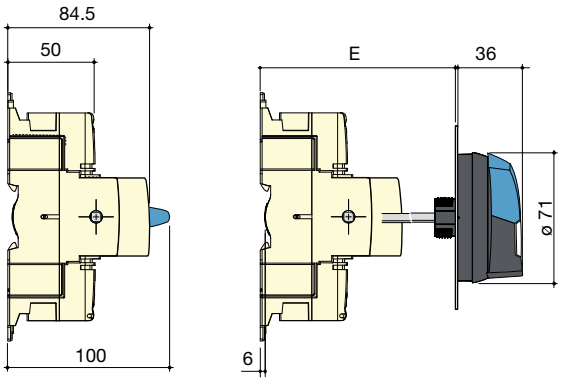
Dimensions (continued)

100 to 125 A / M3

Direct front operation for 3/4 pole changeover switches



External front operation for 3 and 4 pole changeover switches



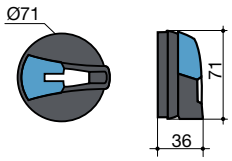
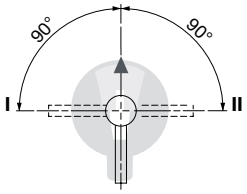
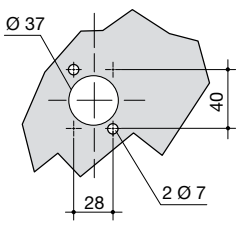
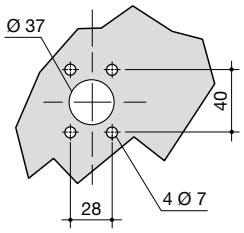
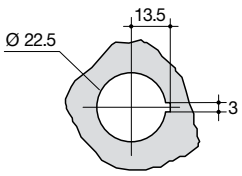
sircm_183_d_1_x_cat

1. Location for: 1 main pole **or** *1 auxiliary contact (See "Accessories" page 13).*
2. Position for 1 auxiliary contact module only.
Note: Maximum of 4 additional blocks (3 pole changeover can be fitted with either one main pole and one A/C block, or two A/C blocks per side; 4 pole changeover can be fitted with only one A/C block per side).

Rating (A)	Frame size	Overall dimensions		Switch body			Switch mounting		Connection
		E min	E max	F	F1	G	M	N	T
100 … 125	M3	105	372	159	26	124.5	52.8	131.5	26

Dimensions for external handles

25 to 125 A / M1 to M3

Handle type	Front operation Direction of operation	Door drilling		
S00 type Transfer switches **I-0-II** and **I - I+II - II**	**0** or **I+II**	IP55 with 2 fixing clips	IP65 with 4 fixing screws	With fixing nut
				

poign_025_b_1_gb_cat

SIRCOVER

Manual transfer switches
from 125 to 3200 A

SIRCOVER
250 A

The solution for

> Manufacturing industry
> Power distribution

Strong points

> A complete range
> Easy connections
> Stable positions

Conformity to standards

> IEC 60947-6-1
> IEC 60947-3
> GB 14048.11

Approvals and certifications[1]

[1] *Product reference on request.*

Function

SIRCOVER are manual multipolar transfer switches with positive break indication.
They are designed for open transition switching (I-0-II).
They provide switching, source inversion and transfer under load for two low voltage power circuits, as well as their safety isolation by double breaking per pole.

Advantages

Easy connections
A copper bar connection kit is available for 2000 to 3200 A ratings. It enables various types of connection: flat or edgewise connection with top or bottom bridging.

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

Improved on load switching
Thanks to its AC-23 and AC-33 characteristics, which are tested in accordance with standards IEC 60947-3 and IEC 60947-6-1, the SIRCOVER enables secure and reliable switching on all types of load, without the need for pre-breaking upstream.

References

I-0-II

Rating (A) / Frame size	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contact	Terminal shrouds
125 A / B3	3 P	41AC **3013**	J2 type Blue 1122 **1111** ■	S2 type Black IP55 1421 **2113** ■	200 mm 1400 **1020** 320 mm 1400 **1032** ■ (1)	1 P 4109 **0019** ■	1st/2nd contact NO/NC 4109 **0021**(2)	3 P 2694 **3014** ■ 4 P 2694 **4014** ■
	4 P	41AC **4013**						
160 A / B3	3 P	41AC **3016** ■						
	4 P	41AC **4016** ■						
250 A / B4	3 P	41AC **3025** ■				1 P 4109 **0025** ■		3 P 2694 **3021** ■ (3)(4) 4 P 2694 **4021** ■ (3)(4)
	4 P	41AC **4025** ■						
400 A / B4	3 P	41AC **3040** ■				1 P 4109 **0039** ■		
	4 P	41AC **4040** ■						
630 A / B5	3 P	41AC **3063** ■				1 P 4109 **0063** ■		3 P 2694 **3051** ■ 4 P 2694 **4051** ■
	4 P	41AC **4063** ■						
800 A / B6	3 P	41AC **3080**	C1 type Black 2799 **7052**	S4 type Black IP65 1443 **3113**	200 mm 1401 **1520** 320 mm 1401 **1532**(1)	1 P 4109 **0080**		
	4 P	41AC **4080**						
1000 A / B6	3 P	41AC **3100**						
	4 P	41AC **4100**						
1250 A / B6	3 P	41AC **3120**				1 P 4109 **0120**		
	4 P	41AC **4120**						
1600 A / B7	3 P	41AC **3160**				1 P 4109 **0160**		
	4 P	41AC **4160**						
2000 A / B8	3 P	41AC **3200**	S5 type Black 2799 **7042**	S5 type Black IP65 1453 **8113**	200 mm 2799 **3015** 320 mm 2799 **3018**(1) 450 mm 2799 **3019**	(6)	1st/2nd contact NO/NC included	
	4 P	41AC **4200**						
2500 A / B8	3 P	41AC **3250**						
	4 P	41AC **4250**						
3200 A / B8	3 P	41AC **3320**						
	4 P	41AC **4320**						

(1) Standard.
(2) 2 pieces: one for position I and one for position II.
(3) To fully shroud front, rear, top and bottom 4 references required.
(4) To shroud front switch top and bottom 2 references required.
(5) 2 pieces: one for top side and another for bottom side.
(6) See "Copper bar connection kits"

For other specific application like

> Overlaping contacts I, I+II, II
> Bypass with 3 stables positions I, O, II

Please consult www.socomec.com

Reference in **green** are new products. ■ Stock items.

Accessories

Direct operation handle

I-0-II

Rating (A)	Frame size	Handle colour	Handle type	Reference
125 … 630	B3 … B5	Blue	J2 type	1122 **1111** ■
800 … 1600	B6 … B7	Black	C1 type	2799 **7052**
2000 … 3200	B8	Black	S5 type	2799 **7042**(1)

(1) Double lever handle.

J2 type handle

C1 type handle

External operation handle

Use

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

I-0-II

Rating (A)	Frame size	Switching type	External IP(1)	Handle	Reference
125 … 630	B3 … B5	I - 0 - II	IP55	S2 type	1421 **2113** ■
800 … 1600	B6 … B7	I - 0 - II	IP65	S4 type	1443 **3113**(2)
2000 … 3200	B8	I - 0 - II	IP65	S5 type	1453 **8113**(2)

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

S2 type handle

S4 type handle

S5 type handle

Shaft for external handle

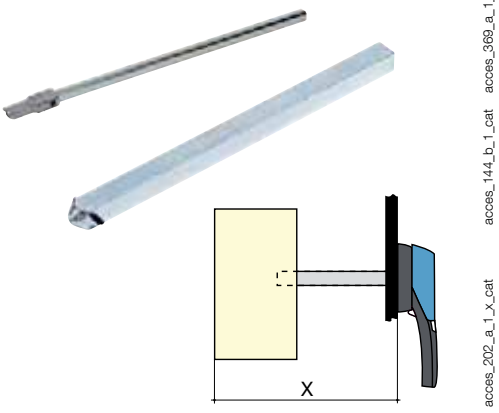
Use

Standard lengths:
- 200 mm,
- 320 mm,
- 450 mm.

Other lengths: please consult us.

I-0-II

Rating (A)	Frame size	Length (mm)	Dimension X (mm)	Reference
125 … 400	B3 … B4	200	210 … 310	1400 **1020**
125 … 400	B3 … B4	320	210 … 430	1400 **1032** ■
500 … 630	B5	200	280 … 390	1400 **1020**
500 … 630	B5	320	280 … 510	1400 **1032** ■
800 … 1600	B6 … B7	200	425 … 577	1401 **1520**
800 … 1600	B6 … B7	320	425 … 697	1401 **1532** ■
2000 … 3200	B8	200	653 ... 803	2799 **3015**
2000 … 3200	B8	320	653 … 923	2799 **3018**
2000 … 3200	B8	450	653 … 1053	2799 **3019**



Bridging bars

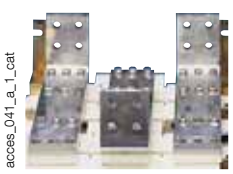
Use

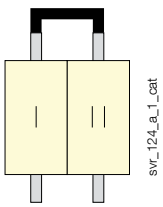
For creating a common connection between switches I & II, on the top or bottom side of the SIRCOVER, to enable, for example, the load to be fed from either incoming source (I or II).

For SIRCOVER Bypass, two sets of bridging bars are required (3/6 pole or 4/8 pole switch).

I-0-II

Rating (A)	Frame size	No. of poles	Section (mm)	Reference
125 … 160	B3	1 P	20 x 2.5	4109 **0019** ■
250	B4	1 P	25 x 2.5	4109 **0025** ■
400	B4	1 P	32 x 5	4109 **0039** ■
630	B5	1 P	50 x 5	4109 **0063** ■
800 … 1000	B6	1 P	50 x 6	4109 **0080**
1250	B6	1 P	60 x 8	4109 **0120**
1600	B7	1 P	90 x 10	4109 **0160**





Reference in **green** are new products. ■ Stock items.

Copper bar connection kits from 2000 to 3200 A

Use

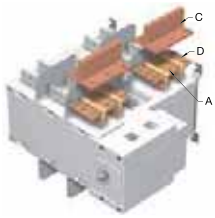
Enables:

- connection between the two power terminals of the same pole for 2000 to 3200 A ratings (Fig. 1)
- top or bottom bridging connection (Fig. 2).

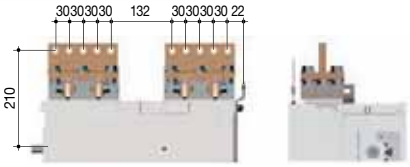
For 3200 A rating, the connection pieces (part A) are delivered bridged from factory. Bolt sets must be ordered separately.

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

Fig. 1

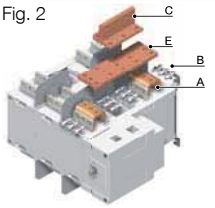


acces_228_b_1_x_cat



acces_233_a_1_cat

Fig. 2



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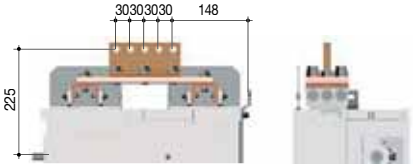


acces_234_a_1_cat

Top or bottom edgewise connection - Fig. 1

Rating (A)	Frame size	Piece	Quantity to order per pole(1)	Reference
2000 … 2500	B8	Connection - part A	2	2619 **1200**
2000 … 2500	B8	T piece - part C	2	2629 **1200**(2)
2000 … 2500	B8	Bracket- part D	2	2639 **1200**(2)
3200	B8	Connection - part A		included
3200	B8	T piece - part C	2	2629 **1200**(2)
3200	B8	Bracket- part D	2	2639 **1200**(2)

(1) Example for 3 pole device equipped upstream only: Order 3 times the indicated quantities.
(2) Bolt set is provided with the accessories.

Top or bottom bridging connection - Fig. 2

Rating (A)	Frame size	Piece	Quantity to order per pole(1)	Reference
2000 … 2500	B8	Connection - part A	2	2619 **1200**
2000 … 2500	B8	Bolt set - part B	2	2699 **1200**
2000 … 2500	B8	Bar - part E	1	4109 **0320**(2)
2000 … 2500	B8	T piece - part C	1	2629 **1200**(2)
3200	B8	Connection - part A		included
3200	B8	Bolt set - part B	2	2699 **1200**
3200	B8	Bar - part E	1	4109 **0320**(2)
3200	B8	T piece - part C	1	2629 **1200**(2)

(1) Example for 3 pole device equipped upstream only: Order 3 times the indicated quantities.
(2) Bolt set is provided with the accessories.

Auxiliary contact

Use

Pre breaking and signalling of positions I and II: 1 or 2 NO/NC auxiliary contacts in each position.

Low level auxiliary contacts: please consult us.

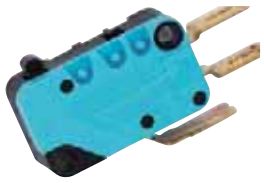
Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

svr_058_a_1_cat



acces_065_a_1_cat

Characteristics

Rating (A)	Frame size	Nominal current (A)	Operating current I_e (A) 250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
125 … 3200	B3 … B8	16	12	8	14	6

NO/NC changeover contact

Rating (A)	Frame size	Contact(s)	Reference
125 … 1600	B3 … B7	1st/2nd	4109 **0021** ■
2000 … 3200	B8	1st/2nd	included

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.

Advantage

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

acces_206_a_2_cat

Rating (A)	Frame size	No. of poles	Position	Reference
125 … 160	B3	3 P	top / bottom / front (I) / rear (II)	2694 **3014** ■ (1)(2)
125 … 160	B3	4 P	top / bottom / front (I) / rear (II)	2694 **4014** ■ (1)(2)
250 … 400	B4	3 P	top / bottom / front (I) / rear (II)	2694 **3021** ■ (1)(2)
250 … 400	B4	4 P	top / bottom / front (I) / rear (II)	2694 **4021** ■ (1)(2)
630	B5	3 P	top / bottom / front (I) / rear (II)	2694 **3051** ■ (1)(2)
630	B5	4 P	top / bottom / front (I) / rear (II)	2694 **4051** ■ (1)(2)

(1) To shroud front switch top and bottom 4 references required for a SIRCOVER and 6 references for a SIRCOVER Bypass.
(2) To shroud front switch top and bottom 2 references required for a SIRCOVER and a SIRCOVER Bypass.
Reference in **green** are new products. ■ Stock items.

Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 630 A / B3 to B5

Thermal current I_{th} at 40°C		**125 A**	**160 A**	**250 A**	**400 A**	**630 A**
Frame size		**B3**	**B3**	**B4**	**B4**	**B5**
Rated insulation voltage U_i (V)		800	800	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)		8	8	12	12	12
Rated operational currents Ie (A) according to IEC 60947-6-1						
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-31 A / AC-31 B	125	160	250	400	630
415 VAC	AC-32 A / AC-32 B			200	400	500
415 VAC	AC-33 A / AC-33 B			200	200	400
Rated operational currents I_e (A) according to IEC 60947-3						
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	400/400	630/630
500 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
500 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630
500 VAC	AC-22 A / AC-22 B	125/125	160/160	200/250	200/400	500/500
500 VAC	AC-23 A / AC-23 B	80/80	80/80	200/200	200/200	400/400
690 VAC(7)	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
690 VAC(7)	AC-21 A / AC-21 B	125/125	160/160	200/200	200/200	500/500
690 VAC(7)	AC-22 A / AC-22 B	125/125	125/125	160/160	160/160	400/400
690 VAC(7)	AC-23 A / AC-23 B	63/80	63/80	125/125	125/125	400/400
220 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	630/630
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	630/630
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	630/630
440 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630
440 VDC	DC-21 A / DC-21 B	125(2)/125(2)	125(2)/125(2)	200(2)/200(2)	200(2)/200(2)	630(2)/630(2)
440 VDC	DC-22 A / DC-22 B	125(2)/125(2)	125(2)/125(2)	200(2)/200(2)	200(2)/200(2)	630(2)/630(2)
440 VDC	DC-23 A / DC-23 B	125(2)/125(2)	125(3)/125(3)	200(3)/200(3)	200(3)/200(3)	500(3)/500(3)
Operational power in AC-23 (kW)						
At 400 VAC without pre-break in AC(3)		63/63	80/80	132/132	280/280	450/450
At 690 VAC without pre-break in AC(3)		55/75	55/75	90/110	150/185	185/220
Reactive power (kvar)						
At 415 VAC		55	75	115	185	290
Fuse protected short-circuit withstand as per IEC 60947-3 at 690 VAC						
Prospective short-circuit current (kA rms)		100 (5)	100 (5)	50	50	50
Associated fuse rating (A)		125	160	250	400	630
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s(4)						
Rated short-time withstand current 0.3s I_{cw} (kA rms)		12 (5)	12 (5)	15	15	17
Short-circuit withstand without protection as per IEC 60947-3 at 690 VAC						
Rated short-time withstand current 1s I_{cw} (kA rms)		7 (5)	7 (5)	8	8	10
Rated peak withstand current (kA peak)		20	20	30	30	45
Rated short-time withstand current 60ms I_{cw} (kA rms) as per IEC 60947-6-1 at 415 VAC				10 (6)	10 (6)	12.6
Connection						
Minimum Cu cable cross-section (mm^2)		35	50	95	185	2 x 150
Minimum Cu busbar cross-section (mm^2)						2 x 30 x 5
Maximum Cu cable cross-section (mm^2)		50	95	150	240	2 x 300
Maximum Cu busbar width (mm)		25	25	32	32	50
Tightening torque mini / maxi (Nm)		9/13	9/13	20/26	20/26	20/26
Mechanical characteristics						
Durability (number of operating cycles)		10 000	10 000	8 000	5 000	5 000
Weight of 3 P switch (kg)		2.9	2.9	3.8	3.9	9.1
Weight of 4 P switch (kg)		4.1	4.1	4.6	4.9	11.1

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-". 4-pole device with 2 poles in series by polarity.
(3) The power value is given for information only, the current values vary from one manufacturer to another.
(4) Value for coordination with any circuit-breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.
(5) Data at 415 VAC
(6) Data at 30ms
(7) With terminal shrouds or phase barrier.

800 to 3200 A / B6 to B8

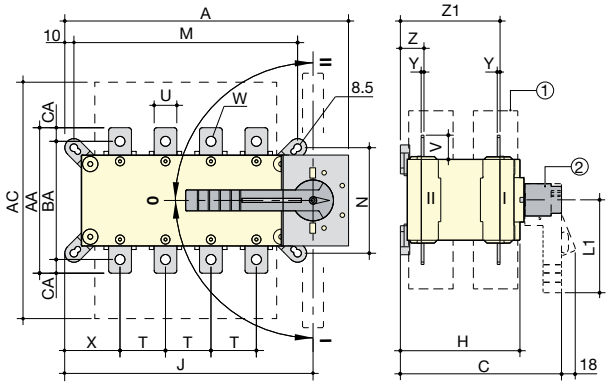
Thermal current I_{th} at 40°C		**800 A**	**1000 A**	**1250 A**	**1600 A**	**2000 A**	**2500 A**	**3200 A**
Frame size		**B6**	**B6**	**B6**	**B7**	**B8**	**B8**	**B8**
Rated insulation voltage U_i (V)		1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)		12	12	12	12	12	12	12
Rated operational currents I_e (A) according to IEC 60947-6-1								
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-31 A / AC-31 B	800	1000	1250	1600	2000	2500	3200
415 VAC	AC-32 A / AC-32 B	800	1000	1250	1600	2000	2000	2000
415 VAC	AC-33 A / AC-33 B	800	800	800	1000	1250	1250	1250
Rated operational currents I_e (A) according to IEC 60947-3								
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
415 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	-/1600	-/1600	-/1600
500 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1600/1600			
500 VAC	AC-23 A / AC-23 B	400/400	630/630	800/800	1000/1000			
690 VAC(6)	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
690 VAC(6)	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
690 VAC(6)	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000			
690 VAC(6)	AC-23 A / AC-23 B	400/400	630/630	800/800	800/800			
220 VDC	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600			
220 VDC	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600			
440 VDC	DC-21 A / DC-21 B	800(3)/800(3)	1000(3)/1000(3)	1250(3)/1250(3)	1250/1250			
440 VDC	DC-22 A / DC-22 B	800(3)/800(3)	1000(3)/1000(3)	1250(3)/1250(3)	1250/1250			
440 VDC	DC-23 A / DC-23 B	800(3)/800(3)	1000(3)/1000(3)	1250(3)/1250(3)	1250/1250			
Operational power in AC-23 (kW)								
At 400 VAC without pre-break in AC(3)		710/710	710/710	710/710	710/710	710/710		
At 690 VAC without pre-break in AC(3)		185/220	475/475	475/475	750/750	750/750		
Reactive power (kvar)								
At 400 VAC (5)		365	460	575				
Fuse protected short-circuit withstand as per IEC 60947-3 at 415 VAC								
Prospective short-circuit current (kA rms)		50	50	100	100			
Associated fuse rating (A)		800	1000	1250	2 x 800			
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s(4)								
Rated short-time withstand current 0.3s I_{cw} (kA rms)		47	64	64	78	78	78	78
Short-circuit withstand without protection as per IEC 60947-3 at 415 VAC								
Rated short-time withstand current 1s I_{cw} (kA rms)		26	35	35	50	50	50	50
Rated peak withstand current (kA peak)		55	55	80	110	110	110	120
Rated short-time withstand current 60ms Icw (kA rms) as per IEC 60947-6-1 at 415 VAC		16	20	25	32	40	50	50
Connection								
Minimum Cu cable cross-section (mm^2)		2 x 185	2 x 240					
Minimum Cu busbar cross-section (mm^2)		2 x 40 x 5	2 x 50 x 5	2 x 60 x 5	2 x 80 x 5	2 x 100 x 10	2 x 100 x 10	2 x 100 x 10
Maximum Cu cable cross-section (mm^2)		2 x 300	4 x 185	4 x 185	6 x 185			
Maximum Cu busbar width (mm)		63	63	63	100	100	100	100
Tightening torque min (Nm)		20/26	20/26	20/26	40/45	40/45	40/45	40/45
Mechanical characteristics								
Durability (number of operating cycles)		4 000	4 000	4 000	3 000	3 000	3 000	3 000
Weight of a 3 pole device (kg)		20.5	21.0	21.6	25.7	42.0	42.0	52.3
Weight of a 4 pole device (kg)		24.8	25.6	26.2	32.0	52.9	52.9	66.6

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-". 4-pole device with 2 poles in series by polarity.
(3) The power value is given for information only, the current values vary from one manufacturer to another.
(4) Value for coordination with any circuit-breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.
(5) Data at 415 VAC.
(6) With terminal shrouds or phase barrier.

Dimensions

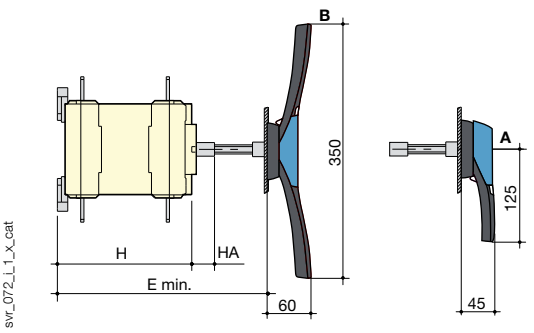
125 to 1600 A / B3 to B7

Direct front operation



A. S2 type handle for external operation: 125 to 630 A
B. S4 type handle for external operation: 800 to 1600 A

External front operation

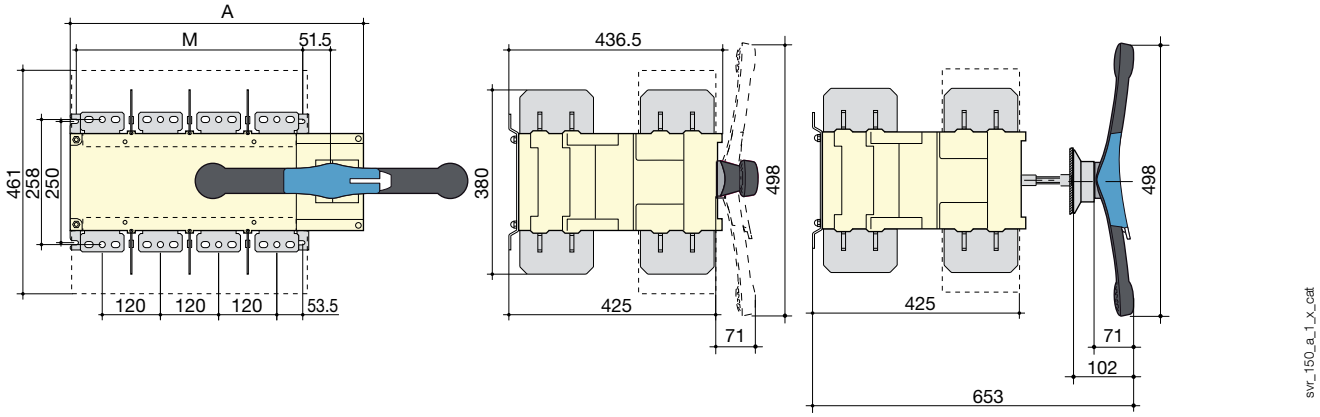


1. Terminal shrouds
2. Direct handle operation:
- 125 to 630 A: L1 = 140 mm,
- 800 to 1600 A: L1 = 210 mm.

Rating (A)/ Frame size	Overall dimensions A 3p.	A 4p.	C	E min	Terminal shrouds AC	Switch body H	HA	J 3p.	J 4p.	Switch mounting M 3p.	M 4p.	N	Connection T	U	V	W	X 3p.	X 4p.	Y	Z	Z1	AA	BA	CA
125 / B3	221	251	218	208 … 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
160 / B3	221	251	218	208 … 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
250 / B4	262	312	218	208 … 436	280	148	25	223	273	196	246	116	50	25	30	11	61	61	3.5	30	124	160	130	15
400 / B4	262	312	218	208 … 436	280	148	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	170	140	15
630 / B5	319	379	295	285 … 513	400	225	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	260	220	20
800 / B6	386	466	375	425 … 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1000 / B6	386	466	375	425 … 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1250 / B6	386	466	375	425 … 577	459	298	29	306.5	386.5	255	336	250	80	60	65	16x11	48	48	7	66.5	255.5	330		29.5
1600 / B7	478	598	375	425 … 577	461	298	29	388.5	518.5	347	467	250	120	90	43.5	12.5x5	54	54	8	66.5	255.5	288		15

2000 to 3200 A / B8

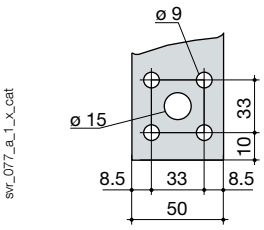
Direct front operation



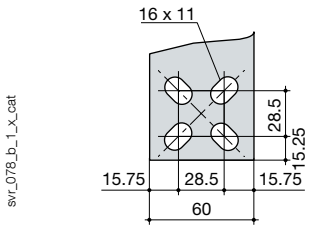
Rating (A) / Frame size	Overall dimensions A 3p.	A 4p.	Switch mounting M 3p.	M 4p.
2000 … 3200 / B8	478	598	347	467

Connection terminals

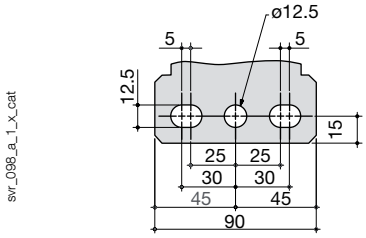
800 A / B6



1250 A / B6



1600 to 3200 A / B7 to B8

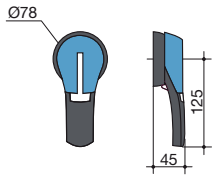


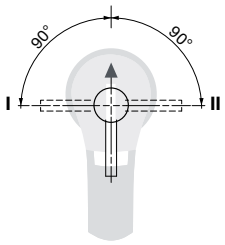
Note: For the connection terminals of lower ratings, see Product "Dimensions" on the previous page.

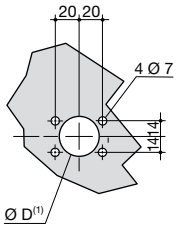
Dimensions for external handles

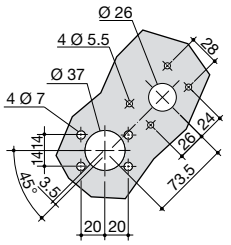
125 to 630 A / B3 to B5

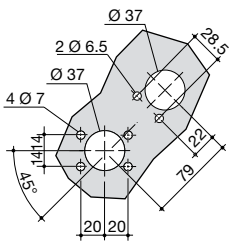
Handle type	Front operation Direction of operation	Door drilling
S2 type	**0** or **I+II**	With lock RONIS EL11AP With lock CASTELL K









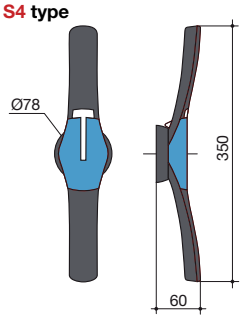


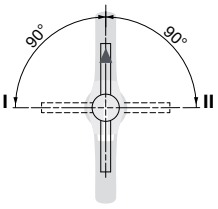
(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.

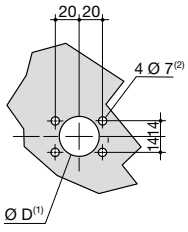
poign_030_a_1_gb_cat

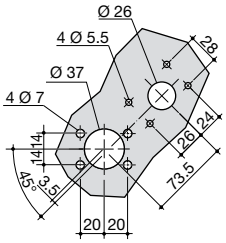
800 to 1600 A / B6 to B7

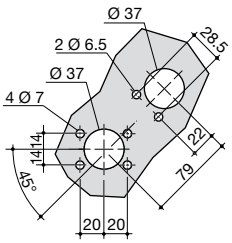
Handle type	Front operation Direction of operation	Door drilling
S4 type	**0** or **I+II**	With lock RONIS EL11AP With lock CASTELL K









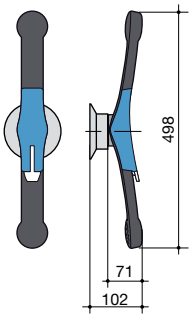


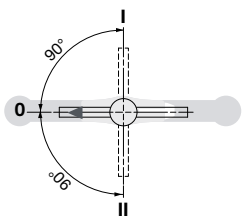
(1) Ø31 to Ø37: Rear screw mounting Ø37: front clip mounting.- (2) Ø6 to Ø7: clip mounting.

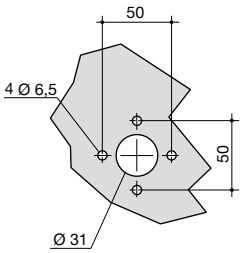
poign_031_a_1_gb_cat

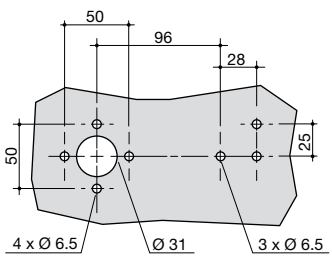
2000 to 3200 A / B8

Handle type	Front operation Direction of operation	Door drilling
S5 type with V Escutcheon		With lock CASTELL K









poign_023_a_1_gb_cat

Selection guide

Remotely operated and automatic transfer switches

ATyS

Which type of power supply? ▶ Which application?

	RTSE (Remotely operated)			
	40 to 125 A	40 to 160 A	125 to 3200 A	
	ATyS S p. 82	*ATyS d M* p. 74	*ATyS r* p. 86	
Type of power supply				
Power supply 12, 24 or 48 VDC	•			
Single power supply 230 VAC	•		•	
Dual power supply 230 VAC		•		
Connection of remote control interface				
D10				
D20				
Application				
Mains/Mains	• (1)	• (1)	• (1)	
Mains-Genset	• (1)	• (1)	• (1)	
Genset/Genset	• (1)	• (1)	• (1)	
Configuration				
Configuration using potentiometers and dip switches				
Configuration using display and keyboard				
Voltage and frequency auto-configuration				
Functions				
Contact for product availability			•	
Fixed functions inputs/outputs (defined by the factory)	•	•	•	
Configurable inputs/outputs				
Voltage and frequency checks				
Phase rotation check				
Unbalanced phase check				
LED indication of source availability				
LED position indication				
Programming of genset startup				
Genset connected on switch II	•	•	•	
Genset connected on switch I	•	•	•	
Test On Load				
Test Off Load				
Load shedding				
Display and measurement of powers and energy (when utilising CTs)				
Supervision				
Programming of genset startup				
RS485 communication				
Ethernet communication				
Webserver via Ethernet module				
Data logging				

(1) With an external controller
(2) Only on two pole versions
(3) Only available on the version with COM
(4) Configurable output

socomec Innovative Power Solutions

Which application?

Need of supervision?

	ATSE (Automatic)			
	40 to 160 A		125 to 3200 A	
	ATyS g M *p. 74*	***ATyS p M*** *p. 74*	***ATyS g*** *p. 86*	***ATyS p*** *p. 86*
	•	•	•	•
		•	•	
		•		•
	•	•	•	•
	•	•	•	•
	•		•	
		•		•
	• (2)		•	•
	•	• (4)	•	•
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		•		•
	•	•	•	•
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		•		•
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		•		•
		• (3)		•
				•
				•
				•

ATyS M

Remotely operated and automatic Transfer Switching Equipment
from 40 to 160 A

ATyS d M
I-0-II 4P

ATyS p M
I-0-II 4P

ATyS g M
I-0-II 2P

Function

ATyS M is a range of single-phase or three-phase modular remotely operated and automatic transfer switches with positive break indication. They enable on load changeover switching of two supply sources in remote control, automatic or manual mode. They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Secure operation
ATyS M products provide electrical and mechanical interlocks for optimum safety. The product also provides positive break indication, confirming switch position with dual mechanical indicators for increased safety.

The right functions for your applications
ATyS d M are remotely operated transfer switches dedicated to applications with an external ATS/AMF controller and to Building Management Systems. ATyS g M are automatic transfer switches specifically designed for mains/genset applications. ATyS p M are automatic transfer switches that have a flexible programming, a tripping function and integrated communication.

Fast commissioning
ATyS g M transfer switches offer significant time saving during commissioning (the process takes 2 to 3 minutes). Thanks to the design that allows commissioning through 4 potentiometers and 4 dip switches, a screwdriver is all that is required to configure the parameters.

Communication and configuration
ATyS p M integrate Modbus communication, which gives acces to most product data (status, voltages, frequencies...). A user friendly configuration software is also available free (Easyconfig) to configure, view and save all the parameters in the ATyS p M.

The solution for
- High Rise Buildings
- Data centre
- Healthcare buildings
- Banking and Insurance
- Transportation (Airports, tunnels…)

Strong points
- Secure operation
- The right functions for your applications
- Fast commissioning
- Communication and configuration

Conformity to standards
- IEC 60947-3
- IEC 60947-6-1
- GB 14048.11

Approvals and certifications(1)
(1) Product reference on request.

Modes of operation

AUT/MAN control

Back-up manual operation

Padlocking facility

What you need to know

On ATyS d M models

Power supply

ATySm_029_b

ATyS d M is equipped with two independent 230 VAC power inputs (176-288 VAC), 50/60 Hz (45/65 Hz).

These two power supplies can be connected individually one to switch I and the other to switch II:

- Power supply 101-102 must be available to reach position I
- Power supply 201-202 must be available to reach position II.

The use of a dual power supply (DPS), or an external supply module, provides full security of the 3 position commands with the availability of any supply.

In this case, both the supply inputs must be connected in parallel in order for them both to be supplied.

Electrical control

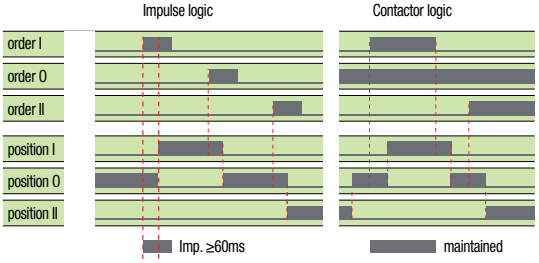
The positions are controlled by volt-free contacts which may come from an external automatic ATS controller (such as the ATyS C30), PLC, BMS or even simply using pushbuttons.

The power section switch positions are stable, with or without a supply present.

Control logic

Two types of control logic are available:

- Impulse logic
  - A switching command of at least 60 ms is necessary to initiate operation.
  - Command I and II have priority over command 0.
  - The first command (order) received (I or II) has priority as long as it remains present.
- Contactor logic
  - Order 0 must be maintained to activate contactor logic.
  - If command I or II disappears, the device returns to zero position, as long as the power supply is available.



ATySm_042_b_1_gb_cat

ATyS g M and p M models

Configuration

ATyS g M

Three-phase interface

atysm_031_b

- Common points between the three-phase and single-phase versions:
  - 2 potentiometers (normal supply loss and return time delays)
  - 2 dip-switches (Pause for 2 seconds in position 0 during switching I<->II ; Transformer/Transformer or Transformer/Genset application).
- 4 LEDs (Source availability indicators; "AUT" Automatic mode; Fault).
- 3 inputs for external control (Inhibition of the automatic mode; Remote test on load (Priority selection for Transformer/Transformer); Manual retransfer from the alternate supply to the normal supply).
- 1 NO bi-stable output relay for generator starting/stopping.
- 1 NC relay for product availability.
- Specific to three-phase ATyS M:
  - -2 additional potentiometers (Nominal voltage; Voltage/frequency thresholds)
  - 2 additional dip switches (50 or 60 Hz; network selection)
- Specific to the single-phase ATyS M:
  - PRG button: voltage and nominal frequency auto configuration.

ATyS p M

Three-phase interface

atysm_030_d

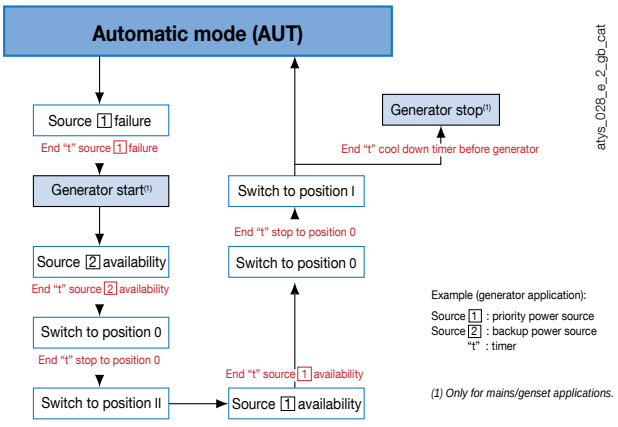
- Applications: Transformer/Genset, Transformer/Transformer, with or without priority.
- Display + keyboard (Device configuration; Displays supply measurements; Test and control mode access).
- LEDs (Product Power On ; Source availability indicators; Position indication; "AUT" Automatic mode; TEST/CONTROL Mode ; Fault).
- 3 configurable inputs.
- 3 configurable output relays.
- 1 configurable output relay for generator starting/stopping.
- Connection of a remote interface D20.
- RS485 MODBUS communication.

Power supply

- ATyS M automatic transfer switches are self powered from incoming supplies:
  230 VAC (176-288 VAC for the ATyS g M and 160-305 VAC for the ATyS p M), 50/60 Hz (45-65 Hz).
- For three-phase, with distributed neutral conductor: Product is powered between phase and neutral (if there is no neutral, an autotransformer is required)
- For single-phase, product is powered between phase and neutral.
- The neutral conductor can be connected to the left or right side of each switch.

Automatic control

- ATyS M g M and p M are equipped with a sequence logic (exemple in case of loss and return of the preferred source).



atys_028_e_2_gb_cat

References

ATyS d M

Rating (A)	No. of poles	ATyS d M	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact
40 A	4 P	9323 **4004**	1309 **4006** ■	2 pieces 1399 **4006**	2294 **4016** ■	1st AC included 2nd AC 1309 **0001** ■
63 A	4 P	9323 **4006**				
80 A	4 P	9323 **4008**				
100 A	4 P	9323 **4010**				
125 A	4 P	9323 **4012**				
160 A	4 P	9323 **4016**	1309 **4016** ■			

ATyS g M

Rating (A)	No. of poles	ATyS g M	Bridging bars	Terminal shrouds	Auxiliary contact
40 A	2 P	9353 **2004**	2 P 1309 **2006** 4 P 1309 **4006** ■	2294 **4016** ■	1st AC included 2nd AC 1309 **0001** ■
	4 P	9354 **4004**			
63 A	2 P	9353 **2006**			
	4 P	9354 **4006** ■			
80 A	2 P	9353 **2008**			
	4 P	9354 **4008**			
100 A	2 P	9353 **2010**			
	4 P	9354 **4010** ■			
125 A	2 P	9353 **2012**			
	4 P	9354 **4012**			
160 A	2 P	9353 **2016**	1309 **2016**		
	4 P	9354 **4016** ■	1309 **4016** ■		

ATyS p M

Rating (A)	No. of poles	ATyS p M + com	Bridging bars	Terminal shrouds	Auxiliary contact	Remote control interface
40 A	4 P	9384 **4004**	1309 **4006** ■	2294 **4016** ■	1st AC included 2nd AC 1309 **0001** ■	D20 9599 **2020**
63 A	4 P	9384 **4006**				
80 A	4 P	9384 **4008**				
100 A	4 P	9384 **4010**				
125 A	4 P	9384 **4012**				
160 A	4 P	9384 **4016**	1309 **4016** ■			

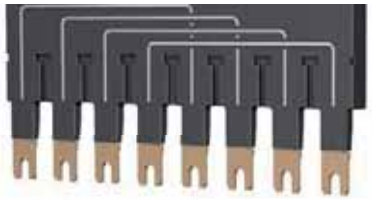
Reference in **green** are new products. ■ Stock items.

Accessories

Bridging bars

Use

Used to bridge the outgoing common connection between switch I and switch II. The bridging bar does not reduce the connection capacity of the cage terminals.


atysm_025_a

Rating (A)	No. of poles	Reference
40 … 125	2 P	1309 **2006**
160	2 P	1309 **2016**
40 … 125	4 P	1309 **4006** ■
160	4 P	1309 **4016** ■

Voltage sensing and power supply tap

Use

It allows connection of 2x ≤1.5 mm² voltage sensing or power cables.

The single pole voltage sensing tap can be mounted in any of the terminals (incoming) without reducing their connecting capacity.

atysm_026_a

Rating (A)	Pack	Reference
40 … 160	2 pieces	1399 **4006**

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.

Avantages of the terminal shroud

Perforations allow remote thermographic inspection without the need to remove the shrouds. Tamper seals can be fitted for increased security.

Mounting

For upstream and downstream protection of three-phase products (4 P), please order the reference twice. For the single-phase products (2 P) please order the reference once.

atysm_027_a

Rating (A)	Position	Reference
40 … 160	top and bottom	2294 **4016** ■ (1)

(1) Reference composed of 2 pieces.

Auxiliary contact

Use

Auxiliary contacts for position indication. A maximum of two auxiliary contact blocks can be fitted to each product.

Each auxiliary contact block integrates 3 NO/ NC auxiliary contacts, one per position (I, 0, II).

The ATyS d M s is supplied with one auxiliary contact block fitted as standard; This A/C block has separate common points.

Characteristics:

250 VAC / 5 A maximum.

24 VDC / 2 A maximum.

access_353_a

Rating (A)	Type	Reference
40 … 160	Separate common points	1309 **0001** ■

Reference in **green** are new products. ■ Stock items.

Accessories (continued)

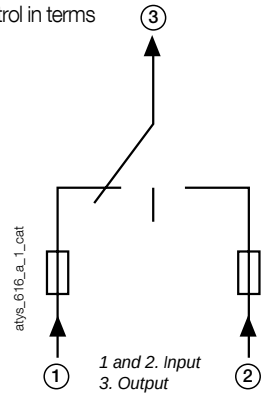
Double power supply - DPS

Use

Allows an ATyS d M to be supplied by two 230 VAC, 50/60 Hz networks to have full control in terms of transfer to and from any position with any one of the power supplies available.

Input

- The input is considered “active” from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: each input is fuse protected 3.15 A.
- Connection on terminals: max. 6 mm^2.
- Modular device: 4 module width.



Input 1	Input 2	Output
230 VAC	0 VAC	230 VAC (Input 1)
0 VAC	230 VAC	230 VAC (Input 2)
230 VAC	230 VAC	230 VAC (Input 1)
0 VAC	0 VAC	0 VAC

Description of accessories	Reference
DPS	1599 **4001**

Remote interfaces for ATyS p M

Use

To remotely display source availability and position indication typically used on the front of a panel when the ATyS M is enclosed.

The remote interface is powered directly from the ATyS M via the RJ45 connection cable.

Maximum cable length: 3 m.

D20

The D20 displays source availability, position indication, measurements and enables mode control and configuration from the front of the display panel.

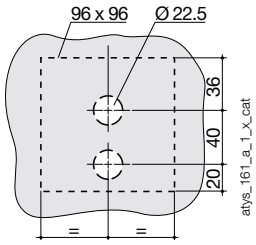
Protection degree: IP21

Door mounting

2 holes Ø 22.5.

ATyS M connection via RJ45 cable, not isolated. Cable not provided

Interfaces are self powered from the ATyS M



Drillings

Description of accessories	Reference
D20	9599 **2020**

Connection cable for remote interfaces

Use

To connect between a remote interface (D20) and an ATyS p M.

Characteristics:

RJ45 8 wire straight-through, non isolated cable. Length 3m.

Type	Length	Reference
RJ45 cable	3 m	1599 **2009**

Reference in **green** are new products. ■ Stock items.

Characteristics according to IEC 60947-3 and IEC 60947-6-1

40 to 160 A

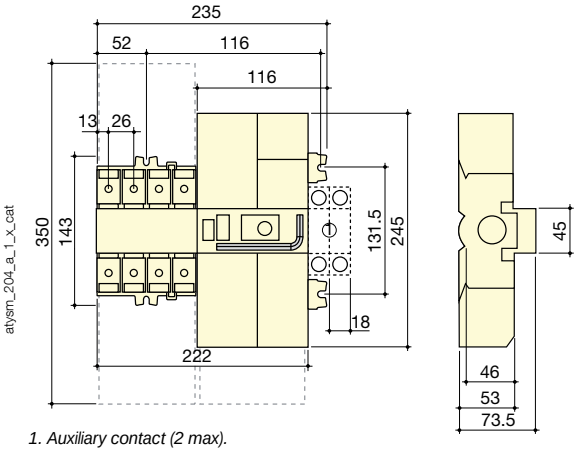
Thermal current I_{th} at 40°C		40 A	63 A	80 A	100 A	125 A	160 A
Rated insulation voltage U_i (V) (power circuit)		800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV) (power circuit)		6	6	6	6	6	6
Rated insulation voltage U_i (V) (operation circuit)		300	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (operation circuit) - ATyS d M		4	4	4	4	4	4
Rated impulse withstand voltage U_{imp} (kV) (operation circuit) - ATyS t M, g M and p M		2.5	2.5	2.5	2.5	2.5	2.5
Rated operational currents I_e (A) according to IEC 60947-6-1							
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-31 A / AC-31 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-32 A / AC-32 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-33 A / AC-33 B	-/40	-/63	-/80	-/100	-/125	-/125
Rated operational currents I_e (A) according to IEC 60947-3							
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	40/40	63/63	80/80	100/100	125/125	125/160
690 VAC(6)	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
690 VAC(6)	AC-22 A / AC-22 B	40/40	63/63	80/80	80/80	100/125	100/125
690 VAC(6)	AC-23 A / AC-23 B	40/40	63/63	63/63	80/80	80/80	80/80
Fuse protected short-circuit withstand (kA rms prospective)							
Prospective short-circuit current (kA rms)		50	50	50	50	50	40
Associated fuse rating (A)		40	63	80	100	125	160
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s(4)							
Rated short-time withstand current 0.3s I_{cw} (kA rms)		7	7	7	7	7	7
Short-circuit capacity (without protection)							
Rated short-time withstand current 1 s. I_{CW} (kA rms)		4	4	4	4	4	4
Rated peak withstand current (kA peak)(2)		17	17	17	17	17	17
Connection							
Minimum Cu cable cross-section (mm^2)		10	10	10	10	10	10
Maximum Cu cable cross-section (mm^2)		70	70	70	70	70	70
Tightening torque (Nm)		5	5	5	5	5	5
Switching time(5)							
I - 0 or II - 0 (ms)(3)		45	45	45	45	45	45
I - II or II - I (ms) (3)		180	180	180	180	180	180
Duration of "electrical blackout" I - II (ms) minimum		90	90	90	90	90	90
Power supply							
Power supply (VAC) - ATyS d M, t M and g M		176/288	176/288	176/288	176/288	176/288	176/288
Power supply min / max (VAC) - ATyS p M		160/300	160/300	160/300	160/300	160/300	160/300
Control supply power demand							
Nominal power (VA)		6	6	6	6	6	6
Max current under 230 VAC (A) - ATyS d M, t M and g M		30	30	30	30	30	30
Max current under 230 VAC (A) - ATyS p M		20	20	20	20	20	20
Mechanical characteristics							
Durability (number of operating cycles)		10 000	10 000	10 000	10 000	10 000	10 000
Weight of single-phase versions - without packaging (kg)		2.8	2.8	2.8	2.8	2.8	2.8
Weight of single-phase versions - with packaging (kg)		3.5	3.5	3.5	3.5	3.5	3.5
Weight of three-phase versions - without packaging (kg)		3.5	3.5	3.5	3.5	3.5	3.5
Weight of three-phase versions - with packaging (kg)		4.2	4.2	4.2	4.2	4.2	4.2

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) For a rated operational voltage U_e = 400 VAC.
(3) Between the command given and reaching of position at U_n (under nominal conditions).
(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.
(5) At rated voltage - excluding time delays and loss of source detection time when applicable.
(6) With terminal shrouds.

Dimensions (mm)

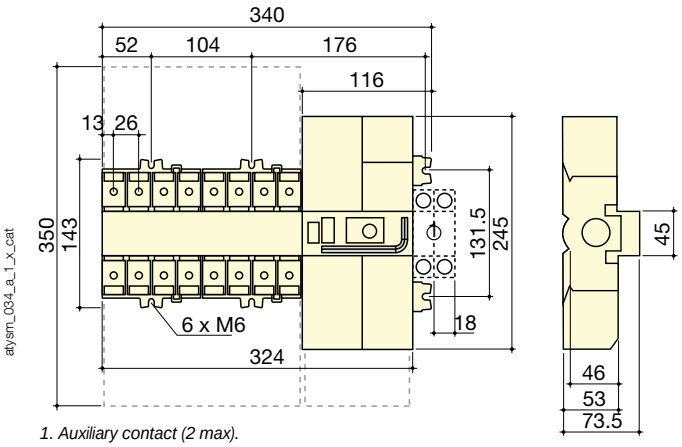
40 to 160 A

Single-phase ATyS M



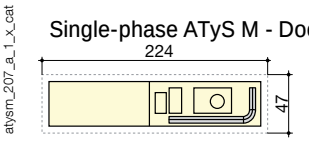
1. Auxiliary contact (2 max).

Three-phase ATyS M

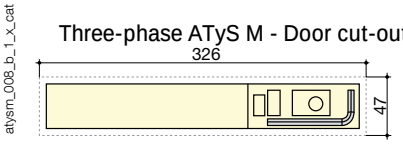


1. Auxiliary contact (2 max).

Single-phase ATyS M - Door cut-out

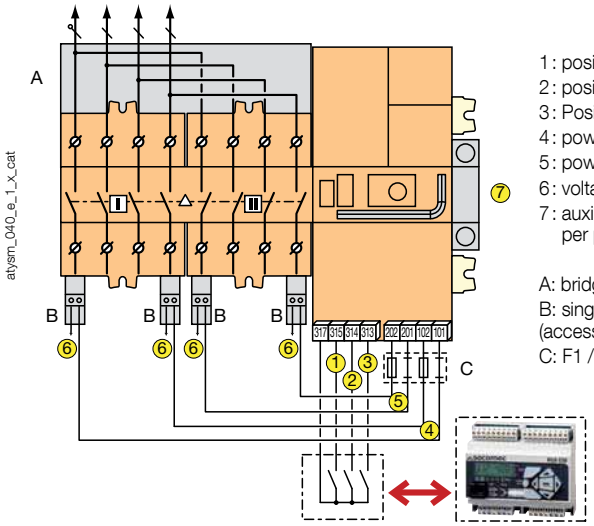


Three-phase ATyS M - Door cut-out



Terminals and connections

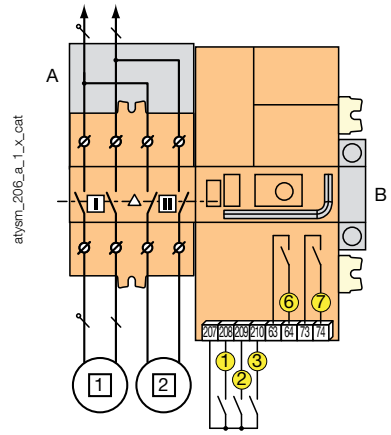
Three-phase ATyS d M



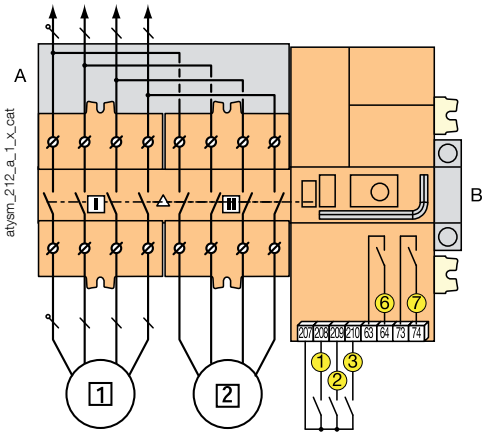
1 : position I control
2 : position II control
3 : Position 0 / C control
4 : power supply I (230 VAC)
5 : power supply II (230 VAC)
6 : voltage tap
7 : auxiliary contact block - 1 NO/NC contact per position I, 0, II (factory fitted)

A: bridging bar (accessories)
B: single-phase voltage sensing tap (accessories)
C: F1 / F2 = fuse 10 A gG

Single-phase ATyS g M



Three-phase ATyS g M

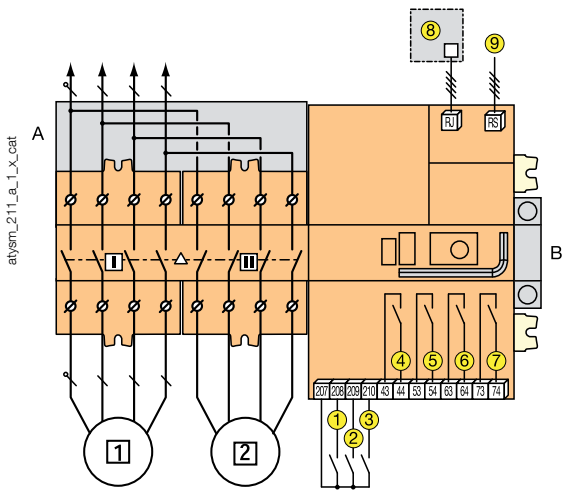


[1] preferred source
[2] alternate source

1 : manual retransfer / priority change
2 : test on load
3 : automatic mode inhibition
6 : product availability relay
7 : genset start / stop control

A: bridging bar (accessories)
B: auxiliary contact block - 1 NO/NC contact per position I, 0, II (accessories)

Three-phase ATyS p M



[1] preferred source
[2] alternate source

1 - 2 - 3 : programmable inputs
4 - 5 - 6 : programmable outputs
7 : genset start / stop control
8 : RJ 45 for connecting a D20 remote interface
9 : RS485 for communication.

A: bridging bar (accessories)

ATyS S

Remotely operated Transfer Switching Equipment
from 40 to 125 A

atys-s_018_a

The solution for

> Genset < 90 kVA
> Heating systems
> Climate control
> Ventilation systems
> Telecommunications

Strong points

> Extensive power supply range
> Safety and reliability
> Easy integration
> Simplified maintenance

Conformity to standards

> IEC 60947-6-1
> IEC 60947-3
> GB 14048-11

Approvals and certifications

Function

ATyS S products are 4 pole remotely operated transfer switches with positive break indication.
They enable the on load transfer of two three-phase supplies via remote volt-free contacts, from either an external automatic controller, using pulse logic, or a switch.
They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Extensive power supply range
The ATyS S is available in four supply versions, each with a broad range (+/-30%).
The four versions are:
- 12 VDC power supply.
- 24/48 VDC power supply (on request).
- 230 VAC single power supply.
- 2 x 230 VAC dual power supply (on request).

Safety and reliability
ATyS S products use stable position technology, ensuring constant pressure on the contacts and preventing premature faults. In addition, they do not require a power supply to maintain position, thus protecting their loads from voltage fluctuations.

Easy integration
ATyS S products can be easily installed inside enclosures. Their design, and in particular their compact size, enables integration within most 200 mm deep enclosures.

Simplified maintenance
Maintenance can be carried out easily under load, with manual operation still available.
The control and motorisation section can be replaced simply by removing 4 screws, with no work required on the installation cabling.

References

ATyS S

Rating (A)	No. of poles	Power supply	ATyS S	Bridging bars	Terminal shrouds
40 A	4 P	12 VDC	9505 **4004**	4 P 9509 **4013**	Source side 2 pieces 9594 **4012** Load side 2 pieces 9594 **9012**
	4 P	230 VAC	9503 **4004**		
63 A	4 P	12 VDC	9505 **4006**		
	4 P	230 VAC	9503 **4006**		
80 A	4 P	12 VDC	9505 **4008**		
	4 P	230 VAC	9503 **4008**		
100 A	4 P	12 VDC	9505 **4010**		
	4 P	230 VAC	9503 **4010**		
125 A	4 P	12 VDC	9505 **4012**		
	4 P	230 VAC	9503 **4012**		

Others power supply: 24/48 V; dual 230 VAC on request.

Accessories

Bridging bars

Use

For bridging power terminals on the top or bottom side of the switch.

Rating (A)	No. of poles	Reference
40 ... 125	4 P	9509 **4013**

Terminal shrouds

Use

IP2X protection against direct contact with terminals or connecting parts.

Terminal shrouds for the source side		
Rating (A)	**Pack**	**Reference**
40 ... 125	2 pieces	9594 **4012**

Terminal shrouds for the load side		
Rating (A)	**Pack**	**Reference**
40 ... 125	2 pieces	9594 **9012**

For other power supply

> 24/48 VDC
> Dual 230 VAC

Please consult www.socomec.com

Reference in **green** are new products. ■ Stock items.

Characteristics according to IEC 60947-3 and IEC 60947-6-1

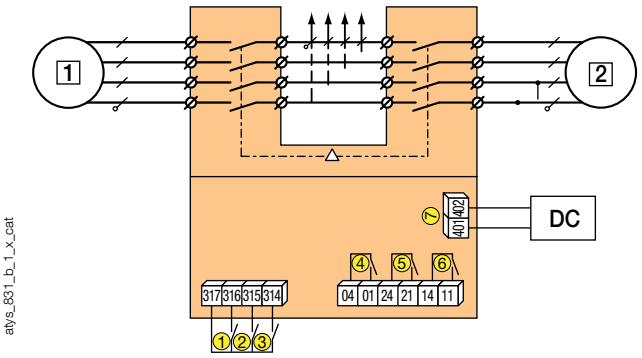
40 to 125 A

Thermal current I_{th} at 40°C		**40 A**	**63 A**	**80 A**	**100 A**	**125 A**
Rated insulation voltage U_i (V) (power circuit)		800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV) (power circuit)		6	6	6	6	6
Rated insulation voltage U_i (V) (operation circuit)		300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (operation circuit)		4	4	4	4	4
Rated operational currents I_e (A) according to IEC 60947-6-1						
Rated voltage	**Utilisation category**	**A/B**	**A/B**	**A/B**	**A/B**	**A/B**
415 VAC	AC-31 B	40	63	80	100	125
415 VAC	AC-32 B	40	63	80	80	80
Rated operational currents I_e (A) according to IEC 60947-3						
Rated voltage	**Utilisation category**	**A/B**	**A/B**	**A/B**	**A/B**	**A/B**
415 VAC	AC-20 A / AC-20 B	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	100/125
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	100/100
415 VAC	AC-23 A / AC-23 B	-/40	-/63	-/63	-/63	-/63
Fuse protected short-circuit withstand (kA rms prospective)						
Prospective short-circuit current (kA rms)		50	50	50	25	15
Associated fuse rating (A)		40	63	80	100	125
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s(3)						
Rated short-time withstand current 0.3s I_{cw} (kA rms)		3.5	3.5	3.5	3.5	3.5
Short-circuit capacity as per IEC 60947-6-1						
Rated short-time withstand current 0.03 s. (kA)		5	5	5	5	-
Rated short-circuit making capacity I_{cm} (kA peak)		7.65	7.65	7.65	7.65	-
Short-circuit capacity as per IEC 60947-3 (without protection)						
Rated short-time withstand current 1 s. I_{cw} (kA rms)		2.5	2.5	2.5	2.5	2.5
Rated peak withstand current (kA peak)		12	12	12	12	12
Connection						
Maximum Cu cable cross-section (mm^2)		50	50	50	50	50
Tightening torque mini / maxi (Nm)		1.2/3	1.2/3	1.2/3	1.2/3	1.2/3
Switching time (Standard setting)						
I - 0 or II - 0 (ms)		500	500	500	500	500
I - II or II - I (ms)		1000	1000	1000	1000	1000
Duration of "electrical blackout" I - II (ms) minimum		500	500	500	500	500
Power supply						
Power supply 12 VDC min / max (VDC)		9/15	9/15	9/15	9/15	9/15
Power supply 230 VAC min / max (VAC)		160/310	160/310	160/310	160/310	160/310
Control supply power demand						
Power supply 12 VDC inrush / nominal (VA)		200/40	200/40	200/40	200/40	200/40
Supply 230 VAC inrush / nominal (VA)		200/40	200/40	200/40	200/40	200/40
Mechanical characteristics						
Durability (number of operating cycles)		25 000	25 000	25 000	25 000	25 000
Weight ATyS S 4 P (kg)		3	3	3	3	3

(1) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

Terminals and connections

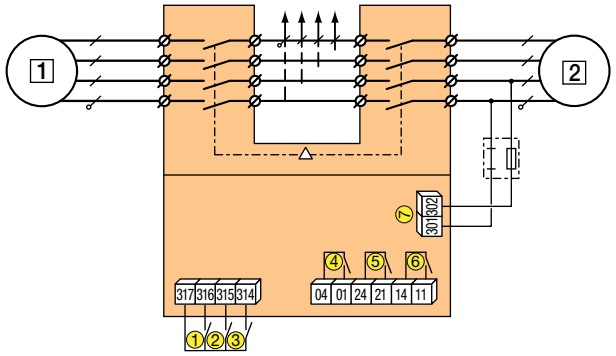
DC version



ats_831_b_1_x_cat

1 preferred source
2 alternate source
1 : position 0 control
2 : position I control
3 : position II control
4 : auxiliary contact, closed when the switch is in position 0
5 : auxiliary contact, closed when the switch is in position II
6 : auxiliary contact, closed when the switch is in position I
7 : power supply 12 VDC (9-15 VDC) or 24 VDC / 48 VDC (17-62 VDC) depending on the version.

230 VAC

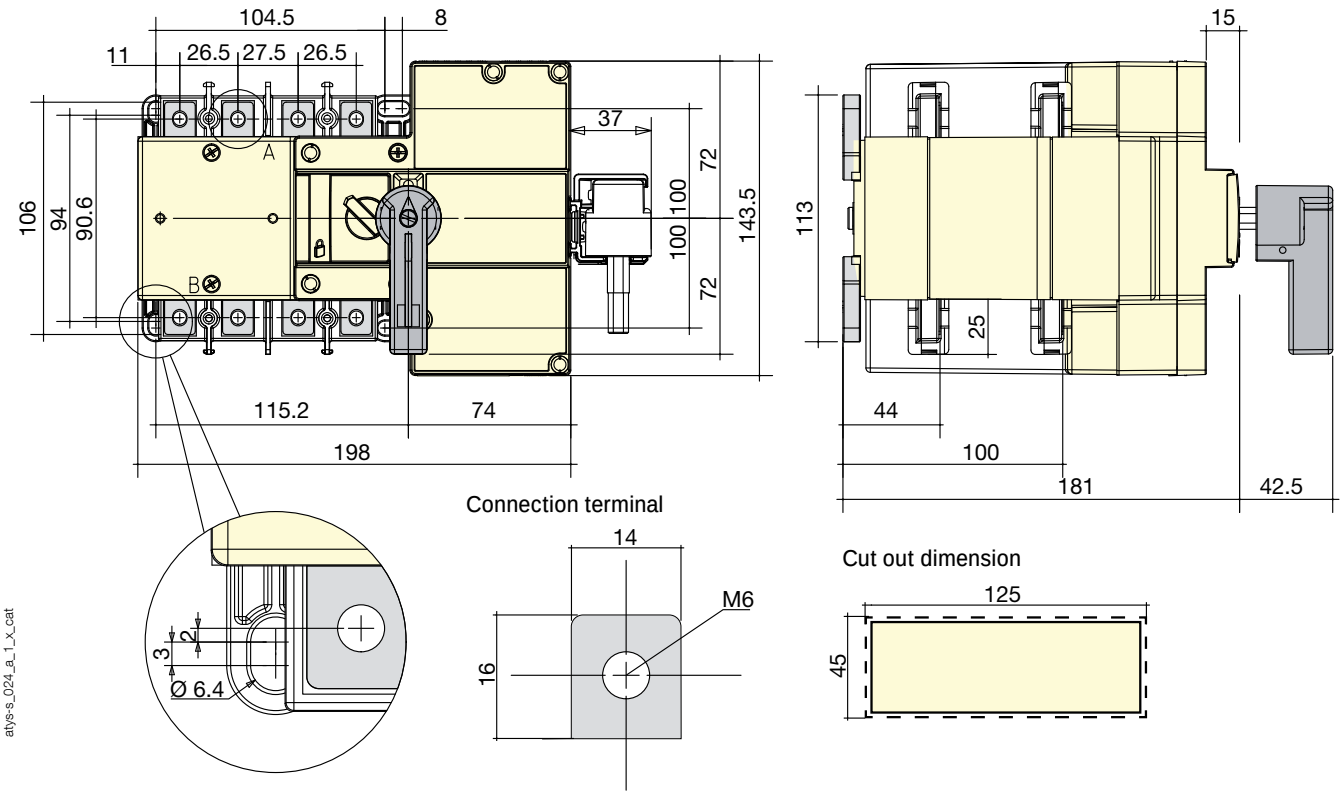


ats_832_a_1_x_cat

1 preferred source
2 alternate source
1 : position 0 control
2 : position I control
3 : position II control
4 : auxiliary contact, closed when the switch is in position 0
5 : auxiliary contact, closed when the switch is in position II
6 : auxiliary contact, closed when the switch is in position I
7 : power supply kit: 230 VAC (160-310 VAC)

Dimensions (mm)

40 to 125 A



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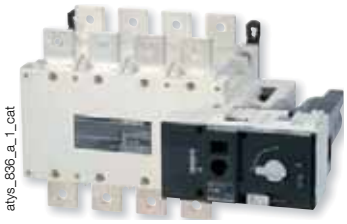
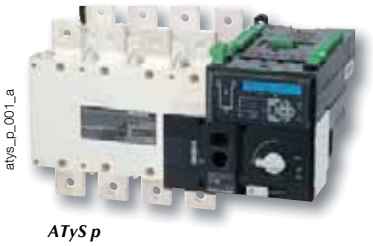
ATyS

Remotely operated Transfer Switching Equipment
from 125 to 3200 A



ATyS r

ATyS g



ATyS p

The solution for

- Transportation (Airports, tunnels…)
- Industry
- Commercials
- Gensets

Strong points

- Watchdog relay to check product availability
- The right functions for your applications
- Fast commissioning
- Communication and events recording
- Power measurements

Conformity to standards

- IEC 60947-6-1
- IEC 60947-3

Approvals and certifications

Function

ATyS is a range of three-phase remotely operated and automatic transfer switches, 3 or 4 poles, with positive break indication. They enable on load changeover switching of two supply sources in remote control, automatic or manual mode. They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Watchdog relay to check product availability

ATyS products are equipped with a Watchdog relay which constantly monitors your product, thereby securing the installation.

This relay informs in real time the user of the product's availability, i.e. wether it is operational and ready for source switching.

The right functions for your applications

ATyS r are remotely operated transfer switches dedicated to applications with an external ATS/AMF controller and to Building Management Systems. ATyS g are automatic transfer switches specifically designed for mains/genset applications. ATyS p are automatic transfer switches that have a flexible programming and communication modules.

Fast commissioning

ATyS g offer significant time saving during commissioning (process takes 2 to 3 minutes). Thanks to the design that allows commissioning through just 4 potentiometers and 4 DIP switches, a screwdriver is all that is required to configure the parameters.

For added simplicity ATyS g and ATyS p also offer an autoconfiguration function which enables automatic adjustment of the rated voltage and frequency.

Communication and events recording

ATyS p offer communication functions thanks to the addition of optional modules, such as RS485 module for Modbus communication or Ethernet module, which includes a webserver. This communication gives access to events recording, thus enabling monitoring of your installation.

Power measurements

ATyS p products are particularly suited to energy management and monitoring. In addition to their integrated power and energy functions (with a 2% accuracy level, programmable inputs/outputs can be utillised to control load shedding based on a load level or tariff.

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What you need to know

On ATyS r models

Electrical control

The positions are controlled by volt-free contacts which may come from an external automatic ATS controller (such as the ATyS C30), PLC, BMS or even simply using pushbuttons.
The power section switch positions are stable, with or without a supply present.

Power supply

ATyS r products offer greater availability thanks to their extensive power supply range of 208 to 277 Vac +/-20 %.

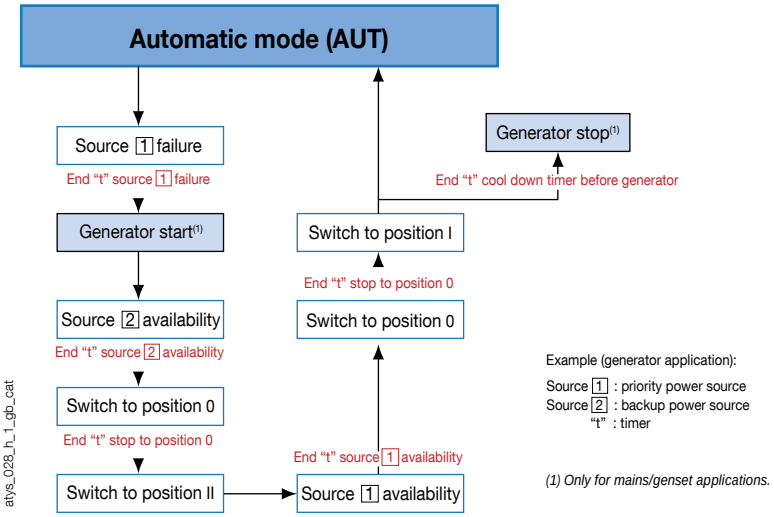
Control logic

Two types of control logic are available:

- Impulse logic
  - A switching command of at least 60 ms is necessary to initiate operation.
  - Command I and II have priority over command 0.
  - The first command (order) received (I or II) has priority as long as it remains present.
- Contactor logic
  - Order 0 must be maintained to activate contactor logic.
  - If command I or II disappears, the device returns to zero position, as long as the power supply is available.

On ATyS g and p models

Automatic control



Configuration

ATyS g

- 4 potentiometers (nominal voltage, voltage and frequency hysteresis, supply failure timer and supply return timer)
- 4 dip-switches (Type of network, With or without neutral, Pause for 2 seconds in position 0 during switching I<->II; Transformer/ Transformer or Transformer/Genset application).
- LEDs (Source availability; Product's position, Automatic mode, Manual mode, Control mode, Test on Load, Test off Load, Fault, Ready, Power).
- 11 inputs for external control (Control enabled; Position I, Position 0, Position II, Priority to position 0, Automatism inhibition, Manual retransfer, Stability timer bypass, Test off Load priority, Test off Load, Test on Load).
- 1 NOC output relay for generator starting/stopping.
- 5 outpus (Product availability, Motor availability, Position I, Position 0, Position II).
- Three phases monitoring on source I and II.

ATyS p

- LCD screen and keypad to have access to all programmable parameters
- LEDs (Source availability; Product's position, Automatic mode, Manual mode, Control mode, Test on Load, Test off Load, Fault, Ready, Power).
- 5 fixed inputs for external control (Control enabled; Position I, Position 0, Position II, Priority to position 0).
- 6 programmable inputs.
- 1 NOC output relay for generator starting/stopping.
- 4 fixed outpus (Motor availability, Position I, Position 0, Position II).
- 1 programmable output (Set to Product Availability as standard)
- 4 slots to connect option modules.
- Connector for current transformes.
- Three phases monitoring on source I and II.

References

ATyS r

Rating (A) / Frame size	No. of poles	ATyS r	Bridging bars	Terminal shrouds	Auxiliary contact
125 A / B3	3 P	9523 **3012**	1 P 4109 **0019** ■	3 P 2694 **3014** ■ (1) 4 P 2694 **4014** ■ (1)	1599 **0502**
	4 P	9523 **4012**			
160 A / B3	3 P	9523 **3016**			
	4 P	9523 **4016**			
250 A / B4	3 P	9523 **3025** ■	1 P 4109 **0025** ■	3 P 2694 **3021** ■ (1) 4 P 2694 **4021** ■ (1)	
	4 P	9523 **4025** ■			
400 A / B4	3 P	9523 **3040** ■	1 P 4109 **0039** ■		
	4 P	9523 **4040** ■			
630 A / B5	3 P	9523 **3063** ■	1 P 4109 **0063** ■	3 P 2694 **3051** ■ (1) 4 P 2694 **4051** ■ (1)	
	4 P	9523 **4063** ■			
800 A / B6	3 P	9523 **3080**	1 P 4109 **0080**		1599 **0532**
	4 P	9523 **4080**			
1000 A / B6	3 P	9523 **3100**			
	4 P	9523 **4100**			
1250 A / B6	3 P	9523 **3120**	1 P 4109 **0120**		
	4 P	9523 **4120**			
1600 A / B7	3 P	9523 **3160**	1 P 4109 **0160**		
	4 P	9523 **4160**			
2000 A / B8	3 P	9523 **3200**	(2)		included
	4 P	9523 **4200**			
2500 A / B8	3 P	9523 **3250**			
	4 P	9523 **4250**			
3200 A / B8	3 P	9523 **3320**			
	4 P	9523 **4320**			

(1) To fully shroud front, rear, top and bottom 4 references required.
To shroud front switch top and bottom 2 references required.
(2) See "Copper bar connection kits" page 91.

Technical information

> Accessories: see page 91.
> Characteristics: see page 94.
> Terminals and connections: see page 96.
> Dimensions: see page 98.

Reference in **green** are new products. ■ Stock items.

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ATyS g

Rating (A) / Frame size	No. of poles	ATyS g	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact
125 A / B3	3 P	9553 **3012**	1 P 4109 **0019** ■	3 P 1559 **3012** 4 P 1559 **4012**	3 P 2694 **3014** ■ (2) 4 P 2694 **4014** ■ (2)	1599 **0502**
	4 P	9553 **4012**				
160 A / B3	3 P	9553 **3016**				
	4 P	9553 **4016**				
250 A / B4	3 P	9553 **3025** ■	1 P 4109 **0025** ■	3 P 1559 **3025** ■ 4 P 1559 **4025** ■	3 P 2694 **3021** ■ (2) 4 P 2694 **4021** ■ (2)	
	4 P	9553 **4025** ■				
400 A / B4	3 P	9553 **3040** ■	1 P 4109 **0039** ■	3 P 1559 **3040** 4 P 1559 **4045**		
	4 P	9553 **4040** ■				
630 A / B5	3 P	9553 **3063** ■	1 P 4109 **0063** ■	3 P 1559 **3063** ■ 4 P 1559 **4063** ■	3 P 2694 **3051** ■ (2) 4 P 2694 **4051** ■ (2)	
	4 P	9553 **4063** ■				
800 A / B6	3 P	9553 **3080**	1 P 4109 **0080**	3 P 1559 **3080** 4 P 1559 **4080**		1599 **0532**
	4 P	9553 **4080**				
1000 A / B6	3 P	9553 **3100**				
	4 P	9553 **4100**				
1250 A / B6	3 P	9553 **3120**	1 P 4109 **0120**	3 P 1559 **3120** 4 P 1559 **4120**		
	4 P	9553 **4120**				
1600 A / B7	3 P	9553 **3160**	1 P 4109 **0160**	3 P 1559 **3160** 4 P 1559 **4160**		
	4 P	9553 **4160**				
2000 A / B8	3 P	9553 **3200**	(3)	3 P 1559 **3200** 4 P 1559 **4201**(1)		included
	4 P	9553 **4200**				
2500 A / B8	3 P	9553 **3250**				
	4 P	9553 **4250**				
3200 A / B8	3 P	9553 **3320**				
	4 P	9553 **4320**				

(1) To fully shroud front, rear, top and bottom 4 references required.
To shroud front switch top and bottom 2 references required.
(2) 2 pieces: one for top side and another for bottom side.
(3) See "Copper bar connection kits" page 91.

Technical information

> Accessories: see page 91.
> Characteristics: see page 94.
> Terminals and connections: see page 96.
> Dimensions: see page 98.

Reference in **green** are new products. ■ Stock items.

References (continued)

ATyS p

Rating (A) / Frame size	No. of poles	ATyS p	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Optional modules	Auxiliary contact
125 A / B3	3 P	9573 **3012**	1 P 4109 **0019** ■	3 P 1559 **3012** 4 P 1559 **4012**	3 P 2694 **3014** ■ (1) 4 P 2694 **4014** ■ (1)	RS485 MODBUS communication 4825 **0092** 2 inputs / 2 outputs 1599 **2001** Ethernet communication 4825 **0203** Ethernet communication + RS485 MODBUS gateway 4825 **0204**	1599 **0502**
	4 P	9573 **4012**					
160 A / B3	3 P	9573 **3016**					
	4 P	9573 **4016**					
250 A / B4	3 P	9573 **3025**	1 P 4109 **0025** ■	3 P 1559 **3025** ■ 4 P 1559 **4025** ■	3 P 2694 **3021** ■ (1) 4 P 2694 **4021** ■ (1)		
	4 P	9573 **4025**					
400 A / B4	3 P	9573 **3040**	1 P 4109 **0039** ■	3 P 1559 **3040** 4 P 1559 **4040**			
	4 P	9573 **4040**					
630 A / B5	3 P	9573 **3063**	1 P 4109 **0063** ■	3 P 1559 **3063** ■ 4 P 1559 **4063** ■	3 P 2694 **3051** ■ (1) 4 P 2694 **4051** ■ (1)		
	4 P	9573 **4063**					
800 A / B6	3 P	9573 **3080**	1 P 4109 **0080**	3 P 1559 **3080** 4 P 1559 **4080**			1599 **0532**
	4 P	9573 **4080**					
1000 A / B6	3 P	9573 **3100**					
	4 P	9573 **4100**					
1250 A / B6	3 P	9573 **3120**	1 P 4109 **0120**	3 P 1559 **3120** 4 P 1559 **4120**			
	4 P	9573 **4120**					
1600 A / B7	3 P	9573 **3160**	1 P 4109 **0160**	3 P 1559 **3160** 4 P 1559 **4160**			
	4 P	9573 **4160**					
2000 A / B8	3 P	9573 **3200**	(2)	3 P 1559 **3200** 4 P 1559 **4201**			included
	4 P	9573 **4200**					
2500 A / B8	3 P	9573 **3250**					
	4 P	9573 **4250**					
3200 A / B8	3 P	9573 **3320**					
	4 P	9573 **4320**					

(1) To fully shroud front, rear, top and bottom 4 references required.
To shroud front switch top and bottom 2 references required.
(2) See "Copper bar connection kits" page 91.

Technical information

> Accessories: see page 91.
> Characteristics: see page 94.
> Terminals and connections: see page 97.
> Dimensions: see page 98.

Reference in **green** are new products. ■ Stock items.

Accessories

Terminal shrouds

Use

IP2X protection against direct contact with terminals or connecting parts.

Advantages

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

Rating (A)	Frame size	No. of poles	Position	Reference
125 … 160	B3	3 P	top / bottom / front (I) / rear (II)	2694 **3014** ■ (1)(2)
125 … 160	B3	4 P	top / bottom / front (I) / rear (II)	2694 **4014** ■ (1)(2)
250 … 400	B4	3 P	top / bottom / front (I) / rear (II)	2694 **3021** ■ (1)(2)
250 … 400	B4	4 P	top / bottom / front (I) / rear (II)	2694 **4021** ■ (1)(2)
630	B5	3 P	top / bottom / front (I) / rear (II)	2694 **3051** ■ (1)(2)
630	B5	4 P	top / bottom / front (I) / rear (II)	2694 **4051** ■ (1)(2)

(1) To shroud front switch top and bottom 2 references required.
(2) To fully shroud front, rear, top and bottom 4 references required.

acces_206_a_2_cat

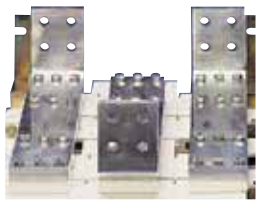
Bridging bars

Use

For bridging power terminals on the top or bottom side of the switch.
One piece required per pole.

Rating (A)	Frame size	No. of poles	Section (mm)	Reference
125 … 160	B3	1 P	20 x 2.5	4109 **0019** ■
250	B4	1 P	25 x 2.5	4109 **0025** ■
400	B4	1 P	32 x 5	4109 **0039** ■
630	B5	1 P	50 x 5	4109 **0063** ■
800 … 1000	B6	1 P	50 x 6	4109 **0080**
1250	B6	1 P	60 x 8	4109 **0120**
1600	B7	1 P	90 x 10	4109 **0160**

acces_205_a_2_cat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Copper bar connection kits

Use

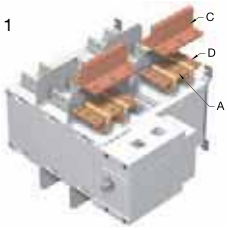
Enables: connection between the two power terminals of the same pole for 2000 to 3200 A ratings (Fig. 2)

Bolt sets must be ordered separately. The user manual for these specific accessories can be downloaded from www.socomec.com.

Top or bottom edgewise connection - Fig. 1

Rating (A)	Frame size	Piece	Quantity to order per pole(1)	Reference
2000 … 2500	B8	Connection - part A	2	2619 **1200**
2000 … 2500	B8	T piece - part C	2	2629 **1200**(2)
2000 … 2500	B8	Bracket- part D	2	2639 **1200**(2)
3200	B8	Connection - part A		included
3200	B8	T piece - part C	2	2629 **1200**(2)
3200	B8	Bracket- part D	2	2639 **1200**(2)

Fig. 1



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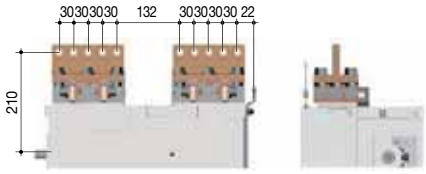


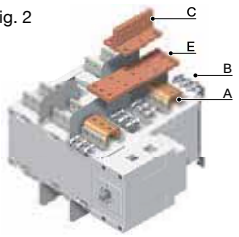
acces_233_a_1_cat

Top or bottom bridging connection - Fig. 2

Rating (A)	Frame size	Piece	Quantity to order per pole(1)	Reference
2000 … 2500	B8	Connection - part A	2	2619 **1200**
2000 … 2500	B8	Bolt set - part B	2	2699 **1200**
2000 … 2500	B8	Bar - part E	1	4109 **0320**(2)
2000 … 2500	B8	T piece - part C	1	2629 **1200**(2)
3200	B8	Connection - part A		included
3200	B8	Bolt set - part B	2	2699 **1200**
3200	B8	Bar - part E	1	4109 **0320**(2)
3200	B8	T piece - part C	1	2629 **1200**(2)

(1) Example for 3 pole device equipped upstream only: Order 3 times the indicated quantities.
(2) Bolt set is provided with the accessories.

Fig. 2



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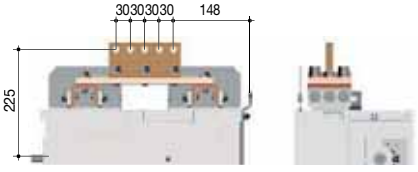


acces_234_a_1_cat

Reference in **green** are new products. ■ Stock items.

Accessories (continued)

Voltage sensing and power supply kit

Use

For power supply and voltage measurement (4 wire, three-phase) for the ATyS g and p.

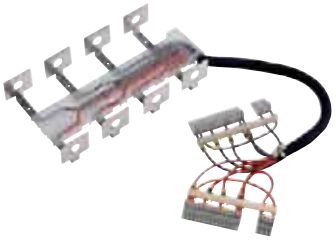
Routing of the conductors is controlled, which means that no specific protective device is necessary for these connections.

The kit can be fitted on the top or bottom of the switch.

Note: the 3-pole version does not integrate the power supply.

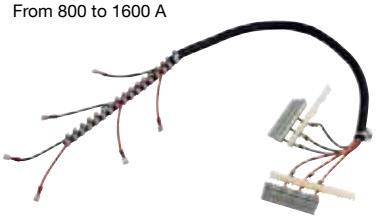
Rating (A)	Frame size	For ATyS g and ATyS p - 3 poles Reference	For ATyS g and ATyS p - 4 poles Neutral on the right Reference
125 … 160	B3	1559 **3012**	1559 **4012**
250	B4	1559 **3025** ■	1559 **4025** ■
400	B4	1559 **3040** ■	1559 **4040** ■
630	B5	1559 **3063** ■	1559 **4063** ■
800 … 1000	B6	1559 **3080**	1559 **4080**
1250	B6	1559 **3120**	1559 **4120**
1600	B7	1559 **3160**	1559 **4160**
2000 … 3200	B8	1559 **3200**	1559 **4200**

From 125 to 630 A



ats_606_a_1_cat

From 800 to 1600 A



ats_603_a_2_cat

Auxiliary contact

Use

Pre breaking and signalling of positions I and II: each reference provides a single factory fitted NO/NC contact for both positions.

Low level auxiliary contacts: please consult us.
1 NO contact per position is factory fitted.

Rating (A)	Frame size	Nominal current (A)	Operating current I_e (A) 250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
125 … 3200	B3 … B8	16	12	8	14	6

Rating (A)	Frame size	Type of mounting	Reference
125 … 630	B3 … B5	Customer fit	1599 **0502**(1)
800 … 1600	B6 … B7	Customer fit	1599 **0532**(1)
2000 … 3200	B8	-	included

(1) Up to 2 auxiliary contacts can be ordered.

acces_396_a

800 to 1600 A

If additional auxiliary contacts are required please consult us.

acces_397_a

125 to 630 A

Plug-in optional modules

Use - For ATyS p only

Number of usable modules per product:

A maximum of four modules can be fitted to each ATyS p, however with the installation of either Ethernet communication module only two additional modules can be installed.
Only one pulse output, one analogue output and one communication module can be installed.

Description of accessories	Reference
RS485 MODBUS communication	4825 **0092**
2 inputs / 2 outputs	1599 **2001**
Ethernet communication (embedded Ethernet webserver software)	4825 **0203**
Ethernet communication + RS485 MODBUS gateway (embedded Ethernet webserver software)	4825 **0204**

ats_016_c_1_cat

diris_447_a_1_cat

RS485 MODBUS® communication

- RS485 link with MODBUS® protocol (speed up to 38400 bauds).

diris_449_a_1_cat

2 inputs - 2 outputs

- Each module has 2 programmable inputs and 2 programmable outputs available.

diris_777_a_1_cat

Ethernet communication

- Ethernet link with MODBUS/TCP or MODBUS RTU over TCP.
- Embedded Ethernet Webserver software.

diris_776_a_1_cat

Ethernet communication with RS485 MODBUS gateway

- Ethernet link with MODBUS/TCP or MODBUS RTU over TCP.
- Connection of 1 to 247 RS485 MODBUS slaves.
- Embedded Ethernet Webserver software.

Reference in **green** are new products. ■ Stock items.

Remote interfaces

Use

To remotely display source availability and position indication typically used on the front of a panel when the product is enclosed.

Interfaces are powered from the ATyS transfer switch via the RJ45 connection cable.

Maximum cable length: 3 m.

D10 - for ATyS g

To display source availability and position indication on the front panel of an enclosure. Protection degree: IP21.

D20 - for ATyS p

In addition to the functions of the D10, the D20 displays measurements and enables control and configuration from the front of a panel.

Protection degree: IP21.

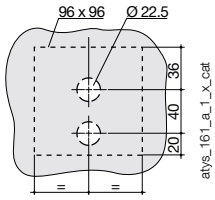
Door mounting

2 holes Ø 22.5. ATyS transfer switch connection via RJ45 cable, not isolated.

Cable available as an accessory.

Interfaces are powered from the ATyS

Drillings



Description of accessories	Reference
D10	9599 **2010**
D20	9599 **2020**

Connection cable for remote interfaces

Use

To connect between a remote interface (type D10 or D20) and an ATyS transfer switch (ATyS g or p).

Characteristics

RJ45 8 wire straight-through, non isolated cable. Length 3 m.

For ATyS g and p		
Type	**Length**	**Reference**
RJ45 cable	3 m	1599 **2009**

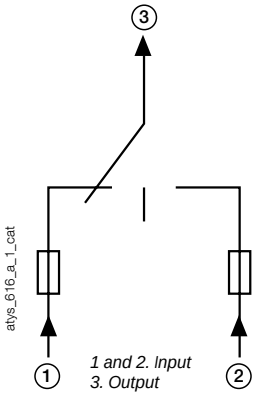
Double power supply - DPS

Use

Allows an ATyS r to be supplied by two 230 VAC, 50/60 Hz networks.

Input

- The input is considered “active” from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: each input is fuse protected 3.15 A.
- Connection on terminals: max. 6 mm^2.
- Modular device: 4 module width.



Description of accessories	Reference
DPS	1599 **4001**

Reference in **green** are new products. ■ Stock items.

Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 630 A / B3 to B5

Thermal current I_{th} at 40°C		**125 A**	**160 A**	**250 A**	**400 A**	**630 A**
Frame size		**B3**	**B3**	**B4**	**B4**	**B5**
Rated insulation voltage U_i (V) (power circuit)		800	800	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV) (power circuit)		8	8	12	12	12
Rated insulation voltage U_i (V) (control circuit)		300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (control circuit)		4	4	4	4	4
Rated operational currents I_e (A) according to IEC 60947-6-1						
Rated voltage	**Utilisation category**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**
415 VAC	AC-31 B	125	160	250	400	630
415 VAC	AC-32 B			200	400	500
415 VAC	AC-33 B			200	200	400
Rated operational currents I_e (A) according to IEC 60947-3						
Rated voltage	**Utilisation category**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**	**A/B[1]**
415 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	400/400	630/630
500 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
500 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630
500 VAC	AC-22 A / AC-22 B	125/125	160/160	200/250	200/400	500/500
500 VAC	AC-23 A / AC-23 B	80/80	80/80	200/200	200/200	400/400
690 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
690 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	200/200	500/500
690 VAC	AC-22 A / AC-22 B	125/125	125/125	160/160	160/160	400/400
690 VAC	AC-23 A / AC-23 B	63/80	63/80	125/125	125/125	400/400
220 VDC[2]	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630
220 VDC[2]	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	630/630
220 VDC[2]	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	630/630
220 VDC[2]	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	630/630
440 VDC[2]	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630
440 VDC[2]	DC-21 A / DC-21 B	125/125	125/125	200/200	200/200	630/630
440 VDC[2]	DC-22 A / DC-22 B	125/125	125/125	200/200	200/200	630/630
440 VDC[2]	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	630/630
Fuse protected short-circuit withstand as per IEC 60947-3 at 690 VAC						
Prospective short-circuit current (kA rms)		100[3]	100[3]	50	50	50
Associated fuse rating (A)		125	160	250	400	630
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s[4]						
Rated short-time withstand current 0.3s I_{cw} (kA rms)		12[3]	12[3]	15	15	17
Rated short-circuit withstand without protection						
Rated short-time withstand current 60ms I_{cw} (kA rms) as per IEC 60947-6-1 at 415 VAC				10[5]	10[5]	12.6
Rated short-time withstand current 1s I_{cw} (kA rms) as per IEC 60947-3 at 690 VAC		7[3]	7[3]	8	8	10
Rated peak withstand current (kA peak) as per IEC 60947-3 at 690 VAC		20	20	30	30	45
Connection						
Minimum Cu cable cross-section (mm^2)		35	50	95	185	2 x 150
Minimum Cu busbar cross-section (mm^2)						2 x 30 x 5
Maximum Cu cable cross-section (mm^2)		50	95	150	240	2 x 300
Maximum Cu busbar width (mm)		25	25	32	32	50
Tightening torque mini / maxi (Nm)		9/13	9/13	20/26	20/26	40/45
Switching time (Standard setting)						
I - II or II - I (s)		0.75	0.75	1.3	1.3	1.3
I-0 or 0-II (s)		0.45	0.45	0.85	0.85	0.85
Duration of "electrical blackout" I - II (s)		0.3	0.3	0.6	0.6	0.6
Power supply						
min / max (VAC)		166/332	166/332	166/332	166/332	166/332
Control supply power demand						
Power demand at 230 VAC inrush / nominal (VA) - ATyS r		184/92	184/92	276/115	276/115	276/150
Power demand at 230 VAC inrush / nominal (VA) - ATyS g, p		206/114	206/114	298/137	298/137	298/172
Mechanical characteristics						
Durability (number of operating cycles)		10 000	10 000	8 000	8 000	5 000
Weight ATyS r 3/4 P (kg)		5.7 / 6.9	5.7 / 6.9	6.6 / 7.4	6.7 / 7.8	11.9 / 14.0
Weight ATyS g, p 3/4 P (kg)		6.8 / 8.0	6.8 / 8.0	7.7 / 8.5	7.8 / 8.9	13.0 / 15.1

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-". 4-pole device with 2 poles in series by polarity.
(3) At 415 VAC.
(4) Value for coordination with any circuit-breaker that ensures tripping in less than 0.3s.
For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.
(5) At 30ms.

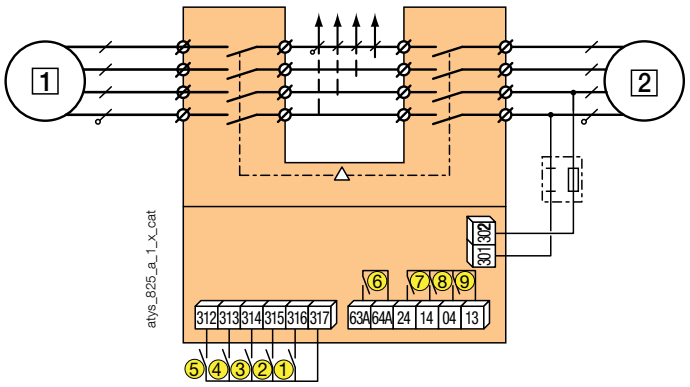
800 to 3200 A / B6 to B8

Thermal current I_{th} at 40°C		800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
Frame size		B6	B6	B6	B7	B8	B8	B8
Rated insulation voltage U_i (V) (power circuit)		1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV) (power circuit)		12	12	12	12	12	12	12
Rated insulation voltage U_i (V) (control circuit)		300	300	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (control circuit)		4	4	4	4	4	4	4
Rated operational currents I_e (A) according to IEC 60947-6-1								
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-31 B	800	1000	1250	1600	2000	2500	3200
415 VAC	AC-32 B	800	1000	1250	1600	2000	2000	2000
415 VAC	AC-33 B	800	800	800	1000	1250	1250	1250
Rated operational currents I_e (A) according to IEC 60947-3								
Rated voltage	**Utilisation category**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**	**A/B(1)**
415 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
415 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	-/1600	-/1600	-/1600
500 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1600/1600			
500 VAC	AC-23 A / AC-23 B	400/400	630/630	800/800	1000/1000			
690 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
690 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
690 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000			
690 VAC	AC-23 A / AC-23 B	400/400	630/630	800/800	1000/1000			
220 VDC(2)	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600			
220 VDC(2)	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC(2)	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC(2)	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC(2)	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600			
440 VDC(2)	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC(2)	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC(2)	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250			
Fuse protected short-circuit withstand as per IEC 60947-3 at 415 VAC								
Prospective short-circuit current (kA rms)		50	50	100	100			
Associated fuse rating (A)		800	1000	1250	2x800			
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s(3)								
Rated short-time withstand current 0.3s I_{cw} (kA rms)		47	64	64	78	78	78	78
Rated short-circuit withstand without protection								
Rated short-time withstand current 60ms I_{cw} (kA rms) as per IEC 60947-6-1 at 415 VAC		16	20	25	32	40	50	50
Rated short-time withstand current 1s I_{cw} (kA rms) as per IEC 60947-3 at 415 VAC		26	35	35	50	50	50	50
Rated peak withstand current (kA peak) as per IEC 60947-3 at 415 VAC		13.5	13.5	13.5	105	120	120	120
Connection								
Minimum Cu cable cross-section (mm^2)		2 x 185	2 x 240					
Minimum Cu busbar cross-section (mm^2)		2 x 50 x 5	2 x 50 x 5	2 x 60 x 5	2 x 80 x 5	2 x 100 x 10	2 x 100 x 10	3 x 100 x 10
Maximum Cu cable cross-section (mm^2)		2 x 300	4 x 185	4 x 185	6 x 185			
Maximum Cu busbar width (mm)		63	63	63	100	100	100	100
Tightening torque mini / maxi (Nm)		8/13	8/13	20/26	40/45	40/45	40/45	40/45
Switching time (Standard setting)								
I - II or II - I (s)		2.6	2.6	2.6	2.6	2	2	2
I-0 or II-0 (s)		1.6	1.6	1.6	1.6	1	1	1
Duration of "electrical blackout" I - II (s)		1.5	1.5	1.5	1.6	1	1	1
Power supply								
min / max (VAC)		166/332	166/332	166/332	166/332	166/332	166/332	166/332
Control supply power demand								
Power demand at 230 VAC inrush / nominal (VA) - ATyS r		460/184	460/184	460/184	460/230	812/322	812/322	812/322
Power demand at 230 VAC inrush / nominal (VA) - ATyS g, p		482/206	482/206	482/206	482/252	834/344	834/344	834/344
Mechanical characteristics								
Durability (number of operating cycles)		4 000	4 000	4 000	3 000	3 000	3 000	3 000
Weight ATyS r 3/4 P (kg)		27.9 / 32.2	28.4 / 32.9	28.9 / 33.6	33.1 / 39.4	50.7 / 61.6	50.7 / 61.6	61.0 / 75.3
Weight ATyS g, p 3/4 P (kg)		29.0 / 33.3	29.5 / 34.0	30.0 / 34.7	34.2 / 40.5	51.8 / 62.7	51.8 / 62.7	62.1 / 76.4

(1) Category with index A = frequent operation - Category with index B = infrequent operation.
(2) 3-pole device with 2 pole in series for the "+" and 1 pole for the "-".
4-pole device with 2 poles in series by polarity.
(3) Value for coordination with any circuit-breaker that ensures tripping in less than 0.3s.
For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

Terminals and connections

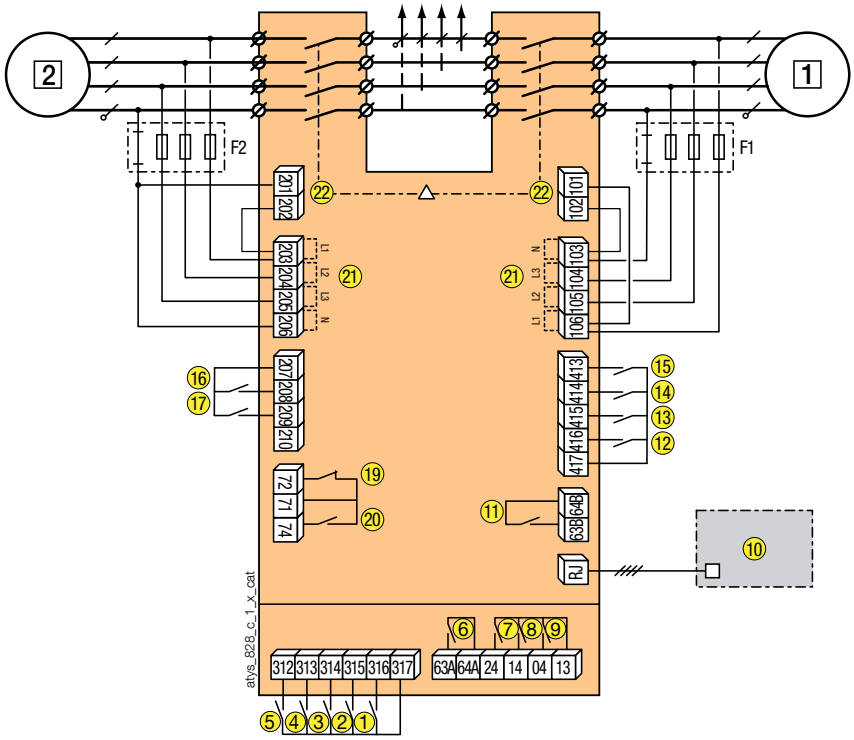
ATyS r



1 preferred source (mains or genset)
2 alternate source (mains or genset)

1 : position 0 control (contactor logic if closed)
2 : position I control
3 : position II control
4 : position 0 priority control
5 : closure of this contact enables the position control orders
6 : product availability relay
7 : auxiliary contact, closed when the switch is in position II
8 : auxiliary contact, closed when the switch is in position I
9 : auxiliary contact, closed when the switch is in position 0

ATyS g

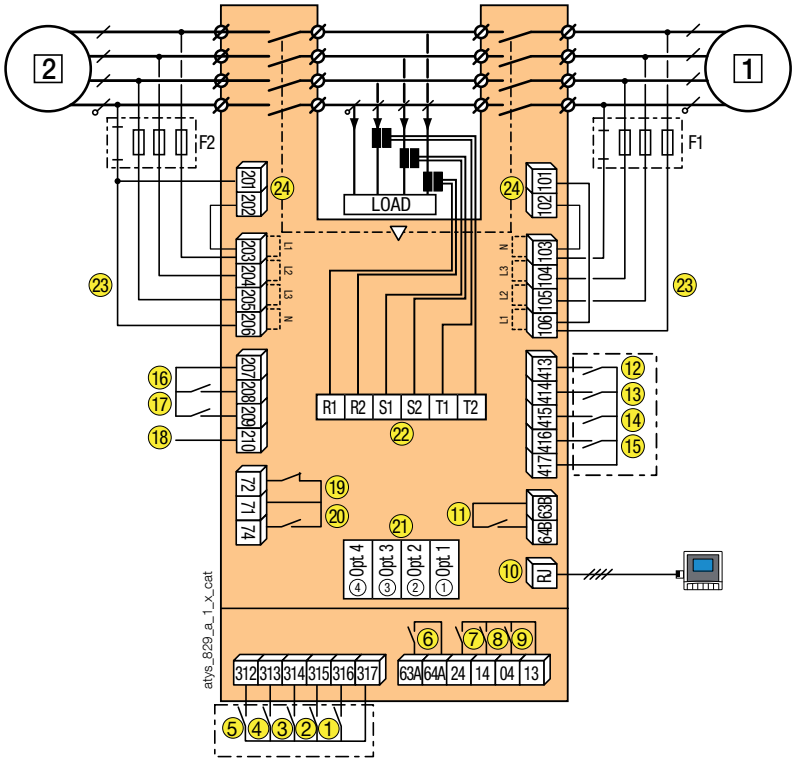


1 preferred source (Mains)
2 alternate source (Mains or genset)
1 : position 0 control (contactor logic if closed)
2 : position I control
3 : position II control
4 : position 0 priority control
5 : closure of this contact enables the position control orders
6 : motorisation unit availability relay
7 : auxiliary contact, closed when the switch is in position II
8 : auxiliary contact, closed when the switch is in position I
9 : auxiliary contact, closed when the switch is in position 0
10 : D10 remote indicator
11 : electronic unit availability relay
12 : automatic operation inhibited
13 : manual retransfer confirmation
14 : 2AT time delay bypass
15 : priority for test on load
16 : remote test off load
17 : remote test on load
19-20 : genset starting and stopping order

Control	71/72 (19)	71/74 (20)
Generator starting	Contact closed	Contact open
Generator stopping	Contact open	Contact closed

21 : voltage tap inputs
22 : power supply inputs

ATyS p



1 preferred source (Mains or genset)
2 alternate source (Mains or genset)

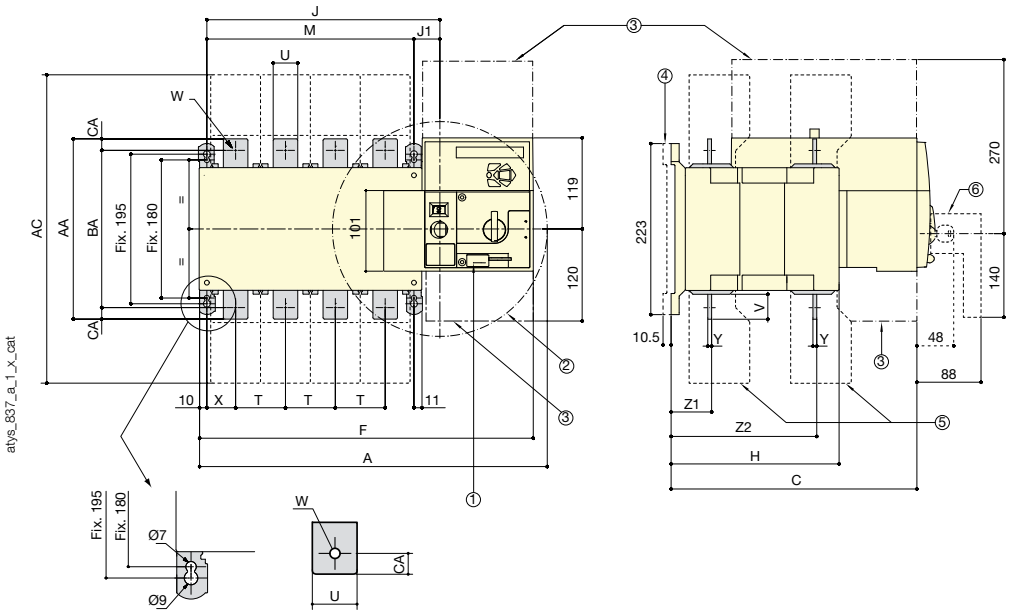
1 : position 0 control (contactor logic if closed)
2 : position I control
3 : position II control
4 : position 0 priority control
5 : closure of this contact enables the position control orders
6 : motorisation unit availability relay
7 : auxiliary contact, closed when the switch is in position II
8 : auxiliary contact, closed when the switch is in position I
9 : auxiliary contact, closed when the switch is in position 0
10 : remote display D20
11 : electronic unit availability relay
12-17 : programmable inputs
18 : auxiliary power supply for the use of optional modules
19-20 : genset starting and stopping order

Control	71/72 (19)	71/74 (20)
Generator starting	Contact closed	Contact open
Generator stopping	Contact open	Contact closed

21 : 4 slots for optional modules
22 : current transformer connection
23 : voltage tap inputs
24 : power supply inputs

Dimensions

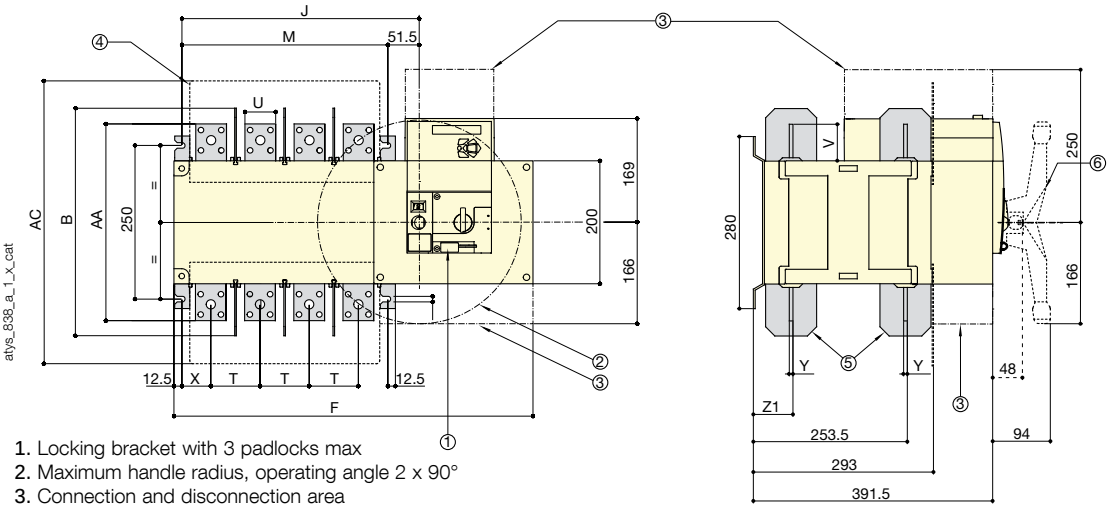
125 to 630 A / B3 to B5



1. Locking bracket with 3 padlocks max
2. Maximum handle radius, operating angle 2 x 90°
3. Connection and disconnection area
4. Spacers
5. Terminal shrouds
6. Handle

Rating (A) / Frame size	Overall dimensions			Terminal shrouds	Switch body						Switch mounting		Connection										
	A 3p.	A 4p.	C	AC	F 3p.	F 4p.	H	J 3p.	J 4p.	J1	M 3p.	M 4p.	T	U	V	W	X 3p.	X 4p.	Y	Z1	Z1	AA	BA	CA
125 / B3	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10
160 / B3	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10
250 / B4	345	395	244	288	328	378	152	195	245	35	160	210	50	25	30	11	33	33	3.5	39.5	133.5	160	130	15
400 / B4	345	395	244	288	328	378	152	195	245	35	160	210	50	35	35	11	33	33	3.5	39.5	133.5	170	140	15
630 / B5	394	454	320.5	402	377	437	221	244	304	34	210	270	65	45	50	13	42.5	37.5	5	53	190	260	220	20

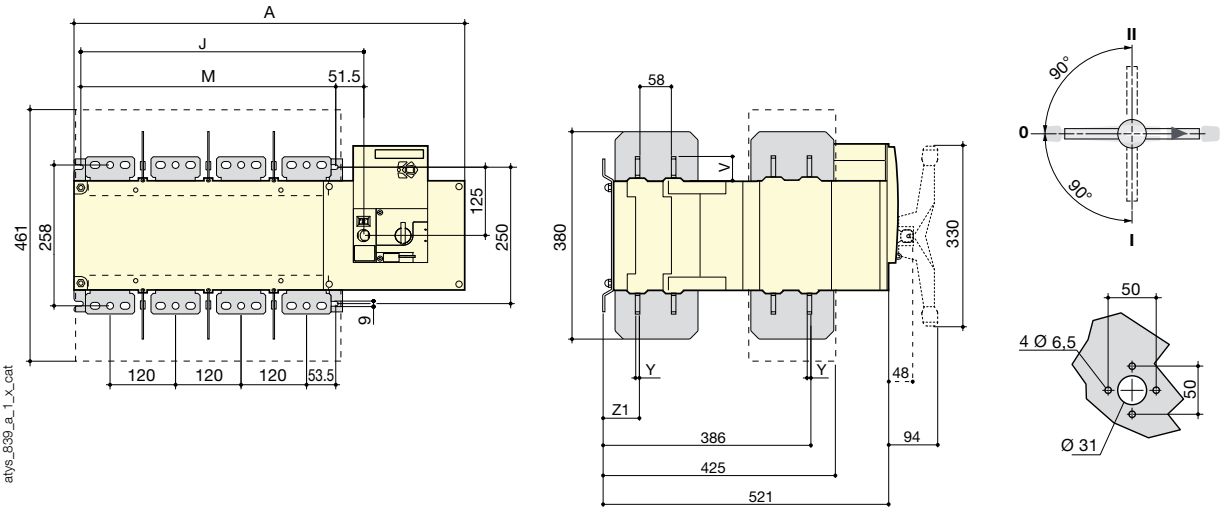
800 to 1600 A / B6 to B7



1. Locking bracket with 3 padlocks max
2. Maximum handle radius, operating angle 2 x 90°
3. Connection and disconnection area
4. Terminal screens
5. Inter phase barrier
6. Handle

Rating (A) / Frame size	Overall dimensions	Terminal shrouds	Switch body				Switch mounting		Connection						
	B	AC	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	X	Y	Z1	AA
800 / B6	370	461	504	584	306.5	386.5	255	335	80	50	60.5	47.5	7	66.5	321
1000 / B6	370	461	504	584	306.5	386.5	255	335	80	50	60.5	47.5	7	66.5	321
1250 / B6	370	461	504	584	306.5	386.5	255	335	80	60	65	47.5	7	66.5	330
1600 / B7	380	531	596	716	398.5	518.5	347	467	120	90	44	53	8	67.5	288

2000 to 3200 A / B8

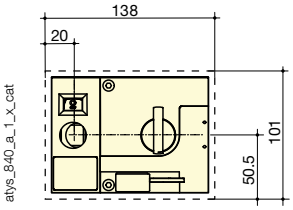


Rating (A)	Overall dimensions B	Terminal shrouds AC	Switch body				Switch mounting		Connection						
			A 3p.	A 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	X	Y	Z1	AA
2000 ... 3200	380	531	596	716	399	519	347	467	120	90	44	53	8	67.5	288

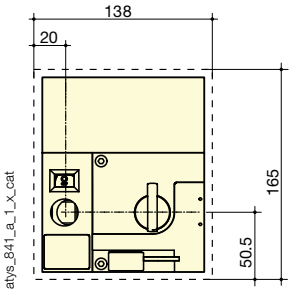
Cut of dimensions

125 to 630 A / B3 to B5

ATyS r

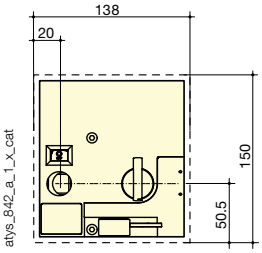


ATyS g / ATyS p

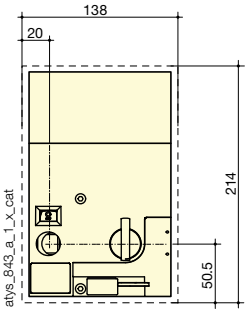


800 to 1600 A / B6 to B7

ATyS r

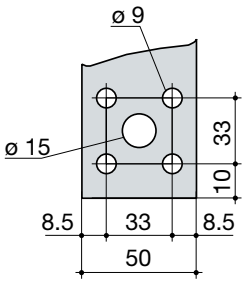


ATyS g / ATyS p

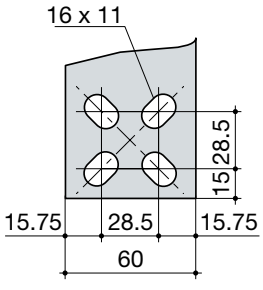


Connection terminals

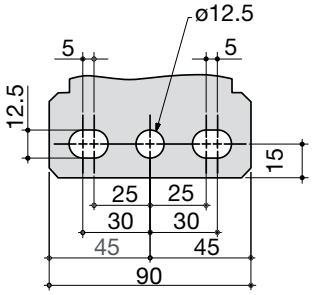
800 to 1000 A / B6



1250 A / B6



1600 to 3200 A / B7 to B8



ATyS C30

Control relays

ATyS C30 controller

The solution for

> Power and control separation

Strong points

> Auxiliary power supply
> Modular device
> Extended compatibility of use

Conformity to standards

> IEC 61010-1
> IEC 61000-4-x
> IEC 60068-2-x

Function

ATyS C30 is modular control relays. They ensure the automatic control of remotely controlled transfer switches, ATyS, ATyS S and ATyS M, as well as contactors, circuit breakers or other motorised switches.

General characteristics

ATyS C30

- Inputs for auxiliary contact position information.
- 3U measurement on network 1 and 1U on network 2.
- 2 programmable inputs for the following functions: test on/off load, manual retransfer, start/stop transfer cycle.
- Up to 2 programmable outputs for the following functions: source availability information and circuit breaker control.
- 1 relay output for genset control.
- D10 or D20 remote interfaces are available for transferring data or control to the front cabinet panel.

Advantages

Auxiliary power supply

Two versions of the ATyS C30 are available. One version with an AC supply via the measurement inputs and another with a DC auxiliary supply.

Modular device

The ATyS C30 is modular product (6 modules, 105 mm wide) which can be DIN-rail mounted.

Extended compatibility of use

The product is used with Socomec transfer switches, or those using identical technology. It is also compatible with contactor and circuit breaker technologies.

Reference in **green** are new products. ■ Stock items.

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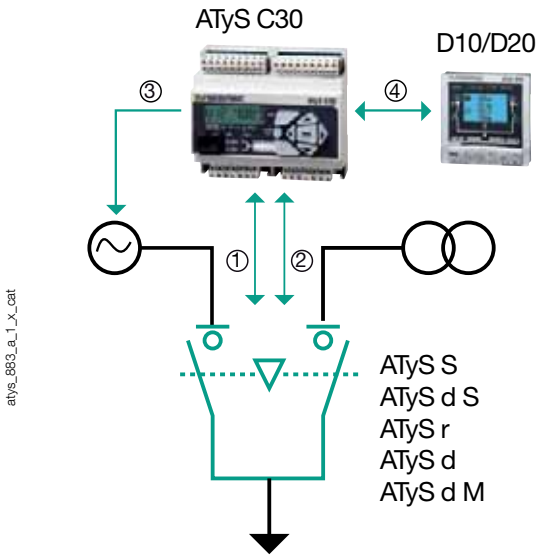
Configurations

Transformer/transformer and transformer/genset applications



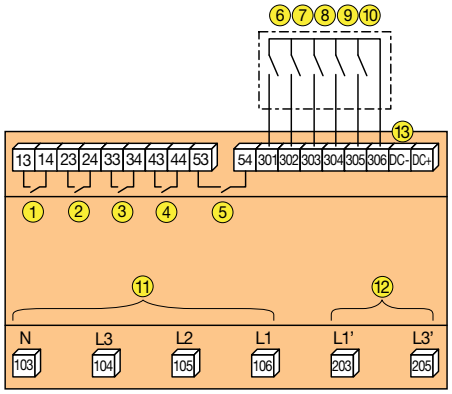
atys_883_a_1_x_cat

1. Measurement and power supply.
2. Control and position information feedback.
3. Genset start / stop control.
4. ATyS display/interface connection.

Electrical characteristics

Supplied from measurement circuit	110 … 400 VAC
Measurement range	110 … 400 VAC / ± 10 %
Frequency	50/60 Hz
Accuracy	± 1 %

Terminals



atys_418_c_1_x_cat

1. Genset start / stop control
2. Position 1: power control
3. Position 2: power control
4. O1: programmable output
5. O2: programmable output
6. AC1: auxiliary contact position 1
7. AC0: auxiliary contact position 0
8. AC2: auxiliary contact position 2
9. I1: programmable input
10. I2: programmable input
11. Source 1 : 3 U network measurement and power supply
12. Source 2 : 1 U network measurement and power supply
13. Not used

References

Type	ATyS C30 Reference
Supplied from measurement circuit	1599 **3030** ■

Reference in **green** are new products. ■ Stock items.

Other products

COMO C

COMO C I-II and COMO C I-0-II (25 to 100 A)

como_179_a

COMO C are manual multipolar changeover switches with positive break indication.

They provide changeover, source inversion or switching under load between two low voltage power circuits, as well as their safety isolation.

Transfer switches for overlapping applications

COMO C I-I+II-II (25 to 100 A), SIRCO M I-I+II-II (25 to 125 A), SIRCO VM1 I-I+II-II (63 to 125 A) and SIRCOVER I-I+II-II (160 to 1600 A)

sircm_191_a

SIRCO M

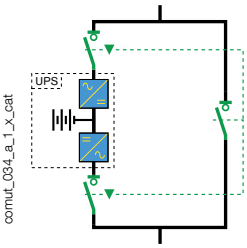
svr_151_a

SIRCOVER

In some specific applications where the two supplies are synchronised, it may be required to transfer without interruption of the load, therefore the transfer switches with overlapping contacts can be used.

Transfer switches for Bypass applications

COMO C Bypass (25 to 100 A), SIRCOVER Bypass (125 to 1600 A) and SIRCOVER ATS Bypass (125 to 1600 A)



comut_034_a_1_x_cat

svr_125_a

SIRCOVER

Upstream and downstream disconnection of an ATS function (automatic switching) while guarenteeing the continuity of the disribution via a 'Bypass' branch. Carried out using a single operating handle, this operation allows the ATS function to be separated for maintenance, in complete safety. Linked to a switching function, the bypass branch means it is still possible to select the sources in the event of a failure of one of them.

Transfer switches with integrated double power supply

ATyS d S (40 to 125 A), ATyS d (160 to 3200 A) and ATyS d H (4000 to 6300 A)

atys_865_a

ATyS d H

In some applications, particularly mains/mains, it may be required to have a double power supply on remotely operated products, to be sure that they can operate whatever the available source is. Therefore we offer some products including a double power supply.

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Automatic Transfer switches for Mains/Mains applications

ATyS t M (40 to 160 A) and ATyS t (160 to 3200 A)

atys_t_001

ATyS t M

atys-mt_001

ATyS t

In some applications, particularly mains/mains, it may be required to have a double power supply on remotely operated products, to be sure that they can operate whatever the available source is. Therefore we offer some products including a double power supply.

Transfer switches for UL applications

SIRCOVER UL (100 to 1200 A) and ATyS UL (100 to 400 A)

svr-ul_014_b_2

SIRCOVER UL

atys-ul_008_a_1_cat

ATyS UL

UL transfer switches are designed for use in total system optional standby power applications for the safe transfer of a load supply between a normal and an alternate source.

Optional standby systems are those systems installed to provide an alternate source of power for structures for which a power outage could cause discomfort or interruption or damage to products or processes.

Controllers for Mains/Genset & Genset/Genset applications

ATyS C20 / C40

ATYS_451_A

ATyS C20 controller

ATYS_599_C

ATyS C40 controller

C20 is a Mains/Genset controller that works the same as C30 withhout RF45 connection.

C40 is a controller dedicated to Genset/Genset applications.

ATyS no-break Bypass solution

tablo_036_a_1_cat

ATS no-break Bypass solution consists in an automatic transfer of two supply sources to ensure continuity of supply to critical loads.

RESYS M40/M40R/P40

Type A differential relays
for motor load break

RESYS M40

RESYS M40R

RESYS P40

Function

RESYS M40/P40 earth leakage relays associated with a remote trip breaking device (automatic power breaking), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

Advantages

Fully configurable

- 2 relays with configurable function (alarm or pre-alarm at 50% IΔn)
- Adjustment of IΔn from 0.03 to 30 A.
- Time delay 0 to 10 s.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.

Tripping accuracy by TRMS measurement.

Improves immunity to nuisance tripping.

Autoreclosing function (M40R)

- reclosing of switching device after earth leakage detection and power supply loss.
- up to six consecutive attempt with different time intervals

Instantaneous display of permanent leakage currents.

The LED bargraph provides a real-time display of fluctuations in leakage currents.

Compact modular design

With 44 mm in width (M40) and panel cut for DIN 48x48mm (P40), the unit allows easy integration into dedicated enclosures. The adjustment buttons are protected by a sealable cover, while the display of available alarms is displayed directly on the front face of the device.

Improved immunity to EMC interferences

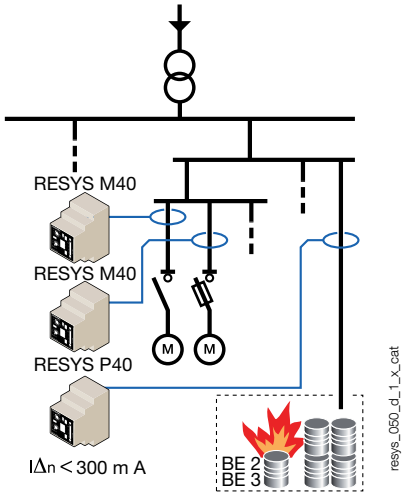
The device has new electronics which improve electromagnetic compatibility.

Applications

Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production.

Protection against fire or explosion risks

The use of Residual Differential Devices (with adjustment IΔn ≤ 300 mA) provides protection against the risk of fire or explosion generated by tracking currents to earth, in areas classed as BE2 or BE3 respectively. This protection is mandatory in TT, TN and IT neutral systems.



The solution for

- Processes
- Manufacturing
- Oil, gas and petrochemistry
- Energy production

Strong points

- Fully configurable
- Measurement accuracy by TRMS (True Root Mean Square)
- Instantaneous display of permanent leakage currents
- Compact case with LED bargraph
- Improved immunity to EMC interferences

Conformity to standards

- IEC 60755
- IEC 60947-2
- IEC 60664
- IEC 61543 A1

Approvals and certifications(1)

(1) *Product reference on request.*

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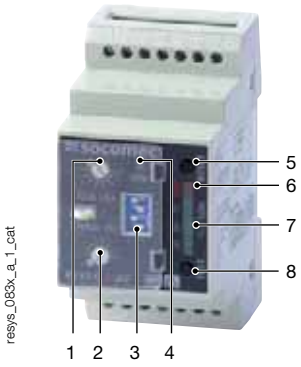
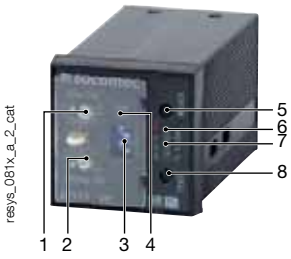
Front panel

RESYS M40/M40R



1. IΔn setting.
2. Time delay setting.
3. Configuration micro-switches (x4).
4. "ON" LED.

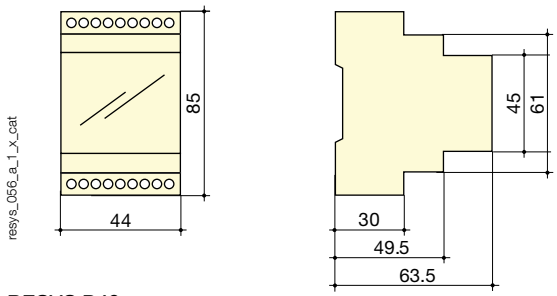
RESYS P40



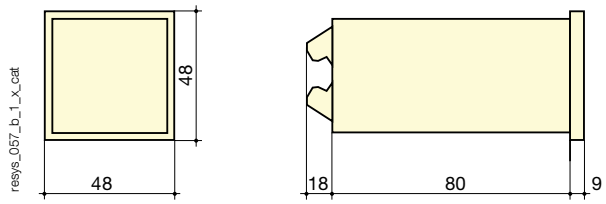
5. "RESET" pushbutton.
6. "TRIP" alarm LED.
7. LED bargraph (% x IΔn).
8. "TEST" pushbutton.

Case

RESYS M40/M40R



RESYS P40



	RESYS M40/M40R	RESYS P40
Type	modular	panel mounting
Number of modules	2.5	-
Dimensions W x H x D	44 x 85 x 63.5	48 x 48 x 107
Case protection index	IP40	IP40
Terminal protection index	IP20	IP20
Rigid cable cross-section	0.2 … 4 mm²	0.2 … 4 mm²
Flexible cable cross-section	0.2 … 2.5 mm²	0.2 … 2.5 mm²
Weight	190 g	190 g
Cutout	-	45 x 45 mm

General characteristics

- RESYS M40/P40 with 2 configurable relays:
  - either 2 alarm relays,
  - or 1 alarm relay and 1 pre-alarm relay (50 % In).
- Adjustment sensitivity from 0.03 mA to 30 A.
- Time delay 0 to 10 s.
- Tripping accuracy by TRMS measurement.
- Automatic instantaneous tripping at 30 mA.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.
- Automatic permanent relay-toroid connection test.
- Sealable cover.

Characteristics

Auxiliary power supply U_s	
Frequency	47 … 63 Hz
AC operating zone	0.8 … 1.15 U_s
DC operating zone	0.8 … 1.05 U_s
Max. consumption	6 VA (AC) / 5 W (DC)
Insulation (according to IEC 60664-1 standard)	
Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230/400 VAC)
Degree of pollution	Class 3
Threshold values	
IΔn setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 … - 10 % IΔn
Domain of network frequency	15 … 400 Hz
Time delay setting	0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 s
PRE-ALARM relay tripping	50 % IΔn
Hysteresis of the PRE-ALARM relay	20 % IΔn
Alarm	
Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	manual by pushbutton / using terminal
Output contacts	
Number of contacts	2
Type of ALARM 1 contact	250 VAC - 8 A - 2000 VA
Type of ALARM 2 or PRE-ALARM contact	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	positive / negative security(1)
ALARM 2 or PRE-ALARM operating mode	positive security(1)
Factory setting of ALARM 1 operating mode	negative security
Factory setting of ALARM 2 operating mode	positive security

(1) Negative security: relay activated in case of alarm / Positive security: relay not activated in case of alarm.

Operating conditions	
Operating temperature	- 20 … + 55 °C
Storage temperature	- 30 … + 70 °C

References

Auxiliary power supply U_s(1)	RESYS M40 Reference	RESYS M40R Reference	RESYS P40 Reference
115 VAC	4941 **3723** ■ (2)	4941 **3724**	4942 **3711**(2)
230 V	4941 **3723** ■	4941 **3724**	
400 VAC	4941 **3740**(2)	4941 **3741**	4942 **3723** ■ (2)
12 … 125 VDC	4941 **3602**(2)		4942 **3602**(2)

(1) Other rating: Please consult us. (2) References and characteristics of closed, split core and rectangular toroids: see "Core balance transformers type A" page 106.

Reference in **green** are new products. ■ Stock items.

Core balance transformers - type A

Dedicated to RESYS

*Core balance transformer **WR***

new

*Split-core balance transformer **ΔIP-R***

*Core balance transformer **ΔIC***

The solution for

- Industry
- Infrastructure
- Non critical buildings
- OEM
- Renewable energy

Strong points

- A complete product range
- A wide range of fixing systems (ΔIC & ΔIP-R)
- A patented cable locator (ΔIC & ΔIP-R)
- A rapid installation and safe implementation (ΔIP-R)

Conformity to standards

- IEC 61869-1

Function

The installation of protection or signalling resources such as earth leakage protection relays involves the use of **core balance transformers**.

Active conductors pass through the aperture of the core balance transformer, providing the differential summation of vector currents which enables the detection of leakage currents.

The core balance transformers (toroids) proposed by SOCOMEC meet requirements in terms of measurement sensitivity and are suitable for earth leakage protection relays RESYS M40/P40..

Closed (series ΔIC, WR and TFR) or split-core (series ΔIP-R) types, suit all wiring configurations.

Advantages

A complete product range

All dimensions and types are available for compatibility with any bar and cable configurations or diameters.

A wide range of fixing systems (ΔIC & ΔIP-R)

ΔIC & ΔIP-R core balance transformers can be mounted on DIN-rail, on back-plate or directly on the cable. These products can be adapted into confined spaces with high integration constraints and provide easy and rapid cabling.

A patented cable locator (ΔIC & ΔIP-R)

The SOCOMEC cable locator is a patented innovation. The cable is perfectly centralised in the core balance transformer to ensure accurate measurement and enhanced immunity to network interferences. It also enables direct mounting of the core balance transformer onto the cable.

A rapid installation and safe implementation (ΔIP-R)

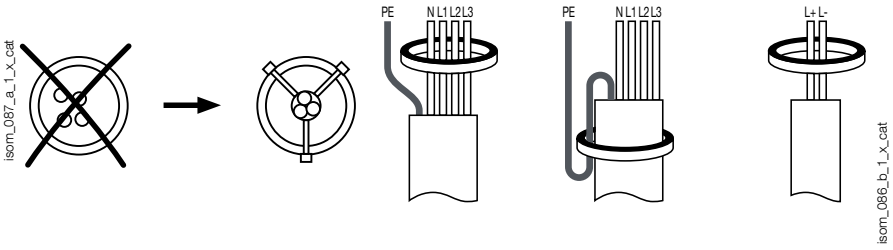
Thanks to an innovative «one click» opening/closing system, without the need of additional accessories, split-core ΔIP-R toroids have been designed to ensure a fully safe installation.

Implementation

All of the active conductors must be passed through the detection toroid's aperture.
The protective conductor must pass on the outside of the toroid or pass once for each direction.

Installation limiting distortions during heavy load switching

Installation of the detection toroids



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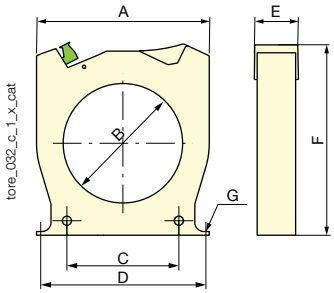
Characteristics

Electrical characteristics	ΔIC	ΔIP-R
Insulation coordination	according to IEC 60664-1	according to IEC 60664-1
Max. operating voltage	720 VAC	720 VAC
Rated impulse voltage	8 kV	8 kV
Assigned withstand voltage	3 kV	3 kV
Degree of pollution	3	3
Winding ratio	600 / 1	600 / 1
Rated primary current	10 A	10 A
Nominal power	20 mVA	50 mVA
Max. accuracy class	3	3
Operating temperature	-40 … +80 °C	-40 … +80 °C
Flammability class	UL94V-0	UL94V-0

Electrical characteristics WR & TFR series	
Insulation coordination	according to IEC 60664-1
Insulation voltage	690 VAC
Rated impulse voltage	8 kV
Dielectric quality	6 kV
Degree of pollution	3
Winding ratio	600 / 1
Rated primary current	10 A
Nominal power	50 mVA
Max. accuracy class	5
Operating temperature	-10 … +55 °C
Flammability class	UL94V-0

Dimensions (mm)

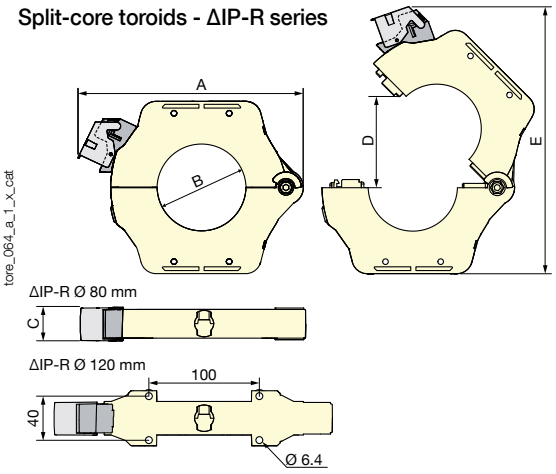
Closed toroids - ΔIC series



A. Width.
B. Diameter.
C. Distance between fixing centres.
D. Distance between rear fixing brackets.
E. Depth.
F. Height.
G. Diameter of fixing screws.

Type	A	B	C	D	E	F	G	Weight (kg)
ΔIC Ø 15	53	17.3	27.8	50	26	81	M4	0.10
ΔIC Ø 30	92	30	50	85	26	103.5	M4	0.13
ΔIC Ø 50	102.5	50	50	90	26	125	M5	0.18
ΔIC Ø 80	116	80	75	105	26	142.5	M5	0.22
ΔIC Ø 120	163	120	100	150	26	182.5	M6	0.38
ΔIC Ø 200	253	200	150	175 x 41.2	51	274	M6	0.88
ΔIC Ø 300	370	300	200	250 x 41.5	50	390	M6	1.72

Split-core toroids - ΔIP-R series



Type	A	B	C	D	E	Weight (kg)
ΔIP-R Ø 80	204	79	30	108	260	0.85
ΔIP-R Ø 120	252	119	30	149	328	1.5

References

Closed toroids type A
ΔIC series

Type	Rated operational current I_n (A)	Toroid diameter (mm)	Reference
ΔIC Ø15	36	15	4950 **6015**(1)
ΔIC Ø30	65	30	4950 **6030** ■ (1)
ΔIC Ø50	85	50	4950 **6050**(1)
ΔIC Ø80	160	80	4950 **6080** ■ (1)
ΔIC Ø120	250	120	4950 **6120** ■ (1)
ΔIC Ø200	400	200	4950 **6200**(1)
ΔIC Ø300	630	300	4950 **6300**(1)

Rectangular closed toroids type A
WR and TFR series

Type	Toroid diameter (mm)	Reference
WR 70 x 175	70 x 175	4795 **0717**(1)
WR 115 x 305	115 x 305	4795 **1130**(1)
WR 150 x 350	150 x 350	4795 **1535**(1)
TFR 200 x 500	200 x 500	4795 **2050**(1)

Split-core toroids type A
ΔIP-R series

Type	Toroid diameter (mm)	Reference
ΔIP Ø 80R	80	4750 **6081**(1)
ΔIP Ø 120R	120	4750 **6121**(1)

(1) Toroids for RESYS relays M40 / P40 and DIRIS A80.

Accessories for ΔIC and ΔIP-R toroids

Cable locator

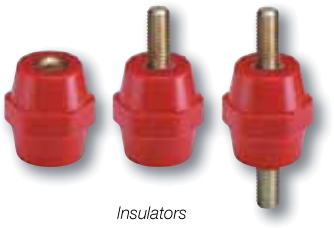
Description of accessories	Reference
Cable locator Ø 30 mm	4950 **0011**
Cable locator Ø 50 mm	4950 **0012**
Cable locator Ø 80 mm	4950 **0013**
Cable locator Ø 120 mm	4950 **0014**

Reference in **green** are new products. ■ Stock items.

Enables the cables to be centred in the toroid's aperture. Use of this accessory allows also the core balance transformer to be directly mounted onto the cables.

Busbar supports

Busbar



Insulators

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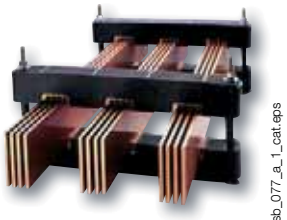

Busbar supports with fixed interphase

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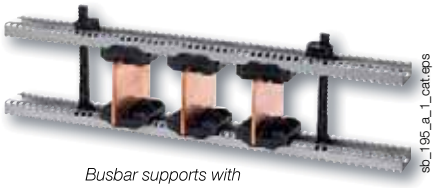


Busbar supports with adjustable interphase

sb_195_a_1_cat.eps

Function

SOCOMEC **insulating busbar supports** allow the fixation of a copper or aluminium bar or busbar.

Characteristics

Insulators

- Polyester without halogene.
- UL94 VO self-extinguishable.
- Colour red RAL 3002.
- Operating temperature from 40°C to + 130°C.
- Deformation under load temperature (ASTM D643): > 200 °C.
- Dielectric constant (ASTM D150): 4/5.
- Arc resistance (ASTM D495): > 180 s.
- Water absorption (ASTM D570): < 0.3 %.

Busbar support

- High dielectric strength.
- High mechanical resistance.
- Amagnetism of assembly parts.
- High resistance to damp heat (supplied "tropicalised").

Software tool for size selection

Mechanical systems is a software which is used to size bar sets. It defines the optimum busbar configuration depending on the electrical characteristics of the panel, in compliance with standard IEC 61439-1. It runs in a Windows® 95, 98, 2000, NT ou XP environment.

sb_201_b_1_fr_cat.eps

The solution for

> Power distribution

Conformity to standards

> IEC 61439-1
> IEC 60865-1

Approvals and certifications(1)

> ASEFA/LCIE

(1) Product reference on request.

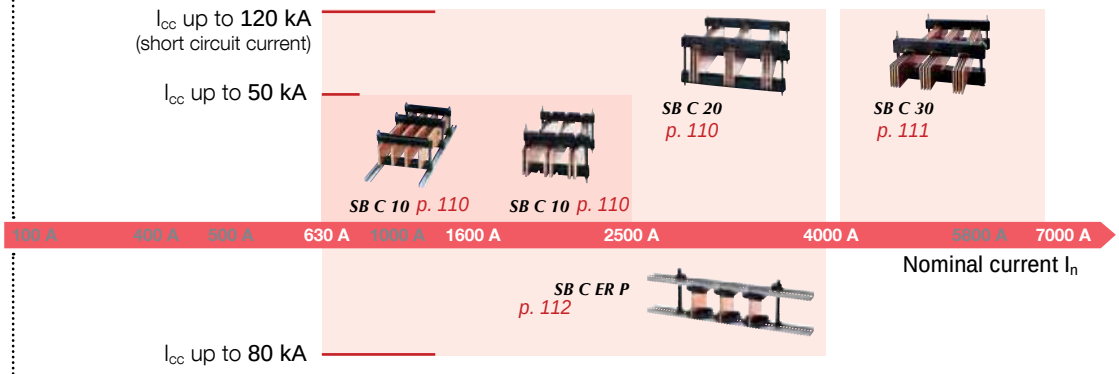
Available on request

> Please consult us

Selection guide

Edgewise mounting

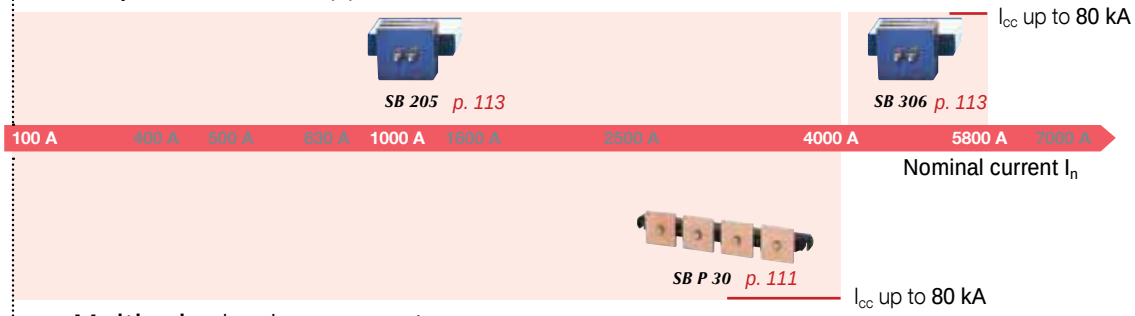
- Busbar supports with **fixed interphase**



- Busbar supports with **adjustable interphase**

Flat mounting

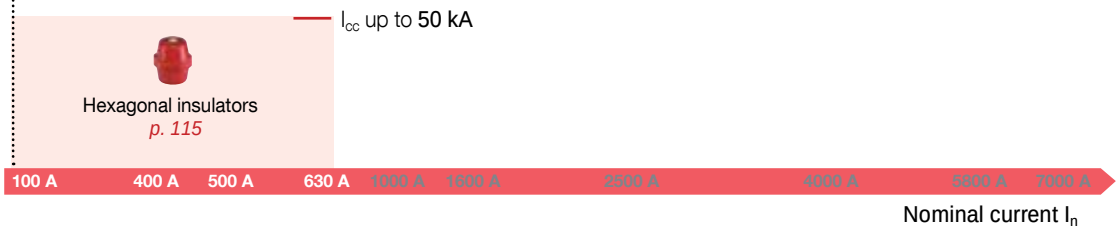
- **Unipolar** busbar supports



- **Multipolar** busbar supports

Other supports

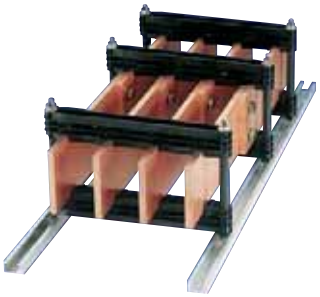
- **Unipolar** busbar supports



Edgewise mounting busbar support fixed interphase

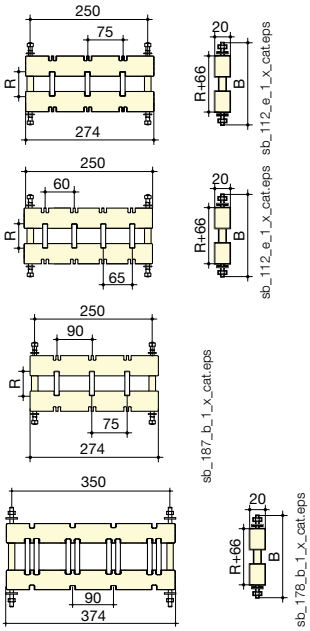
SB C 10

Reference



Nb of poles	Nb of maximum bars	Reference
3	2x5 / 1x10	5024 **6300**
4	2x5 / 1x10	5024 **6500** ■
3	1x10 / 2x10	5024 **6400** ■
4	1x10 / 2x10	5024 **6600** ■

Dimensions



Fixed interphase:
- 3 poles: 75 mm
- 4 poles 5 mm: 60 mm
- 4 poles 10 mm: 65 mm.

Fixed interphase:
- 3 poles 1x10 mm: 75 mm
- 3 poles 2x10 mm: 90 mm
- 4 poles 90 mm.

Characteristics

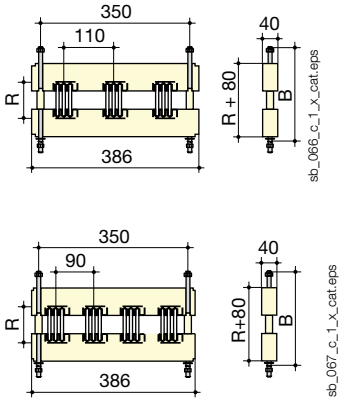
	3 & 4 poles with 5 mm bars						3 & 4 poles with 10 mm bars					
peak I_{sc}	15 kA	24 kA	48 kA	63 kA	82 kA		15 kA	24 kA	48 kA	63 kA	82 kA	
rms I_{sc} (1s)	9 kA	12 kA	23 kA	30 kA	39 kA	Iz (A)	9 kA	12 kA	23 kA	30 kA	39 kA	Iz (A)
Bars x nb	Max distance beetwen 2 bustar supports (mm)											
25x1	775	475	225	175	140	330	1000	1000	500	375	275	
25x2	675	425	200	160	125	590	1000	1000	525	400	300	850
50x1	1000	700	350	250	200	600	1000	1000	725	550	425	850
50x2	1000	675	325	250	200	1050	1000	1000	800	600	475	1550
80x1	1000	950	475	350	225	900	1000	1000	975	725	550	1300
80x2	1000	975	475	375	275	1550	1000	1000	1000	850	650	2300
100x1	1000	1000	550	400	225	1100	1000	1000	1000	850	650	1550
100x2	1000	1000	575	425	325	1900	1000	1000	1000	975	675	2750

SB C 20

Reference

Nb of poles	Nb of maximum bars	Bars thickness	Reference
3	1 … 2	10	5024 **7300** ■
4	1 … 2	10	5024 **7400** ■
3	1 … 4	5	5024 **8300**
4	1 … 4	5	5024 **8400**

Dimensions



Fixed interphase:
- 3 poles: 110 mm
- 4 poles: 90 mm

Characteristics

	3 & 4 poles with 5 mm bars						3 & 4 poles with 10 mm bars					
peak I_{sc}	63 kA	82 kA	114 kA	152 kA	165 kA		63 kA	82 kA	114 kA	152 kA	165 kA	
rms I_{sc} (1s)	30 kA	39 kA	52 kA	69 kA	75 ka	Iz (A)	30 kA	39 kA	52 kA	69 kA	75 ka	Iz (A)
Bars x nb	Max distance beetwen 2 bustar supports (mm)											
50x1	625	475	350	250	225	600	1000	925	675	500	450	850
50x2	525	400	300	225	200	1050	1000	850	600	450	400	1550
80x1	800	625	450	325	300	900	1000	1000	850	625	575	1300
80x2	725	550	400	300	275	1550	1000	1000	775	575	525	2300
100x1	900	700	500	375	350	1100	1000	1000	950	700	650	1550
100x2	850	650	475	350	325	1900	1000	1000	850	625	575	2750
125x1	1000	800	575	425	400	1300	1000	1000	1000	800	725	1900
125x2	975	750	550	400	375	2350	1000	1000	925	675	625	3350

Reference in **green** are new products. ■ Stock items.

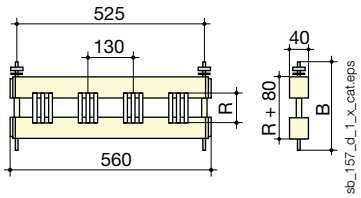
SB C 30

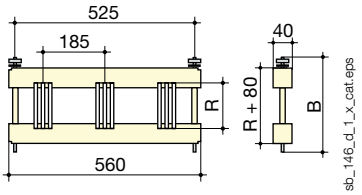
Reference

sb_173_a_2_cat

Nb of poles	Nb of maximum bars	Bars thickness	Reference
3	1 ... 3	10	5024 **5300** ■
4	1 ... 3	10	5024 **5500** ■

Dimensions





Fixed interphase:
- 3 poles: 185 mm
- 4 poles: 130 mm

Characteristics

	3 & 4 poles with 5 mm bars							
peak I_{sc}	**82 kA**	**114 kA**	**152 kA**	**165 kA**	**187 kA**	**220 kA**	**264kA**	
rms I_{sc} (1s)	**39 kA**	**52 kA**	**69 kA**	**75 ka**	**85 kA**	**100 kA**	**120 kA**	**Iz (A)**
Bars x nb	**Max distance beetwen 2 bustar supports (mm)**							
80x1	1000	1000	750	675	600	500	425	1300
80x2	1000	825	625	575	500	425	350	2300
80x3	750	550	400	375	325	275	225	3200
125x1	1000	1000	925	850	750	625	525	1900
125x2	1000	1000	750	675	600	500	425	3350
125x3	1000	750	550	525	450	375	325	4650
160x1	1000	1000	1000	925	825	700	575	2350
160x2	1000	1000	750	700	625	525	425	4150
160x3	1000	900	675	625	550	475	375	5800

Stud kits for *SB C 10*, *20* & *30*

Reference

Bar width	Available for	B SBC 10	B SBC 20	B SBC 30	Reference
25	SBC 10	160	-	-	5020 **2025**
40	SBC 10	160	-	-	5020 **2040**
50	SBC 10 ; SBC 20 ; SBC 30	190	190	190	5020 **2050**
60	SBC 10 ; SBC 20 ; SBC 30	190	190	190	5020 **2060**
63	SBC 10 ; SBC 20 ; SBC 30	190	190	190	5020 **2063**
70	SBC 30	-	-	190	5020 **2070**
80	SBC 10 ; SBC 20 ; SBC 30	220	220	220	5020 **2080**
100	SBC 10 ; SBC 20 ; SBC 30	220	220	220	5020 **2100**
120	SBC 20 ; SBC 30	-	245	245	5020 **2120**
125	SBC 20 ; SBC 30	-	245	245	5020 **2125**
160	SBC 30	-		280	5020 **2160**

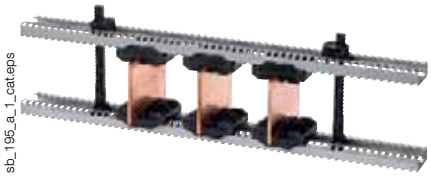
Order example for a SBC 20 4 poles 2 x 60 x 10: 1 x 5024 7400 + 1 x 5020 2060.

Reference in **green** are new products. ■ Stock items.

Edgewise mounting busbar support adjustable interphase

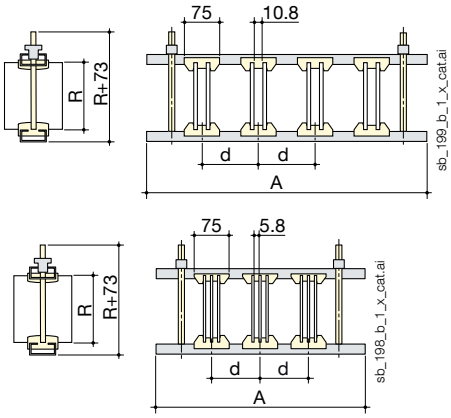
■ *SB C ER P*

Reference



Nb of poles	Bars thickness	Order quantity for 1 support	Reference
3	1 … 2	6	5025 **5205**
4	1 … 2	8	5025 **5205**
3	1 … 4	6	5025 **5210** ■
4	1 … 4	8	5025 **5210** ■

Dimensions



A (mm)	Enclosure (mm)
380	400
480	500
580	600
780	800

Accessories

Description	Length	Order quantity for 1 support	Reference
Rod kit (bar height 25 to 200 mm)		2	5025 **5100** ■
380 mm profile	380	2	5025 **5124**
480 mm profile	480	2	5025 **5125**
580 mm profile	580	2	5025 **5126**
780 mm profile	780	2	5025 **5128**
2 m profile	2000		5025 **5120**

Characteristics

	3 & 4 poles with 5 mm bars					3 & 4 poles with 10 mm bars					
peak I_{sc}	**24 kA**	**48 kA**	**63 kA**	**82 kA**	**114 kA**	**82 kA**	**114 kA**	**152 kA**	**165 kA**	**187 kA**	
rms I_{sc} (1s)	**12 kA**	**23 kA**	**30 kA**	**39 kA**	**52 kA**	**39 kA**	**52 kA**	**69 kA**	**75 ka**	**85 kA**	**Iz (A)**
Bars x nb	**Max distance beetwen 2 bustar supports (mm)**										
50x5x1	975	475	350	275		275					600
50x5x2	900	450	325	250	175	250	175	140	130	115	1050
50x5x3	1000	525	400	300	200	300	200	165	150	135	1450
80x5x1	1000	625	475	375	225	375	250	200			900
80x5x2	1000	625	475	375	225	375	250	200	175	160	1250
80x5x3	1000	725	550	425	225	425	300	225	200	175	2200
100x5x1	1000	725	550	425	225	425	300	225	200	175	1100
100x5x2	1000	750	575	425	225	425	300	225	200	175	1900
100x5x3	1000	875	650	450	225	500	350	275	250	200	2650
125x5x1	1000	850	650	500	250	500	350	250	250	200	1300
125x5x2	1000	900	675	500	250	525	375	275	250	225	2350
125x5x3	1000	1000	800	500	250	600	425	325	275	225	3250
50x10x1	1000	975	700	400	200						850
50x10x2	1000	950	675	400	200						1550
80x10x1	1000	1000	725	450	225	750	525	300	250	200	1300
80x10x2	1000	1000	700	425	225	775	525	300	250	175	2300
100x10x1	1000	1000	800	475	225	850	575	300	250	200	1550
100x10x2	1000	1000	800	450	225	900	550	300	250	200	2750
125x10x1	1000	1000	850	500	250	1000	600	325	275	225	1900
125x10x2	1000	1000	850	500	250	1000	600	325	275	225	3350
160x10x1						1000	675	375	325	250	2350
160x10x2						1000	675	375	325	250	4150

Reference in **green** are new products. ■ Stock items.

socomec
Innovative Power Solutions

Unipolar flat mounting busbar support

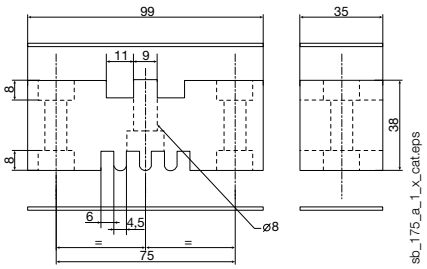
SB 205 - SB 306

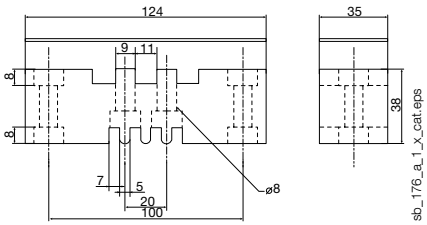
Reference

sb_117_a_1_cat.eps

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 205	1000	1 ... 3	100	6	5022 **5110** ■
SB 306	1000	1 ... 3	160	6	5023 **6110** ■

Dimensions

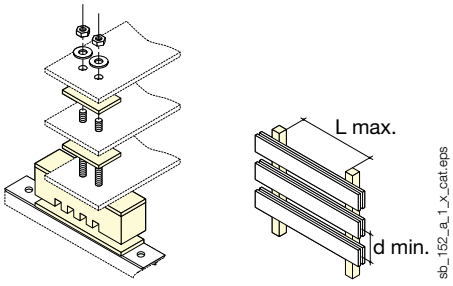




Characteristics

Support	Bar x no.	peak I_{sc} / rms I_{sc}	Max. L (distance between centres of supports 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 nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.



Mounting

- SB 205: 1 to 3 bars of max. width 100 mm.
- SB 306: 1 to 3 bars of max. width 160 mm.

Reference in **green** are new products. ■ Stock items.

Multipolar flat mounting busbar supports with fixed interphase

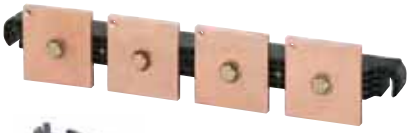
■ *SB P 30*

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3	1000	50-100	1	5023 **0310**
4	1000	50-80	1	5023 **0410**

Mounting bracket		
Description of accessories	**To be ordered in multiples of**	**Reference**
2 mounting brackets for SB P 30	1	5024 **9002**

Bar fixing screws		
Description of accessories	**To be ordered in multiples of**	**Reference**
Headless screw for attaching 1 thickness of bar	25	5119 **4601**
Headless screw for attaching 2 thicknesses of bar	25	5119 **4602**
Headless screw for attaching 3 thicknesses of bar	25	5119 **4603**


sb_123_a_3_cat_.eps

sb_210_a_1_cat.eps

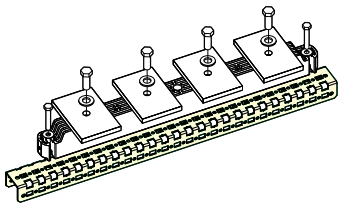
sb_211_a_1_cat.eps

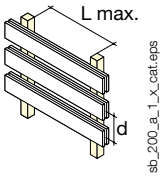
Characteristics

d = 123 mm

	Max. L (distance between centres of supports 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 no.									**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

	Max. L (distance between centres of supports 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 no.									**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

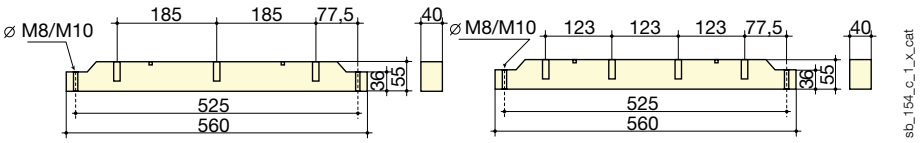

sb_160_a_1_x_cat.eps



sb_200_a_1_x_cat.eps

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

Reference in **green** are new products. ■ Stock items.

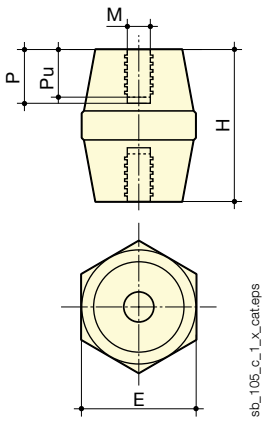
Unipolar flat mounting busbar support

Female to female ***hexagonal insulator***

References

sb_104_a_1_cat.eps

Height (mm)	Insert	Depth (mm)		Ø (mm)	Pack	
H	M	P	Pu	E	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_105_c_1_X_cat.eps

Characteristics

			Max. L (distance between centres of supports 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		
H (mm)	Insert M	Bar x no.						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 nominal current for a temperature in the cabinet of 45°C and 80°C for the bars.
Other assembly configurations: please consult us.

Headless screw

References

Length (mm)	Thread	To be ordered in multiples of	Reference
20	M6	20	5032 **2006**
20	M8	20	5032 **2008**
25	M6	20	5032 **2506**
25	M8	20	5032 **2508**
30	M6	20	5032 **3006**
30	M8	20	5032 **3008**
40	M8	20	5032 **4008**
40	M10	20	5032 **4010**
50	M12	20	5032 **5012**

Reference in **green** are new products. ■ Stock items.

sb_121_a_2_cat.eps

socomec
DIRIS
C-30
D-30
I-35
ON
ALARM
COM
DIGIWARE BUS
socomec
+FREQUENCY
CLIM BA
INST
AVG
MAX
U 1-2 398.5v
05.03.2014 11:10:00
U 2-3 3
05.03.20
U 3-1 398.5v
05.03.2014 11:10:00
F 50.
05.03.2014
IP
E
VF

Energy Efficiency

DIRIS Digiware selection guide ..... p. 118

COUNTIS selection guide ..... p. 132

DIRIS selection guide ..... p. 148

Multi-circuit metering & measurement

new

DIRIS Digiware
p. 120

new

TE / TR / TF
current sensors
p. 128

Measurement and wireless metering

new

DIRIS B-30
p. 124

new

TE / TR / TF
current sensors
p. 128

Single-circuit metering, measurement & analysis

COUNTIS E
p. 132

DIRIS A
p. 148

Communication gateways

new

DIRIS G
RS485 and wireless to Ethernet
p. 170

Measurement devices

Current transformers
5 to 6000 A
p. 166

Software suite

Embedded web server

new

VERTELIS WEBVIEW
p. 174

Selection guide

Measurement and monitoring system for electrical installations

DIRIS Digiware

new

appli_637_a

Application	Voltage measurement module		
	Metering	Monitoring	Analysis
DIRIS Digiware U	***U-10*** *p. 120*	***U-20*** *p. 120*	***U-30*** *p. 120*
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Power quality			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Individual harmonics U & V (up to rank 63)			•
Voltage dips, interruptions and swells (EN 50160)			•
Alarms			
On threshold			•
History of average values			
45 days (max.)			•
Format			
Width/Number of modules	18 mm / 1	18 mm / 1	18 mm / 1

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Control and power supply interface + Voltage measurement module + Current measurement modules

Application	Control and power supply interface			
	Centralisation and display of data		Data centralisation	Repeater
DIRIS Digiware	***D-40*** p. 120	***D-50*** p. 120	***C-31*** p. 120	***C-32*** p. 120
Function				
Centralisation of measurement points	•	•	•	•
High-resolution LCD display (configuration, selection and visualisation display of circuits)	•	•		
Repeater				•
Power supply				
24 VDC	•	•	•	•
Communication				
RS485 Modbus	• Output	• Input	•	
Digiware BUS	•	•	•	•
Ethernet Modbus TCP		•		

Application	Current measurement modules							
	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
DIRIS Digiware I	***I-30*** p. 120	***I-31*** p. 120	***I-33*** p. 120	***I-35*** p. 120	***I-43*** p. 120	***I-45*** p. 120	***I-60*** p. 120	***I-61*** p. 120
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 level 63)				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/Outputs					2 / 2	2 / 2		
History of average values								
45 days (max.)				•		•		
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

DIRIS Digiware

Measurement and monitoring system for electrical installations

new

DIRIS Digiware D-50

DIRIS Digiware U-30

DIRIS Digiware I-35

Configuration with EasyConfig,

The solution for

- Industry
- Building
- Infrastructure
- Local authority

Strong points

- Multi-circuit
- Global accuracy class 0.5 in accordance with IEC 61557-12
- Cost effective and flexible
- Plug & Play

Conformity to standards

- IEC 61557-12
- ISO 14025
- UL

Function

The **DIRIS Digiware** system is a hub of technological innovations that revolutionises the world of measurements, bringing a high degree of flexibility to installations and making connection and configuration easy.

These innovations, together with unrivaled performance in terms of accuracy and functionality, make DIRIS Digiware the most effective solution for metering consumption, measuring and monitoring the quality of electrical energy in industrial and commercial applications.

- Management and optimisation of the power installed DIRIS Digiware allows you to identify most demanding loads and monitor abnormal electrical values, providing you with a perfectly-managed electrical network.
- Simplified network maintenance: the electrical energy quality monitoring functions offered by DIRIS Digiware make it easier to anticipate electrical malfunctions.

Advantages

Multi-circuit

Ability to monitor several circuits via a single current measurement module due to independent current inputs.

Accuracy as per standard IEC 61557-12

- Class 0.5 from 2% to 120% of nominal current for the global measurement chain (associated with TE/TF current sensors).
- Class 0.2 for the meter alone.

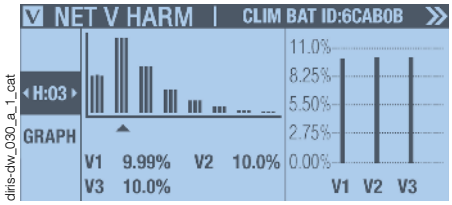
Cost effective and flexible

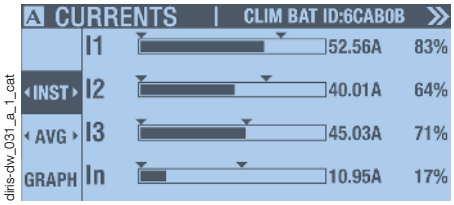
- Implementation in a quarter of the time vs existing technologies.
- Installation of modules and sensors at the closest point to the load.
- Shared functions:
  - Common display.
  - Single voltage measurement for the entire system.
  - Single auxiliary power supply.
- Compact design: suitable for new and existing installations including panels with space restrictions.
- Large range of current sensors

Plug & Play

- RJ12 current sensor connection
  - Automatic detection of ratings.
  - Identification of cables by color-coding.
  - Disconnection of the current sensor secondary under load.
- RJ45 interconnection of I and U modules via Digiware bus.
- Auto-configuration of parameters: Network and load type - addressing of devices connected to the bus.

Example of displays on DIRIS Digiware D-40/D-50





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DIRIS Digiware System

- 1 display
- 1 voltage measurement module
- current measurement modules
- current sensors

diris-dw_011_b_1_cat

Control and power supply interface (24 VDC)

or

DIRIS Digiware D-40/D-50

- High-resolution LCD display
- Centralisation of measurement points:
  - circuit selection,
  - data display.
- Keys on the front face for direct access to:
  - measurement data,
  - circuits selection,
  - device configuration.
- 24 VDC power supply.

	D50	D40
Input	RS485	Digiware
	Digiware	
Output	Ethernet	RS485

DIRIS Digiware C-31/C-32

- No-display mode
- Centralisation of DIRIS Digiware measurement data on RS485 Modbus
- 24 VDC power supply
- Communication
  - Digiware Bus,
  - RS485 Modbus.
- Repeater (more than 15 W or more than 100 m)

+

Voltage measurement module

DIRIS Digiware U-xx

U-10
- U12, U23, U31, V1, V2, V3, f

U-20
- U12, U23, U31, V1, V2, V3, f
- THDv1, THDv2, THDv3, THDu12, THDu23, THDu31

U-30
- U12, U23, U31, V1, V2, V3, f
- U system, V system
- Ph/N unbalance (Vnb, Vnba, Vdir, Vinv, Vhom)
- Ph/Ph unbalance (Unb, Unba, Udir, Uinv)
- THDv1, THDv2, THDv3, THDu12, THDu23, THDu31
- Individual harmonics U & V (up to rank 63)
- Voltage dips, interruptions and swells (EN 50160)
- Alarms
- History of average values

+

Current measurement modules

DIRIS Digiware I-3x
3 inputs

I-30 / I-60
- ± kWh, ± kvarh, kVAh
- I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF

I-31 / I-61
- ± kWh, ± kvarh, kvah
- Multi-tariff
- Load curves
- I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF

I-33 / I-43
- ± kWh, ± kvarh, kvah
- I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF
- P, Q, S, PF per phase
- THDi1, THDi2, THDi3, THDin

DIRIS Digiware I-4x
4 inputs

I-35 / I-45
- ± kWh, ± kvarh, kVAh
- Multi-tariff
- Load curves
- I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF
- P, Q, S, PF per phase
- Predictive power (ΣP, ΣQ, ΣS)
- I System
- Current unbalance (Inba, Idir, Iinv, Ihom, Inb)
- Phi, cos Phi, tan Phi
- THDi1, THDi2, THDi3, THDin
- Individual harmonics I (up to rank 63)
- Overcurrents
- Alarms
- 2 inputs / 2 outputs (I-45)
- History of average values

DIRIS Digiware I-6x
6 inputs

Connections

Associated current sensors

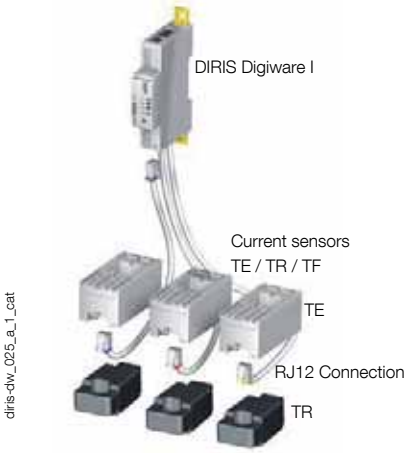
Various types of current sensors can be connected to the DIRIS Digiware: Solid TE , split-core TR , flexible TF current sensors. This range of sensors can be adapted to all types of new or existing installations. A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS Digiware automatically recognises the sensor size and type. This guarantees the overall accuracy of the DIRIS Digiware + current sensor measurement chain.

For more information: see page 120.

TE solid current sensors

TR Split-core current sensors

TF Flexible current sensors



Configuration

Power consumption of devices

Components	Power supplied (W)	Power consumption (W)
Power supply		
P15 100-240 VAC / 24 VDC	15	
Cables		
50 metre package		1.5
System interfaces		
DIRIS Digiware D-x0		2
DIRIS Digiware C-31		0.8
Voltage module		
DIRIS Digiware U-xx		0.72
Current modules		
DIRIS Digiware I-3x		0.52
DIRIS Digiware I-4x		1.125
DIRIS Digiware I-6x		0.7
Repeater		
DIRIS Digiware C-32		1.5

Repeater

When the power consumption is over 20 W or the distance exceeds 100 m,
a DIRIS Digiware C-32 repeater is required.

In a DIRIS Digiware system, maximum 2 repeaters can be used.

Rules to set the maximum number of products on the Digiware BUS

The total power consumptions by the devices connected to the Digiware BUS must not exceed the power supplied by the 24 VDC supply.

The power supply must not exceed 20 W / 70 °C or 27 W / 40 °C.

System configuration with P15 power supply (ref: 4829 0120) providing 15 W

System can include:

- 1 display DIRIS Digiware D-50 (2 W)
- 1 voltage module DIRIS Digiware U-xx (0.72 W)
- 50 meter cable (1.5 W)

and

- 20 current modules DIRIS Digiware I-3x (20 x 0.52 = 10.4 W)
  ⇨ **Total power = 14.62 W**

or

- 9 current modules DIRIS Digiware I-4x (9 x 1.125 = 10.125 W)
  ⇨ **Total power = 14.345 W.**

System configuration with a 24 VDC power supply providing a maximum of 20 W

System can include:

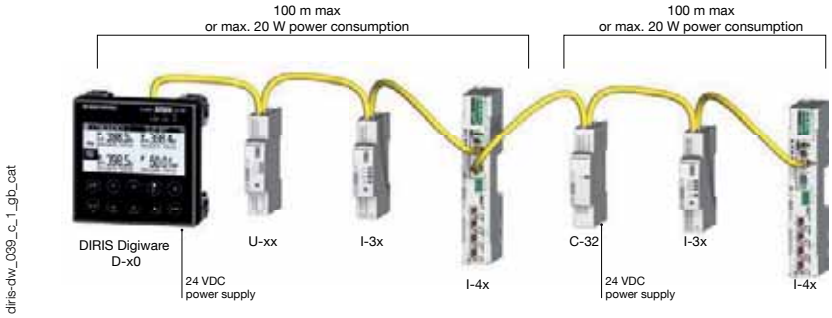
- 1 display DIRIS Digiware D-50 (2 W)
- 1 voltage module DIRIS Digiware U-xx (0.72 W)
- 50 meter cable (1.5 W)

and

- 30 current modules DIRIS Digiware I-3x (30 x 0.52 = 15.6 W)
  ⇨ **Total power = 19.82 W**

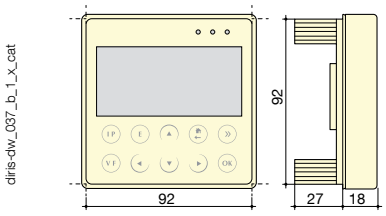
or

- 14 current modules DIRIS Digiware I-4x (14 x 1.125 = 15.72 W)
  ⇨ **Total power = 19.97 W.**

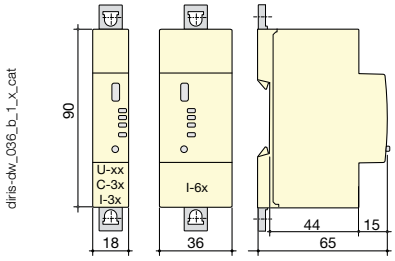


Dimensions

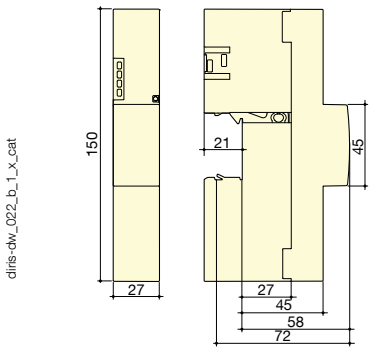
DIRIS Digiware D-50



DIRIS Digiware U / C / I-3x / I-6x



DIRIS Digiware I-4x



Technical characteristics

Electrical characteristics

DIRIS Digiware C-31	
Input voltage	24 VDC ± 20 % - 20 W max
Connection	Removable screw terminal, 2 positions, 0.2 to 2.5 mm² stranded or solid cable
P15 power supply	Characteristics: 100-240 VAC/ 24 VDC - 0.63 A - 15 W Modular format - Dimensions (H x L): 90 x 25 mm

Measurement characteristics

Energy and power measurement	
Accuracy Active energy and active power	Class 0.2 DIRIS Digiware alone Class 0.5 with TE or TF current sensors Class 1 with TR current sensors
Reactive energy accuracy	Class 2 with TE, TR or TF current sensors
Power factor measurement	
Accuracy	Class 0.5 with TE or TF current sensors Class 1 with TR current sensors
Voltage measurement - DIRIS Digiware U	
Network characteristics measured	50-300VAC (Ph/N) - 87-520VAC (Ph/Ph) - CAT III
Frequency range	45 … 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
Permanent overload	300 VAC Ph/N
Voltage measurement accuracy	Class 0.2
Connection	Removable screw terminal, 4 positions, 0.2 to 2.5 mm² stranded or solid cable
Current measurement - DIRIS Digiware I	
Number of current inputs	I-3x: 3 / I-45 : 4 / I-6x : 6
Associated current sensors	Solid TE , split-core TR , flexible TF current sensors
Current measurement accuracy	Class 0.2 DIRIS Digiware alone Class 0.5 with TE or TF current sensors Class 1 with TR current sensors
Connection	Specific SOCOMEC cable with RJ12 connectors
Inputs - DIRIS Digiware I-45	
Number of inputs	2
Type / Power supply	Non insulated input, internal polarisation 12 VDC max, 1mA
Input functions	Logic status or pulse meter
Connection	Removable screw terminal, 0.14 to 1.5 mm² stranded or solid cable
Outputs - DIRIS Digiware I-45	
Number of outputs	2
Relay type	230 VAC ±15 % - 1 A
Function	Configurable alarm (current, power,…) on threshold overruns or remote controlled status
Connection	Removable screw terminal, 0.2 to 2.5 mm² stranded or solid cable

Communication characteristics

Digiware BUS	
Function	Connection between DIRIS Digiware modules
Type of cable	Specific SOCOMEC cable with RJ45 connectors
RS485	
Connection type	2 … 3 half duplex wires
Protocol	Modbus RTU
Speed	1200 … 115200 bauds
Function	Configuration and data transmission
Location	Single-point on DIRIS Digiware C
USB	
Protocol	Modbus RTU over USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measuring module
Connection	B-type micro USB connector

Mechanical characteristics

Types of casing	Modular for DIN-rail or back plate mounting
Casing degree of protection	IP20 / IK06
Front face degree of protection	IP40 (panel face with modular mounting) / IK06

Environment characteristics

Operating temperature	-10 … +70 °C
Storage temperature	-25 … +70 °C
Operating humidity	55 °C / 97 % relative humidity
Operating altitude	2000 m

DIRIS Digiware D-40 / D-50 characteristics

Mechanical characteristics	
Screen type	Capacitive touch-screen technology, 10 keys
Screen resolution	350 x 160 pixels
Front face degree of protection	IP65
Communication	
Ethernet RJ45 10/100 Mbs	Modbus TCP gateway function (D-50)
RJ45 Digiware	Control and power supply interface function
RS485 2-3 wires	Modbus RTU communication function (input D-50 / output D-40)
USB	Updating via B-type micro USB connector
Electrical characteristics	
Power supply	24 VDC +10 % / -20 %
Consumption	2 VA
Environment characteristics	
Storage temperature	-20 … +70 °C
Operating temperature	-10 … +70 °C
Humidity	95 % at 40 °C
Installation category - degree of pollution	CAT III, 2

References

DIRIS Digiware		**Reference**
D-40	Multi-point display - RS485 output	4829 **0199**
D-50	Multi-point display - Ethernet output	4829 **0201** ■
C-31	System interface	4829 **0101** ■
C-32	Repeater	4829 **0103**
U-10	Metering	4829 **0105** ■
U-20	Monitoring	4829 **0106**
U-30	Analysis	4829 **0102** ■
I-30	Metering - 3 current inputs	4829 **0110** ■
I-31	Metering + load curve - 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 + load curve - 6 current inputs	4829 **0113** ■

Power supply		**Reference**
P15	100-240 VAC/ 24 VDC 15 W power supply	4829 **0120** ■
Digiware connection cables		**Reference**
RJ45 cables for BUS Digiware	0.10 m length	4829 **0181** ■
	0.20 m length	4829 **0188**
	0.50 m length	4829 **0182** ■
	1 m length	4829 **0183** ■
	2 m length	4829 **0184**
	5 m length	4829 **0186**
	10 m length	4829 **0187**
	50 m + 50 connectors	4829 **0185**
Termination for Digiware BUS (fitted on C-31 and D-50)		4829 **0180**
USB configuration cable		4829 **0050**
Single-point display		**Reference**
DIRIS D-30(1)	Single-point display for DIRIS Digiware I-4x	4829 **0200**

(1) DIRIS D-30 display characteristics, please see page 127.

Reference in **green** are new products. ■ Stock items.

DIRIS B-30

Wireless power monitoring devices

new

Configuration with EasyConfig,

DIRIS B-30
Radio frequency (wireless)

DIRIS B-30
RS485

Function

The **DIRIS B-30** is a power monitoring device in a modular format that communicates wirelessly or via RS485. The 4 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-30 is connected to current sensors(1) (RJ12 connection) that are suitable for all types of installation: solid TE, split-core TR, and flexible TF current sensors.

(1) See page 128.

Advantages

Plug & Play

A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. Automatically addressing and configuring the product (communication address, load type, type and ratio of current sensor) allow you to simplify implementation and to save time.

Class 0.5 in accordance with IEC 61557-12

- Class 0.2 for the meter alone.
- Class 0.5 from 2% to 120% of nominal current for the global measurement chain (associated with TE/TF current sensors).

Multi-circuit

- 4 current measurement inputs allow you to configure multiple circuits in order to optimise the number of measurement devices per installation.

Communication

- The DIRIS B-30 can be connected to:
  - a remote DIRIS D-30 screen for displaying measurement and metering data.
  - a DIRIS G(1) gateway for centralisation and communication of data wirelessly or via RS485 and Ethernet.
  - optional modules to communicate in BACnet IP, BACnet MSTP and PROFIBUS DP protocol. Digital or analogue input/ output modules can also be connected.

(1) See page 170.

The solution for

- Industry
- Building
- Infrastructure
- Local authority

Strong points

- Plug & Play
- Global accuracy class 0.5 in accordance with IEC 61557-12
- Multi-circuit
- Communication

Conformity to standards

- IEC 61557-12
- EN 50160
- ISO 14025

PEP ecoPASSPORT®

Selection guide

DIRIS B-30	
DIRIS B-30 RS	RS485 MODBUS communication
DIRIS B-30 RF	Radio frequency Communication (wireless)
Optional modules	
DIRIS O-iod	2 digital inputs / 2 digital outputs
DIRIS O-ioa	2 analogue inputs / 2 analogue outputs
DIRIS O-it	3 temperature inputs
DIRIS O-m	Additional RS485 communication
DIRIS O-p	PROFIBUS communication
DIRIS O-b/ip	BACnet IP communication
DIRIS O-b/mstp	BACnet MSTP communication

Functions

Multi-measurement

- Currents
  - I1, I2, I3, In, Isystem
- Voltages & frequency
  - V1, V2, V3, VN, Vsystem, U12, U23, U31, Usystem, f
- Power
  - P1, P2, P3, ΣP, Q1, Q2, Q3, ΣQ, S1, S2, S3, ΣS
  - Predictive power ΣP, ΣQ, ΣS
- Power factor
  - PF1, PF2, PF3, ΣPF
- Cos φ & tanφ
  - Instantaneous values per phase

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent energy: kVAh
- Multi-tariff (8 max.)

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
  - Phase-to-neutral voltage THDv1, THDv2, THDv3
  - Phase-to-phase voltage THDu12, THDu23, THDu31
- Individual harmonics up to rank 63
  - Currents: I1h, I2h, I3h, INh
  - Phase-to-neutral voltage: V1h, V2h, V3h
  - Phase-to-phase voltage: U12h, U23h, U31h
- Active (according to EN 50160)
  - Dips, interruptions, swells

Load curves and history logs (130 days max.)

- Active, reactive and apparent power
- Currents, voltages and frequency

Alarms

- Alarms for all electrical values, events and input status changes, possibility of boolean combination

Communication

- DIRIS B-30 RF: Radio frequency Communication (wireless)
- DIRIS B-30 RS: RS485 Modbus,
- Optional modules: RS485, BACnet IP, BACnet MSTP, PROFIBUS DPV1

Inputs

- 2 digital inputs
  - Supply by the DIRIS B-30 or external supply
  - Function: logic status, circuit breaker status, pulse meter or synchronisation pulse

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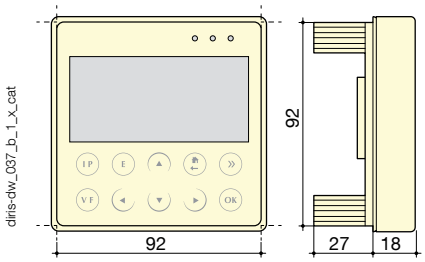
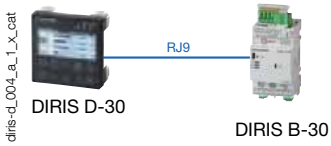
DIRIS B-30 display

DIRIS D-30

Dimensions



Connection



Accessories

Remote radio antenna

- Mounted outside the enclosure of the DIRIS B-30 monitoring device to increase the transmission distance.

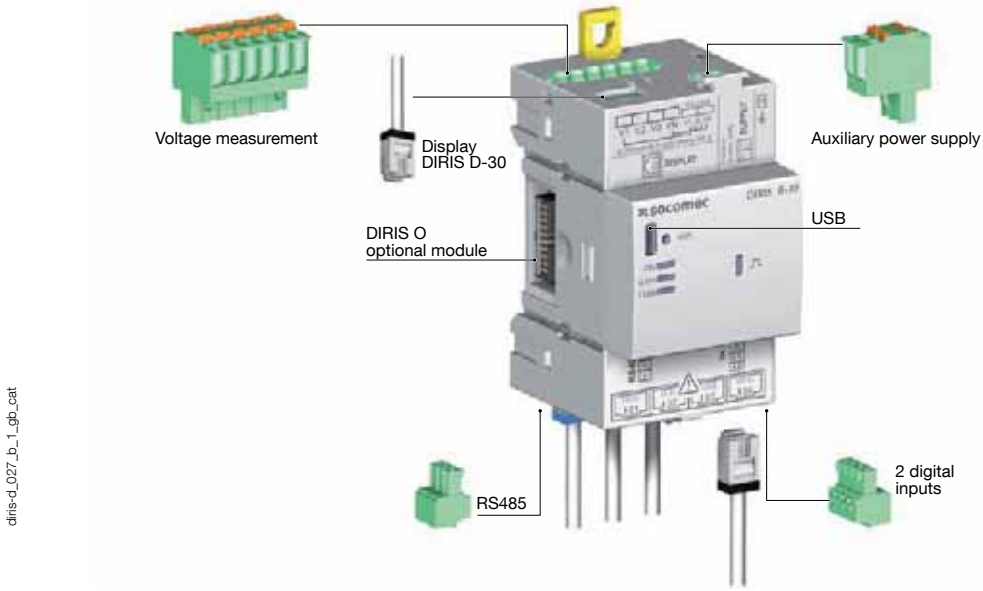
DIRIS B-30 sealing cover

- Prevents access to the cabling of the monitoring device.

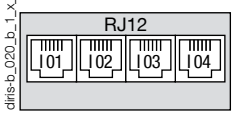
USB configuration cable (2 m)

- Advanced configuration of DIRIS B-30 gateways can be achieved using the EASY CONFIG software via Ethernet or direct USB connection.

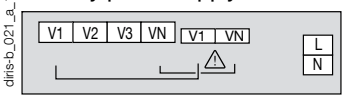
DIRIS B-30 terminals



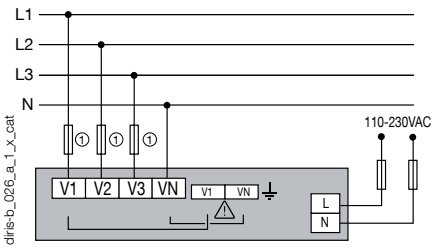
Current measurement



Voltage measurement and auxiliary power supply

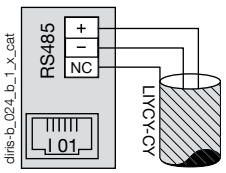


Separate power supply



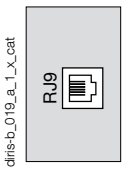
1. Fuses 0.5 A gG / 0.5 A class CC.

RS485



RJ9 for DIRIS D-30

(self-supply and data)



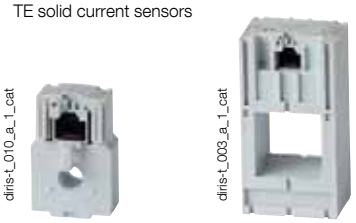
Connections

Associated current sensors

Various types of current sensors can be connected to the DIRIS Digiware: Solid TE , split-core TR , 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-30 automatically recognises the sensor size and type. This guarantees the overall accuracy of the DIRIS B-30 + current sensor measurement chain.

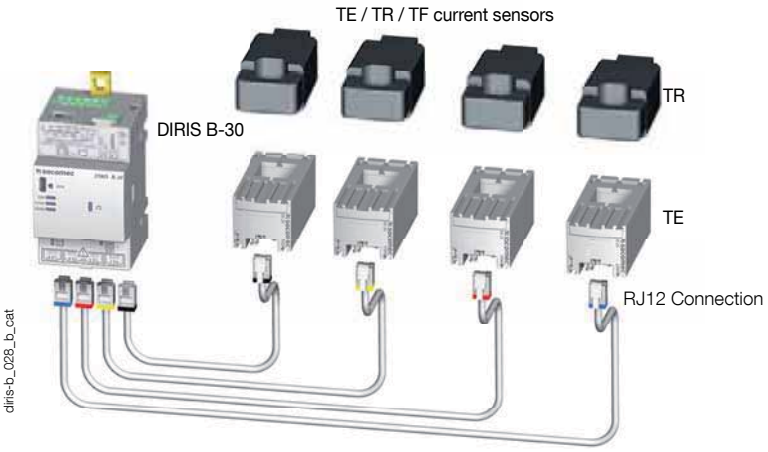
For more information: see page 128.

TE solid current sensors



TR Split-core current sensors

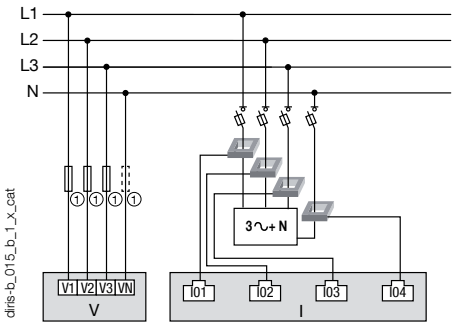
TF Flexible current sensors



Network and connection examples

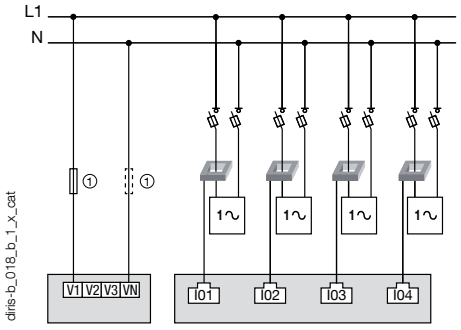
Three phase + neutral

3P+N - 4CTs (measurement for 1 three-phase load + Neutral)



Single-phase

1P+N-1CT (4 single-phase loads)

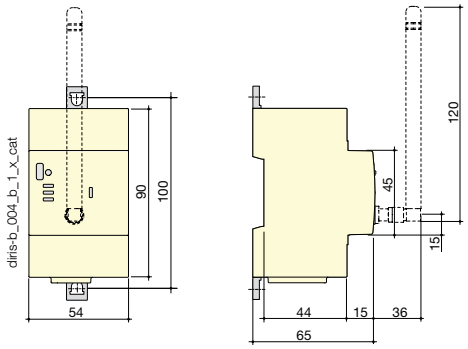


CT: Current sensors

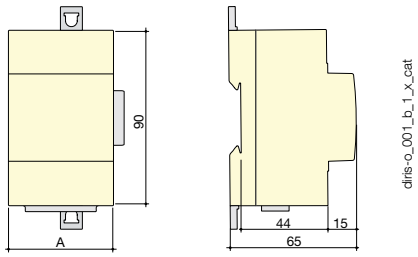
3~ Load

Dimensions (mm)

DIRIS B-30



DIRIS O optional modules

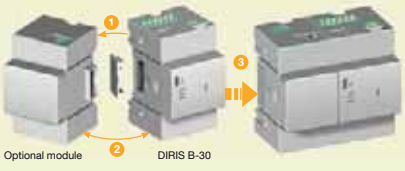


DIRIS O optional modules	A (mm)
DIRIS O-iod - DIRIS O-ioa - DIRIS O-it	45
DIRIS O-m - DIRIS O-p - DIRIS O-b/ip - DIRIS O-b/mstp	54

More technicall & more accessories

- Digital inputs/outputs
- Analogue inputs/outputs
- Temperature inputs
- Communication ports RS485 Modbus, PROFIBUS, BACnet IP and Bac net MSTP

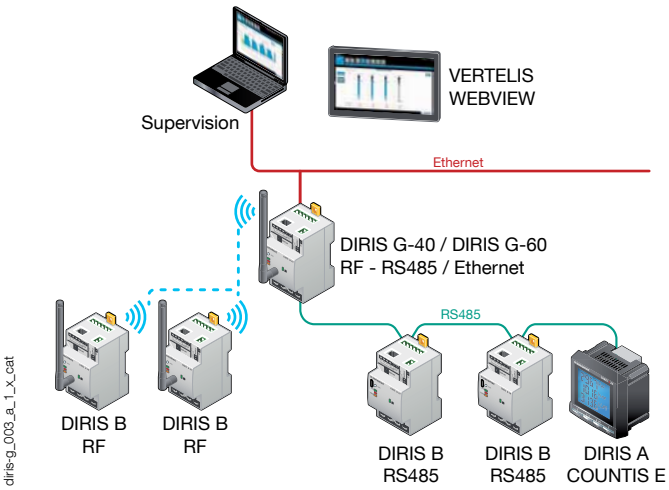
Please consult www.socomec.com



Communication architecture

Example of communication architecture with DIRIS G gateway and WEBVIEW embedded WEB server

For more information about DIRIS G, please see page 170.



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)
Electrical characteristics	
Power supply	24 VDC +10 % / -20 %
Consumption	2 VA
Environment	
Storage temperature (°C)	-20 ... +70 °C
Operating temperature (°C)	-20 ... +70 °C
Humidity	95 % to 40 °C
Installation category	CAT III
Degree of pollution	2

References

DIRIS B-30 monitoring devices	Reference
DIRIS B-30 RS485 - Modbus - 230VAC	4829 **0000** ■
DIRIS B-30 RF - Modbus - 230 VAC	4829 **0002**
Accessories	**Reference**
DIRIS D-30 - Single-point display	4829 **0200**
RJ9 cable for DIRIS D-30 display - 3 m	4829 **0281**
DIRIS B-30 sealing cover for I/O terminals	4829 **0049**
USB configuration cable	4829 **0050**

Reference in **green** are new products. ■ Stock items.

DIRIS B-30 characteristics

Electrical characteristics

Auxiliary power supply	
AC voltage	110-230VAC ±15 % (Ph/N ou Ph/Ph) Cat III
Frequency	50/60 Hz
Consumption	< 2VA without display < 6VA with display
Connection	Removable spring-cage terminal, 2 x 2 positions, 0.5 … 2.5 mm² solid cable or 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-30 alone Class 0.5 with TE or TF current sensors Class 1 with TR current sensors
Reactive energy accuracy	Class 2 with TE, TR or TF current sensors
Power factor measurement	
Accuracy	Class 0.5 with TE or TF current sensors Class 1 with TR current sensors
Voltage measurement	
Network characteristics measured	50-300VAC (Ph/N) - 87-520VAC (Ph/Ph) - CAT III
Frequency range	45 … 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
Permanent overload	300VAC Ph/N
Voltage measurement accuracy	Class 0.2
Connection	Removable spring-cage terminal, 2 x 6 positions, 0.5 … 2.5 mm² solid cable or 0.25 … 1.5 mm² stranded cable with ferrule
Current measurement	
Number of current inputs	4
Associated current sensors	Solid TE , split-core TR , flexible TF current sensors
Accuracy	Class 0.2 DIRIS B-30 alone Class 0.5 with TE 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 synchronisation pulse status (input 1)

Communication characteristics

DIRIS B-30 RS485	
Link	RS485
Connection type	2 … 3 half duplex wires
Protocol	Modbus RTU
Speed	1200 … 115200 bauds
USB	DIRIS B-30 RS485 configuration
DIRIS B-30 RF	
Link	Wireless radio frequency
Frequency band	868 MHz (low frequency: 868.1 MHz and high frequency: 869.5875 MHz)
Speed	38400 bauds
USB	DIRIS B-30 RF configuration

Environment characteristics

Operating temperature	-10 … +70 °C
Storage temperature	-25 … +85 °C
Operating humidity	55 °C / 97 % relative humidity
Operating altitude	2000 m
Vibration	1G from 10 Hz to 100Hz

TE, *TR* and *TF* current sensors

Current sensors

associated to DIRIS Digiware and DIRIS B-30

new

TE Solid current sensors

TR Split-core current sensors *TF Flexible current sensors*

Function

TE, TR and TF current sensor ranges can be connected to DIRIS Digiware and DIRIS B-30 via a rapid RJ12 connection. Various accessories are available to allow the installation of sensors in all panel configurations.

Thanks to a wide measurement range, the TE current sensors cover the full current range from 5 to 1000 A, with only 6 models.

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.
- Mounting orientation of current sensors is indifferent.

Accuracy as per standard IEC 61557-12

- Class 0.5 from 2% to 120% of nominal current for the global measurement chain (associated with TE or TF current sensors).
- Class 1 from 2% to 120% of nominal current for the global measurement chain (associated with TR current sensors).

Suitable for any installation

Dimensions of the range allow:

- New installation: a range of solid TE sensors adapted to the pitch of protective devices.
- Existing installations: a range of split-core TR sensors for existing sites.
- Existing space-constrained installations with high-intensity currents: a range of flexible TF current sensors (Rogowski).

Selection guide

Current sensors	TE Solid current sensors	TR Split-core current sensors	TF Flexible current sensors
Nominal current range (A)	5 … 1000	25 … 600	150 … 6000

The solution for

- Industry
- Building
- Infrastructure
- Local authority

Strong points

- Plug & Play
- Accuracy as per standard IEC 61557-12
- Suitable for any installation

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training… Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.

Conformity to standards

- IEC 61557-12
- ISO 14025
- UL

Functions

TE range

- Solid current sensors.
- Plug & Play RJ12 connection.
- High accuracy over the whole operating range.
- 6 models with ratings from 5 to 1000 A that are adapted to the pitch of protective devices (18/25/35/45/55 mm).
- A 5A/RJ12 adapter for use with TC 5A current transformers in the DIRIS Digiware and DIRIS B-30 ranges.
- Accessories for back-plate, DIN-rail, cable or bar mounting.

TR range

- Split-core current sensors.
- Plug & Play RJ12 connection.
- High accuracy over the whole operating range.
- 4 models with ratings from 25 to 600 A.
- Apertures from 10 to 36 mm.

TF range

- Split-core current sensors.
- Plug & Play RJ12 connection.
- High accuracy over the whole operating range.
- 3 models with different ratings (from 150 to 6000 A).
- Apertures from 55 to 300 mm.

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Mounting

TE range

Linear mounting (circuit breaker pitch)
TE-25 / TE-35 / TE-45 / TE-55

diris-t_005_a_1_cat

Staggered mounting
TE-18 / TE-35 / TE-45 / TE-55

diris-t_005_a_1_cat

Cable mounting

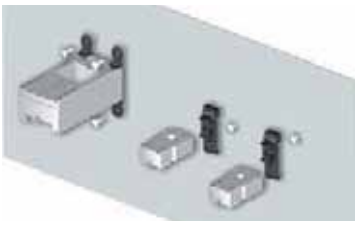
diris-t_035_a_1_cat

DIN-rail mounting

diris-t_033_a_1_cat

Back-plate mounting

diris-t_034_a_1_cat



Bar mounting

diris-t_036_a_1_cat

TR range

Cable mounting

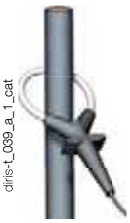
diris-t_037_a_1_cat

diris-t_038_a_1_cat

TF range

Cable mounting

diris-t_039_a_1_cat



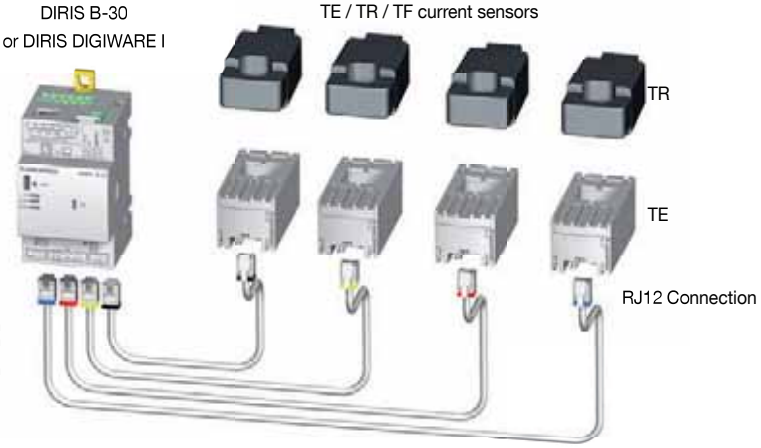
Bar mounting

diris-t_040_a_1_cat

Connections

DIRIS B-30
or DIRIS DIGIWARE I

TE / TR / TF current sensors



diris-b_028_b_cat

Mounting accessories

Mounting accessories provided with TE current sensors

Fixing		TE-18	TE-25	TE-35 TE-45 TE-55
	DIN-rail or back plate	1 part		
	DIN-rail		2 parts	2 parts
	Back plate		4 parts	4 parts
	Bar			2 parts

diris-t_042_a - 043_a - 044_a - 045_a

Accessories

Adapter for 5A CT

diris-t_041_a_1_cat

- This adapter is for use with a 5 A CT with output terminals on the DIRIS Digiware and DIRIS B-30. For use with standard 5 A current sensors for > 1000 A measurement requirements. Dimensions are identical to TE-18.
See page 131.

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/TF current sensors.

diris-t_046_a_1_cat

TE, *TR* and *TF* current sensors

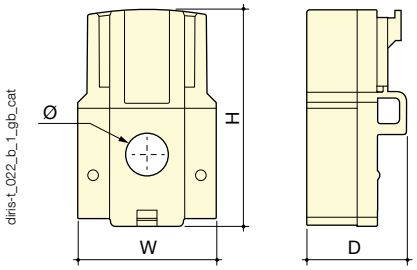
Current sensors

associated to DIRIS Digiware and DIRIS B-30

Dimensions (mm)

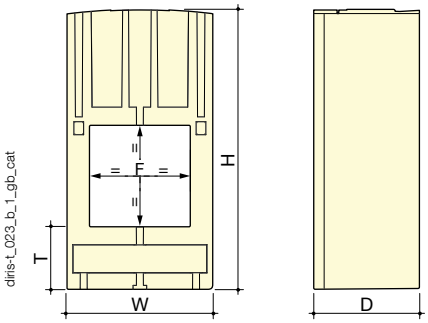
TE - Solid current sensors

TE-18



Model	Nominal current range (A)	Pitch (mm)	H x W x D (mm)	Ø (mm)
TE-18	5 … 63	18	45 x 28 x 20	8.6

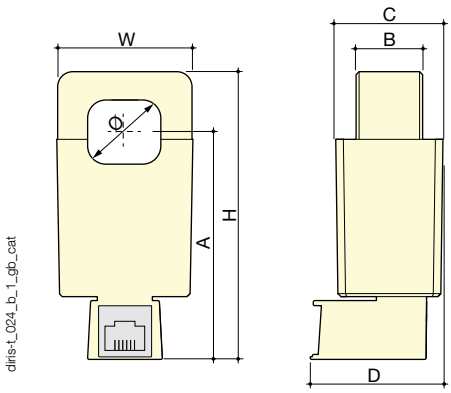
TE-25 / TE-35 / TE-45 / TE-55



Model	Nominal current range (A)	Pitch (mm)	H x W x D (mm)	F (mm)	T (mm)
TE-25	40 … 160	25	65 x 25 x 32.5	13.5 x 13.5	17,5
TE-35	63 … 250	35	71 x 35 x 32.5	21 x 21	17,5
TE-45	160 … 630	45	86 x 45 x 32.5	31 x 31	19,5
TE-55	400 … 1000	55	100 x 55 x 32.5	41 x 41	21.5

TR - Split-core current sensors

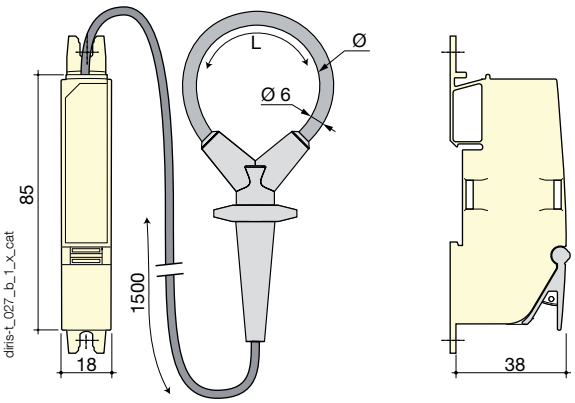
TR-10 / TR-16 / TR-24 / TR-36



Model	Nominal current range (A)	H x W x D (mm)	Ø (mm)	A (mm)	B (mm)	C (mm)
TR-10	25 … 75	71 x 25 x 39	10	58	14,5	26
TR-16	32 … 100	74 x 30 x 42	16	61	19	31
TR-24	63 … 200	95 x 45 x 44	24	72	22	34
TR-36	200 … 600	111 x 57 x 42	36	82	34	40.5

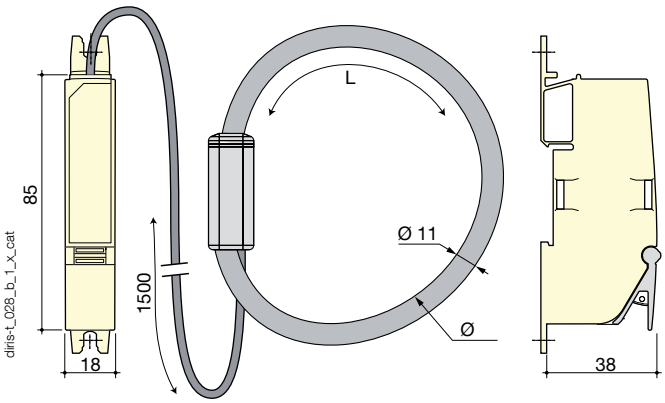
TF - Flexible current sensors

TF -55



Model	Nominal current range (A)	Ø loop (mm)	L = loop length (mm)
TF -55	150 … 600	55	172

TF-120 / TF-300



Model	Nominal current range (A)	Ø loop (mm)	L = loop length (mm)
TF -120	500 … 2000	120	376
TF -300	1600 … 6000	300	942

Technical characteristics

TE - Solid current sensors

Model	TE-18	TE-18	TE-25	TE-35	TE-45	TE-55
Nominal current range (A)	5 … 20	25 … 63	40 … 160	63 … 250	160 … 630	400 … 1000(1)
Max. current (A)	24	75.6	192	300	756	1200
Weight (g)	24	24	69	89	140	187
Max. voltage	300 V			600 V		
Rated withstand voltage	3 kV			3,6 kV		
Frequency	50/60 Hz					
Intermittent overload	10 x I_n during 1sec					
Measurement category	CAT III					
Degree of protection	IP30 / IK06					
Operating temperature	-10 … +70 °C					
Storage temperature	-25 … +85 °C					
Relative humidity	95 % non-condensing					
Altitude	2000 m					
Connection	SOCOMEC cable or equivalent RJ12 straight, twisted pair, unshielded 300 V cat. III cable. -40 / +85 °C					

(1) > 1000 A with 5A CT adapter.

TR - Split-core current sensors

Model	TR-10	TR-16	TR-24	TR-36
Nominal current range (A)	25 … 75	32 … 100	63 … 200	200 … 600
Max. current (A)	90	120	240	720
Weight (g)	74	117	211	311
Max. voltage	300 V			
Rated withstand voltage	3 kV			
Frequency	50/60 Hz			
Intermittent overload	10 In for 1 s			
Measurement category	CAT III			
Degree of protection	IP20 / IK06			
Operating temperature	-10 … +70 °C			
Storage temperature	-25 … +85 °C			
Relative humidity	95 % non-condensing			
Altitude	2000 m			
Connection	SOCOMEC cable or equivalent RJ12 straight, twisted pair, unshielded 300 V cat. III cable. -40 / +85 °C			

TF - Flexible current sensors

Model	TF -55	TF -120	TF -300
Nominal current range (A)	150 … 600	500 … 2000	1600 … 6000
Weight (g)	114	142	220
Max. voltage	600 V		
Rated withstand voltage	3,6 kV		
Frequency	50 / 60 Hz		
Intermittent overload	10 I_n for 1 s		
Measurement category	CAT III		
Degree of protection	IP30 / IK07		
Operating temperature	-10 … +70 °C		
Storage temperature	-25 … +75 °C		
Relative humidity	95 % non-condensing		
Altitude	2000 m		
Connection	SOCOMEC cable or equivalent RJ12 straight, twisted pair, unshielded 300 V cat. III cable. -40 / +85 °C		

References

TE - Solid current sensors

Model	Nominal current range (A)	Pitch (mm)	Reference
TE-18	5 … 20	18	4829 **0500**
TE-18	25 … 63	18	4829 **0501** ■
TE-25	40 … 160	25	4829 **0502** ■
TE-35	63 … 250	35	4829 **0503** ■
TE-45	160 … 630	45	4829 **0504**
TE-55	400 … 1000	55	4829 **0505**

TR - Split-core current sensors

Model	Nominal current range (A)	Ø (mm)	Reference
TR-10	25 … 75	10	4829 **0551**
TR-16	32 … 100	16	4829 **0552**
TR-24	63 … 200	24	4829 **0553**
TR-36	200 … 600	36	4829 **0554** ■

RJ12 connection cables	Cable length (m)				
	0,3	1	2	5	10
N° of cables	Reference	Reference	Reference	Reference	Reference
1	-	-	-	4829 **0602** ■	4829 **0603**
3	4829 **0582** ■	4829 **0583** ■	4829 **0584** ■	-	-

TF - Flexible current sensors

Model	Nominal current range (A)	Ø (mm)	Reference
TF -55	150 … 600	55	4829 **0570** ■
TF -120	500 … 2000	120	4829 **0571** ■
TF -300	1600 … 6000	300	4829 **0572**

Accessories	Reference
Coupling links (20 parts for linear mounting and 10 parts for staggered mounting)	4829 **0598**
5A/CT adapter (measurement >1000 A)	4829 **0599**

Reference in **green** are new products. ■ Stock items.

Selection guide

Active energy meters and pulse concentrators

COUNTIS E

Which type of network? ▶ Which load current?

Network - Input current	Single-phase Direct up to 32 A		Single-phase Direct up to 63 A	Single-phase Direct up to 80 A		Three-phase Direct up to 63 A	
Active energy meters: *COUNTIS E*	***E00/E02*** *p. 134*	***E03/E04*** *p. 134*	***E10/E11/E12*** *p. 136*	***E13/E14*** *p. 136*	***E15/E16*** *p. 136*	***E20/E21*** *p. 138*	***E23/E24*** *p. 138*
Main specifications							
MID: EN 50470 module B + D certification	• (E02)	• (E04)	• (E12)	• (E14)	• (E16)		• (E24)
RS485 Modbus		•		•			•
M-BUS					•		
Case	1 module	1 module	3 modules	3 modules	3 modules	4 modules	4 modules
Input voltage	230 VAC	230 VAC	230 VAC	230 VAC	230 VAC	230 … 400 VAC	230 … 400 VAC
Functions							
Total/partial energy kWh	•/-	•/-	•/• (E10, E11)	•/-	•/-	•/•	•/•
Active power / Reactive power			•/-	•/•	•/•	•/-	
Dual tariff for kWh			• (E11, E12)	•	•	• (E21)	•
Total/partial energy kvarh							
kVA							
Load curve							
Measurement (I, V, P, Q, S, F and PF) via communication		•		•	•		•
CT connection indication							
Birectional (energy consumption and production)				•	•		•
Accuracy							
Active energy (IEC 62053-21)	class 1	class 1	class 1	class 1	class 1	class 1	class 1
Reactive energy (according to IEC 62053-23)							
Active energy (EN 50470)	class B (E02)	class B (E04)	class B (E12)	class B (E14)	class B (E16)		class B (E24)
Characteristics							
Metrological LED	•	•	•	•	•	•	•
Pulse output	100 Wh		100 Wh			100 Wh	
Sealing cover (MID version only)	• (E02)	• (E04)	• (E12)	• (E14)	• (E16)		• (E24)
Phase/neutral inversion protection						•	

(1) Does not include frequency measurement. - (2) Does not include frequency measurement, nor energy production metering.

Pulse concentrator	***COUNTIS ECi2*** *p. 146*	***COUNTIS ECi3*** *p. 146*
Case	**4 modules**	**4 modules**
Logical inputs	**7**	**7**
Analogue inputs		**2**
ON/OFF output (alarm)	1	1
Partial, total, daily, weekly or monthly kWh or other types of data (liters, m^3…)	•	•
Load curve from 8 to 30 minutes	•	•
RS485 Modbus	•	•

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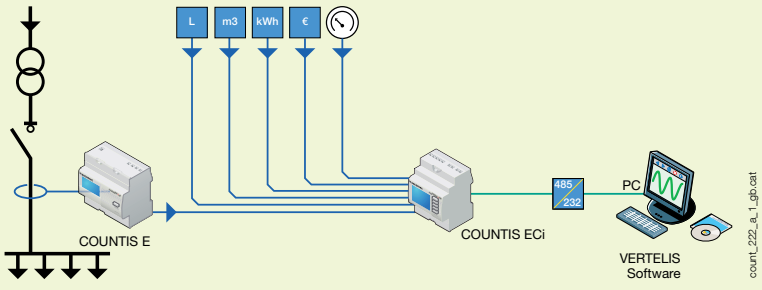
Which accuracy? → MID certification? → Communication or pulse output?

	Three-phase Direct up to 63 A	3 ph Direct up to 100 A			Three-phase CT/5 A			Three-phase CT/5 A	
	E25/E26 p. 138	*E30/E31/E32* p. 140	*E33/E34* p. 140	*E35/E36* p. 140	*E40/E41/E42* p. 142	*E43/E44* p. 142	*E45/E46* p. 142	*E50* p. 144	*E53* p. 144
	• (E26)	• (E32)	• (E34)	• (E36)	• (E42)	• (E44)	• (E44)		
			•			•			•
	•			•			•		
	4 modules	7 modules	7 modules	7 modules	4 modules	4 modules	4 modules	96x96	96x96
	230 … 400 VAC	230 … 400 VAC	230 … 400 VAC	230 … 400 VAC	230 … 400 VAC	230 … 400 VAC	230 … 400 VAC	86 … 520 VAC	86 … 520 VAC
	•/•	•/• (E31)	• / via COM (E34)	• / via COM (E34)	•/•	• / via COM (E44)	• / via COM (E46)	•/•	•/•
		•/-	•/ via COM	•/ via COM	•/-	•/ via COM	•/ via COM	•/•	•/•
	•	• (E31 / E32)	up to 4 via COM	up to 4 via COM		up to 4 via COM	up to 4 via COM	•	•
			via COM	via COM		via COM	via COM	•	•
			via COM	via COM		via COM	via COM	•	•
			via COM	via COM		via COM	via COM		
	•		via COM	via COM		via COM	via COM	•	•
					•	•	•	•	•
	•		• (E33)	• (E35)		• (E43)	• (E45)		
	class 1	class 1	class 1	class 1	class 0,5s	class 0,5s	class 0,5s	class 1	class 1
					class 2	class 2	class 2	class 2	class 2
	class B (E26)	class B (E32)	class B (E34)	class B (E36)	class C (E42)	class C (E44)	class C (E46)		
	•	•	•	•	•	•	•		
					configurable				
	• (E26)	• (E32)	• (E34)	• (E36)	• (E42)	• (E44)	• (E46)		
		•	•	•	•	•	•	•	•

COUNTIS ECi pulse concentrator

Enables pulses from water, gas, compressed air, electricity meters or even analogue sensors (light, temperature, wind etc.) to be registered and stored. All data can be centralised and managed by an energy efficiency software via RS485 communication.



COUNTIS E0x

Active energy meters

single-phase - direct 32 A

COUNTIS E02 - MID

COUNTIS E04

The solution for

- Camping sites
- Marinas
- Shopping centres
- Data centres

Strong points

- Compact
- Pulse output
- MID certified B+D module
- RS485 communication (MODBUS)

MID certification

- COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- COUNTIS E MID feature tamper-proof components to prevent fraud.

Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-31
- IEC 62052-11
- EN 50470-1
- EN 50470-3

Function

The **COUNTIS E0x** is a modular active electrical energy meter displaying the total energy consumed (kWh) directly on its LCD display. It is designed for single-phase load metering and is used for direct connections of up to 32 A. The COUNTIS E02 and E04 has MID certification.

Advantages

Compact

The COUNTIS E0x is only 1 module wide.

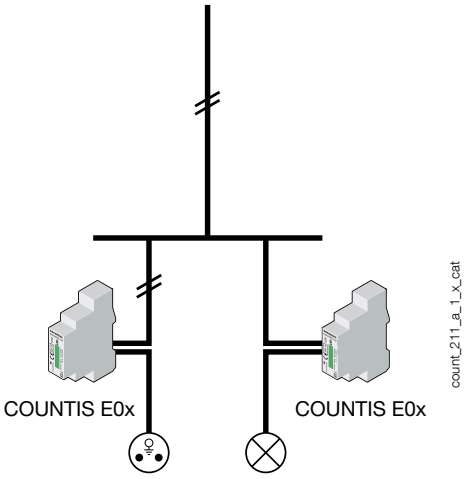
Pulse output

The pulse output enables the kWh consumption to be reported to a remote system (PC/BMS) so that it can be analysed for billing, energy saving or energy cost management purposes.

MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. “Module B+D” certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Principle diagram



Common characteristics

- Compact design.
- Measurement accuracy: 1 %.
- LCD display.

Models	Key functions
E00	Pulse output
E02	MID + Pulse output
E03	MODBUS RS485 communication
E04	MODBUS RS485 communication + MID

Front panel

count_215x_a_2_cat

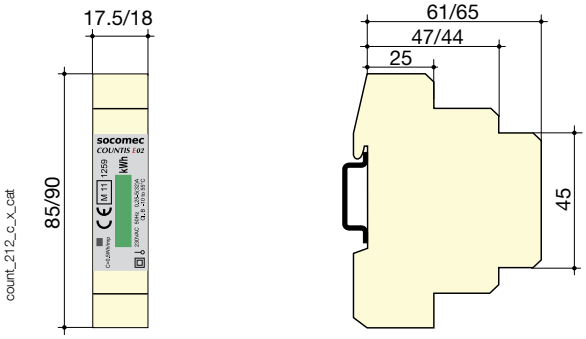
1. Terminal shrouds (COUNTIS E02 + E04).
2. MID Marking (COUNTIS E02 + E04).
3. Metrological LED (2000 pulses/kWh for E00/E02 and 1000 pulses/kWh for E03/E04)
4. kWh display.
5. Serial number (COUNTIS E02).

Electrical characteristics

Current measurement (TRMS)	
Type	single-phase - direct 32 A
Input consumption	< 2 VA
Permanent overload	32 A
Intermittent overload	30 I_{max} for 10 ms
Minimum current measured	20 mA
Voltage measurements (TRMS)	
Range of measurement	196 … 264 VAC
Input consumption	8 VA
Permanent overload	264 VAC
Energy accuracy	
Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B
Power supply	
Self-supplied	yes

Output (pulsed)	**COUNTIS E00/E02**
Number	1
Type of optocoupler	15 VDC max
Fixed pulse weight	100 Wh
Pulse duration	100 ms
Operating conditions	
Operating temperature	- 10 … + 55 °C
Storage temperature	- 20 … + 70 °C
Relative humidity	95 %
Communication	**COUNTIS E03/E04**
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS speed	1200 … 38400 bauds

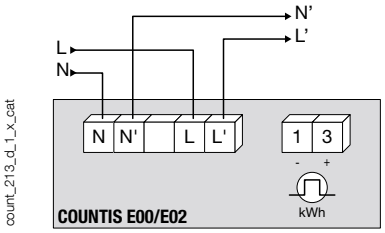
Case



count_212_c_x_cat

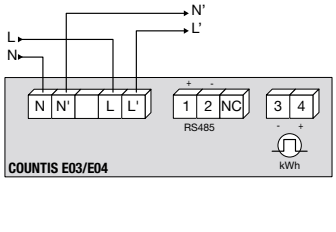
	COUNTIS E00/E02	COUNTIS E03/E04
Type	modular	modular
Number of modules	1	1
Dimensions W x H x D	17.5 x 85 x 61	19 x 87 x 63
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 50	IP 50
Display type	LCD 5+1 digits	LCD 6+1 digits
Rigid cable cross-section	10 mm^2	6 mm^2
Flexible cable cross-section	6 mm^2	4 mm^2
Weight	150 g	150 g

Connection



count_213_d_1_x_cat

N - L: network input.
N' - L': network output.
1 - 3: output (pulsed).



count_239_c_1_x_cat

References

Type	COUNTIS E00 Reference	COUNTIS E02 Reference	COUNTIS E03 Reference	COUNTIS E04 Reference
Direct 32 A	4850 **3019** ■			
Direct 32 A - MID		4850 **3020** ■		
Direct 32 A - with MODBUS communication via RS485			4850 **3029** ■	
Direct 32 A - with MODBUS communication via RS485 - MID				4850 **3030** ■

Reference in **green** are new products. ■ Stock items.

COUNTIS E1x

Active energy meters

single-phase - direct 63/80 A

COUNTIS E12 - MID

COUNTIS E13

Function

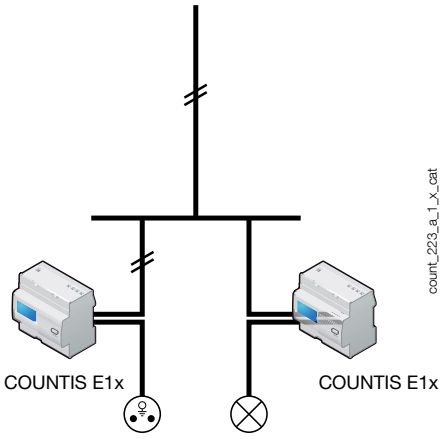
The **COUNTIS E1x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for single-phase load metering and is used for direct connections of up to 63 or 80 A depending on the model).

COUNTIS E12, E14 and E16 have MID certification.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display (only E10/E11/E12).

Principle diagram



Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

To enable the remote reporting of energy consumption, COUNTIS E1x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol. In addition to their reporting functions, COUNTIS E1x with RS485 can be configured remotely and enable access to multi-measurement values.

Dual-tariff metering

Two tariffs are available and can be easily accessed through the meter's display. Each tariff can be utilised to assign energy metering to different time slots (high and low demand hours) or different sources (normal/backup).

MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Models	Key functions
E10	Pulse output
E11	Dual tariff (2 partial counters) + Pulse output
E12	Dual tariff + MID (Reset impossible) + Pulse output
E13	Dual tariff + MODBUS RS485 communication
E14	Dual tariff + MODBUS RS485 communication + MID (Reset impossible)
E15	Dual tariff + M-BUS communication
E16	Dual tariff + M-BUS communication + MID (Reset impossible)

The solution for

- Marinas
- Shopping centres
- Data centres

Strong points

- RS485 communication (MODBUS or M-BUS) or pulse output
- Dual-tariff metering
- MID certified B+D module

MID certification

- COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- COUNTIS E MID feature tamper-proof components to prevent fraud.

Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-31
- IEC 62052-11
- EN 50470-1
- EN 50470-3

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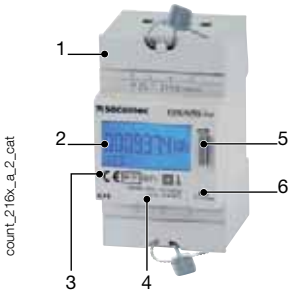
Front panel



1. Terminal shrouds (COUNTIS E12).
2. Backlit LCD display.
3. MID Marking (COUNTIS E12).
4. Serial number (COUNTIS E12).
5. Navigation key.
6. Metrological LED (1000 pulses/kWh).

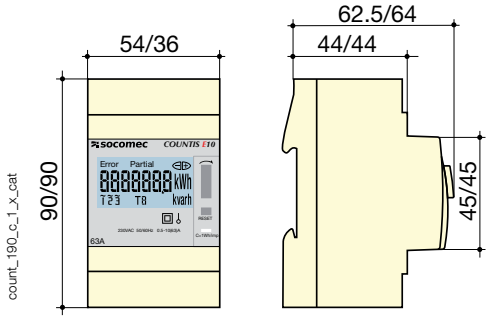
Electrical characteristics

Current measurement	**COUNTIS E10...E12**	**COUNTIS E13...E16**
Type	single-phase direct 80 A	single-phase direct 80 A
Input consumption	0.8 VA max.	0.8 VA max.
Startup current (I_{st})	40 mA	20 mA
Minimum current (I_{min})	0.5 A(1)	0.25 A
Transition current (I_{tr})	1 A(2)	0.5 A
Reference current (I_{ref})	10 A(3)	5 A
Permanent overload (I_{max})	63 A	80 A
Intermittent overload	1890 A max for 10 ms	2400 A max for 10 ms
Voltage measurement		
Range of measurement	230 V +/- 20 %	230 V +/- 20 %
Consumption (VA)	0.5 VA max.	0.5 VA max.
Permanent overload	280 V phase-neutral	300 V phase-neutral
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	Class 1
Active (according to EN 50470)	Class B	
Power supply		
Self-supplied	yes	
Frequency	50/60 Hz	

Output (pulsed)	**COUNTIS E10/E11/E12**	
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)	
Number	1	
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions	**COUNTIS E10...E12**	**COUNTIS E13...E16**
Operating temperature	-10 to 55 °C	-25 to 55 °C
Storage temperature	-20 to 70 °C	-25 to 70 °C
Relative humidity	85 %	85%
Communication	**COUNTIS E13/E14**	**COUNTIS E15/E16**
Link	RS485	Connection
Type	2 half duplex wires	2 half duplex wires
Protocol	MODBUS® RTU	M-BUS
Speed	4800 … 38400 bauds	300 … 9600 bauds

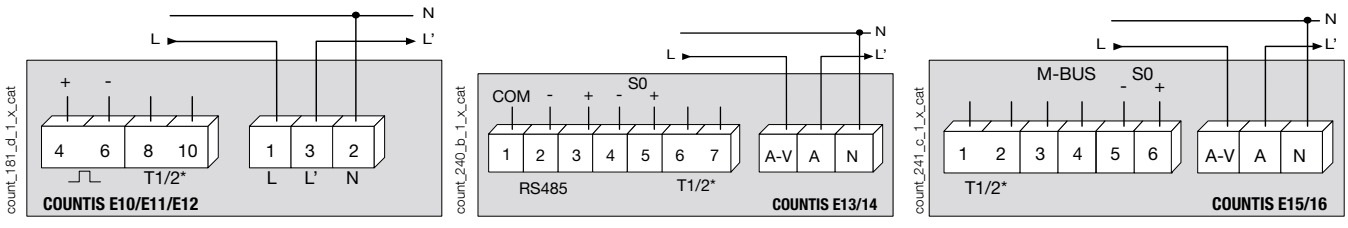
(1) $I_{(min)} \leq 0.5 * Itr$
(2) The accuracy class is guaranteed between I_{tr} and I_{max}.
*(3) $I_{(ref)} = I_{(b)}$ (base current) = 10 * $I_{(tr)}$ for direct connection COUNTIS.*

Case



	COUNTIS E10...E12	**COUNTIS E13...E16**
Type	modular	modular
Number of modules	3	3
Dimensions W x H x D	54 x 90 x 62.5 mm	54 x 90 x 64 mm
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 51	IP 51
Display type	Backlit LCD display	LCD display
Rigid cable cross-section	1.5 to 16 mm^2	7 to 50 mm^2
Flexible cable cross-section	1 to 16 mm^2	7 to 50 mm^2
Weight	170 g	170 g

Connection



** Not available on COUNTIS E10*
** Not available on COUNTIS E13*
** Not available on COUNTIS E15*

References

Type	**COUNTIS E10 Reference**	**COUNTIS E11 Reference**	**COUNTIS E12 Reference**	**COUNTIS E13 Reference**	**COUNTIS E14 Reference**	**COUNTIS E15 Reference**	**COUNTIS E16 Reference**
Direct 63 A	4850 **3000** ■						
Direct 63 A - Dual tariff		4850 **3001**					
Direct 63 A - Dual tariff and MID			4850 **3002** ■				
Direct 80 A - Dual tariff + MODBUS com. via RS485				4850 **3031** ■			
Direct 80 A - Dual tariff + MODBUS com. via RS485 - MID					4850 **3032**		
Direct 80 A - Dual tariff + M-BUS communication						4850 **3033**	
Direct 80 A - Dual tariff + M-BUS comminucation - MID							4850 **3034**

Reference in **green** are new products. ■ Stock items.

COUNTIS E2x

Active energy meters

three-phase - direct 63 A

COUNTIS E20 COUNTIS E23

Function

The COUNTIS E2x is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for three-phase load metering and is used for direct connections of up to 63 A.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display (only E20/E21)
- Detects connection errors

Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

To enable the remote reporting of energy consumption, COUNTIS E2x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol. In addition to their reporting functions, COUNTIS E2x with RS485 can be configured remotely and enable access to multi-measurement values.

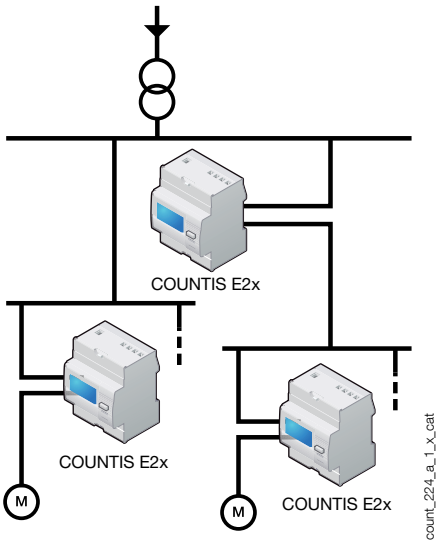
Dual-tariff metering

Two tariffs are available and can be easily accessed through the meter's display. Each tariff can be utilised to assign energy metering to different time slots (high and low demand hours) or different sources (normal/backup).

Detection of connection errors (E20/21)

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Principle diagram



MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Models	Key functions
E20	Pulse output
E21	Dual tariff (2 partial counters) + Pulse output
E23	Dual tariff + MODBUS RS485 communication
E24	Dual tariff + MODBUS RS485 communication + MID (Reset impossible)
E25	Dual tariff + M-BUS communication
E26	Dual tariff + M-BUS communication + MID (Reset impossible)

The solution for

- Industry
- Infrastructure
- Data centres

Strong points

- RS485 communication (MODBUS or M-BUS) or pulse output
- Dual-tariff metering
- Detection of connection errors
- MID certified B+D module

Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-31
- IEC 62052-11
- EN 50470-1
- EN 50470-3

MID certification

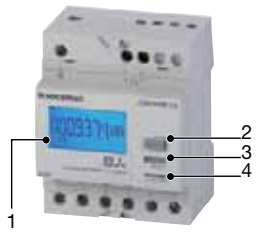
- COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- COUNTIS E MID feature tamper-proof components to prevent fraud.

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training… Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.

Front panel

count_177x_b_1_cat



1. Backlit LCD display.
2. Navigation key.
3. Reset key.
4. Metrological LED (1000 pulses/kWh).

Electrical characteristics

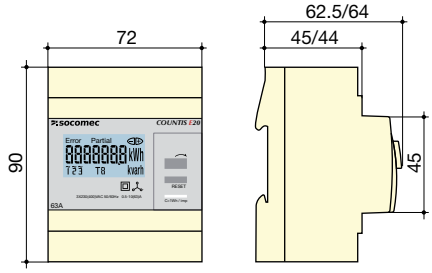
Current measurement	COUNTIS E20/E21	COUNTIS E23…E26
Type	three-phase direct 63 A	three-phase direct 63 A
Input consumption	0.8 VA max. per phase	0.8 VA max. per phase
Startup current (I_{st})	40 mA	15 mA
Minimum current (I_{min})	0.5 A(1)	0.25 A
Transition current (I_{tr})	1 A(2)	0.5 A
Reference current (I_{ref})	10 A(3)	5 A
Permanent overload (I_{max})	63 A	63 A
Intermittent overload	1890 A max for 10 ms	1890 A max for 10 ms
Voltage measurement		
Range of measurement	230 ... 400 V +/- 20 %	230 ... 400 V +/- 20 %
Consumption (VA)	2 VA max.	2 VA max.
Permanent overload	280 V phase-neutral / 480 V phase-phase	276 V phase-neutral
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	
Active (according to EN 50470)	Class B	

(1) $I_{(min)} \leq 0.5 * Itr$
(2) The accuracy class is guaranteed between I_{tr} and I_{max}.
*(3) $I_{(ref)} = I_{(b)}$ (base current) = 10 * $I_{(tr)}$ for direct connection COUNTIS.*

Power supply		
Self-supplied	yes	
Frequency	50 Hz	
Output (pulsed)	**COUNTIS E20/E21**	
Number	1	
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)	
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions	**E20 … E21**	**E23 … E26**
Operating temperature	-10 to 55 °C	-25 to 55 °C
Storage temperature	-20 to 70 °C	-25 to 70 °C
Relative humidity	85 %	80 %
Communication	**COUNTIS E23/E24**	**COUNTIS E25/E26**
Link	RS485	Connection
Type	2 half duplex wires	2 half duplex wires
Protocol	MODBUS® RTU	M-BUS
Speed	1200 … 38400 bauds	300 … 9600 bauds

Case

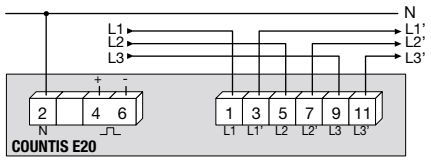
count_191_c_1_x_cat



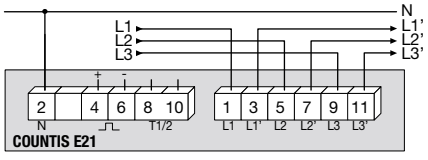
	COUNTIS E20/E21	COUNTIS E23…E26
Type	modular	modular
Number of modules	4	4
Dimensions W x H x D	72 x 90 x 62.5 mm	72 x 90 x 64 mm
Case degree of protection	IP20	IP20
Front degree of protection	IP51	IP51
Display type	Backlit LCD display	LCD display
Rigid cable cross-section	1.5 to 16 mm²	1.5 to 35mm²
Flexible cable cross-section	1 to 16 mm²	1.5 to 35mm²
Weight	245 g	245 g

Connection

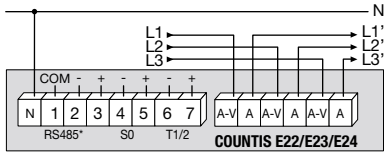
count_182_b_1_x_cat



count_183_a_1_x_cat

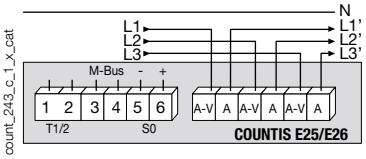


count_242_b_1_x_cat



** Not available on COUNTIS E23*

count_243_c_1_x_cat



** Not available on COUNTIS E25*

References

Type	COUNTIS E20 Reference	COUNTIS E21 Reference	COUNTIS E23 Reference	COUNTIS E24 Reference	COUNTIS E25 Reference	COUNTIS E26 Reference
Direct 63 A - three-phase	4850 **3003** ■					
Direct 63 A - three-phase - Dual tariff		4850 **3004**				
Direct 63 A - Dual tariff with MODBUS com. via RS485			4850 **3035** ■			
Direct 63 A - Dual tariff with MODBUS com. via RS485 - MID				4850 **3036** ■		
Direct 63 A - Dual tariff with M-BUS communication					4850 **3037**	
Direct 63 A - Dual tariff with M-BUS communication - MID						4850 **3038**

Reference in **green** are new products. ■ Stock items.

COUNTIS E3x

Active energy meters

three-phase - direct 100 A

count_219_a

COUNTIS E32 - MID

Function

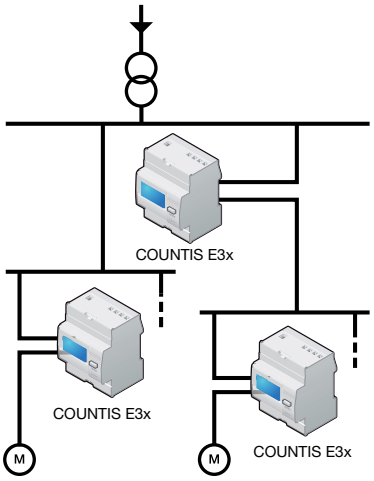
The **COUNTIS E3x** is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for three-phase load metering and is used for direct connections of up to 100 A.

COUNTIS E32, E34 and E36 are MID certified.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display.
- Detects connection errors.

Principle diagram



count_225_a_1_X_cat

Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

To enable the remote reporting of energy consumption, COUNTIS E3x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol.

In addition to their reporting functions, COUNTIS E3x with RS485 can be configured remotely and enable access to multi-measurement values.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. “Module B+D” certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (available only on the E33 and E35)

This function is for metering energy production or energy consumption.

Multi-measurement and load curve

Display of electrical values (I, U, V, P, Q, S, PF) and load curve over a 7 day period via communication.

Models	Key characteristics
E30	Pulse output
E31	Dual tariff (2 partial counters) + Pulse output
E32	Dual tariff + MID (Reset impossible) + Pulse output
E33	Dual tariff + RS485 MODBUS communication
E34	Dual tariff + RS485 MODBUS communication + MID (Reset impossible)
E35	Dual tariff + M-BUS communication
E36	Dual tariff + M-BUS communication + MID (Reset impossible)

The solution for

- Industry
- Infrastructure
- Data centres

Strong points

- RS485 communication (MODBUS or M-BUS) or pulse output
- Detection of connection errors
- MID certified B+D module
- Bi-directional metering
- Multi-measurement and load curve

MID certification

- COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- COUNTIS E MID feature tamper-proof components to prevent fraud.

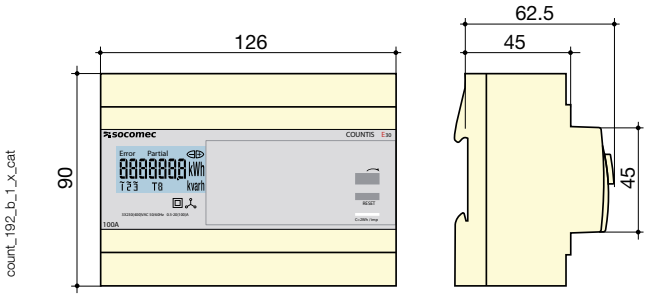
Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-31
- IEC 62053-11
- EN 50470-1
- EN 50470-3

Front panel

1. Terminal shrouds (COUNTIS E32, E34 and E36).
2. Backlit LCD display.
3. MID marking (COUNTIS E32, E34 and E36).
4. Serial number (COUNTIS E32, E34 and E36).
5. Navigation key.
6. Reset key.
7. Metrological LED.

Case



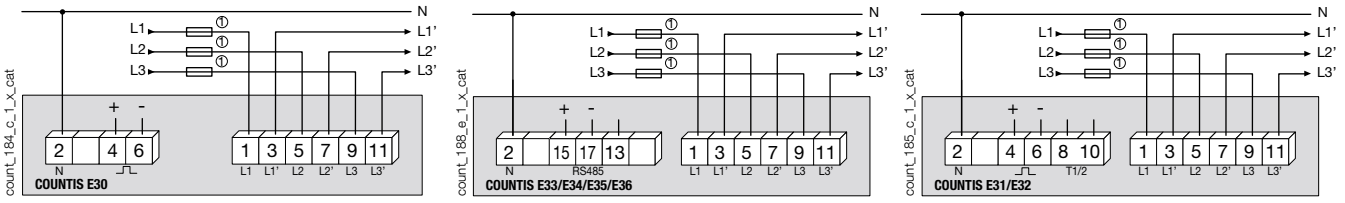
Type	modular
Number of modules	7
Dimensions W x H x D	126 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	2.5 to 35 mm^2
Flexible cable cross-section	2.5 to 35 mm^2
Weight	490 g

Electrical characteristics

Current measurement		
Type	three-phase - direct 100 A	
Input consumption	0.5 VA max. per phase	
Startup current (I_{st})	80 mA	
Minimum current (I_{min})	0.5 A(1)	
Transition current (I_{tr})	2 A(2)	
Reference current (I_{ref})	20 A(3)	
Permanent overload (I_{max})	100 A	
Intermittent overload	3000 A max for 10 ms	
Voltage measurement		
Range of measurement	230 ... 400 V +/- 20 %	
Consumption (VA)	2	
Permanent overload	280 V phase-neutral / 480 V phase-phase	
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	
Active (according to EN 50470)	Class B	
Power supply		
Self-supplied	yes	
Frequency	50 / 60 Hz	
Output (pulsed) (E30/E31/E32)		
Number	1	
Type of optocoupler	IEC 62053-31 class A (20 ... 30 VDC)	
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions		
Operating temperature	-10 to 55 °C	
Storage temperature	-20 to 70 °C	
Relative humidity	85 %	
Communication	**E33/34**	**E35/E36**
Link	RS485	Connection
Type	2 half duplex wires	2 half duplex wires
Protocol	MODBUS RTU	MBUS
Speed	4800 … 38 400 bauds	300 … 9600 bauds

(1) $I_{(min)} \leq 0.5 * Itr$
(2) The accuracy class is guaranteed between I_{tr} and I_{max}.
*(3) $I_{(ref)} = I_{(b)}$ (base current) = 10 * $I_{(tr)}$ for direct connection COUNTIS.*

Connection



1. 100 A gG / Am fuses max.

References

Type	COUNTIS E30 Reference	COUNTIS E31 Reference	COUNTIS E32 Reference	COUNTIS E33 Reference	COUNTIS E34 Reference	COUNTIS E35 Reference	COUNTIS E36 Reference
Direct 100 A	4850 **3005** ■						
Direct 100 A - Dual tariff		4850 **3006**					
Direct 100 A - Dual tariff - MID			4850 **3007** ■				
Direct 100 A - Dual tariff with RS485 MODBUS com. (1)				4850 **3012** ■			
Direct 100 A - Dual tariff with RS485 MODBUS com. - MID(1)					4850 **3013** ■		
Direct 100 A - Dual tariff with M-BUS communication (1)						4850 **3025**	
Direct 100 A - Dual tariff with M-BUS communication - MID(1)							4850 **3026**
Management software for COUNTIS	Consult us						

(1) 4 tariffs through RS485 communication.

Reference in **green** are new products. ■ Stock items.

COUNTIS E4x

Active energy meters

three-phase - via CT up to 6000 A

COUNTIS E44 - MID - (3000 A MID - 6000 A not MID)

Function

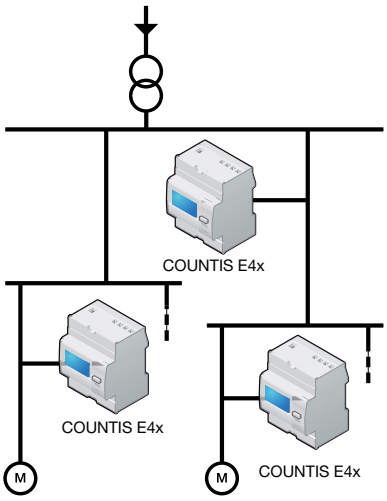
The COUNTIS E4x is a modular active and reactive electrical energy meter displaying the energies and active power consumed (kWh, kVArh and kW) directly on its backlit LCD display. It is designed for three-phase load metering with connection via CT and is suitable for applications of up to 6000 A (3000 A for MID).

COUNTIS E42, E44 and E46 are MID certified.

Common characteristics

- Measurement accuracy: 1 % / 0,5%(MID).
- Backlit LCD display.
- Detects connection errors.

Principle diagram



Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

To enable the remote reporting of energy consumption, COUNTIS E4x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol.

In addition to their reporting functions, COUNTIS E4x with RS485 can be configured remotely and enable access to multi-measurement values.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. “Module B+D” certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (available on E43 and E45)

This function is for metering energy production or energy consumption.

Multi-measurement and load curve

Display of electrical values (I, U, V, P, Q, S, PF) and load curve over a 7 day period via communication.

Models	Key functions
E40	Pulse output
E41	Dual tariff (2 partial counters) + Pulse output
E42	Dual tariff + MID (Reset impossible) + Pulse output
E43	Dual tariff + RS485 MODBUS communication
E44	Dual tariff + RS485 MODBUS communication + MID (Reset impossible)
E45	Dual tariff + M-BUS communication
E46	Dual tariff + M-BUS communication + MID (Reset impossible)

The solution for

- Industry
- Infrastructure
- Data centres

Strong points

- RS485 communication (MODBUS or M-BUS) or pulse output
- Detection of connection errors
- MID certified B+D module
- Bi-directional metering
- Multi-measurement and load curve

MID certification

- COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- COUNTIS E MID feature tamper-proof components to prevent fraud.

Conformity to standards

- IEC 62053-21 class 1
- IEC 62053-23 class 2
- IEC 62053-31
- IEC 62053-11
- EN 50470-1
- EN 50470-3

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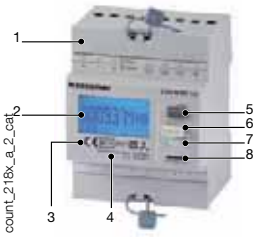
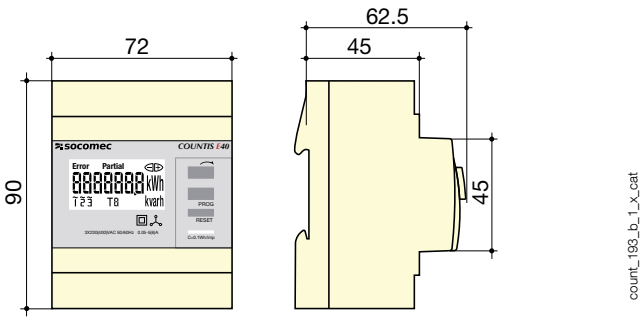
Front panel



1. Terminal shrouds (COUNTIS E42, E44 and E46).
2. Backlit LCD display.
3. MID marking (COUNTIS E42, E44 and E46).
4. Serial number (COUNTIS E42, E44 and E46).
5. Navigation key.
6. Reset key.
7. Metrological LED.
8. Programming key.

Case



Type	modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	1.5 to 10 mm^2
Flexible cable cross-section	1 to 6 mm^2
Weight	230 g

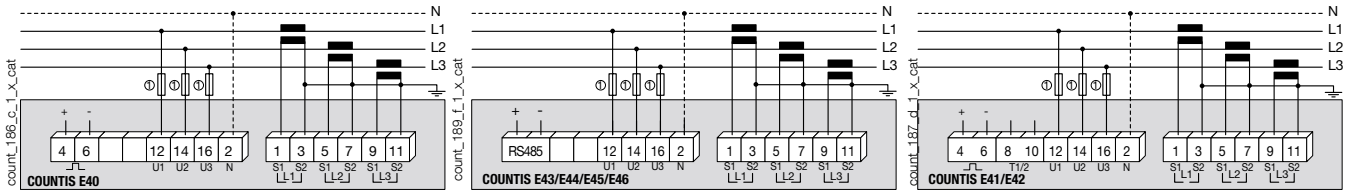
Electrical characteristics

Current measurement		
Type	three-phase on CT/5A up to 6000 A (3000 A for MID products)	
Input consumption	0.2 VA per phase	
Startup current (I_{st})	10 mA	
Minimum current (I_{min})	50 mA(1)	
Transition current (I_{tr})	250 mA(2)	
Reference current (I_{ref})	5 A(3)	
Permanent overload (I_{max})	6 A	
Intermittent overload	120 A for 0.5 s	
Voltage measurement		
Range of measurement	230 ... 400 V +/- 20 %	
Consumption (VA)	2 VA	
Permanent overload	280 V phase-neutral / 480 V phase-phase	
Energy accuracy		
Active (according to IEC 62053-21)	Class 0,5s	
Active (according to EN 50470)	Class C (E42/44/E46)	
Power supply		
Self-supplied	yes	
Frequency	50 / 60 Hz	
Output (pulsed) (E40/E41/E42)		
Number	1	
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)	
Pulse weight	100 Wh, 1 kWh, 10 kWh, 100 kWh	
Pulse duration	50 ms, 100 ms, 200 ms, 400 ms, 800 ms, 1000 ms, 1500 ms	
Operating conditions		
Operating temperature	-10 to 55 °C	
Storage temperature	-20 to 70 °C	
Relative humidity	85 %	
Communication	**E43/E44**	**E45/E46**
Link	RS485	Connection
Type	2 half duplex wires	2 half duplex wires
Protocol	MODBUS RTU	M-BUS
Speed	4800 … 38400 bauds	300 … 9600 bauds

(1) $I_{(min)} \leq 0.5 * Itr$
(2) The accuracy class is guaranteed between I_{tr} and I_{max}.
*(3) $I_{(ref)} = I_{(b)}$ (base current) = 10 * $I_{(tr)}$ for direct connection COUNTIS.*

Connection

Recommendation:
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Type	COUNTIS E40 Reference	COUNTIS E41 Reference	COUNTIS E42 Reference	COUNTIS E43 Reference	COUNTIS E44 Reference	COUNTIS E45 Reference	COUNTIS E46 Reference
Via CT	4850 **3008** ■						
Via CT - Dual tariff		4850 **3009**					
Via CT - Dual tariff - MID			4850 **3015** ■				
Via CT - Dual tariff with RS485 MODBUS com.(1)				4850 **3017** ■			
Via CT - Dual tariff with RS485 MODBUS com. - MID(1)					4850 **3014** ■		
Via CT - Dual tariff with M-BUS com.(1)						4850 **3027**	
Via CT - Dual tariff with M-BUS com. - MID(1)							4850 **3028**
Management software for COUNTIS	Consult us						

(1) 4 tariffs through RS485 communication.

Reference in **green** are new products. ■ Stock items.

COUNTIS E5x

Active energy meters

three-phase - via CT up to 6000 A

count_196_b_1_cat

COUNTIS E53 up to 6000 A via CT

The solution for

- Industry
- Infrastructure
- Data centres

Strong points

- RS485 MODBUS communication or pulse output
- Detection of connection errors
- Large backlit LCD display
- Direct display of multi-measurement and metering values

Conformity to standards

- IEC 62053-23 class 2
- IEC 62053-22 class 0.5S
- IEC 61557-12

Management software

- To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. Please consult us.

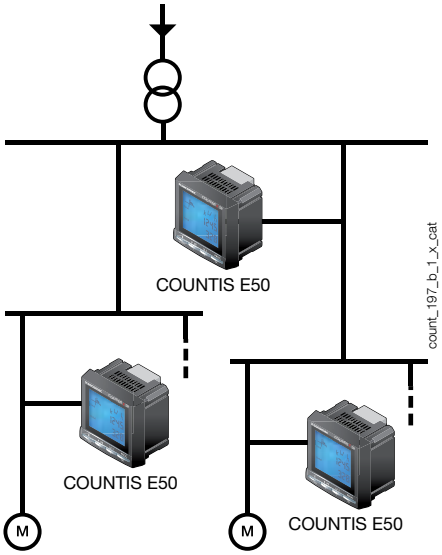
Function

The **COUNTIS E5x** is a panel mounted active and reactive electrical energy meter displaying energy and multi-measurement values directly on its large backlit LCD display. It is designed for utilisation on three-phase or single-phase networks with connection via CT and is suitable for applications of up to 6000 A. The CT ratio can be configured by the user via the keypad and the display, or via RS485 MODBUS communication (E53).

Common characteristics

- Measurement accuracy: 0.5%.
- Large backlit LCD display.
- Direct access to multi-measurement and metering values.
- Detects connection errors.

Principle diagram



count_197_b_1_x_cat

Advantages

RS485 MODBUS communication or pulse output

To enable the remote reporting of energy consumption, COUNTIS E5x are provided with either a pulse output (E50) or an RS485 MODBUS communication output (E53).

Remote configuration of the Countis E53 is possible via RS485 MODBUS communication.

Detection of connection errors

The COUNTIS E5x is protected against phase/neutral inversion and has an integrated test function which can be utilised to detect wiring errors. This function enables CT installation errors to be corrected without having to remake connections. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Large backlit LCD display

Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, COUNTIS E5x provide clear readings and are easy to use.

They directly display a number of total/partial metering and multi-measurement values : +/- kWh, +/- kvarh, kVAh, I, U, V, S, PF, etc.

Direct display of multi-measurement and metering values

Multi-measurement

- Currents: instantaneous: I1, I2, I3
- Voltages: instantaneous: V1, V2, V3, U12, U23, U31
- Power:
  - instantaneous: 3P, 3Q, 3S
  - maximum average: 3P
- Power factor:
  - instantaneous: 3PF

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent energy: kVAh

Models	Key characteristics
E50	Pulse output
E53	RS485 MODBUS communication

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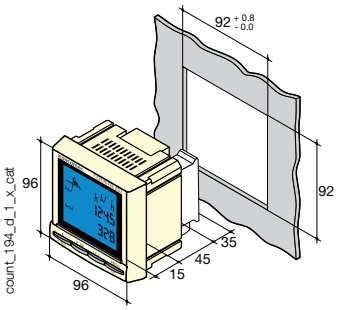
Front panel

1. Backlit LCD display
2. Energy display and test function key
3. Power and power factor display key
4. Current and voltage display key
5. Programming mode access key

Case



Type	Panel mounting
Dimensions W x H x D	96 x 96 x 80 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Voltage and current connection cross-section	0.5 … 2.5 mm²
Current connection cross-section	1.5 … 6 mm²
Weight	370 g

Electrical characteristics

Current measurement	
Type	three-phase on CT/5A up to 6000 A
Input consumption	< 0.6 VA
Startup current (I_{st})	40 mA
Minimum current (I_{min})	50 mA(1)
Transition current (I_{tr})	250 mA(2)
Reference current (I_{ref})	5 A(3)
Permanent overload (I_{max})	6 A
Intermittent overload	50 A for 1 s
Voltage measurement	
Range of measurement	86 … 520 VAC
Input consumption	< 0.1 VA
Permanent overload	800 VAC
Energy accuracy	
Reactive (according to IEC 62053-23)	Class 2
Active (according to IEC 62053-22)	Class 0.5S
Power supply	
Self-supplied	no
Auxiliary power supply U_s	110 … 400 VAC / 125… 350 VDC +/-10 %
Frequency	45 … 65 Hz
Output (pulsed)	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8
Operating conditions	
Operating temperature	-10 … 55 °C
Storage temperature	-20 … 85 °C
Relative humidity	95 %
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	1400 … 38400 bauds

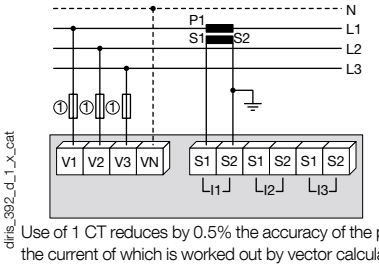
(1) $I_{(min)} \leq 0.5 * I_{tr}$ - (2) The accuracy class is guaranteed between I_{tr} and I_{max}.
*(3) $I_{(ref)} = I_{(b)}$ (base current) = 10 * $I_{(tr)}$ for direct connection COUNTIS.*

Connection

Recommendation:

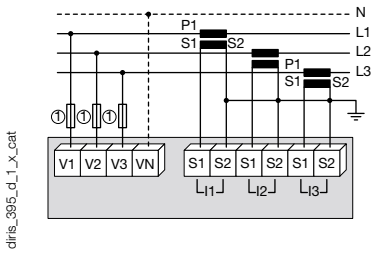
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.

Low voltage balanced network
3/4 wires with 1 CT

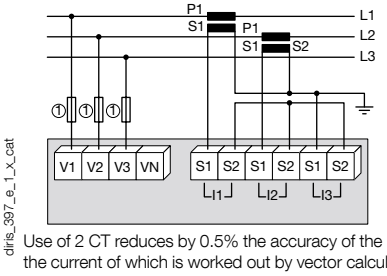


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Low voltage unbalanced network
3/4 wires with 3 CTs



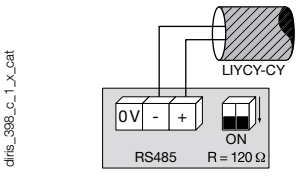
3 wires with 2 CTs



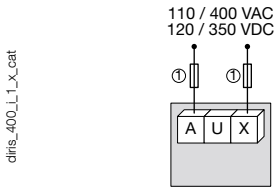
Use of 2 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Additional information

Communication via RS485 link



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Type	COUNTIS E50 Reference	COUNTIS E53 Reference
Pulse output	4850 **3010**	
RS485 MODBUS communication (1)		4850 **3011** ■
Management software for COUNTIS	Consult us	

(1) 4 tariffs through RS485 communication.
Reference in **green** are new products. ■ Stock items.

COUNTIS ECix

Multi-utility pulse concentrator

COUNTIS ECi3

The solution for

- Data centres
- Industry
- Infrastructure

Strong points

- Up to 7 multi-utility meters and 2 analogue sensors
- Load curves
- RS485 MODBUS communication
- Improved customisation

Management software

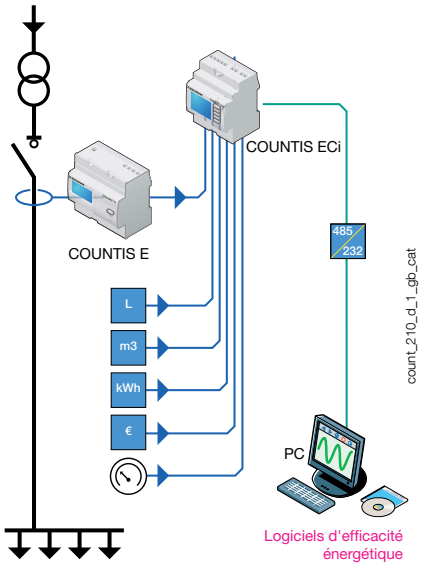
- To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. Please consult us.

Function

The **COUNTIS ECix** is a multi-utility pulse concentrator which communicates via an RS485 link using MODBUS protocol.

It enables pulses from water, gas, compressed air, electricity meters and, for the COUNTIS ECi3, the output of analogue sensors (light, temperature, wind etc.) to be registered and stored. All data, ie. total and partial meters and load curves (available for all logical and analogue inputs) can be centralised via RS485 communication using MODBUS protocol.

Principle diagram



Advantages

Up to 7 multi-utility meters and 2 analogue sensors

- 7 logical inputs + 2 analogue inputs.
- Total, partial and programmable metering (day, week, month, year).

Load curves

Load curves are available for each of the 7 logical inputs.

A history of average values are available for the 2 analogue inputs (ECi3).

RS485 MODBUS communication

- Centralisation and transmission of pulse and analogue data to a supervision station.
- Remote configuration of COUNTIS ECi device.

Improved customisation

- Selection of the measuring unit: kWh, m^3, liters.
- Selection of the currency unit: €, K€, £, $.

Values can be displayed in the unit of your choice and energy costs can be directly calculated.

Models	Key characteristics
ECi2	7 insulated inputs
ECi3	7 insulated inputs + 2 analogue inputs.

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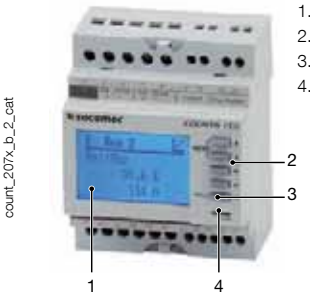
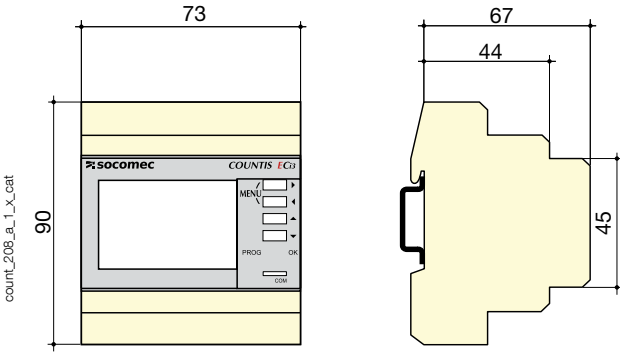
Front panel



1. Backlit LCD display.
2. Navigation keys.
3. Validation pushbutton in programming mode.
4. Communication status indicator (COM).

Case

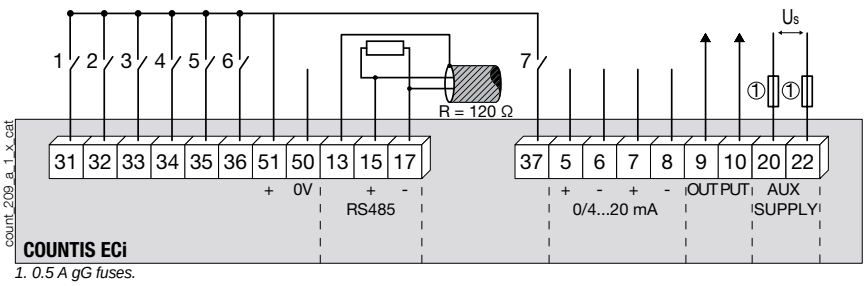


Type	modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 67 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Terminal blocks type	fixed
Rigid cable cross-section	1… 10 mm²
Flexible cable cross-section	0.5… 6 mm²
Weight	215 g

Characteristics

Auxiliary power supply	
Self-supplied	no
Alternating voltage	110 / 400 VAC
Direct voltage	120 / 300 VDC
Tolerance	± 10 %
Frequency	45 / 65 Hz
Consumption	5 VA
Insulation voltage	3.5 kV
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	9600… 38400 bauds
Inputs	
Number	7
Control voltage (integrated)	10…30 VDC
Minimum signal width	10 ms
Maximum signal width	2 s
Minimum duration between 2 pulses	30 ms
Edge triggering	rising
Analogue inputs (ECi3)	
Number	2
Current	25 mA
Accuracy	0.5 %
Response time	500 ms
Input resistance	200 Ω
Consumption	0.1 VA
Operating conditions	
Operating temperature	-10… +55 °C
Storage temperature	-20… +70 °C
Relative humidity	95 %

Connection



1. 0.5 A gG fuses.

31: logical input n°1.
32: logical input n°2.
33: logical input n°3.
34: logical input n°4.
35: logical input n°5.
36: logical input n°6.
37: logical input n°7.

51-50: Inputs internal/ external power supply.

13-15-17: RS485 link.

5-6: Analogue input n°1.
7-8: Analogue input n°2.
9-10: output.
20-22: power supply U=110...400 VAC ± 10 %.

References

Auxiliary power supply U_s	**COUNTIS ECi2 Reference**	**COUNTIS ECi3 Reference**
230 / 400 VAC	4853 **0000**	
230 / 400 VAC + 2 analogue inputs		4853 **0001** ■
Description of accessories	**Reference**	**Reference**
Panel mounting kit	192J **8015**	192J **8015**
Management software for COUNTIS	Consult us	

Reference in **green** are new products. ■ Stock items.

Selection guide

Multifunction meters

DIRIS A

Which application? ▶ Which functions?

Application	Multifunction metering (PMD)				
		new			
	DIRIS A10 *p. 150*	***DIRIS A14*** *p. 152*	***DIRIS A17*** *p. 154*	***DIRIS A20*** *p. 156*	
Multi-measurement					
Currents, voltages (ph/ph and ph/n), active/reactive/apparent powers, power factor, frequency	•	•	•	•	
4th CT for neutral current measurement					
Voltage/current unbalance					
Currents, voltages, frequency (average values)	(max. average value for currents)	(max. average value for currents)	(max. average value for currents)	(max. average value for currents)	
Max. power demand	•	•	•	•	
Temperatures	Internal				
Tangent phi		• cos phi			
Hour meter	•			•	
Memorisation of min/max instantaneous values		•			
Metering					
MID: EN 50470 module B + D certification		•			
kWh (+/-), kvarh (+/-)	kWh (+), kvarh (+)	•	•	kWh (+), kvarh (+)	
Logical input(s) for pulse meter(s)			1 as standard		
Multi-tariff meters	•	•			
Pulse output(s)	1 as standard		1 as standard	with optional module	
Active energy accuracy / IEC 62053-21 class 1			•		
Active energy accuracy / IEC 62053-22 class 0.5 s	•	•		•	
Active energy accuracy / IEC 62053-22 class 0.2 s					
Active energy (EN 50470)		Class C			
Reactive energy accuracy / IEC 62053-23 class 2	•	•	•	•	
Compability with IEC 61557-12	•	•	•	•	
Power management					
Load curves (period 5, 8, 10, 15, 20 and 30 minutes)		•			
Predictive power					
Power quality					
THD voltages, currents and neutral currents	Row 51	Row 63	Row 31 (if option available)	Row 51	
Individual harmonics					
Interharmonics					
Vector diagram					
Flicker					
EN 50160					
Sag, swell and outages, overcurrent					
RMS 1/2 period curve backup for events					
Management of fault currents					
Plug-in modules					
	• 1 logical input as standard • 1 logical output as standard • Modbus as standard for 1 reference			• 1 logical output • Modbus RS485 communication • 3 In / 1 out + alarm	

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Which dimensions? → Which communication protocol? → Which options?

	Power monitoring (PMD)		Power monitoring & events analysis (PMD)
	DIRIS A40 *p. 158*	***DIRIS A41*** *p. 158*	***DIRIS A60*** *p. 162*
	•	•	•
		•	
			•
	•	•	•
	•	•	•
	by temperature sensor PT100	by temperature sensor PT100	by temperature sensor PT100
			•
	•	•	•
	optional	optional	•
	•	•	•
	up to 6 with optional module	up to 6 with optional module	up to 6 with optional module
	up to 6 with optional module	up to 6 with optional module	up to 6 with optional module
	•	•	•
	•	•	•
	•	•	•
	optional	optional	•
	•	•	•
	Row 63	Row 63	Row 63
	Row 63	Row 63	Row 63
			•
			•
			•
	• 2 pulse outputs • Modbus RS485 communication • PROFIBUS DP communication • Ethernet communication (available with Modbus gateway) • 2 analogue outputs • 2 inputs / 2 outputs • Memory • Temperature inputs		• Memory fitted as standard • 2 pulse outputs • Modbus RS485 communication • Ethernet communication (available with Modbus gateway) • 2 analogue outputs • 2 inputs / 2 outputs • Temperature inputs

DIRIS A10

Multifunction meters - PMD

Modular multifunction meter

diris_791_c_1_cat

DIRIS A10

The solution for

- Industry
- Infrastructures
- Data centres

Strong points

- Easy to use
- Integrated temperature sensor
- Detects wiring errors
- Compliant with IEC 61557-12

Conformity to standards

- IEC 61557-12
- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2
- UL

Function

The **DIRIS A10** is a modular multifunction meter for measuring electrical values in low voltage networks.

It allows all electrical parameters to be displayed and utilised for communication and/or output functions.

Advantages

Easy to use

Five direct access pushbuttons enable all measurements to be clearly viewed on its backlit LCD display.

Integrated temperature sensor

It allows variations in temperature to be detected.

Detects wiring errors

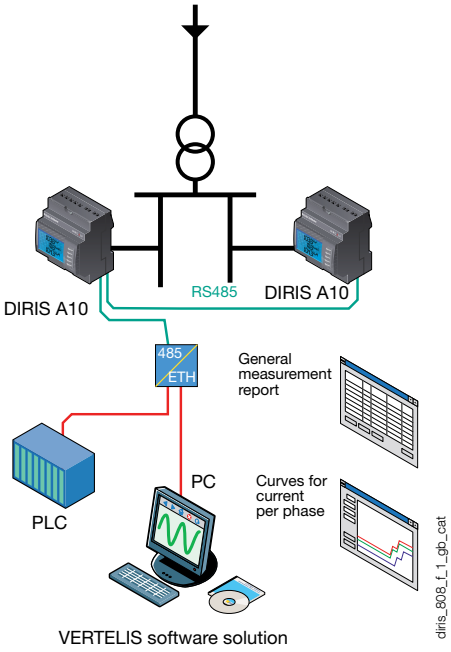
An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Principle diagram



diris_808_f_1_gb_cat

Functions

Multi-measurement

- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - maximum average: ΣP, ΣQ, ΣS
- Power factors
  - instantaneous: 3PF, ΣPF

- **Metering**
- Active energy: + kWh
- Reactive energy: + kVarh
- Hours:
- **Harmonic analysis**
- Total harmonic distortion (level 51)
  - Currents: thd I1, thd I2, thd I3
  - Phase-to-neutral voltage: thd 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).

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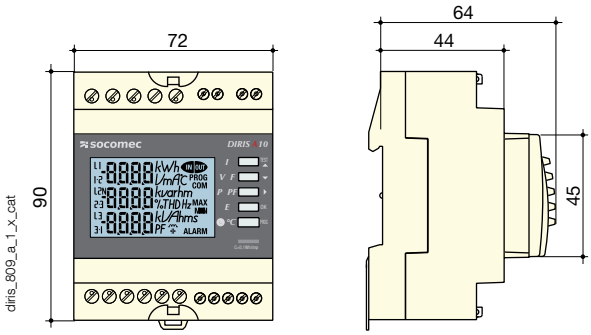
Front panel

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.

Case



Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP 30
Front degree of protection	IP 52
Display type	backlit LCD display
Voltage and current connection cross-section	4 mm^2
Connection cross-section for AUX supply, input, output and comms.	2.5 mm^2
Weight	205 g (4825 0010) - 215 g (4825 0011)

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 … 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I_n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 … 500 VAC
Direct measurement between phase and neutral	28 … 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 … 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 … 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	< 3 VA
Digital output (pulses or on/off)	
Number	1
Type	20 / 30 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8
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	- 10 … + 55 °C
Storage temperature	- 20 … + 70 °C
Relative humidity	85 %

References

Basic device **Description**	**DIRIS A10** **Reference**
DIRIS A10 (available in light grey on request)	4825 **0010**
DIRIS A10 with RS485 MODBUS communication (available in light grey on request)	4825 **0011** ■

Reference in **green** are new products. ■ Stock items.

DIRIS A14

Multifunction meters - PMD

Modular multifunction meter - MID

Single-circuit metering, measurement & analysis

new

DIRIS A14

The solution for

- Industry
- Infrastructures
- Data centre

Strong points

- MID certified B+D module
- Bi-directional metering
- Multi-measurement and load curves
- Compliant with IEC 61557-12
- Detection of connection errors

Conformity to standards

- IEC 61557-12
- IEC 62053-23 class 2
- EN50470-1
- EN50470-3 class C

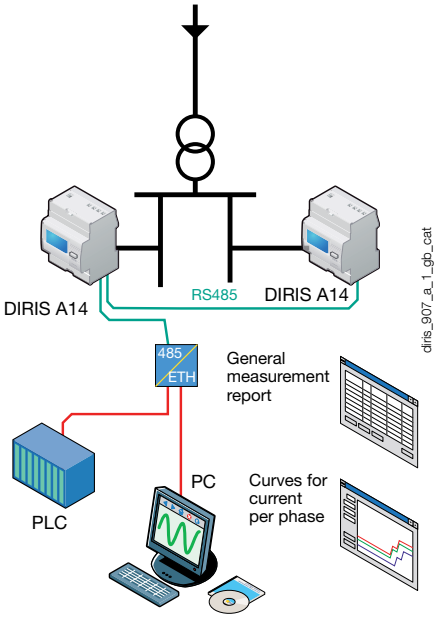
IEC

Function

The **DIRIS A14** is a modular multifunction meter for measuring electrical values in low voltage networks.

It allows all electrical parameters to be displayed and utilised for communication and/or output functions.

Functional diagram



VERTELIS software solution

Advantages

MID certified B+D module

DIRIS A14 products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. “Module B+D” certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (four quadrants)

This function is for metering energy production or energy consumption.

Multi-measurement and load curve.

Display of electrical values (I, U, V, ΣP, ΣQ, ΣS, PF) and P+ load curve over a 7 day period via communication.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors

Functions

Multi-measurement

- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Voltages
  - instantaneous: V1, V2, V3, U12, U23, U31
- Power
  - instantaneous: ΣP, ΣQ, ΣS
  - maximum average: ΣP, ΣQ, ΣS
- Power factor (cos φ)
  - instantaneous: Σ cos φ
  - maximum average: Σ cos φ

Total and partial metering

- Active energy: + kWh, - kWh
- Reactive energy: + kvarh, - kvarh

Harmonic analysis (via communication)

- Total harmonic distortion (level 63)
  - 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

Multi tariff function (via communication)

Selection of one out of 4 billing tariffs

Events (via communication)

- Active energy consumption: day n-1 / week n-1 / month n-1
- Active power load curve: P 10 minutes over 7 days with time-log

Communications

RS485 with MODBUS protocol

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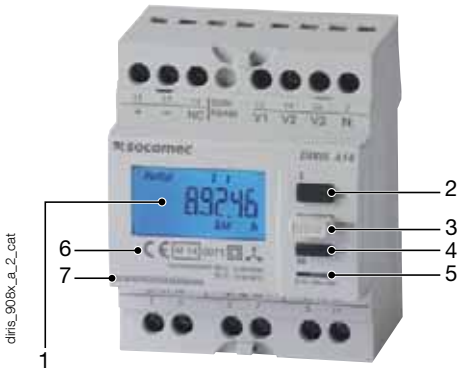
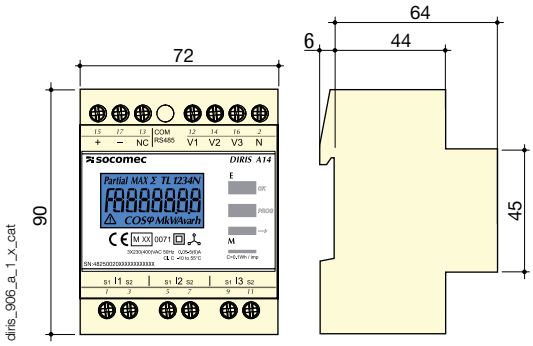
Front panel



1. Backlit LCD display.
2. Direct access for energies and validation key.
3. Programming key.
4. Navigation key for measurements.
5. Metrological LED
6. MID marking.
7. Serial Number.

Case



Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	Backlit LCD
Rigid cable cross-section	1.5 to 10 mm^2
Flexible cable cross-section	1 to 6 mm^2
Weight	240 gr

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	10 to 2500 A
Via CT secondary	5 A
Input consumption	0.6 VA
Startup current (I_{st})	5 mA
Minimum current (I_{min})	50 mA
Transmission current (I_{tr})	250 mA
Reference current (I_{ref})	5 A
Measurement updating period	1 s
Accuracy	0,5 %
Permanent overload	6 A
Intermittent overload	120 A for 0.5 s
Voltage measurements (TRMS)	
Direct measurement (four phases)	50 to 460 VAC +/- 15 %
Input consumption	2 VA
Measurement updating period	1 s
Accuracy	0,2 %
Permanent overload	480 V (phase-to-phase measurement)
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement (cos φ)	
Measurement updating period	1 s
Accuracy	0.01

Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Active (according to EN 50470)	Class C
Metrological LED (EA$^+$,EA$^-$)	
Pulse weight	10000 pulses/kWh
Colour	Red
Auxiliary power supply	
Self-supply	Yes
Frequency	50 / 60 Hz
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 … 38400 bauds
Operating conditions	
Operating temperature	- 10 … + 55 °C
Storage temperature	- 20 … + 70 °C
Relative humidity	95 % without condensation

References

Basic device **Description**	**DIRIS A14** **Reference**
DIRIS A14 MID + RS485 MODBUS communication	4825 **0020** ■

Accessories	**Reference**
Panel mounting kit	4825 **0070**

Reference in **green** are new products. ■ Stock items.

DIRIS A17

Multifunction meters - PMD

Multi-measurement meter - dimensions 72x72 mm - LV/HV

DIRIS A17

The solution for

- Industry
- Infrastructure
- Non critical buildings

Strong points

- Compact
- Compliant with IEC 61557-12
- User friendly
- Advanced functionalities

Conformity to standards

- IEC 61557-12
- IEC 62053-21 class 1
- IEC 62053-23 class 2

Management software

- To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. Please consult us.

Function

Compact and ergonomic, the **DIRIS A17** is a multifunction meter specially adapted for monitoring and managing electrical energy. Its communication function allows the use and analysis of data collected via a PLC or VERTELIS energy management software.

The DIRIS A17 is a key tool for all your energy efficiency projects.

Advantages

Compact

The 72 x 72 mm compact, surface-mounted format allows easily integration into any type of electrical cabinet configuration.

Compliant with IEC 61557-12

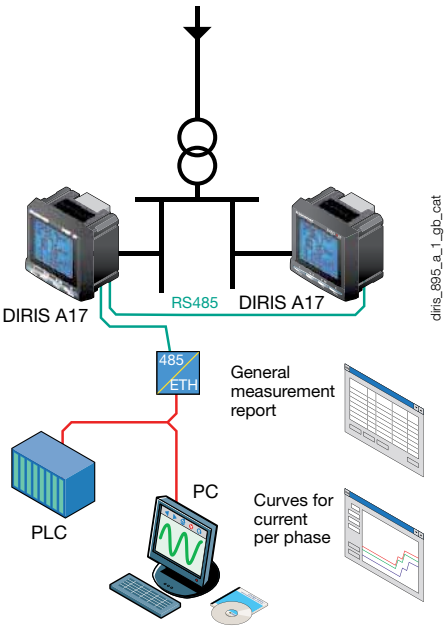
IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

User friendly

As well as being compact, the DIRIS A17 also allows easy navigation via its 4 direct access keys. Its screen displays a large amount of information, whilst remaining easy to read.

Functional diagram



VERTELIS software solution

Advanced functionalities

The DIRIS A17 offers input/output functions as standard and has a pulse output or RS485 MODBUS communication output.

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

Harmonic analysis
- Total harmonic distortion (level 31)
  - Currents: thd I1, thd I2, thd I3, thd In
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3, (4 wire network)
  - Phase-to-phase voltage: thd U12, thd U23, thd U31, (3 wire networks)

Events

Alarms on all electrical values

Communications

RS485 with MODBUS protocol

Input
- Pulsed Input
- Data report via external dry contact

Output
- Remote command of device
- Alarm report
- Pulse report

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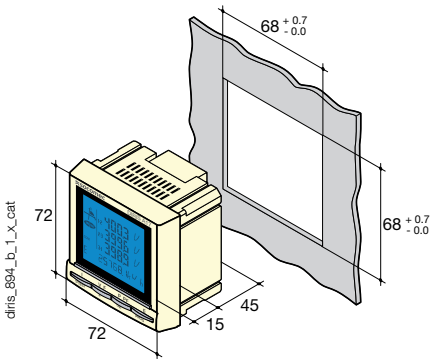
Front panel

1. Backlit LCD display.
2. Direct access key for currents (instantaneous and maximum) and current THD.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies.

Case



Type	Panel mounting
Dimensions W x H x D	72 x 72 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD
Terminal block type	fixed or plug-in
Voltage and other connection cross-section	0.2 … 2.5 mm²
Current connection cross-section	0.5 … 6 mm²
Weight	400 g

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 … 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Permanent overload	6 A
Intermittent overload	10 I_n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 … 500 VAC
Direct measurement between phase and neutral	28 … 289 VAC
VT primary	400 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy at 50 Hz	1 %
Accuracy at 60 Hz	2 %
Power factor measurement	
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Frequency measurement	
Measurement range	45 … 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-21) at 50 Hz	class 1
Active (according to IEC 62053-21) at 60 Hz	class 2
Reactive (according to IEC 62053-23)	class 2
Operating conditions	
Operating temperature	- 10 … + 55 °C
Storage temperature	- 20 … + 85 °C
Relative humidity	95 %
Auxiliary power supply	
AC voltage	220 … 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	3 VA
Digital, pulse, command input	
Number	1
Type	optocoupler 8 to 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	1200 … 38400 bauds
Pulse, alarm and control output	
Number	1
Power supply	8 to 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type of optocoupler	IEC 62053-31 Class A (5 ... 30 VDC)
Pulse weight	100 Wh,1 kWh, 10 kWh, 100 kWh, 1000 kWh, 10000 kWh
Pulse length	100 ms, 200 ms, 300 ms, ..., 900 ms

References

Basic device **Auxiliary power supply U_s**	**DIRIS A17** **Reference**
220 ... 277 VAC with pulse output	4825 **0101**
220 ... 277 VAC with MODBUS communication via RS485	4825 **0102**
220 ... 277 VAC with MODBUS communication via RS485 + THD	4825 **0103**
220 ... 277 VAC with MODBUS communication via RS485 + 2 inputs	4825 **0104**
220 ... 277 VAC with MODBUS communication via RS485 + 2 inputs + THD	4825 **0105**

Reference in **green** are new products. ■ Stock items.

DIRIS A20

Multifunction meters - PMD

Multi-measurement meter - dimensions 96 x 96 mm

DIRIS A20

The solution for

> Industry
> Infrastructure
> Data centres

Strong points

> Easy to use
> Compliant with IEC 61557-12
> Detects wiring errors

Conformity to standards

> IEC 61557-12
> IEC 62053-22 class 0.5S
> IEC 62053-23 class 2
> UL

Management software

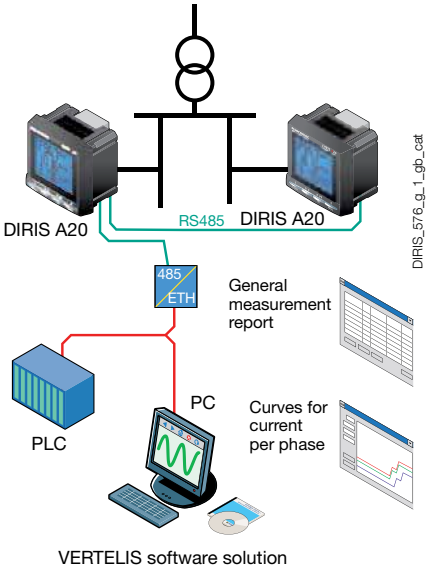
> To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. Please consult us.

Function

DIRIS A20 are panel mounted measurement units which ensure the user has access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored.

All this information can be analysed remotely using the VERTELIS software solution.

Principle diagram



Advantages

Easy to use

Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, DIRIS A20 provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values : + kWh, + kvarh, I, U, V, F, P, Q, S, PF, etc.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Functions

Multi-measurement
- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - maximum average: ΣP, ΣQ, ΣS
- Power factors
  - instantaneous: 3PF, Σ

Metering
- Active energy: + kWh
- Reactive energy: + kvarh
- Hours:

Harmonic analysis
- Total harmonic distortion (level 51)
  - Currents: thd I1, thd I2, thd I3
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3
  - Phase-to-phase voltage: thd U12, thd U23, thd U31

Events

Alarms on all electrical values

Communications(1)

RS485 with MODBUS protocol

Output
- Remote command of device
- Alarm report
- Pulse report

Inputs
- Remote status device

(1) Available as an option (see the following pages).

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Front panel

1. Backlit LCD display.
2. Direct access key for currents (instantaneous and max. values), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies, hour meter and programming menu.

Plug-in modules

DIRIS® A20

1 Output

1 output assignable to:
- Pulses: configurable (type, weight, duration) in kWh or kvarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer.
- Remote command of device.

Communication

RS485 link with JBUS / MODBUS protocol (speed up to 38400 bauds)

3 inputs, 1 output

3 inputs assignable to:
- Remote status device.

1 output assignable to:
- Pulses: configurable (type, weight, duration) in kWh or kvarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer.
- Remote command of device.

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 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 … 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 … 400 VAC
AC tolerance	± 10 %
Direct voltage	120 … 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	10 VA
Pulse or alarm output	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8
Inputs	
Number	3
Power supply	10 … 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	Phototransistors
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	1400 … 38400 bauds
Operating conditions	
Operating temperature	- 10 … + 55 °C
Storage temperature	- 20 … + 85 °C
Relative humidity	95 %

References

Basic device **Auxiliary power supply U_s**	**DIRIS A20** **Reference**
110 … 400 VAC / 120 … 350 VDC	4825 **0200** ■
Optional plug-in modules	**Reference**
1 output	4825 **0080** ■
RS485 MODBUS® communication	4825 **0082** ■
3 inputs, 1 output	4825 **0083**
Accessories	
Description of accessories	**Reference**
IP65 protection	4825 **0089**
Panel mounting kit for a 144 x 96 mm cut-out	4825 **0088**

Reference in **green** are new products. ■ Stock items.

DIRIS A40/A41

Multifunction meters - PMD

Multi-measurement meter - dimensions 96 x 96 mm

DIRIS A41

Function

DIRIS A40 and **A41**are panel mounted measurement units which ensure the user has access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored.

All this information can be analysed remotely using the VERTELIS software solution.

The DIRIS A41 has a CT current input for measuring the neutral current.

Advantages

Easy to use

Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, DIRIS A4x provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values : +/- kWh, +/- kvarh, kVAh, I, U, V, F, P, Q, S, PF, etc.

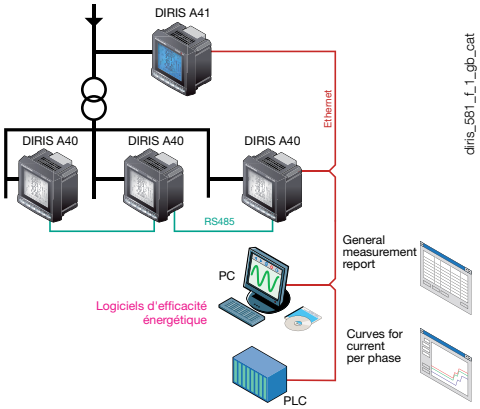
Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Customisable

Thanks to the wide range of optional modules, the product can be customised or upgraded after installation.

Principle diagram



Webserver function

Optional Ethernet communication modules include a Webserver function for monitoring and exploiting data remotely without additional software.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

The solution for

- Industry
- Data centres
- Infrastructures

Strong points

- Easy to use
- Detects wiring errors
- Customisable
- Webserver function
- Compliant with IEC 61557-12

Conformity to standards

- IEC 61557-12
- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2
- UL

Functions

Multi-measurement

- Currents
  - instantaneous: I1, I2, I3, In, Isystem
  - average/maximum average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Usystem
  - average/maximum average: V1, V2, V3, U12, U23, U31, F
- Power
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - maximum average: ΣP, ΣQ, ΣS
  - predictive: (ΣP), (ΣQ), (ΣS)
- Power factors
  - instantaneous: 3PF, ΣPF
  - average/maximum average: ΣPF
- Temperatures(1)
  - internal
  - external via 3 PT100 sensors

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Hours:

Harmonic analysis

- Total harmonic distortion
  - Currents: thd I1, thd I2, thd I3, thd In
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3
  - Phase-to-phase voltage: thd U12, thd U23, thd U31
- Individual up to level 63
  - Currents: HI1, HI2, HI3, HIn
  - Phase-to-neutral voltage: HV1, HV2, HV3,
  - Phase-to-phase voltage: HU12, HU23, HU31

Load curves(1)

- Active and reactive power: ΣP+/-; ΣQ+/-
- Voltages & frequency: V1, V2, V3, U12, U23, U31, F

Events(1)

- Alarms on all electrical values.

Communications(1)

- RS485 MODBUS RTU & PROFIBUS DP
- Ethernet (MODBUS TCP or RTU over TCP and Web server)
- Ethernet with RS485 gateway MODBUS RTU over TCP

Inputs / Outputs(1)

- Pulse metering
- Remote control/command
- Alarm report
- Pulse report

Analogue output

- 0/4- 20 mA analogue output

(1) Available as an option (see the following pages).

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Front panel

1. Backlit LCD display.
2. Direct access key for currents and test function.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current and power values.
6. Direct access key for harmonic values.
7. Direct access key for energies, hour meter and programming menu.

Plug-in modules

DIRIS® A40

DIRIS® A41*

** with a factory fitted neutral CT module.*

Pulse outputs

2 configurable pulse outputs (type, weight and duration) on ± kWh, ±kvarh and kVAh.

Communication MODBUS®

RS485 link with MODBUS® protocol (speed up to 38400 bauds).

PROFIBUS® DP communication

SUB-D9 link with PROFIBUS® DP protocol (speed up to 12 Mbauds).

Ethernet communication

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Embedded Webserver function (1).

Ethernet communication with RS485 MODBUS gateway

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Connection of 1 to 247 RS485 MODBUS slaves.
- Embedded Webserver function.

Analogue outputs

A maximum of 2 modules may be connected, providing up to 4 analogue outputs.
Per module 2 outputs assignable to:
3I, In, 3V, 3U, F, ± ΣP, ± ΣQ, ΣS, ΣPFL/C, I sys, Vsys, Usys, Ppred, Q pred, Spred, T°C internal, T°C 1, T°C 2, T°C3 and to 30 VDC power supply.

2 inputs - 2 outputs

A maximum of 3 modules may be connected, providing up to 6 inputs and 6 outputs.
Per module 2 outputs assignable to:
- monitoring: 3I, In, 3V, 3U, F, ±ΣP, ±ΣQ, SS, ΣPFL/C, THD 3I, THD In, THD 3V, THD 3U, Ppred, Qpred, Spred, internal T°C, T°C 1, T°C2, T°C3 and hour meter,
- remote control,
- timed remote control.
- 2 inputs for pulse metering.

Memory

- Storing up to a maximum of 62 days of P+, P-, Q+, Q- with an internal or external synchronisation signal of 5, 8, 10, 15, 20, 30 and 60 minutes.
- Storing of 10 hour-dated last alarms.
- Storing of the last minimum and maximum instantaneous values for 3U, 3V, 3I, In, F, ΣP±, ΣQ±, ΣS, THD 3U, THD 3V, THD, 3U, THD, 3V, THD, 3I, THD In.
- Storing of 3U, 3V and F average values based on synchronisation function (maximum 60 days).

Temperature

Temperature indication:
- internal,
- external sensor PT 100 (T°C 1),
- external sensor PT 100 (T°C 2),
- external sensor PT 100 (T°C 3),.

DIRIS A40/A41

Multifunction meters - PMD

Multi-measurement meter - dimensions 96 x 96 mm

Accessories

Current transformers
(see page 166)

IP65 protection

Panel mounting kit for a 144 x 96 mm cut-out

Electrical characteristics

Current measurement on insulated inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 … 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I_n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 … 700 VAC
Direct measurement between phase and neutral	28 … 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Current-voltage product	
Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 … 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 … 400 VAC
AC tolerance	± 10 %
Direct voltage	120 … 350 VDC / 12 … 48 VDC
DC tolerance	± 20 % / - 6 … + 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA

2 inputs / 2 outputs module: Outputs (alarms / control)	
Number of relays	2(1)
Type	250 VAC - 5 A - 1150 VA
2 inputs / 2 outputs module: Phototransistor inputs	
Number	2(1)
Power supply	10 … 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	phototransistors
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8
Analogue output module	
Number of outputs	2(2)
Type	insulated
Range	0 / 4 … 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 … 38400 bauds
PROFIBUS-DP communication module	
Link	SUB-D9
Protocol	PROFIBUS® DP
PROFIBUS® speed	9.8 kbauds … 12 Mbauds
Ethernet communication module	
Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP
Temperature module (inputs)	
Type	PT100
Connection	2, 3 or 4 wires
Dynamic	- 20 °C ... 150 °C
Accuracy	+/- 1 digit
Maximum length	300 cm
Operating conditions	
Operating temperature	- 10 … + 55 °C
Storage temperature	- 20 … + 85 °C
Relative humidity	95 %

(1) Max. 3 modules / DIRIS.
(2) Max. 2 modules / DIRIS.

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References

Basic device	DIRIS A40	DIRIS A41 with CT on the neutral
Auxiliary power supply U_s	**Reference**	**Reference**
110 ... 400 VAC / 120 ... 350 VDC	4825 **0201** ■	4825 **0202**
12 ... 48 VDC	4825 **1201**	4825 **1202**

Options		
Plug-in modules(1)	**Reference**	**Reference**
Pulse outputs	4825 **0090** ■	4825 **0090** ■
RS485 MODBUS® communication	4825 **0092** ■	4825 **0092** ■
Analogue outputs	4825 **0093** ■	4825 **0093** ■
2 inputs / 2 outputs	4825 **0094**	4825 **0094**
Communication Sub D9 PROFIBUS®DP(2)	4825 **0205** ■	4825 **0205** ■
Memory	4825 **0097** ■	4825 **0097** ■
Embedded Webserver function (2).	4825 **0203** ■	4825 **0203** ■
Ethernet communication + RS485 MODBUS gateway (Embedded Webserver function)(2)	4825 **0204**	4825 **0204**
Temperature inputs	4825 **0206**	4825 **0206**

(1) Ease of integration for additional functions (maximum 4 slots on A40 and 3 on A41).
(2) Dimension of the plug-in module: 2 slots.

Accessories		
Description of accessories	**Reference**	**Reference**
IP65 protection	4825 **0089** ■	4825 **0089** ■
Panel mounting kit for a 144 x 96 mm cut-out	4825 **0088**	4825 **0088**

More technicall detail

> Connections
> Terminals
Please consult www.socomec.com

Reference in **green** are new products. ■ Stock items.

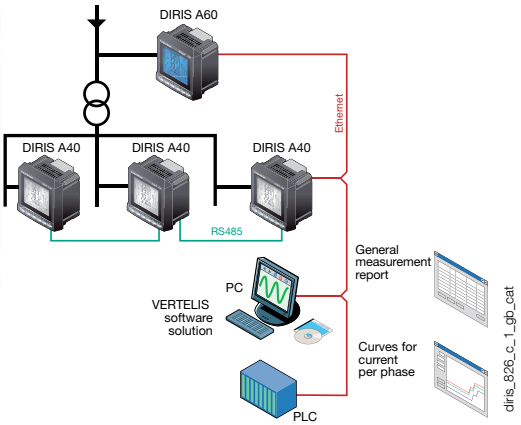
DIRIS A60

Multifunction meters - PMD

Energy monitoring and event analysis - dimensions 96x96 mm

DIRIS A60

Principle diagram



The solution for

- Industry
- Infrastructure
- Data centres

Strong points

- Easy to use
- Detects wiring errors
- Compliant with IEC 61557-12
- Management softwares
- Conformity to standard EN 50160

Conformity to standards

- IEC 61557-12
- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2
- EN 50160

Function

DIRIS A60 is a panel mounted multifunction meter which incorporates all functions of the DIRIS A40 with the addition of enhanced data logging functions, recording curves for quality events. All this information can be analysed remotely using the Analysis software which is available at no charge and can be downloaded from the SOCOMEC website www.socomec.com.

Advantages

Easy to use

Thanks to its large backlit LCD display and its multiple viewing screens with direct key access, the DIRIS A60 provides clear readings and is easy to use.

It directly displays a number of multi-measurement and metering values : +/- kWh, +/- kvarh, kVAh, I, U, V, F, P, Q, S, PF, etc.

Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Management softwares

- Optional Ethernet module with Webserver function: For measurement monitoring, data exploitation and the export of load curves remotely without a specific software (web browser access).
- Analysis software: For the analysis of events data in order to improve the reliability of the electrical installation.
- Easy Config software: For quick and easy remote device configuration; configuration files can be copied from and sent to the DIRIS A60, or they can be created without communication and sent at a later time. Multiple devices can be configured from a single file, which is especially useful for OEMs and panel builders.

Conformity to standard EN 50160

EN 50160 is a standard which defines events relating to the quality of electrical networks. The DIRIS A60 captures voltage events in accordance with this standard.

Functions

In addition to the functions of the DIRIS A40, the DIRIS A60 also:

- shows the current and voltage unbalance
- shows the tangent φ
- stores the load curves (60 days with an interval of 10 minutes) for the active, reactive and apparent power: ΣP+/-; ΣQ+/-, ΣS
- detects and stores the last 40 events concerning:
  - overvoltage
  - voltage dips
  - cut-offs
  - overcurrent.

For each stored event, the DIRIS A60 records the relevant RMS 10 ms interval curves for the voltages V1, V2, V3, U12, U23, U31 and the currents I1, I2, I3, In, giving a total of 400 curves.

Other functions:

Multi-measurement

Currents
- instantaneous: I1, I2, I3, In, Isystem,
- average/maximum average: I1, I2, I3, In,
- unbalance: I unb.

- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Usystem
  - average/maximum average: V1, V2, V3, U12, U23, U31, F
  - unbalance: U unb.
- Power
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - maximum average: ΣP, ΣQ, ΣS
  - predictive: ΣP, ΣQ, ΣS.
- Power factor - PF, ΣPF
- Instantaneous total tangent φ
- Instantaneous, average and max. average unbalance
- Temperatures(1)
  - internal,
  - external via 3 PT100 sensors

Metering
- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Hours:

Harmonic analysis (level 63)
- Total harmonic distortion
  - Currents: thd I1, thd I2, thd I3, thd In
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3
  - Phase-to-phase voltage: thd U12, thd U23, thd U31
- Individual
  - Currents: HI1, HI2, HI3, HIn
  - Phase-to-neutral voltage: HV1, HV2, HV3,
  - Phase to phase voltage: HU12, HU23, HU31

Events (1)
- Alarms on all electrical values

Communications(1)
- 0/4- 20 mA analogue output
- RS485 MODBUS RTU
- Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver)
- Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver) with RS485 MODBUS RTU gateway

Inputs / Outputs (1)
- Pulse metering
- Remote control/command
- Alarm report
- Pulse report

(1) Available as an option (see the following pages).

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Front panel

1. Backlit LCD display.
2. Direct access key for currents, temperatures and test function.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current, voltage and power values.
6. Direct access key for harmonics values.
7. Direct access key for energies, hour meter and programming menu.

Plug-in modules

DIRIS® A60*

** With integrated memory module.*

Pulse outputs

- 2 configurable pulse outputs (type, weight and duration) on ± kWh, ±kvarh and kVAh.

Communication MODBUS®

- RS485 link with MODBUS® protocol (speed up to 38400 bauds).

Ethernet communication

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Embedded Webserver function.

Ethernet communication with RS485 MODBUS gateway

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Connection of 1 to 247 RS485 MODBUS slaves.
- Embedded Webserver function (1).

Analogue outputs

- A maximum of 2 modules may be connected, providing up to 4 analogue outputs.
- Per module 2 outputs assignable to: 3I, In, 3V, 3U, F, ± ΣP, ± ΣQ, ΣS, ΣPFL/C, Isys, Vsys, Usys, Ppred, Q pred, Spred, T°C internal, T°C 1, T°C 2, T°C3 and to 30 VDC power supply.

2 inputs - 2 outputs

- A maximum of 3 modules may be connected, providing up to 6 inputs and 6 outputs.
- Per module 2 outputs assignable to:
  - monitoring: 3I, In, 3V, 3U, F, ± 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 hour meter,
  - remote control,
  - timed remote control,
- 2 inputs for pulse metering.

Temperature

Temperature indication:
- Internal
- External sensor PT 100 (T°C 1)
- External sensor PT 100 (T°C 2)
- External sensor PT 100 (T°C 3).

DIRIS A60

Multifunction meters - PMD

Energy monitoring and event analysis - dimensions 96x96 mm

Electrical characteristics

Current measurement on insulated inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5
Measurement range	0 … 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I_n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 … 700 VAC
Direct measurement between phase and neutral	28 … 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Current-voltage product	
Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 … 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 … 400 VAC
AC tolerance	± 10 %
Direct voltage	120 … 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA

2 inputs / 2 outputs module: Outputs (alarms / control)	
Number of relays	2(1)
Type	250 VAC - 5 A - 1150 VA
2 inputs / 2 outputs module: Phototransistor inputs (pulse metering)	
Number	2(1)
Power supply	10 … 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	phototransistors
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8
Analogue output module	
Number of outputs	2(2)
Type	insulated
Range	0 / 4 … 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 … 38400 bauds
Ethernet communication module	
Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP
Temperature inputs	
Type	PT100
Connection	2, 3 or 4 wires
Dynamic	- 20 °C ... 150 °C
Accuracy	+/- 1 digit
Maximum length	300 cm
Operating conditions	
Operating temperature	- 10 … + 55 °C
Storage temperature	- 20 … + 85 °C
Relative humidity	95 %

(1) Max. 3 modules / DIRIS.
(2) Max. 2 modules / DIRIS.

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References

Basic device Auxiliary power supply U_s	DIRIS A60 Reference
110 ... 400 VAC / 120 ... 350 VDC	4825 **0207**

Options Plug-in-modules[1]	 Reference
Pulse outputs	4825 **0090** ■
RS485 MODBUS® communication	4825 **0092** ■
Analogue outputs	4825 **0093** ■
2 inputs / 2 outputs	4825 **0094**
Ethernet communication (embedded Ethernet Webserver)[2]	4825 **0203** ■
Ethernet communication + RS485 MODBUS gateway (embedded Ethernet Webserver)[2]	4825 **0204**
Temperature inputs	4825 **0206**

(1) Easy integration of additional functions (maximum 3 slots per device).
(2) Dimension of the plug-in module: 2 slots.

Options Description of accessories	 Reference
IP65 protection	4825 **0089** ■
Panel mounting kit for a 144 x 96 mm cut-out	4825 **0088**

More technicall detail

> Connections
> Terminals
Please consult www.socomec.com

Reference in **green** are new products. ■ Stock items.

Current transformers

Measurement devices

from 60 to 3000 A

Three-phase CT

Split-core transformer

Cable-through CT

Function

SOCOMEC current transformers deliver to the secondary a standard current proportional to the primary current and adapted to the rating of the associated device. They are equipped as standard with removable terminal covers and double terminals allowing the secondary to be short-circuited without any risk.

They are mounted using two screw-on metal brackets or, in certain cases, by a clip-on DIN-rail fastener. The connections are made by screws or by fast-on terminals.

- Accuracy class: 0.2s — 0.5 or 1.
- Dielectric quality: 3 kV — 50 Hz — 1 min.
- Operating frequency: 50 — 60 Hz.
- Permanent overload: 1.2 In.
- Insulation class: E (120 °C).

Advantages

An adapted accuracy class

In order to get the best of your DIRIS multifunction meters and COUNTIS energy meters, we can provide current transformers with the following accuracy classes: 0.2s; 0.5; 1 or 3.

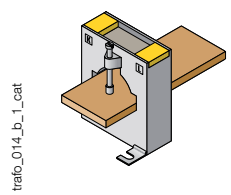
A wide range of ratings and dimensions

Your measurement process can be optimised whatever your needs in terms of ratings, space requirements, conductor sizing or accuracy class. A wide range of combinations are available in our standard range with specific versions available on request (other ratios, tropicalisation and specific frequency, class or burden).

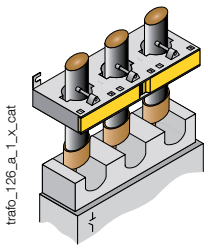
Quick and easy to mount

Our current transformers are adapted to any type of mounting: edgewise or flat mounting, DIN-rail or back-plate mounting. Implementation is easy and rapid.

Composition of the range



Bar or cable-through CT



Bar or cable-through three-phase CT

The solution for

> Industry
> Office buildings

Strong points

> An adapted accuracy class
> A wide range of ratings and dimensions
> Quick and easy to mount

Conformity to standards

> IEC 61869-2
> IEC 61439-1

Available on request

SOCOMEC also offer customised solutions:

> 1 A secondary
> Double or triple primary ratio
> Voltage transformer
> Summation CTs

More applications

> Class 0.25 bar or cable-trough CT
> Primary wound mouldel case CT
> Bar through CT
> Measurement shunts

Please consult our General Catalogue at www.socomec.com

socomec Innovative Power Solutions

Bar or cable-through CT

References

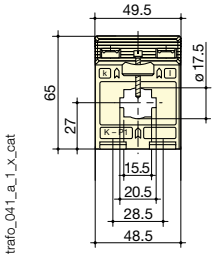
Primary	Secondary(1)	TCB 17-20 Class 1	TCB 17-20 Reference	TCB 26-30 Class 0.5	TCB 26-30 Reference	TCB 26-40 Class 1	TCB 26-40 Reference	TCB 32-40 Class 0.5	TCB 32-40 Reference
60 A	5 A	1 VA	192T **2106** ■						
75 A	5 A	1 VA	192T **2107**						
80 A	5 A	1.25 VA	192T **2108**						
100 A	5 A	1.5 VA	192T **2110** ■	1.5 VA	192T **2310** ■				
125 A	5 A	1.5 VA	192T **2112**	1.5 VA	192T **2312**				
150 A	5 A	2.5 VA	192T **2115**	1.5 VA	192T **2315** ■	2.5 VA	192T **3215**		
160 A	5 A	2.5 VA	192T **2116**			2.5 VA	192T **3216** ■		
200 A	5 A	2.5 VA	192T **2120**	2.5 VA	192T **2320**	2.5 VA	192T **3220**		
250 A	5 A			5 VA	192T **2325** ■	2.5 VA	192T **3225** ■	5 VA	192T **4025**
300 A	5 A			5 VA	192T **2330**	5 VA	192T **3230**		
400 A	5 A			5 VA	192T **2340** ■	5 VA	192T **3240** ■	10 VA	192T **4040**
500 A	5 A			5 VA	192T **2350**				
600 A	5 A			5 VA	192T **2360**			10 VA	192T **4060**
750 A	5 A			5 VA	192T **2375**			10 VA	192T **4075**

Primary	Secondary(1)	TCB 44-50 Class 0.5	TCB 44-50 Reference	TCB 55-80 Class 0.5	TCB 55-80 Reference	TCB 85-100 Class 0.5	TCB 85-100 Reference
400 A	5 A	10 VA	192T **5040** ■				
500 A	5 A	10 VA	192T **5050**				
600 A	5 A	10 VA	192T **5060** ■				
750 A	5 A	10 VA	192T **5075**				
800 A	5 A	15 VA	192T **5080** ■				
1000 A	5 A	15 VA	192T **5090** ■	15 VA	192T **8190**		
1200 A	5 A	15 VA	192T **5092**	15 VA	192T **8192**		
1250 A	5 A	15 VA	192T **5095**	15 VA	192T **8193** ■		
1500 A	5 A			15 VA	192T **8195**		
1600 A	5 A			15 VA	192T **8194**	15 VA	192T **9694**
2000 A	5 A			15 VA	192T **8196** ■	30 VA	192T **9696** ■
2500 A	5 A					30 VA	192T **9697**
3000 A	5 A					30 VA	192T **9698**

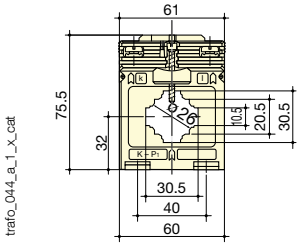
(1) Secondary 1 A: on request.

Dimensions

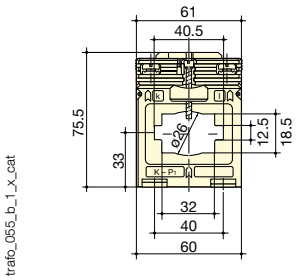
TCB 17-20



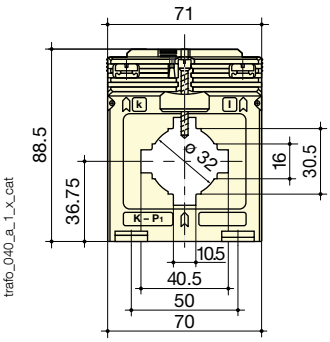
TCB 26-30



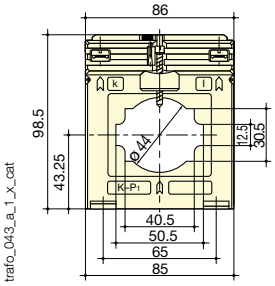
TCB 26-40



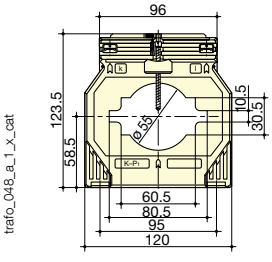
TCB 32-40



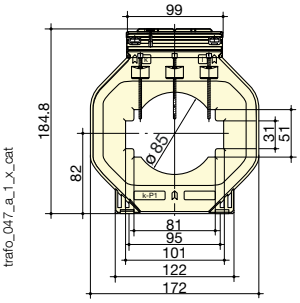
TCB 44-50



TCB 55-80



TCB 85-100



Reference in **green** are new products. ■ Stock items.

Current transformers

Measurement devices

from 60 to 3000 A

Cable-through CT

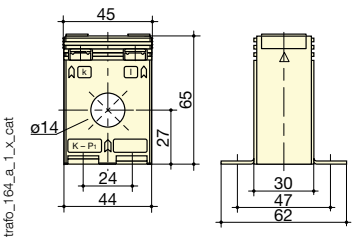
References

Primary	Secondary[1]	TCA 14 Class 1	TCA 14 Reference	TCA 21 Class 1	TCA 21 Class 0.5	TCA 21 Reference	TCA 22 Class 1	TCA 22 Reference
40 A	5 A	1	192T **1404** ■					
50 A	5 A	1	192T **1405** ■					
60 A	5 A	1.5	192T **1406**	1 VA		192T **2006** ■		
75 A	5 A	1.5	192T **1407**	1.5 VA		192T **2007** ■		
80 A	5 A			1.5 VA		192T **2008**		
100 A	5 A				1.5 VA	192T **2010** ■	1 VA	192T **2022**
125 A	5 A				1.5 VA	192T **2012**		
150 A	5 A				1.5 VA	192T **2015** ■	1.5 VA	192T **2023**
200 A	5 A				2.5 VA	192T **2020** ■	2.5 VA	192T **2024**
250 A	5 A				2.5 VA	192T **2016**	3.75 VA	192T **2025**
400 A	5 A						5 VA	192T **2034**
600 A	5 A						5 VA	192T **2036**[2]

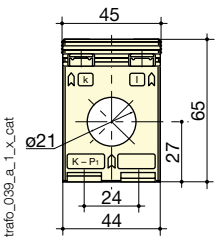
(1) Secondary 1 A: on request. *(2) Dimensions of T2CA 225*

Dimensions

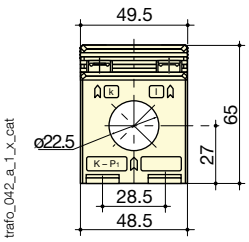
TCA 14



TCA 21



TCA 22



Three-phase bar or cable-through CT

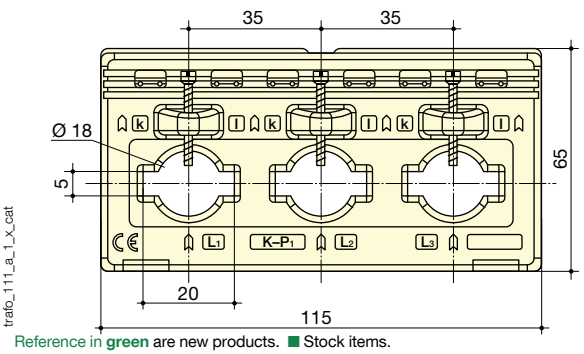
References

Primary	Secondary[1]	TCB3 18-20 Class 1	TCB3 18-20 Reference	TCB3 22-30 Class 1	TCB3 22-30 Reference
3 x 100 A	3 x 5 A	1 VA	192T **3310** ■		
3 x 150 A	3 x 5 A	1.25 VA	192T **3315** ■		
3 x 200 A	3 x 5 A	1.5 VA	192T **3320**		
3 x 250 A	3 x 5 A	2.5 VA	192T **3325** ■	2.5 VA	192T **3425**
3 x 300 A	3 x 5 A			3.75 VA	192T **3430**
3 x 400 A	3 x 5 A			5 VA	192T **3440** ■
3 x 500 A	3 x 5 A			5 VA	192T **3450**
3 x 600 A	3 x 5 A			5 VA	192T **3460**

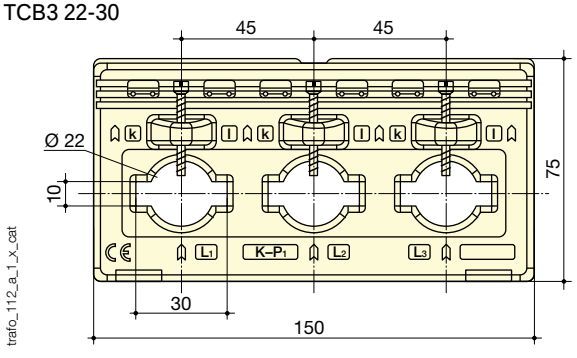
(1) Secondary 1 A: on request.

Dimensions

TCB3 18-20



TCB3 22-30



Reference in **green** are new products. ■ Stock items.

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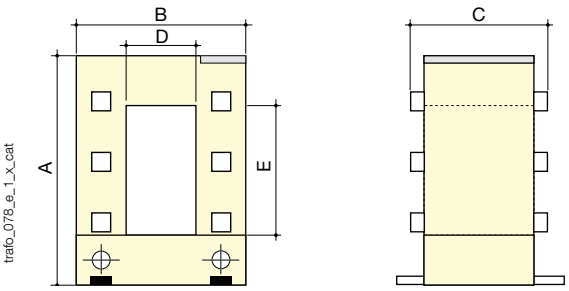
Split-core CT

References

		TO 23			TO 58			TO 812		TO 816	
Primary	**Secondary**	**Class 1**	**Class 3**	**Reference**	**Class 0.5**	**Class 1**	**Reference**	**Class 0.5**	**Reference**	**Class 0.5**	**Reference**
100 A	5 A		1.25 VA	192T **4601**							
150 A	5 A		1.5 VA	192T **4602**							
200 A	5 A		2.5 VA	192T **4603**							
250 A	5 A	1.5 VA		192T **4604** ■		1.5 VA	192T **4625**				
300 A	5 A	3.75 VA		192T **4605**		2.5 VA	192T **4630**				
400 A	5 A	5 VA		192T **4606**	1 VA		192T **4640** ■				
500 A	5 A				2.5 VA		192T **4650**	2.5 VA			
600 A	5 A				2.5 VA		192T **4660** ■	2.5 VA			
750 A	5 A				2.5 VA		192T **4675**	2.5 VA			
800 A	5 A				2.5 VA		192T **4680**	2.5 VA			
1000 A	5 A				5 VA		192T **4610** ■	5 VA	192T **4710**	10 VA	192T **4810**
1250 A	5 A							7.5 VA	192T **4712**	10 VA	192T **4812**
1500 A	5 A							7.5 VA	192T **4715**	10 VA	192T **4815**
1600 A	5 A									10 VA	192T **4814**
2000 A	5 A									10 VA	192T **4820**
2500 A	5 A									10 VA	192T **4825**
3000 A	5 A									15 VA	192T **4830**
4000 A	5 A									15 VA	192T **4840**
5000 A	5 A									15 VA	192T **4850**

Dimensions



Fixed by M5 screw

Dimensions (mm)

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
TO 23	106	93	58	23	33
TO 58	158	125	58	55	85
TO 812	198	155	58	85	125
TO 816	243	195	79	85	165

Reference in **green** are new products. ■ Stock items.

DIRIS G

Wireless and cabled RS485 to Ethernet communication gateways

new

Configuration with EasyConfig,

diris-g_004_a_1_cat.eps

DIRIS G-30
RS485 / Ethernet

diris-g_006_a_1_cat.eps

DIRIS G-40
RS485 - wireless / Ethernet

Function

With **DIRIS G** communication gateways, all information from metering and measurement devices communicating wirelessly or via the RS485 bus are centralised in a single device and then made available on the Ethernet network via Modbus TCP.

The gateway has an embedded WEBVIEW web server, allowing real time monitoring of electrical values and analysis of consumption data. The user can be alerted of any alarms via email.

Advantages

WEBVIEW embedded web server(1)

DIRIS G gateways include an embedded web server. Two versions are available:

- Power Monitoring:
  - Real time measurements and alarms
- Power & Energy Monitoring:
  - Real time measurements and alarms,
  - Historical of measurements and analysis of consumptions.
- DIRIS D-90 touch-screen tablet can be fitted on the panel door to display WEBVIEW pages.

(1) See page 174.

Plug & Play

Connected metering and measurement devices are automatically addressed and detected by the DIRIS G gateway.

DIRIS G gateways provide:

- Automatic clock synchronisation (SNTP) with battery recording.
- Synchronisation of connected devices.
- Warning messages in case of alarms (e-mail SMTP).
- Automatic recording and storage of measurements and consumption data.
- Automatic distribution of tariff changes.

Scalable

Several optional modules are available:

- Digital inputs/outputs.
- Analogue inputs/outputs.
- Temperature inputs.

Selection guide

	Gateway	DIRIS G-30	DIRIS G-40	DIRIS G-50	DIRIS G-60
Communication	RS485 Modbus	•	•	•	•
	Radio frequency Communication (wireless)		•		•
	Ethernet	•	•	•	•
WEBVIEW embedded web server	Power Monitoring	•	•	•	•
	Power & Energy Monitoring			•	•

The solution for

- Industry
- Building
- Infrastructure
- Local authority

Strong points

- WEBVIEW embedded web server
- Plug & Play
- Scalable

Conformity to standards

- IEC 61010
- ISO 14025
- UL

Functions

DIRIS G-30 / DIRIS G-50

- RS485 and Ethernet ports (2 ports with integrated switch)
- Automatic addressing and detection of connected devices.
- Historical of measurements: max 1 year
- Internal clock (SNTP synchronisation)
- Sending of alarm by email (SMTP)
- WEBVIEW embedded web server

DIRIS G-40 / DIRIS G-60

- Same functions as DIRIS G-30/G-50
- Wireless connection

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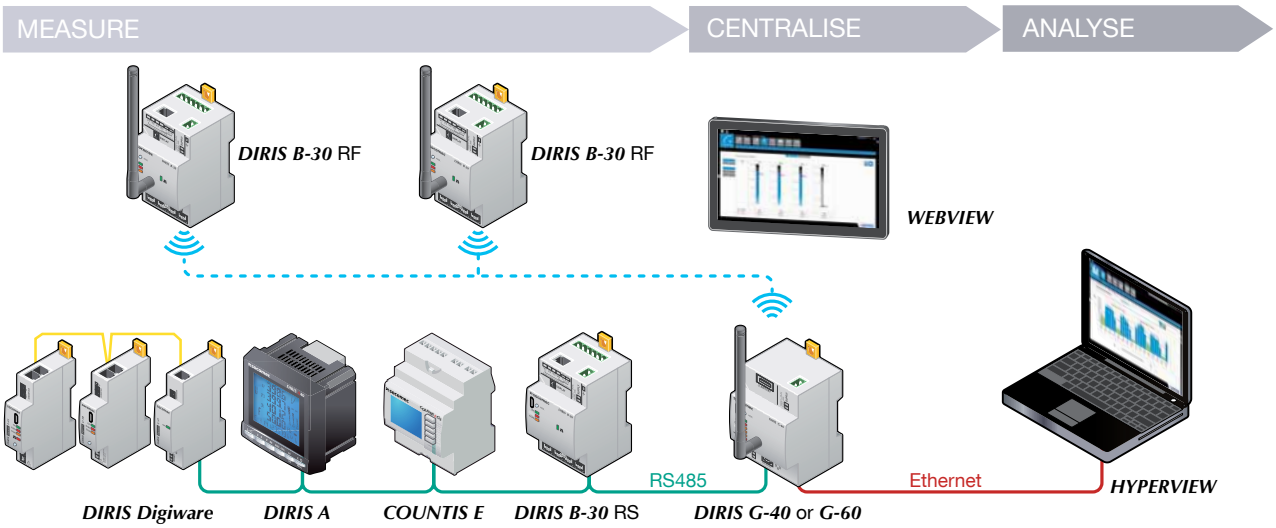
Architecture

Example of communication architecture with DIRIS G gateway and WEBVIEW embedded WEB server



<Sans lien d'intersection>

Embedded web server

WEBVIEW embedded web server(1)

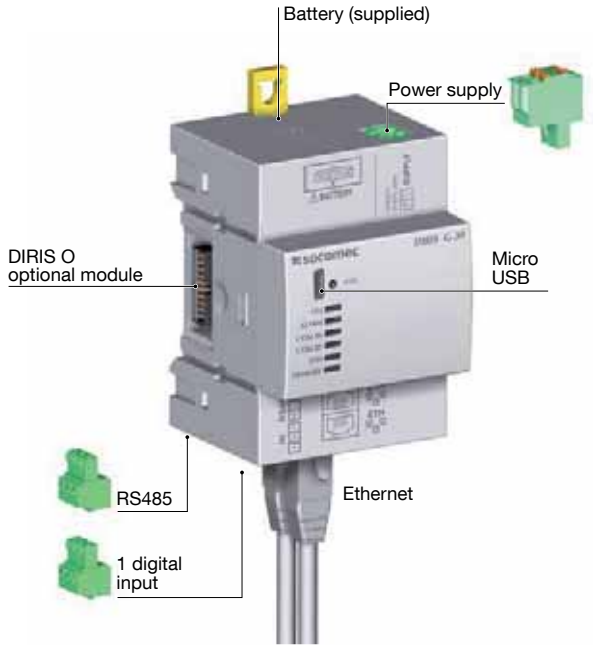
- Power Monitoring version:
  embedded in DIRIS G-30 and G-40
- Power & Energy Monitoring version:
  embedded in DIRIS G-50 and G-60
- 32 devices max (RS485 and wireless indifferently)

soft_027_a_1_fr_cat.eps

(1) For more details see

page 174.

DIRIS G terminals



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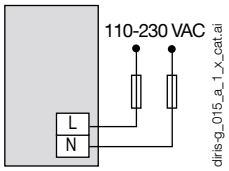
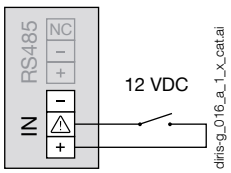
Power supply



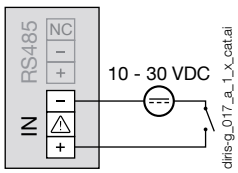
diris-g_015_a_1_x_cat.ai

Input supplied by the product



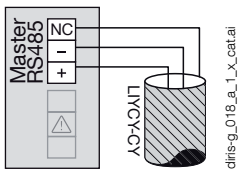
diris-g_016_a_1_x_cat.ai

Input with external power supply



diris-g_017_a_1_x_cat.ai

RS485



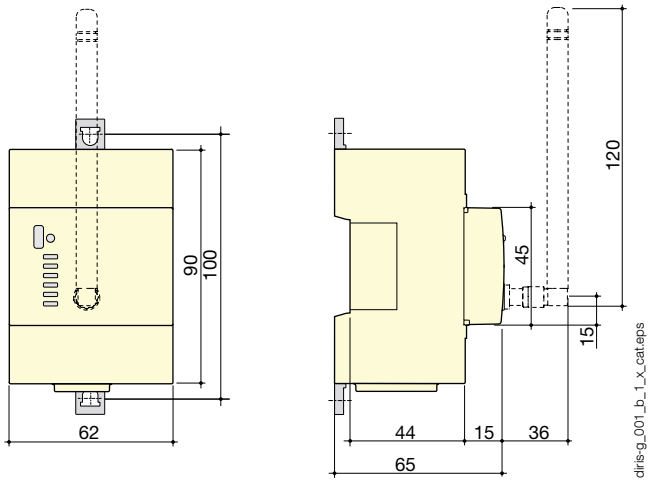
diris-g_018_a_1_x_cat.ai

Terminals of DIRIS O optional modules

Optional modules are common to the DIRIS B-30 monitoring device.
For terminal description, see page page 125.

Dimensions (mm)

DIRIS G-30 / G-40 / G-50 / G-60



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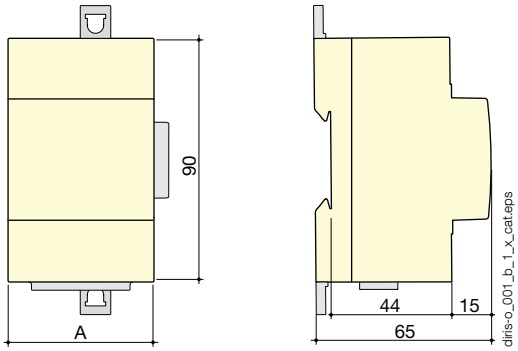
DIRIS O optional modules



diris-o_001_b_1_x_cat.eps

DIRIS O optional modules	A
DIRIS O-iod - DIRIS O-ioa - DIRIS O-it	45 mm

Technical characteristics

Mechanical characteristics

Casing type	Modular for DIN-rail or back plate mounting
Case degree of protection	IP20 / IK06
Front degree of protection	IP40 (panel face with modular mounting) / IK08
Weight	DIRIS G-30, G-50 = 190 g DIRIS G-40, G-60 = 215 g

Electrical characteristics

Power supply	
AC voltage	110-230 VAC ± 15 % (Ph/N or Ph/Ph) Cat III
Frequency	50/60 Hz
Consumption	6 VA
Battery	CR 1220 3 V lithium button cell battery
Input	
Number	1
Type / Power supply	Optocoupler internal polarisation (12 VDC ± 10 %) or external polarisation (10-30 VDC ± 10 %)
Input function	Logic status, pulse meter or synchronisation pulse status

Communication characteristics

DIRIS G	
Link	RS485
Connection type	2 … 3 half duplex wires
Protocol	Modbus RTU
Speed	2400 … 115200 bauds
Function	Communication with PMDs and meters
DIRIS G-40 and DIRIS G-60	
Link	Radio frequency (wireless)
Frequency band	868 MHz (low frequency: 868.1 MHz and high frequency: 869.5875 MHz)
Speed	38400 bauds
Function	Communication with DIRIS B-30 RF
Scope	300 m (open field)

Ethernet	
Link	Ethernet 10/100 base-T, 2 RJ45 bases with integrated switch
Protocol	Modbus TCP (port 502), Modbus RTU over TCP (port 503), HTTP, SMTP, SNTP, DHCP
Clock	Internal
SNTP protocol	Gateway time updating from an NTP server. Connected PMDs time updating.
SMTP protocol	Sending of alarm emails from the gateway
Function	Configuration of the gateway, connected PMDs and meters Access to the WEBVIEW web server, data centralisation
USB	
Connection type	USB 2 (Easy Config software required)
Protocol	Modbus RTU over USB
Function	Configuration of the gateway, connected PMDs and meters
Connection	B-type micro USB connector

Memory capacity

Historical of consumptions (memory capacity extension of meters and monitoring devices)	1 year (1-hour period)
Electrical values	2 months (10-minute period)
Number of events	Alarms: 1000 Network quality as per EN 50160: 1000

Environment characteristics

Operating temperature	-10 … +70 °C
Storage temperature	-25 … +85 °C
Operating humidity	55 °C / 97 % relative humidity

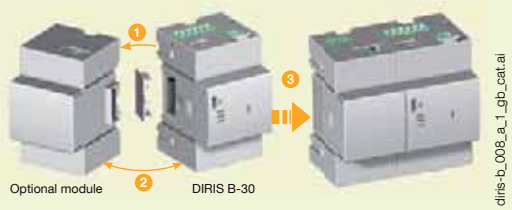
References

DIRIS G gateways		**Reference**
DIRIS G-30	RS485 / Ethernet - WEBVIEW Power Monitoring	4829 **0300**
DIRIS G-40	RS485-RF / Ethernet - WEBVIEW Power Monitoring	4829 **0301**
DIRIS G-50	RS485 / Ethernet - WEBVIEW Power & Energy Monitoring	4829 **0302** ■
DIRIS G-60	RS485-RF / Ethernet - WEBVIEW Power & Energy Monitoring	4829 **0303**
Accessories		**Reference**
Wireless remote antenna, 868 MHz - 210 mm height		4854 **0126**
Cable for remote antenna - SMA connector - 3 meter length		4854 **0127**
USB configuration cable		4829 **0050**

More technicall & more accessories

> Digital inputs/outputs
> Analogue inputs/outputs
> Temperature inputs
> Communication ports RS485 Modbus

Please consult www.socomec.com



Reference in **green** are new products. ■ Stock items.

WEBVIEW

Web server embedded in the DIRIS G communication gateway

Software suite

new

soft_027_a_1_fr_cat.eps

The solution for

- Industry
- Building
- Infrastructure
- Local authority

Strong points

- Plug & Play
- Easy to use
- Various functions

Function

The **WEBVIEW** web server embedded in DIRIS G gateways enables measurement monitoring up to 32 devices and displays the energy consumptions by usage.

Pre-set alarms defined by the user can sent by e-mail.

User can access WEBVIEW via a web browser on a PC or a tablet.

Advantages

Plug & Play

Automatic detection of connected devices facilitates the WEBVIEW configuration. In order to achieve the consumption distribution, the user is assisted in the metering plan definition.

Easy to use

WEBVIEW centralises all the devices measurements via a unique, clear and easy-to-use interface.

It provides easy and rapid monitoring of the devices by displaying the parameters and events on summary pages.

Various functions

WEBVIEW ensures real time monitoring of all electrical parameters measured thanks to summary pages showing graphs or charts. Time-logged alarms are recorded and displayed by usage, type, nature and criticality. The user receives alarm notification by email.

Energy consumption breakdown is displayed per utility (electricity, water, gas…) and usage (heating, lightning…).

Selection guide

WEBVIEW	Functions	Hosted on Gateway (32 devices max.)
Power Monitoring	**Monitor** - Real time measurement - Alarms	DIRIS G-30
		DIRIS G-40
Power & Energy Monitoring	**Monitor** - Real time measurement - Alarms **Display** - Measurement history - Consumptions	DIRIS G-50
		DIRIS G-60

socomec Innovative Power Solutions

Functions

2 versions available:

Power Monitoring

Monitor

- Automatic detection of connected devices.
- Summary of the parameters measured on the electrical network and the loads.
- Measurements of voltage, current, power, power factor, harmonic distortion rate (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.

Alarm

- Alarms for overloads, events and input status changes.
- Display of alarm history.
- Sorting by type, nature, criticality or state.
- Alarm displayed on the main page.
- Sending of alarm by email (SMTP).

Power & Energy Monitoring

Display

- Historical measurements and consumption (one year of data).
- Distribution of consumption by usage and by utility (water, gas, electricity, etc.).
- Export of consumption data in CSV format.

Power & Energy Monitoring also includes the "Monitoring" and "Alarm" functions.

soft_027_a_1_fr_cat.eps

Real-time display.

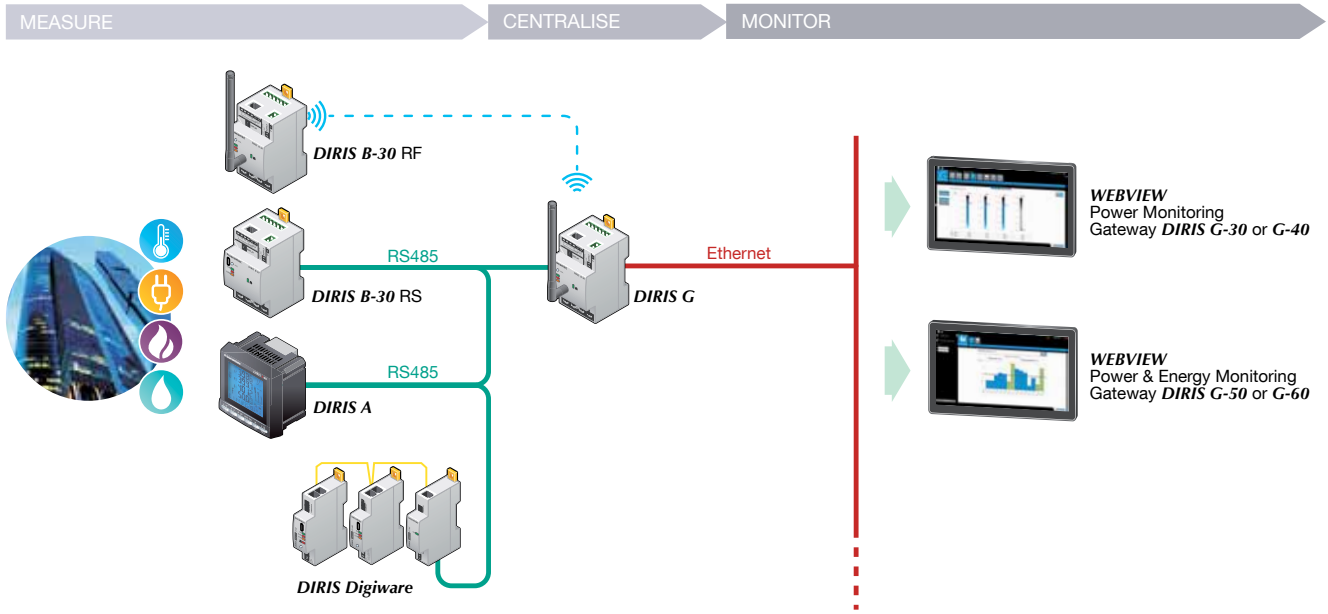
soft_025_a_1_fr_cat.eps

Alarm history.

soft_036_a_1_fr_cat.eps

Consumption history.

Architecture



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References

Type		Reference
DIRIS G-30	RS485 / Ethernet - WEBVIEW Power Monitoring	4829 **0300**
DIRIS G-40	RS485-RF / Ethernet - WEBVIEW Power Monitoring	4829 **0301**
DIRIS G-50	RS485 / Ethernet - WEBVIEW Power & Energy Monitoring	4829 **0302** ■
DIRIS G-60	RS485-RF / Ethernet - WEBVIEW Power & Energy Monitoring	4829 **0303**

Reference in **green** are new products. ■ Stock items.

socomec

Power Conversion

Single-phase UPS

NETYS PL
600 and 800 VA
p. 178

NETYS PE
600 to 2000 VA
p. 180

NETYS PR
Mini Tower
1000 to 2000 VA
p. 182

NETYS PR
Rack/Tower
1700 to 3300 VA
p. 184

NETYS PR
Rack 1U
1000 to 2000 VA
p. 186

NETYS RT
1100 to 11000 VA
p. 188

ITYS
1 to 10 kVA
p. 192

MASTERYS BC
30 to 120 kVA
p. 198

MASTERYS GP
100 to 120 kVA
p. 208

Single-phase and three-phase UPS

MASTERYS GP
10 to 80 kVA
p. 204

ITYS PRO
10 to 20 kVA
p. 196

Back-up storage

Battery cabinets

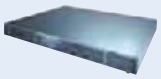
for ***MASTERYS BC*** *p. 202*

for ***MASTERYS GP*** *p. 210*

Single-phase and three-phase STS

STATYS
30 to 100 A
p. 212

Automatic Transfer System



ASYS
16 A
p. 214

NETYS PL

User-friendly multi-socket protection
600 and 800 VA

NETYS PL
600 VA

NETYS PL
800 VA

GAMME 255 A

The solution for

> PC: LCD or CRT monitors, scanners, printers, etc.
> Cash registers
> Interactive terminals

Technology

> VFD "offline"

Certifications

RoHS COMPLIANT

An innovative solution and superior design

- Compact and practical pluggable power protection integrating a larger number of sockets adapted to computer and IT peripherals in small office and home office environments, facilitating connection and tidier cabling.
- Modern design suitable for positioning over/under the desk or floor installations.
- Complementary USB port on the top for recharging mobile devices (e.g. phones, MP3, etc.).

Adapted protection to meet all your needs

- 6 output sockets (British, French or German/Italian standards) for easy distribution directly to your applications:
  - 4 sockets protected against power cuts and overvoltages, aimed at your most sensitive applications (professional desk top systems, workstation and monitors). The back-up time (up to 30 minutes) enables standard PC tasks and configuration to be saved.
  - 2 sockets protected against overvoltage alone for use with less critical applications and high absorption consumers (e.g. laser printers).

Easy to use

- Operating mode indicated by means of the smart LED indicator lights.
- Easy battery maintenance and replacement.
- Integrated mains input cable on the side, allowing all six sockets to be used.

socomec Innovative Power Solutions

References

Power (VA)	Number of sockets	Communication		Back-up time(1)	Reference
		USB serial port	USB port to charge mobile devices		
600	6 x French	•	•	15'	**NPL-0600-F** ■
	6 x German-Italian				**NPL-0600-D**
	6 x British				**NPL-0600-B**
800	6 x French	•	•	20'	**NPL-0800-F**
	6 x German-Italian				**NPL-0800-D**
	6 x British				**NPL-0800-B**

(1) PC + 17" LCD monitor.

Technical data

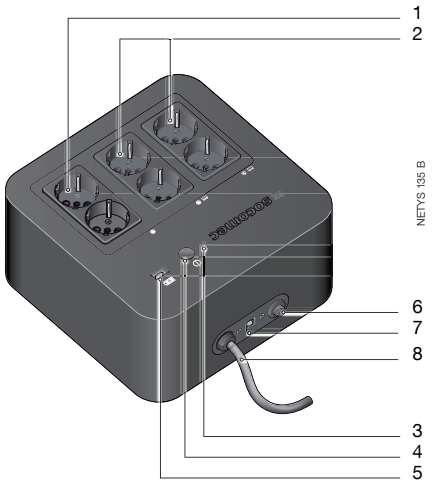
	NETYS PL	
References	**NPL-0600-F** ■ **NPL-0600-D** **NPL-0600-B**	**NPL-0800-F** **NPL-0800-D** **NPL-0800-B**
Sn	600 VA	800 VA
Pn	360 W	480 W
Power (surge)	1200 VA	
Input / output	1/1	
INPUT		
Rated voltage	230 V	
Voltage tolerance	180 ÷ 270 V	
Rated frequency	50/60 Hz with automatic selection	
Mains connection	Cable with plug	
OUTPUT		
Rated voltage	230 V ±10%	
Rated frequency	50/60 Hz ±1%	
Wave form	Step wave	
Protection	Overload, significant discharge and short circuit	
Sockets	4 sockets for UPS and surge protection, 2 sockets for surge protection	
Socket standard	British, French or German/Italian	
BATTERIES		
Type	Sealed lead-acid maintenance free - expected life 3/5 years	
Back-up time (1)	15 min	20 min
COMMUNICATION		
Interfaces	USB	
Local communication software	Local View	
UPS CABINET		
Dimensions W x D x H	220 x 220 x 123 mm	
Weight	3.6 kg	4.1 kg
Colour	Black	White
STANDARDS		
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Product declaration	CE, RCM (E2376)	

(1) PC + 17" LCD monitor.

Socket types

French socket | German/Italian socket | British socket

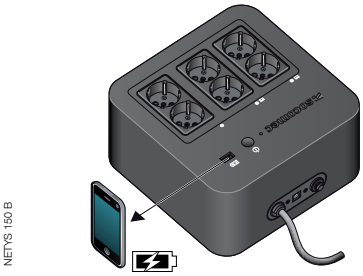
Connections



1. Filtered output sockets
2. Inverter output sockets
3. LED
4. On/Off button
5. USB port to charge mobile devices
6. Fuse
7. USB serial port
8. Mains input cable

Standard electrical features

- USB port to charge mobile devices



Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.

Reference in **green** are new products. ■ Stock items.

NETYS PE

Practical and cost-effective protection
from 600 to 2000 VA

Single-phase UPS

GAMME 253 A

NETYS PE
600/650/850 VA

NETYS PE
1000 VA

NETYS PE
1500/2000 VA

The solution for

- CAD, graphic workstations
- Multimedia workstations and peripherals
- LCD screens and monitors
- POS (Points Of Sales)

Technology

- VI “line interactive” with AVR, step wave

Certifications

RoHS COMPLIANT

Ideal and cost-effective protection for SOHO or POS applications

- Adapted to protect IT applications in home, office and retail environments.
- A complete range of six models to adapt the power to the equipment’s consumption or to required back-up time.

Easy to use

- Control panel with graphical icons LCD / LEDs allowing the operating mode to be easily monitored.

A solution for network power cuts and voltage fluctuations

- The integrated AVR function (Automatic Voltage Regulation) stabilizes the output voltage and avoids the switching to Battery Mode operation, therefore saving the battery to support critical power cut events.

Simplified connection

- Several IEC 320 sockets (IT standard) simplify the connectivity to computer and IT peripherals.

Protection for your data line

- Integrated NTP protection for LAN/ADSL connection against the risk of data line overvoltage.

References

Power (VA)	Number of sockets	Communication		Back-up time(1)	Reference
		USB	Data Line protection		
600	4	-	-	15'	**NPE-B600**
650	4	•	•	15'	**NPE-0650**
850	4	•	•	20'	**NPE-0850** ■
1000	4	•	•	45'	**NPE-1000-LCD**
1500	6	•	•	55'	**NPE-1500-LCD** ■
2000	6	•	•	60'	**NPE-2000-LCD**

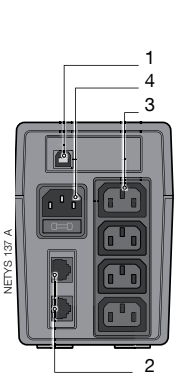
(1) PC + 17" LCD monitor.

Technical data

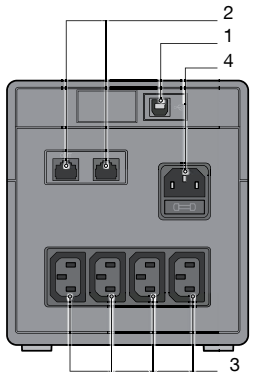
	NETYS PE					
References	**NPE-B600**	**NPE-0650**	**NPE-0850** ■	**NPE-1000-LCD**	**NPE-1500-LCD** ■	**NPE-2000-LCD**
Sn	600 VA	650 VA	850 VA	1000 VA	1500 VA	2000 VA
Pn	360 W	360 W	480 W	600 W	900 W	1200 W
Input / output	1/1					
INPUT						
Rated voltage	230 V					
Voltage tolerance	170 - 280 V					
Rated frequency	50/60 Hz with automatic selection					
Mains connection	IEC320 socket					
OUTPUT						
Automatic Voltage Regulation (AVR)	•	•	•	•	•	•
Rated voltage	230 V ±10%					
Rated frequency	50/60 Hz ±1%					
Wave form	Step wave					
Protection	Overload, significant discharge and short circuit					
Connections	4 x IEC 320 (C13)(1)				6 x IEC 320 (C13)(1)	
BATTERIES						
Type	Sealed lead-acid maintenance free - expected life 3/5 years					
Back-up time (2)	15 min	15 min	20 min	45 min	55 min	60 min
COMMUNICATION						
Interfaces	-	USB				
Local communication software	-	Local View				
Data Line protection	-	NTP data line suppressor				
UPS CABINET						
Dimensions W x D x H	100 x 290 x 145 mm			145 x 345 x 165 mm	145 x 390 x 205 mm	
Weight	5.0 kg	5.2 kg	6.0 kg	9.7 kg	11.2 kg	12 kg
STANDARDS						
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2					
EMC	IEC/EN 62040-2, AS 62040.2					
Product declaration	CE, RCM (E2376)					

(1) Australian standard sockets on Netys PE models specific for Australia.
(2) PC + 17" LCD monitor.

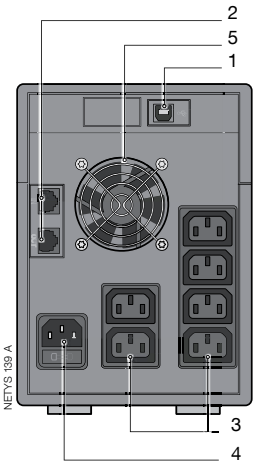
Connections



600 / 650 / 850 VA



1000 VA



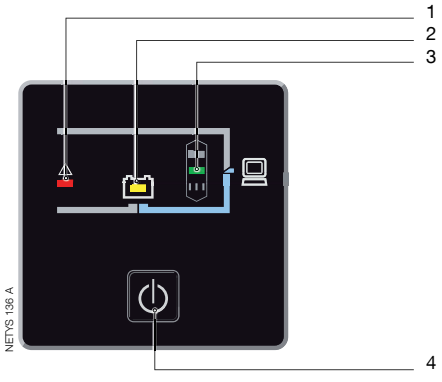
1. USB serial port
2. NTP data line suppressor
3. UPS output sockets
4. Input socket and fuse
5. Fan / air vents

1500 / 2000 VA

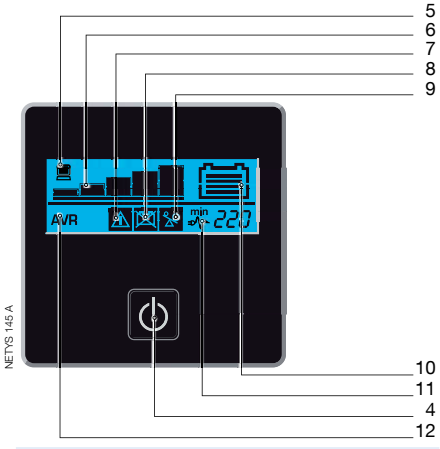
Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.

Control panel



600 / 650 / 850 VA



1000 / 1500 / 2000 VA

1. Alarm
2. Operation with battery
3. Normal operation
4. On / Off
5. Load present
6. Load level (5 steps)
7. General Alarm
8. Battery fault / Replace the battery
9. Overload
10. Battery capacity
11. Normal mode / Battery mode (flashing)
12. Automatic Voltage / Regulation active

Reference in **green** are new products. ■ Stock items.

NETYS PR

Space saving reliable protection
from 1000 to 2000 VA - Mini Tower

NETYS PR
1000 VA

NETYS PR
1500/2000 VA

The solution for

> Professional and IT equipment
> Servers and networking devices
> CAD / graphic workstations with monitors and peripherals
> Control systems

Technology

> VI "line interactive" with AVR, sine wave

Certifications

RoHS COMPLIANT

Professional line interactive UPS

- Ideal solution for protecting small servers and high performance CAD or graphic workstations.
- Assures service continuity to critical applications.
- Designed for professional applications: the sinevawe inverter technology assures full compatibility with any kind of load and power supply.
- Minitower case to easily fit close to the IT load to be supplied and protected.

A solution for network power cuts and voltage fluctuations

- The integrated AVR function (Automatic Voltage Regulation) stabilizes the output voltage and avoids the switching to Battery Mode operation, therefore saving the battery to support critical power cut events.

Easy to use

- Control panel with graphical icons LCD allowing the operating mode to be easily monitored.

Simplified connection

- Several IEC 320 sockets (IT standard) simplify the connectivity to computer and IT peripherals.

Protection for your data line

- Integrated NTP protection for LAN/ADSL connection against the risk of data line overvoltage.

socomec Innovative Power Solutions

References

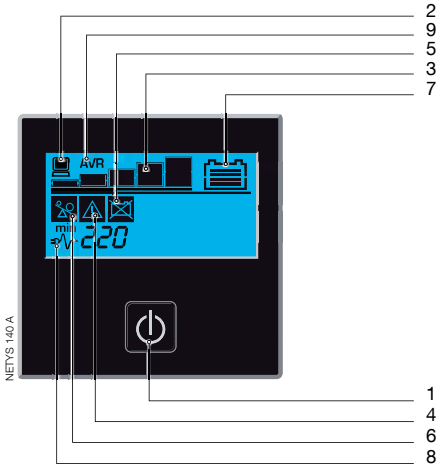
Power (VA)	Number of sockets	Communication		Back-up time(1)	Reference
		USB	Data Line protection		
1000	4	•	•	45'	**NPR-1000-MT**
1500	6	•	•	55'	**NPR-1500-MT** ■
2000	6	•	•	60'	**NPR-2000-MT**

(1) PC + 17" LCD monitor.

Technical data

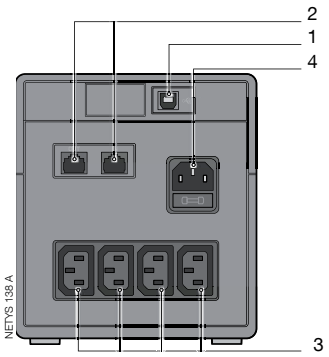
	NETYS PR Mini Tower		
References	**NPR-1000-MT**	**NPR-1500-MT** ■	**NPR-2000-MT**
Sn	1000 VA	1500 VA	2000 VA
Pn	700 W	1050 W	1400 W
Input / output	1/1		
INPUT			
Rated voltage	230 V		
Voltage tolerance	170 - 280 V		
Rated frequency	50/60 Hz with automatic selection		
Mains connection	IEC320 socket		
OUTPUT			
Automatic Voltage Regulation (AVR)	•	•	•
Rated voltage	230 V ±10%		
Rated frequency	50/60 Hz ±1%		
Wave form	Sine wave		
Protection	Overload, significant discharge and short circuit		
Connections	4 x IEC 320 (C13)	6 x IEC 320 (C13)	
BATTERIES			
Type	Sealed lead-acid maintenance free - expected life 3/5 years		
Back-up time (1)	45 min	55 min	60 min
COMMUNICATION			
Interfaces	USB		
Local communication software	Local View		
Data Line protection	NTP data line suppressor		
UPS CABINET			
Dimensions W x D x H	145 x 345 x 165 mm	145 x 390 x 205 mm	
Weight	9.2 kg	12.3 kg	13.2 kg
STANDARDS			
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2		
EMC	IEC/EN 62040-2, AS 62040.2		
Product declaration	CE, RCM (E2376)		

Control panel

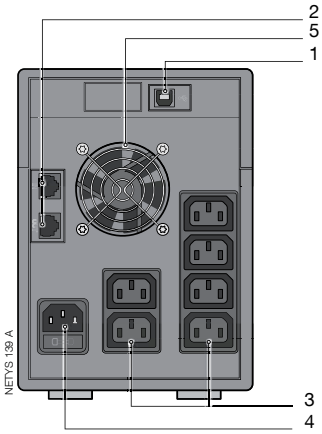


1. On / Off
2. Load present
3. Load level (5 steps)
4. General Alarm
5. Battery fault / Replace the battery
6. Overload
7. Battery capacity
8. Normal mode / Battery mode (flashing)
9. Automatic Voltage / Regulation active

Connections



1000 VA



1500 / 2000 VA

1. USB serial port
2. NTP data line suppressor
3. UPS output sockets
4. Input socket and fuse
5. Fan / air vents

Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.

Reference in **green** are new products. ■ Stock items.

NETYS PR

High performance protection on rack or tower
from 1700 to 3300 VA - Rack/Tower

Single-phase UPS

The solution for

> Professional and IT equipment
> Servers and networking devices
> CAD / graphic workstations with monitors and peripherals
> Control systems

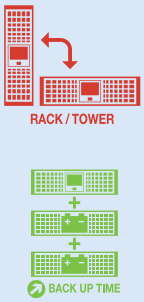
Technology

> VI "line interactive" with AVR, sine wave

Certifications

RoHS COMPLIANT

Advantages



A secure and professional supply continuity

- Ideal solution for protecting small servers, networking devices and peripherals.
- Assures service continuity to critical applications.
- Designed for professional applications: the sinevawe inverter technology assures full compatibility with any kind of load and power supply.

Tailored to IT networking

- The space and time-saving tower/rack conversion option means it can be installed easily either in tower mode or inside standard 19" rack cabinets depending on the user's needs.

Simple to install

- No configuration needed on first startup.
- Compact footprint (2U/89 mm) for installation in rack cabinets.
- Attractive design for visible installation in offices.
- USB port and HID protocol as standard for direct interfacing with Windows® systems, without the need for additional specialist software.

Protection for your data line

- Integrated NTP protection for LAN/ADSL connection against the risk of data line overvoltage.

Meets practical needs

- Optional battery extension modules (EBM) to meet all back-up time requirements, even after installation.
- Clear and uncluttered LCD interface, with buzzers that immediately indicate the operating status of the UPS, even for less specialist users.
- Simplified maintenance and Battery 'hot swap', without closing down other applications.

Easy to use and to integrate

- Wide range of communication protocols available in options (including JBUS, TCP/IP and SNMP) for integration into LAN networks or building management systems (BMS).
- Easy connections to the applications (depending on power) via 8 or 8+1 IEC 320 (IT standard) sockets.
- Load segmentation function to prioritize loads and manage critical situations.
- EPO (Emergency Power Off) emergency stop.
- RS232 advanced connections for the management of the power supply and local/ remote shutdown of applications.

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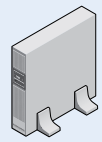
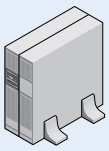
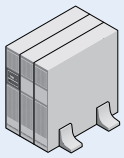
References

	Power (VA)	Back-up time(1)	Number of sockets	Dimensions WxDxH (mm)	Weight (kg)	Reference
	1700	7'	8	(440x436x87)	18	**NPR-1700-RT**
	2200	9'	8	(440x608x87)	28.2	**NPR-2200-RT** ■
	3300	8'	9	(440x608x87)	31.5	**NPR-3300-RT**
	1700	22'	8	(440x436x87) x 2	18 + 20.7	**NPR-1700-RT + (x1) NPR-B1700-RT**
	2200	37'	8	(440x608x87) x 2	28.2 + 36.5	**NPR-2200-RT + (x1) NPR-B3300-RT** ■
	3300	22'	9	(440x608x87) x 2	31.5 + 36.5	**NPR-3300-RT + (x1) NPR-B3300-RT** ■
	1700	42'	8	(440x436x87) x 3	18 + 20.7 + 20.7	**NPR-1700-RT + (x2) NPR-B1700-RT**
	2200	72'	8	(440x608x87) x 3	28,2 + 36.5 + 36.5	**NPR-2200-RT + (x2) NPR-B3300-RT** ■
	3300	43'	9	(440x608x87) x 3	31.5 + 36.5 + 36.5	**NPR-3300-RT + (x2) NPR-B3300-RT** ■

(1) PC + 17" LCD monitor.

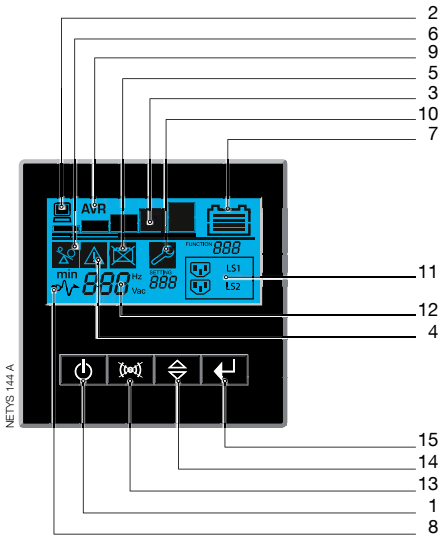
Accessories	Reference
Manual bypass hot swap 1U with IEC plugs for UPS up to 3.3 KVA	**MBP-1U-IEC**
Manual bypass for single unit	**ENT-OP-PDU16**
Professional WEB/SNMP interface	**NET-VISION6CARD**
Dry-contact Interface	**NPR-OP-REL**

Technical data

	NETYS PR Rack/Tower		
References	**NPR-1700-RT**	**NPR-2200-RT** ■	**NPR-3300-RT**
Sn	1700 VA	2200 VA	3300 VA
Pn	1350 W	1800 W	2700 W
Input/output	1/1		
INPUT			
Rated voltage	230 V		
Voltage tolerance	161 V ±4% (selecting wide mode) -276 V ±4%		
Rated frequency	50/60 Hz with automatic selection		
Mains connection	IEC320-C14 (10 A)	IEC320-C20 (16 A)	
OUTPUT			
Automatic Voltage Regulation (AVR)	The AVR increases (boost 1) the output voltage by 14% when the input voltage drops below 90% of the nominal value. The AVR decreases (bucks) the output voltage by 12% when the input voltage rises above 106% of the nominal value.		
Rated voltage	230 V ±5%		
Rated frequency	50/60 Hz ±0.1%		
Wave form	Sine wave		
Protection	Normal Mode: overload (110% for 3 minutes) Battery Mode: overload (110% for 30 seconds); shortcircuit protected		
Connections	8 (10 A) x IEC 320		8 (10 A) x IEC 320 1 (16 A) x IEC 320
BATTERIES			
Type	Sealed lead-acid maintenance free - expected life 3/5 years		
COMMUNICATION			
Interfaces	RS232 - USB		
Ethernet adapter	NET VISION (TCP/IP & SNMP) optional card		
Local communication software	Local View		
Data line protection	NTP data line suppressor: RJ45 10 Base T		
STANDARDS			
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2		
EMC	IEC/EN 62040-2, AS 62040.2		
Product declaration	CE, RCM (E2376)		

Reference in **green** are new products. ■ Stock items.

Control panel



1. On / Off
2. Load present
3. Load level (5 steps)
4. General Alarm
5. Battery fault / Replace the battery
6. Overload
7. Battery capacity
8. Normal mode / Battery mode (flashing)
9. Automatic Voltage / Regulation active
10. Configuration
11. Programmable outlets
12. Input value
13. UPS test / Buzzer off
14. Navigator button
15. Enter

Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.
- HID: UPS management based on Windows® and Mac OS X® embedded service - USB interface.
- MODBUS RTU (RS232).

Communication options

- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.
- Dry-contact interface.
- Rails.

NETYS PR

High density, compact power protection on rack
from 1000 to 1500 VA - Rack 1U

The solution for

- Professional and IT equipment
- Servers and networking devices
- CAD / graphic workstations with monitors and peripherals
- Control systems

Technology

- VI “line interactive” with AVR, sine wave

Certifications

RoHS COMPLIANT

A professional UPS

- Designed for professional environments, protection against power cuts and over voltage is ensured by Line Interactive technology with Automatic Voltage Regulation (AVR).

An installation adapted to the networking environment

- NETYS PR rack provides high power density (1U - 45 mm) which conserves valuable space in the rack for other equipment.
- Can be easily installed in 19” and 23” Rack cabinets, depending on the user’s needs. The UPS is provided with rails and mounting accessories.

Adapted connections

- Easy connections to the applications via 4 IEC 320 (IT standard) sockets.

Data line protection

- With RJ45 connector.

Communication with the computer system

- RS232 or USB advanced connections for the management of the power supply and local / remote shutdown of applications.
- Advanced diagnostics and remote control via various protocols and user environments: JBUS, HID, SNMP, TCP / IP.

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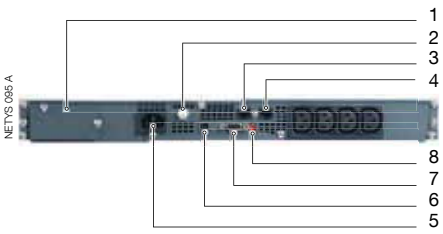
References

Power (VA)	Back-up time(1)	Number of sockets	Dimensions WxDxH (mm)	Weight (kg)	Reference
1000	12'	4	1U (440x575x44.5)	21	**NET1000-PR-1U**
1500	12'	4	1U (440x575x44.5)	23	**NET1500-PR-1U** ■

(1) PC + 17" LCD monitor.

Accessories	Reference
Manual bypass hot swap 1U with IEC plugs for UPS up to 3.3 KVA	**MBP-1U-IEC**
Manual bypass for single unit for 1000 VA to 3300 VA UPS	**ENT-OP-PDU16**
Professional WEB/SNMP interface	**NET-VISION6CARD**

Connections



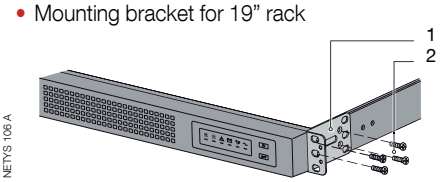
1. Slot for optional communication boards
2. Input protection
3. Network Transient Protector
4. Output sockets (IEC 320 10 A)
5. Main input socket (IEC 320)
6. USB Port
7. RS232 serial port
8. DIP switches

Technical data

	NETYS PR Rack 1U	
References	**NET1000-PR-1U**	**NET1500-PR-1U** ■
Sn	1000 VA	1500 VA
Pn	670 W	1000 W
Input/output	1/1	
INPUT		
Rated voltage	230 V (default), 220 V, 230 V, 240 V selectable	
Rated frequency	50/60 Hz auto-sensing	
OUTPUT		
Rated voltage	230 V	
Rated frequency	50/60 Hz	
Sockets	4 x IEC 320 (10 A)	
Data line protection	NTP data line suppressor: RJ45 10 Base T	
BATTERIES		
Type	sealed lead-acid maintenance free - expected life 3/5 years	
Back-up time (1)	12 min	
COMMUNICATION		
Interfaces	RS232 - USB	
Local communication software	Local View	
STANDARDS		
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Product declaration	CE, RCM (E2376)	

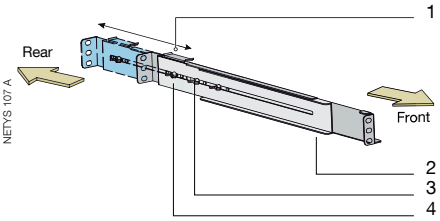
Included

- Mounting bracket for 19" rack



1. Mounting bracket
2. M3 x 6 bracket screws

- Adjustable rails



1. Rear Hold-Down Bracket
2. Rail assembly
3. Assembly Wing Nuts
4. Wing nut for rear Hold-down bracket

Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.
- HID: UPS management based on Windows® and Mac OS X® embedded service - USB interface.
- MODBUS RTU (RS232).

Communication options

- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Battery Hot-swap

- Battery can be hot-swapped without having to shut down the connected equipment.
- Battery can be replaced from the front without removing and disconnecting the UPS.
- Battery check system and replacement indicator.

Reference in **green** are new products. ■ Stock items.

NETYS RT

Total protection on rack or tower
from 1100 to 11000 VA

Simple to install

- IEC input and output connections (1100-3000 VA) or terminal input and output connections with built-in magnetothermal input switch (5000-11000 VA).
- Compact footprint for installation in rack cabinets.

Easy to use

- No configuration necessary on first startup.
- Wide range of communication protocols for integration into LAN networks or Building Management Systems (BMS).

Meets practical needs

- Online double conversion technology with sinusoidal waveform, completely filters out all disturbances from / to the mains power supply and ensures maximum protection of the utility.
- Modular battery extension (MBE) to meet all back-up time requirements, even after installation.
- Possibility of 1+1 parallel redundant configuration to maximise the availability of critical utilities, even in the event of a module breakdown (5000-11000 VA).

The solution for

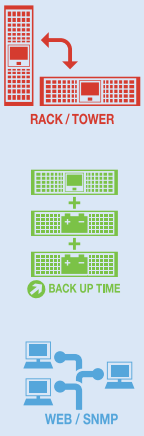
> Switching
> Storage
> Servers and networking devices
> VoIP communication systems
> Structured cabling systems
> Control systems
> Video surveillance systems

Technology

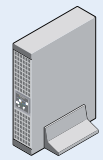
> VFI "online double conversion"

Certifications

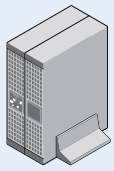
Advantages



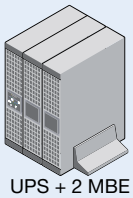
References


UPS

Power (VA)	Back-up time(1)	Number of sockets	UPS size rack	Weight (kg)	Reference
1100	8'	6	2U	13	**NRT2-U1100**
1700	12'	7	2U	18	**NRT2-U1700** ■
2200	8'	7	2U	19	**NRT2-U2200**
3300	10'	7	2U	30	**NRT2-U3300** ■
5000	10'	terminals	4U	55.5	**NRT2-U5000K**
7000	10'	terminals	4U	56	**NRT2-U7000K**
9000	12'	terminals	6U	85.5	**NRT2-U9000K**
11000	12'	terminals	6U	86	**NRT2-U11000K**


UPS + 1 MBE

Power (VA)	Back-up time(1)	Number of sockets	UPS size rack	Weight (kg)	Reference
1100	32'	6	2U+2U	13+16	**NRT2-U1100 + (x1) NRT-B1100**
1700	45'	7	2U+2U	18+29	**NRT2-U1700 + (x1) NRT-B2200** ■
2200	34'	7	2U+2U	19+29	**NRT2-U2200 + (x1) NRT-B2200**
3300	39'	7	2U+2U	30+43	**NRT2-U3300 + (x1) NRT-B3000** ■
5000	24'	terminals	4U+2U	55+40	**NRT2-U5000K + (x1) NRT-B7000**
7000	15'	terminals	4U+2U	56+40	**NRT2-U7000K + (x1) NRT-B7000**
9000	26'	terminals	6U+3U	85+66	**NRT2-U9000K + (x1) NRT-B11000**
11000	21'	terminals	6U+3U	86+66	**NRT2-U11000K + (x1) NRT-B11000**


UPS + 2 MBE

Power (VA)	Back-up time(1)	Number of sockets	UPS size rack	Weight (kg)	Reference
1100	60'	6	2U+2U+2U	13+16+16	**NRT2-U1100 + (x2) NRT-B1100**
1700	87'	7	2U+2U+2U	18+29+29	**NRT2-U1700 + (x2) NRT-B2200** ■
2200	63'	7	2U+2U+2U	19+43+43	**NRT2-U2200 + (x2) NRT-B2200**
3300	72'	7	2U+2U+2U	30+43+43	**NRT-U3000 + (x2) NRT-B3000** ■
5000	38'	terminals	4U+2U+2U	55+40+40	**NRT2-U5000K + (x2) NRT-B7000**
7000	27'	terminals	4U+2U+2U	56+40+40	**NRT2-U7000K + (x2) NRT-B7000**
9000	45'	terminals	6U+3U+3U	85+66+66	**NRT2-U9000K + (x2) NRT-B11000**
11000	36'	terminals	6U+3U+3U	86+66+66	**NRT2-U11000K + (x2) NRT-B11000**

(1) @ 75% of nominal load

Accessories	Reference
Parallel module and manual bypass for 1+1 Configuration for 5000 VA to 11000 VA UPS	**NRT-OP-PMB**
Manual bypass for single unit for 1100 VA to 3000 VA UPS	**ENT-OP-PDU16**
Manual bypass for single unit for 5000 VA to 11000 VA UPS	**NRT-OP-MBP**
Professional WEB/SNMP interface	**NET-VISION6CARD** ■
Dry-contact Interface	**NPR-OP-REL** ■

Reference in **green** are new products. ■ Stock items.

Standard electrical features

- Built-in backfeed protection.
- RJ11 connection for Emergency Power Off (EPO).
- Connection for battery extension modules.
- Port for parallel operation (5000-11000 VA).

Electrical options

- 1+1 parallel module (5000-11000 VA).
- Manual bypass without interruption (5000-11000 VA).
- Battery extension modules.

Standard communication features

- LOCAL VIEW: ideal UPS monitoring and shutdown point-to-point solution for Windows®, Linux and Mac OS X® operating systems.
- HID: UPS management based on Windows® and Mac OS X® embedded service - USB interface (1100-3000 VA).
- MODBUS RTU (RS232).
- RT-VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems (5000-11000 VA).

Communication options

- RT-VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems (1100-3000 VA).
- Dry-contact interface.

NETYS RT
Single-phase UPS
from 1100 to 11000 VA

Technical data

	NETYS RT							
References	**NRT2-U1100**	**NRT2-U1700** ■	**NRT2-U2200**	**NRT2-U3300** ■	**NRT2-5000K**	**NRT2-7000K**	**NRT2-9000K**	**NRT2-11000K**
Sn	1100 VA	1700 VA	2200 VA	3000 VA	5000 VA	7000 VA	9000 VA	11000 VA
Pn	800 W	1200 W	1600 W	2100 W	4500 W	5400 W	7200 W	9000 W
Architecture	online double conversion VFI with input PFC and automatic bypass							
Parallel redundant function	-	-	-	-	1+1	1+1	1+1	1+1
INPUT								
Voltage	230 V (1ph) 160~275 Vac; up to 130 Vac @70% load				230 V (1ph) 181~280 Vac up to 100 Vac @50% load			
Frequency	50/60 Hz +/-10% (Auto-Selectable)							
Power factor / THDi	>0.98 / <6%				>0.99 / <5%			
Input socket	IEC 320-C14 (10 A)	IEC 320-C20 (16 A)			terminals			
OUTPUT								
Voltage	230 V (1ph) selectable 200 / 208 / 220 / 240V - 50 or 60 Hz + /- 2 % (+/- 0.05 Hz in battery mode)							
Efficiency	up to 91% online mode				up to 92% online mode			
Overload capability	up to 105% continuously; 125% x 3 min; 150% x 30 sec				up to 105% continuously; 125% x 5 min; 150% x 30 sec			
Output connections	6 x IEC 320-C13 (10 A)	6 x IEC 320-C13 (10 A) + 1 x IEC 320-C19 (16 A)			terminals			
BATTERY								
References	**NRT-B1100**	**NRT-B2200** ■	**NRT-B2200** ■	**NRT-B3000** ■	**NRT-B7000**	**NRT-B7000**	**NRT-B11000**	**NRT-B11000**
Voltage	24 Vdc	48 Vdc	48 Vdc	72 Vdc	192 Vdc	192 Vdc	240 Vdc	240 Vdc
Recharge time	< 6 hr to recover 90% capacity				< 6 hr to recover 90% capacity			
COMMUNICATION								
Mimic panel	LED				LCD 6 languages			
RS232 MODBUS protocol	•	•	•	•	•	•	•	•
USB HID protocol	•	•	•	•	-	-	-	-
WEB/SNMP (Ethernet RJ45 port)	option	option	option	option	•	•	•	•
COMM slot	•	•	•	•	•	•	•	•
Dry contacts card	option	option	option	option	option	option	option	option
EPO input (RJ11 port)	•	•	•	•	•	•	•	•
Modem/ADSL surge protection	•	•	•	•	-	-	-	-
Parallel port	-	-	-	-	•	•	•	•
STANDARDS								
Performance & topology	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3							
Safety /EMC	IEC/EN 62040-1, EN 62040-2, AS 62040.1.2, AS 62040.2							
Product declaration	CE, RCM (E2376)							
IP rating	IP20							
ENVIRONMENT								
Operating ambient temperature	from 0 °C to +40 °C (from 15 °C to 25 °C for best battery life)							
Storage temperature range	from -15 °C to +50 °C (from 15 °C to 25 °C for best battery life)							
Relative Humidity	0-90% non-condensing							
Noise level (ISO 3746)	< 45 dBA				< 55 dBA			
DIMENSIONS & WEIGHT								
UPS size std (W x D x H)	89x340x440 mm	89x438x440 mm	89x438x440 mm	89x610x440 mm	177.5x670x440 mm	177.5x670x440 mm	261x623x440 mm	261x623x440 mm
UPS size RACK	2U	2U	2U	2U	2U+2U	2U+2U	3U+3U	3U+3U
UPS weight std	13 kg	18 kg	19 kg	30 kg	15.5+40 kg	16+40 kg	19.5+66 kg	20+66 kg
EBM module size (W x D x H)	89x340x440 mm	89x438x440 mm	89x438x440 mm	89x610x440 mm	89x608x440 mm	89x608x440	130.5x623x440 mm	130.5x623x440 mm
EBM module RACK	2U	2U	2U	2U	2U	2U	3U	3U
EBM module weight	16 kg	29 kg	29 kg	43 kg	40 kg	40 kg	66 kg	66 kg

Reference in **green** are new products. ■ Stock items.

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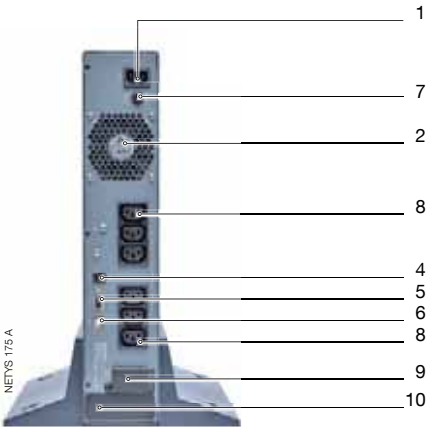
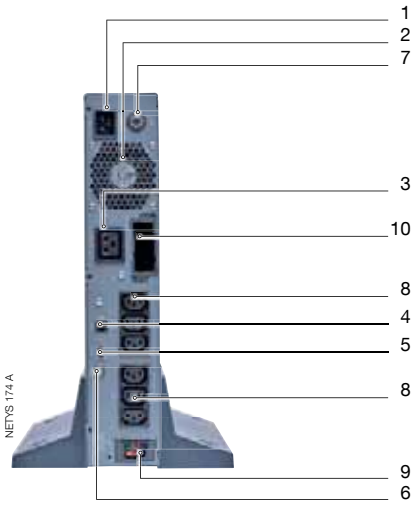
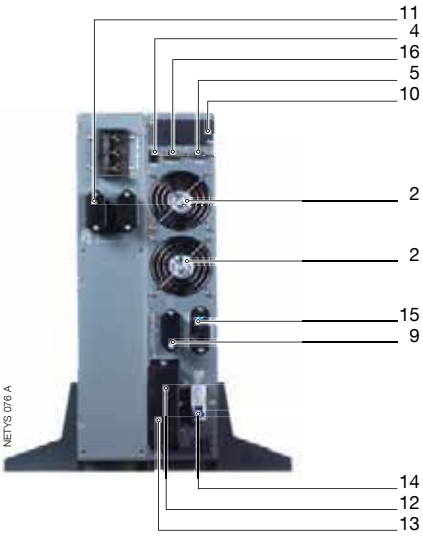
Connections



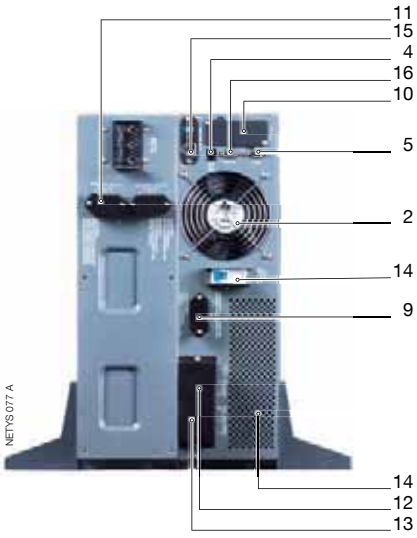
1100 VA



1700 VA - 2200 VA - 3300 VA



5000 VA - 7000 VA + battery



9000 VA - 11000 VA + battery

1. Mains input socket (IEC 320)
2. Fan
3. Output socket (full power)
4. EPO (Emergency Power Off) input
5. RS232 interface (MODBUS protocol)
6. USB port
7. Input protection
8. Output sockets (IEC 320 - 10 A)
9. Connector for external battery extension
10. Slot for optional communication boards
11. Battery extension connector
12. Output terminals
13. Input terminals
14. Input switch
15. RJ45 LAN ethernet connector
16. Parallel port connector

Parallel redundant operation for business continuity

To achieve the highest level of availability and to power critical utilities, NETYS RT UPS modules above 3 kVA can be configured for 1:1 redundancy.

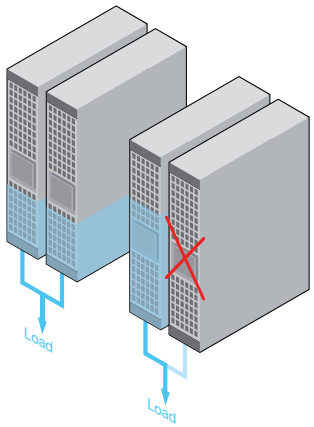
Redundant operation (1+1) means: the system incorporates one more UPS module than is needed to protect the load; in the event of a breakdown, it guarantees sufficient power supply capacity to the load by maintaining online protection.

Parallel technology is based on the principle of load sharing, whereby both units are always kept active.

In a redundant configuration, overall system availability is much higher than a conventional UPS system using similar technology.

1+1 redundant configuration does not require additional circuits and can therefore be set up at a later date, simply by using two UPS modules and a collector/manual bypass module which simplifies cabling and maintenance of the UPS installation.

To further streamline the solution, it is also possible to select between operation with separate battery or shared battery, which is extremely useful in the case of applications requiring high levels of autonomy.



ITYS

Reliable and versatile power protection
from 1 to 10 kVA

The solution for

- Professional workstations
- Server and corporate networks
- Storage systems
- Industrial automation
- Security systems
- Telecom systems

Technology

- VFI “online double conversion”

Certifications

RoHS COMPLIANT

High protection and availability

- True online double conversion technology (VFI) assures high availability and total load protection.
- Constant output voltage and frequency regulation makes ITYS compatible with different applications, operating environments and generator sets.
- Automatic bypass supplies the loads in the event of overloads or faults.

Robust and versatile

- Compact tower UPS system saves space in the operating environment.
- No particular configuration on first startup.
- Easy connections via IEC 320 sockets or terminals.
- Wide input voltage tolerance limits the switchovers to battery mode prolonging the battery life.
- Manual bypass for periodic or emergency maintenance.

Wide battery configurability

- Flexible battery management available for all ITYS models to ensure power supply continuity in the event of an outage.
- Modular battery extension meets a wide variety of power back-up times according to the load to be supplied.
- Modular battery extension enables limitless increases in autonomy, even after installation.
- Powerful battery charger models guarantee constant and reliable operation using external high capacity batteries, therefore providing supply continuity during long outages.

References

UPS with internal batteries (standard model)

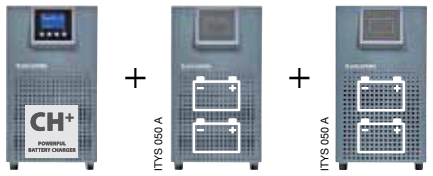
Power (VA)	Back-up time(1)	Number of sockets	Dimensions WxDxH (mm)	Weight (kg)	Reference
1000	11'	3	145x400x220	13	**ITY2-TW010B** ■
2000	17'	6	192x460x347	34	**ITY2-TW020B**
3000	10'	4	192x460x347	35	**ITY2-TW030B** ■
6000	15'	terminals	260x550x708	80	**ITY2-TW060B**
10000	9'	terminals	260x550x708	84	**ITY2-100B** ■

(1) @75% of rated load

UPS with internal batteries (standard model) + Modular battery extension with 2 string

Power (VA)	Back-up time(1)	Number of sockets	Dimensions WxDxH (mm)	Weight (kg)	Reference
1000	44 min	3	(x2) 145x400x220	13 + 19	**ITY2-TW010B + (x1) ITY2-EX010B**
2000	68 min	6	(x2) 192x460x347	34 + 47	**ITY2-TW020B + (x1) ITY2-EX030B**
3000	40 min	4	(x2) 192x460x347	35 + 47	**ITY2-TW030B + (x1) ITY2-EX030B**
6000	58 min	terminals	(x2) 260x550x708	80 + 129	**ITY2-TW060B + (x1) ITY2-EX100B**
10000	29 min	terminals	(x2) 260x550x708	84 + 129	**ITY2-TW100B + (x1) ITY2-EX100B**

(1) @75% of rated load



UPS without internal batteries and with powerful battery charger + Modular battery extension with 1 or 2 strings + Modular battery extension with 1 or 2 strings

Power (VA)	Back-up time(1)	Number of sockets	Dimensions WxDxH (mm)	Weight (kg)	Reference
1000	68 min	3	(x3) 145+400x220	7+19+19	**ITY2-TW010LB + (x2) ITY2-EX010B**
2000	96 min	6	(x3) 192x460x347	13+47+47	**ITY2-TW020LB + (x2) ITY2-EX030B**
3000	59 min	4	(x3) 192x460x347	13+47+47	**ITY2-TW030LB + (x2) ITY2-EX030B**
6000	83 min	terminals	(x3) 260x550x708	26+129+129	**ITY2-TW060LB + (x2) ITY2-EX100B**
10000	43 min	terminals	(x3) 260x550x708	30+129+129	**ITY2-TW100B + (x2) ITY2-EX100B**

(1) @75% of rated load

	Reference
Manual bypass for single unit for 1000 to 3000 VA UPS	**ENT-OP-PDU16**
Professional WEB/SNMP interface	**NET-VISION6CARD** ■
Dry-contact Interface	**ITY-OP-ADC** ■
ITYS relay board (5 relays)	**ITY-OP-5REL+ESD**

Reference in **green** are new products. ■ Stock items.

ITYS
Single-phase UPS
from 1 to 10 kVA

Technical data

	ITYS - UPS				
Reference	**ITY2-TW010B** ■	**ITY2-TW020B**	**ITY2-TW030B** ■	**ITY2-TW060B**	**ITY2-TW100B** ■
Sn	1000 VA	2000 VA	3000 VA	6000 VA	10000 VA
Pn	800 W	1600 W	2400 W	5400 W	9000 W
Input/output	1/1				
INPUT					
Rated voltage	230 V (110÷300 V)			230 V (176÷276 V)	
Rated frequency	50/60 Hz				
Power factor	0.98				
OUTPUT					
Rated voltage	208 / 220 / 230 / 240 V (± 2 %)			208 / 220 / 230 / 240 V (± 1 %)	
Rated frequency	50/60 Hz (45÷55 Hz/54÷66 Hz)				
Overload	Up to 150 % for 10 seconds			Up to 150 % for 1 minute	
Crest factor	3:1				
Connections	3 x IEC 320 (C13)	6 x IEC 320 (C13)	4 x IEC 320 (C13) + terminals	terminals	
BATTERIES					
Type	sealed lead-acid maintenance free - expected life 3/5 years				
Voltage	36 V DC	96 V DC		240 V DC	
Back-up time[1][2]	10 min	17 min	9 min	13 min	9 min
Battery charger[3]	8 A			4 A	
COMMUNICATION					
Interfaces	RS232 - USB			RS232 - USB - Dry contact	
Ethernet adapter	NET VISION (TCP/IP & SNMP) optional card				
Local communication software	Local View				
EFFICIENCY					
Online mode	up to 92 %				
ENVIRONMENT					
Ambient service temperature	0 °C to +40 °C (15 °C to 25 °C for maximum battery lifetime)				
Relative humidity	< 95 % non-condensing				
Maximum altitude	1000 m without de-rating				
Noise level at 1 m	< 50 dBA				< 55 dBA
UPS CABINET					
Dimensions W x D x H	145 x 400 x 220 mm	192 x 460 x 347 mm		260 x 550 x 708 mm	
Weight (models with internal batteries)	13 kg	34 kg	35 kg	80 kg	84 kg
Weight (models without internal batteries)	7 kg	13 kg	13 kg	26 kg	30 kg
Degree of protection	IP20				
STANDARDS					
Safety	IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2				
EMC	IEC/EN 62040-2, AS 62040.1				
Product declaration	CE, RCM (E2376)				

(1) @75 % of rated load (models with internal batteries) PF 0.7
(2) Models with internal batteries
(3) Models wthout batteries

Advanced communication

- Wide range of communication protocols available as options (including JBUS, TCP/IP and SNMP) for integration into LAN networks or building management systems (BMS).
- RS232 advanced connection for the management of power supply and local/remote shutdown of the applications with Windows®, Linux and Mac OS X® systems.
- USB port for direct interfacing with Windows® and Mac OS X® systems.
- Clear and uncluttered LCD interface for easy UPS monitoring, even for less specialist users.

ITYS 1-2-3 kVA

ITYS 6-10 kVA

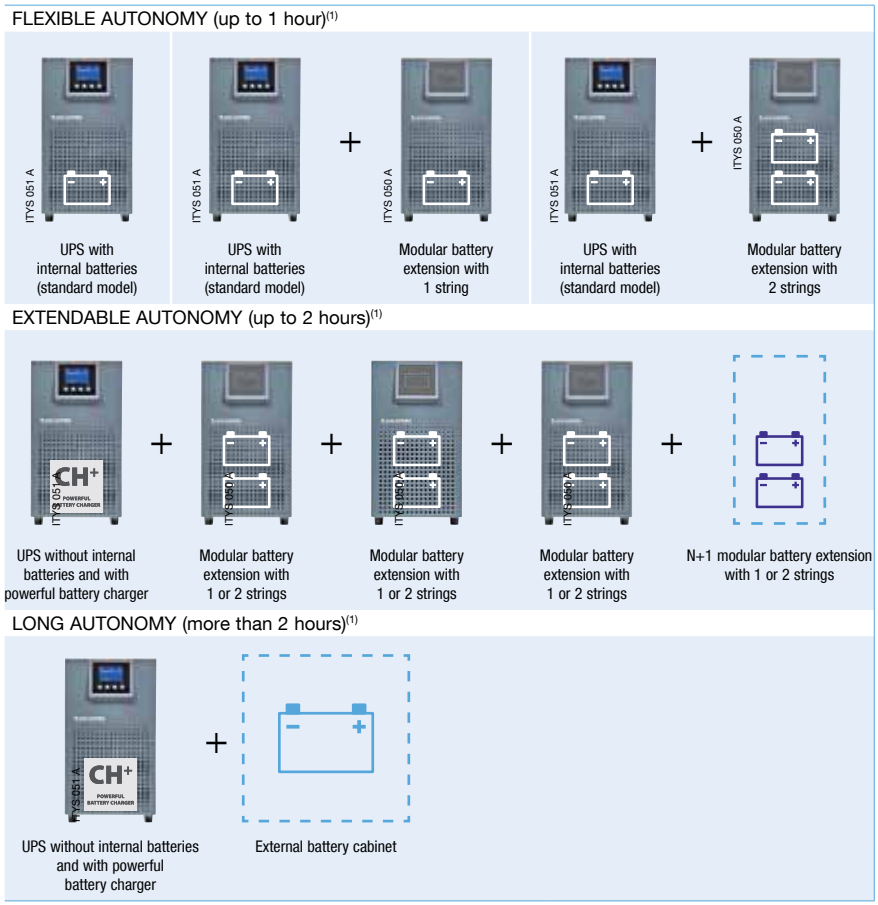
Local and IP network management solutions

- LOCAL VIEW: ideal point-to-point software for UPS monitoring and shutdown of Windows®, Linux and MAC OS X® operating systems (standard for all models).
- NET VISION: professional network adapter for monitoring and controlling UPS units from a remote location (option for all models).

Reference in **green** are new products. ■ Stock items.

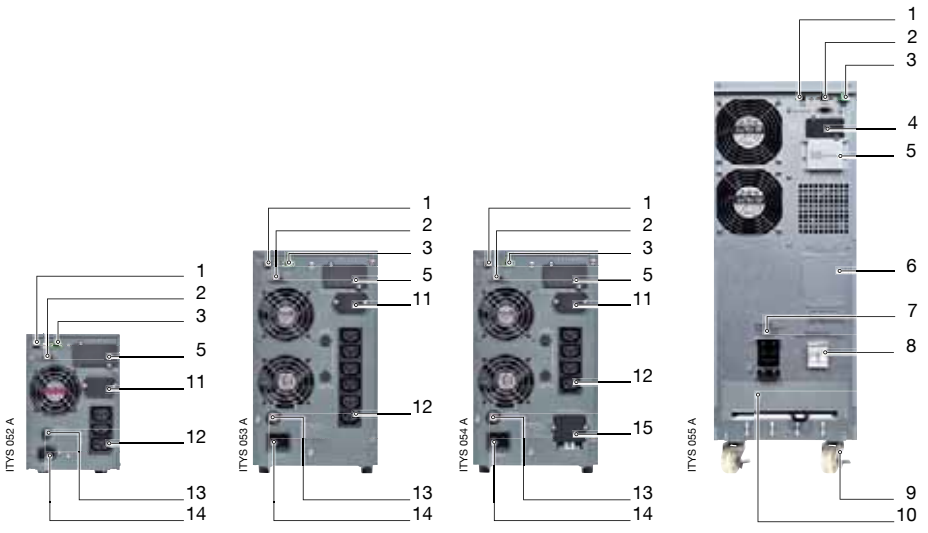
Battery configurations

- Flexible battery management available for all ITYS models to ensure power supply continuity in the event of an outage.
- Modular battery extension meets a wide variety of power back-up times according to the load to be supplied.
- Modular battery extension enables limitless increases in autonomy, even after installation.
- Powerful battery charger models guarantee constant and reliable operation using external high capacity batteries, therefore providing supply continuity during long outages.



(1) Depending on model and load.

Connections



ITYS 1 kVA | ITYS 2 kVA | ITYS 3 kVA | ITYS 6 - 10 kVA

1. USB serial port
2. RS232 serial port
3. EPO (Emergency Power Off)
4. Dry contact interface (DB9)
5. Slot for optional communication boards(1)
6. Manual bypass
7. Input protection (thermal breaker)
8. Battery fuse holder
9. Castor wheel with security lock
10. Input, output and external battery terminal board
11. Connection for modular battery extension
12. Output sockets (IEC 320)
13. Input protection
14. Input socket (IEC 320)
15. Output terminals

(1) Dry contact interface or WEB/SNMP network adapter.

ITYS PRO

Reliable cost-effective power protection
from 10 to 20 kVA

Single-phase and three-phase UPS

new

Compact, cost-effective protection

- Easy to order, install and operate.
- State-of-the-art technology providing high levels of performance in a very compact unit.
- Online double conversion mode with an output power factor of 0.9 providing 12% more active power compared to UPS with a power factor of 0.8.
- Best-in-class online efficiency.
- Innovative battery management extending battery life (virtually ZERO ripple on batteries).
- Redundant bypass protection reducing the risk of power cuts.
- Integrated LAN network monitoring via web browser. Multilanguage display.

Tailored to your environment

- Designed to operate in challenging electrical environments.
- Ideal for protecting sensitive IT and non-IT applications.
- Flexible battery configurability without changing the footprint.
- Low electromagnetic emissions compliant for commercial installations.

The solution for

> Server rooms
> Service sector
> Infrastructure
> Healthcare sector
> Light industrial applications

Technology

> VFI "online double conversion"

Advantages

95% EFFICIENCY

PF 0.9

3 LEVEL TECHNOLOGY

UPS configurations

UPS - Type S
Without batteries

UPS - Type M
With batteries

UPS - Type T
With batteries

socomec
Innovative Power Solutions

References

SINGLE-PHASE

Power (kVA)	Back-up time	IN / OUT 3/1	Dimensions WxDxH (mm)	Weight (kg)	Reference
10	14'	•	370x780x1170	146	ITYP110M91D
10	36'	•	370x780x1170	214	ITYP110M92D
10	58'	•	370x780x1385	289	ITYP110T93D

THREE-PHASE

Power (kVA)	Back-up time	IN / OUT 3/3	Dimensions WxDxH (mm)	Weight (kg)	Reference
10	14'	•	370x780x1170	142	ITYP310M91 ■
10	36'	•	370x780x1170	210	ITYP310M92
10	58'	•	370x780x1385	285	ITYP310T93
15	13'	•	370x780x1170	205	ITYP315M72
15	21'	•	370x780x1170	215	ITYP315M92
20	14'	•	370x780x1170	215	ITYP320M92
20	24'	•	370x780x1170	291	ITYP320T93 ■

	ITYS PRO		
Reference	ITYP110M91D ITYP310M91 ITYP110M92D ITYP310M92 ITYP110T93D ITYP310T93	ITYP315M72 ITYP315M92	ITYP320M92 ■ ITYP320T93 ■
Sn [kVA]	10	15	20
Pn [kW]	9	13.5	18
INPUT			
Rated voltage	3P+N 400 V		
Voltage tolerance	± 20 % (-40 % @ 70 % of nominal load)		
Rated frequency	50/60 Hz ± 10 %		
Power factor / THDI	0.99 / <2.5 %		
OUTPUT			
Rated voltage	1P+N : 230 V (configurable: 208[1]/220/230/240)		
	3P+N : 400 V (configurable: 360[1]/380/400/415)		
Voltage tolerance	± 1 %		
Rated frequency	50/60 Hz ±2 (up to ±5 with generator - selectable)		
Overload	Up to 150 % for 30 seconds		
Crest factor	3:1 (complying with IEC 62040-3)		
Connections (output)	Terminals		
BYPASS			
Rated voltage	rated output voltage		
Voltage tolerance	±15 % (± 20 % with generator - selectable)		
Rated frequency / tolerance	50/60 Hz ±2 (up to ±5 with generator - selectable)		
COMMUNICATION			
Interfaces	RS232 - Ethernet		
Optional cards	SNMP card - ADC/RS485 card - MODBUS card		
Communication software	LOCAL VIEW - NETVISION - WEB BROWSER		
EFFICIENCY			
Online mode	up to 95 %		
ECO mode	up to 98 %		
ENVIRONMENT			
Ambient temperature	0 to 40 °C (15 to 25 °C for maximum battery life)		
Relative humidity	0 to 95 % without condensation		
Maximum altitude	1000 m without derating		
Noise level at 1 m	<51 dBA	<54 dBA	
STANDARDS			
Safety	EN 62040-1, EN 60950-1, AS 62040.1.1, AS 62040.1.2		
EMC	IEC/EN 62040-2 class C2, AS 62040.2		
Performance	VFI-SS-111 - IEC/EN 62040-3 - AS 62040.3		
Product certification	CE, RCM (E2376)		

(1) Pout = 90 % Pnom

Standard electrical features

- Dual input mains (3/1 models).
- Internal maintenance bypass
- Backfeed protection : detection circuit.
- EBS (Expert Battery System) for battery management.

Standard communication features

- User-friendly multilingual interface with graphic display.
- Integrated LAN network monitoring via web browser.
- 2 slots for communication options.

Communication options

- Dry-contact interface.
- MODBUS interface.

Local and IP network management solutions

- LOCAL VIEW: ideal point-to-point software for UPS monitoring and shutdown of Windows®, Linux and MAC OS X® operating systems.
- NET VISION: professional network adapter for monitoring and controlling UPS units from a remote location (option for all models).

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Reference in **green** are new products. ■ Stock items.

MASTERYS BC

Reliable, simple and ready-to-use power protection from 30 to 120 kVA

The solution for

> Server rooms
> Service Sector
> Infrastructure
> Healthcare Sector
> Light industrial applications

Technology

> VFI “online double conversion”

Certifications

The ***MASTERYS BC*** series is certified by TÜV SÜD with regard to product safety (EN 62040-1).

A complete, cost-effective solution

- Online double conversion mode with an output power factor of 0.9 providing 12% more active power compare to UPS with a power factor of 0.8.
- Dual input mains allows you to manage independent power sources.
- Increased system availability placing two UPS in parallel for 1+1 redundancy.
- Internal manual bypass for easy maintenance without power interruption.
- Internal batteries providing more than 1 hour runtime.
- Multilanguage display.

Tailored to your environment

- Saves space with a reduced footprint and optimized cabinet size.
- Low noise level.
- Flexible battery solutions
- Compact, lightweight and easy to install.
- Extended battery life and performance with exclusive EBS battery charging management for increased battery life.

References 30 and 40 kVA

Power (kVA)	Back-up time	IN/OUT 3/3	Dimensions (mm) WxDxH	Weight (kg)	Reference
30	0	•	444x795x800	110	**MAS4BC330S-00**
30	13'	•	444x795x1000	310	**MAS4BC330M+92**
30	22'	•	444x795x1400	430	**MAS4BC330T+93**
30	34'	•	444x795x1400	535	**MAS4BC330T+94**
40	0	•	444x795x800	115	**MAS4BC340S-00**
40	8'	•	444x795x1000	315	**MAS4BC340M+92**
40	15'	•	444x795x1400	435	**MAS4BC340T+93**
40	22'	•	444x795x1400	540	**MAS4BC340T+94**

Technical data

	MASTERYS BC	
Reference	**MAS4BC330S-00 MASBC330M+92 MASBC330T+93 MASBC330T+94**	**MAS4BC340S-00 MASBC340M+92 MASBC340T+93 MASBC340T+94**
Sn [kVA]	30	40
Pn [kW]	27	36
Parallel configuration	1+1(1)	
INPUT		
Rated voltage	400 V 3ph + N	
Voltage tolerance	240 V to 480 V(2)	
Rated frequency	50/60 Hz ± 10%	
Power factor / THDI	0.99 / < 3%	
OUTPUT		
Rated voltage	3ph + N: 400 V (can be configured 380/415 V)	
Voltage tolerance	static load ±1 % dynamic load in accordance with VFI-SS-111	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable from 1% to 8%)	
Overload	125% for 10 minutes, 150% for 1 minute	
Crest factor	3:1	
BYPASS		
Rated voltage	rated output voltage	
Voltage tolerance	± 15% (configurable with from 10% to 20%)	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable for Genset compatibility)	
EFFICIENCY		
Online mode @ 100% of load	up to 94,5%	
ENVIRONMENT		
Operating ambient temperature	from 0 °C up to +40(2) °C (from 15 °C to 25 °C for maximum battery life)	
Relative humidity	0% - 95% without condensation	
Maximum altitude	1000 m without derating (max. 3000 m)	
Acoustic level at 1 m (ISO 3746)	< 55 dBA	
Degree of protection	IP20	
Colours	RAL 7012	
STANDARDS		
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3	
Product declaration	CE, RCM (E2376)	

(1) The standard model is prepared for a 1+1 redundant system. Upon request, it is possible to have connected up to 6 modules in a parallel system. (2) Conditions apply. (3) Without batteries.

Standard electrical features

- Dual input mains.
- Internal manual bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.

Electrical options

- External battery cabinet.
- External temperature sensor.
- Additional battery chargers.
- Galvanic isolation transformer.
- Parallel kit.
- ACS synchronization system.

Standard communication features

- MODBUS RTU.
- 2 slots for communication options.

Communication options

- Dry-contact interface.
- PROFIBUS.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Complementary pages

> Battery cabinets, page

Reference in **green** are new products. ■ Stock items.

MASTERYS BC

Three-phase UPS

from 30 to 120 kVA

References 60 and 80 kVA

Power (kVA)	Back-up time	IN/OUT 3/3	Dimensions (mm) WxDxH	Weight (kg)	Reference
60	External battery cabinet	•	444x895x1400	200	**MAS4BC360T-00**
80	External battery cabinet	•	444x895x1400	210	**MAS4BC380T-00**

Technical data

	MASTERYS BC	
Reference	**MAS4BC360T-00**	**MAS4BC380T-00**
Sn [kVA]	60	80
Pn [kW]	54	72
Parallel configuration	1+1(1)	
INPUT		
Rated voltage	400 V 3ph + N	
Voltage tolerance	240 V to 480 V(2)	
Rated frequency	50/60 Hz ± 10%	
Power factor / THDI	0.99 / < 3%	
OUTPUT		
Rated voltage	3ph + N: 400 V (can be configured 380/415 V)	
Voltage tolerance	static load ±1 % dynamic load in accordance with VFI-SS-111	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable from 1% to 8%)	
Overload	125% for 10 minutes, 150% for 1 minute	
Crest factor	3:1	
BYPASS		
Rated voltage	rated output voltage	
Voltage tolerance	± 15% (configurable with from 10% to 20%)	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable for Genset compatibility)	
EFFICIENCY		
Online mode @ 100 % of load	up to 94,5%	
ENVIRONMENT		
Operating ambient temperature	from 0 °C up to +40(2) °C (from 15 °C to 25 °C for maximum battery life)	
Relative humidity	0% - 95% without condensation	
Maximum altitude	1000 m without derating (max. 3000 m)	
Acoustic level at 1 m (ISO 3746)	< 62 dBA	
Degree of protection	IP20	
Colours	RAL 7012	
STANDARDS		
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3	
Product declaration	CE, RCM (E2376)	

(1) The standard model is prepared for a 1+1 redundant system. Upon request, it is possible to have connected up to 6 modules in a parallel system. (2) Conditions apply. (3) Without batteries.

Standard electrical features

- Internal manual bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.

Electrical options

- Dual input mains.
- External battery cabinet.
- External temperature sensor.
- Additional battery chargers.
- Galvanic isolation transformer.
- Parallel kit.
- ACS synchronization system.

Standard communication features

- MODBUS RTU.
- 2 slots for communication options.

Communication options

- Dry-contact interface.
- PROFIBUS.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Complementary pages

> Battery cabinets, page

Reference in **green** are new products. ■ Stock items.

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References 100 and 120 kVA

Power (kVA)	Back-up time	IN/OUT 3/1	IN/OUT 3/3	Dimensions (mm) WxDxH	Weight (kg)	Reference
100	External battery cabinet	•	•	700x845x1930	380	**MAS4BC+100-00**
120	External battery cabinet	•	•	700x845x1930	382	**MAS4BC+120-00**

Technical data

	MASTERYS BC	
References	**MAS4BC+100-00**	**MAS4BC+120-00**
Sn [kVA]	100	120
Pn [kW]	90	108
Parallel configuration	1+1(1)	
INPUT		
Rated voltage	400 V 3ph + N	
Voltage tolerance	240 V to 480 V(2)	
Rated frequency	50/60 Hz ± 10%	
Power factor / THDI	0.99 / < 3%	
OUTPUT		
Rated voltage	400 V (can be configured 380/415 V)	
Voltage tolerance	static load ±1 % dynamic load in accordance with VFI-SS-111	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable from 1% to 8%)	
Overload	125% for 10 minutes, 150% for 1 minute	
Crest factor	3:1	
BYPASS		
Rated voltage	rated output voltage	
Voltage tolerance	± 15% (configurable with from 10% to 20%)	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable for Genset compatibility)	
EFFICIENCY		
Online mode @ 100 % of load	up to 94,5%	
ENVIRONMENT		
Operating ambient temperature	from 0 °C up to +40(2) °C (from 15 °C to 25 °C for maximum battery life)	
Relative humidity	0% - 95% without condensation	
Maximum altitude	1000 m without derating (max. 3000 m)	
Acoustic level at 1 m (ISO 3746)	< 65 dBA	
UPS CABINET		
Degree of protection	IP20	
Colours	RAL 7012, silver grey frontal door	
STANDARDS		
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3	
Product declaration	CE, RCM (E2376)	

(1) The standard model is prepared for a 1+1 redundant system. Upon request, it is possible to have connected up to 6 modules in a parallel system.
(2) Conditions apply. (3) Without batteries.

Standard electrical features

- Dual input mains.
- Internal manual bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.

Electrical options

- External battery cabinet.
- External temperature sensor.
- Additional battery chargers.
- Galvanic isolation transformer.
- Parallel kit.
- ACS synchronization system.

Standard communication features

- MODBUS RTU.
- 2 slots for communication options.

Communication options

- Dry-contact interface.
- MODBUS TCP.
- PROFIBUS.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Reference in **green** are new products. ■ Stock items.

Battery cabinets

The value of your back-up time
from 30 to 120 kVA

Complementary pages

> MASTERYS BC

Total protection during downtime

- Designed to satisfy and respect safety protection standards (EN 50272-2 and EN 62040-1).
- The right size of protection device tailored to your power rating.
- Robust cabinet.
- Normal and long-life batteries.
- Compatible with different battery brands.
- Chemical safety means shelves protected against corrosion of H2SO4 that can cause risks of electric shock and short circuit (fire).
- Designed according to the specific UPS model for easy connections, correct recharge current and appropriate discharge rating to optimize battery life
- Modular hot-swap battery cabinets with string protection and individual string disconnection

Easy installation and maintenance

- Frontal switch/breaker protection.
- Frontal input output connections.
- Easy battery replacement.
- Suitable for rigid cables and cable-glands.
- Suitable for tripping coil contact (on request).
- Height aligned with UPS.

Electrical protection coordination for your safety

Battery protection is essential for safety.

We perform tests in our laboratories under abnormal conditions (i.e. short-circuit) to guarantee the maximum safety for the installation.

As batteries can cause fire if the protection is not adequate, we test all battery protections in real operating conditions.

- Switch/Breaker with fuse
- Magnetothermal MCCB

The protective devices are sized according to the UPS and to the battery short-circuit current.

Technical data

Standard degree of protection	IP20 (according to IEC 60529)
Optional degree of protection	IP32(1)
Operating temperature	0÷40 °C (+15 ÷ +25 °C recommended for long battery life(1))
Ambient storage and transport temperature	-5 °C ÷ +40 °C max (reccomended: 25 °C)
Relative humidity (condensation-free)	up to 95%
Conforms to standards	EN 50272-2, EN 62040-1
Product declaration	CE

(1) Versions with a higher degree of protection and versions with a wider operating temperature range are available on request.

Please contact SOCOMEC for specific battery brands and custom solutions.

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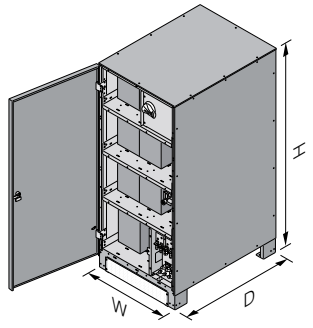
Dimensions

Small MASTERYS battery cabinet



References for MASTERYS BC 30-40 kVA

Back-up time (1)				Dimensions (mm) WxDxH	Weight (kg)	Reference
15 kVA	20 kVA	30 kVA	40 kVA			
66	42	25	17	600x840x1400	520	**1MBF40-026N4P**
69	46	26	18	600x840x1400	540	**1MBF42-026N4P**
73	50	27	19	600x840x1400	560	**1MBF44-026N4P**
82	57	30	22	600x840x1400	600	**1MBF48-026N4P**
96	70	40	27	600x840x1400	730	**1MBF40-040N4P**
101	73	43	29	600x840x1400	759	**1MBF42-040N4P**
105	77	46	31	600x840x1400	788	**1MBF44-040N4P**
116	86	52	34	600x840x1400	846	**1MBF48-040N4P**

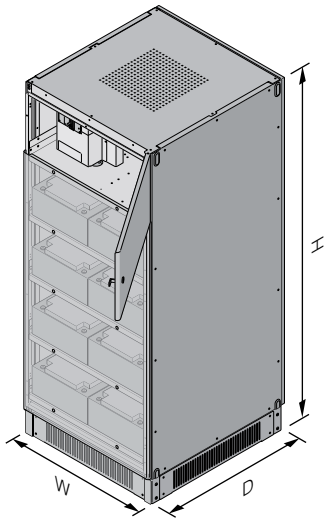
(1) at 80% load and PFout 0,69.

References for MASTERYS BC 60-80 kVA

Back-up time (1)		Dimensions (mm) WxDxH	Weight (kg)	Reference
60 kVA	80 kVA			
15	10	600x840x1400	730	**1MBF40-040N4F**
17	11	600x840x1400	788	**1MBF44-040N4F**

(1) at 80% load and PFout 0,69.

Big MASTERYS battery cabinet



References for MASTERYS BC 100-120 kVA (long life batteries)

Back-up time (1)		Dimensions (mm) WxDxH	Weight (kg)	Reference
100 kVA	120 kVA			
17	13	800x870x1930	1240	**1MBF40-070L4H**
29	23	800x870x1930	1660	**1MBF40-092L4H**
31	24	800x870x1930	1726	**1MBF42-092L4H**
33	26	800x870x1930	1792	**1MBF44-092L4H**

(1) at 80% load and PFout 0,69.

Reference in **green** are new products. ■ Stock items.

MASTERYS GP

High-efficiency protection without compromise

Green Power 2.0 range from 10 to 80 kVA/kW

Single-phase and three-phase UPS

GREEN 086 B - GAMME 125 B

The solution for

- Data centres
- Telecommunications
- Healthcare sector
- Service sector
- Infrastructure
- Industrial applications

Certifications

The ***MASTERYS GP*** series is certified by TÜV SÜD with regard to product safety (EN 62040-1).

Advantages

3 LEVEL TECHNOLOGY

96% EFFICIENCY

kW = kVA

Better performance than the EU Code of Conduct on efficiency of AC UPS

Energy saving + Full rated power = reduced TCO

Energy Saving: high efficiency without compromise

- Offers the highest efficiency in the market using VFI – Double Conversion Mode, the only UPS working-mode that assures total load protection against all mains quality problems.
- Ultra high efficiency output independently tested and verified by an international certification organization in a wide range of load and voltage operating conditions, to have the value in the real site conditions.
- Ultra high efficiency in VFI mode is provided by an innovative topology (3-Level technology) that has been developed for all the Green Power 2.0 UPS ranges.

Full-rated power: kW=kVA

- No power downgrading when supplying the latest generation of servers (leading or unity power factor).
- Real full power, according to IEC 62040: kW=kVA (unity power factor design) means 25% more active power available compared to legacy UPS.
- Suitable also for leading power factor loads down to 0.9 without apparent power derating.

Significant cost-saving (TCO)

- Maximum energy saving thanks to 96% efficiency in true double conversion mode: 50% saving on energy losses compared to legacy UPS gives significant savings in energy bill.
- UPS "self-paying" with energy saving.
- Energy Saver mode for global efficiency improvement on parallel systems.
- kW=kVA means maximum power available with the same UPS rating: no overdesign cost and therefore less €/kW.
- Upstream infrastructure cost optimization (sources and distribution), thanks to high performance IGBT rectifier.
- Battery configuration can be optimized, thanks to a very wide DC range.
- Extended battery life and performance:
  - long life battery,
  - very wide input voltage and frequency acceptance, without battery use.
- EBS (Expert Battery System) charging management improves battery service life.

References 10 and 20 KVA

Single-phase

Power (kVA)	Back-up time(1)	IN/OUT 3/1	Dimensions (mm) WxDxH	Weight (kg)	Reference
10	23'	•	444x795x800	190	**MGP4GP110S+C1**
10	39'	•	444x795x1000	295	**MGP4GP110M+B2**
10	63'	•	444x795x1400	410	**MGP4GP110T+B3**
15	13'	•	444x795x800	195	**MGP4GP115S+C1**
15	24'	•	444x795x1000	300	**MGP4GP115M+B2**
15	40'	•	444x795x1400	415	**MGP4GP115T+B3**
20	16'	•	444x795x800	300	**MGP4GP120M+B2**
20	28'	•	444x795x1000	415	**MGP4GP120T+B3**
20	40'	•	444x795x1400	520	**MGP4GP120T+B4**

Three-phase

Power (kVA)	Back-up time(1)	IN/OUT 3/1	Dimensions (mm) WxDxH	Weight (kg)	Reference
10	23'	•	444x795x800	190	**MGP4GP310S+C1**
10	39'	•	444x795x1000	295	**MGP4GP310M+B2**
10	63'	•	444x795x1400	410	**MGP4GP310T+B3**
15	0	•	444x795x800	94	**MGP4GP315S-00**
15	13'	•	444x795x800	190	**MGP4GP315S+C1**
15	23'	•	444x795x1000	295	**MGP4GP315M+B2**
20	0	•	444x795x800	94	**MGP4GP320S-00**
20	8'	•	444x795x800	190	**MGP4GP320S+C1**
20	16'	•	444x795x1000	295	**MGP4GP320M+C2**

This load approximate the most common situation (80% of the typical mixing linear / non-linear load).

Technical data

	MASTERYS GP		
Sn [kVA]	10	15	20
Pn [kW]	10	15	20
Parallel configuration	up to 6 units		
INPUT			
Rated voltage	400 V 3ph+N		
Voltage tolerance	240 V to 480 V(1)		
Rated frequency	50/60 Hz ± 10%		
Power factor / THDI	> 0.99 / < 2.5%		
OUTPUT			
Rated voltage	1ph + N: 230 V (can be configured 220/240 V) 3ph + N: 400 V (can be configured 380/415 V)		
Voltage tolerance	static load ±1 % dynamic load in accordance with VFI-SS-111		
Rated frequency	50/60 Hz		
Frequency tolerance	± 2% (configurable for GenSet compatibility)		
Total output voltage distortion - linear load	< 1%		
Total output voltage distortion - non-linear load	< 3%		
Overload	125% for 10 minutes, 150% for 1 minute(1)		
Crest factor	3:1		
BYPASS			
Rated voltage	rated output voltage		
Voltage tolerance	± 15% (configurable from 10% to 20%)		
Rated frequency	50/60 Hz		
Frequency tolerance	± 2%		
EFFICIENCY (TÜV SÜD verified)			
Online mode @ 50 % of load	up to 96%		
Online mode @ 75 % of load	up to 96%		
Online mode @ 100 % of load	up to 96%		
Eco Mode	up to 98%		
ENVIRONMENT			
Operating ambient temperature	from 0 °C up to +40(1) °C (from 15 °C to 25 °C for maximum battery life)		
Relative humidity	0% - 95% without condensation		
Maximum altitude	1000 m without derating (max. 3000 m)		
Acoustic level at 1 m (ISO 3746)	< 52 dBA		
UPS CABINET			
Degree of protection	IP20		
Colours	RAL 7012		
STANDARDS			
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2		
EMC	IEC/EN 62040-2, AS 62040.2		
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3		
Product declaration	CE, RCM (E2376)		

(1) Conditions apply.

Standard electrical features

- Dual input mains.
- Internal maintenance bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.
- Battery temperature sensor.

Electrical options

- External maintenance bypass.
- External battery cabinet.
- Additional battery chargers.
- Galvanic isolation transformer.
- Parallel kit.
- ACS synchronization system.

Standard communication features

- User-friendly multilingual interface with color graphic display.
- Commissioning wizard.
- 2 slots for communication options.
- MODBUS TCP.
- MODBUS RTU.
- Embedded LAN interface (web pages, email).

Communication options

- Dry-contact interface.
- PROFIBUS.
- BACnet/IP interface.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Reference in **green** are new products. ■ Stock items.

MASTERYS GP

Three-phase UPS

Green Power 2.0 range from 10 to 80 kVA

References 30 and 40 kVA

Power (kVA)	Back-up time[1]	IN/OUT 3/3	Dimensions (mm) WxDxH	Weight (kg)	Reference
30	0	•	444x795x800	115	**MGP4GP330S-00**
30	13'	•	444x795x1000	315	**MGP4GP330M+C2**
30	23'	•	444x795x1400	435	**MGP4GP330T+C3**
30	36'	•	444x795x1400	540	**MGP4GP330T+C4**
40	0	•	444x795x800	120	**MGP4GP340S-00**
40	8'	•	444x795x1000	320	**MGP4GP340M+C2**
40	15'	•	444x795x1400	440	**MGP4GP340T+C3**
40	23'	•	444x795x1400	545	**MGP4GP340T+C4**

This load approximate the most common situation (80% of the typical mixing linear / non-linear load).

Technical data

	MASTERYS GP	
References	**MGP4GP330S-00 MGP4GP330M+C2 MGP4GP330T+C3 MGP4GP330T+C4**	**MGP4GP340S-00 MGP4GP340M+C2 MGP4GP340T+C3 MGP4GP340T+C4**
Sn [kVA]	30	40
Pn [kW]	30	40
Parallel configuration	up to 6 units	
INPUT		
Rated voltage	400 V 3ph+N	
Voltage tolerance	240 V to 480 V[1]	
Rated frequency	50/60 Hz ± 10%	
Power factor / THDI	> 0.99 / < 2.5%	
OUTPUT		
Rated voltage	3ph + N: 400 V (can be configured 380/415 V)	
Voltage tolerance	static load ±1 % dynamic load in accordance with VFI-SS-111	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable for GenSet compatibility)	
Total output voltage distortion - linear load	< 1%	
Total output voltage distortion - non-linear load	< 3%	
Overload	125% for 10 minutes, 150% for 1 minute[1]	
Crest factor	3:1	
BYPASS		
Rated voltage	rated output voltage	
Voltage tolerance	± 15% (configurable from 10% to 20%)	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2%	
EFFICIENCY (TÜV SÜD verified)		
Online mode @ 50 % of load	up to 96%	
Online mode @ 75 % of load	up to 96%	
Online mode @ 100 % of load	up to 96%	
Eco Mode	up to 98%	
ENVIRONMENT		
Operating ambient temperature	from 0 °C up to +40[1] °C (from 15 °C to 25 °C for maximum battery life)	
Relative humidity	0% - 95% without condensation	
Maximum altitude	1000 m without derating (max. 3000 m)	
Acoustic level at 1 m (ISO 3746)	< 55 dBA	
Degree of protection	IP20	
Colours	RAL 7012	
STANDARDS		
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3	
Product declaration	CE, RCM (E2376)	

(1) Conditions apply.

Standard electrical features

- Dual input mains.
- Internal maintenance bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.
- Battery temperature sensor.

Electrical options

- External maintenance bypass.
- External battery cabinet.
- Additional battery chargers.
- Galvanic isolation transformer.
- Parallel kit.
- ACS synchronization system.

Standard communication features

- User-friendly multilingual interface with color graphic display.
- Commissioning wizard.
- 2 slots for communication options.
- MODBUS TCP.
- MODBUS RTU.
- Embedded LAN interface (web pages, email).

Communication options

- Dry-contact interface.
- PROFIBUS.
- BACnet/IP interface.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Reference in **green** are new products. ■ Stock items.

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References 60 and 80 kVA

Power (kVA)	Back-up time	IN/OUT 3/3	Dimensions (mm) WxDxH	Weight (kg)	Reference
60	External battery cabinet	•	600x800x1400	180	**MAG4GP360T-00**
80	External battery cabinet	•	600x800x1400	200	**MGP4GP380T-00**

Technical data

	MASTERYS GP	
References	**MGP4GP360T-00**	**MGP4GP380T-00**
Sn [kVA]	60	80
Pn [kW]	60	80
Parallel configuration	up to 6 units	
INPUT		
Rated voltage	400 V 3ph+N	
Voltage tolerance	240 V to 480 V(1)	
Rated frequency	50/60 Hz ± 10%	
Power factor / THDI	> 0.99 / < 2.5%	
OUTPUT		
Rated voltage	3ph + N: 400 V (can be configured 380/415 V)	
Voltage tolerance	static load ±1 % dynamic load in accordance with VFI-SS-111	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable for GenSet compatibility)	
Total output voltage distortion - linear load	< 1%	
Total output voltage distortion - non-linear load	< 3%	
Overload	125% for 10 minutes, 150% for 1 minute(1)	
Crest factor	3:1	
BYPASS		
Rated voltage	rated output voltage	
Voltage tolerance	± 15% (configurable from 10% to 20%)	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2%	
EFFICIENCY (TÜV SÜD verified)		
Online mode @ 50 % of load	up to 96%	
Online mode @ 75 % of load	up to 96%	
Online mode @ 100 % of load	up to 96%	
Eco Mode	up to 98%	
ENVIRONMENT		
Operating ambient temperature	from 0 °C up to +40(1) °C (from 15 °C to 25 °C for maximum battery life)	
Relative humidity	0% - 95% without condensation	
Maximum altitude	1000 m without derating (max. 3000 m)	
Acoustic level at 1 m (ISO 3746)	< 60 dBA	
Degree of protection	IP20	
Colours	RAL 7012	
STANDARDS		
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3	
Product declaration	CE, RCM (E2376)	

(1) Conditions apply.

Standard electrical features

- Dual input mains.
- Internal maintenance bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.
- Battery temperature sensor.

Electrical options

- External maintenance bypass.
- External battery cabinet.
- Additional battery chargers.
- Galvanic isolation transformer.
- Parallel kit.
- ACS synchronization system.

Standard communication features

- User-friendly multilingual interface with color graphic display.
- Commissioning wizard.
- 2 slots for communication options.
- MODBUS TCP.
- MODBUS RTU.
- Embedded LAN interface (web pages, email).

Communication options

- Dry-contact interface.
- PROFIBUS.
- BACnet/IP interface.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Reference in **green** are new products. ■ Stock items.

MASTERYS GP

High-efficiency protection without compromise

Green Power 2.0 range from 100 to 120 kVA

Three-phase UPS

The solution for

- Data centres
- Telecommunications
- Healthcare sector
- Service sector
- Infrastructure
- Industrial applications

Certifications

The ***MASTERYS GP*** series is certified by TÜV SÜD with regard to product safety (EN 62040-1).

Advantages

3 LEVEL

96%

kW = kVA

Better performance than the EU Code of Conduct on efficiency of AC UPS

Complementary pages

- Battery cabinets, page

Energy saving + Full rated power = reduced TCO

Energy Saving: high efficiency without compromise

- Offers the highest efficiency in the market using VFI – Double Conversion Mode, the only UPS working-mode that assures total load protection against all mains quality problems.
- Ultra high efficiency output independently tested and verified by an international certification organization in a wide range of load and voltage operating conditions, to have the value in the real site conditions.
- Ultra high efficiency in VFI mode is provided by an innovative topology (3-Level technology) that has been developed for all the Green Power 2.0 UPS ranges.

Full-rated power: kW=kVA

- No power downgrading when supplying the latest generation of servers (leading or unity power factor).
- Real full power, according to IEC 62040: kW=kVA (unity power factor design) means 25% more active power available compared to legacy UPS.
- Suitable also for leading power factor loads down to 0.9 without apparent power derating.

Significant cost-saving (TCO)

- Maximum energy saving thanks to 96% efficiency in true double conversion mode: 50% saving on energy losses compared to legacy UPS gives significant savings in energy bill.
- UPS "self-paying" with energy saving.
- Energy Saver mode for global efficiency improvement on parallel systems.
- kW=kVA means maximum power available with the same UPS rating: no overdesign cost and therefore less €/kW.
- Upstream infrastructure cost optimization (sources and distribution), thanks to high performance IGBT rectifier.
- Battery configuration can be optimized, thanks to a very wide DC range.
- Extended battery life and performance:
  - long life battery,
  - very wide input voltage and frequency acceptance, without battery use.
- EBS (Expert Battery System) charging management improves battery service life.

References 100 and 120 KVA

Power (kVA)	Back-up time	IN/OUT 3/3	Dimensions (mm) WxDxH	Weight (kg)	Reference
100	External battery cabinet	•	700x845x1930	380	**MAG4GP+100-00**
120	External battery cabinet	•	700x845x1930	380	**MGP4GP+120-00**

Technical data

	MASTERYS GP	
References	**MGP4GP+100-00**	**MGP4GP+120-00**
Sn [kVA]	100	120
Pn [kW]	100	120
Parallel configuration	up to 6 units	
INPUT		
Rated voltage	400 V 3ph+N	
Voltage tolerance	240 V to 480 V(1)	
Rated frequency	50/60 Hz ± 10%	
Power factor / THDI	> 0.99 / < 2.5%	
OUTPUT		
Rated voltage	3ph + N: 400 V (can be configured 380/415 V)	
Voltage tolerance	static load ±1 % dynamic load in accordance with VFI-SS-111	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2% (configurable for GenSet compatibility)	
Total output voltage distortion - linear load	< 1%	
Total output voltage distortion - non-linear load	< 3%	
Overload	125% for 10 minutes, 150% for 1 minute(1)	
Crest factor	3:1	
BYPASS		
Rated voltage	rated output voltage	
Voltage tolerance	± 15% (configurable from 10% to 20%)	
Rated frequency	50/60 Hz	
Frequency tolerance	± 2%	
EFFICIENCY (TÜV SÜD verified)		
Online mode @ 50 % of load	up to 96%	
Online mode @ 75 % of load	up to 96%	
Online mode @ 100 % of load	up to 96%	
Eco Mode	up to 98%	
ENVIRONMENT		
Operating ambient temperature	from 0 °C up to +40(1) °C (from 15 °C to 25 °C for maximum battery life)	
Relative humidity	0% - 95% without condensation	
Maximum altitude	1000 m without derating (max. 3000 m)	
Acoustic level at 1 m (ISO 3746)	< 65 dBA	
STANDARDS		
Safety	IEC/EN 62040-1 (TÜV SÜD certified), EN 60950-1, AS 62040.1.1, AS 62040.1.2	
EMC	IEC/EN 62040-2, AS 62040.2	
Performance	VFI-SS-111 - IEC/EN 62040-3, AS 62040.3	
Product declaration	CE, RCM (E2376)	

(1) Conditions apply.

Standard electrical features

- Dual input mains.
- Internal maintenance bypass.
- Backfeed protection: detection circuit.
- EBS (Expert Battery System) for battery management.
- Battery temperature sensor.

Electrical options

- External maintenance bypass.
- External battery cabinet.
- Additional battery chargers.
- Galvanic isolation transformer.
- Parallel kit.
- ACS synchronization system.

Standard communication features

- User-friendly multilingual interface with color graphic display.
- Commissioning wizard.
- 2 slots for communication options.
- MODBUS TCP.
- MODBUS RTU.
- Embedded LAN interface (web pages, email).

Communication options

- Dry-contact interface.
- PROFIBUS.
- BACnet/IP interface.
- NET VISION: professional WEB/SNMP interface for UPS monitoring and shutdown management of several operating systems.

Remote monitoring service

- LINK-UPS, remote monitoring service that connects your UPS to your Critical Power specialist 24/7.

Reference in **green** are new products. ■ Stock items.

Battery cabinets

The value of your back-up time
from 15 to 120 kVA

Complementary pages

> MASTERYS GP

Total protection during downtime

- Designed to satisfy and respect safety protection standards (EN 50272-2 and EN 62040-1).
- The right size of protection device tailored to your power rating.
- Robust cabinet.
- Normal and long-life batteries.
- Compatible with different battery brands.
- Chemical safety means shelves protected against corrosion of H2SO4 that can cause risks of electric shock and short circuit (fire).
- Designed according to the specific UPS model for easy connections, correct recharge current and appropriate discharge rating to optimize battery life
- Modular hot-swap battery cabinets with string protection and individual string disconnection

Easy installation and maintenance

- Frontal switch/breaker protection.
- Frontal input output connections.
- Easy battery replacement.
- Suitable for rigid cables and cable-glands.
- Suitable for tripping coil contact (on request).
- Height aligned with UPS.

Electrical protection coordination for your safety

Battery protection is essential for safety.

We perform tests in our laboratories under abnormal conditions (i.e. short-circuit) to guarantee the maximum safety for the installation.

As batteries can cause fire if the protection is not adequate, we test all battery protections in real operating conditions.

- Switch/Breaker with fuse
- Magnetothermal MCCB

The protective devices are sized according to the UPS and to the battery short-circuit current.

Technical data

Standard degree of protection	IP20 (according to IEC 60529)
Optional degree of protection	IP32(1)
Operating temperature	0÷40 °C (+15 ÷ +25 °C recommended for long battery life(1))
Ambient storage and transport temperature	-5 °C ÷ +40 °C max (reccomended: 25 °C)
Relative humidity (condensation-free)	up to 95%
Conforms to standards	EN 50272-2, EN 62040-1
Product declaration	CE

(1) Versions with a higher degree of protection and versions with a wider operating temperature range are available on request.

Please contact SOCOMEC for specific battery brands and custom solutions.

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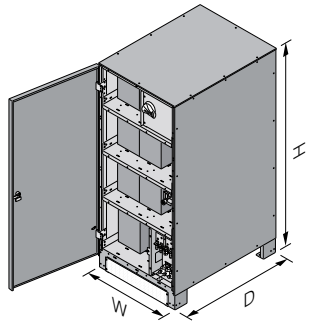
Dimensions

Small MASTERYS battery cabinet



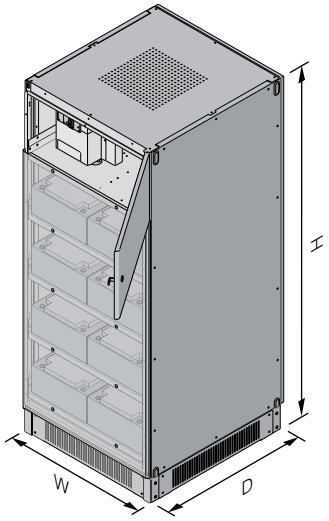
References for MASTERYS GP 30-40 kVA (long life batteries)

Back-up time[1]				Dimensions (mm) WxDxH	Weight (kg)	Reference
15 kVA	20 kVA	30 kVA	40 kVA			
67	43	25	18	600x840x1400	520	**1MBF40-025L4P**
71	48	26	19	600x840x1400	540	**1MBF42-025L4P**
75	52	27	20	600x840x1400	560	**1MBF44-025L4P**
84	59	32	23	600x840x1400	600	**1MBF48-025L4P**
98	71	41	28	600x840x1400	730	**1MBF40-040L4P**
103	75	44	30	600x840x1400	759	**1MBF42-040L4P**
107	79	48	32	600x840x1400	788	**1MBF44-040L4P**
119	88	54	35	600x840x1400	846	**1MBF48-040L4P**

References for MASTERYS GP 60-80 kVA (long life batteries)

Back-up time[1]		Dimensions (mm) WxDxH	Weight (kg)	Reference
60 kVA	80 kVA			
16	10	600x840x1400	730	**1MBF40-040L4F**
18	12	600x840x1400	788	**1MBF44-040L4F**

MASTERYS Battery cabinet



References for MASTERYS GP 100-120 kVA (long life batteries)

Back-up time[1]		Dimensions (mm) WxDxH	Weight (kg)	Reference
100 kVA	120 kVA			
17	13	800x870x1930	1240	**1MBF40-070L4H**
29	23	800x870x1930	1660	**1MBF40-092L4H**
31	24	800x870x1930	1726	**1MBF42-092L4H**
33	26	800x870x1930	1792	**1MBF44-092L4H**

(1) at 80% load and PFout 0,69.

Reference in **green** are new products. ■ Stock items.

STATYS

Redundant design for power availability and site maintainability

hot-swap Static Transfer Systems from 32 to 100 A

Single-phase and three-phase STS

The solution for

- Finance, banking and insurance
- Healthcare sector
- Telecom & Broadcasting
- Industry
- Power generation plants
- Transport

STATYS provides

- High reliability - internal redundant design. Flexibility and adaptability to various types of applications.
- Compact design: saves up to 40% of valuable space.
- Operational security and ease of use Remote data access in real time and from any location.
- Full support and service.

Static Transfer Switch: user benefits

Supplied by two independent alternate sources, STATYS:

- Provides redundant power supply to mission critical loads.
- Increases the power supply availability by choosing the best power supply quality.
- Prevents fault propagation.
- Allows easy extension and easy infrastructure design, ensuring high availability of the power supply to critical applications.
- Facilitates installation and maintenance procedures.

STATYS also provides protection against:

- Main power source outage.
- Failures in the upstream power distribution system.
- Failures caused by faulty equipment supplied by the same source.
- Operator errors.

Flexibility

STATYS offers a wide range of three-phase systems that suits all types of applications and power supply systems.

Dual or single cord servers, linear or non-linear loads, IT or electromechanics are just some of the load types that STATYS can supply. Wherever a smart power source is needed, whether for existing or new electrical plants, STATYS can be easily installed and efficiently supply the load.

It is available in:

- 2 wires with neutral switching, to be connected between phase/neutral or phase/phase.
- 3 wires arrangement without neutral,

- for reduced cable costs,
- for local zoning of the applications by using insulating transformers,

- 4 wires three-phase arrangement with neutral, with or without neutral pole switching,

STATYS offers:

- Flexible digital control capacity that can adapt to any operational or electrical environment conditions,
- Capability to manage synchronised and non-synchronised sources according to load specificity,
- Advanced Transformer Switching Management (ATSM). If the upstream network has no distributed neutral cable, two upstream transformers or one downstream transformer can be added to create a neutral reference point at the output. For the downstream solution, STATYS, thanks to ATSM, correctly manages the switching to limit inrush current and avoid the risk of spurious protection tripping.

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High reliability - Internal redundant design

STATYS increases the overall availability of the system during abnormal events and programmed maintenance. It allows plant segmentation and intelligent fault management, therefore increasing the global uptime of the supplied system.

Other features include:

- Redundant control system using double microprocessor control boards.
- Dual redundant power supplies for control boards.
- Individual control board with redundant power supply for each SCR path.
- Redundant cooling with fan failure monitoring.
- 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.
- 24/7/365 real-time remote monitoring.

References

	Rated current	Reference
Single phase		
2 poles / 2 poles switching	32 A	**3210 032002**
	63 A	**3210 063002**
Three phase		
3 poles / 3 poles switching	63 A	**3230 063010**
	100 A	**3230 100010**
Three phase + neutral		
4 poles / 3 poles switching	63 A	**3230 063011**
	100 A	**3230 100011**
4 poles / 4 poles switching	63 A	**3230 063012**
	100 A	**3230 100012**

Note: The number of switching poles has to be chosen according the neutral system.

Technical data

	STATYS			
Reference	**3210 032002**	**3210 063002**	**3230 063010 3230 063011 3230 063012**	**3230 100010 3230 100011 3230 100012**
Rated current (A)	32	63	63	100
ELECTRICAL SPECIFICATIONS				
Rated voltage	220-240 V		380-415 V	
Voltage tolerance	10% (configurable)			
Rated frequency	50-60 Hz			
Frequency tolerance	+5 Hz (configurable)			
Maintenance bypass	Interlocked and secured			
Overload	150 % for 2 minutes -110 % for 60 minutes			
Efficiency	99 %			
Admissible power factor	No restrictions			
ENVIRONMENT				
Operating temperature	0-40 °C			
Relative humidity	95%			
Maximum altitude	1000 m a.s.l. without derating			
Cooling	Forced ventilation			
Acoustic level at 1m (ISO 3746)	< 45 dBA			
MECHANICAL SPECIFICATIONS				
Dimensions WxDxH	483 (19") x 747 x 89 (2U)		483 (19") x 648 x 89 (9U)	
Weight	26 kg		58 kg	
Degree of Protection	IP30			

Remote data access in real time and from any location

Its advanced communication capabilities make STATYS easily integrable in the existing monitoring and control infrastructures.

STATYS fulfils LAN connectivity prerequisites and plug and play modular communication Com Slot for:

- Remote connection for monitoring.
- Remote maintenance.
- Customer's Building Management System (BMS) integration.

Standard features

- Smart commutation system configurable according to the load.
- Output fault sensing.
- Internal CAN Bus.
- Double maintenance bypass.
- Neutral oversizing for non-linear loads compatibility.

Standard communication features

- Ethernet network connection (WEB/SNMP/eMail/MODBUS TCP).
- Dry-contact interface.
- Flexible Com Slots.
- LCD Mimic Panel.
- Full digital configuration and setting.

Options

- Additional dry contacts interface board.
- MODBUS RTU.
- Voltage adaptation.
- Fuse protected design.
- Other ratings and configurations, please consult us.

ASYS

Compact 19" transfer switch for power redundancy

16 A, 19" Rack mounted

Automatic Transfer System

The solution for

> Rack servers
> IT applications
> Routers, switches, hubs, etc

Advantages

RoHS COMPLIANT

Rack automatic system for IT networks

The ASYS automatic transfer system provides reliable redundant power to single corded IT equipment.

It performs an automatic and seamless transfer of the critical load to an alternate source in case of preferred source corruption.

The transfer is carried out without source overlapping.

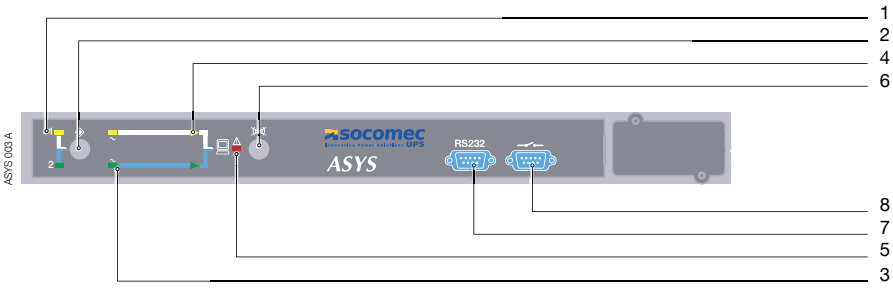
Continuity of service for critical applications

- Located as close as possible to the application, ASYS allows for a highly accessible architecture.
- ASYS has been designed to be easily installed near sensitive applications, to fit into 19" racks.

Easy site operation

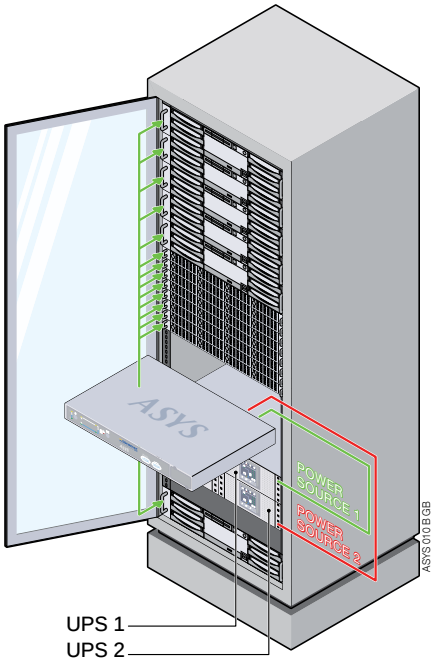
- Easy changing of the preferred supply path without modifying the cabling.
- Carried out by the operator and secured by the automatic control, ASYS switches the load from one path to the other.
- Provides redundant power supply to single corded equipment, servers, routers, switches, hubs, etc.
- Powered by two separate independent sources (UPS).
- Permanent source monitoring.
- Automatic switching to alternate source.
- Synchronised and non-synchronised source management
- Preferred source selection on front panel.
- Fast switching with synchronised or out of phase sources.
- Compact 19" rack 1U system.

Front view



1. Preferred source indication
2. Preferred source selection
3. Input source status
4. Supplying source
5. General alarm
6. Buzzer acknowledge
7. RS232 communication port (MODBUS RTU)
8. Dry contacts communication port

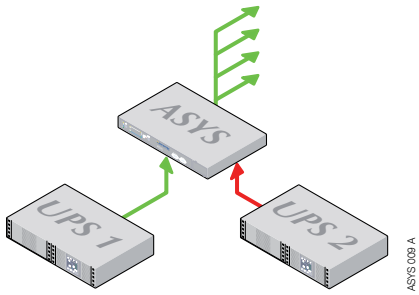
Application Rack



Reference and technical data

	ASYS
Reference	**ASYS16A-230**
INPUT	
Rated voltage	220/230/240 V (selectable)
Voltage tolerance	±12%
Rated frequency	50/60 Hz (auto sensing)
Frequency tolerance	±15%
Rated current	16 A
OUTPUT	
Rated voltage	220/230/240 V (selectable)
Voltage tolerance	±12%
Rated frequency	50/60 Hz
Frequency tolerance	±15%
Rated current	16 A
Transfer time	6 ms (typical), ≤ 15 ms (maximum)
CONNECTION	
Input	2 x IEC 320-C20
Output	1 x IEC 320-C19 2 x 3 output IEC 320-C13
Communication	5 dry contacts, RS232
ENVIRONMENT	
Operating ambient temperature	0 to 40 °C
Relative humidity	20% - 85% without condensation
Maximum altitude	≤ 1000 m without derating
Acoustic level at 1 m (ISO 3746)	< 25 dBA
Cooling	Natural
MECHANICAL SPECIFICATIONS	
Dimensions W x D x H	430 (19") x 315 x 44 mm (1U)
Weight	5 kg
Degree of protection	IP30
Colours	Pantone 432C

Example of possible architecture



MODULYS GP
ATEX
Q6
Q1
socomec

Maintenance & professional services

Prevention and service operations

Preventive maintenance ..... p. 218
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Measurement and analysis

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Optimisation

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Consultancy, deployment & training

Project consultancy ..... p. 234
Commissioning & on-site test ..... p. 235
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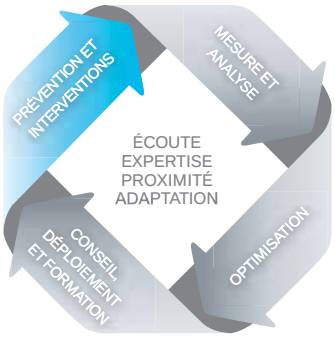
Preventive maintenance

Improving reliability and durability of your Critical Power equipment

The service life of the UPS depends on various factors such as load specifications (percentage, linearity and variability) and the operating environment (temperature, humidity, level of pollution).

To keep the UPS running at maximum levels of efficiency and to avoid system downtime with possible risks and damage to loads, it is important to have the manufacturer's expertise to perform regular preventive maintenance.

This is the best way to ensure the reliability of your equipment over time and the most cost-effective solution to keep the Total Cost of Ownership under control.



Key points

- Inspections: mechanical, electrical, battery
- Dust removal/equipment cleaning
- Software updates
- Electronics testing
- Environmental checks
- Battery check
- Maintenance report

Benefits

- Helps reduce equipment malfunction
- Optimises operating efficiency
- Extends equipment lifetime
- Improves system availability

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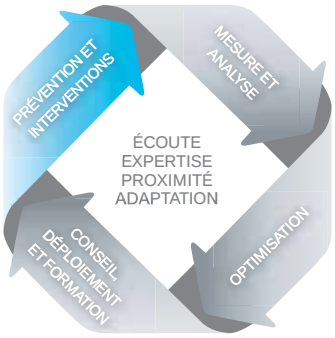
Emergency service 24/7

Guaranteed response to all unforeseen events

SITE 588 A

The response time is vital for business continuity and to limit as much as possible any downtime in case of a severe system anomaly.
It is therefore essential to have the expertise of a maintenance supplier who fully understands your equipment and knows your working environment and who can respond to emergencies within a time guaranteed by a bespoke Service Level Agreement (SLA).
Proximity and emergency service carried out by the manufacturer are the best guarantees for fast troubleshooting and real problem solving.



Key points

> Specialist team of engineers on call 24/7
> Technical expertise on-site within 4 hours* guaranteed
> Remote monitoring and proactive troubleshooting
> Corrective maintenance with original spare parts
> 24/7 spare part stock availability with high priority shipment

** Please check the service coverage in your area.*

Benefits

> Quality technical support
> Fast and precise diagnostic
> Real problem solving

Maintenance service packages

A broad range of solutions to suit all your needs

APPLI 707 A

The Maintenance service packages which combine the advantages of preventive maintenance and emergency service 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 packages suitable for users of UPS Standard, UPS modular, UPS in data centres and changeover switches has 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	PLATINIUM	PLATINIUM+	REGULAR	PREMIUM	EVO PACK	PRISM
Standard UPS system	•	•	•	•				
Modular & scalable UPS system					•	•	•	
UPS system for data centres								•
Transfer switches	•	•	•	•				

3-YEAR MAINTENANCE CONTRACT (WARRANTY INCLUSIVE)

new

After commissioning, critical applications may require special maintenance services and committed Service Level Agreements, even during the warranty period as the standard warranty may not achieve the required level of SLA.

To meet these needs, the Maintenance service packages can include the «3-year Warranty Inclusive» option, giving you all the maintenance package benefits from the commissioning, and at a special rate in recognition of your loyalty.

A further advantage:

the same rate will be applied for the following 3-years renewal period.

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Maintenance service packages

For your standard Critical Power equipment

Silver, Gold, Platinum and Platinum+ are the Maintenance service packages suitable for standard UPS.
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	•	•	•	•
Battery Check	•	•	•	•
Labour & Mileage for corrective maintenance		•	•	•
Original spare parts			•	•
Hot-line availability	•	•	•	•
Emergency hot-line 24 / 7	o	o	o	•
Response Time to Site within Next working day	•	•	•	
Response Time to Site within 6h*	o	o	o	•
Response Time to Site within 4h*	o	o	o	o
Preventive Replacement of Consumables (fans and capacitors, excluding batteries)	o	o	o	o
UPS Remote Monitoring (LINK-UPS) Remote check-up + Proactive troubleshooting + Report	o	o	o	o
Additional Preventive Maintenance Visit	o	o	o	o
Out of hours preventive maintenance visit during night, week-end, bank holidays	o	o	o	o
Thermal Imaging	o	o	o	o
Power Quality audit	o	o	o	o
3-year Warranty inclusive	o	o	o	o new
Changeover switches Inspection Visit	o	o	o	o new

** Please check the service coverage in your area.*

•: included.
o: optional.

UPS Rental

All-inclusive solution for immediate Critical Power needs

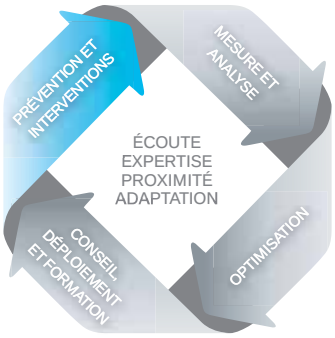
SITE 789 A

For guaranteed high quality, uninterrupted electrical energy - where and when you need it most - SOCOMEC UPS Rental is the ideal short-term critical power solution for rapid response deployment.

Immediate UPS availability: over 200 standard UPS across all power ranges (from 1 to 500kVA) are in-stock, ready to be fast-tracked to your site.

Flexible rental options: because every situation is unique, SOCOMEC offers a flexible approach to rental periods, from just one week up to several months and beyond – with easy extension options.

All-Inclusive solution: as the industry experts, SOCOMEC will take care of all aspects of the UPS shipping, commissioning and maintenance – right through to removal and return transportation - making deployment quick and easy.



Key points

- UPS shipped in 4 hours
- Transport to customer site
- UPS commissioning
- Hot-line technical support
- Next working day repair service
- UPS decommissioning and removal
- Return transport

Benefits

- First choice: rapid identification of the optimum solution for your unique requirements
- Fast: express shipment within a 4-hour window
- Flexible: rental periods available upwards of just 1 week, with easy extension options
- Safe: manufacturer standards guarantee compliance and technical performance
- Cost effective: rental fees are tax deductible as operating expenses*

**according to local tax legislation*

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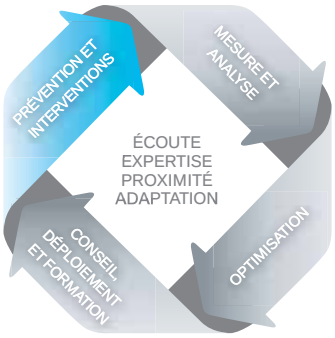
LINK-UPS remote monitoring

SOCOMEC 24/7 monitoring of your Critical Power

APPLI 581 A

LINK-UPS is the new SOOCMEC remote monitoring service designed to provide IT and Facility Managers with 24/7 support to ensure the ongoing performance, efficiency and safety of their critical infrastructure and avoid costly downtime.

LINK-UPS provides a permanent connection between the internal monitoring system of any SOCOMEC installed UPS and the nearest SOCOMEC Service Centre.



Key points

- Automatic anomaly detection
- Proactive diagnostics
- Optimised troubleshooting

Benefits

- Continuous monitoring of your equipment's performance
- Problem prevention
- Reduced Mean Time to Repair
- Increases system availability
- Saves downtime costs

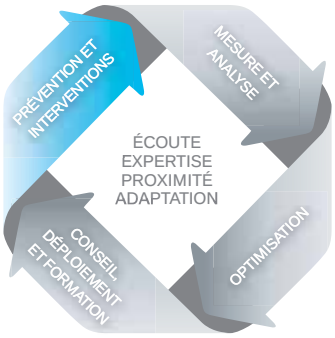
Replacement of consumables

Ensuring the continued reliability of your Critical Power equipment during its lifetime

APPLI 572 A

The components of each UPS system are designed to operate reliably during the product's normal life cycle, in the electrical environments and environmental conditions stated in the installation and operating manual.

To reduce the impact of ageing on your system, which could affect the efficiency and availability of the installation, it is vital to carry out a periodic preventive replacement of parts subject to wear and tear such as fans and capacitors.



Key points

> Preventive replacement of consumables
> Original spare parts

Benefits

> Prevents UPS instability and malfunctions
> Avoids risk of system breakdown
> Saves downtime costs

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Battery care

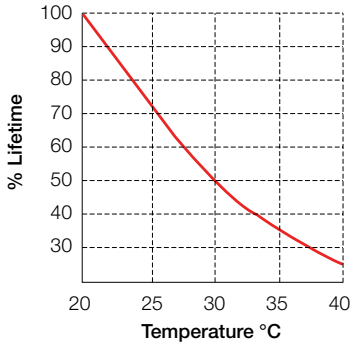
Ensuring the availability of backup time during battery lifetime

COUV 187 A

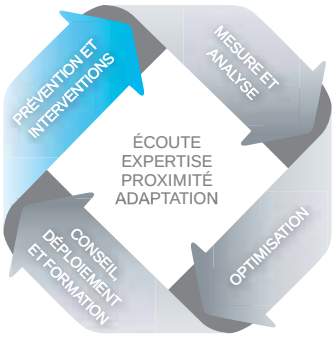
Batteries are a key element of UPS systems. Their efficiency and availability are important for preventing load downtime, but at the same time batteries are the most vulnerable and failure-prone component of such systems.
Therefore, continuous battery monitoring, adequate maintenance and periodic preventive replacement are essential to guarantee continuity of operations.

Main factors reducing battery lifecycle:

- High temperatures
- Frequent number of cycles
- Discharge too deep
- Recharging with high voltage
- Lack of regular maintenance



Source Eurobat



Key points

> Battery check during preventive visit
> Periodic preventive replacement based on manufacturer expertise
> Battery monitoring

Benefits

> Maintains the battery back-up time
> Avoids risk of UPS downtime
> Optimises battery investment

Inspection and testing visit

For the care of your changeover switches

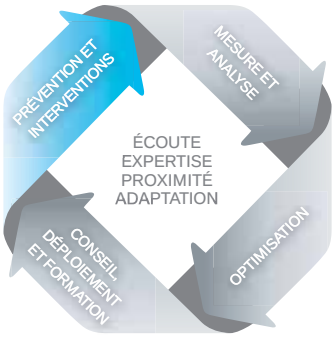
new

APPLI 759 A

Because of the critical nature of many applications coupled with the rigorous demands of insurers and other bodies concerned with building safety, some organisations may benefit from the reassurance of a routine inspection of their changeover switches by the manufacturer.

The Inspection and Testing Visit comprises an annual site visit by a qualified SOCOMEC engineer, which certifies that each changeover switch is functioning correctly.

After each inspection and testing procedure the engineer will provide a detailed report and certificate of conformity.



Key points

- Manufacturer seal of approval
- Latest firmware updates
- Complete report including technical recommendations
- Certificate of conformity

Benefits

- All critical points will be secured and under control
- Reduced risk of potential faults going undetected
- Costly downtime and the risk of operating losses are cut

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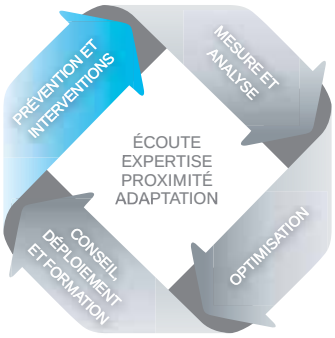
Multibrand

A single partner for all your Critical Power installed base

DEFYS I01 A

Some critical power facilities operate with an installed base fragmented by various items of equipment made by different manufacturers.
That's why it is increasingly important (and more efficient) to have all maintenance operations handled by a single reliable service provider.
For all your multibrand equipment SOCOMEC can ensure the Service Level Agreement required, centralise maintenance scheduling and deploy emergency back-up services in case of urgency.



Key points

- Expertise & easy management of all maintenance planning
- A single point of contact for all sites and all eligible equipment
- Full audit of all equipment on site with consolidated report detailing recommended approach for maintenance

Benefits

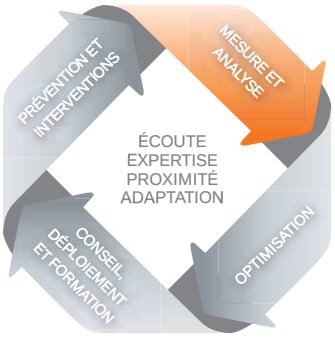
- Optimises all maintenance planning
- Centralises the emergency technical call-out services
- Advice on site's critical power issues and potential areas of risk/vulnerability
- Reduces operating costs

Power quality audit

Optimising the reliability, efficiency and safety of your high quality power supply

APPLI 731 A

The Power Quality Audit (PQA), is a service offered by SOCOMEC that checks the reliability, efficiency and safety of an organisation's electrical system.
The PQA uses network analysers, instruments specially designed to detect faults and deteriorations and record parameters and information that may be of use in locating the causes of electrical disturbance.
The data is collected and analysed by SOCOMEC engineers, who can then diagnose the problems and suggest the most appropriate solutions.



Key points

- Voltage drop
- Reduction of power factor
- Unbalanced three-phase load
- Harmonic distortion
- Transient current
- Neutral and ground plan

Benefits

- Identification of disjunctions and dysfunctions
- Optimised operational efficiency
- Extended service life of equipment
- Improved reliability of the system

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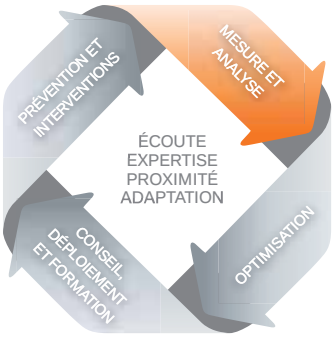
Thermal imaging

High resolution analysis for predictive maintenance

COUV 142 A

SOCOMEC's Thermal Imaging service involves checking the components of your electrical installation using special infrared equipment.

Infrared cameras are used to detect and photograph infrared radiations produced by warm objects, thus enabling an object's temperature to be analysed in a non-invasive way and with a high level of precision. In this way it is possible to perform a preventive diagnosis of breakdown risks by analysing the temperature of components including transformers, electrical switchboards, power factor correction systems, distribution cables, protection devices, isolators, UPS, converters, and batteries, etc.



Key points

- Complete check-up of your low voltage installation
- Wide range of components can be analysed
- Identification of malfunctions that would not be possible through simple visual inspection

Benefits

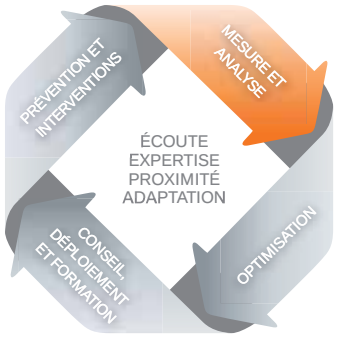
- Increased equipment availability and reliability
- Reduced downtime costs
- Optimised service lifetime of equipment
- Reliable estimation of expected remaining service life of consumables
- Increased MTBF (Mean Time Between Failures)

Electrical measurement plan

Monitoring and optimising your electrical consumption

APPLI 541 A

SOCOMEC service experts can perform a complete 'energy efficiency' diagnosis of your electrical installation, and so identify the appropriate measurement points essential to achieving your goals.
Once done SOCOMEC teams will help you set up the measurement instrumentation and software and also provide you with all the support services necessary to maintain your system during its entire lifecycle.



Key points

- Audit of your energy efficiency needs
- Integration and checking of each measurement point
- Commissioning of the solution (hardware + software)
- Software customisation based on your requests
- Several levels of training modules (user training, advanced training, in-house and intercompany trainings)
- Maintenance and software upgrades

Benefits

- A secured installation of your energy efficiency solution
- The guarantee of a complete system (product + software) that is immediately operational
- An adapted solution based on your requirements
- A reliable installation to optimise your energy consumption
- Controlled and predictable cost savings

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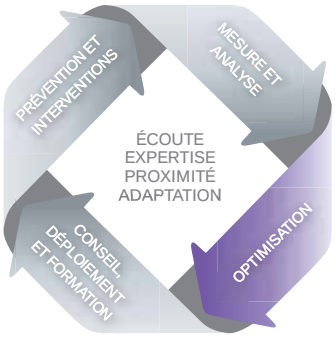
Continuous improvement approach

Proactive advice for your system integrity over the years

SYDM_248_A

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, including an in-depth analysis of equipment performance and key recommendations for improvement.
This will help you improve your maintenance process and so optimise your resources and costs during the entire lifecycle of your electrical installation.



Key points

- In-depth analysis of operating conditions and usage of your installation
- Dedicated report with a summary of all operations performed
- Periodic meetings with our experts
- Key recommendations for improvement

Benefits

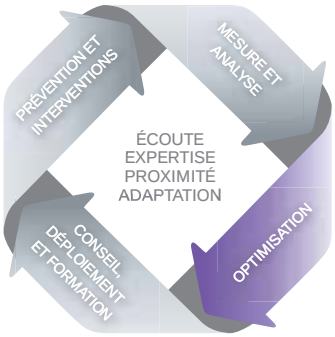
- Optimisation of system and solutions based on environment conditions and operational constraints
- System reliability, efficiency and safety
- Resource and cost optimisation during the entire lifecycle

End-of-life management

Expert assistance to maximise the residual value of your assets

SYDN_249_A

End of Life (EoL), 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 eventual recycling phase.



Key points

- Technical & economic analysis
- Support for planning the safe removal and disposal of old products (including recycling of batteries) following the applicable environmental standards (e.g. ISO 14001, WEEE, etc.)

Benefits

- Certified eco-friendly processes for hardware disposal, refurbishment & recycling
- Cost optimisation
- One point of contact during the entire lifecycle

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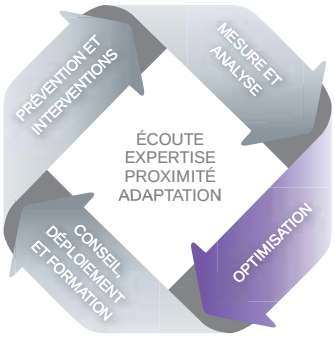
Product renewal

Uninterrupted transition from old to new

SYDN_247_A

Having a product renewal process is essential in order to support sustainable growth and to avoid or anticipate operational disturbances while always benefiting from the latest technology.

SOCOMEC is on hand to accompany 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.



Key points

- Special price conditions
- Full consultancy and support on product refurbishment
- Risk-free procedures during the entire replacement operation

Benefits

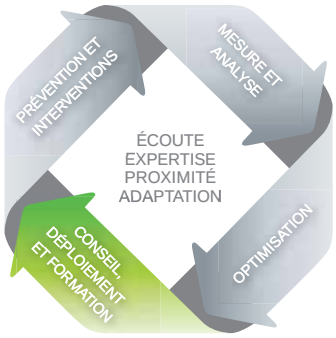
- Reduced risk of downtime
- Cutting-edge technology, always
- Cost optimisation

Project consultancy

From design through to operation of your system

Critical power projects can be challenging and may require dedicated personnel with the right level of experience and seniority to manage complexity in a quick, reliable and cost efficient way.

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. Site audit, analysis, design and implementation for reliable, safe and effective power facilities in order to fully guarantee the productivity of the customer's business… anytime and anywhere.



Key points

- Audits of preliminary installations
- Functional analysis of your solution
- Recommendations for implementation
- On-site commissioning and tests
- Tracking system implemented in the first weeks of operation

Benefits

- All-in-one solution
- Single point of contact
- Manufacturer expertise
- Better time to market

Commissioning & on-site test

Quality procedure for the startup and handover of your system

APPLI 531 A

The commissioning of a UPS or other Critical Power supply systems 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.

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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
- Load bank test (on request)

Benefits

- Commissioning performed with the best working standards
- Compatibility with your work environment
- Compliance with the various installation standards

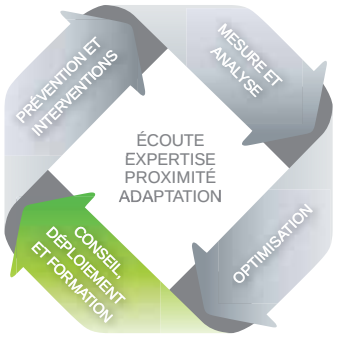
Technical training

Certified Manufacturer Training Program

CORPO 270 A

SOCOMEC specialists can help you gain the necessary skills to operate your equipment efficiently and so increase its availability.

SOCOMEC technical training courses can take place either at your premises or in SOCOMEC's dedicated training centre.



Key points

- Hands-on training
- Either in SOCOMEC factories or at customer's site
- Open discussions and participants' feedback
- Many types of configurations covered
- Real-case simulations based on customer's actual installation
- Experienced 'field-tested' trainers

Benefits

- Autonomy to manage routine operations
- Alarm procedures
- Safer operation and maintenance
- Always up to date with latest technologies

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