SIRCO V

Load break switches standards UL and CSA

30 to 400 A

sirco-ul_022

SIRCO
3 x 200 A

Function

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

General characteristics

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

The solution for

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

Strong points

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

Conformity to standards

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

Customized solutions

- Please consult us

References

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

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

NFPA 79 accessories

Flange handle for flange operation

Use

Meets both UL 508A and NFPA 79 requirements.

The handle will operate the switch by cable or rod.

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

(1) Defeatable handle.

sirco_246_a_1_us_cat

Cable operator

Use

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

sirco_247_a_1_cat

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

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

ul_042_b_1

Rod operator

Use

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

Rating 30 ... 200 A

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

For 400 A rating, please consult us.

ul_043_a

NFPA 79 "Through the door" kit

Use

Meets both UL 508A and NFPA 79 requirements.

Allows retrofit of your installations for ratings from 30 to 400 A.

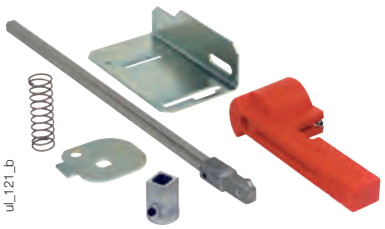
Please order an S-type external handle separately.

Number of auxiliary contact installed on the switch will be limited to 1 layer (instead of 2).

If more needed please use the S type auxiliary contacts.

Delivered with a 12.6 in / 320 mm shaft.

For longer shafts, please consult us.



ul_121_b

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

Accessories (continued)

External operation handle

Use

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

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


acces_150

S2 type handle

Front handle I - 0

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


acces_236

S2 type handle

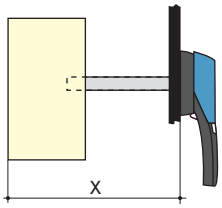
Shaft for external handle

Use

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

Other lengths: please consult us.


acces_369



acces_202_a

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

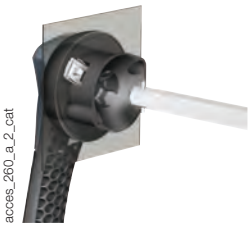
Accessories (continued)

Shaft guide for external handle

Use

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

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



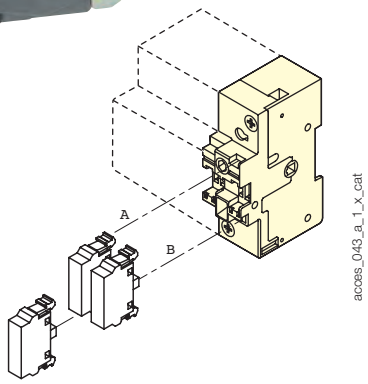
U-type auxiliary contacts

Use

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

Electrical characteristics

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



NO auxiliary contacts		
Rating (A)	**Number of contacts**	**Reference**
30 ... 400	1	3999 **0701**

NC auxiliary contacts		
Rating (A)	**Number of contacts**	**Reference**
30 ... 400	1	3999 **0702**

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

S-type auxiliary contacts

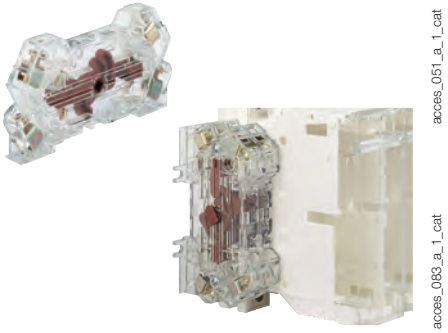
Use

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

Electrical characteristics

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

NO+NC auxiliary contacts		
Rating (A)	**Number of contacts**	**Reference**
30 ... 400	1	3999 **U041**
30 ... 400	2	3999 **U042**



Terminal shrouds

Use

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

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

(1) Top or bottom.

fuser_314_a_1_cat

Terminals lugs

Use

Connection of cables to the terminals.

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

ul_032_a

Characteristics

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

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

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

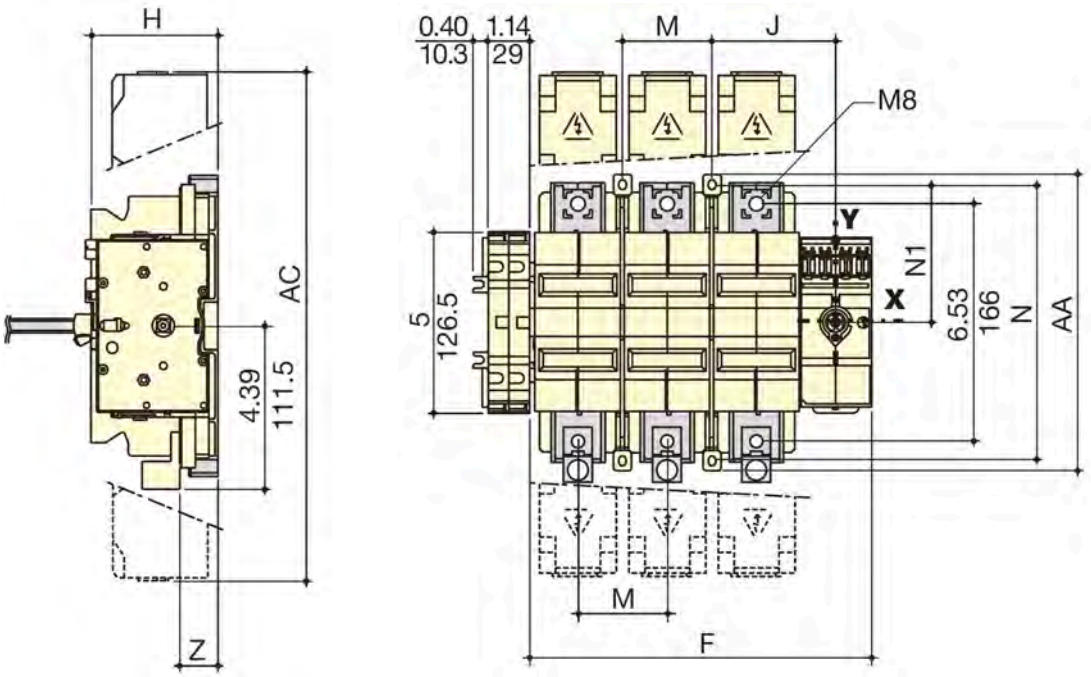
Characteristics according to IEC 60947-3

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

(1) Category with index A = frequent operation.
(2) The power value is given for information only, the current values vary from one manufacturer to another.
(3) For a rated operating voltage U_2 = 400 VAC.

Dimensions (in/mm)

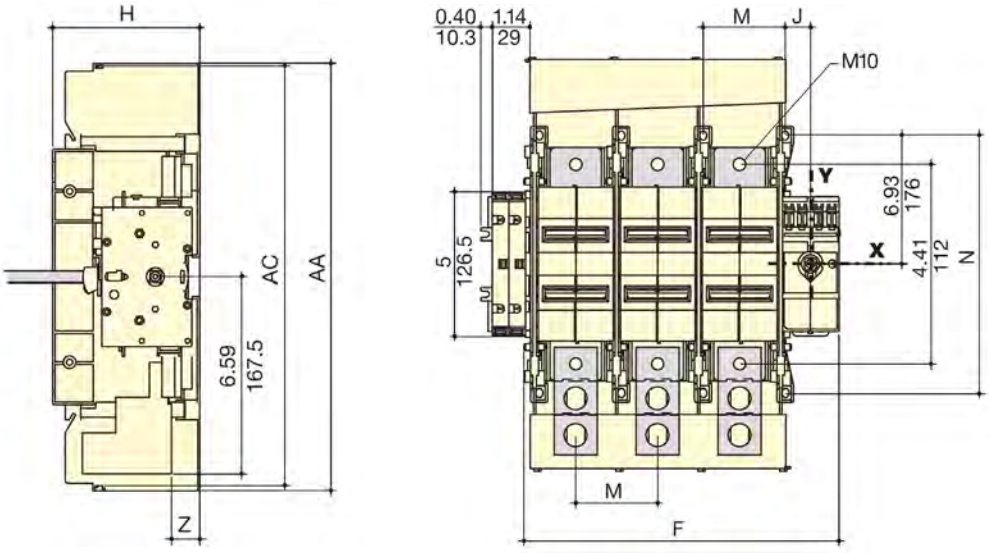
Sirco V 30 A front operation



ul_009_a_1_cat

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

Sirco V 60 and 100 A front operation

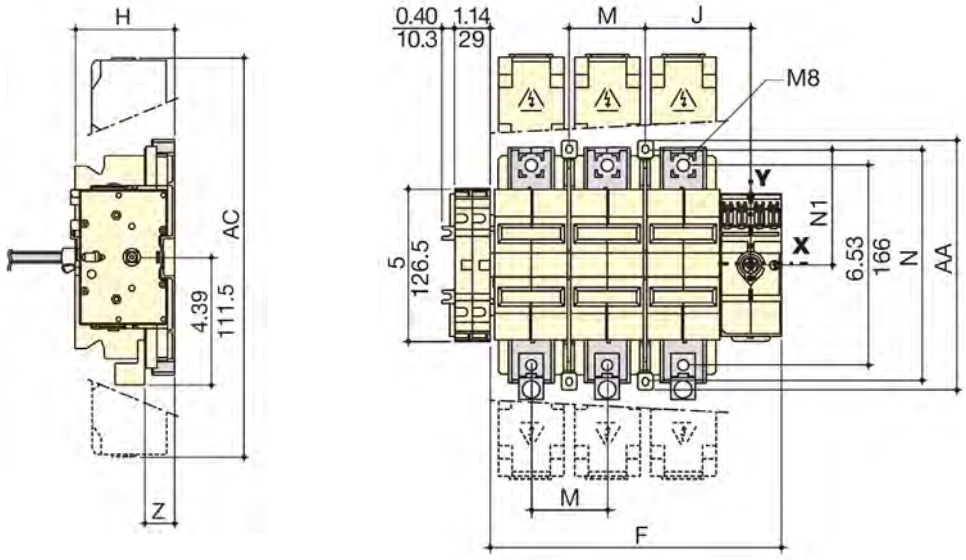


ul_003_a_1_cat

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

Dimensions (in/mm) (continued)

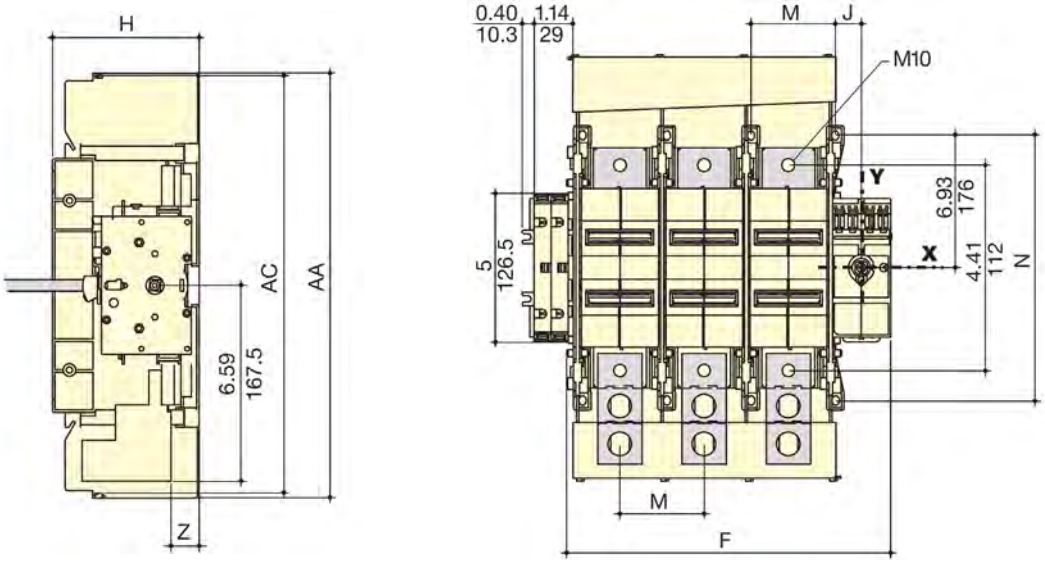
Sirco V 200A Front Operation



sirco_107_d_1_x_cat

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

Sirco V 400A Front Operation



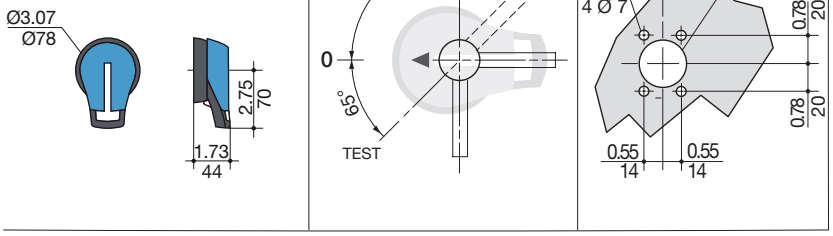
sirco_228_d_1_x_cat

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

External handles dimensions (in/mm)

30 to 60 A

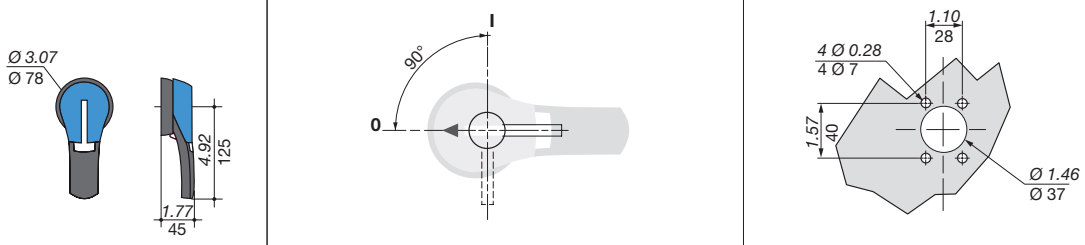
Handle type	Front operation	
	Direction of operation	Door drilling
S1 type		



fuser-ul_015_b_1_gb_cat

100 to 400 A

Handle type	Front operation	
	Direction of operation	Door drilling
S2 type		



poign_013_a_1_us_cat

SIRCO UL 98C

Non-fusible switches standards UL and CSA

400 to 800 A

sirco-ul_022

SIRCO
3 x 800 A

Function

SIRCO non-fusible disconnect switches are heavy duty switches that break and make power circuits on and off load and provide safety isolation up to 800 VAC.

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

General characteristics

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

The solution for

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

Strong points

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

Conformity to standards

- UL 98C
  Guide WHTY2
  File E201138

References

Rating (A)	No. of Poles	Switch Body	Direct handle	External handle	Shaft for external handle	Auxiliary contacts	Terminal protection screens	Terminal lugs kits
400 A	**3 P**	2700 **3042**	2699 **5052**	S2 type Black 1, 3R, 12 142F **2111**(1) Red/Yellow 1, 3R, 12 142G **2111**(1) Black 4, 4X 142D **2111**(1) Red/Yellow 4, 4X 142E **2111**(1)	7.9 in 200 mm 1400 **1020** 12.6 in 320 mm 1400 **1032** 15.7 in 400 mm 1400 **1040**	1st contact NO/NC 2799 **0021** 2nd contact NO/NC 2799 **0022**	3 P 2798 **3041**(2) 2798 **8041**(3)	3 P 3954 **3040**(4)
	4 P							
800 A	**3 P**	2700 **3082**	3799 **6012**	S3 type Black 4, 4X 143D **3111**(1) Red/Yellow 4w, 4X 143E **3111**(1)	7.9 in 200 mm 1401 **1520** 12.6 in 320 mm 1401 **1532** 15.7 in 400 mm 1401 **1540**		3 P 2798 **3120**(5)	3 P 3954 **3120**
	4 P	2700 **4082**						

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

Accessories

Direct operation handle

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

B type handle

H type handle

Accessories (continued)

External operation handle

Use

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

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


acces_150

S2 type handle

Front handle I - 0

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


acces_166

S3 type handle

Front handle heavy duty I - 0 with metallic lever

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


acces_236

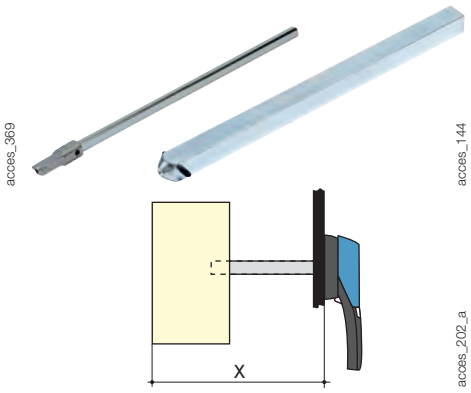
Heavy duty S2 type handle

Shaft for external handle

Use

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

Other lengths: please consult us.



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

(1) UL pending, please consult us.

Alternative color S-type handle cover

Use

For single lever handles type S2 and S3.

Other colors: please consult us.

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


acces_198

S-type handle raiser

Use

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

Dimensions

Adds 0.47 in /12 mm to the depth.

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


acces_187

Shaft guide for external handle

Use

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

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


acces_260

Description	Reference
Shaft guide	1429 **0000**

Auxiliary contacts

Use

Pre-break and signaling of positions 0 and I.

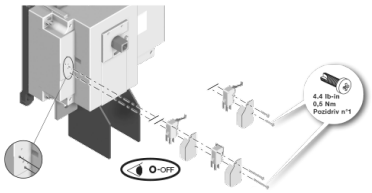
To have 2 NO/NC contacts per switch, please order 1st and 2nd auxiliary contacts per switch. 1st contact is mandatory to operate the 2nd one.

Electrical characteristics

A300 for 100 to 400 A.

A600 for 600 to 1200 A.


acces_076



NO/NC contact for 400 to 800 A

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

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

Low level NO/NC contact for 400 to 800 A

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

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

Terminal screens

Use

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

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

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


acces_079

Terminal lugs

Use

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

Rating max (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
400	#4 - 600MCM	1	3	Cu / Al	3954 **3040**
400	2x (#6 - 350MCM)	2	3	Cu / Al	3954 **3041**
800(1)	4x (#2 - 600MCM)	2	6	Cu / Al	3954 **3120**

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


ul_032_a

SIRCO UL 98C

Non-fusible disconnect switches

400 to 800 A

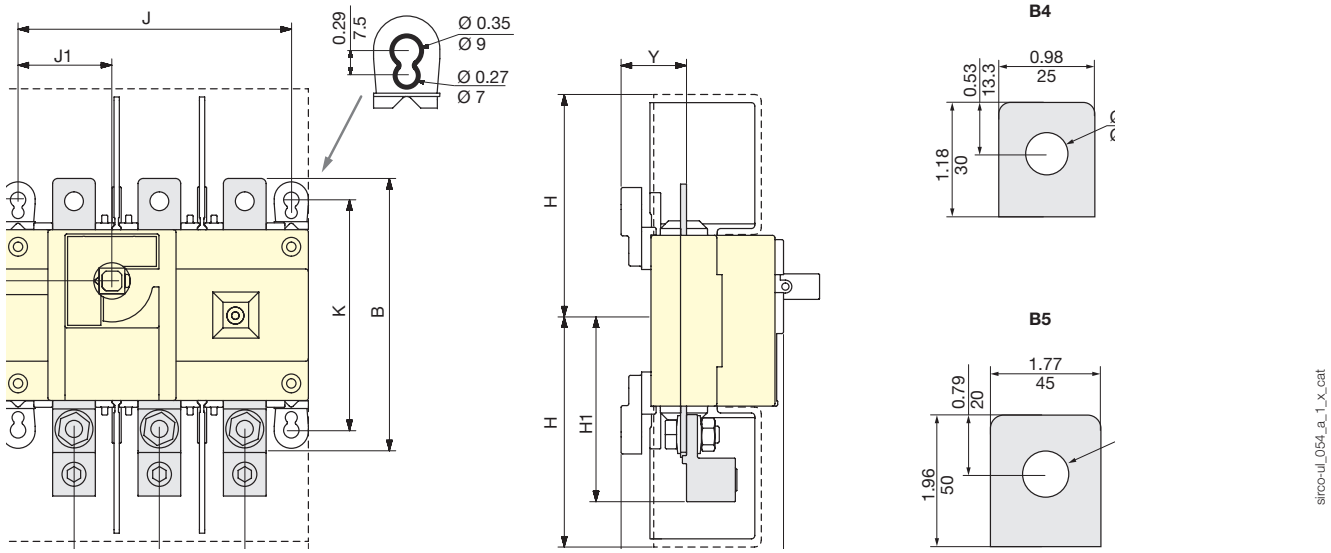
Characteristics

Characteristics according to UL 98C

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

Dimensions (in/mm)

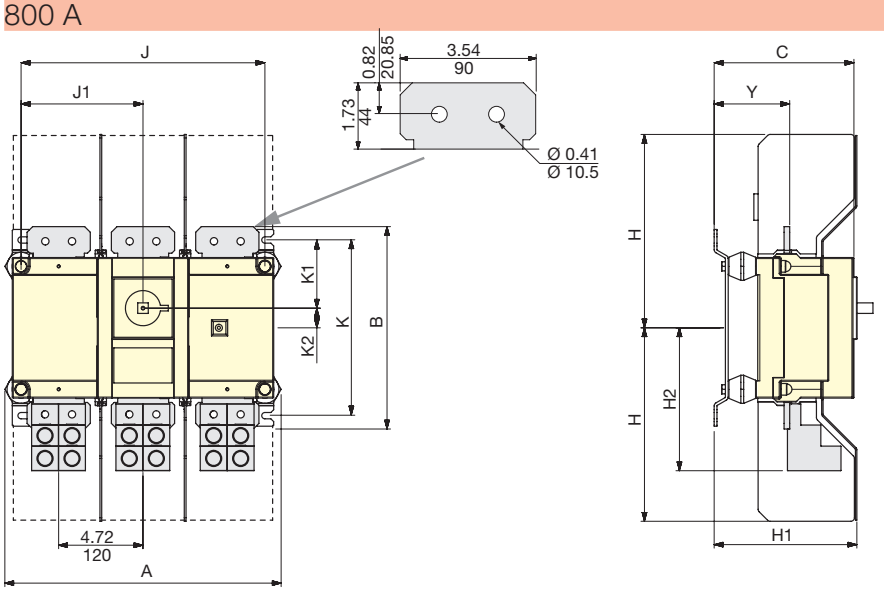
400 A



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

Dimensions (in/mm) (continued)

800 A

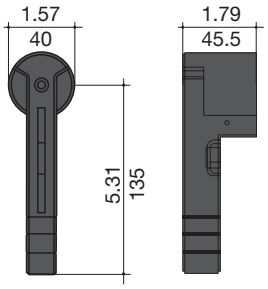


sirco-ul_059_a_1_x_cat

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

400 A

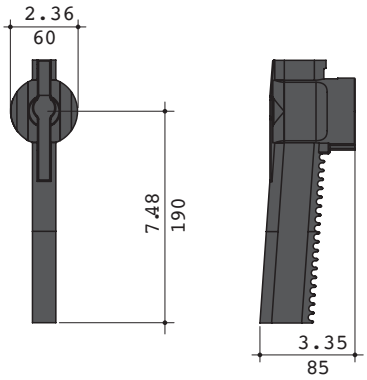
Front direct handle



sirco-ul_027_a_1_x_cat

800 A

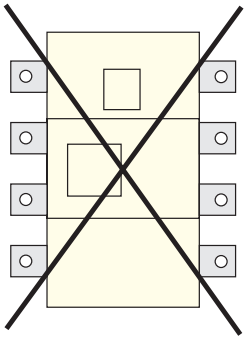
Front direct handle



sirco_267_b_1_x_cat

Mounting orientation

400 and 800 A

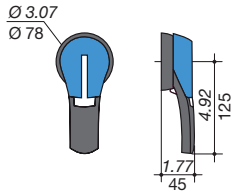


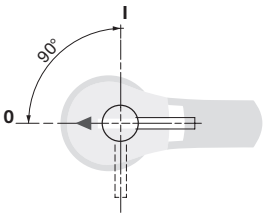
sirco-ul_028_a_1_x_cat

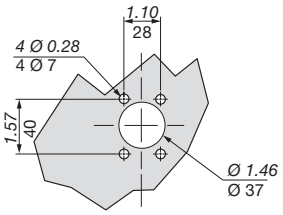
External handles dimensions (in/mm)

400 A

Handle type	Front operation Direction of operation	Door drilling
S2 type		



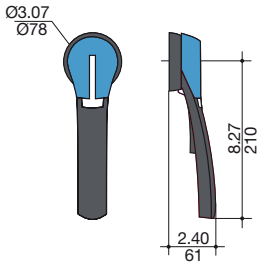


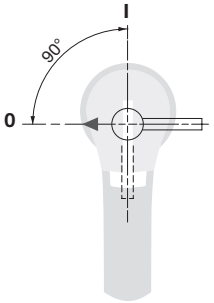


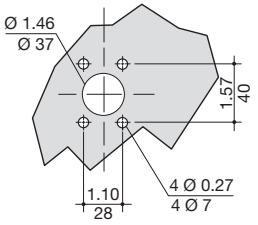
polgn_013_a_1_us_cat

800 A

Handle type	Front operation Direction of operation	Door drilling
S3 type		



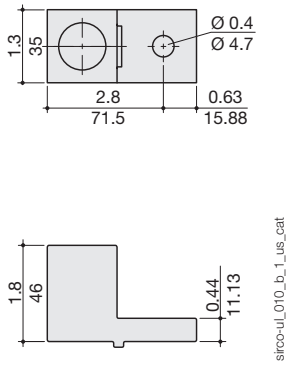




polgn_046_a_1_gb_cat

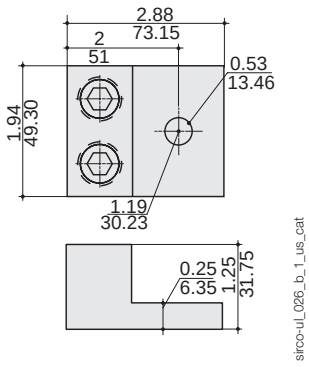
Terminal lugs (in/mm)

400 A



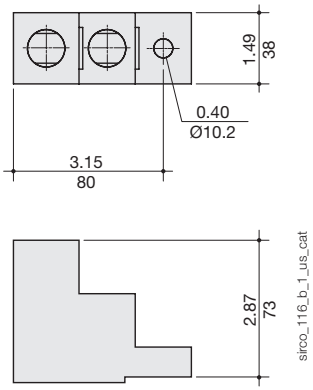
600 kcmil

400 A



2 x 350 kcmil

800 A



2 x 600 kcmil

Photovoltaic range

Photovoltaic disconnect switches

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

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

RM PV
30 A
p. 107

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

SIRCO MOT PV
2000 A
p. 103

Expert Services

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

A fully tested range for all your PV applications

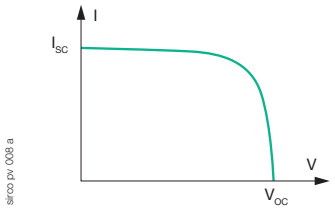
Using tested and certified components is key for the success of the design for any photovoltaic system.
The SIRCO PV and INOSYS LBS range is tested and certified according to main standards used in the photovoltaic industry.

Global approvals

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

PV critical current

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



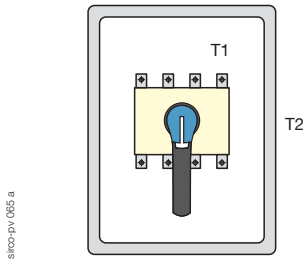
Current (I)/Voltage (V) curve of a PV system. When the current decreases (in the evening or when cloudy) the voltage may increase. SC = Short-circuit, OC = Open-circuit

Short Circuit

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

Thermal current test

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



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

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

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

The standards for PV disconnect switches

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

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

The 5th largest European power laboratory

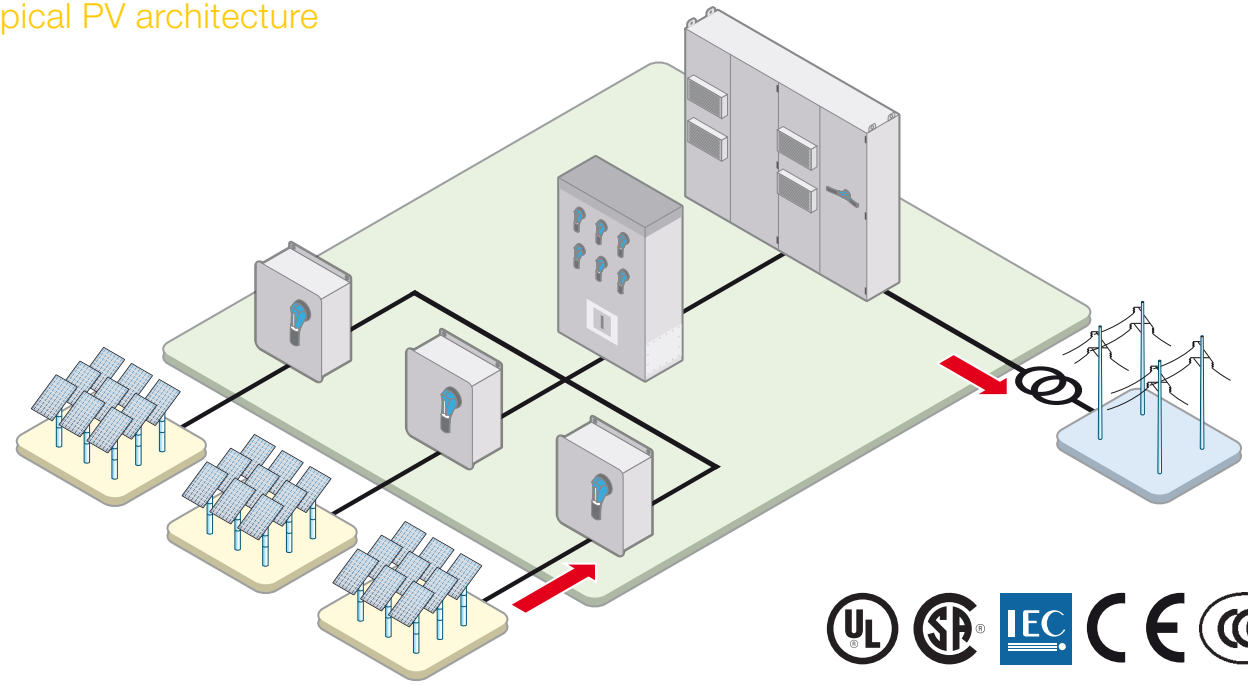
Since 1965, the Pierre Siat test laboratory has used its expertise to guarantee the reliability and compliance of SOCOMEC products and solutions.

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

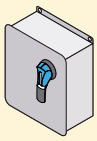
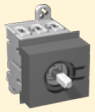
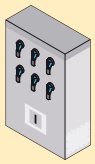
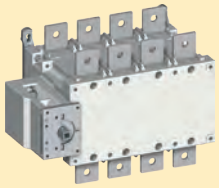
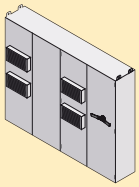
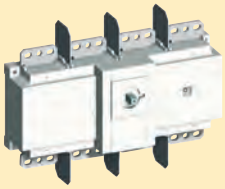
With its 100 MVA (I_{dc} 100 kA rms 1 s) short-circuit platform, three 10 kA overload platforms and numerous other test instruments, in facilities covering 1500 m^2, the Pierre Siat laboratory is currently the 2nd largest French power laboratory. It combines expertise in electricity and mechanics, pneumatics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

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

Typical PV architecture



The SOCOMEC solutions

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

SIRCO MC PV UL 508i

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

sirco-mc_002_a_1_cat

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

The solution for

- Residential
- Buildings
- Solar parks

Strong points

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

Conformity to standards

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

Approvals and certifications(1)

(1) Product reference on request.

Function

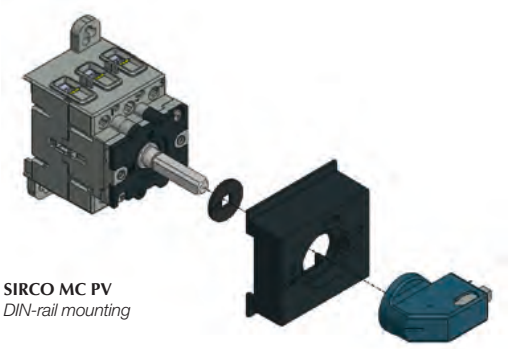
SIRCO MC PV are DC non-fusible disconnect switches. They make and break under load conditions and provide optimum safe isolation for any PV circuit.

Advantages

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

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

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

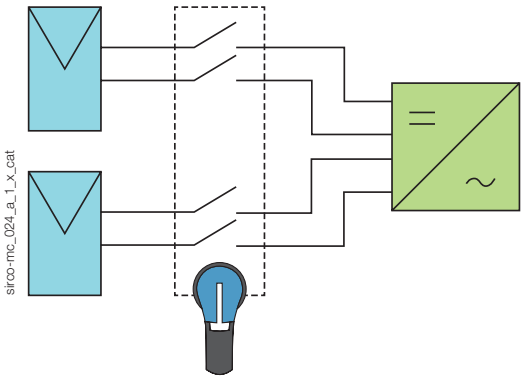


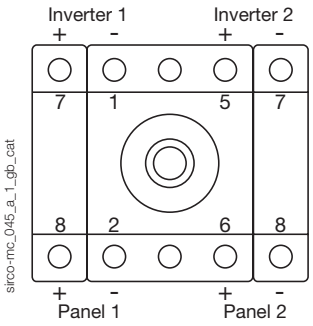
sirco-mc_028_a

SIRCO MC PV
DIN-rail mounting

Multi-circuit switching

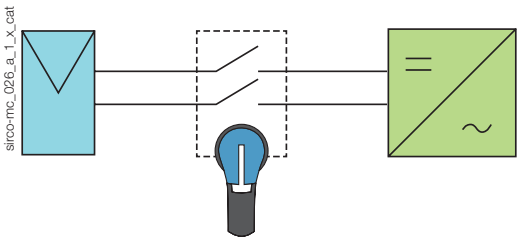
- The SIRCO MC PV for dual circuits (2 MPPT: Maximum Power Point Tracking) enables connection of two independent photovoltaic circuits to a single switch in order to reduce the costs of the global solution.

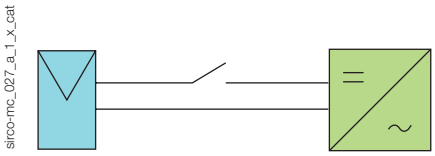




What you need to know

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





SIRCO MC PV UL 508i

Non-fusible disconnect switches for photovoltaic applications

from 25 to 45 A, up to 1000 VDC

References

600 VDC

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

Common accessories - more available on next pages.

(1) Door interlocking.

1000 VDC

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

Common accessories - more available on next pages.

(1) Door interlocking.

Accessories

Direct operation handle

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

MC0 handle

acces_305_a_1_cat

MC01 handle

acces_293_a_1_cat

External operation handle

Use

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

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

acces_341_a_1_cat

S00 handle

acces_302_a_1_cat

MC1 handle

DIN-rail or back plate mounting

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

Shaft for external handle

Use

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

Shaft length

Device + shaft:
- 10.43 in / 265 mm

acces_297_a_1_cat

DIN-rail or back plate mounting

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

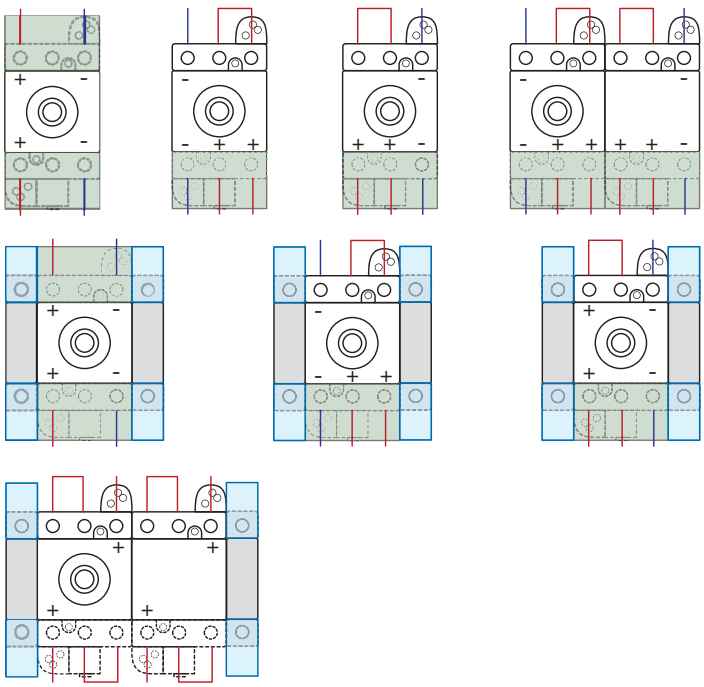
(1) Shaft for door interlocking.

Terminal shrouds

Use

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

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



sirco-mc_011_e_1_cat

acces_299_a_1_cat

Terminal shrouds 1 pole

acces_300_a_1_cat

Terminal shrouds 3 pole

SIRCO MC PV UL 508i

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

Characteristics

according to UL 508i

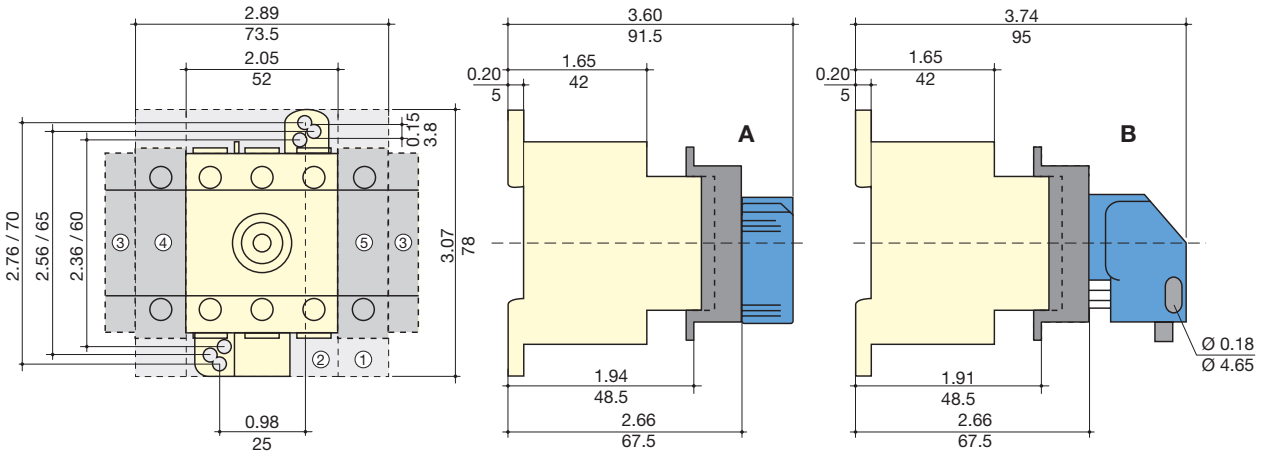
			25 A	45 A
General use rating with 200% overload extra test				
Rated voltage	**Number of poles of the device**	**Number of PV circuits**	**(A)**	**(A)**
600 VDC	2 P	1	25	-
600 VDC	4 P	1	-	45
600 VDC	2 x 2 P	2	25	-
600 VDC	2 x 4 P	2	-	45
1000 VDC	4 P	1	-	32
1000 VDC	2 x 4 P	2	-	32
Short-circuit capacity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

according to IEC 60947-3

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

Dimensions (in/mm)

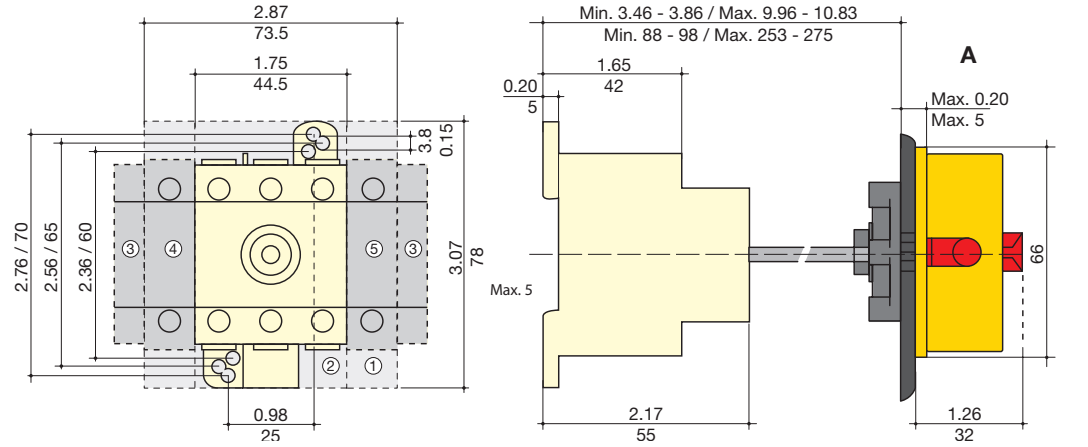
DIN-rail mounting - Direct operation



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

A. MC0 handle
B. MC01 handle

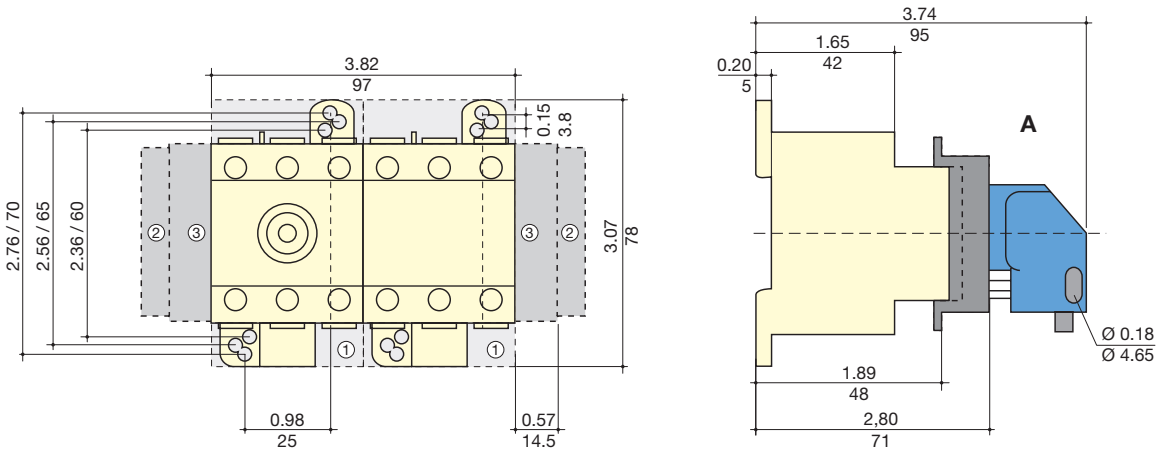
DIN-rail mounting - External operation



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

A. MC1 handle

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

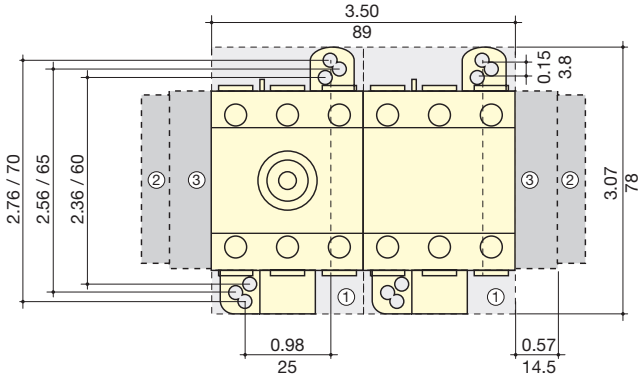


1. Terminal shrouds 3P.
2. Auxiliary contact.
3. PV power pole.

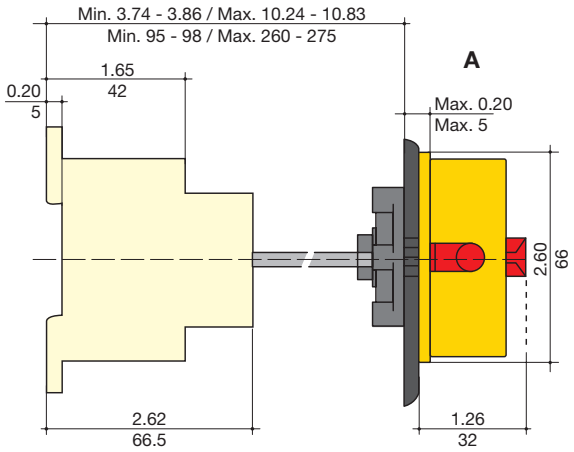
A. MC01 handle.

Dimensions (continued)

DIN-rail mounting - External operation



1. Terminal shrouds 3P.



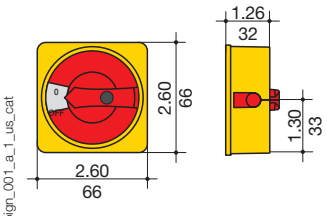
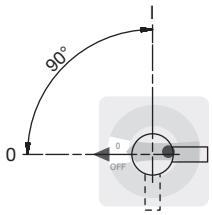
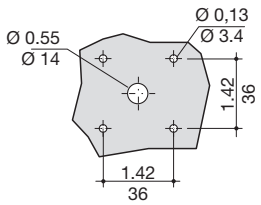
2. Auxiliary contact.

A. MC1 handle.

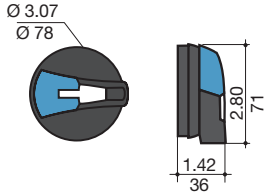
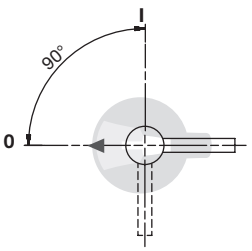
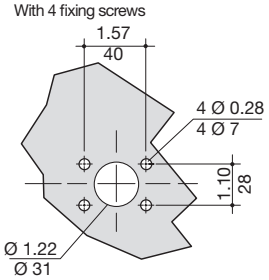
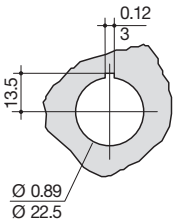
sirco-mc_040_b_1_us_cat

Dimensions for external handles (in/mm)

DIN-rail or back plate mounting

Handle type	Front operation Direction of operation	Door drilling
MC1 type 		

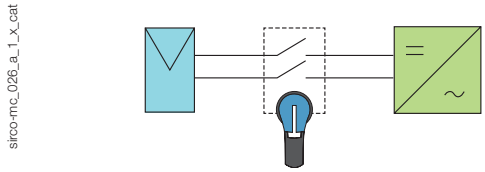
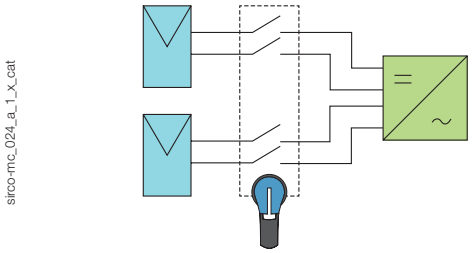
poign_001_a_1_us_cat

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

poign_056_a_1_us_cat

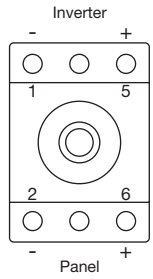
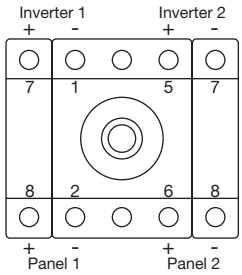
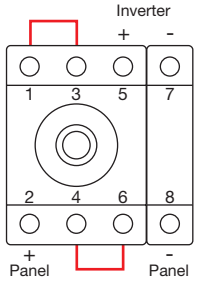
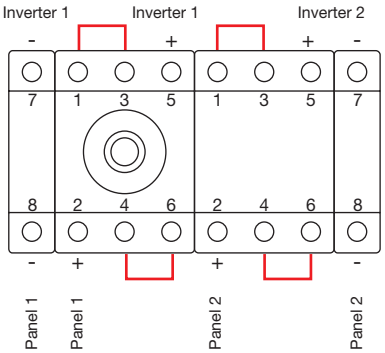
Poles connections

Switching of polarities + and - (1)

Single PV circuit	Dual PV circuit
	

sirco-mc_026_a_1_x_cat

sirco-mc_024_a_1_x_cat

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

sirco-mc_044_a_1_gb_cat

sirco-mc_045_a_1_gb_cat

sirco-mc_083_a_1_gb_cat

sirco-mc_065_a_1_gb_cat

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

INOSYS LBS UL 98B

Load Break Switches for DC & PV applications
from 100 to 600 A, up to 1500 VDC

inosy_158.psd

INOSYS LBS
2-poles

The solution for

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

Strong points

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

Conformity to standards

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

Compatible with requirements:

- IEC 60364-7-712

Function

INOSYS LBS are load break switches available in manual operation. They can be operated using the handle to disconnect all or part of the electrical installation.

They make and break under all load conditions, provide safety isolation for any low voltage circuits up to 1500 VDC and are suitable for emergency switching. They are available for DC-PV2 utilization category.

Advantages

High-performance switching in a compact frame

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

Safe & reliable operation

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

Designed for harsh environments

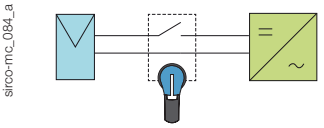
- Vibration testing (from 13.2 to 100 Hz at 0.7 g).
- Shock testing (15 g during three cycles).
- Humid temperature testing (2 cycles, 131 °F/55 °C with 95% humidity level).
- Salt mist testing (3 cycles with humidity storage, 104 °F/40 °C, 93% humidity after each cycle).

Easy to install

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

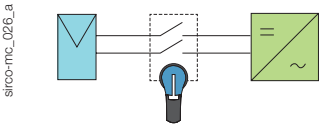
Modular solution for a flexible configuration

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



sirco-mc_084_a

Single polarity switching

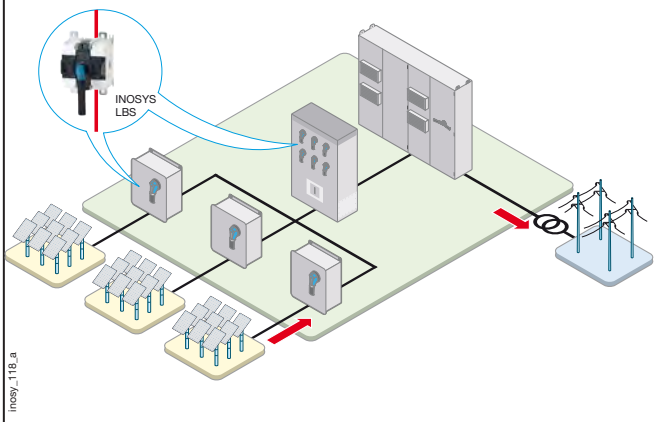


sirco-mc_026_a

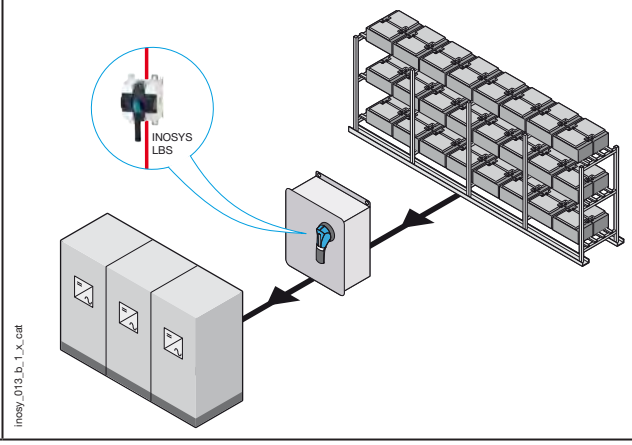
Dual polarity switching

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

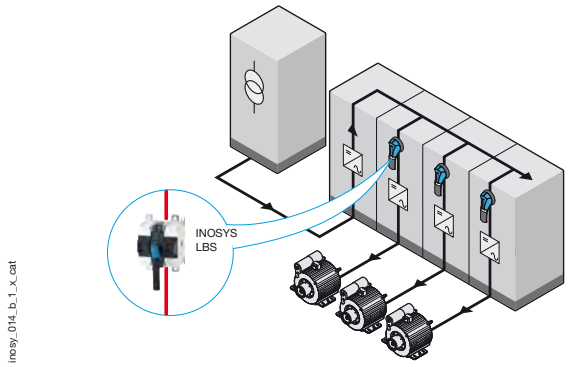
PV installation: Combiner box, Recombiner box or Inverter



Battery protection



Isolation of DC processes



The SOCOMEC solutions

SIRCO PV

Manual operation PV switches

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

INOSYS LBS

Up to 1500 VDC with visible contact indication

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

Overview

inosy_058_a_1_x_cat.psd

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

References

INOSYS LBS

1000 VDC - 1 circuit

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

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

1500 VDC - 1 circuit

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

1500 VDC - 2 circuits

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

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

Accessories

Door interlocked external operation handle

Use

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

Example

As the handle is interlocked in the “ON” position the operator must safely disconnect and isolate the circuit prior to accessing the panel for maintenance procedures.

Opening the door when the switch is in the “ON” position can only be done by defeating the interlocking function with the use of a dedicated tool (authorized personnel only). The interlocking function is restored when the door is re-closed.

S2 type handle

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

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

Direct operation handle available, consult us.

Shaft for external handle

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

Other lengths: please consult us.

Shaft for S2 and S2L type handle

Auxiliary contact

Use

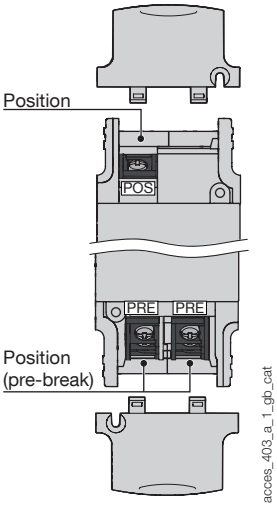
The function of the auxiliary contact depends on where it is mounted on the mechanism.

Characteristics

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

acces_402_a_1_cat

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



acces_403_a_1_gb_cat

Characteristics

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

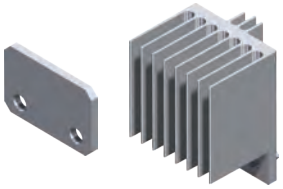
Accessories (continued)

Bridging bar for poles in series

Use

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

Connection diagrams,
see “Pole series connection” pages.



acce_411_a_1_cat

acce_410_a_1_cat

1000 VDC - 1 circuit

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

1500 VDC - 1 circuit

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

1500 VDC - 2 circuits

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

(1) Centered mechanism.

Terminal screen

Use

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

Advantages

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

acces_408_a_1_cat

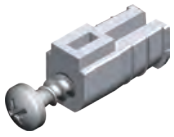
Frame size	No. of poles	Position	Reference(1)(2)
F2	2 P	Top and bottom	8499 **3222**
F2	3 P	Top and bottom	8499 **3232**
F3	2 P	Top and bottom	8499 **3722**

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

Holding insert

Use

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



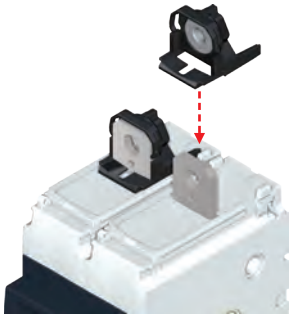
acces_409_a_1_cat

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

Captive nut

Use

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



acce_399_a_1_cat

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

Voltage tap

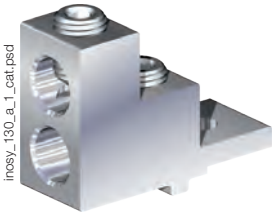
Use

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

acce_412_a_1_cat

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

Terminal lugs



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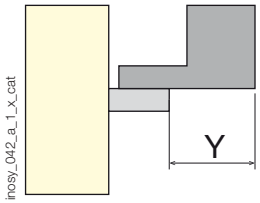


inosy_042_a_1_x_cat

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

(1) Captive nut 84996xxx is mandatory.

Characteristics

Characteristics according to UL 98B

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

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

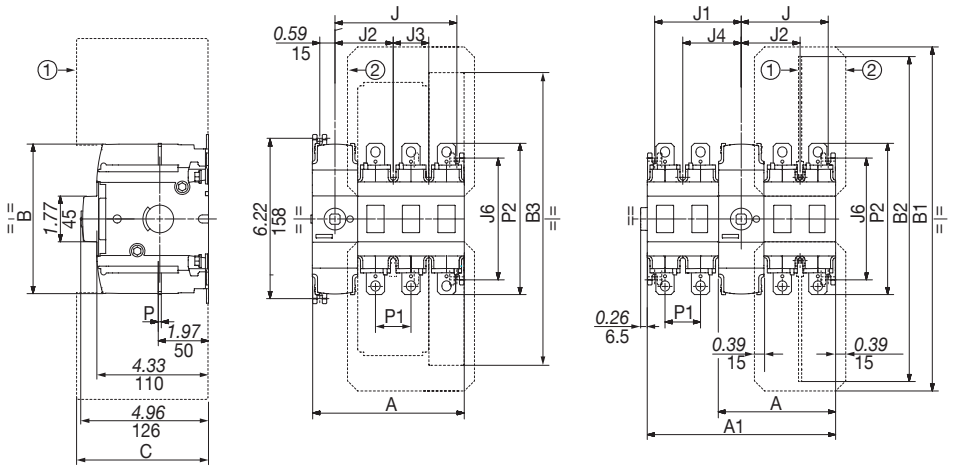
Characteristics

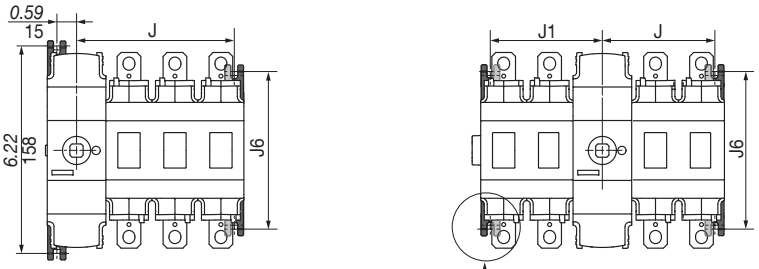
Characteristics according to IEC 60947-3

Rated current I_n			**160 A**	**250 A**	**315 A**	**400 A**	**630 A**	**800 A**
Frame size			**F2**	**F2**	**F2**	**F3**	**F3**	**F3**
Thermal current at 40°C (A)			160	250	315	400	630	800
Thermal current at 50°C (A)			160	250	315	400	630	760
Thermal current at 60°C (A)			160	250	315	400	570	685
Rated insulation voltage U (V)			1500	1500	1500	1500	1500	1500
Rated impulse withstand voltage U_{imp} (kV)			12	12	12	12	12	12
Number of circuits	**Rated voltage**	**Utilization category**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**
1 circuit	1000 VDC(1)	DC-21 B	160	250	315	400	630	800
1 circuit	1500 VDC(2)	DC-21 B	160	250	315	400	630	-
Number of circuits	**Rated voltage**	**Utilization category**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**	**I_e (A)**
1 circuit	1000 VDC(1)	PV2	-	-	-	-	-	-
1 circuit	1500 VDC(2)	PV2	160	250	315	400	630	-
2 circuits	1500 VDC(2)	PV2	-	-	-	400	630	-
Short-circuit capacity at 1000 & 1500VDC (without protection)								
Rated short-time withstand current I_{cw} 1s (kA eff.)			5	5	5	8	8	8
Rated short-circuit making capacity I_{cm} (kA peak) - 60 ms			10	10	10	10	10	10
Connection								
Recommended Cu rigid cable cross-section (mm²)(3)			70	120	185	240	2 X 185	2X 240
Recommended Cu busbar width (mm)(3)			20	20	20	25	25	25
Mechanical characteristics								
Durability (number of operating cycles)			8,000	8,000	8,000	8,000/6,000(4)	8,000/6,000(4)	8,000/6,000(4)
Power loss/pole (W/Pole)			4.5	11.2	13	13	30.2	50

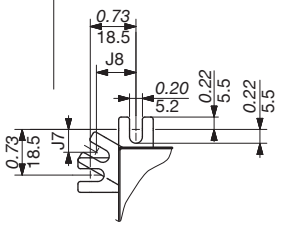
(1) 2 poles in series.
(2) 2 or 3 poles in series.
(3) For aluminium connection, please consult us.
(4) 8000 for LBS.

INOSYS LBS



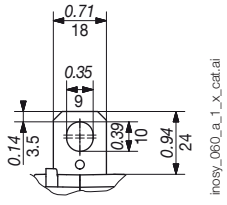


1. Inter-phase barrier.
2. Terminal screens..



inosy_166_a_1_x_cat.ai

Connection terminal F2



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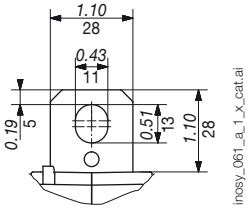
Connection terminal F3



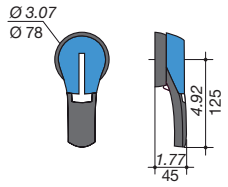
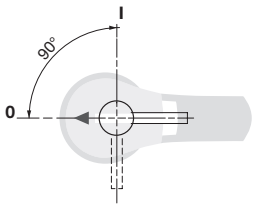
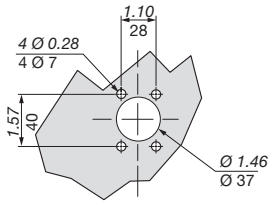
inosy_061_a_1_x_cat.ai

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

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

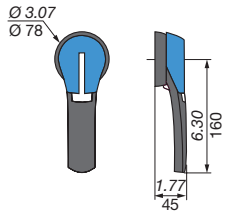
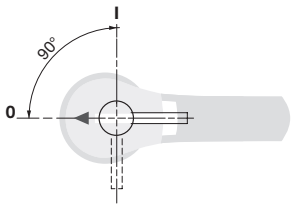
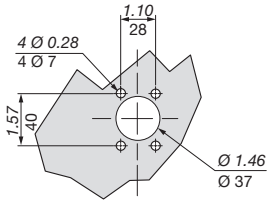
Dimensions for external handles (in/mm)

F2 frame size

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

poign_013_b_1_us_cat.eps

F3 frame size

Handle type	Front operation Direction of operation	Door drilling
S2L type 		

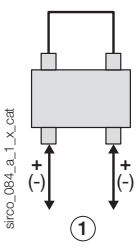
poign_069_b_1_us_cat.eps

Pole series connections

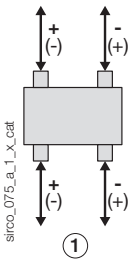
1 PV circuit - 1000 & 1500 VDC

F2-F3 - 2 P

Grounded network



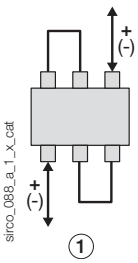
Floating network



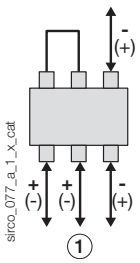
1 PV circuit - 1500 VDC

F2 - 3 P

Grounded network



Floating network



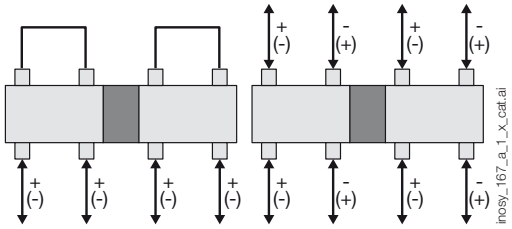
1. Circuit 1
2. Circuit 2

2 PV circuits - 1500 VDC

F3 - 2 P

Grounded network

Floating network

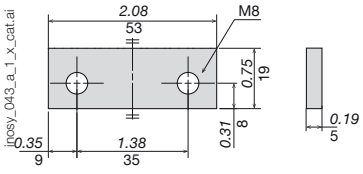


Bridging bars (in/mm)

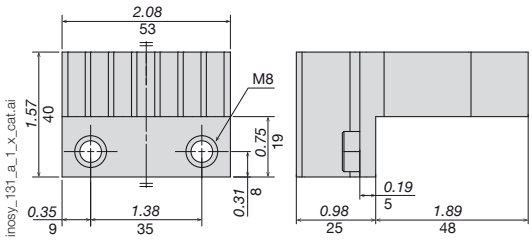
F2

8409 0016 (1)

(1) Kit comprises 2 identical bars.



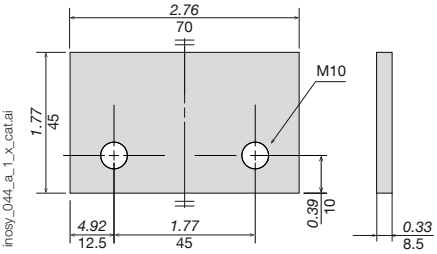
8409 0025



F3

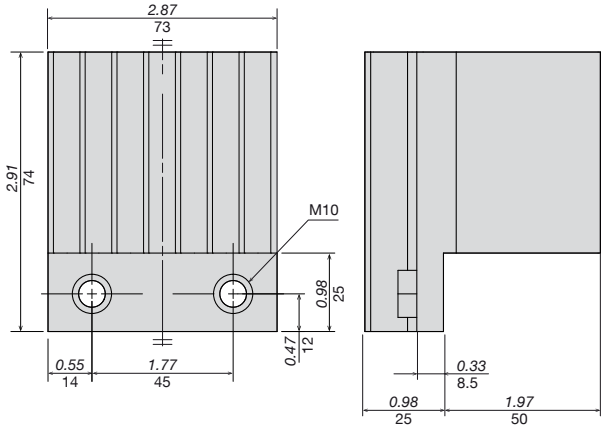
8409 0040 (1)

(1) Kit comprises 2 identical bars.

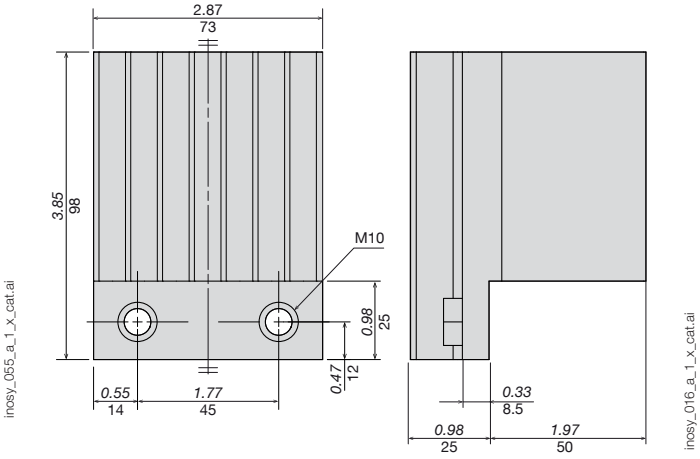


F3

8409 0041



8409 0063



Mounting orientation

F2 - F3

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

SIRCO PV UL 98B

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

The solution for

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

Function

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

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

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

Strong points

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

Conformity to standards

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

Advantages

Performance

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

Back-to-back double disconnect switch

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

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

Approvals and certifications(1)

(1) Product reference on request.

References

1000 VDC - Back plate mounting

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle
1 PV circuit					
100 A	B4	2 P	27PV **2009**	S2 type Black 1, 3R, 12 142F **2111**(1) Red/Yellow 1, 3R, 12 142G **2111**(1) Black 4, 4X 142D **2111**(1) Red/Yellow 4, 4X 142E **2111**(1)	7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**(2)
200 A	B4		27PV **2019**		
250 A	B4		27PV **2024**		
325 A	B5		27PV **2032**		
400 A	B5		27PV **2039**		
600 A	B6	4 P	27PV **4060**	S3 type Black 4, 4X 143D **3111**(1) Red/Yellow 4, 4X 143E **3111**(1)	7.9 inches 200 mm 1401 **1520** 12.6 inches 320 mm 1401 **1532** 15.7 inches 400 mm 1401 **1540**(2)
800 A	B7		27DC **4081**	S4 type Black 4, 4X 144D **3111**(1) Red/Yellow 4, 4X 144E **3111**(1)	
1200 A	B7		27DC **4121**		
2000 A	$B7_{DS}$	8 P	27DC **4201**	V1 type Black 3R, 12 2799 **7145**	12.6 inches 320 mm 4199 **3018**
2 PV circuits					
100 A	$B4_{DS}$	4 P	27PV **5009**	S2 type Black 1, 3R, 12 142F **2111**(1) Red/Yellow 1, 3R, 12 142G **2111**(1) Black 4, 4X 142D **2111**(1) Red/Yellow 4, 4X 142E **2111**(1)	7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**(2)
250 A	$B4_{DS}$		27PV **5024**		
325 A	B5		27PV **4032**		
400 A	B5		27PV **4039**		
600 A	$B6_{DS}$	8 P	27PV **8060**	V1 type Black 3R, 12 2799 **7145**	12.6 inches 320 mm 4199 **3018**
800 A	$B7_{DS}$		27DC **8081**		
1000 A	$B7_{DS}$		27DC **8101**		
4 PV circuits					
350 A	$B5_{DS}$	8 P	27PV **8039**	S3 type Black 4, 4X 143D **3111**(1) Red/Yellow 4, 4X 143E **3111**(1)	7.9 inches 200 mm 1401 **1520** 12.6 inches 320 mm 1401 **1532** 15.7 inches 400 mm 1401 **1540**(2)

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

SIRCO PV UL 98B

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

1500 VDC - Back plate mounting

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle
1 PV circuit					
275 A	B5	3 P	27PV **3026**	S2 type Black 1, 3R, 12 142F **2111**(2) Red/Yellow 1, 3R, 12 142G **2111**(2) Black 4, 4X 142D **2111**(2) Red/Yellow 4, 4X 142E **2111**(2)	7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**(3)
325 A	B5		27PV **3032**		
400 A	B5		27PV **3039**		
600 A(1)	$B6_{DS}$	8 P	27PV **8060**	V1 type Black 3R, 12 2799 **7145**	12.6 inches 320 mm 4199 **3018**
800 A (1)	$B7_{DS}$		27DC **8081**		
1000 A (1)	$B7_{DS}$		27DC **8101**		
2 PV circuits					
275 A	$B5_{DS}$	6 P	27PV **6026**	S3 type Black 4, 4X 143D **3111**(2) Red/Yellow 4, 4X 143E **3111**(2)	7.9 inches 200 mm 1401 **1520** 12.6 inches 320 mm 1401 **1532** 15.7 inches 400 mm 1401 **1540**(3)
350 A	$B5_{DS}$		27PV **6039**		

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

Accessories

External operation

Use

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

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

Example

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

S2 type handle — Reinforced S2 type handle

Frame size	Handle type	Handle color	Nema degree of protection	Reference
B4 ... B5 $B4_{DS}$	S2	Black	1, 3R, 12	142F **2111**
		Red/Yellow		142G **2111**
		Black	4, 4X	142D **2111**
		Red/Yellow		142E **2111**
$B5_{DS}$ B6	S3	Black		143D **3111**
		Red/Yellow		143E **3111**
B7	S4	Black		144D **3111**
		Red/Yellow		144E **3111**
$B6_{DS}$ ... $B7_{DS}$	V1	Black	1, 3R, 12	2799 **7145**

Front handle heavy duty I - 0 with metallic lever

Frame size	Handle type	Color	Nema type	Reference
B4 ... B5 $B4_{DS}$	S2	Black	4, 4X	142D **2911**
		Red/Yellow	4, 4X	142E **2911**
$B5_{DS}$ B6	S3	Black	4, 4X	143D **3911**
		Red/Yellow	4, 4X	143E **3911**
B7	S4	Black	4, 4X	144D **3911**
		Red/Yellow	4, 4X	144E **3911**

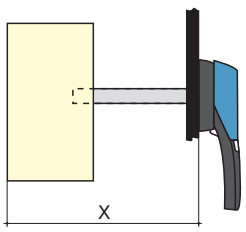
S3 type handle — S4 type handle — V1 type handle

Shaft for external handle

Use

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

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



Frame size	Handle type	Dimension (inches)	Dimension X (mm)	Length (inches)	Length (mm)	Reference
B4	S2	6 ... 11.6	150 ... 295	7.9	200	1400 **1020**
		6 ... 16.3	150 ... 415	12.6	320	1400 **1032**
		6 ... 19.4	150 ... 495	15.7	400	1400 **1040**
B5		8 ... 12.9	203 ... 328	7.9	200	1400 **1020**
		8 ... 17.6	203 ... 448	12.6	320	1400 **1032**
		8 ... 20.7	203 ... 525	15.7	400	1400 **1040**
B6	S3	8.70 ... 13.50	220 ... 343	7.9	200	1401 **1520**
		8.70 ... 18.23	220 ... 463	12.6	320	1401 **1532**
		8.70 ... 21.38	220 ... 543	15.7	400	1401 **1540**
B7	S4	12 ... 14.4	305 ... 366	7.9	200	1401 **1520**
		12 ... 19.1	305 ... 485	12.6	320	1401 **1532**
		12 ... 22.2	305 ... 564	15.7	400	1401 **1540**
$B4_{DS}$	S2	12 ... 14.3	305 ... 363	7.9	200	1400 **1020**
		12 ... 19	305 ... 483	12.6	320	1400 **1032**
		12 ... 22.10	305 ... 561	15.7	400	1400 **1040**
$B5_{DS}$	S3, S4	16 ... 18.4	406 ... 467	7.9	200	1401 **1520**
		16 ... 23.1	406 ... 589	12.6	320	1401 **1532**
		16 ... 26.3	406 ... 668	15.7	400	1401 **1540**
$B6_{DS}$	V1	20 ... 28.1	508 ... 714	12.6	320	4199 **3018**
		20 ... 31.3	508 ... 795	15.7	400	4199 **3019**
$B7_{DS}$		20 ... 28.1	508 ... 714	12.6	320	4199 **3018**
		20 ... 39.4	508 ... 795	15.7	400	4199 **3019**

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

S-type handle adapter

Use

For handles S2, S3 and S4.

Dimensions

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

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

acces_187_a_3_cat

Alternative S-type handle cover colors

Use

For handles S2, S3 and S4.

Other colors: please consult us.

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

acces_198_a_3_cat

Auxiliary contact

Use

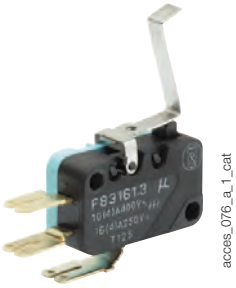
Pre-break and signaling of positions 0 and I:

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

Electrical characteristics

A300.

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



acces_076_a_1_cat

NO/NC contact

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

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

Low level NO/NC auxiliary contacts

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

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

Terminal screen

Use

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

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

acces_079_a_1_cat

Jumpers for connecting poles in series

1 PV circuit - 1000 VDC

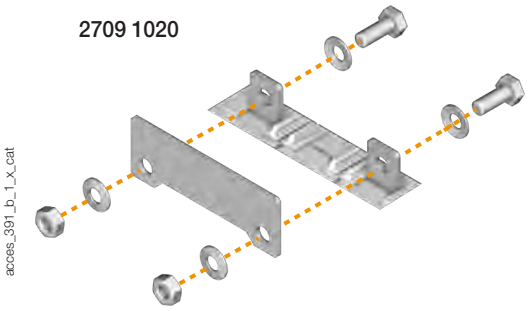
Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Jumper kit Reference
			Ungrounded	Grounded	
27PV **2009**	B4	100	N/A	1	2709 **1020**
27PV **2019**	B4	200	N/A	1	2709 **1020**
27PV **2024**	B4	250	N/A	1	2709 **1020**
27PV **2032**	B5	325	N/A	1	2709 **1041**
27PV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

Use

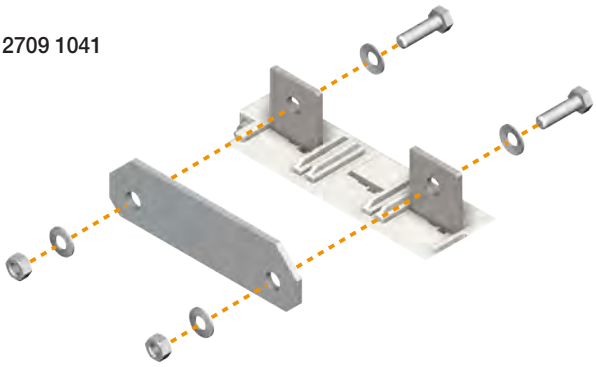
The jumpers will make easy the connection of the poles in series, allowing the following configurations(1).

(1) Other connections: refer to mounting instructions.

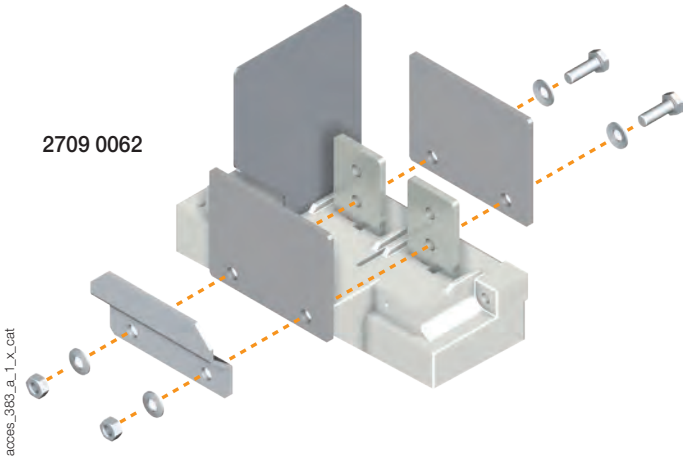
2709 1020



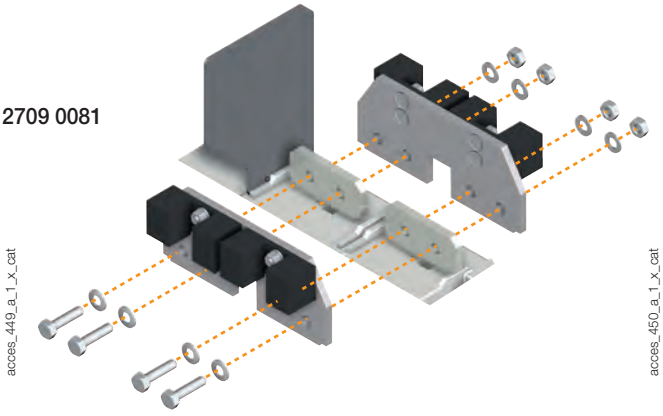
2709 1041



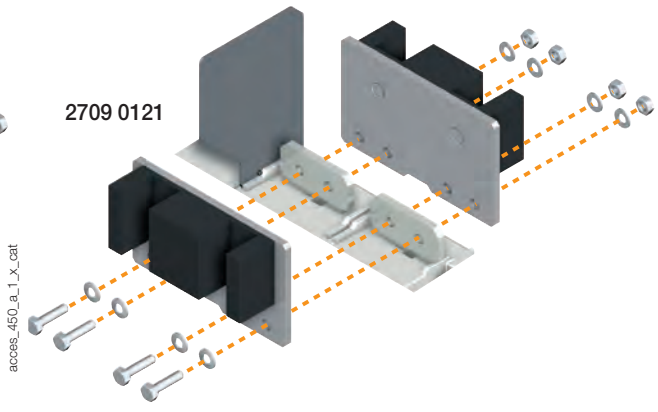
2709 0062



2709 0081



2709 0121



SIRCO PV UL 98B

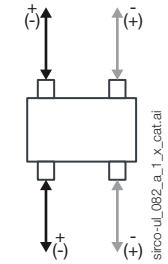
Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

1 PV circuit - 1000 VDC

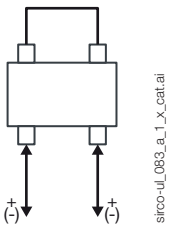
27PV 2009 - 27PV 2019 - 27PV 2024

Ungrounded



No jumper kit

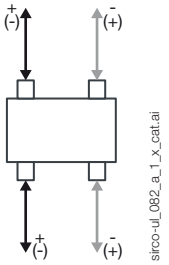
Grounded



1 x 2709 1020 jumper kit

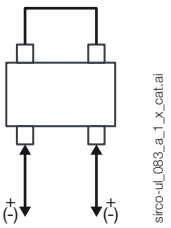
27PV 2032

Ungrounded



No jumper kit

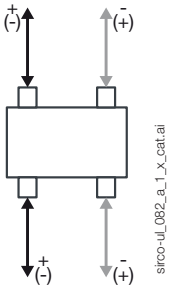
Grounded



1 x 2709 1041 jumper kit

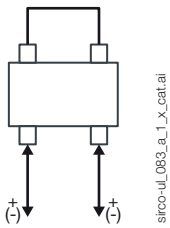
27PV 2039

Ungrounded



No jumper kit

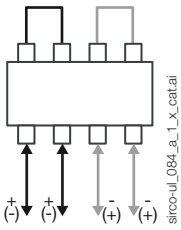
Grounded



2 x 2709 1041 jumper kits

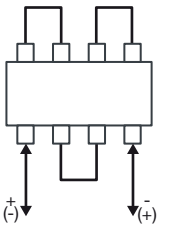
27PV 4060

Ungrounded



2 x 2709 0062 jumper kits

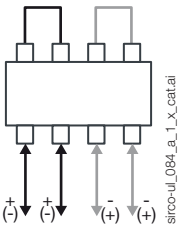
Grounded



3 x 2709 0062 jumper kits

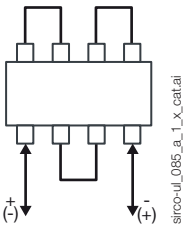
27DC 4081

Ungrounded



2 x 2709 0081 jumper kits

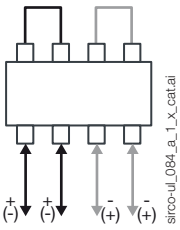
Grounded



3 x 2709 0081 jumper kits

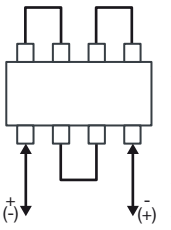
27DC 4121

Ungrounded



2 x 2709 0121 jumper kits

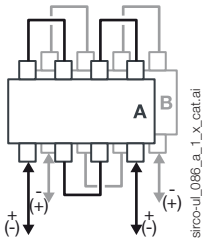
Grounded



3 x 2709 0121 jumper kits

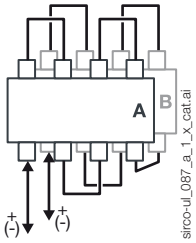
27DC 4201

Ungrounded



6 x 2709 0121
jumper kits

Grounded



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

Jumpers for connecting poles in series (continued)

2 PV circuits - 1000 VDC

Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Jumper kit Reference
			Ungrounded	Grounded	
2 PV circuits					
27PV **5009**	$B4_{DS}$	100	N/A	2	2709 **1020**
27PV **5024**	$B4_{DS}$	250	N/A	2	2709 **1020**
27PV **4032**	B5	325	N/A	2	2709 **0027**
27PV **4039**	B5	400	N/A	2	2709 **0038**
27PV **8060**	$B6_{DS}$	600	4	6	2709 **0062**
27DC **8081**	$B7_{DS}$	800	4	6	2709 **0121**
27DC **8101**	$B7_{DS}$	1000	4	6	2709 **0121**

4 PV circuits - 1000 VDC

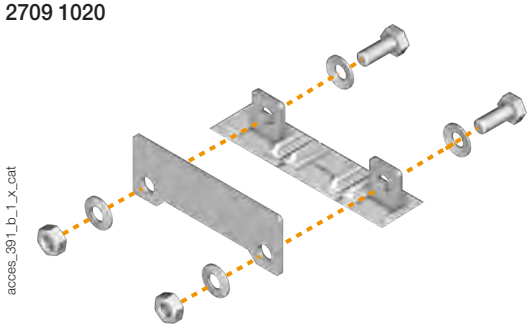
Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Jumper kit Reference
			Ungrounded	Grounded	
27PV **8039**	$B5_{DS}$	350	N/A	4	2709 **0038**

Use

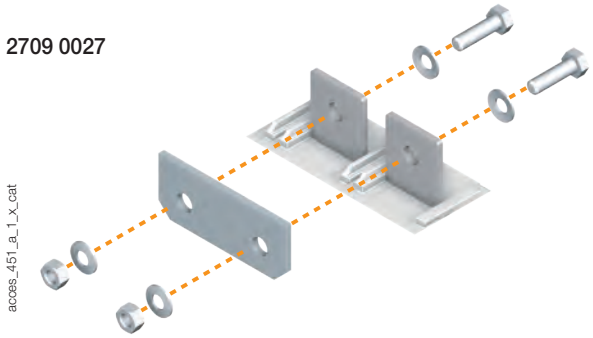
The jumpers will make easy the connection of the poles in series, allowing the following configurations(1).

(1) Other connections: refer to mounting instructions.

2709 1020

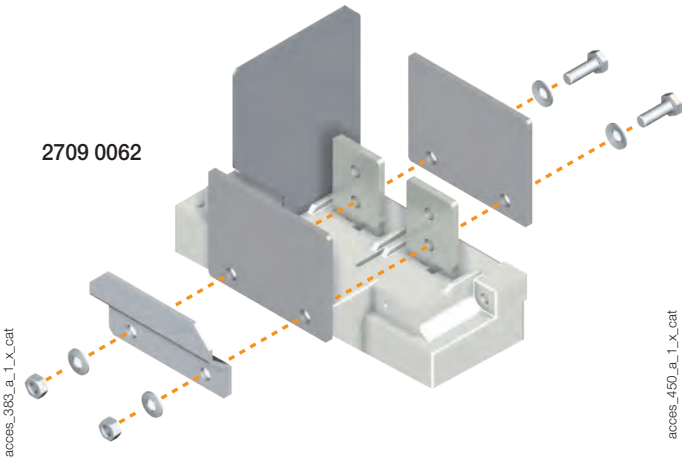


2709 0027

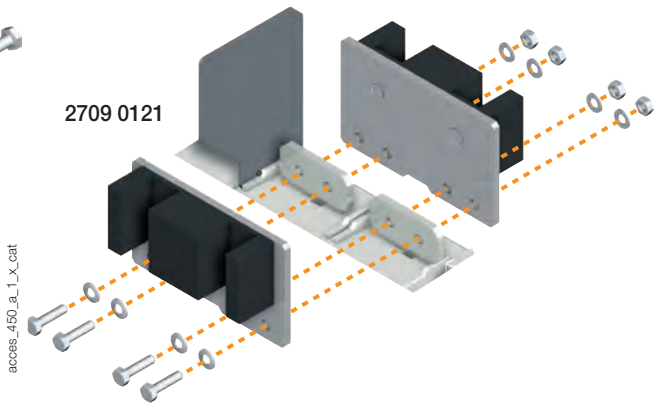


2709 0038

2709 0062



2709 0121



SIRCO PV UL 98B

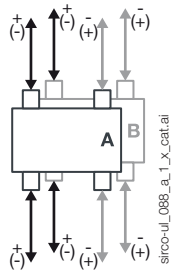
Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

2 PV circuits - 1000 VDC

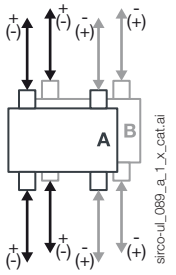
27PV 5009 - 27PV 5024

Ungrounded



No jumper kit required

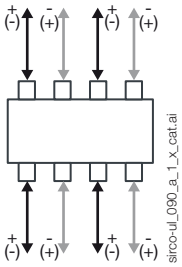
Grounded



2 x 2709 1020 jumper kits

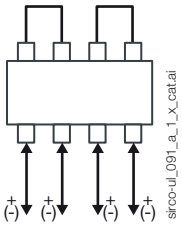
27PV 4032

Ungrounded



No jumper kit required

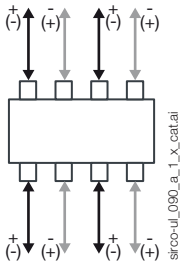
Grounded



1 x 2709 0027 jumper kit

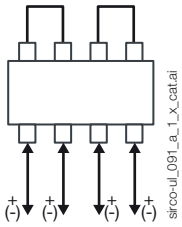
27PV 4039

Ungrounded



No jumper kit required

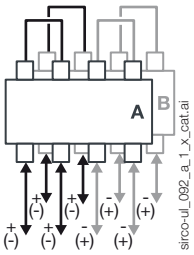
Grounded



2 x 2709 0045 jumper kits

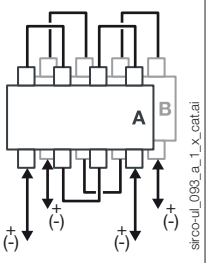
27PV 8060

Ungrounded



4 x 2709 0062 jumper kits

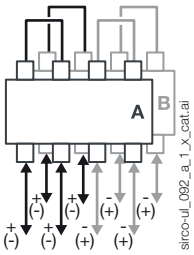
Grounded



6 x 2709 0062 jumper kits

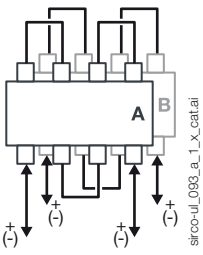
27DC 8081 - 27DC 8181

Ungrounded



2 x 2709 0121 jumper kits

Grounded

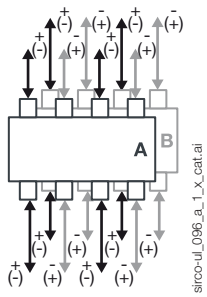


6 x 2709 0121 jumper kits

4 PV circuits - 1000 VDC

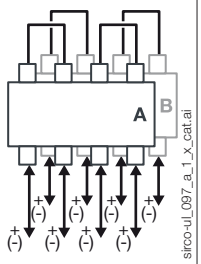
27PV 8039

Ungrounded



No jumper kit required

Grounded



4 x 2709 0046 jumper kits

Jumpers for connecting poles in series (continued)

1 PV circuit - 1500 VDC

Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Fig. of one jumper kit	Jumper kit Reference
			Ungrounded	Grounded		
1 PV circuit						
27PV **3026**	B5	275	1	2	3	2709 **0027**
27PV **3032**	B5	325	1	2	3	2709 **0027**
27PV **3039**	B5	400	1	2	4	2709 **0038**
27PV **8060**	$B6_{DS}$	600	6	6(2)	6	2709 **0062**
27DC **8081**	$B7_{DS}$	800	6	6(1)	8	2709 **0121**
27DC **8101**	$B7_{DS}$	1000	6	6(1)	8	2709 **0121**
2 PV circuits						
27PV **6026**	$B5_{DS}$	275	2	4	3	2709 **0027**
27PV **6039**	$B5_{DS}$	350	2	4	4	2709 **0038**

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

2 PV circuits - 1500 VDC

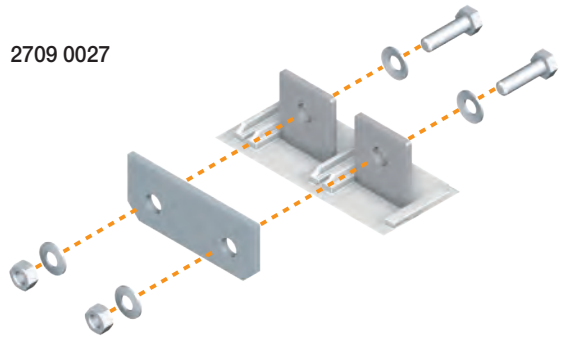
Switch Reference	Frame size	Rating (A)	Quantity of jumper kits to be order per switch		Fig. of one jumper kit	Jumper kit Reference
			Ungrounded	Grounded		
27PV **6026**	$B5_{DS}$	275	2	4	3	2709 **0027**
27PV **6039**	$B5_{DS}$	350	2	4	4	2709 **0038**

Use

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

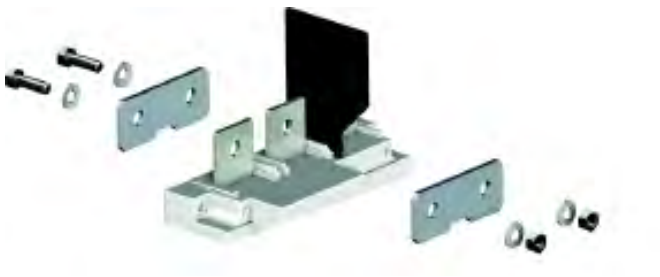
(1) Other connections: refer to mounting instructions.

2709 0027



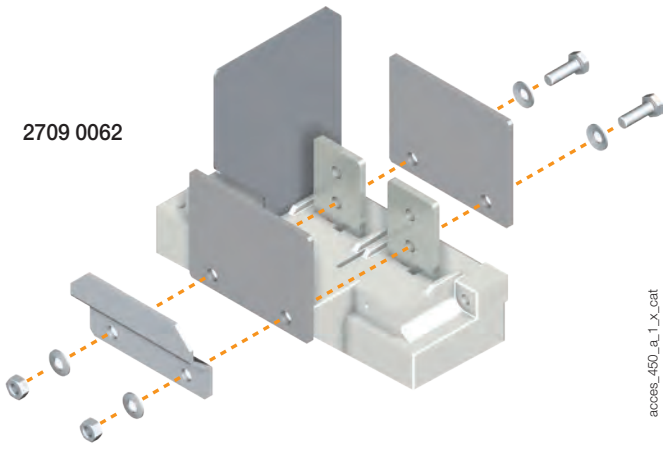
acces_451_a_1_x_cat

2709 0038



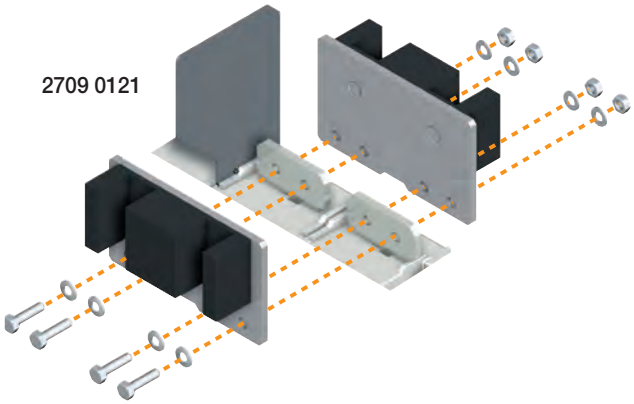
acces_378_a_1_x_cat

2709 0062



acces_383_a_1_x_cat

2709 0121



acces_450_a_1_x_cat

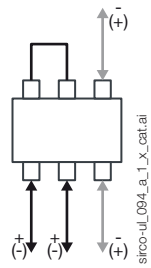
SIRCO PV UL 98B

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

1 PV circuit - 1500 VDC

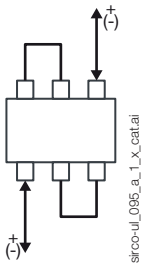
27PV 3026 - 27PV 3032

Ungrounded



1 x 2709 0027 jumper kit

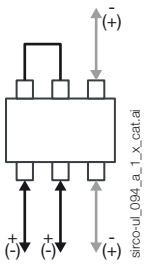
Grounded



2 x 2709 0027 jumper kits

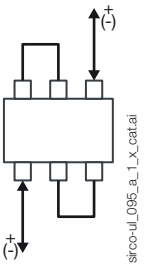
27PV 3039

Ungrounded



1 x 2709 0038 jumper kit

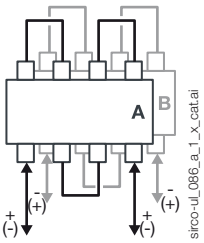
Grounded



2 x 2709 0038 jumper kit

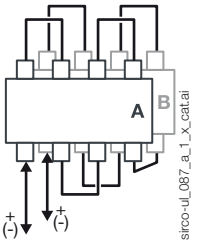
27PV 8060

Ungrounded



2 x 2709 0062
jumper kits

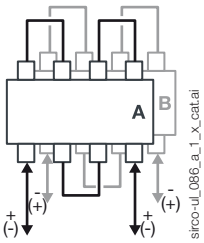
Grounded



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

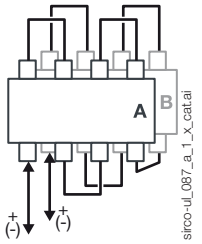
27DC 8081 - 27DC 8101

Ungrounded



6 x 2709 0121
jumper kits

Grounded

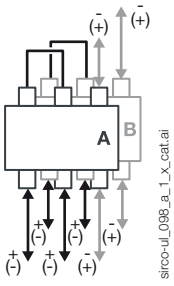


6 x 2709 0121 jumper kits
and one paralleling kit
(272 1200 or 2729 1201 or 2729 1202)

2 PV circuits - 1500 VDC

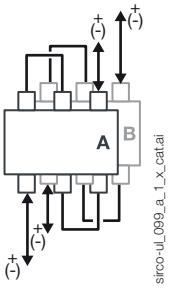
27PV 6026

Ungrounded



2 x 2709 0027 jumper kits

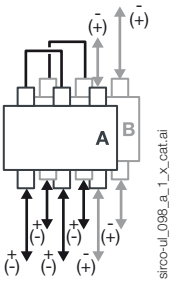
Grounded



4 x 2709 0027 jumper kits

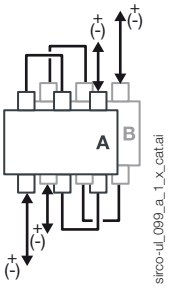
27PV 6026

Ungrounded



2 x 2709 0038 jumper kits

Grounded



4 x 2709 0038 jumper kits

Accessories (continued)

Terminal lugs

Use

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

Frame size	Rating max (A)	Numbrer and size of cables	Max. number of connections per terminal	Type of cable	Quantity	Reference
B4 - $B4_{DS}$	100 ... 250	1 conductor (#6-300MCM)	1	Cu / Al	2 lugs	3954 **2020**
		2 conductors (#4-2/0)	1	Cu / Al	2 lugs	3954 **2025**
B5 - $B5_{DS}$	325 ... 400	1 conductor (#4-600MCM)	1	Cu / Al	2 lugs	3954 **2040**
		2 conductors (#6-350MCM)	1	Cu / Al	2 lugs	3954 **2041**
B6 - $B6_{DS}$	600	2 conductors (#2-600MCM)	1	Cu / Al	2 lugs	3954 **2060**
B7	800 ... 1200	2 conductors (#2-600MCM)	2	Cu / Al	2 lugs	3954 **2060**
		2 conductors (#2-600MCM)	3(1)	Cu / Al	3 lugs	3954 **3060**
$B7_{DS}$	2000	2 conductors (#2-600MCM)	2(2)	Cu / Al	2 lugs	3954 **2060**
		2 conductors (#2-600MCM)	3(3)	Cu / Al	3 lugs	3954 **3060**

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

Paralleling connection kit

Use

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

Fig. 1

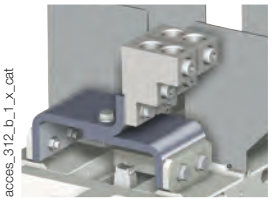


Fig. 2

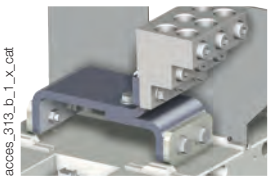
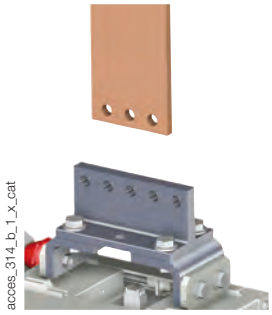


Fig. 3



Top or bottom flat connection

Frame size	Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
$B7_{DS}$	800 ... 1000	1	1	2	2729 **1200**
		2	1	3	2729 **1202**
	2000	1	1	2	2729 **1200**
		2	1	3	2729 **1202**

Top or bottom edgewise connection

Frame size	Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
$B7_{DS}$	800 ... 2000	3	1	3	2729 **1201**

Characteristics

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

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

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

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

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

(1) Wwithout fuse during 50 ms.

Characteristics (continued)

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

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

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

(1) Without fuse during 50 ms.

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

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

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

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

(1) Without fuse during 50 ms.

Characteristics (continued)

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

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

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

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

SIRCO PV UL 98B

Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

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

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

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

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

Characteristics (continued)

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

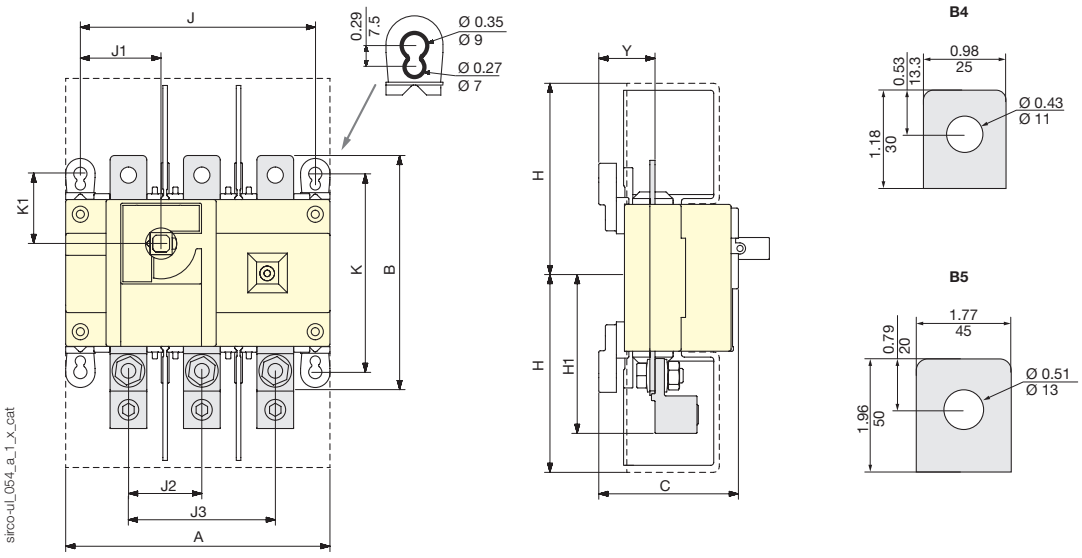
Rating		**1200 A**				**2000 A**			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	1200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

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

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

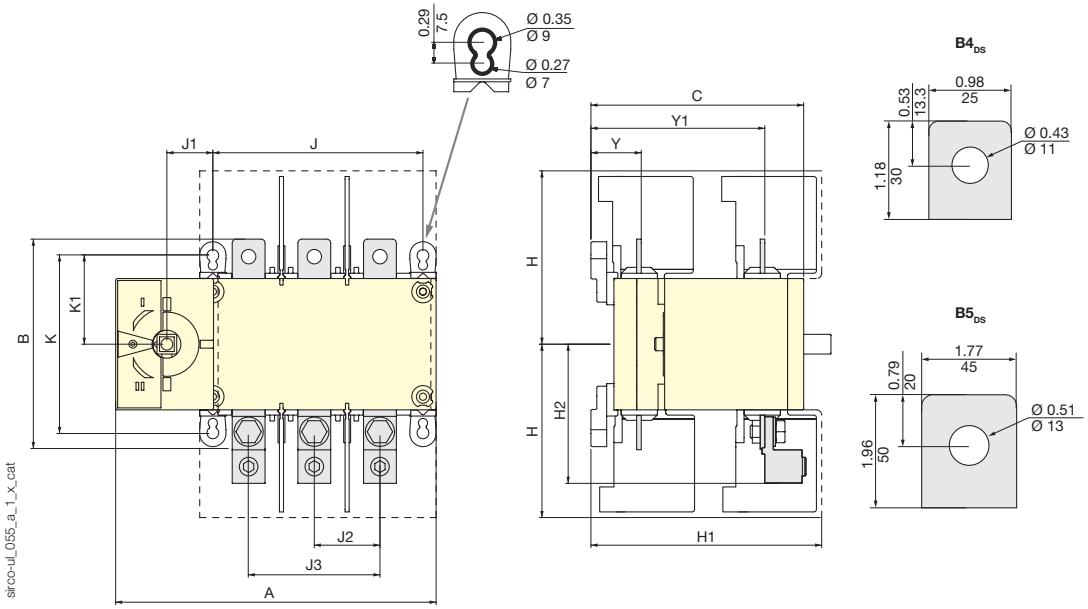
Dimensions (in/mm)

B4-B5



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

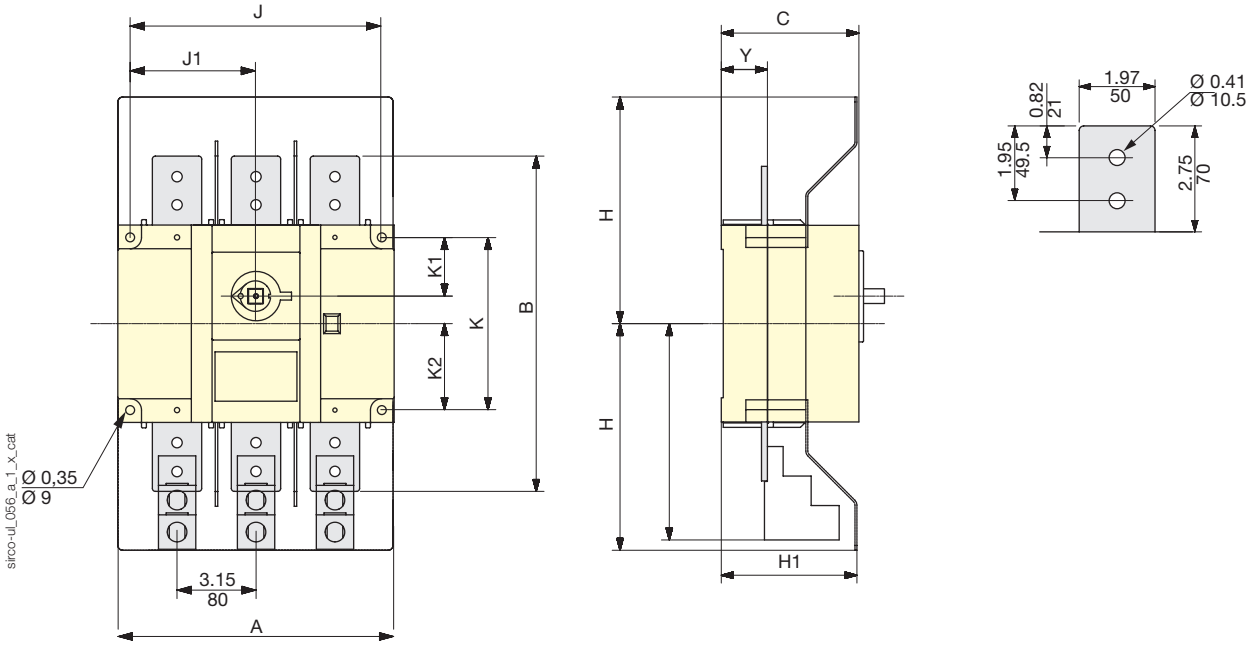
$B4_{DS}$-$B5_{DS}$



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

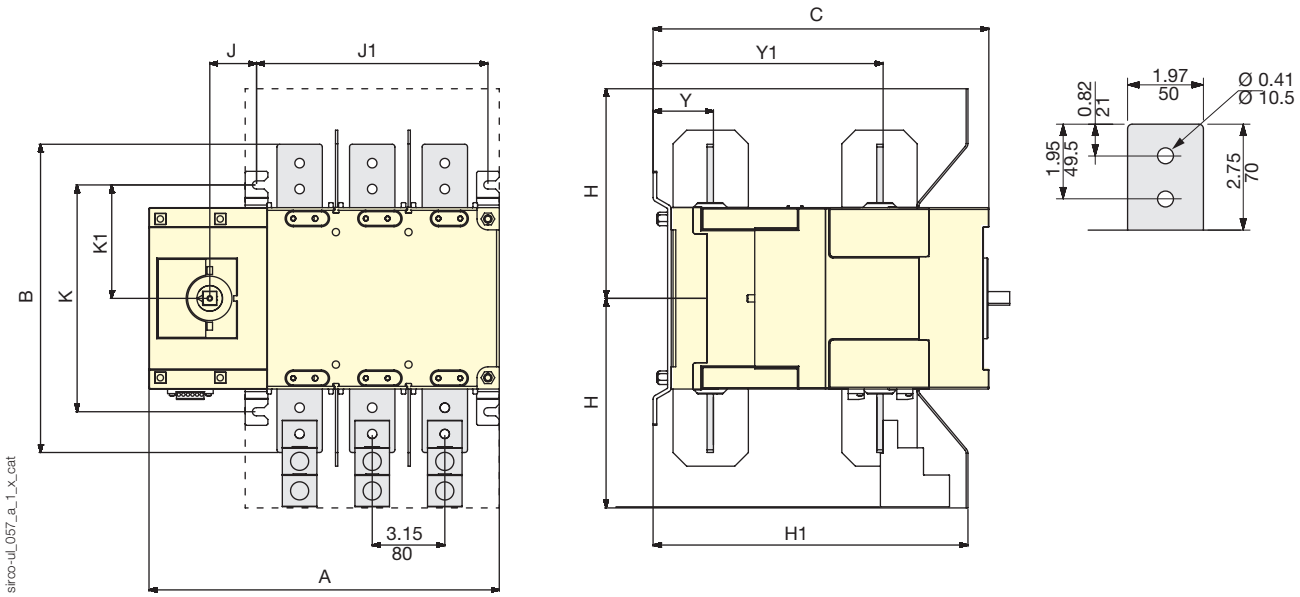
Dimensions (in/mm) (continued)

B6



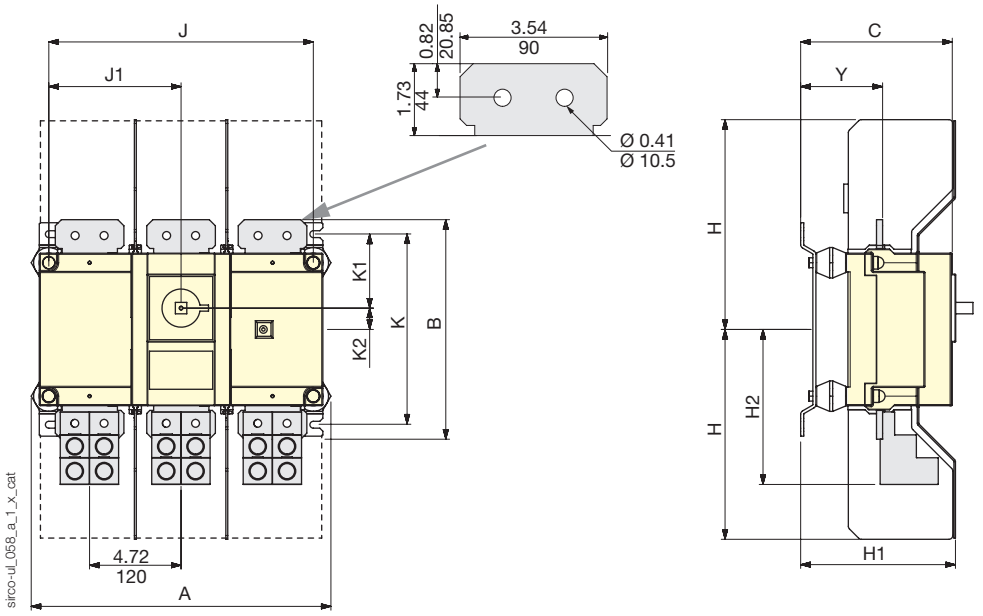
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	K2	Y
B6	4 P	inches	14.17	13.38	5.47	10.63	5.70	13.19	6.59	6.88	2.34	1.10	1.83
		mm	360	340	139	270	145	335	167.5	175	59.5	28	46.5

$B6_{DS}$



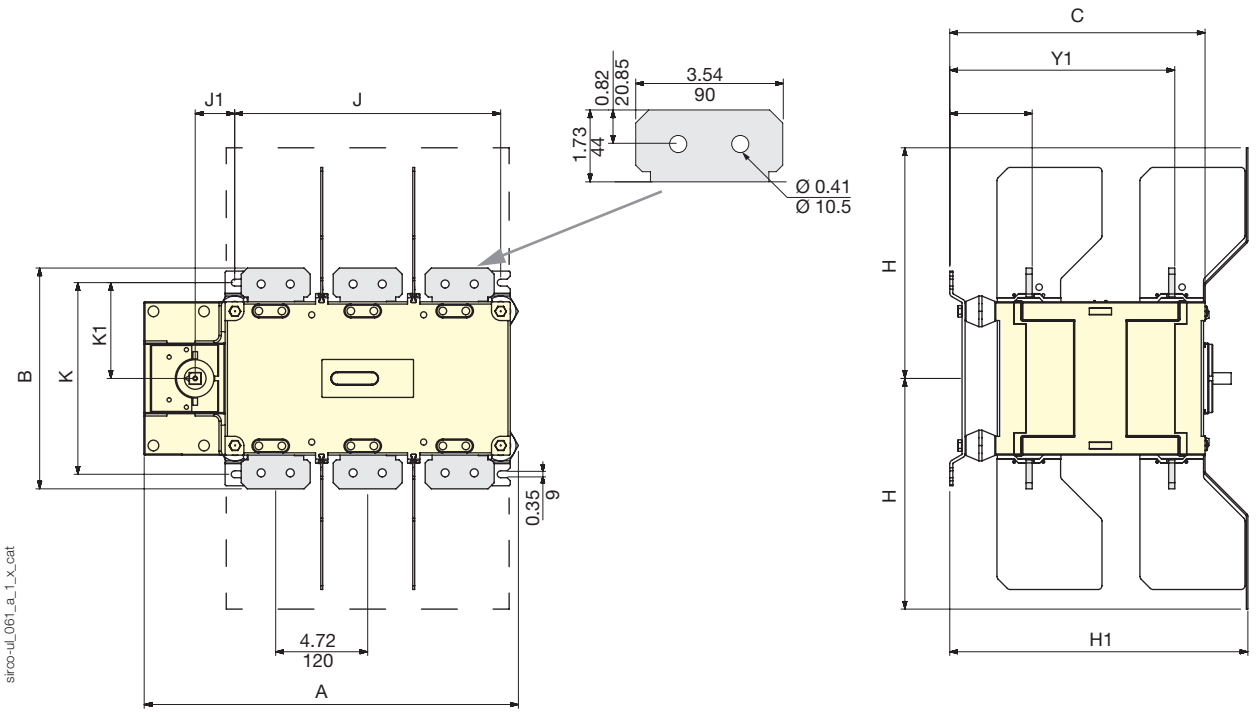
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	Y	Y1
$B6_{DS}$	8 P	inches	18.34	13.38	14.56	10.63	13.66	13.18	2.02	9.84	4.92	2.61	9.98
		mm	466	340	370	270	347	335	51.5	250	125	66.5	253.5

B7



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

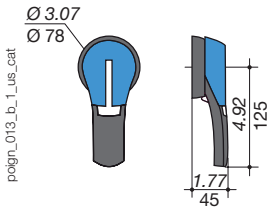
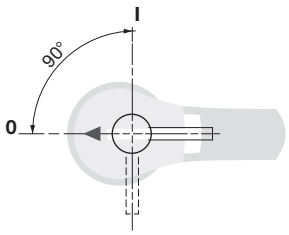
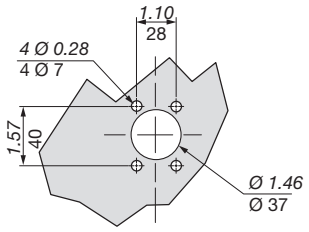
B7$_{DS}$



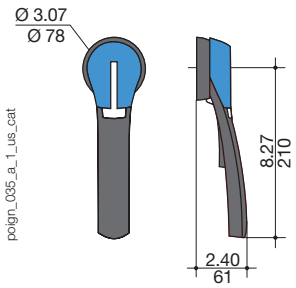
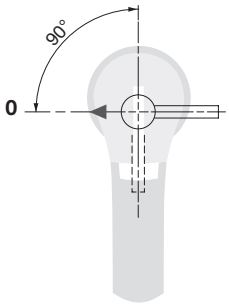
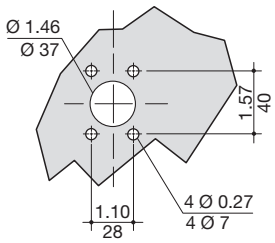
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	Y	Y1
B7$_{DS}$	8 P	inches	23.95	11.33	13.11	11.85	15.31	18.38	2.02	9.84	4.92	4.23	11.55
		mm	608.5	288	333	301	389	467	51.5	250	125	107.5	293.5

Dimensions for external handles (in/mm)

B4 - $B4_{DS}$ - B5

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

$B5_{DS}$ - B6

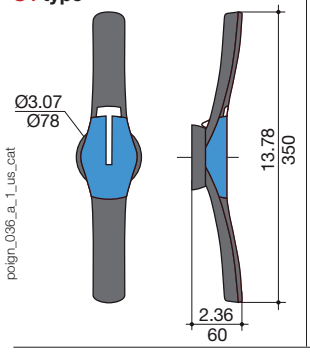
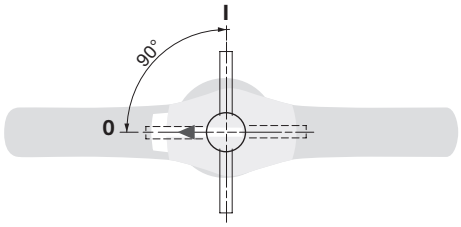
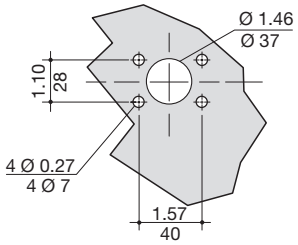
Handle type	Front operation Direction of operation	Door drilling
S3 type 		

SIRCO PV UL 98B

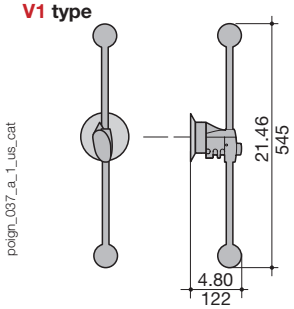
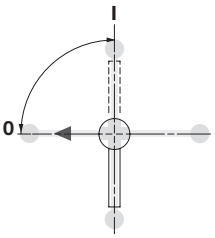
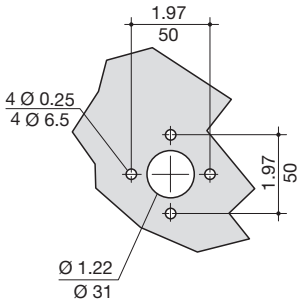
Disconnect switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

B7

Handle type	Front operation Direction of operation	Door drilling
S4 type 		

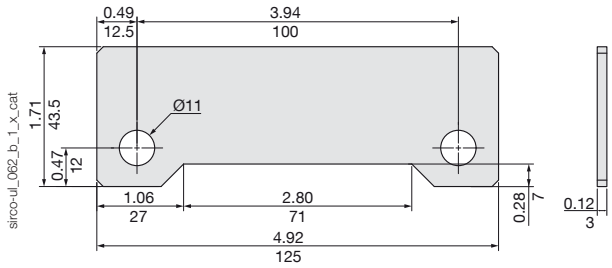
B6DS - B7DS

Handle type	Front operation Direction of operation	Door drilling
V1 type 		

Jumpers (in/mm)

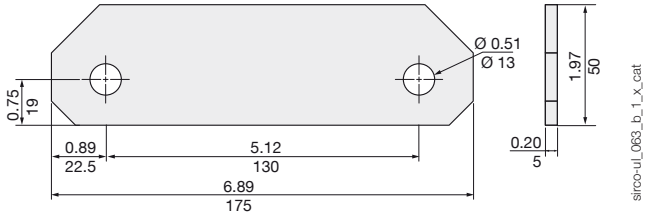
B4 - $B4_{DS}$

2709 1020

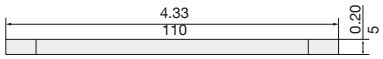


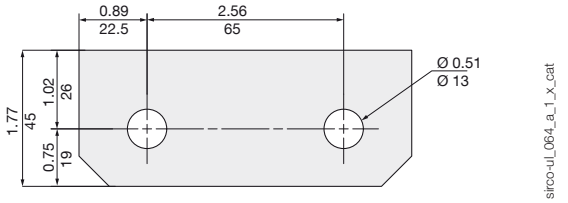
B5 - $B5_{DS}$

2709 1041

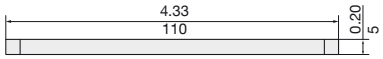


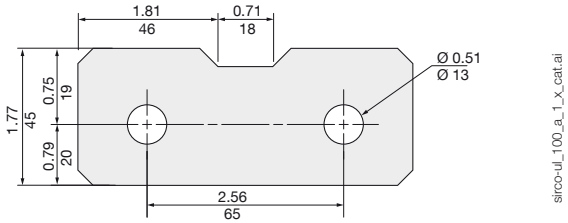
2709 0027





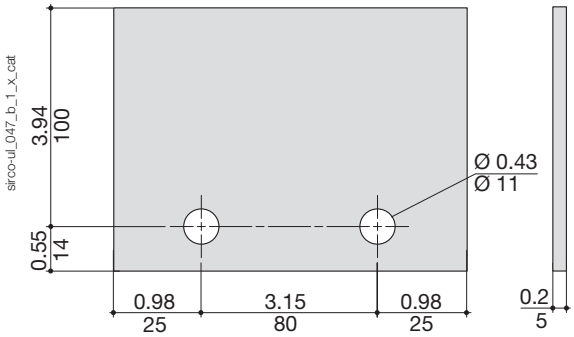
2709 0038





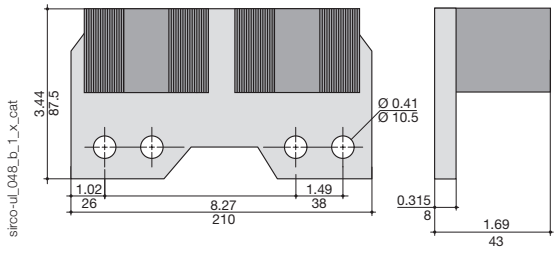
B6 - $B6_{DS}$

2709 0062



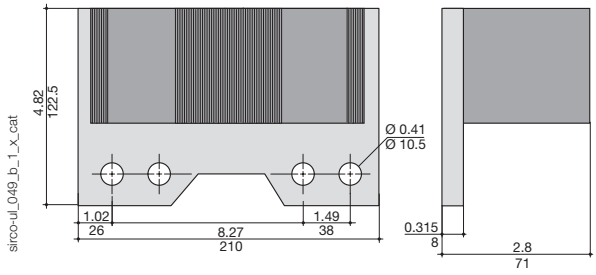
B7

2709 0081



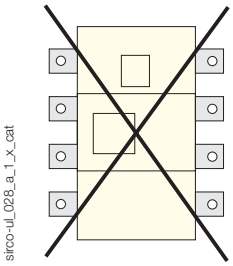
B7 - $B7_{DS}$

2709 0121

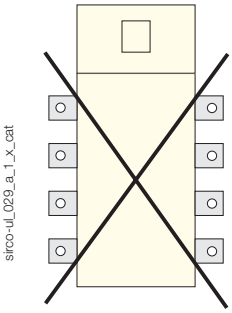


Mounting orientation

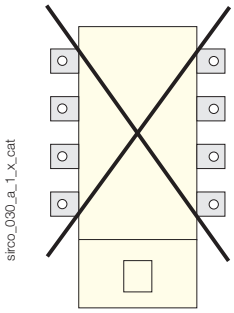
All frames



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

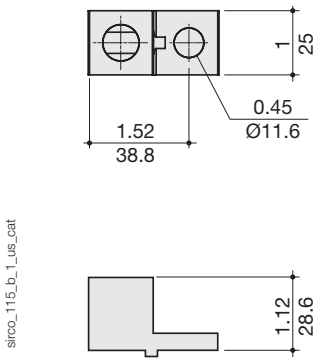


$B6_{DS}$ - $B7_{DS}$



Terminal lugs (in/mm)

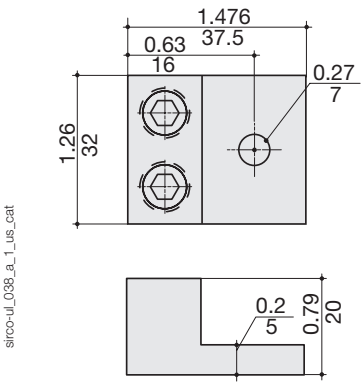
100 to 250 A



sirco_115_b_1_us_cat

300MCM

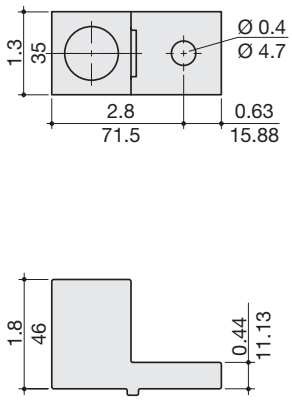
100 to 250 A



sirco-ul_038_a_1_us_cat

2/0

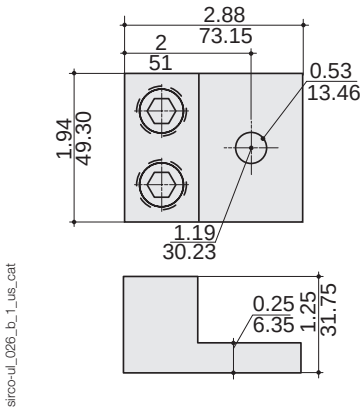
400 A



sirco-ul_010_a_1_us_cat

600MCM

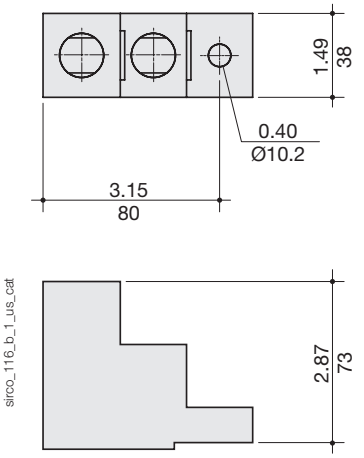
400 A



sirco-ul_026_b_1_us_cat

2 x 350MCM

600 to 2000 A



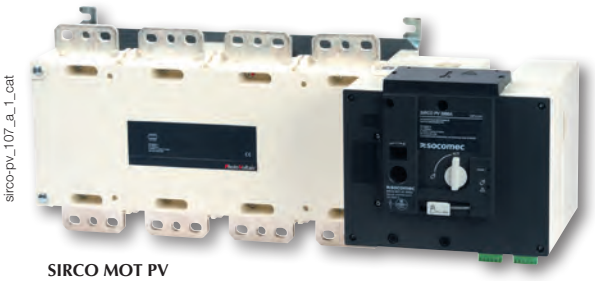
sirco_116_b_1_us_cat

2 x 600MCM

SIRCO MOT PV

Disconnect switches for photovoltaic applications

remotely operated range 2000 A, up to 1000 VDC



sirco-pv_107_a_1_cat

SIRCO MOT PV
4 x 2000 A

The solution for

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

Strong points

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

Conformity to standards

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

Function

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

Advantages

High breaking performance

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

Remotely operated product

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

Manual emergency operation

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

General characteristics

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

References

1000 VDC - Back plate mounting

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

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

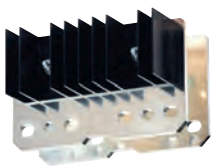
Accessories

Bridging bars for connecting poles in series

Use

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

Connection diagrams:
see “Pole series connections”



acces_392_a_1_cat

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

Accessories (continued)

Auxiliary contact

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

Connection to the control circuit
By 0.25 in / 6.35 mm fast-on terminal.

Electrical characteristics
30,000 operations.

Characteristics

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

References

NO/NC changeover contact

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

Terminal screens

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

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

2 position padlocking (I - 0)

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

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

Key handle interlocking system

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

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

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

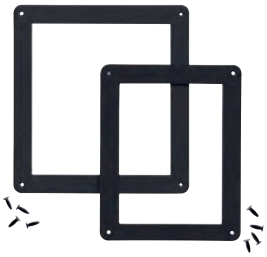
Accessories (continued)

Door protective surround

Use

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

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



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

2000 A / B7

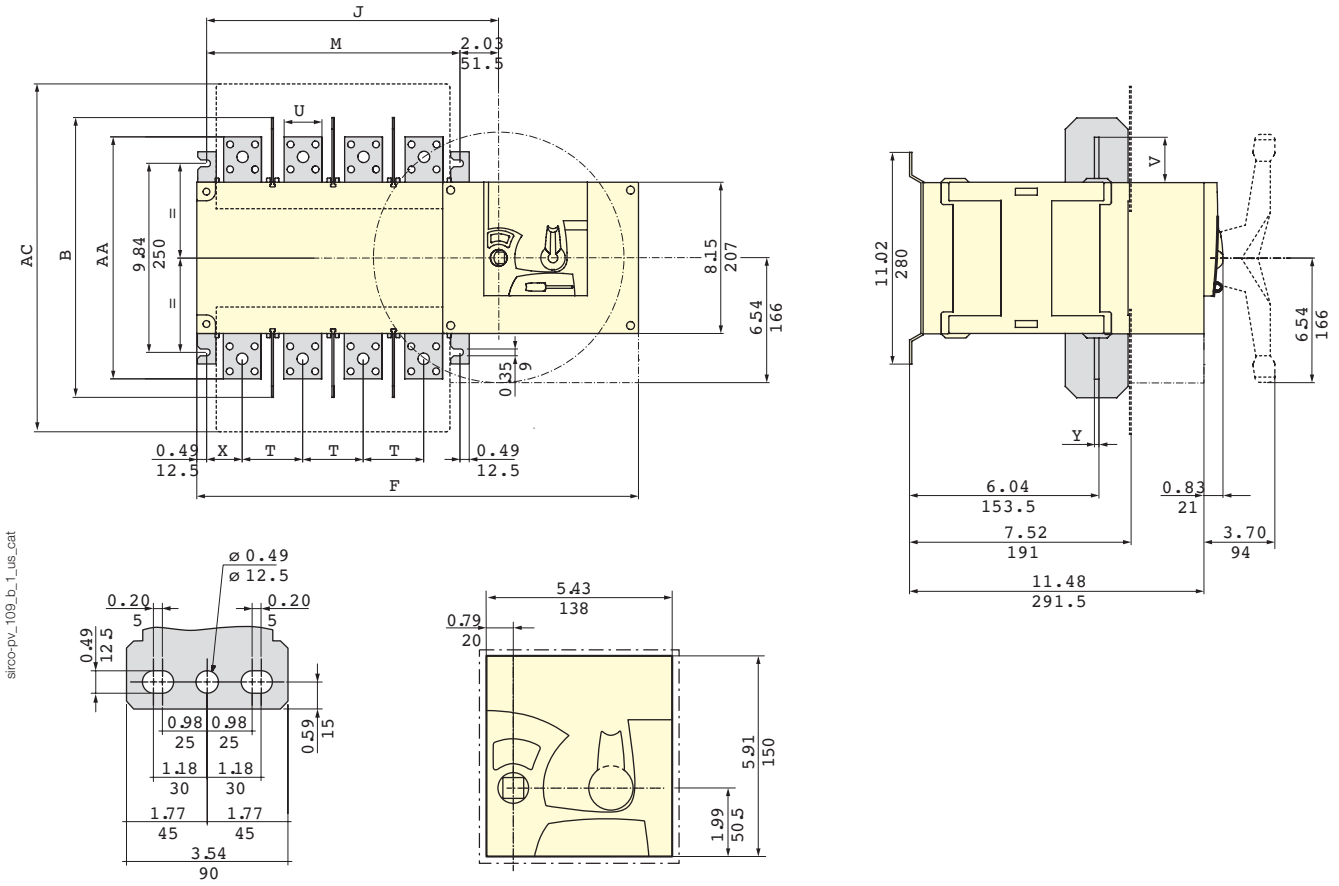
Rating		2000 A			
Number of circuits	**Rated voltage**	**(A)**	**Number of pole(s) in series per polarity**	**Number of pole(s) of the device**	**Frame size**
1 circuit	1000 VDC	2000	4 P	4 P	B7
Short-circuit capacity at 1000 VDC (any circuit breaker)					
Prospective short-circuit current (kA rms DC)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

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

(1) Improved endurances: Please consult us.

Dimensions (in/mm)

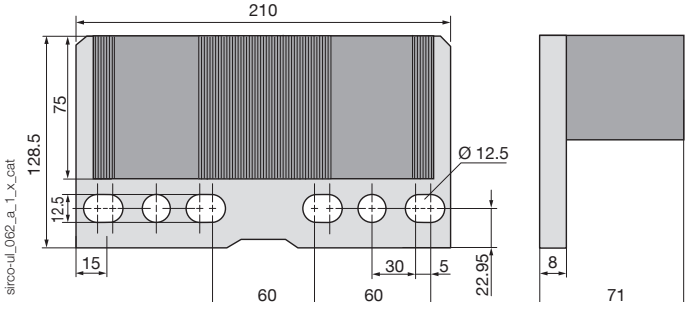
2000 A / B7



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

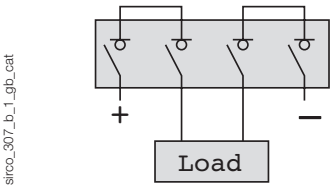
Bridging bar

2000 A / B7



Pole series connections(1)

4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions

RM PV UL

Photovoltaic modular fuse holder
for PV Midget and 10x38 fuses

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

The solution for

> Small installations
up to large PV farms

Strong points

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

Conformity to standards

> UL 4248-18,
Guide IZMR,
File E470731

> CSA C22.2 No. 14,
Class 3211-37,
File 265615

> IEC 60269-2

Function

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

Advantages

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

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

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

References

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

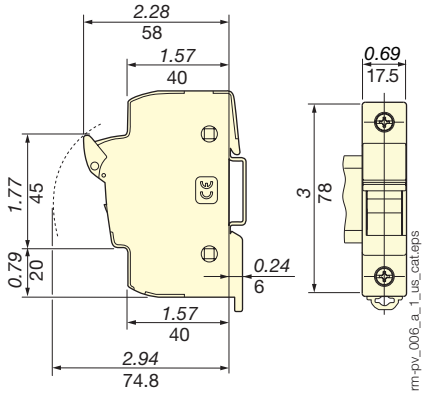
Characteristics according to UL 4248-18 and CSA C22.2 No. 14

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

Characteristics according to IEC 60269-2

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

Dimensions



Fusible disconnect switches

Fusible disconnect switches

FUSERBLOC UL
30 to 800 A
p. 113

Modular fuse holders

RM CC
Class CC
30 A
p. 127

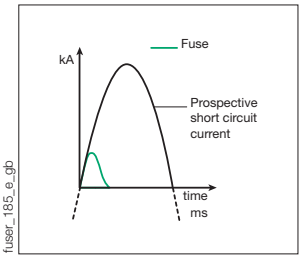
RM - RMS
for Midget / Ferrule fuses
32 to 125 A
p. 131

Specific products

Fuse combination switches for specific applications.
p. 137

Fuse solutions: definite advantages over circuit breakers

Fuses: a high performance



fuser_185_e_gb

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

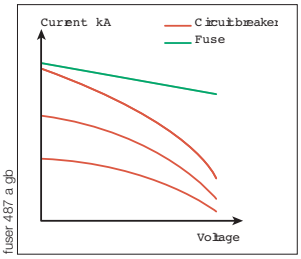
Our disconnects have been designed around this concept to provide 200 kA as a SCCR on most of the range.

Safety

fuser 192 b

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

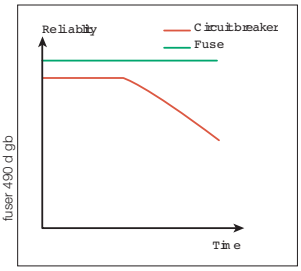
Circuit-breakers: reduced breaking capacity



fuser 487 a gb

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

Reliability over time



fuser 490 d gb

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

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

Re-close or Replace ?

fuser 664 a

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

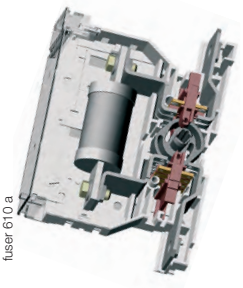
You should however consider that the circuit-breaker should be inspected each time there is a significant short-circuit.

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

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

Thus, Re-close or replace ?

Last longer



fuser 610 a

Our FUSERBLOC show 2 main functionalities:

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

Evolution of NEC® regulation

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

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

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

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

Arc flash NEC®2005

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

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

UL/ CSA standards for disconnect switches

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

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

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

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

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

Typical control panel

UL standards for Electrical Machinery

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

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

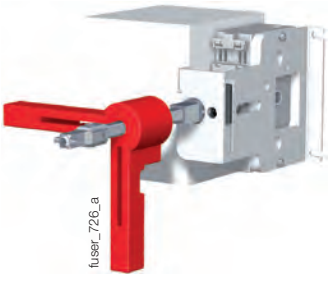
These products are IEC type products, smaller requiring only a creepage distance between phases of 1/2 inch. UL 508 standard requested only 5 kA or 10 kA as short circuit withstand with fuse protection. Their use as a disconnecting mean is therefore limited to local disconnection of motors. These products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

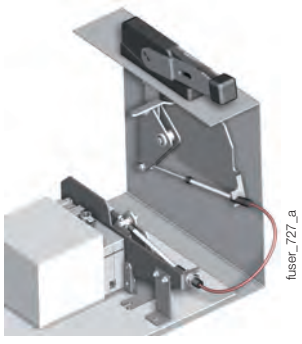
A manual motor controller marked “Suitable as motor disconnect” shall be installed only on the load side of the branch circuit protective device (UL 508A 30.3.3 and NEC 430.109(6)).

NFPA 79 Electrical Standard for industrial machinery

The following types of machines are identified as industrial machinery:

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



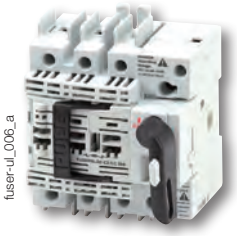


FUSERBLOC UL

Fusible disconnect switches UL and CSA

from 30 to 800 A

ul_004_a



fuser-ul_006_a

fuser-ul_005_a

The solution for

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

Strong points

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

Conformity to standards

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

Enclosures

- Enclosed fusible disconnect switch available, see Enclosed Disconnect Switches

coff-ul_032.psd

Function

FUSERBLOC UL are heavy duty switches that break and make power circuits on and off load. The switches employ double break contacts per pole that ensure complete isolation of the fuse when the switch is in the “OFF” position. These switches are extremely durable and are tested and approved for use in the most demanding applications.

The TEST position function is enabled with handles with the TEST position. This function tests the control circuit auxiliaries without switching the main contacts. It is a simple alternative to a separately wired push button.

Advantages

Improved safety

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

High breaking capacity.

- Up to 200 kA short circuit rating.

A complet range of functions

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

References

Fusible disconnect switches

Rating/Fuse Type Frame size	No. of poles	Switch body	Direct handle	Front external handle	External right side handle[1]	Shaft external handle	NFPA 79 kit	U-type auxiliary contacts	Terminal shrouds
30A Class CC Frame Size 1 CD	3 P	3710 **3003**	Black 3729 **4012**	S0 type Black I - 0 1, 3R, 12 1493 **0111** 4, 4X 149D **0111**		S0 type 7.9 inches 200 mm 1405 **0620** 12.6 inches 320 mm 1405 **0632** 15.7 inches 400 mm 1405 **0640**	3729 **4532**[2]	1 contact NO 3999 **0701** 1 contact NC 3999 **0702**	not required
	3 P + switched neutral	3710 **4003**							
	3 P + solid neutral	3710 **5003**							
30A CLass J Frame Size 2 CD	3 P	3710 **3004**	3729 **4014**	S1 type Black I - 0 1, 3R, 12 141F **2111** 4, 4X 141D **2111**		S1 type 7.9 inches 200 mm 1401 **0520** 12.6 inches 320 mm 1401 **0532** 15.7 inches 400 mm 1401 **0540**			
	3 P + switched neutral	3710 **4004**							
	3 P + solid neutral	3710 **5004**							
30A Class J Frame Size 4	2 P	3861 **2004**	Black 3629 **7910**	S1 type Black I - 0 1, 3R, 12 Defeatable 141F **2111** I - 0 4, 4X Defeatable 141D **2111** I - 0 - Test 4, 4X Defeatable 141D **2115**	S1 type Black I - 0 4, 4X 141H **6111** S1 type Red / yellow I - 0 4, 4X 141I **6111**	S1 type 7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**	3729 **7540**		
	3 P	3861 **3004**							
	4 P	3861 **6004**							
60A Class J Frame Size 4	2 P	3861 **2005**							
	3 P	3861 **3005**							
	4 P	3861 **6005**							

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

References (continued)

Fusible disconnect switches

Rating/Fuse Type Frame size	No. of poles	Switch body	Direct handle	Front external handles	External right side handle[1]	Shaft for external handle	NFPA 79 kit	U-type auxiliary contacts	Terminal shrouds
60A Class J Frame Size 5	2 P	3861 **2006**	Black 3629 **7910**	S2 type Black I - 0 1, 3R, 12 Defeatable 142F **2111** 4, 4X Defeatable 142D **2111**	S2 type Black I - 0 4, 4X 142H **6111** Red / yellow I - 0 4, 4X 142I **6111**	S2 type 7.9 inches 200 mm 1400 **1020** 12.6 inches 320 mm 1400 **1032** 15.7 inches 400 mm 1400 **1040**	3729 **7540**	1 contact type NO 3999 **0701** 1 contact type NC 3999 **0702**	not required
	3 P	3861 **3006**							
	4 P	3861 **6006**							
100A Class J Frame Size 5	2 P	3861 **2010**							
	3 P	3861 **3010**							
	4 P	3861 **6010**							
200A Class J Frame Size 6	2 P	3861 **2020**							3898 **2020**
	3 P	3861 **3020**							3898 **3020**
	4 P	3861 **6020**							3898 **4020**
400A Class J Frame Size 7	2 P	3851 **2038**					3729 **7544**		3898 **2040**
	3 P	3851 **3038**							3898 **3040**
	4 P	3851 **6038**							3898 **6040**
600A Class J Frame Size 8	2 P	3850 **2060**	Black 3859 **6011**	S3 type Black I - 0 1, 3R, 12 Defeatable 143F **3111** 4, 4X Defeatable 143D **3111**		S3 type 7.9 inches 200 mm 1400 **1220** 12.6 inches 320 mm 1400 **1232** 15.7 inches 400 mm 1400 **1240**	3729 **7552**		2 P 3898 **2080** 3 P 3898 **3080** 4 P 3898 **4080**
	3 P	3850 **3060**							
	4 P	3850 **6060**							
800A Class L Frame Size 8	2 P	3850 **2080**							
	3 P	3850 **3080**							
	4 P	3850 **6080**							

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

Accessories

Electronic fuse operation indication (FMD)

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

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

References

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

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

Relay characteristics

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

FMD10
1-led version

FMD30
3-leds version

NFPA 79 accessories

Flange handle for flange operation

Use

Meets both UL 508A and NFPA 79 requirements.

The handle will operate the switch by cable or rod.

Rating (A)	Type	Nema type	Reference
30 … 200	Standard handle	1, 3, 3R, 4, 12	3729 **9002**(1)
30 … 200	Chrome plated handle	1, 3, 3R, 4, 4X, 12	3729 **9003**(1)

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


sirco_246_a_1_us_cat

Cable operator

Use

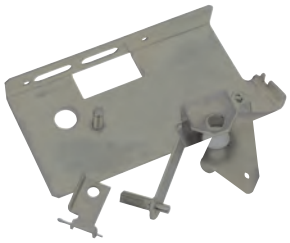
Link between the flange handle and the switch, please order the flange handle, the mechanism and a cable length of your choice.

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

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

For 400 A rating, please consult us.


sirco_247_a_1_cat


ul_042_b_1

Rod operator

Use

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

Rating 30 … 200 A

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

For 400 A rating, please consult us.


ul_043_a

NFPA 79 "Through the door" kit

Use

Meets both UL 508A and NFPA 79 requirements.

Allows retrofit of your installations for ratings from 30 to 800 A.

Please order an S-type external handle separately.

Number of auxiliary contact installed on the switch will be limited to 1 layer (instead of 2).

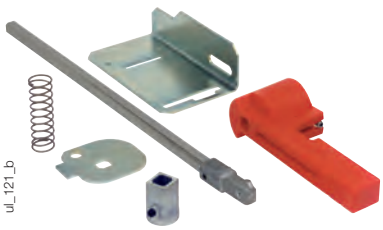
If more needed please use the S type auxiliary contacts.

Delivered with a 12.6 in / 320 mm shaft.

For longer shafts, please consult us.

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

(1) Use with S1 handle.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Accessories

Direct handle

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


Fig.1


acces_147_a_2_cat
acces_261_a
Fig. 2

External handle

Use

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

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

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

Front operation

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

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

Front handle heavy duty I - 0 with metallic lever

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

Right side operation

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


acces_263_a_2_cat
S0-type handle


acces_149_a_2_cat
S- type handle


acces_164_a_2_cat
S2-type handle


acces_151_a_1_cat
S3-type handle

S-type handle raiser

Use

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

Dimensions

Increases distance to door by 0.47 in / 12 mm.


acces_187_a_1_cat

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

Alternative color S-type handle cover

Use

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


acces_198_a_1_cat

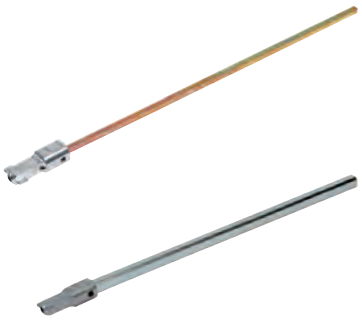
Handle color	Pack qty	Handle type	Reference
Light grey	50	S1, S2, S3	1401 **0001**
Dark grey	50	S1, S2, S3	1401 **0011**

Shaft for external handle

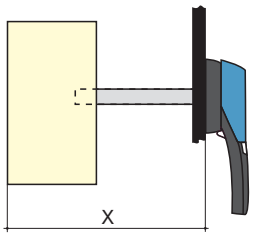
Use

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

Other lengths: please consult us.


acces_145_b_1_cat

acces_369_a_1_cat



acces_202_a_1_cat

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

Accessories (continued)

External front operation shaft support accessory

Use

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

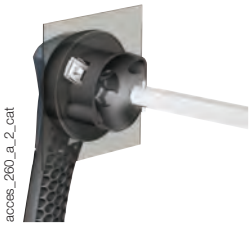
Rating (A)	Frame size	Reference
30 ... 400	4 ... 7	3899 **0400**

Shaft guide for external handle

Use

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

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



U-type auxiliary contacts

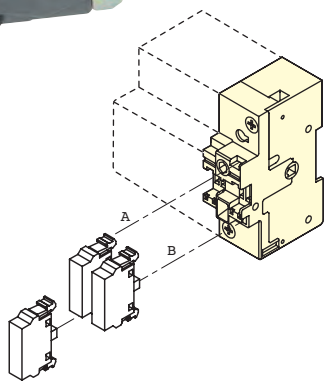
Use

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

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

Electrical characteristics

A600.
When FUSERBLOC is front operated, ACs are prebreak and signaling position I and 0.
When FUSERBLOC is side operated, Acs are signaling positions I and 0.



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

NO auxiliary contacts		
Rating (A)	**Number of contacts**	**Reference**
CD 30 ... 800	1	3999 **0701**

NC auxiliary contacts		
Rating (A)	**Number of contacts**	**Reference**
CD 30 ... 800	1	3999 **0702**

Contact holder for additional auxiliary contacts		
Rating (A)	**Fuses**	**Reference**
CD 30	CC	3999 **0710**
CD 30	J	3999 **0710**

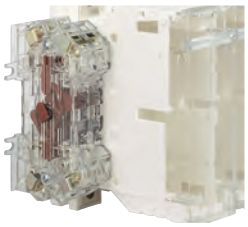
S-type auxiliary contacts

Use

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

Electrical characteristics

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



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

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

Terminal shrouds

Use

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

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

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

fuser_314_a_1_cat

Terminals lugs

Use

Connection of cables to the terminals.

Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
CD 30 Size 1	#14 - #10	1		Cu	as standard
30	#14 - #10	1		Cu	as standard
30 … 60 Size 4	#10 - #6	1		Cu	as standard
60 … 100 Size 5	#12 - #1	1		Cu	as standard
200	#6 - 300MCM	1	2	Cu / Al	3954 **2020**
200	#6 - 300MCM	1	3	Cu / Al	3954 **3020**
200	#6 - 300MCM	1	4	Cu / Al	3954 **4020**
400	#2 - 600MCM	1	2	Cu / Al	3954 **2040**
400	#2 - 600MCM	1	3	Cu / Al	3954 **3040**
400	#2 - 600MCM	1	4	Cu / Al	3954 **4040**
400	2 x (#6 - 350 MCM)	2	2	Cu / Al	3954 **2041**
400	2 x (#6 - 350 MCM)	2	3	Cu / Al	3954 **3041**
400	2 x (#6 - 350 MCM)	2	4	Cu / Al	3954 **4041**
600 … 800	2 x (#2 - 600MCM)	2	2	Cu / Al	3954 **2060**
600 … 800	2 x (#2 - 600MCM)	2	3	Cu / Al	3954 **3060**
600 … 800	2 x (#2 - 600MCM)	2	4	Cu / Al	3954 **4060**

ul_032_a

Solid links

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

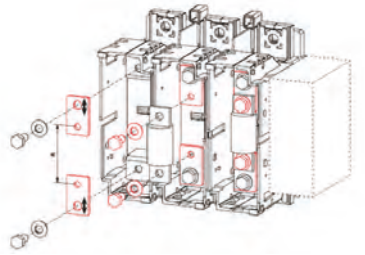
fuser-ul_019_a_1_cat

Class T fuse adapter

Use

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

	Size Class T fuse			
Rating (A)	(in)	(mm)	No. of poles	Reference
100	2.34	59.5	3 P	3729 **8010**
200	2.48	63	3 P	3729 **8020**
400	2.71	69	3 P	3729 **8040**
600	2.95	75	3 P	3729 **8060**
800	3.17	80.5	3 P	3729 **8080**



fuser-ul_014_b_1_cat

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

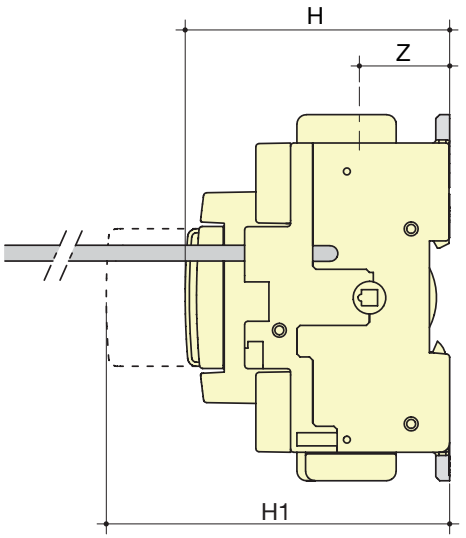
CD 30 to 800 A

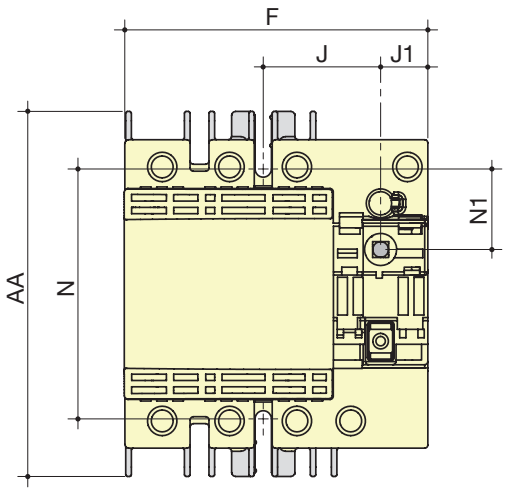
Characteristics UL and CSA	CD 30 A[3]	CD 30 A[3]	30 A	60 A	60 A	100 A	200 A	400 A	600 A	800 A
Short circuit rating at 600 VAC (kA)	100	100	200	100	200	200	200	200	200	200
Type of fuse	CC	J	J	J	J	J	J	J	J	L
Max. fuse rating (A)	30	30	30	60	60	100	200	400	600	800
Max. motor hp / FLA 1 ph motor max.										
120 VAC	2 - 24	2 / 24	2 / 24	5 / 56	5 / 56	7.5 / 80	15 / 135	-	-	-
240 VAC	5 - 28	5 / 28	5 / 28	10 / 50	10 / 50	20 / 88	40 / 176	50 / 216	-	-
Max. motor hp / FLA 3 ph motor max.										
220-240 VAC	7.5 / 22	7.5 / 22	7.5 / 22	15 / 42	15 / 42	30 / 80	60 / 154	125 / 312	200 / 480	200 / 480
440-480 VAC	15 / 21	15 / 21	15 / 21	30 / 40	30 / 40	60 / 77	125 / 156	250 / 302	500 / 590	500 / 590
600 VAC	20 / 22	20 / 22	20 / 22	50 / 52	50 / 52	75 / 77	150 / 144	350 / 336	500 / 472	500 / 472
125 VDC[1]	3 / 25	3 / 25	3 / 25	3 / 25	3 / 25	7.5 / 58	15 / 112	20 / 148	-	-
250 VDC[2]	5 / 20	5 / 20	5 / 20	10 / 38	10 / 38	20 / 38	40 / 140	50 / 173	-	-
Mechanical endurance										
Endurance (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	8 000	6 000	5 000	5 000
Operating torque (lbs.in / Nm)	31 / 3.5	31 / 3.5	71 / 8	71 / 8	71 / 8	71 / 8	90 / 10.2	150 / 17	586 / 66.2	586 / 66.2
Connection										
Min. connection cross-section/ (mm^2)[2]	#14	#14	2 x #12	2 x #10	#10	#10	#6	#2 or 2 x #6	2 x #2	2 x #2
Max. connection cross-section/ (mm^2)[2]	#10	#10	2 x #6	2 x #6	#2/0	#2/0	300MCM	600MCM or 2 x 350MCM	2 x 600MCM	2 x 600MCM

Common accessories - more available on next pages.
(1) 2 pole in series.
(2) 3 pole in series.
(3) UL 489/CSA22.2 #5.

Dimensions (in/mm)

CD 30 A / CC - Frame size 1

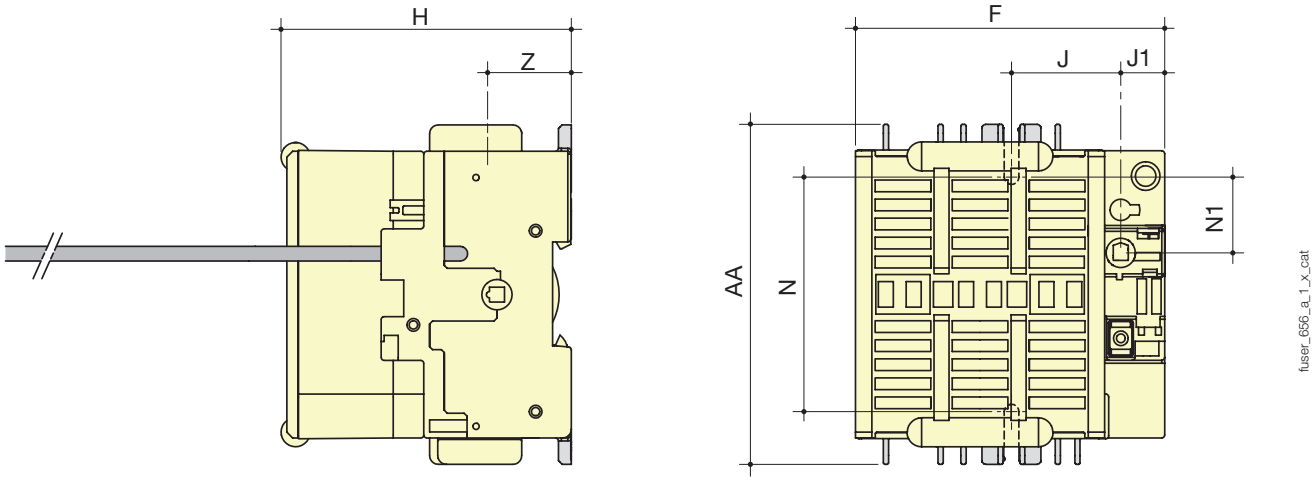




fuser_655_a_1_x_cat

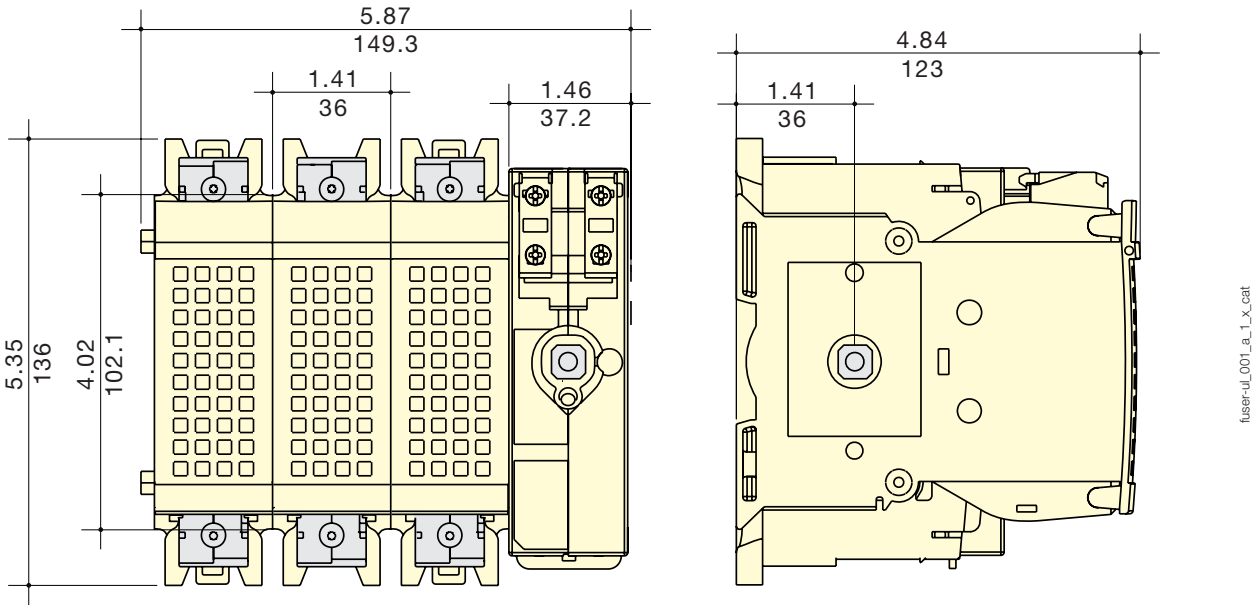
Rating (A) / Fuse	Unit	Switch body					Switch mounting		Connection	
		F	H	H1	J	J1	N	N1	AA	Z
CD 30 A / CC	in	3.78	3.28	5.19	1.47	0.59	3.13	1	4.56	1.12
	mm	96	83.5	132	37.5	15	79.5	25.5	116	28.5

CD 30 A / J - Frame size 2



Rating (A) / Fuse	Unit	Switch body				Switch mounting		Connection	
		F	H	J	J1	N	N1	AA	Z
CD 30 A / J	in	4.13	3.89	1.47	0.59	3.30	1	4.56	1.12
	mm	105	99	37.5	15	84	25.5	116	28.5

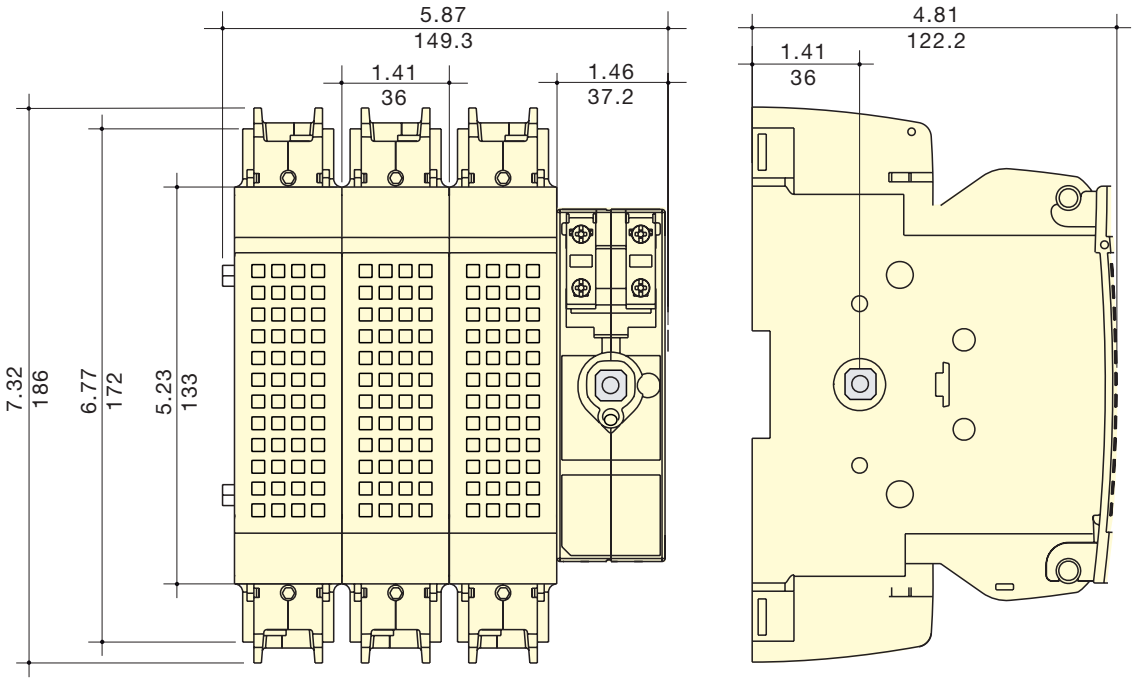
30 to 60 A / J - Frame size 4



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

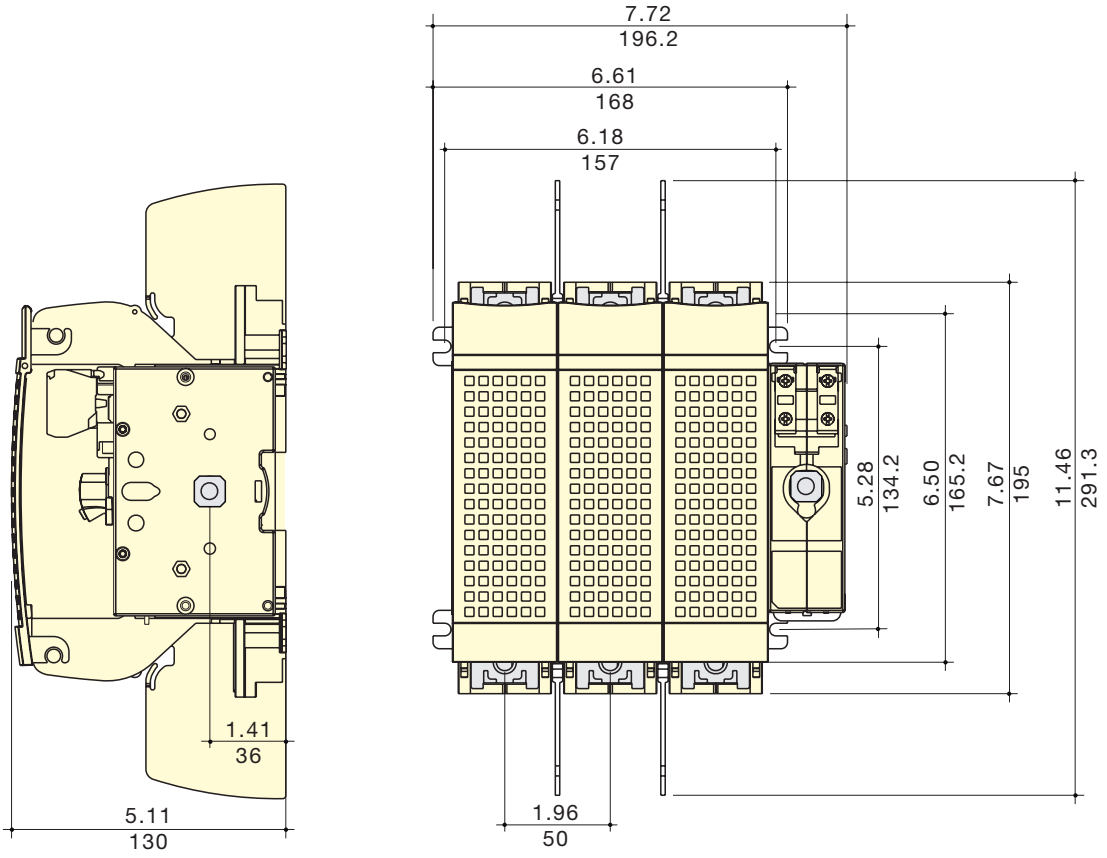
Dimensions (in/mm) (continued)

60 to 100 A / J - Frame size 5



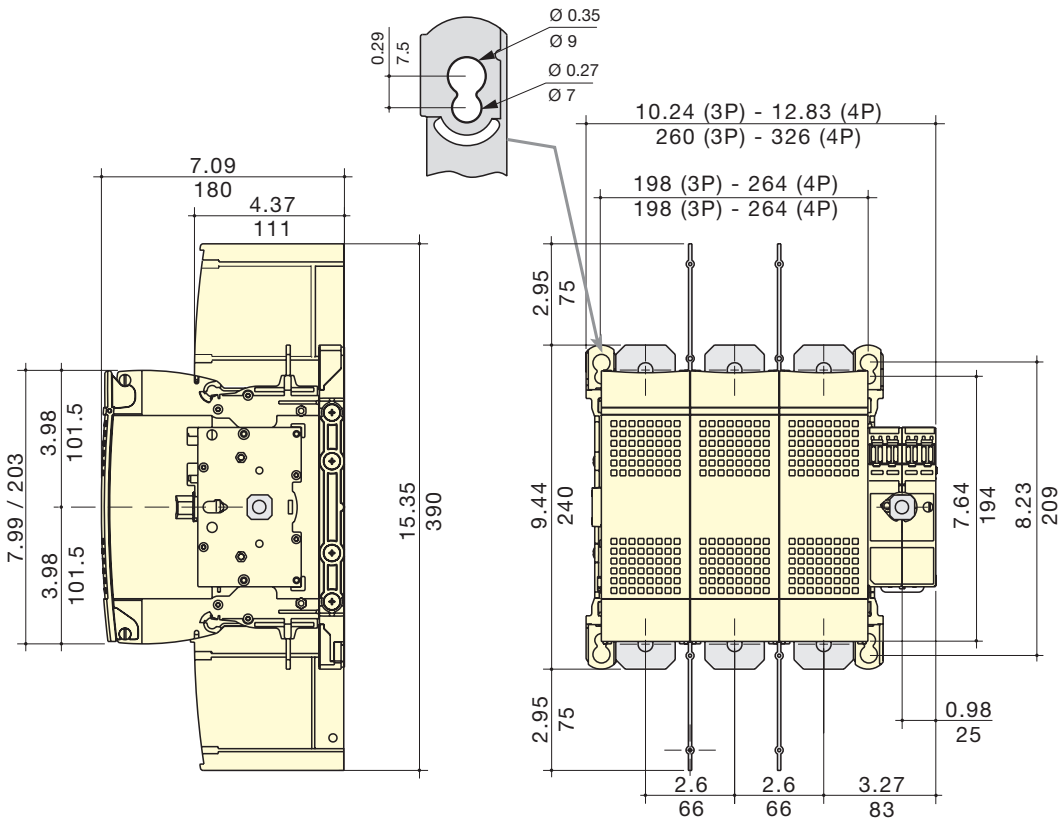
Note for width :
For 2 pole device decrease overall width by 1.41 in / 36 mm.
For 4 pole device increase overall width by 1.41 in / 36 mm.

200 A / J - Frame size 6



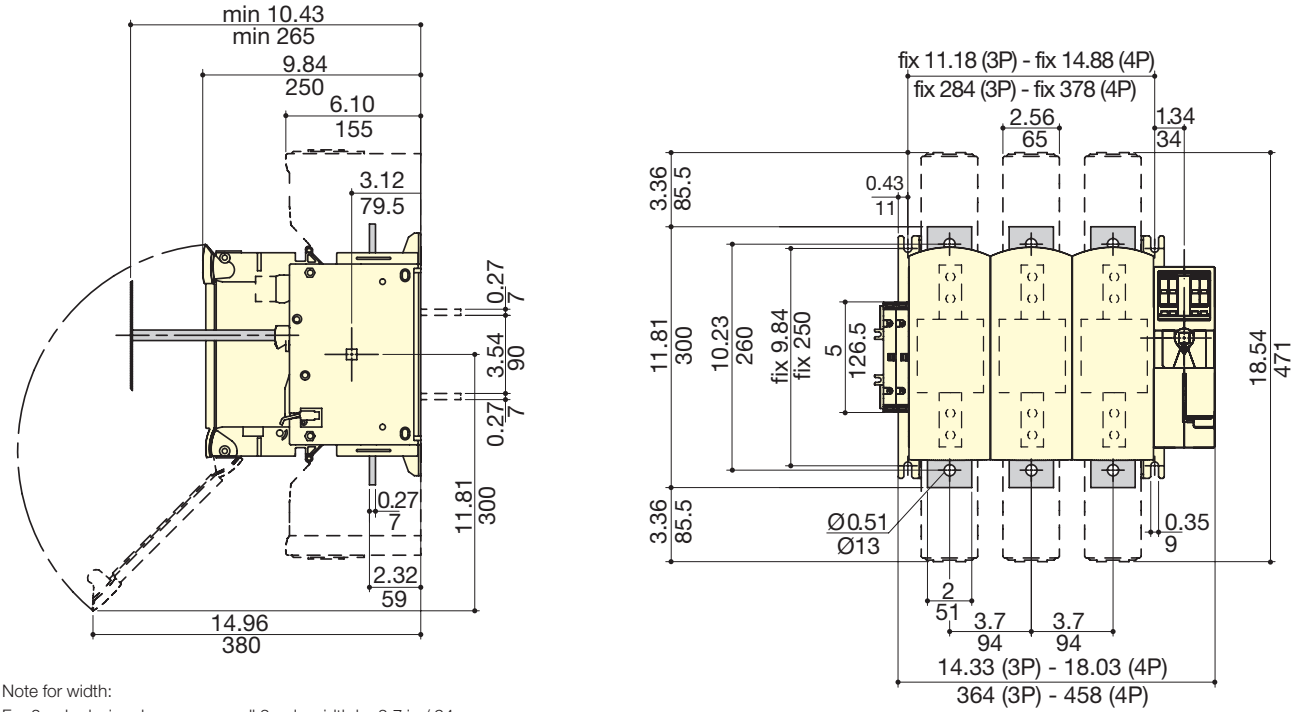
Note for width:
For 2 pole device decrease overall width by 1.96 in / 50 mm.
For 4 pole device increase overall width by 1.96 in / 50 mm.

400 A / J - Frame size 7



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

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

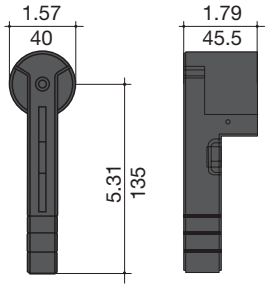


Note for width:
For 2 pole device decrease overall 3 pole width by 3.7 in / 94 mm.

Dimensions (in/mm) (continued)

30 to 400 A

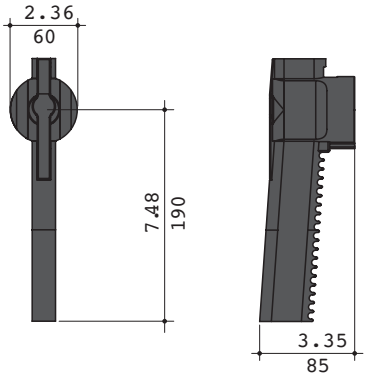
Front direct handle



sirco-ul_027_a_1_x_cat

600 to 800 A

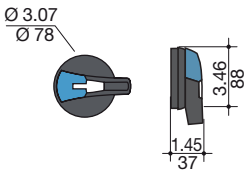
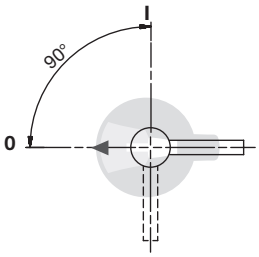
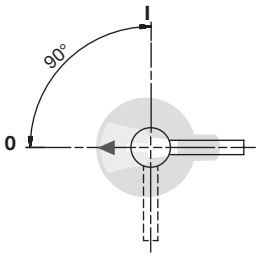
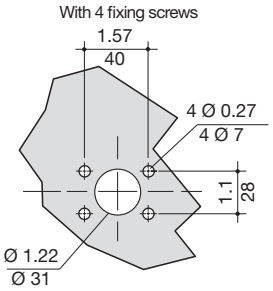
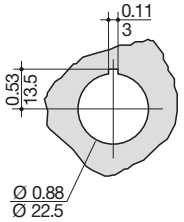
Front direct handle



sirco_267_b_1_x_cat

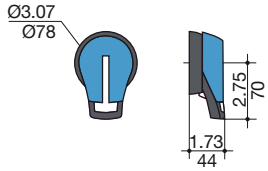
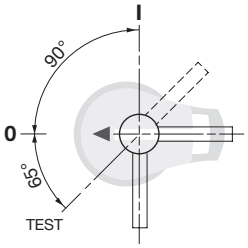
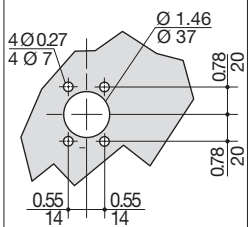
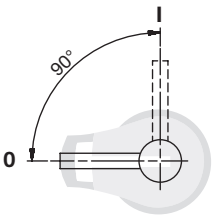
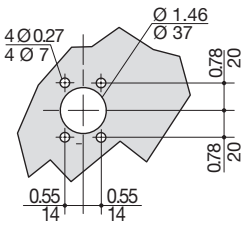
External handle dimensions (in/mm)

CD 30 A - Frame size 1 / 2

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

fuser-ul_015_a_1_gb_cat

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

Handle type	Front operation Direction of operation	Front operation Door drilling	Side operation[1] Direction of operation	Side operation[1] Door drilling
S1 type 				

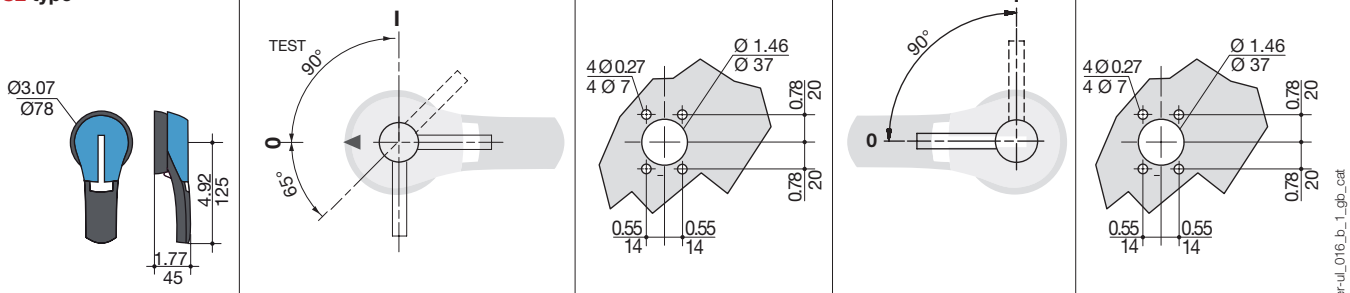
fuser-ul_015_b_1_gb_cat

(1) Not for frames 1 and 2.

External handle dimensions (in/mm)

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

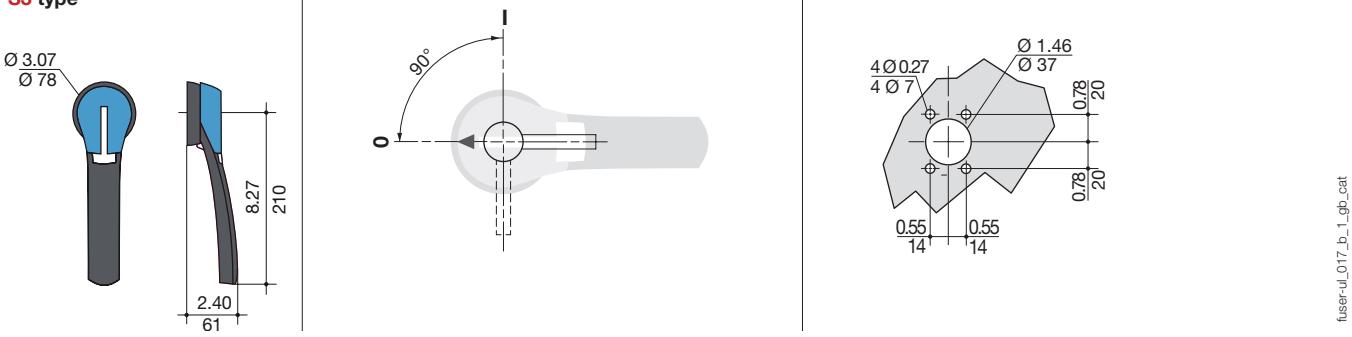
Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S2 type				



fuser-ul_016_b_1_gb_cat

600 and 800 A - Frame size 8

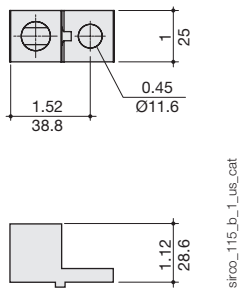
Handle type	Front operation	
	Direction of operation	Door drilling
S3 type		



fuser-ul_017_b_1_gb_cat

Terminal lugs (in/mm)

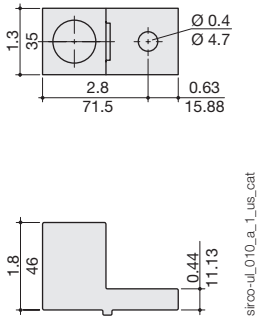
200 A



sirco_115_b_1_us_cat

300 kcmil

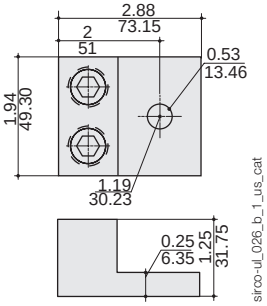
400 A



sirco-ul_010_a_1_us_cat

600 kcmil

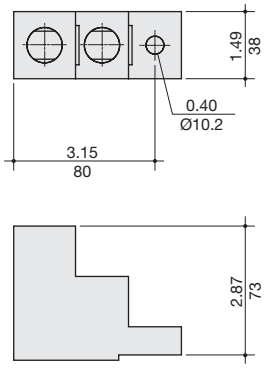
400 A



sirco-ul_026_b_1_us_cat

2 x 350 kcmil

600 to 800 A



sirco_116_b_1_us_cat

2 x 600 kcmil max

RM CC

Modular fuse holders
for CC fuses

rm-ul_001.eps

RM CC
30 A

rm-ul_002.eps

RM CC *with LED*
30 A

The solution for

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

Strong points

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

Compliance with standards

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

Function

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

Advantages

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

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

Accessories
- Padlocking kits
- Coupling kits

References

RM CC

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

Accessories

Key handle padlocking system

Use

Padlocking of the handle (padlock not supplied).

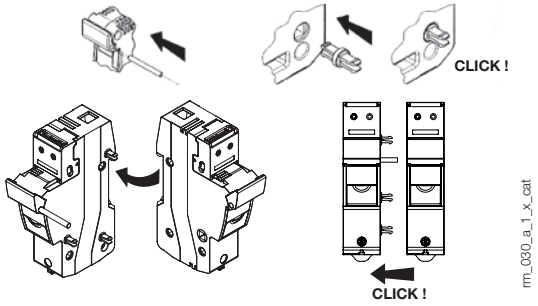
Rating (A)	Quantity (units)	Reference[1]
30	5	5701 **9040**

(1) Not UL.

Coupling system

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

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



Reinforced insulation kit

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

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

Characteristics

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

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

(1) For fuse holders with LED indicator.

Class CC fuse protected short-circuit withstand

Prospective short-circuit current (kA rms.)		200

Design current derating coefficient for N poles side by side

N = 1 … 3		1
N = 4 … 6		0.8
N = 7 … 9		0.7
N ≥ 10		0.6

Connection

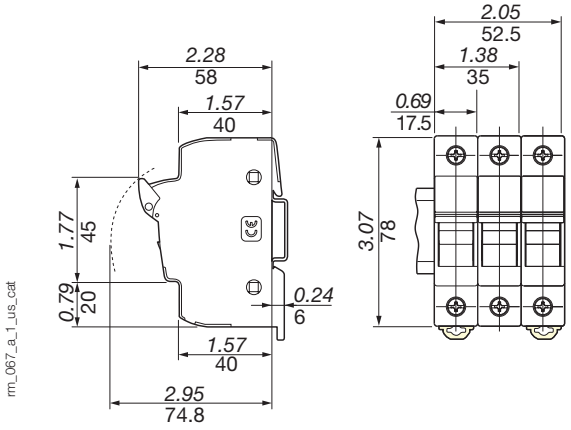
Wire type (solid / stranded Cu)		60 / 75°C
1 wire	Minimum Cu cable cross-section solid / stranded	18 AWG / 0.75 mm^2
	Maximum Cu cable cross-section solid / stranded	8 AWG / 16 mm^2
2 wires	Minimum Cu cable cross-section solid / stranded	18 AWG / 0.75 mm^2
	Maximum Cu cable cross-section solid	8 AWG / 10 mm^2
	Maximum Cu cable cross-section stranded	10 AWG / 10 mm^2
Wire strip (mm / in)		10 / 0.39
Maximum tightening torque		2.5 Nm / 22 lb.in
Fixing		DIN rail 35 mm DIN 46277/1-3 (EN50022)

Mechanical characteristics

Weight of 1 P (lb / kg)	0.126 / 0.057
Weight of 2 P (lb / kg)	0.251 / 0.114
Weight of 3 P (lb / kg)	0.375 / 0.170

Dimensions (in / mm)

30 A



RM and RMS

Modular fuse holders

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

rm_060.psd

RM
32 A

rm_066.psd

RM
50 A

rm_062.psd

RMS
100 A

The solution for

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

Strong points

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

Compliance with standards

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

Approvals and certifications(1)

(1) Product reference on request.

Function

RM and **RMS** are modular fuse holders for cylindrical fuses. They safely provide non-load disconnection and protection against overloads and short-circuits in any low voltage electrical circuit.

- RM: Non-signalling fuse holders for fuses without strikers.
- RMS: Fuse disconnect switches with pre-break auxiliary contact, position and blown indication.

Advantages

Improved safety

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

Accessories

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

High breaking capacity

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

References

RM and RMS - Non-signalling device

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	5701 **5005** (1)				
1 P + N (2 modules)	6	5701 **0017**	3	5702 **5005**	3	5703 **5005**
1 P LED signalling	12	5701 **0011**	6	5702 **0011**	6	5703 **0011**
2 P	6	5701 **0020**	3	5702 **5002**	3	5703 **5002**
3 P	4	5701 **0018**	2	5702 **5003**	2	5703 **5003**
3 P + N	3	5701 **0019**	1	5702 **5004**	1	5703 **5004**
4 P			1	5702 **5006**	1	5703 **5006**
N	12	5701 **0016**	6	5702 **5000**	6	5703 **5000**

(1) This device is not cURus.

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

Basic device Fuse size	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
1 P	6	5702 **5011**	6	5703 **5011**
2 P	3	5702 **5012**	3	5703 **5012**
3 P	2	5702 **5013**	2	5703 **5013**
3 P + N	1	5702 **5014**	1	5703 **5014**
4 P	1	5702 **5016**	1	5703 **5016**

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

Something to think about

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

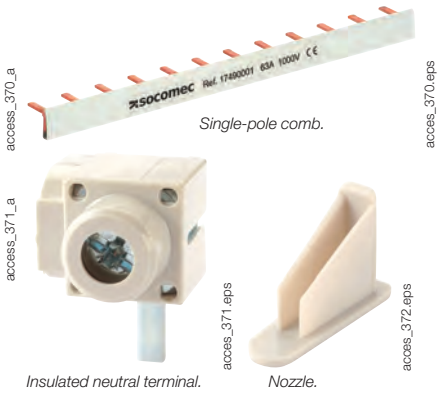
Accessories

Connection accessories for RM 32 A 10 x 38

Comb bridging connection

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

(1) Not UL.



Connection terminals

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

(1) Not UL.

Auxiliary contact

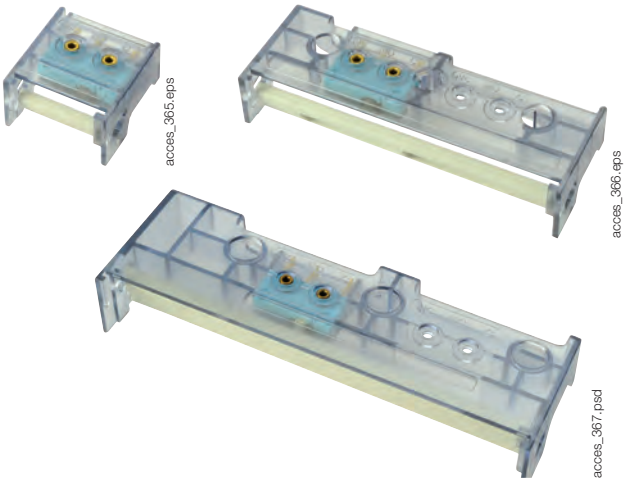
Use

1 or 2 NO/NC auxiliary contacts:

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

Connection

By 0.25 in / 6.35 mm fast-on terminal.



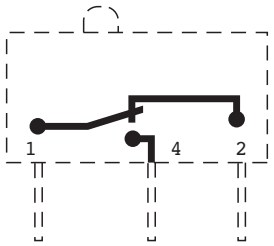
Characteristics Rating (A)	Contact type	Operating current I_e (A) 250 VAC AC-13
50 … 100	NO/NC contact	2.5
50 … 100	Two-level NO/NC contact	0.1

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

(1) Not UL.

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

(1) Not UL.

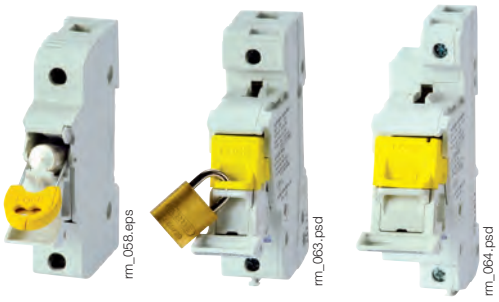


Padlocking adapter

Use
Padlocking of the handle (padlock not supplied).

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

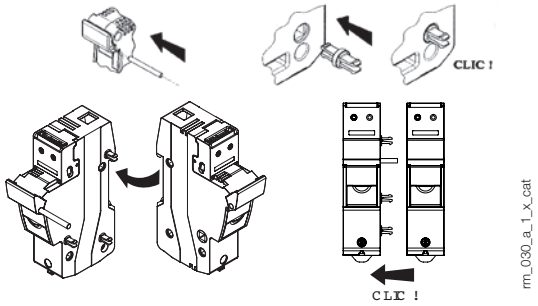
(1) Not UL.



Coupling system for RM

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

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



Reinforced insulation kit

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

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

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

30 to 100 A

Thermal operational current		**30 A**	**50 A**	**100 A**
Fuse size		Midget / 10 x 38	14 x 51	22 x 58
Rated operating voltage (V)		750	750	750
Rated fuse dissipated power (W/P)		3	5	12 W
Protection degree		IP20	IP20	IP20
gG fuse protected short-circuit withstand	**Rated volatge**			
Prospective short-circuit current (kA rms.)(1)	690 VAC	100	100	100
Prospective short-circuit current (kA rms.)(1)	400/500 VAC	120	120	120
Design current derating coefficient for N poles side by side				
N = 1 ... 3		1	1	1
N = 4 ... 6		0.8	0.8	0.8
N = 7 ... 9		0.7	0.7	0.7
N ≥ 10		0.6	0.6	0.6
Design current derating coefficient depending on the temperature				
20°C | 68°F		1	1	1
30°C | 86°F		0.95	0.95	0.95
40°C | 104°F		0.90	0.90	0.90
50°C | 122°F		0.80	0.80	0.80
60°C | 140°F		0.70	0.70	0.70
70°C | 158°F		0.60	0.60	0.60
Connection				
Minimum Cu cable cross-section SOLID / STRANDED		0.75 mm² / 18 AWG	1.5 mm² / 16 AWG	1.5 mm² / 16 AWG
Maximum Cu cable cross-section SOLID		16 mm² / 8 AWG	35 mm² / 8 AWG	50 mm² / 1 AWG
Maximum Cu cable cross-section STRANDED		16 mm² / 8 AWG	25 mm² / 6 AWG	35 mm² / 2 AWG
Tightening torque		2.5 Nm / 22 lb.in	3 Nm / 26 lb.in	4 Nm / 35 lb.in
Dimensional data				
Weight of 1 P / N (kg/lb)		0.125 / 0.0132 lb | 0.057 / 0.06 kg	0.22 lb | 0.1 kg	0.342 lb | 0.155 kg
Weight of 1 P + N (kg/lb)		0.258 lb | 0.117 kg	0.473 lb | 0.215 kg	0.721 lb | 0.327 kg
Weight of 3 P + N (kg/lb)		0.505 lb | 0.229 kg	0.915 lb | 0.415 kg	1.393 lb | 0.632 kg

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

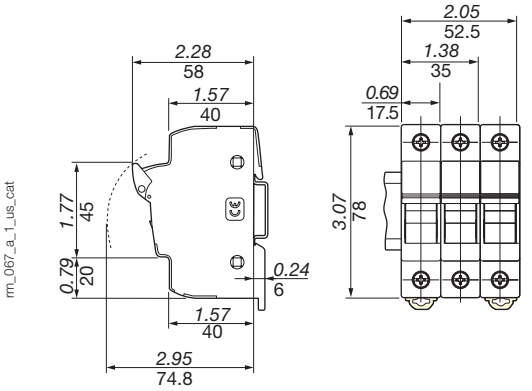
Characteristics according to IEC 60269-2

32 to 100 A

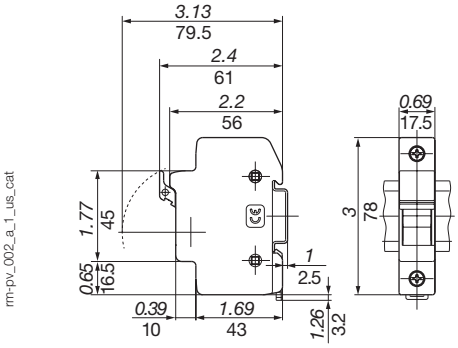
Thermal current I_{th} (20°C/68°F)	**32 A**	**50 A**	**100 A**
Fuse size	10 x 38	14 x 51	22 x 58
Rated insulation voltage U_i (V)	690	690	690
Fuse rating (A)			
at 400 VAC	32	50	125
at 500 VAC	32	50	125
at 690 VAC		50	125

Dimensions

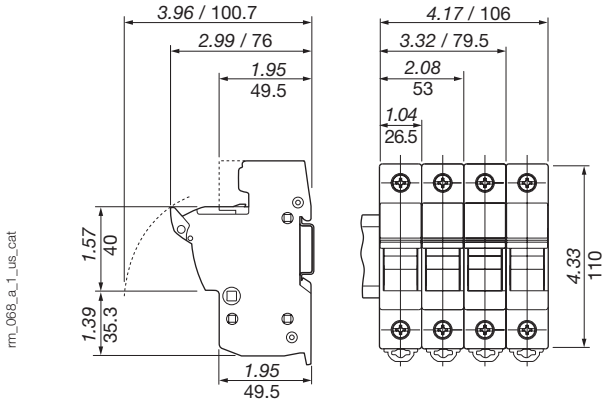
RM 32 A unipolar and multipolar

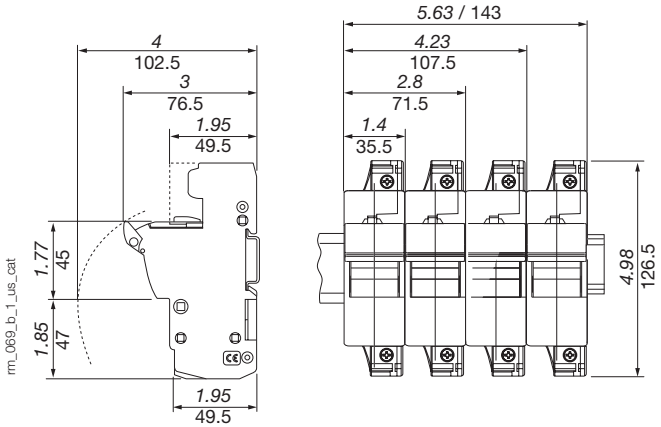


RM 32 A Ref.: 5701 5005



RMS 50/100 A unipolar and multipolar





Fuse combination switches

for specific applications

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

Fused changeover switches

fuser_426_a_1_cat.eps

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

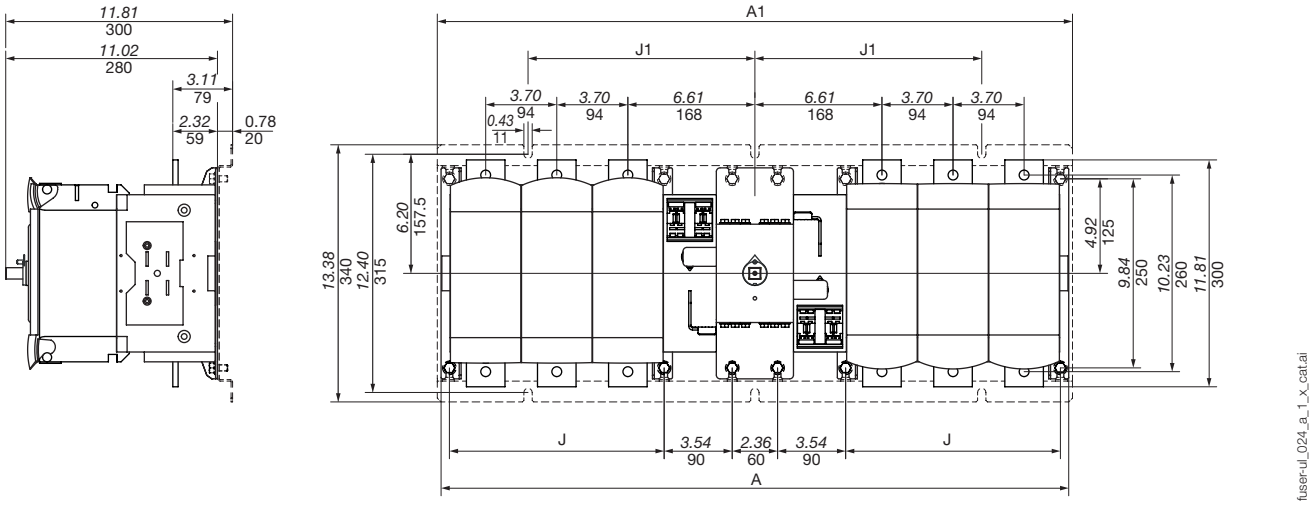
(1) Other ratings: please consult us.

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

References for UL listed fused changeover switches

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

Dimensions



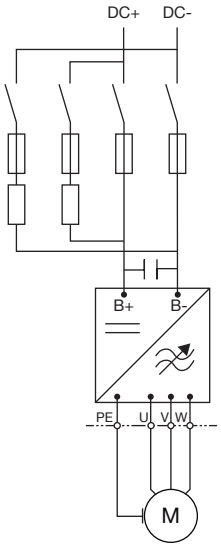
fuser-ul_024_a_1_x_cat.ai

FUSERBLOC LMDC (not UL listed)

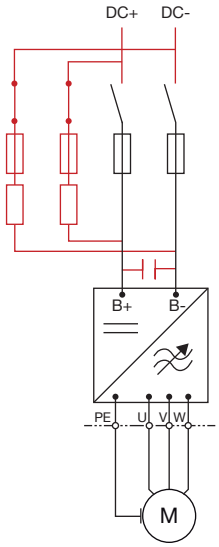
fuser-lm_002.eps

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

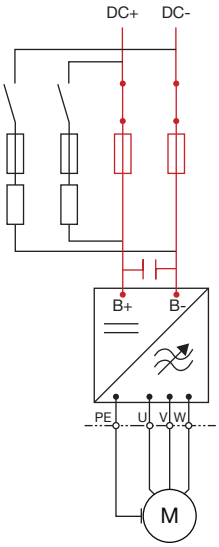
Example: Variable speed drive disconnected from the common DC bus. The inverter capacitors discharge and the direct power up would cause a current draw that could damage the inverter, or even shut down the entire system (voltage drop). This inrush current must be limited.



Disconnected variable speed drive and motor



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



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

fuser-lm_012_a_1_x_cat.ai

References

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

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

Transfer switches

Manual transfer switches

COMO CS
25 to 100 A
p. 143

SIRCOVER UL 98/1008
100 to 1200 A
p. 149

Non-automatic transfer switches

ATyS UL 1008
100 to 1200 A
p. 161

Automatic transfer switches

ATyS FT
100 to 400 A
p. 171

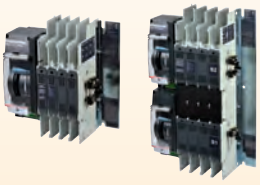
ATyS DT
100 to 400 A
p. 171

ATS controller

ATyS C66
p.179

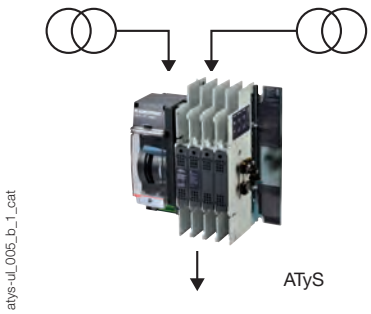
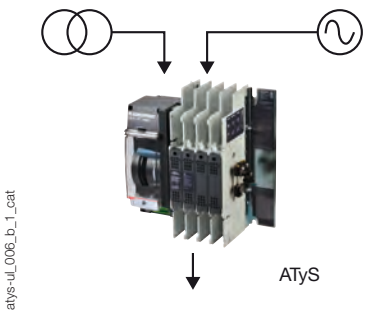
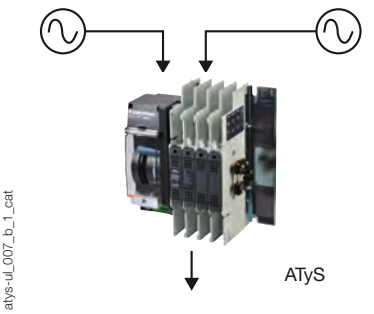
Manual, non-automatic & automatic transfer switches

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

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

Typical applications

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

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

COMO CS

Manual Cam changeover switches
from 25 to 100 A

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

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

The solution for

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

Strong points

- Simple installation
- Quick mounting

Compliance with standards

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

(1) 25A only.

Function

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

Advantages

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

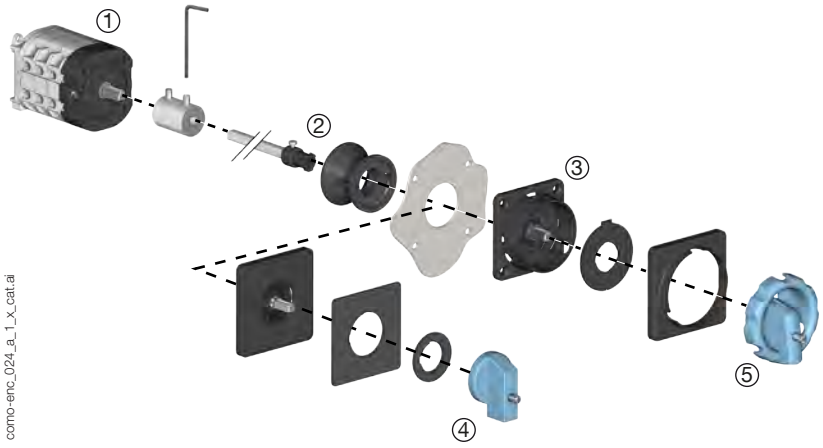
Quick mounting
The accessories offered are common to all the products in the range. The products are designed for installation:
- on the rear of the cabinet on a backplate,
- on the rear of the cabinet on a DIN rail,
- on the door with a direct handle.

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

Please consult us for adaptations to specific wiring diagrams.

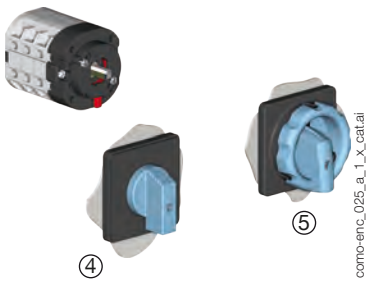
Configurations

Backplate switch mounted with external handle



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

Direct quickfixing handle for door or backplate mounted switch



5. Padlockable handle

References

COMO CS

Backplate mounting with direct quickfixing handles or external handles

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

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

Door mounting with direct quickfixing handles

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

Other solutions with enclosures

General characteristics


como-enc_019.eps

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

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

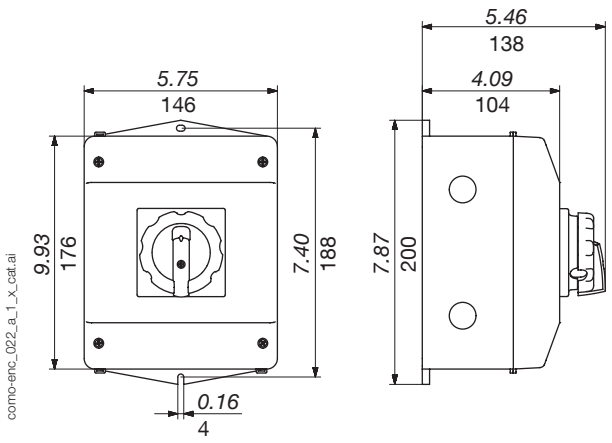
References

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

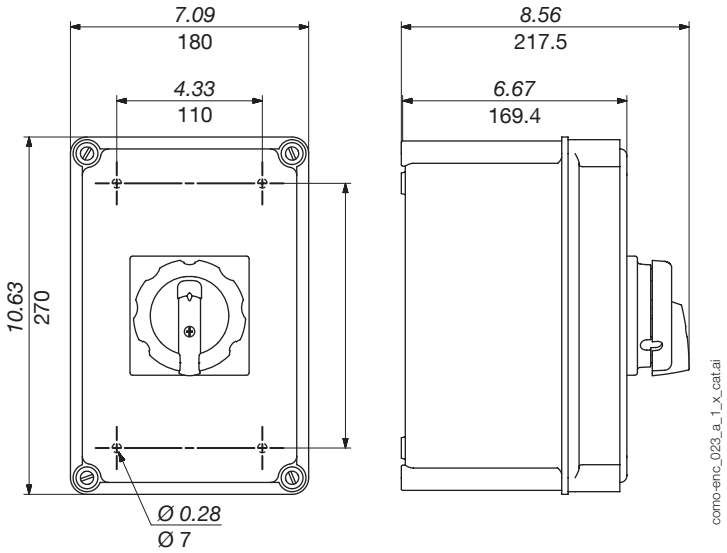
** For an ambient temperature of 95 °F / 35 °C*

Dimensions (in/mm)

25 to 40 A



63 to 100 A



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

25 to 100 A

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

(1) 25A only.

Characteristics according to IEC 60947-3

25 to 100 A

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

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

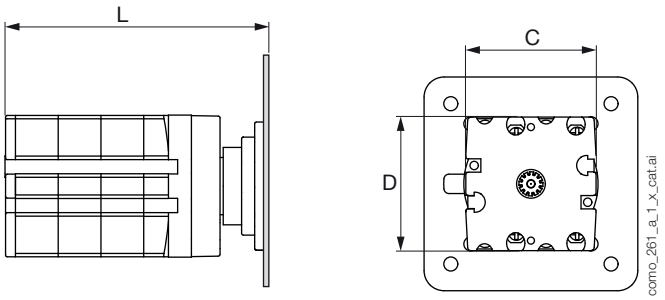
Dimensions (in/mm)

25 to 100A

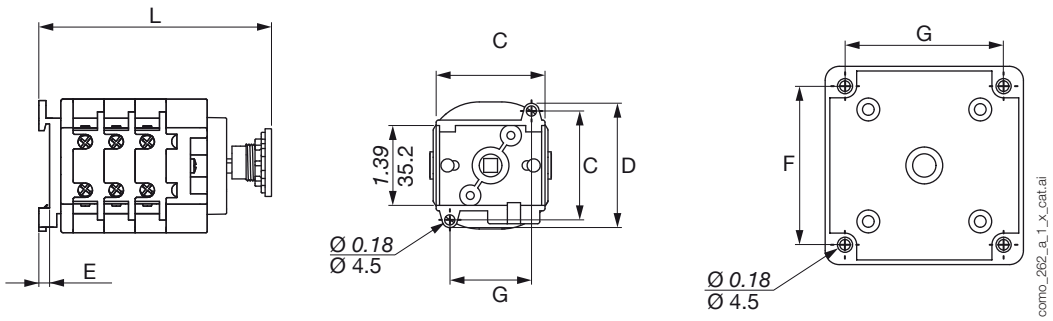
Mounting on door - Fixing with direct handle

Door width		
Unit	Mini	Maxi
in	0.04	1
mm	0.16	4

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



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

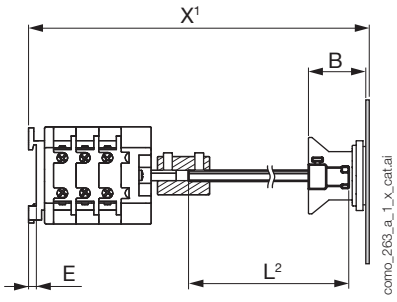


		W				E	C	D	F	G
		I-II /I-0-II		Bypass I-0-II						
Rating (A)	Unit	3 P	4 P	3 P	4 P					
25	in	3.20	3.68	4.15	4.57	0.18	1.89	2.2	1.65	1.42
	mm	81.4	93.4	105.4	116.1	4.5	48	56	47	36
40	in	3.73	4.28	4.28	5.08	0.18	1.89	2.2	1.65	1.42
	mm	94.7	107.7	120.7	129	4.5	48	56	47	36
63 … 100	in	5.10	5.97	6.83	7.54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

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

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

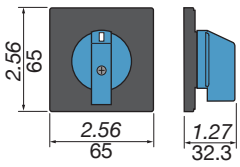
(1) X is the distance between the inside of the door and the fixing plate
(2) L is the total length of the shaft (max 200 mm)
(3) Minimum distance between the inside of the door and the fixing plate



Dimensions for handles

25 to 100 A

Handle type	Front operation Direction of operation	Door drilling
K1 type non padlockable	0 or I 90° 90° I II	1.89 48 Ø 0.20 Ø 5 0.88 22.3 1.89 48 0.94 24.1



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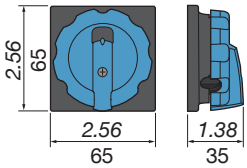
Handle type	Front operation Direction of operation	Door drilling
K1 type padlockable	0 or I 90° 90° I II	1.89 48 Ø 0.20 Ø 5 0.88 22.3 1.89 48 0.94 24.1



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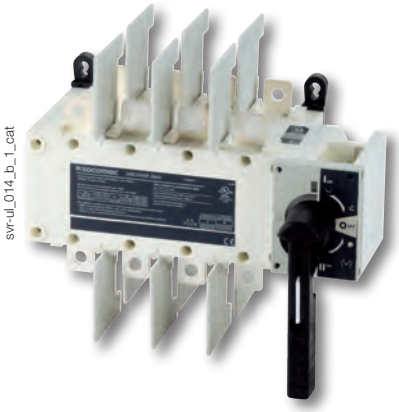
SIRCOVER UL 98/1008

Manually operated transfer switching equipment
from 100 to 1200 A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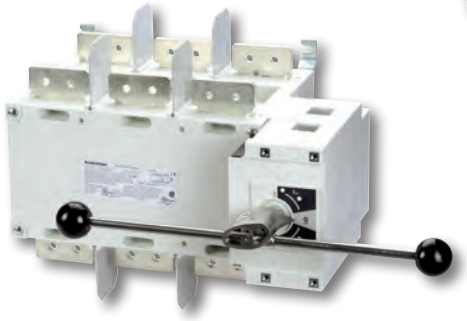
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Function

SIRCOVER UL 98/1008 are heavy duty manual transfer switches. They ensure switching transfer of sources or transfer of two low voltage circuits on load as well as their safe disconnection.

These switches are extremely durable and are tested and approved for use in the most demanding applications, such as resitive load or total system applications.

Advantages

Stable positions

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

Compact design

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

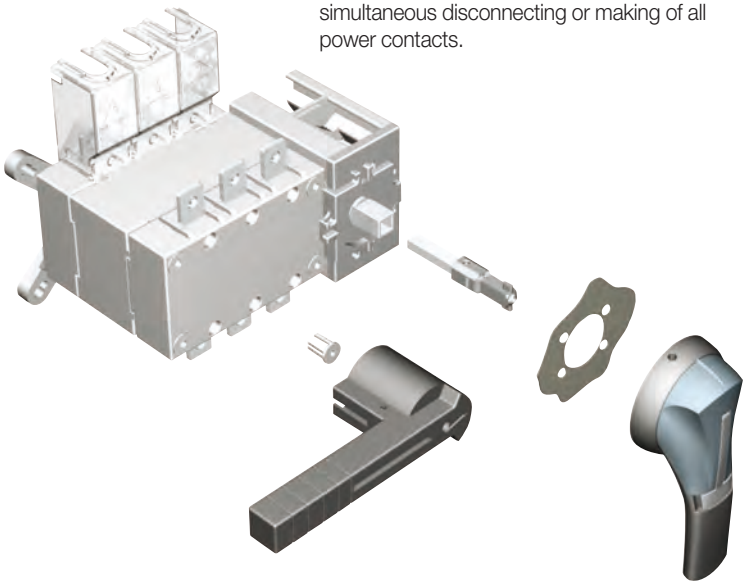
On-load switching

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

Reliability

The SIRCOVER UL has double breaking per pole achieved through its sliding bar contacts system.

The quick opening and rapid closure provides simultaneous disconnecting or making of all power contacts.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The solution for

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

Strong points

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

Conformity to standards

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

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

Enclosed solutions

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

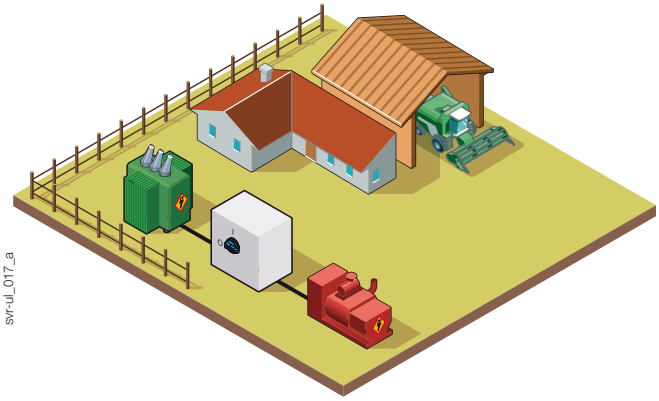
Enclosed
SIRCOVER

Typical application

The SIRCOVER UL 98/1008 range provides safe transfer and disconnection within your LV installation for optional standby systems (as described in NEC Article 702).

Standard applications also include:

- Transfer from Normal power supply to the backup genset source (emergency supply).
- Safe on load transfer.
- Changing motor phase rotation and equipment grounding connection.



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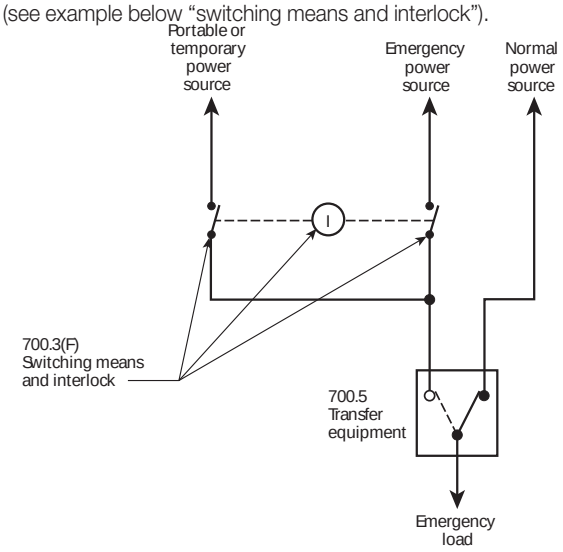
The SIRCOVER UL 98/1008 can also be used as switching means to a temporary power supply in emergency systems (systems needed for human safety) as described in article 700.3(F) of the NEC
(see example below “switching means and interlock”).



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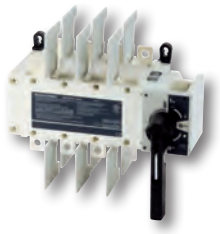
Example of connection for temporary or portable power [1].

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

SOCOMEC solution up to 1200 A



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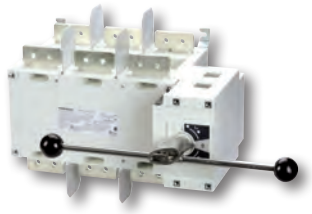
UL 1008 Manual Transfer Switch
From **100 to 400 A** for resistive and total systems applications.
UL 98 / CSA 22.2 No. 4 versions on request.



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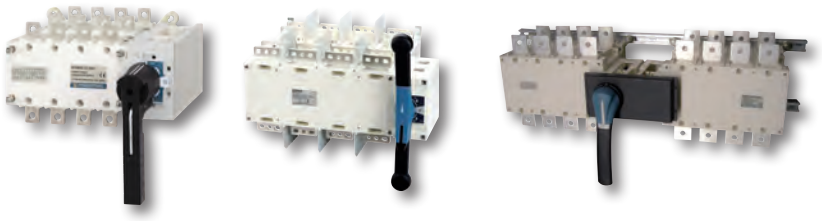
UL 1008 and UL 98 Manual Transfer Switch
From **600 to 1200 A** for resistive and total systems applications.
Has UL 98/CSA 22.2 No. 4 certification.

IEC solution up to 3200 A

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



SIRCOVER UL 98/1008

Manually operated transfer switching equipment
from 100 to 1200 A

References

SIRCOVER UL 98/1008

<table>
<tr><th>Rating (A)</th><th>Frame size</th><th>No. of poles</th><th>Switch body</th><th>Direct handle</th><th>External handle</th><th>Shaft for external handle</th><th>Bridging bars</th><th>Auxiliary contacts</th><th>Terminal screens</th></tr>
<tr><td rowspan="3">100 A*</td><td rowspan="6">B4</td><td>2 P</td><td>4150 2012</td><td rowspan="12">Black
4199 4012</td><td rowspan="6">S2 type
Black
I - 0 - II
4, 4X
142D 2113</td><td rowspan="6">S2 type

200 mm
7.9 inches
1400 1020

320 mm
12.6 inches
1400 1032

400 mm
15.7 inches
1400 1040</td><td rowspan="6">2 P
4159 2021
3 P
4159 3021
4 P
4159 4021</td><td rowspan="12">Contact NO/NC
4159 0021
Low level
4159 0022</td><td rowspan="6">2 / 3 P
4158 3021
4 P
4158 4021</td></tr>
<tr><td>3 P</td><td>4150 3012</td></tr>
<tr><td>4 P</td><td>4150 4012</td></tr>
<tr><td rowspan="3">200 A*</td><td>2 P</td><td>4150 2022</td></tr>
<tr><td>3 P</td><td>4150 3022</td></tr>
<tr><td>4 P</td><td>4150 4022</td></tr>
<tr><td rowspan="3">260 A*</td><td rowspan="6">B5</td><td>2 P</td><td>4150 2026</td><td rowspan="6">S2 type
Black
I - 0 - II
4, 4X
142D 2113

S3 type
Black
I - 0 - II
4, 4X
143D 3113</td><td rowspan="9">S2 type

200 mm
7.9 inches
1400 1020

320 mm
12.6 inches
1400 1032

400 mm
15.7 inches
1400 1040

S3, S4 type

200 mm
7.9 inches
1401 1520

320 mm
12.6 inches
1401 1532

400 mm
15.7 inches
1401 1540</td><td rowspan="6">2 P
4159 2041
3 P
4159 3041
4 P
4159 4041</td><td rowspan="6">2 / 3 P
4158 3041
4 P
4158 4041</td></tr>
<tr><td>3 P</td><td>4150 3026</td></tr>
<tr><td>4 P</td><td>4150 4026</td></tr>
<tr><td rowspan="3">400 A*</td><td>2 P</td><td>4150 2042</td></tr>
<tr><td>3 P</td><td>4150 3042</td></tr>
<tr><td>4 P</td><td>4150 4042</td></tr>
<tr><td rowspan="2">600 A</td><td rowspan="2">B6</td><td>3 P</td><td>4150 3060</td><td rowspan="2">Black
4199 7012</td><td rowspan="2">S3 type
Black
I - 0 - II
4, 4X
143D 3113</td><td rowspan="2">3 P
4159 3063
4 P
4159 4063</td><td rowspan="6">Contact NO/NC
as standard</td><td rowspan="2">3 P
1609 3063
4 P
1609 4063</td></tr>
<tr><td>4 P</td><td>4150 4060</td></tr>
<tr><td rowspan="3">800 A</td><td rowspan="4">B7</td><td>3 P</td><td>4150 3080</td><td rowspan="4">Black
4199 7062</td><td rowspan="4">S4 type
Black
I - 0 - II
4, 4X
144D 3813(1)</td><td rowspan="4">3 P
4159 3080
4 P
4159 4080</td><td rowspan="4">3 P
1609 3080
4 P
1609 4080</td></tr>
<tr><td>4 P</td><td>4150 4080</td></tr>
<tr><td rowspan="2">1200 A</td><td>3 P</td><td>4150 3120</td></tr>
<tr><td>4 P</td><td>4150 4120</td></tr>
</table>

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

Direct handle

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

Type B3

Type C2

Type V1

External handle

Rating (A)	Handle type	Color	Nema type	Lockable in 3 positions	Reference
100 … 400	S2	Black	4, 4X	no	142D **2113**
100 … 400	S2	Red/Yellow	4, 4X	no	142E **2113**
100 … 400	S2	Black	1, 3R, 12	no	142F **2113**
100 … 400	S2	Red/Yellow	1, 3R, 12	no	142G **2113**
100 … 400	S2	Black	4, 4X	yes	142D **2813**
100 … 400	S2	Red/Yellow	4, 4X	yes	142E **2813**
100 … 400	S2	Black	1, 3R, 12	yes	142F **2813**
100 … 400	S2	Red/Yellow	1, 3R, 12	yes	142G **2813**
260 … 600	S3	Black	4, 4X	no	143D **3113**
260 … 600	S3	Red/Yellow	4, 4X	no	143E **3113**
260 … 600	S3	Black	1, 3R, 12	no	143F **3113**
260 … 600	S3	Red/Yellow	1, 3R, 12	no	143G **3113**
260 … 600	S3	Black	4, 4X	yes	143D **3813**
260 … 600	S3	Red/Yellow	4, 4X	yes	143E **3813**
260 … 600	S3	Black	1, 3R, 12	yes	143F **3813**
260 … 600	S3	Red/Yellow	1, 3R, 12	yes	143G **3813**
800 … 1200	S4	Black	4, 4X	no	144D **3113**
800 … 1200	S4	Black	1, 3R, 12	no	144E **3113**
800 … 1200	S4	Black	1, 3R, 12	no	144E **3113**
800 … 1200	S4	Red/Yellow	1, 3R, 12	no	144G **3113**
800 … 1200	S4	Black	4, 4X	yes	144D **3813**
800 … 1200	S4	Red/Yellow	4, 4X	yes	144E **3813**
800 … 1200	S4	Black	1, 3R, 12	yes	144F **3813**
800 … 1200	S4	Red/Yellow	1, 3R, 12	yes	144G **3813**

Use

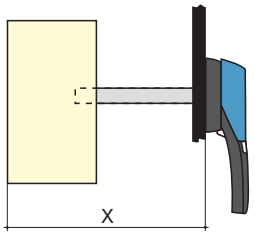
The handle interlocking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position.

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

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

Shaft for external handle

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



Accessories (continued)

Bridging bars

Use

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

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

acces_205_a_1_cat

Terminal protection screen

Use

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

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

acces_207_a_1_cat

Auxiliary contacts

Use

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

Electrical characteristics

A300.

NO/NC auxiliary contact

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

acces_065_a_1_cat

acces_065_a_1_cat

Terminal lugs

Use

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

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

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

ul_032_a

Characteristics

Characteristics according to UL 1008

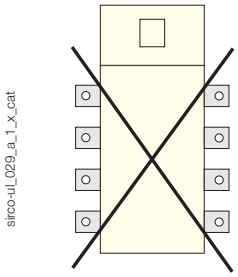
General use rating (A)	100 A	200 A	260 A	400 A	600 A	800 A	1200 A
Frame size	**B4**		**B5**		**B6**	**B7**	
Operation voltage 2 P - 3/4 P	240/600	240/600	240/600	240/600	-/600	-/600	-/600
Short circuit rating at 600 VAC with fuses (kA)							
Short circuit rating at 600 VAC (kA)	100	100	65	65	100	100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

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

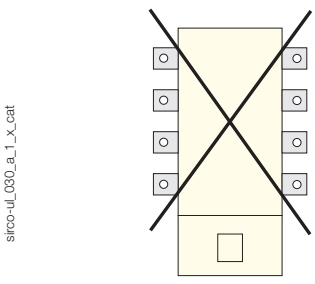
General use rating at 600 VAC and 250 VDC (A)	Specific reference upon request				600 A	800 A	1200 A
Frame size					**B6**	**B7**	
Short-circuit rating at 600 VAC (kA)	-	-	-	-	200	100	100
Type of fuse	-	-	-	-	J	L	L
Max. fuse rating (A)	-	-	-	-	600	800	1200
Max. motor, hp / FLA 3 ph motor max.							
220-240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

Mounting orientation

100 to 400 A / B4 - B5

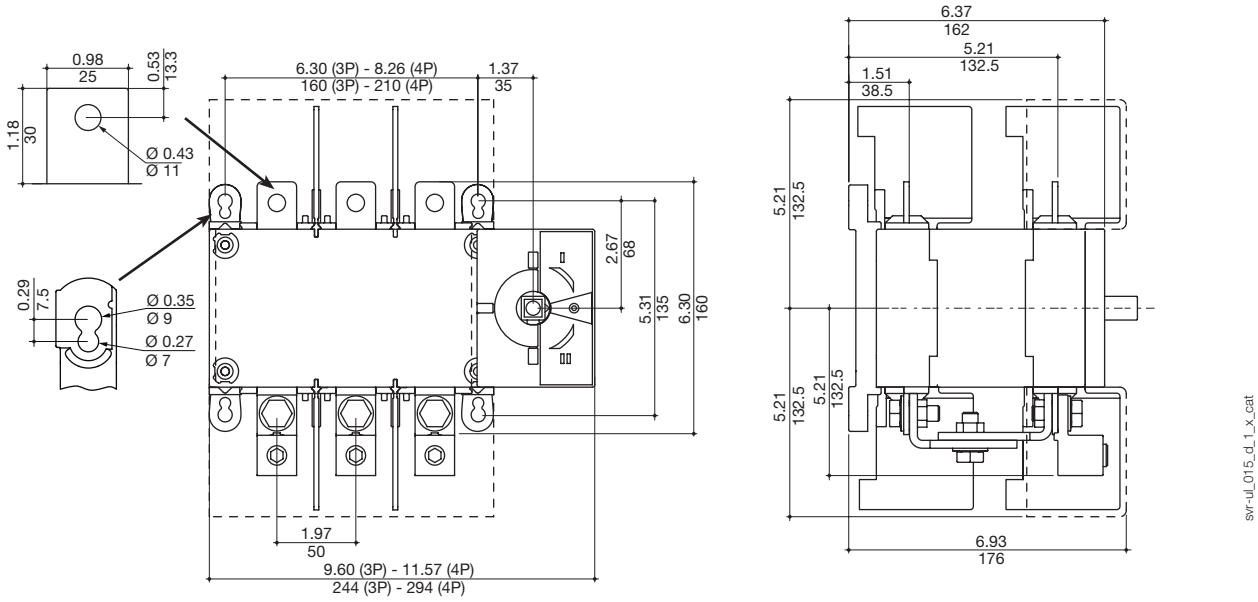


600 to 1200 A / B6 - B7

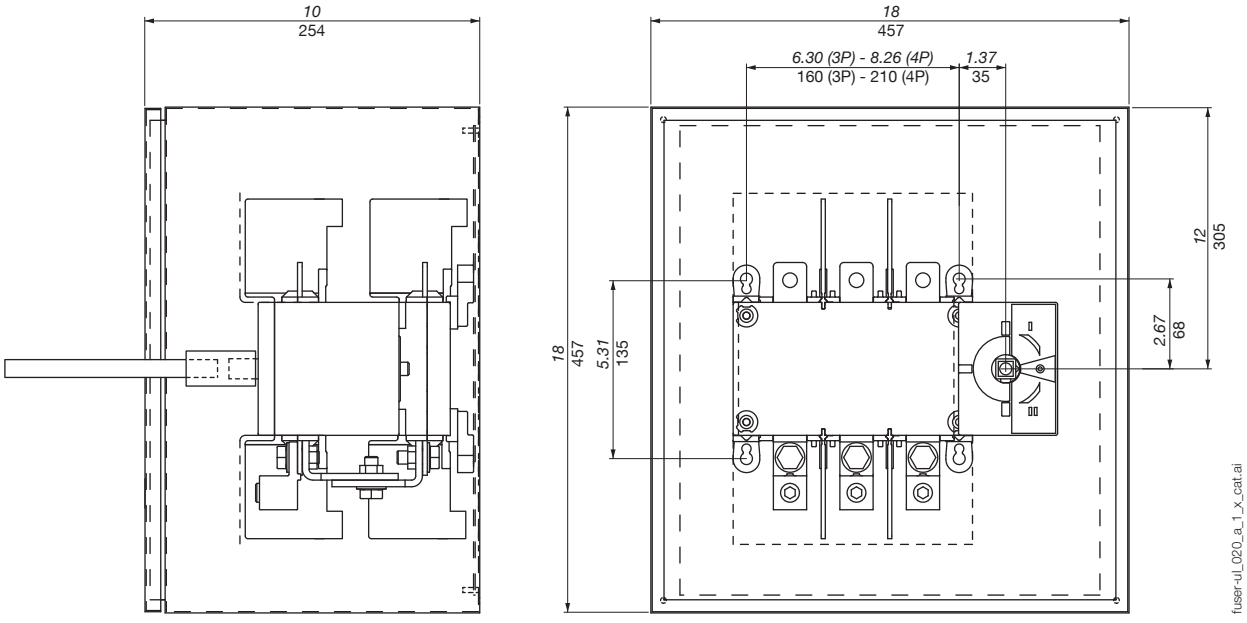


Dimensions (in/mm)

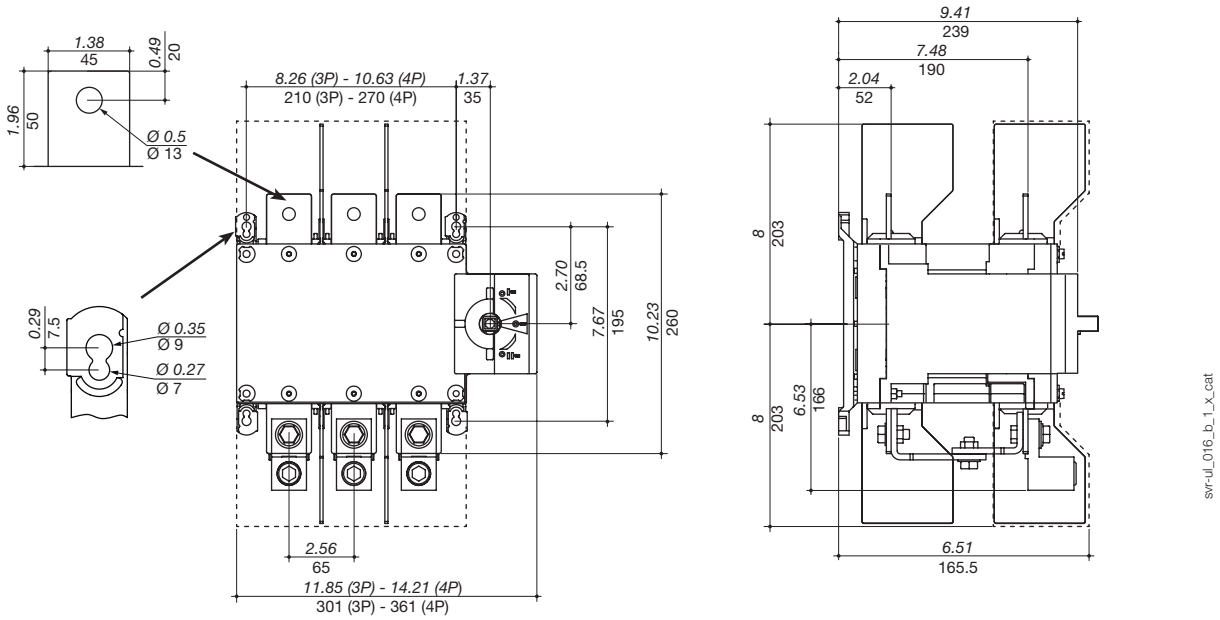
100 to 200 A / B4



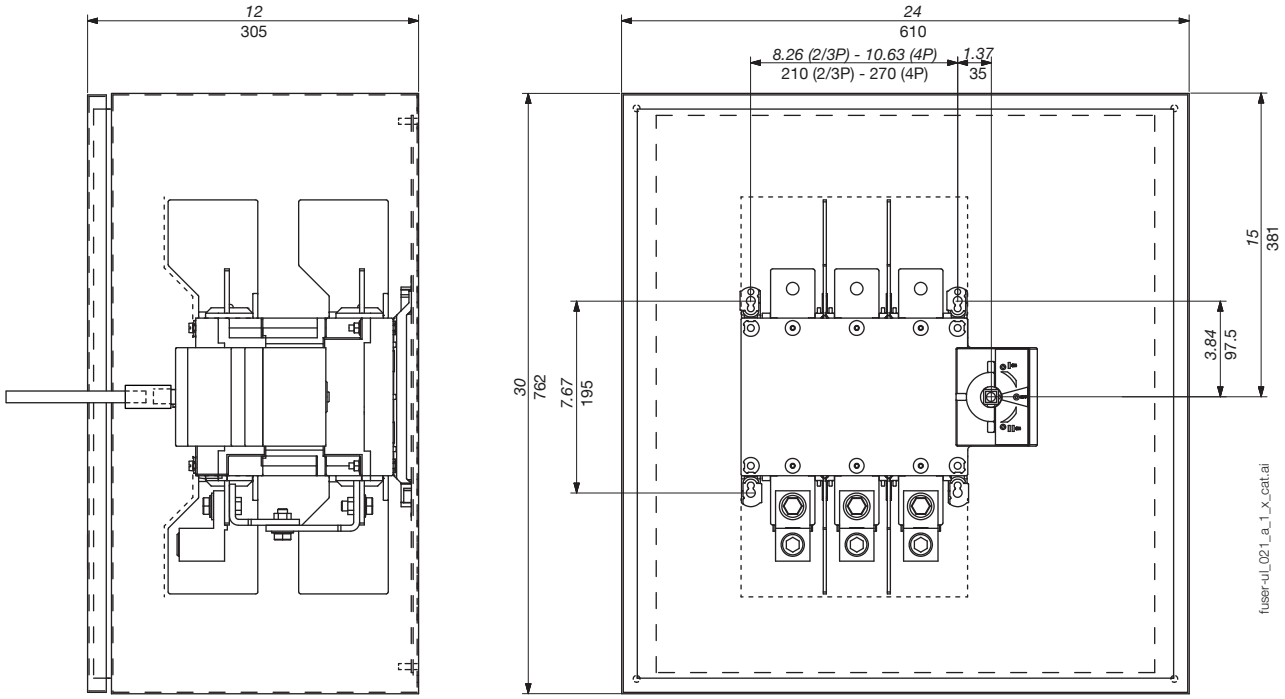
Minimum enclosure dimensions



260 to 400 A / B5

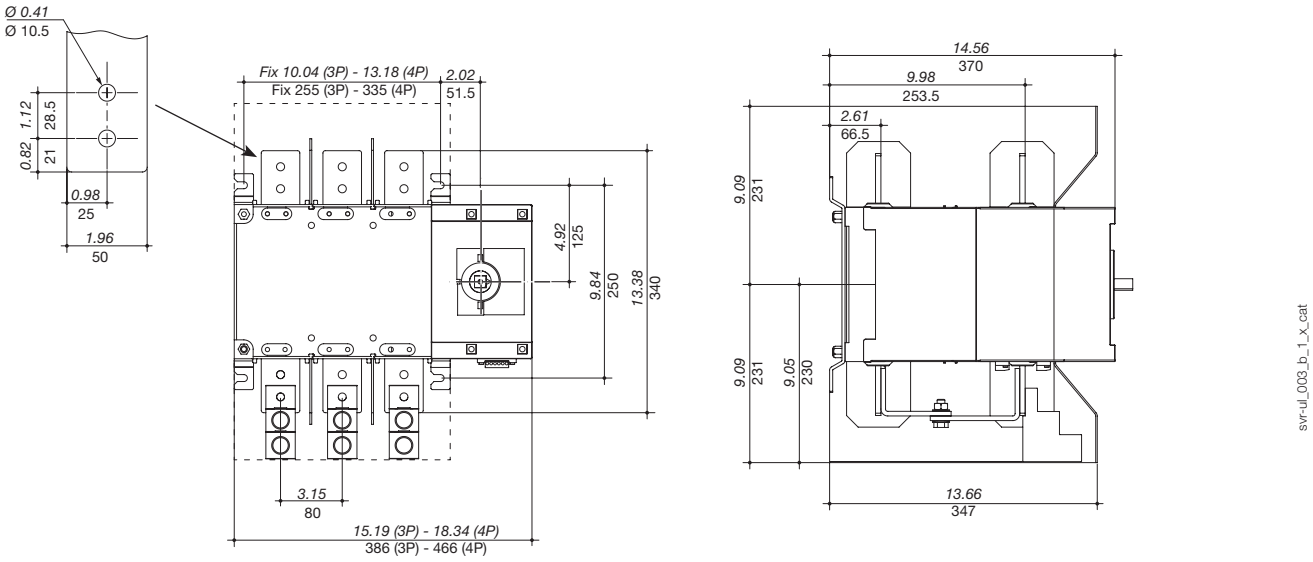


Minimum enclosure dimensions

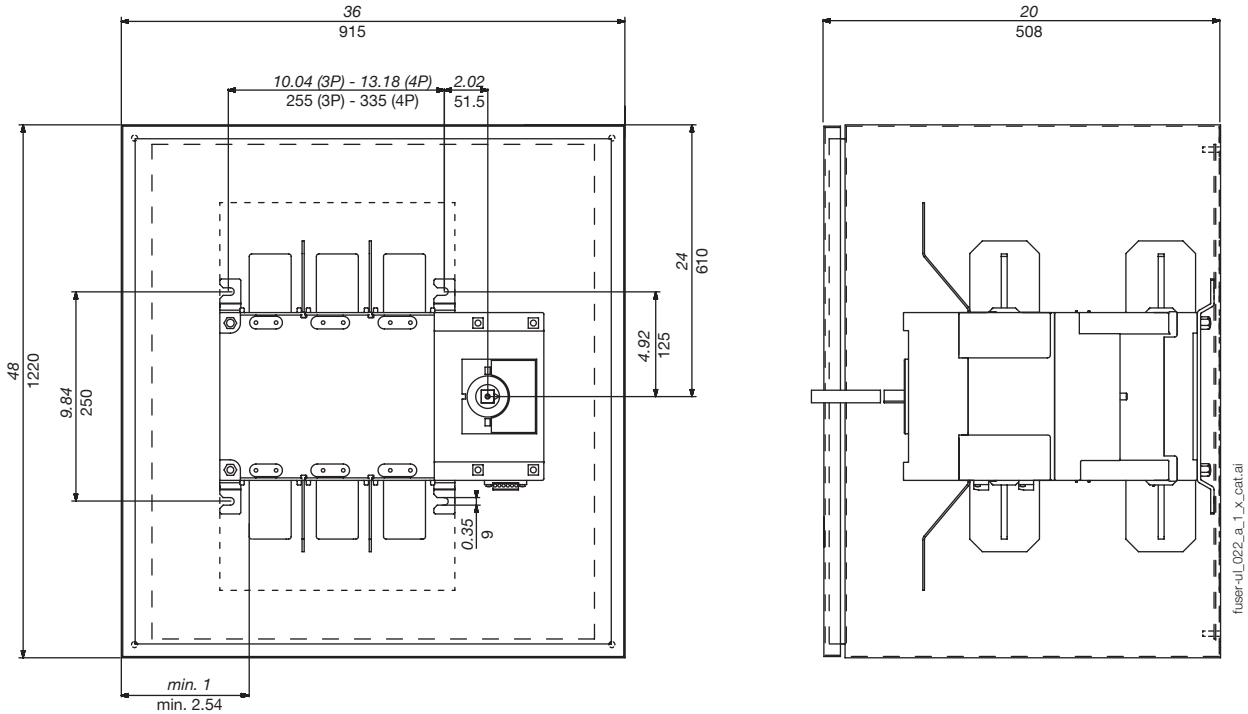


Dimensions (in/mm) (continued)

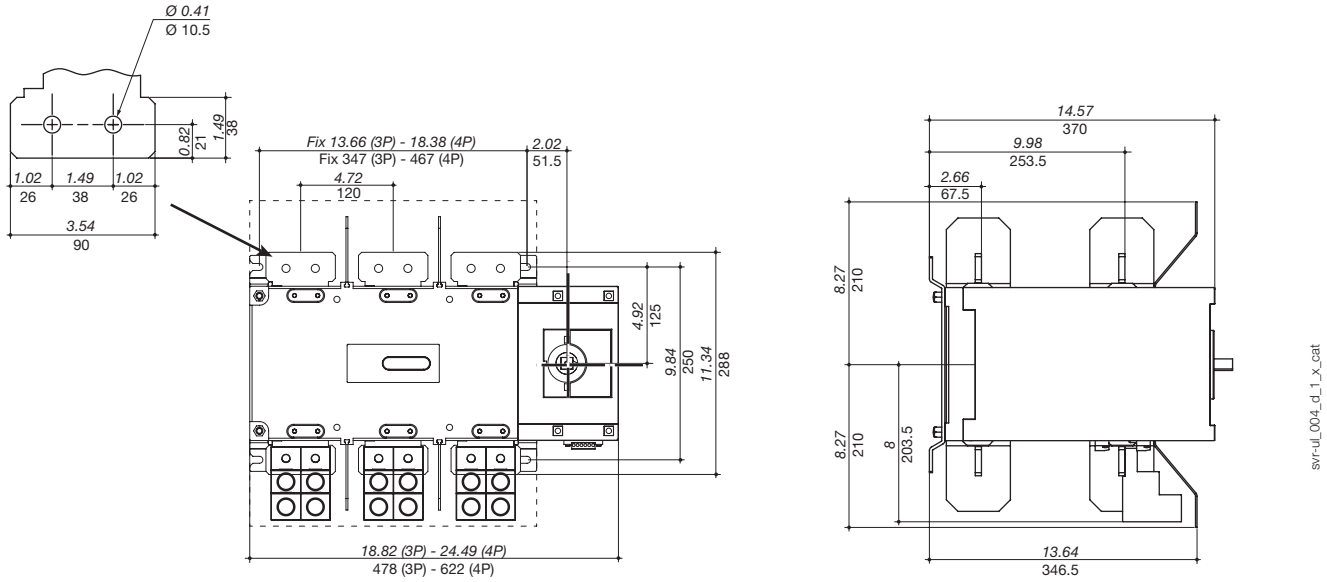
600 A / B6



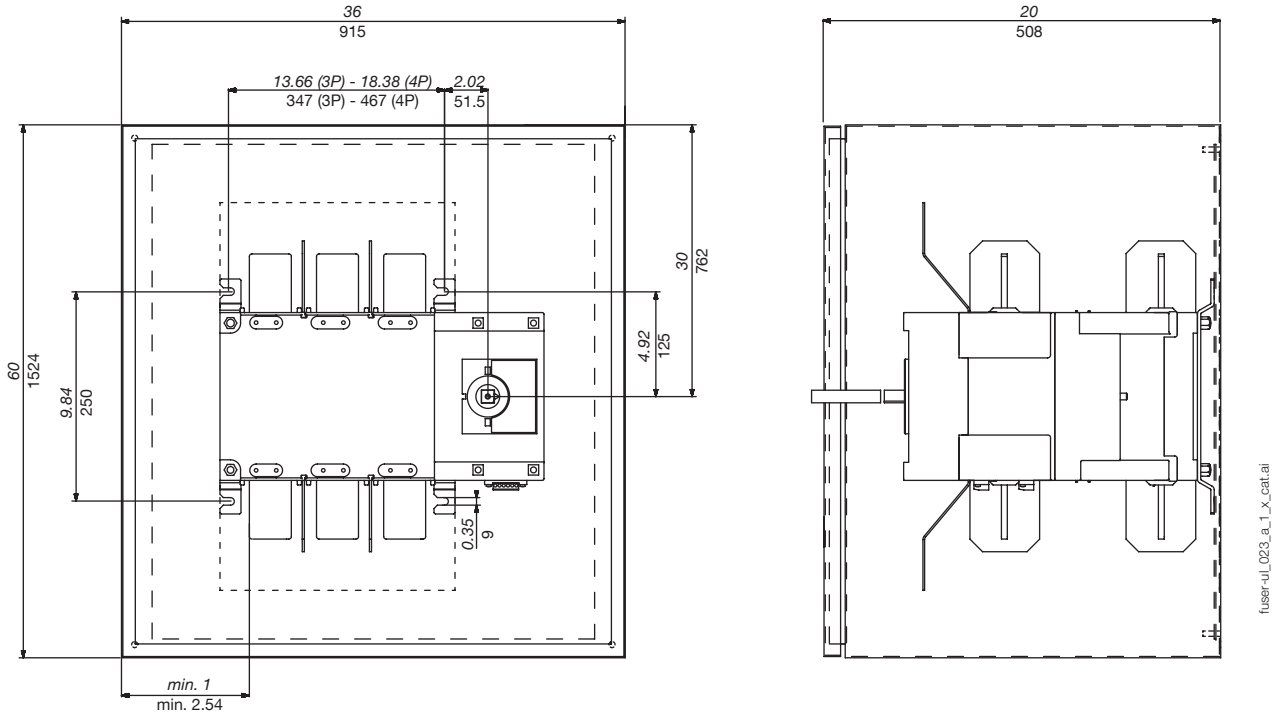
Minimum enclosure dimensions



800 to 1200 A / B7

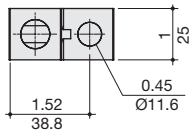


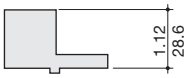
Minimum enclosure dimensions



Terminal lugs (in/mm)

100 to 200 A / B4

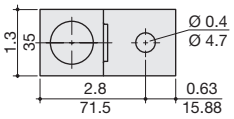


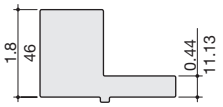


300 kcmil

sirco_115_b_1_us_cat

260 to 400 A / B5

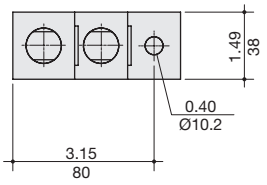


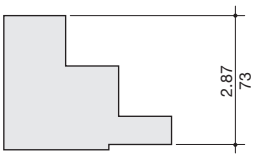


600 kcmil

sirco-ul_010_a_1_us_cat

600 to 1200 A / B6 - B7



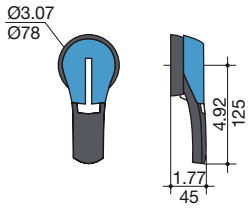
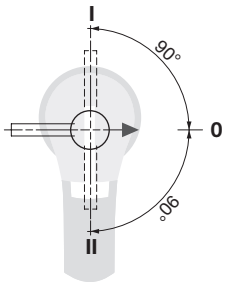
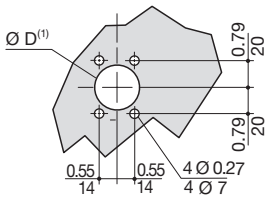


2 x 600 kcmil

sirco_116_b_1_us_cat

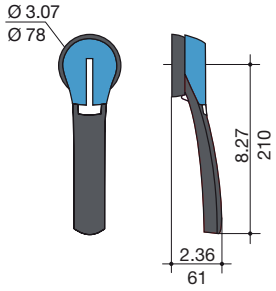
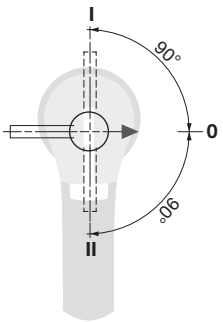
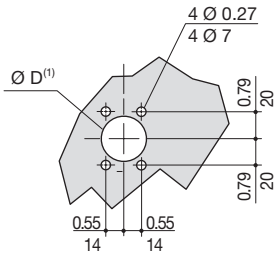
External handles dimensions (in/mm)

100 to 400 A / B4 - B5

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

poign_067_a_1_us_cat

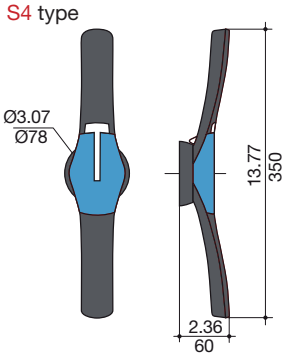
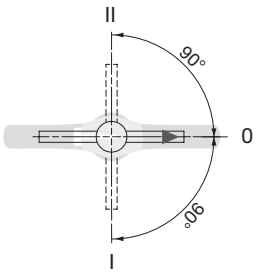
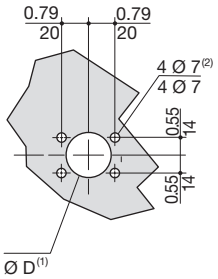
260 and 600 A / B5 - B6

Handle type	Front operation Direction of operation	Door drilling
S3 type 		

poign_064_a_1_fr_cat

External handles dimensions (in/mm) (continued)

800 to 1200 A / B7

Handle type	Front operation Direction of operation	Door drilling
S4 type 		

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

poign_065_a_1_gb_cat

ATyS UL 1008

Non-automatic Transfer Switching Equipment

from 100 to 1200 A

The solution for

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

Strong points

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

Conformity to standards

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

Your choice of ATS controls

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

Function

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

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

Advantages

Robust and Reliable design

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

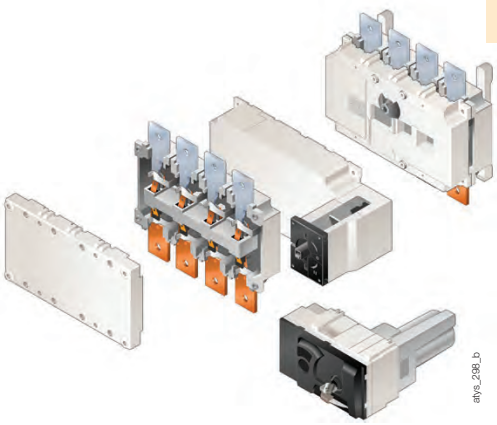
Maintenance free

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

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

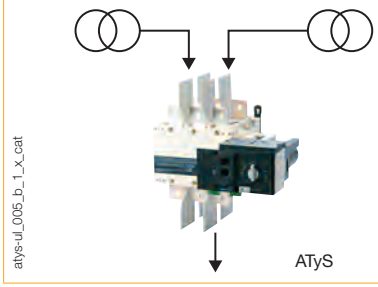
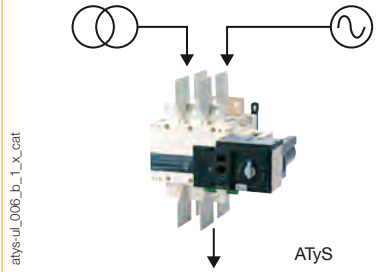
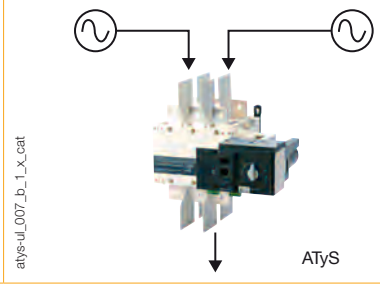
Compatible with virtually any ATS controls

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



Typical applications

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

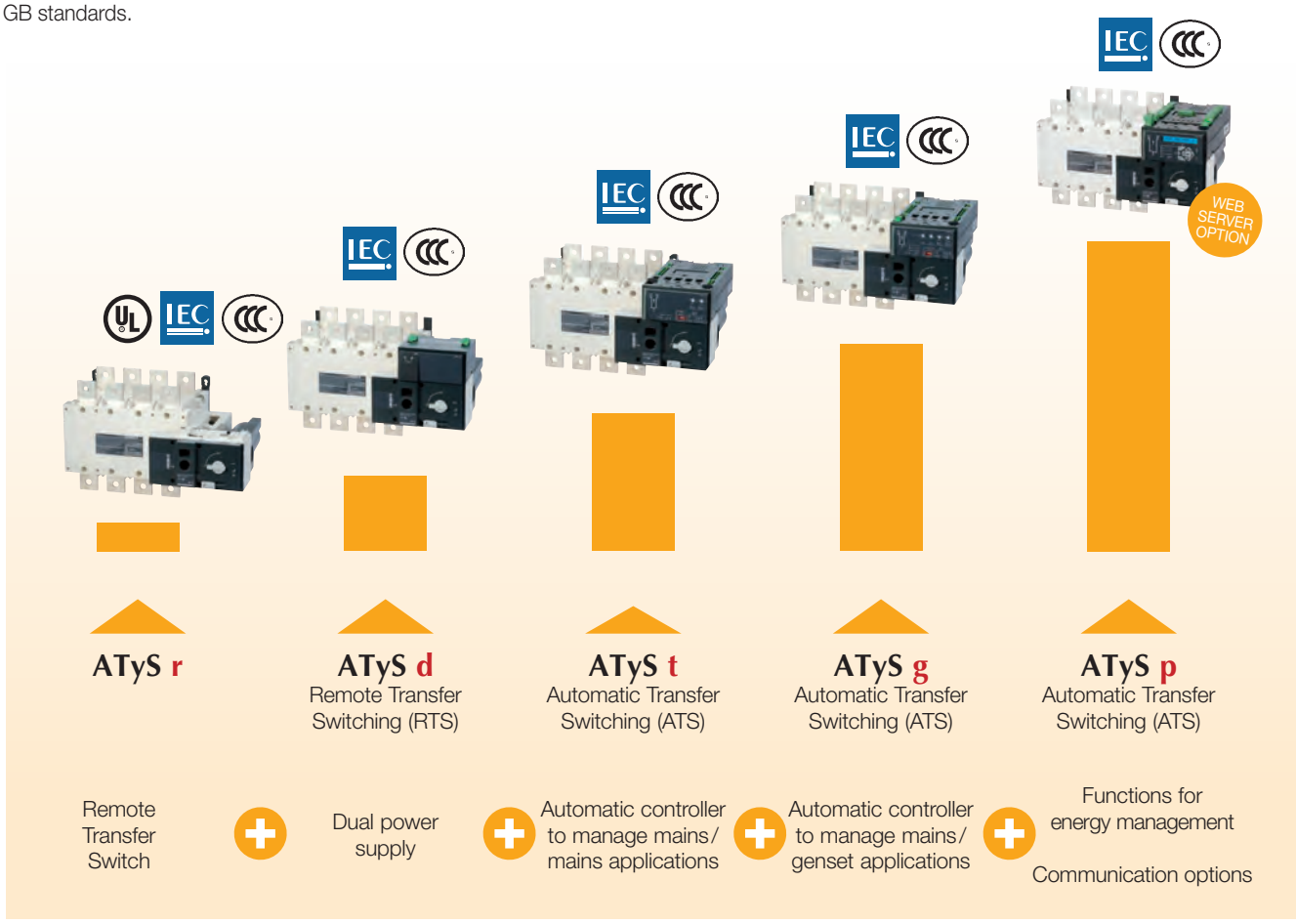
Mains / Mains	Mains / Genset	Genset / Genset
		

Part of a globally recognized range

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

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

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



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

ATyS UL 1008

Non-automatic Transfer Switching Equipment

from 100 to 1200 A

References

ATYS UL 1008

Rating (A)	Frame size	No. of poles	ATyS	Bridging bars	Terminal screens	Auxiliary contact	Lug kits
100 A	B4	2 P	9723 **2010**	2 P 4159 **2021** 3 P 41593021 4 P 4159 **4021**	2/3 P 4158 **3021** 4 P 4158 **4021**	NO/NC 4159 **0021** Low level 4159 **0022**	2 P 3954 **2020** 3 P 3954 **3020** 4 P 3954 **4020**
		3 P	9723 **3010**				
		4 P	9723 **4010**				
200 A		2 P	9723 **2020**				
		3 P	9723 **3020**				
		4 P	9723 **4020**				
260 A	B5	2 P	9723 **2026**	2 P 4159 **2041** 3 P 41593041 4 P 4159 **4041**	2 / 3 P 4158 **3041** 4 P 4158 **4041**		2 P 3954 **2040** 3 P 3954 **3040** 4 P 3954 **4040**
		3 P	9723 **3026**				
		4 P	9723 **4026**				
400 A		2 P	9723 **2040**				
		3 P	9723 **3040**				
		4 P	9723 **4040**				
600 A	B6	3 P	9723 **3060**	4159 **3063**	1609 **3063**		3954 **3060**
		4 P	9723 **4060**	4159 **4063**	1609 **4063**		3954 **4060**
800 A	B7	3 P	9723 **3080**	3 P 4159 **3080** 4 P 4159 **4080**	3 P 1609 **3080** 4 P 1609 **4080**	Contact NO/NC as standard	3 P 3954 **3120** 4 P 3954 **4120**
		4 P	9723 **4080**				
1200 A		3 P	9723 **3120**				
		4 P	9723 **4120**				

Common accessories - more available on next pages.

Accessories

Terminal screens

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

Use

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

acces_207_a_2_cat

Bridging bars

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

Use

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

acces_205_a_2_cat

Auxiliary contacts

Use

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

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

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

acces_065_a_1_cat

acces_065_a_1_cat

Terminal lugs

Use

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

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

ul_032_a

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

ATyS UL 1008

Non-automatic Transfer Switching Equipment

from 100 to 1200 A

Spares

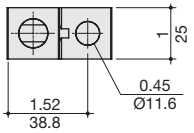
Motorization module

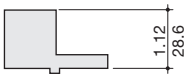
Rating (A)	No. of poles	Frame size	Used for ATyS reference	Motorization module References
100	2 / 3 / 4 P	B4	9723 **2010** - 9723 **3010** - 9723 **4010**	9709 **5010**
200	2 / 3 / 4 P		9723 **2020** - 9723 **3020** - 9723 **4020**	9709 **5020**
260	2 / 3 / 4 P	B5	9723 **2026** - 9723 **3026** - 9723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

atys_871.eps

Terminal lugs (in/mm)

100 and 200 A / B4

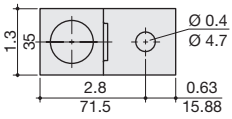


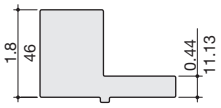


300 kcmil

sirco_115_b_1_us_cat

260 and 400 A / B5

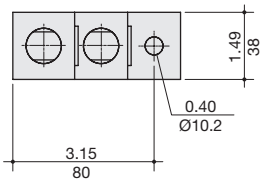


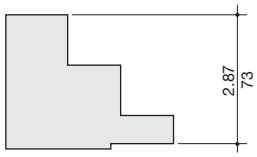


600 kcmil

sirco_ul_010_a_1_us_cat

600 to 1200 A / B6 - B7



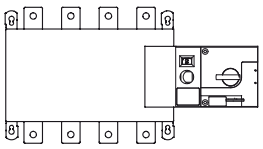
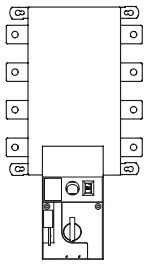
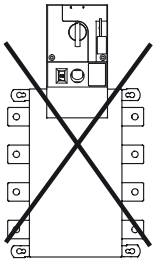
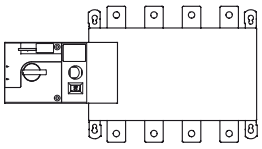


2 x 600 kcmil

sirco_116_b_1_us_cat

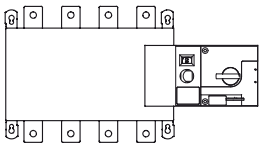
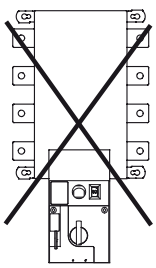
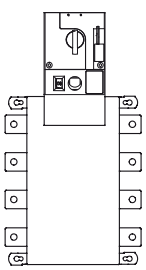
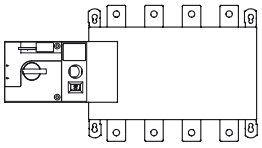
Mounting orientation

100 to 400 A / B4 - B5

			
Recommended	OK	Not Allowed	OK

atys-ul_013 ... 014_a_1_x_cat

600 to 1200 A / B6 - B7

			
Recommended	Not Allowed	OK	OK

atys-ul_013 ... 014_a_1_x_cat

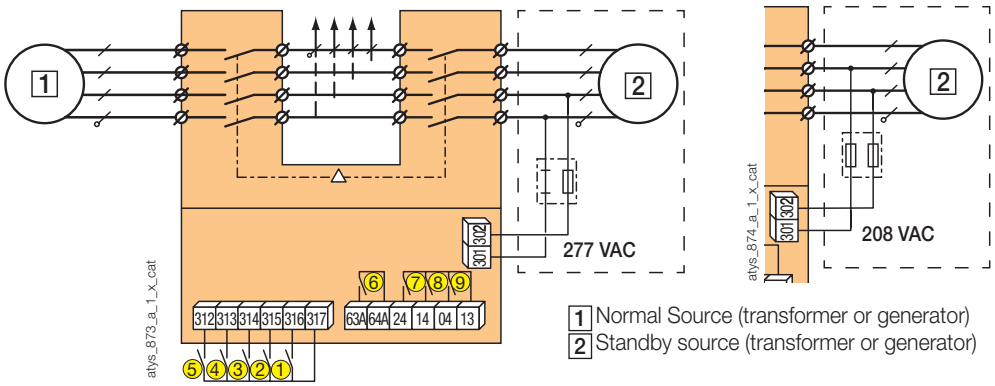
Characteristics

Characteristics according to UL 1008 (Optional standby)

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

Terminals and connections

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



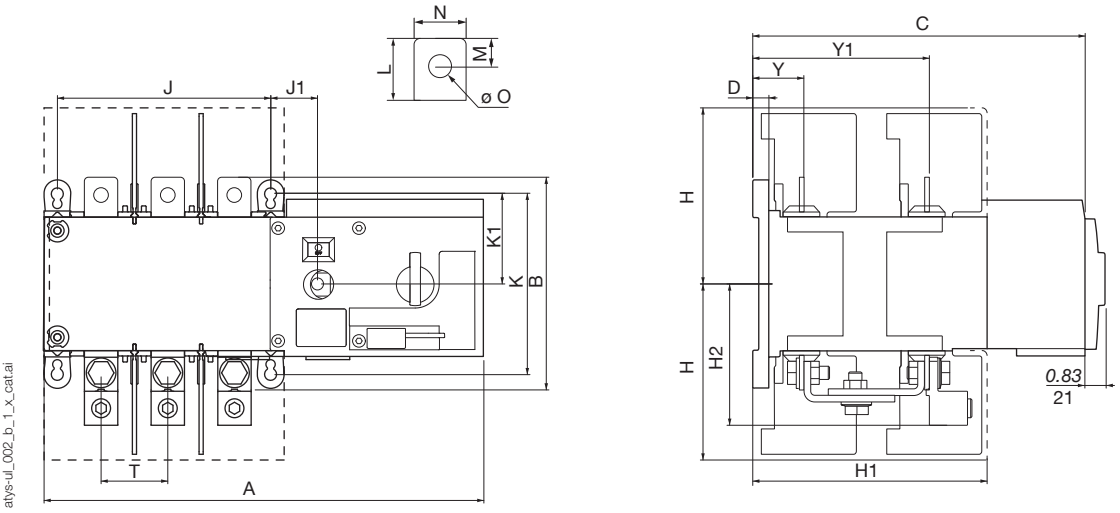
1 Normal Source (transformer or generator)
2 Standby source (transformer or generator)

1 : position 0 order input (contactor logic if closed)
2 : position I order input
3 : position II order input
4 : position 0 priority order input
5 : Input to enable or disable inputs 1 to 4
6 : product availability relay, (watchdog)
7 : auxiliary contact, closed when the switch is in position II
8 : auxiliary contact, closed when the switch is in position I
9 : auxiliary contact, closed when the switch is in position 0

Dimensions (in/mm)

100 to 400 A / B4 - B5

Transfer switch dimensions

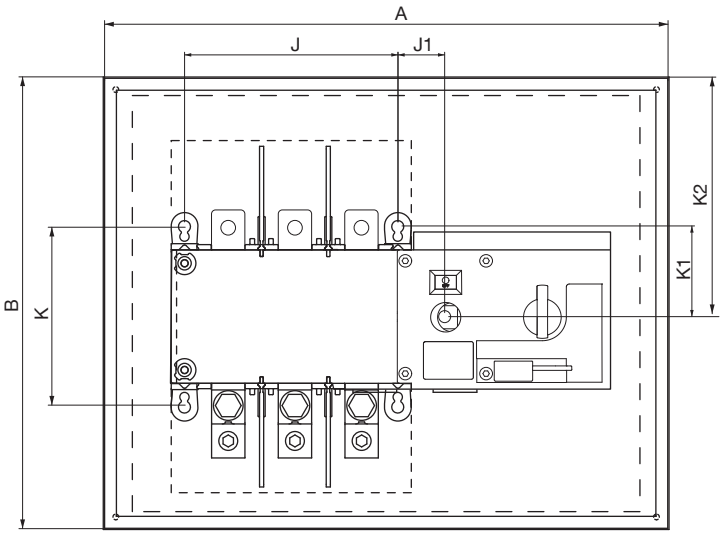


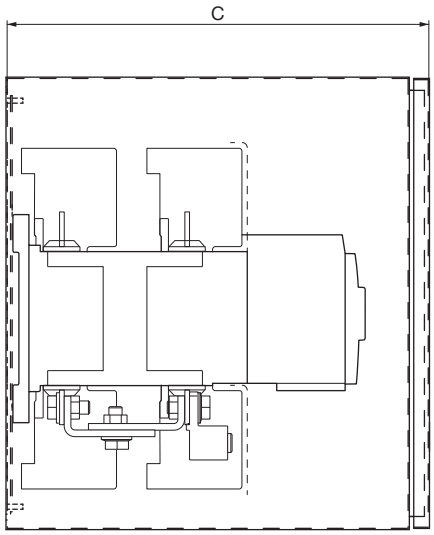
Rating (A)	Frame size	Reference	No. of poles	A		B		C		D		H		H1		H2		Y		Y1	
				in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100 - 200	B4	9723 **2010** - 9723 **2020**	2 P	12.91	328	6.30	160	9.60	244	0.41	10.5	5.08	129	6.93	176	4.21	107	1.51	38.5	5.21	132.5
		9723 **3010** - 9723 **3020**	3 P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

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

100 to 400 A / B4 - B5

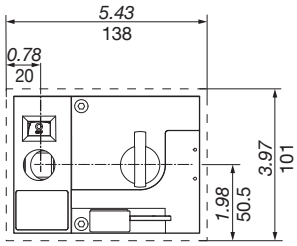
Minimum enclosure dimensions





atys-ul_009_b_1_x_cat.ai

Door cut-out for front panel



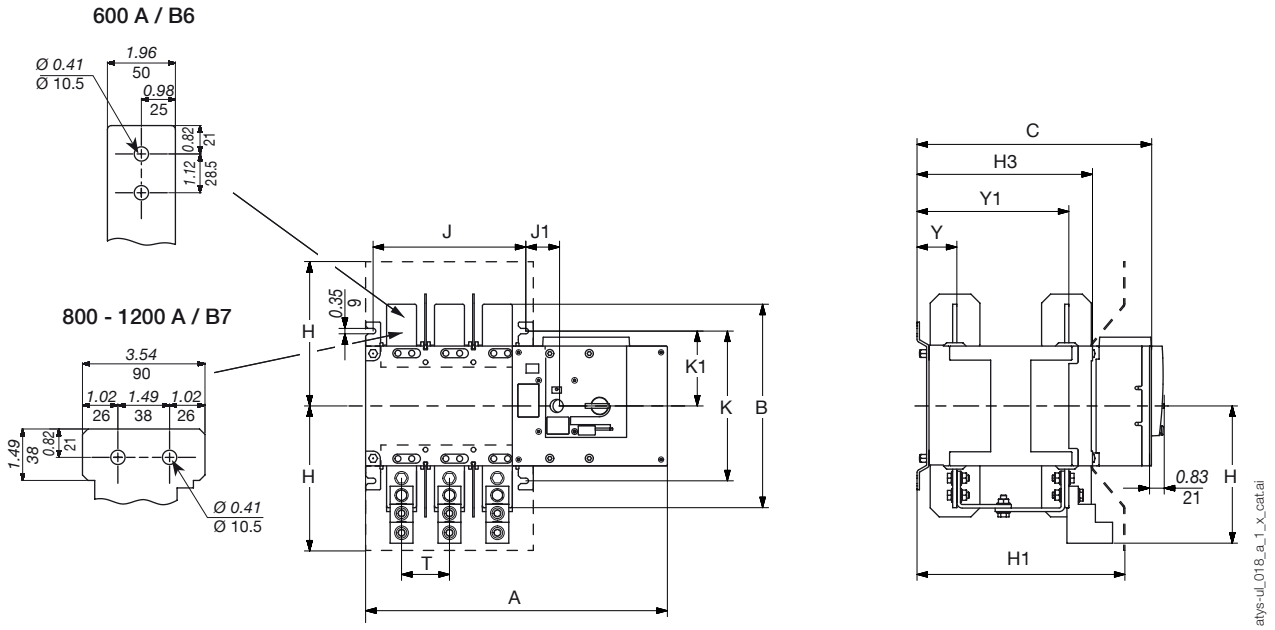
atys-ul_017_a_1_x_cat.ai

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

Dimensions (in/mm) (continued)

600 to 1200 A / B6 - B7

Transfer switch dimensions

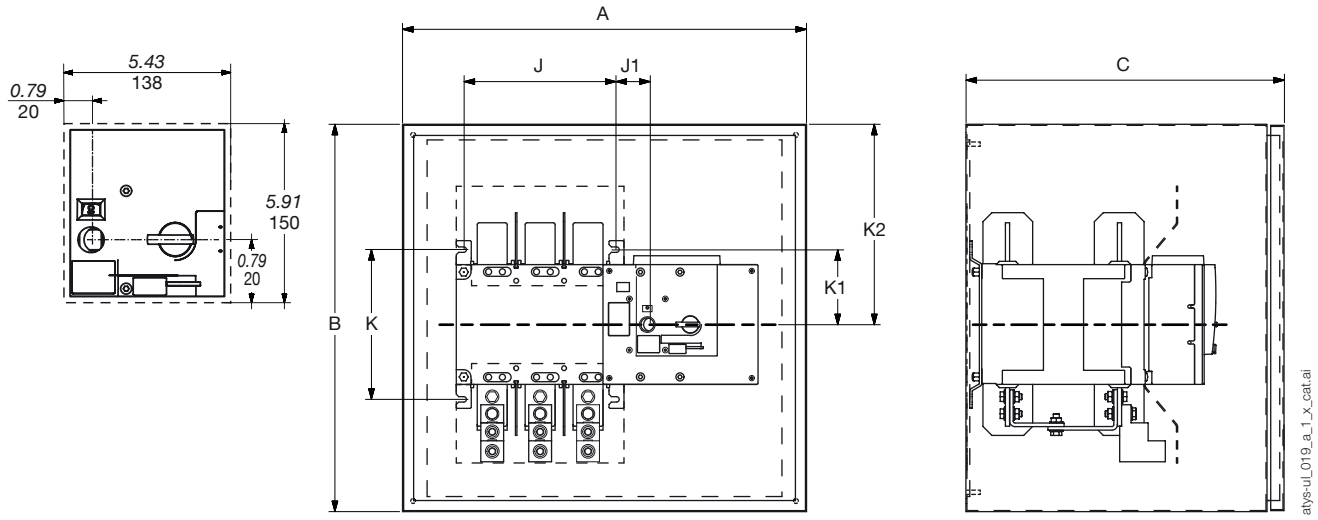


Rating (A)	Frame size	Reference	No. of poles	A		B		C		H		H1		H2		H3	
				in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
600	B6	9723 **3060**	3 P	19.8	504	13.38	340	15.4	392	9.09	231	13.7	347	9.05	230	11.5	293
		9723 **4060**	4 P	22.99	584												
800 - 1200	B7	9723 **3080** - 9723 **3120**	3 P	23.5	596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

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

600 to 1200 A / B6 - B7

Minimum enclosure dimensions



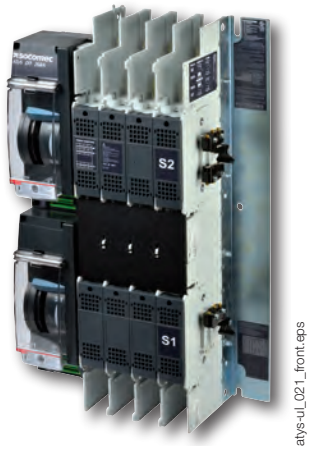
Rating (A)	Frame size	Reference	No. of poles	A		B		C		J		J1		K		K1		K2	
				in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
600	B6	9723 **3060**	3 P	36	915	48	1220	20	508	10.04	255	2.02	51.5	9.84	250	4.92	125	24	610
		9723 **4060**	4 P							12.18	355								
800 - 1200	B7	9723 **3080** - 9723 **3120**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

ATyS FT - ATyS DT

Automatic Transfer Switching Equipment

from 100 to 400 A

atys-ul_020_front.eps



atys-ul_021_front.eps

Function

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

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

Advantages

Robust, reliable and high performing

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

Safe manual handle

The ATyS FT and ATyS DT ensure the safety of your maintenance personnel due to patented safety features.

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

Intuitive use and simple installation

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

Inspectable contacts

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

atys-ul_043_a.psd

The solution for

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

Strong points

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

Conformity to standards

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

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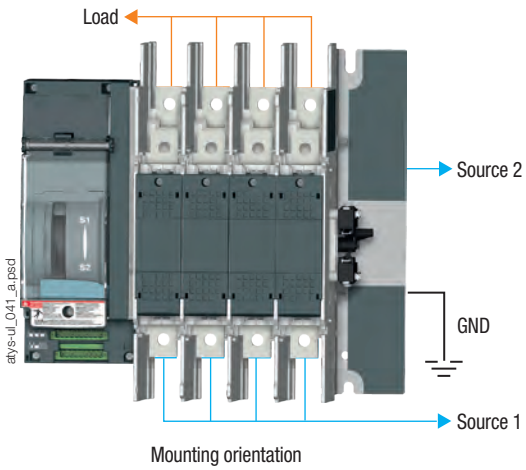
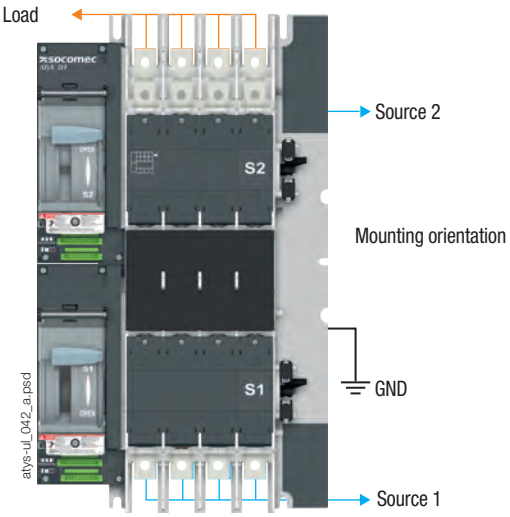
socomec Innovative Power Solutions

Typical applications

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





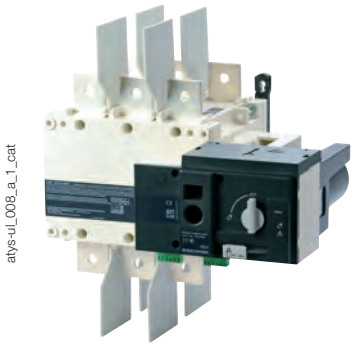
Additional Products

ATyS C66

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

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

ATyS UL 1008



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

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

References

ATyS FT: Fast transfer I – II switch & controller

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

Rating (A)	Frame size	N° of poles (1)	ATyS FT Reference	ATyS FT spare switch Reference	ATyS FT Spare harness Reference	Terminal screens	Additional auxiliary contacts
100	F1	2 P	96A0 **2010**	9600 **2010**	9696 **4000**	9698 **2020**	9699 **0021**
		2 P+SN	96A1 **2010**	9601 **2010**		9698 **3020**	
		3 P	96A0 **3010**	9600 **3010**			
		3 P(2)	9680 **3010**		9697 **4000**		
		3 P+SN	96A1 **3010**	9601 **3010**	9696 **4000**	9698 **4020**	
		4 P	96A0 **4010**	9600 **4010**			
200		2 P	96A0 **2020**	9600 **2020**		9698 **2020**	
		2 P+SN	96A1 **2020**	9601 **2020**		9698 **3020**	
		3 P	96A0 **3020**	9600 **3020**			
		3 P(2)	9680 **3020**		9697 **4000**		
		3 P+SN	96A1 **3020**	9601 **3020**	9696 **4000**	9698 **4020**	
		4 P	96A0 **4020**	9600 **4020**			
260	F2	2 P	96A0 **2026**	9600 **2026**		9698 **2040**	
		2 P+SN	96A1 **2026**	9601 **2026**		9698 **3040**	
		3 P	96A0 **3026**	9600 **3026**			
		3 P(2)	9680 **3026**		9697 **4000**		
		3 P+SN	96A1 **3026**	9601 **3026**	9696 **4000**	9698 **4040**	
		4 P	96A0 **4026**	9600 **4026**			
400		2 P	96A0 **2040**	9600 **2040**		9698 **2040**	
		2 P+SN	96A1 **2040**	9601 **2040**		9698 **3040**	
		3 P	96A0 **3040**	9600 **3040**			
		3 P(2)	9680 **3040**		9697 **4000**		
		3 P+SN	96A1 **3040**	9601 **3040**	9696 **4000**	9698 **4040**	
		4 P	96A0 **4040**	9600 **4040**			

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

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

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

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

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

Accessories

Terminal screens

Use

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

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

(1) Top and bottom.

Additional auxiliary contact kit

Use

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

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

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

Characteristics according to to UL 1008 and CSA-C22.2 No. 178.1-14

100 to 400 A

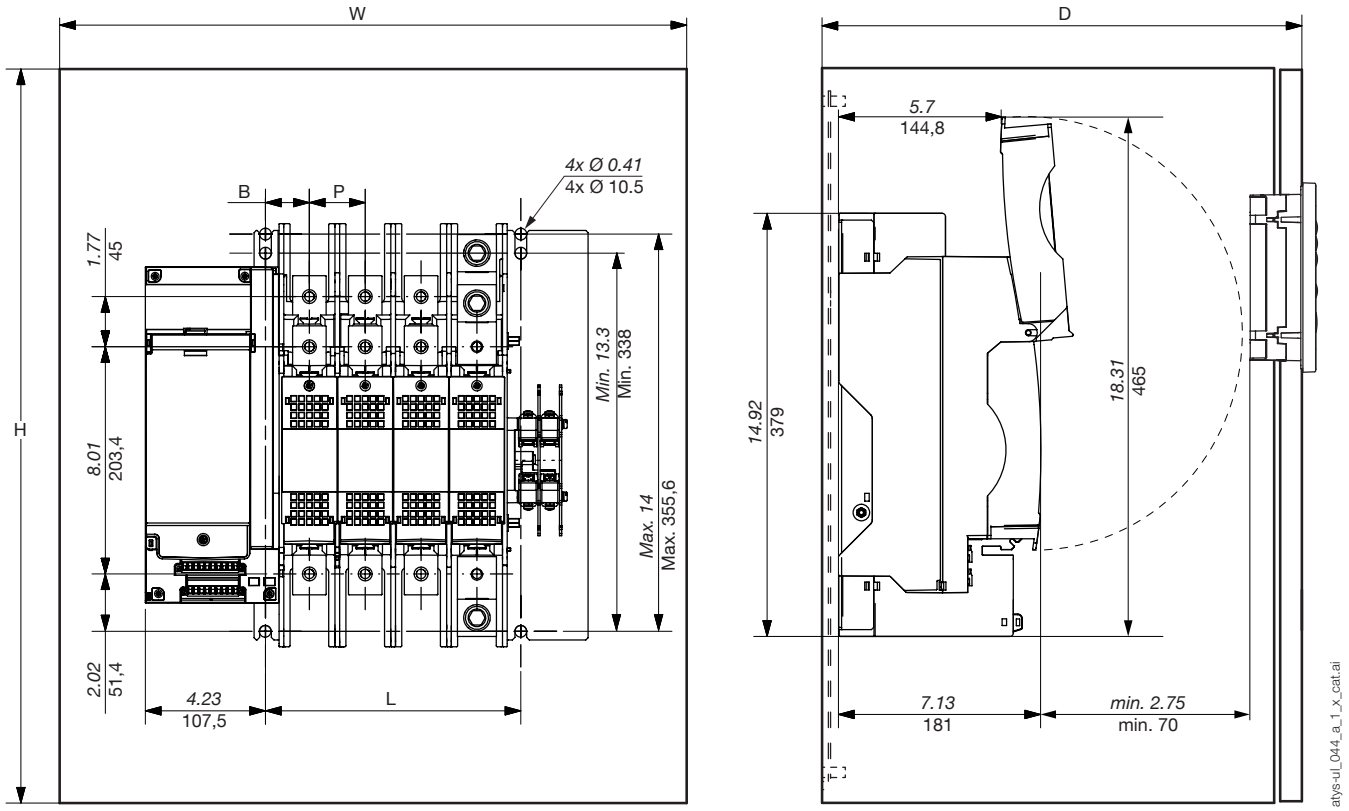
General use rating (A)	100	200	260	400
Frame size	**F1**		**F2**	
Compatible voltage networks	240 V 2 wires, 208 V 3 wires, 120 V 2 wires , 120/240 V 3 wires, 120/208 V 4 wires, 277/480 4 wires , 480 V 3 wires			
Short circuit rating at 480 VAC with fuses (kA)				
Short circuit current (kA)	100	100	100	100
Fuse link	J	J	J	J
Fuse rating (A)	400	400	600	600
Short circuit rating three phase at 480 VAC with “specific breaker” (kA)				
Square D : DC , FI , HD , HG ,HJ , HL 100 A	50	50	-	-
Square D : JD, JG , JJ , JL 250 A	50	50	-	-
Square D : JJ, JL, JR 250 A	-	-	100	100
Schneider Electric NSX 400 A	-	-	65	65
Siemens 3VA5 100 A	50	50	-	-
Siemens 3VA5 , 3VA6 150 A	50	50	-	-
Siemens 3VA5 , 3VA6 250 A	50	50	65	65
Eaton FCL , JGS , JGH , JGC 250 A	35	35	-	-
Eaton LGH 400 A	-	-	50	50
GE SFL 250 A	-	-	65	65
Short circuit rating single phase at 240 VAC with “specific breaker” (kA)				
Square D : DC , FI , HD , HG , HJ , HL 100 A	50	50	-	-
Square D : JD, JG , JJ , JL 250 A	50	50	-	-
Siemens 3VA5 , 3VA6 250 A	-	-	65	65
Eaton LGH 400 A	-	-	50	50
GE SFL 250 A	-	-	100	100
Rated operational current (A)				
Up to 480 VAC “Resistive load”	100	200	260	400
Up to 480 VAC “Total system”	100	200	260	400
Mechanical endurance				
Endurance (number of operating cycles)	6050			
Connection terminal				
Min. connection section (AWG)	#6, 14 AWG	#6	#4	#4
Max. connection section (AWG)	1/0	250 KCMIL	300 KCMIL	600KCMIL
Associated lugs	CMC LA300R , ILSCO D0957	CMC LA300R , ILSCO D2831	CMC LA630R, ILSCO D3096-22	
Power supply				
Switch Supply voltage (VAC)	194-304			
Controller supply voltage (VAC)	84-575			
Minimum Switching time(1) (ms)				
Contact transfer time Normal to Alternate(2)	24	24	30	30
Contact transfer time Alternate to Normal(2)	21	21	27	27
Total transfer time Normal to Alternate(3)	100	100	100	100
Total transfer time Alternate to Normal(3)	410	410	410	410

(1) All switching time measured offload, with 240 VAC networks may vary according to network voltage and load type.
(2) Time for which load is disconnected from both source 1 and source 2 with both sources available.
(3) Total time to transfer including detection of source failure and transfer times (all customer adjustable timers set to 0 and specific functions disabled).

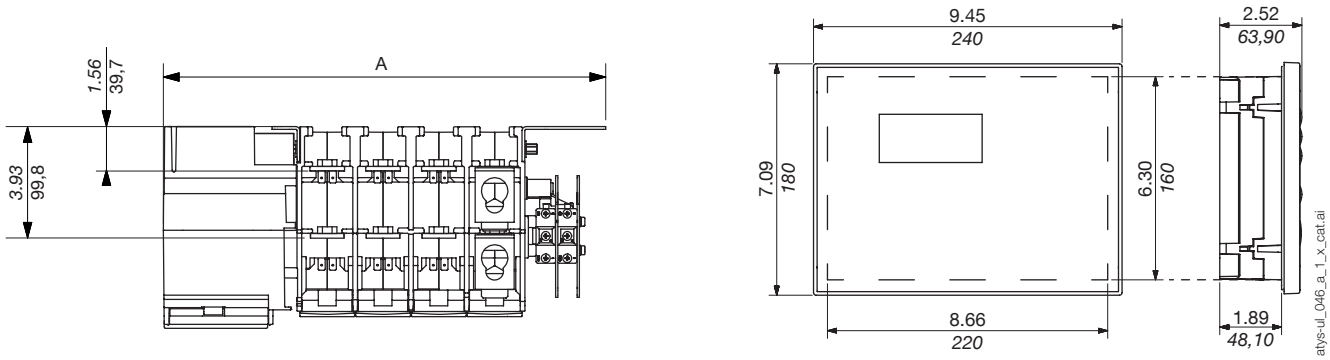
Dimensions

ATyS FT : Fast transfer I – II switch & controller

Switch dimensions



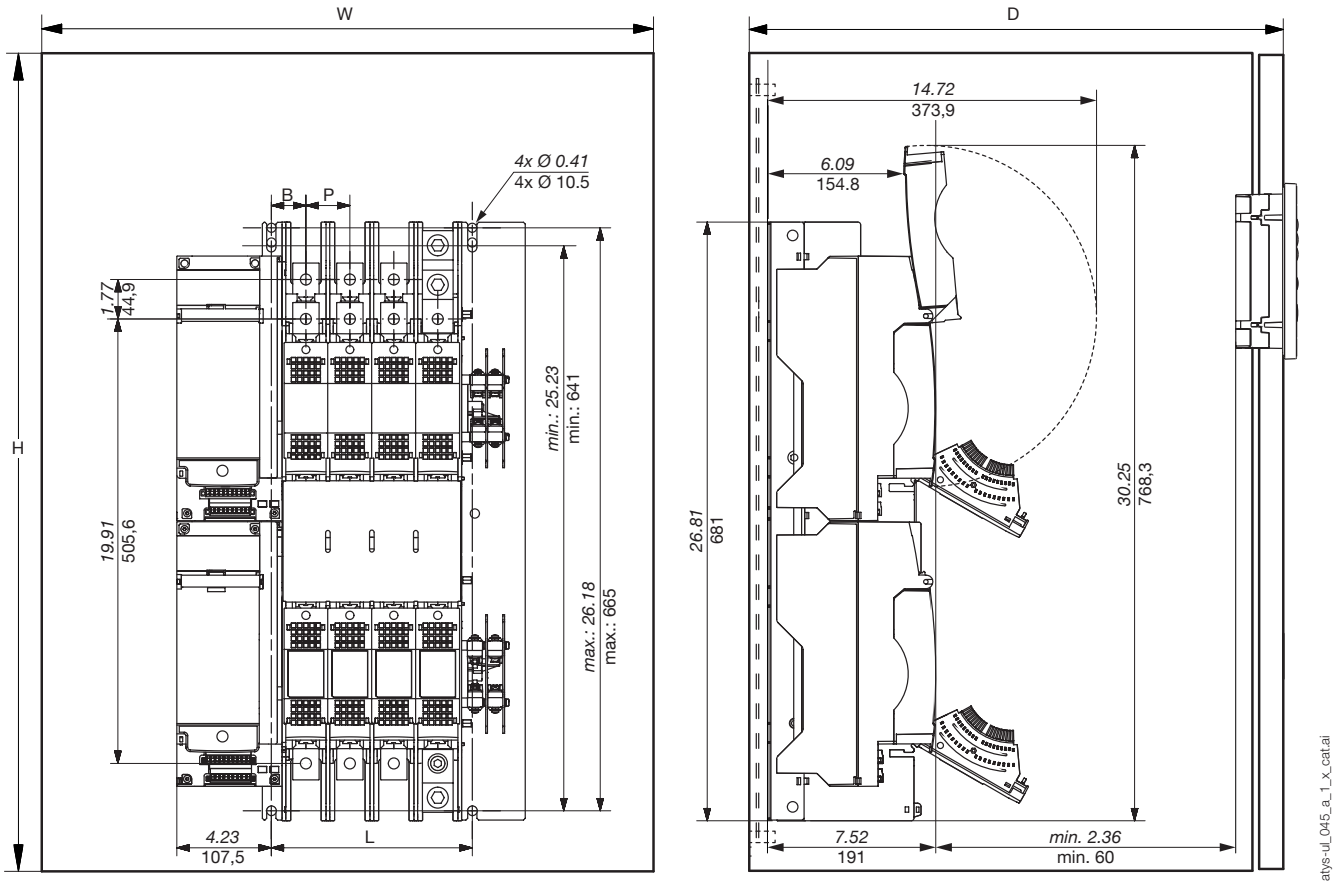
Controller dimensions



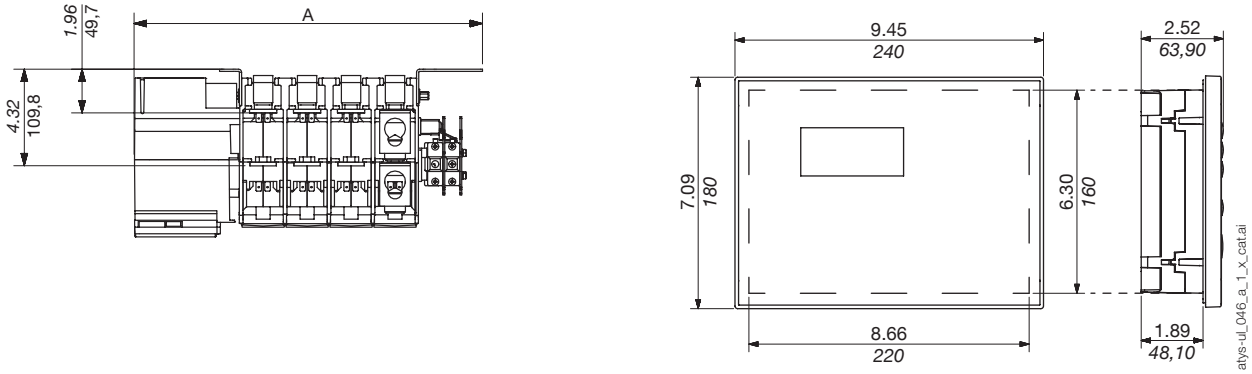
Rating (A)	Nb Poles	A		B		L		P		H		W		D	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100-200A	2 P	10.47	266,30	1.25	31,80	3.85	98,70	1.38	35	20	508	16	406	12	305
	2 P + N / 3 P	11.85	301,30	1.25	31,80	5.49	133,70	1.38	35	20	508	16	406	12	305
	3 P + N / 4 P	13.24	336,30	1.25	31,80	6.60	168,70	1.38	35	20	508	16	406	12	305
260-400A	2 P	11.67	296,30	1.55	39,30	5	128,60	1.97	50	48	1220	24	610	12	305
	2 P + N / 3 P	13.63	346,30	1.55	39,30	7	178,60	1.97	50	48	1220	24	610	12	305
	3 P + N / 4 P	15.60	396,30	1.55	39,30	8.97	228,60	1.97	50	48	1220	24	610	12	305

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

Switch dimensions



Controller dimensions



Rating (A)	Nb Poles	A		B		L		P		H		W		D	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100-200A	2 P + N / 3 P	11.85	301,30	1.25	31,80	5.49	133,70	1.38	35	36	915	16	407	12	305
	3 P + N / 4 P	13.24	336,30	1.25	31,80	6.60	168,70	1.38	35	36	915	16	407	12	305
260-400A	2 P + N / 3 P	13.63	346,30	1.55	39,30	7	178,60	1.97	50	60	1524	24	610	12	305
	3 P + N / 4 P	15.60	396,30	1.55	39,30	8.97	228,60	1.97	50	60	1524	24	610	12	305

ATyS C66

UL ATS Controller

for Open and Delayed Transition

atysc_024us

ATyS C66

The solution for

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

Strong points

- Self-powered
- Built-in advanced features
- Intuitive menus & Dashboards
- NEMA 3R/12

Conformity to standards

- UL 61010
  CSA-C22.2 No. 61010-1
  Guide NRAQ
  File E206136
- UL 1008
  CSA-C22.2 No. Guide WPWR 178.1-14
  File E506172
- IEC 60947-6-1

Function

ATyS C66 is an ATSE controller designed to control all types of emergency system, legally required and optional standby transfer switching equipment. The ATyS C66 is cULus 1008 listed with ATyS FT* and ATyS DT* power contactor switches as well as cURus 1008 and cULus 61010 listed for use with circuit breakers or contractors. ATyS C66 ensures automatic and manual transfer from one source to another with fully configurable timers and thresholds.

** ATyS FT Fast Transfer, ATyS DT Delayed Transfer.*

Advantages

Fast commissioning

On initial power up, the ATyS C66's smart wizard will guide the operator through the commissioning process.

User customizable

Front panel LEDs, load shedding, engine exercisers and the elevator control signal are just some of the customizable features available on ATyS C66.

Intuitive operation

- The high-resolution LCD screen provides several dashboards enabling easy monitoring of all parameters, including power and energy consumption of the loads.
- The integrated energy backup provides transitional power to the product enabling status indication (switch position, timer status, fault notifications) and communication to remain active with no supply present.
- Quick and easy access to main functions through the front panel with direct key input.

General characteristics

- Self-powered from voltage sensing.
- Wide voltage range (88 - 576 VAC).
- 24 VDC aux power supply (for optional use).
- 6 x 8A programmable dry contact Form C outputs (SPDT) (2 latching relays).
- 6 x programmable inputs.
- DIN rail mountable I/O extension, up to 30 inputs and 18 outputs (accessory).
- Power & Energy metering with 1 or 5A current transformers.
- Up to 30 second energy backup.
- Smart wizard.
- 3000 Alarms and Events.
- Built-in engine exerciser with 4 independent programs.
- Associated Webserver software.
- In-phase transfer.
- Tiered access levels of password protection.
- UV tested.

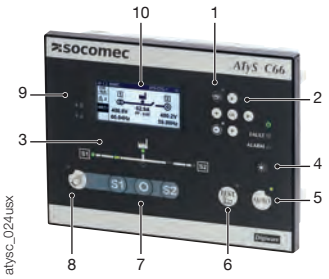
Communication gateways

DIRIS Digiware M-70 & D-70

References

Description	Reference
ATyS C66 controller	1600 **0066**
DIRIS Digiware IO-10 (4 input/2 output) DIN-rail extension	4829 **0140**
DIRIS Digiware M-70 communications gateway for Ethernet & Webserver	4829 **0222**
DIRIS Digiware D-70 communication gateway for Ethernet & Webserver and multi-product display	4829 **0202**
Current Transformers	Consult us
ATyS FT / ATyS DT and cable harnesses	Consult us

Front panel



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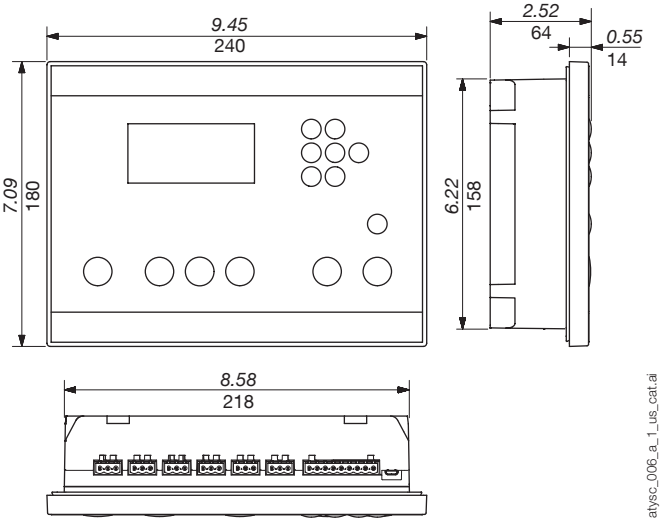
1. Dashboard displays.
2. Navigation keypad.
3. Mimic LED indication.
4. Lamp test button / LED info.
5. AUTO mode select.
6. TEST button.
7. CONTROL mode select.
8. Position orders (only in CONTROL mode).
9. Customizable LED.
10. Hi-res LCD screen.

Dimensions (in/mm)



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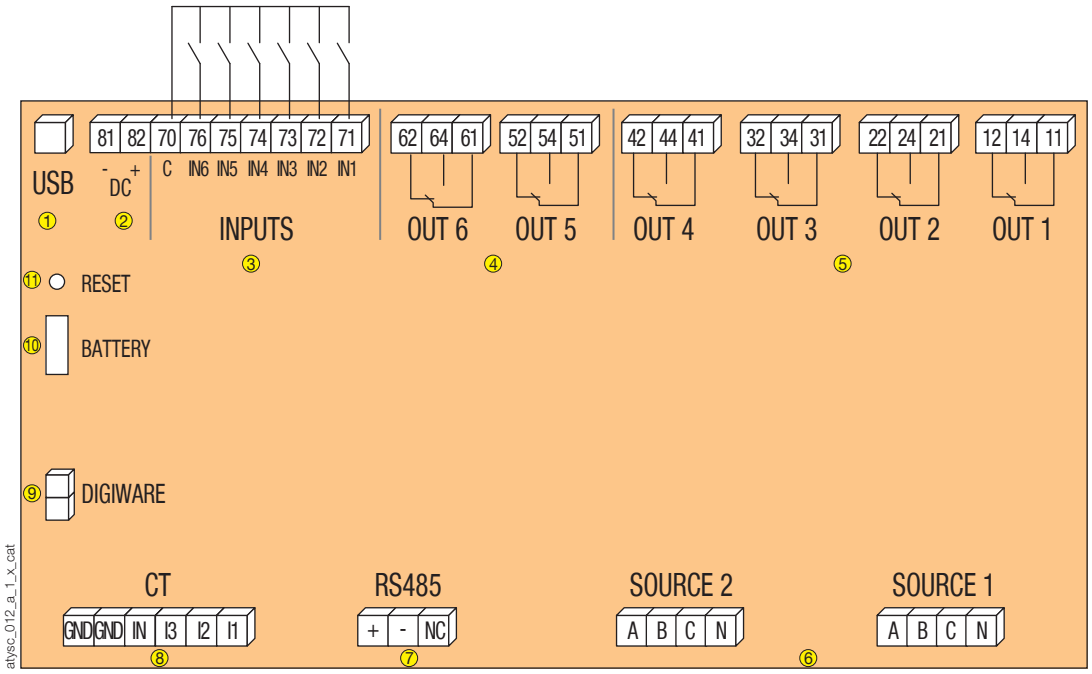
Characteristics

Electrical characteristics	
Operating AC limits	110 - 480 VAC ±20%
Optional DC supply	24 VDC
Frequency limits	45 - 65 Hz
Power consumption	< 10 W
Current transformers	1 or 5A
Measurement type	True RMS (TRMS)
Inputs	6 x fully programmable
Outputs	6 x form C, fully programmable
Output relays	8A general use
I/O Extension (IO10)	Up to 30 inputs and 18 outputs
Overvoltage category	CAT III
Impulse withstand	8/6 kV (1)

Mechanical characteristics	
Weight	2.38 lb / 1080 gr
Door cutout	8.66 x 6.3 in / 220 x 160 mm
Protection degree	NEMA 3R/12, IP65
Operating temperature	-22 … +158 °F / -30 … +70 °C
Communications	
Interface type	RS485. 2 to 3 half duplex wires
Protocol	MODBUS RTU
Baudrate	Programmable 1200 - 115200 bps
Digiware bus cable	RJ45 specific cable
Display	
Screen resolution	350 x 160 pixels
Event recorder	3000 events

(1) 8 kV tested between phases of a different source and 6 kV tested between phases of the same source.

Terminals



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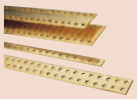
1. Configuration USB
2. 24 VDC aux power supply (for optional use)
3. 6 x inputs
4. 2 x latching relay outputs
5. 4 x relay outputs
6. Source sensing (110-480 ±20%)
7. RS485 communication
8. Current transformers (1 or 5A)
9. Digiware RJ45 connectors
10. Replaceable RTC battery
11. Hard reset button

Mounting, cabling & accessories

Accessories

Power distribution blocks
p. 183

Busbar



Rigid copper bars
p. 187

Flexible copper bars
p. 189

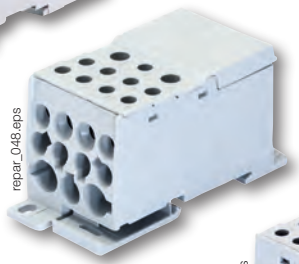
Insulated copper braids
p. 191

Edgewise mounting busbar supports
p. 193

Power distribution blocks

Distribution

Power distribution blocks single pole UL



Power distribution blocks single pole UR

Power distribution blocks three-pole UR

The solution for

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

Strong points

- IP20 finger safe protection
- Wide range
- Easy integration
- Flexibility of wiring
- UL listed

Conformity to standards

- UL 1953
  Guide QPQS
  File E500778
- UL 1059
  CSA-C22.2 No. 128
  Guide XCFR
  File E500524
- IEC 61439-1
- IEC 60947-7-1

Function

SOCOMEC **Power distribution blocks** allow for easy connection of conductors to distribute power from one load into multiple smaller loads. They are installed downstream of a disconnect switch, transfer switch or circuit breaker.

Advantages

IP20 finger safe protection

- IP20 rated.
- Finger-safe design provides touch safe protection from live parts.

Wide range

The extent of the range makes it possible to find the distribution system adapted to its needs:

- 5 single pole power distribution blocks UL,
- 4 single pole power distribution blocks UR,
- 1 multipolar power distribution blocks UR.

Easy integration

The compact design of the different distribution blocks allows an easier integration into the equipment and allows for either DIN rail mounting on direct panel mounting.

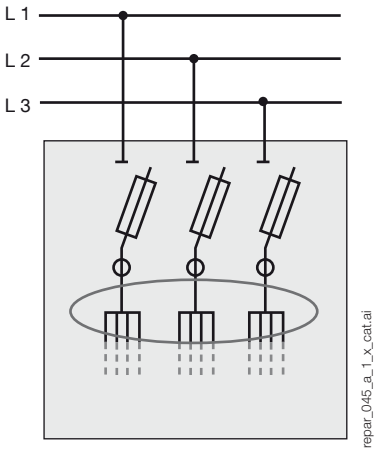
Flexibility of wiring

Allows use of standard solid, stranded and fine wire strands with use of compression sleeve.

UL & IEC range

The range of distribution blocks comply to the UL standards & the IEC standards.

Application



Power distribution blocks UL 1953

General characteristics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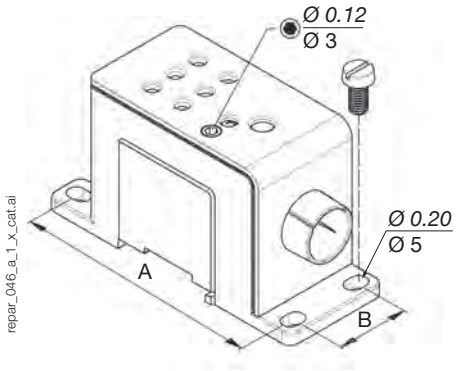
- Material: tin plated aluminum
- Suitable conductors: aluminum or copper.
- IP20 finger-safe.
- Adjustable Dial allows for Selection of L1–L2–L3 phase designation.
- Simple and secure DIN rail locking clip allows easy mounting on DIN Rail.
- Panel mounting.
- Included connection clip allows to join multiple poles together.
- Voltage Ratings: 1000 VAC/DC UL

References

Type	Rating (A) Cable Cu	Cable Al	References
Type 1	85	65	54UL **1008**
Type 2	115	90	54UL **1012**
Type 3	175	135	54UL **1017**
Type 4	255	205	54UL **1025**
Type 5	380	310	54UL **1040**

Dimensions (in/mm)



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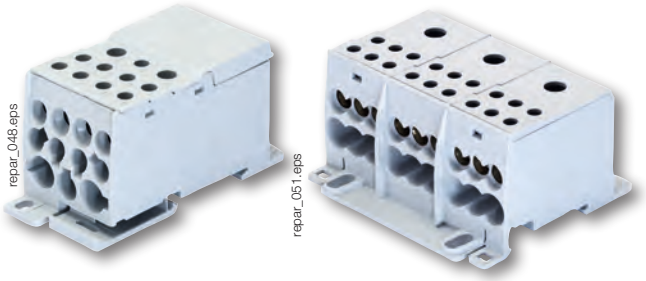
Type	Units	H x W x D	Mounting A	Mounting B
Type 1	in	1.93 x 1.417 x 3.524	3.118	0.914
	mm	49 x 36 x 89.5	79.2	23.2
Type 2	in	1.93 x 1.417 x 3.524	3.118	0.914
	mm	49 x 36 x 89.5	79.2	23.2
Type 3	in	2.09 x 1.417 x 3.898	3.492	0.914
	mm	53 x 36 x 99	88.7	23.2
Type 4	in	2.39 x 2.126 x 4.488	4.063	1.622
	mm	60.7 x 54 x 114	103.7	41.2
Type 5	in	2.39 x 2.126 x 4.488	4.063	1.622
	mm	60.7 x 54 x 114	103.7	41.2

Connections & electrical characteristics

Type	For connection	Number of holes	Solid / stranded wired Connection	Fine wire with sleeve Connection	1953 Voltage Max. AC (V)	1953 Voltage Max. DC (V)	Short circuit withstanding I_{cw} (kA)	Short circuit withstanding I_{pk} (kA)	Short circuit withstanding SCCR (kA)	Max. Fuse rating (A) Class RK5	Max. Fuse rating (A) Class RK1	Max. Fuse rating (A) Class J
Type 1	Line	1	3 - 14 AWG	3 - 14 AWG	1000	1000	3	35	100	100	200	250
	Load	6	8 - 14 AWG	10 - 14 AWG								
Type 2	Line	1	1 - 14 AWG	2 - 14 AWG			6	36.1		100	200	250
	Load	6	4 - 14 AWG	6 - 14 AWG								
Type 3	Line	1	2/0 - 14 AWG	1/0 - 14 AWG			8.4	40.8		100	200	250
	Load	4	4 - 14 AWG	6 - 14 AWG								
Type 4	Line	1	250 - 2 kcmil	4/0 - 2 AWG			14.4	47.7		200	400	450
	Load	6	2 - 14 AWG	4 - 14 AWG								
Type 5	Line	1	500 - 2/0 kcmil	400 - 2/0 kcmil			28.8	57.2		200	400	450
	Load	6	8 - 14 AWG	4 - 14 AWG								

Power distribution blocks

General characteristics

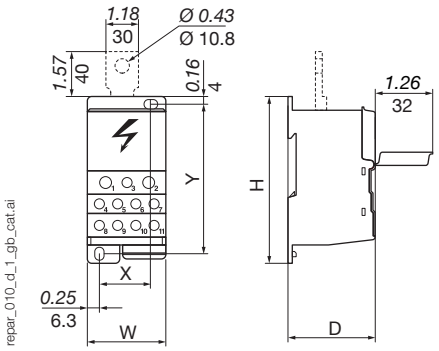


- Material: tin plated aluminum.
- Suitable conductors: aluminum or copper.
- IP20 finger-safe.
- DIN Rail mounting.
- Panel mounting.
- Voltage Ratings: 600 VAC/DC

References

Type	Nb poles	Rating (A) Cable Cu	Rating (A) Cable Al	References
Type 1	1 P	115	90	5411 **1012**
Type 2	1 P	115	90	5411 **1013**
Type 3	1 P	175	135	5411 **1017**
Type 4	1 P	255	-	5411 **1025**
Type 5	3 P	175	135	5411 **3017**
Accessorie				**References**
Type 4 connection for devices				5410 **0025**

Dimensions (in/mm)



Type	Units	Dimensions H x W x D	Mounting A	Mounting B
Type 1	in	2.91 x 1.06 x 1.81	2.44	0.157
	mm	74 x 27 x 46	62	4
Type 2	in	2.80 x 1.77 x 1.69	2.386	0.685
	mm	71 x 45 x 43	60.6	17.4
Type 3	in	2.80 x 1.77 x 1.69	2.386	0.685
	mm	71 x 45 x 43	60.6	17.4
Type 4	in	3.74 x 1.75 x 1.93	3.836	1.165
	mm	95 x 44.5 x 49	86	29.6
Type 5	in	2.8 x 3.15 x 1.93	2.382	2.07
	mm	72 x 80 x 43	60.6	52.5

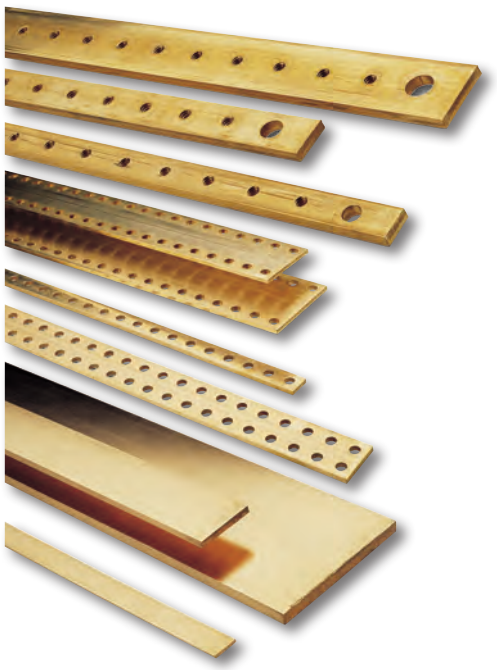
Direct or cable connection distribution blocks, IP20 which can be clipped onto a symmetric DIN rail.

Connections & electrical characteristics

Type	For connection	Number of holes	Solid / stranded wired	Fine wire with sleeve	1059 Voltage Max.		Short circuit withstanding	
			Connection	Connection	AC (V)	DC (V)	I_{cw} (kA)	I_{pk} (kA)
Type 1	Line	1	2 - 8 AWG	2 - 8 AWG	600	600	4.2	30
	Line	1	4 - 14 AWG	6 - 14 AWG				
	Load	6	4 - 14 AWG	6 - 14 AWG				
Type 2	Line	1	2 - 8 AWG	2 - 8 AWG			4.2	30
	Load	10	4 - 14 AWG	6 - 14 AWG				
Type 3	Line	1	2/0 - 8 AWG	1/0 - 8 AWG			11	30
	Load	10	4 - 14 AWG	6 - 14 AWG				
Type 4	Line	1	250 - 2 kcmil	4/0 - 2 AWG			21	51
	Load	2	2 - 14 AWG	4 - 14 AWG				
	Load	5	6 - 14 AWG	6 - 14 AWG				
	Load	4	8 - 14 AWG	8 - 14 AWG				
Type 5	Line	1	2/0 - 8 AWG	1/0 - 8 AWG			11	30
	Load	6	4 - 14 AWG	6 - 14 AWG				

Rigid copper bars

Busbar



barre_001

The solution for

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

Function

The SOCOMEC **rigid copper bars** are suitable for providing main or distribution connections.

Composition of the range

Solid bars
- Thickness: 4.5 and 10 mm.
- Width: 20 to 160 mm.
- Length: 1750, 2900, 5800 mm.

Pre-punched bars
- Thickness: 5 and 10 mm.
- Width: 25 to 125 mm.
- Length: 1750 mm.

Pre-punched and threaded bars
- Thickness: 5 mm.
- Width: 15 to 32 mm.
- Length: 990 mm.

Solid bars
- Determination of the admissible current I_z (A) for solid bars, in usual use conditions (Temperature ambient 113°F / 45°C, admissible warming of the bars 95°F / 35°C, 50 Hz current).

Pre-punched copper bars
- For the pre-punched bars of same dimensions as the solid bars: pre-punched I_z = 0.9 I_z solid.

Aluminium bars
- For the aluminium bars of same dimensions as the solid bars: I_z aluminium = 0.78 I_z solid copper.

Connector for drill-free connection on the busbar
- Bars for thickness 10 mm.

Connection Earth / Neutral
- Corner piece for Earth / Neutral connection, L = 1750 mm.
- Earth bar, L = 470 mm and L = 120 mm.

Amperage per number of bars

Edgewise mounting

Bar section l x e (mm)	Number of bars per phase			
	I	II	III	IIII
20 x 4	240	430	600	750
15 x 5	220	390	540	650
25 x 5	330	590	800	1000
32 x 5	410	700	1000	1250
40 x 5	500	850	1200	1500
50 x 5	600	1050	1450	1850
63 x 5	700	1250	1800	2250
80 x 5	900	1550	2200	2750
100 x 5	1100	1900	2650	3350
125 x 5	1300	2350	3250	4100
30 x 10	600	1050	1450	1800
50 x 10	850	1550	2150	2700
60 x 10	1000	1800	2400	3150
80 x 10	1300	2300	3200	4000
100 x 10	1550	2750	3850	4850
125 x 10	1900	3350	4650	5900
160 x 10	2350	4150	5800	7300

Flat mounting

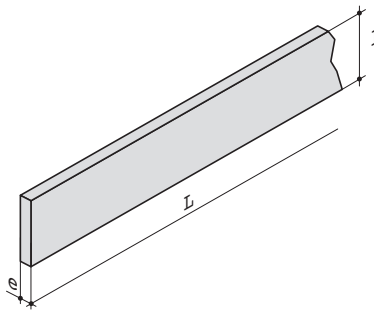
Bar section l x e (mm)	Number of bars per phase			
	I	II	III	IIII
20 x 4	210	340	460	570
15 x 5	190	310	420	510
25 x 5	280	470	600	750
32 x 5	350	580	750	950
40 x 5	420	700	900	1150
50 x 5	510	850	1100	1400
63 x 5	620	1000	1350	1700
80 x 5	750	1250	1700	2100
100 x 5	900	1500	2050	2550
125 x 5	1100	1850	2500	3050
30 x 10	490	800	1100	1350
50 x 10	750	1200	1650	2050
60 x 10	850	1400	1900	2350
80 x 10	1100	1800	2450	3000
100 x 10	1350	2200	2950	3650
125 x 10	1600	2700	3600	4400
160 x 10	2000	3300	4450	5500

References

Solid bars

		L = 1750 mm To be ordered in multiples of 1 bar	L = 2900 mm To be ordered in multiples of 1 bar	L = 5800 mm To be ordered in multiples of 5 or 10 bars
I x e (mm)	Weight (kg/ml)	Reference	Reference	Reference
20 x 4	0.71	4510 **2004**	4513 **2004**	4514 **2004**(1)
25 x 5	1.11	4510 **2505**	4513 **2505**	4514 **2505**(1)
32 x 5	1.42	4510 **3205**	4513 **3205**	4514 **3205**(1)
40 x 5	1.78	4510 **4005**	4513 **4005**	4514 **4005**(1)
50 x 5	2.22	4510 **5005**	4513 **5005**	4514 **5005**(1)
63 x 5	2.80	4510 **6305**	4513 **6305**	4514 **6305**(1)
80 x 5	3.56	4510 **8005**	4513 **8005**	4514 **8005**(2)
100 x 5	4.45	4510 **9005**	4513 **9005**	4514 **9005**(2)
125 x 5	5.56	4510 **9205**	4513 **9205**	4514 **9205**(2)
30 x 10	2.67	4510 **3010**	4513 **3010**	4514 **3010**(2)
50 x 10	4.45	4510 **5010**	4513 **5010**	4514 **5010**(2)
60 x 10	5.33	4510 **6010**	4513 **6010**	4514 **6010**(2)
80 x 10	7.11	4510 **8010**	4513 **8010**	4514 **8010**(2)
100 x 10	8.89	4510 **9010**	4513 **9010**	4514 **9010**(2)
125 x 10	11.11	4510 **9210**	4513 **9210**	4514 **9210**(2)
160 x 10	14.22	4510 **9610**	4513 **9610**	4514 **9610**(2)

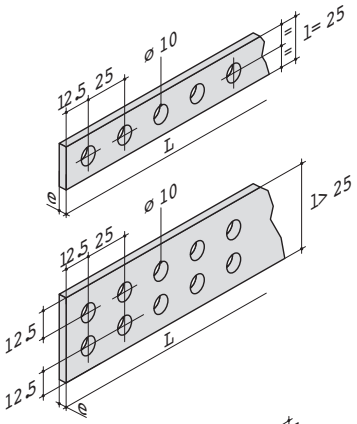
(1) To be ordered by multiple 10 bars
(2) To be ordered by multiple 5 bars



barre_002_a_1_x_cat

Pre-punched bars

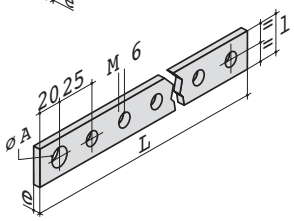
I x e (mm)	W (mm)	Weight (kg/ml)	No. of rows	To be ordered in multiples of	Reference
25 x 5	1750	1.11	1	5	4511 **2505**
50 x 5	1750	2.22	2	5	4511 **5005**
63 x 5	1750	2.80	2	5	4511 **6305**
80 x 5	1750	3.56	2	5	4511 **8005**
100 x 5	1750	4.45	2	5	4511 **9005**
125 x 5	1750	5.56	2	5	4511 **9205**
50 x 10	1750	4.45	2	5	4511 **5010**
60 x 10	1750	5.33	2	5	4511 **6010**
80 x 10	1750	7.11	2	5	4511 **8010**
100 x 10	1750	8.89	2	5	4511 **9010**
125 x 10	1750	10.70	2	5	4511 **9210**



barre_003_a_1_x_cat

Pre-punched and threaded bars

I x e (mm)	W (mm)	Weight (kg/ml)	Ø A (mm)	To be ordered in multiples of	Reference
15 x 5	990	0.67 kg	8.2	5	4512 **1505**
20 x 5	990	0.89 kg	10.2	5	4512 **2005**
32 x 5	990	1.42 kg	12.2	5	4512 **3205**



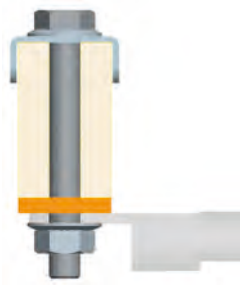
barre_004_a_1_x_cat

Accessories

Drill-free connection accessories

Use

- Allows the drill-free connection of flexible bars or cables onto a busbar.
- Connection across 2 bars, 10 mm thick, placed side by side, 10 mm apart.
- Compatible with busbar supports in the SBC range.
- For terminals or flexible bars with widths greater than 40 mm, use 2 connection accessories.
- Secured with M10 screws, tightening torque 45Nm.
- To make a connection: 1 securing clamp and 1 screw adapted to the height of the bars are required.


barre_020_a_1_x_cat

Type	Bar (mm)	To be ordered in multiples of	Reference
Securing clamp M10	all	12	5119 **4423**
Screw M10	30	100	5119 **4503**
Screw M10	50	100	5119 **4505**
Screw M10	60	100	5119 **4506**
Screw M10	80	100	5119 **4508**
Screw M10	100	100	5119 **4510**
Screw M10	125	100	5119 **4512**

Insulated flexible copper bars

Busbar

barre_011_a_1_cat

The solution for

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

Strong points

- Easy to install
- Increased safety by the elimination of crimped connections

Conformity to standards

- UL 67 and UL 891
  CSA-C22.2
  No. 29 and 244
  Guide QUEY
  File E495516

Function

SOCOMEC **insulated flexible** copper bars are mainly used for providing the power connections between busbars and the disconnection devices within an electrical panel.
The insulated layered copper allows the flexible copper bar to be easily formed to provide a customised solution.

Advantages

Easy to install

- Compact version.
- High level of flexibility enabling easy manipulation of the busbar.
- Reduced installation time with the elimination of terminal lugs and their crimping.

Increased safety by the elimination of crimped connections

- Better behavior under short-circuit conditions.
- Decreased number of heating points.
- More reliable connections.

Characteristics

- Width of 9 to 100 mm.
- Copper layer thickness from 0.8 to 1 mm.
- Length of 6.56 ft / 2 m.

Conductor

- Layers of electrolytic copper Cu/ETP, final annealing state.

Insulator

- High temperature co-extruded vinyl compound on the copper strips (insulation thickness: 1.5 to 2 mm).
- Self-extinguishing: NFC 32200 and UL 94 V0.
- Continuous temperature withstand: 221 °F / 105 °C.
- Shore hardness A: 89 +/- 2.
- Module 100 % elongation: 16 Mpa.
- Resistance to elongation: < 15 % mini.
- Breaking stress: 20 Mpa.
- Transversal volume resistivity: 6.1015 Ω.
- Oxygen index: 29.5 %.
- Scratch and tear resistant.

Insulated flexible busbar

- Operating-temperature range: from -40 °F / -40 °C to + 221 °F / +105 °C.
- Maximum operating voltage: 1000 VAC / 1500 VDC.
- Alternating voltage withstand (10 minute test):
  - between core and insulation: 16.5 kV,
  - between two insulating elements in contact: 33 kV,
  - Conductivity: 100 IACS,
  - HV < 50,
  - Resistance to traction Rm > 200 N/cm²,
  - Stretch before break 35 %,
  - Resistivity: 1.724 micro Ω/cm at 68 °F / 20 °C.

Available on request

- Specific lengths
- Halogen-free
- Please consult us

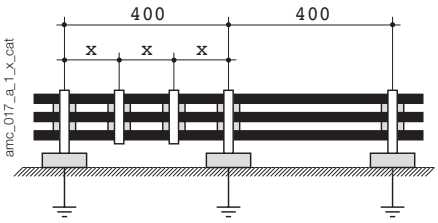
References

I x N x e (mm)	L (mm)	Permissible amperage for ΔT (°C) (1) 104°F / 40°C (A)	122°F / 50°C (A)	140°F / 60°C (A)	To be ordered in multiples of	Reference
9 x 2 x 0.8	2000	113	129	143	1	4518 **0902**
9 x 3 x 0.8	2000	140	160	178	1	4518 **0903**
9 x 4 x 0.8	2000	165	188	209	1	4518 **0904**
9 x 5 x 0.8	2000	187	214	238	1	4518 **0905**
9 x 6 x 0,8	2000	208	238	264	1	4518 **0906**
13 x 3 x 0.5	2000	142	162	180	1	4518 **1303**
13 x 4 x 0.5	2000	165	189	210	1	4518 **1304**
13 x 5 x 0.5	2000	186	213	237	1	4518 **1305**
13 x 6 x 0.5	2000	206	235	261	1	4518 **1306**
15.5 x 2 x 0.8	2000	167	191	212	1	4518 **1502**
15.5 x 3 x 0.8	2000	207	237	263	1	4518 **1503**
15.5 x 4 x 0.8	2000	242	277	308	1	4518 **1504**
15.5 x 6 x 0.8	2000	304	347	386	1	4518 **1506**
15.5 x 8 x 0.8	2000	358	409	455	1	4518 **1508**
15.5 x 10 x 0.8	2000	408	466	519	1	4518 **1510**
20 x 2 x 1	2000	228	261	290	1	4518 **2002**
20 x 3 x 1	2000	283	324	360	1	4518 **2003**
20 x 4 x 1	2000	331	378	421	1	4518 **2004**
20 x 5 x 1	2000	374	428	476	1	4518 **2005**
20 x 6 x 1	2000	415	474	527	1	4518 **2006**
20 x 8 x 1	2000	488	558	621	1	4518 **2008**
20 x 10 x 1	2000	556	635	705	1	4518 **2010**
24 x 2 x 1	2000	263	301	335	1	4518 **2402**
24 x 3 x 1	2000	326	373	414	1	4518 **2403**
24 x 4 x 1	2000	380	435	483	1	4518 **2404**
24 x 5 x 1	2000	429	491	546	1	4518 **2405**
24 x 6 x 1	2000	475	542	603	1	4518 **2406**
24 x 8 x 1	2000	557	636	708	1	4518 **2408**
24 x 10 x 1	2000	632	722	803	1	4518 **2410**
32 x 2 x 1	2000	331	379	421	1	4518 **3202**
32 x 3 x 1	2000	409	468	520	1	4518 **3203**
32 x 4 x 1	2000	476	544	605	1	4518 **3204**
32 x 5 x 1	2000	536	612	681	1	4518 **3205**
32 x 6 x 1	2000	591	675	751	1	4518 **3206**
32 x 8 x 1	2000	689	787	876	1	4518 **3208**
32 x 10 x 1	2000	777	887	987(1)	1	4518 **3210**
40 x 2 x 1	2000	398	455	506	1	4518 **4002**
40 x 3 x 1	2000	490	560	623	1	4518 **4003**
40 x 4 x 1	2000	569	650	723	1	4518 **4004**
40 x 5 x 1	2000	639	730	812	1	4518 **4005**
40 x 6 x 1	2000	703	803	893	1	4518 **4006**
40 x 8 x 1	2000	815	932	1036	1	4518 **4008**
40 x 10 x 1	2000	915	1045	1163	1	4518 **4010**
50 x 3 x 1	2000	589	673	749	1	4518 **5003**
50 x 4 x 1	2000	682	780	867	1	4518 **5004**
50 x 5 x 1	2000	764	873	971	1	4518 **5005**
50 x 6 x 1	2000	838	957	1062	1	4518 **5006**
50 x 8 x 1	2000	967	1105	1229	1	4518 **5008**
50 x 10 x 1	2000	1080	1234	1373	1	4518 **5010**
63 x 3 x 1	2000	715	816	908	1	4518 **6303**
63 x 4 x 1	2000	825	943	1048	1	4518 **6304**
63 x 5 x 1	2000	921	1052	1171	1	4518 **6305**
63 x 6 x 1	2000	1041	1187	1324	1	4518 **6306**
63 x 8 x 1	2000	1157	1321	1470	1	4518 **6308**
63 x 10 x 1	2000	1286	1469	1634	1	4518 **6310**
80 x 3 x 1	2000	874	998	1110	1	4518 **8003**
80 x 4 x 1	2000	1006	1149	1278	1	4518 **8004**
80 x 5 x 1	2000	1119	1279	1422	1	4518 **8005**
80 x 6 x 1	2000	1220	1393	1550	1	4518 **8006**
80 x 8 x 1	2000	1393	1592	1771	1	4518 **8008**
80 x 10 x 1	2000	1543	1763	1961	1	4518 **8010**
100 x 4 x 1	2000	1211	1383	1538	1	4518 **9004**
100 x 5 x 1	2000	1343	1534	1707	1	4518 **9005**
100 x 6 x 1	2000	1460	1668	1855	1	4518 **9006**
100 x 8 x 1	2000	1660	1897	2110	1	4518 **9008**
100 x 10 x 1	2000	1833	2094	2329	1	4518 **9010**
100 x 12 x 1	2000	1993	2277	2531	1	4518 **9012**

(1) For ambient air temperature of 104 °F / 40 °C.
Important: max. busbar temperature = 221 °F / 105 °C.

L: length of bar in metres.
I: width of bare busbar in mm.
N: number of copper layers.
e: copper layer thickness in mm.

Implementation



Flexible bars should be mounted on insulated supports with a maximum distance of 400 mm. Bars should also be held together with straps, as shown in the above diagram. The distance between successive straps depends on the electro-dynamic constraints in the event of a short-circuit. The table below gives the recommended distances between straps.

I_{cc} max. (kA rms)	Distance x between straps (mm)(1)
20	350
25	200
35	100
45	70

(1) 9 mm straps, load 176 lbs / 80 kg.

Parallel systems

Putting bars in parallel increases the temperature of the air near the bar, which forms a reduction coefficient

No. of barres in parallel	Aamperage at ΔT 104°F/40°C	Correction factor
I	any intensity	1
II	< 900A	1,72
II	> 900A	1,65
III	< 900A	2,25
III	> 900A	2,12

Insulated copper braids

Busbar

The solution for

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

Strong points

- Easy to install
- Wide range of applications
- Compatibility

Customised solutions

- For any other length, please contact us

Function

SOCOMEC **insulated copper braids** are mainly utilized for providing the power connections between distribution busbars and the devices within an electrical panel.
Their flexibility is particularly suited to complex and diverse connections in confined spaces.

Technical characteristics

- Electrolytic copper, annealing state
- Operating voltage 1000 VAC - 1500 VDC
- Dielectric strength 20 KV / mm
- Operating temperature: -40°F/-40°C | +221°F/+105°C
- Self-extinguishing: UL 94 V0
- Contact surface: Bare copper

Advantages

Easy to install
- Compact design.
- Length and orientation are easily adapted.
- Prewired.

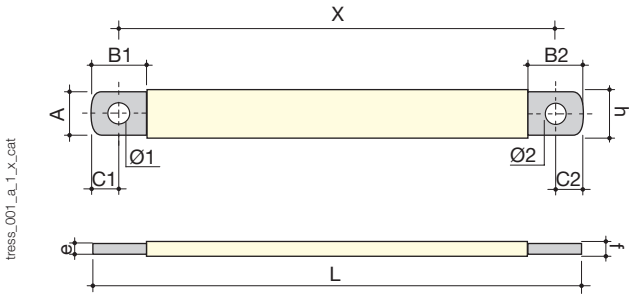
Wide range of applications
- Amperage up to 1000 A.
- Suitable for various connection ranges.
- Lengths from 7.87 in / 200 mm to 31.5 in / 800 mm.

Compatibility
- With SOCOMEC devices.
- With most commercial circuit breakers.

Part numbers and dimensions

Current rating at ambient temperature of 630 to 7000 A					Dimensions										Range		
95°F / 35°C (A)	Nominal rating 113°F / 45°FC (A)	131°F / 55°C (A)	Reference	Section mm²	A Width (mm)	e Thickness (mm)	X Distance (mm)	L Length (mm)	Ø 1 (mm)	Ø 2 (mm)	C1 (mm)	C2 (mm)	h Width (mm)	f Thickness (mm)	B1 (mm)	B2 (mm)	Weight (lb)
180	**160**	140	4516 **1620**	25	20	1.5	200	220	8.5	10.5	8	12	22	3.5	25	30	0.17
180	**160**	140	4516 **1625**	25	20	1.5	250	270	8.5	10.5	8	12	22	3.5	25	30	0.19
180	**160**	140	4516 **1630**	25	20	1.5	300	320	8.5	10.5	8	12	22	3.5	25	30	0.24
180	**160**	140	4516 **1635**	25	20	1.5	350	370	8.5	10.5	8	12	22	3.5	25	30	0.26
180	**160**	140	4516 **1640**	25	20	1.5	400	420	8.5	10.5	8	12	22	3.5	25	30	0.31
180	**160**	140	4516 **1650**	25	20	1.5	500	520	8.5	10.5	8	12	22	3.5	25	30	0.37
280	**250**	220	4516 **2520**	50	20	3	200	220	8.5	10.5	8	12	22	5	25	30	0.31
280	**250**	220	4516 **2525**	50	20	3	250	270	8.5	10.5	8	12	22	5	25	30	0.35
280	**250**	220	4516 **2530**	50	20	3	300	320	8.5	10.5	8	12	22	5	25	30	0.42
280	**250**	220	4516 **2535**	50	20	3	350	370	8.5	10.5	8	12	22	5	25	30	0.49
280	**250**	220	4516 **2540**	50	20	3	400	420	8.5	10.5	8	12	22	5	25	30	0.55
280	**250**	220	4516 **2550**	50	20	3	500	520	8.5	10.5	8	12	22	5	25	30	0.66
440	**400**	320	4516 **4020**	120	32	5	200	222	10.5	10.5	10	12	34	7	25	30	0.66
440	**400**	320	4516 **4025**	120	32	5	250	272	10.5	10.5	10	12	34	7	25	30	0.79
440	**400**	320	4516 **4030**	120	32	5	300	322	10.5	10.5	10	12	34	7	25	30	0.95
440	**400**	320	4516 **4035**	120	32	5	350	372	10.5	10.5	10	12	34	7	25	30	1.08
440	**400**	320	4516 **4040**	120	32	5	400	422	10.5	10.5	10	12	34	7	25	30	1.23
440	**400**	320	4516 **4050**	120	32	5	500	522	10.5	10.5	10	12	34	7	25	30	1.52
440	**400**	320	4516 **4060**	120	32	5	600	622	10.5	10.5	10	12	34	7	25	30	1.81
440	**400**	320	4516 **4080**	120	32	5	800	822	10.5	10.5	10	12	34	7	25	30	2.36
690	**630**	560	4516 **6325**	240	32	10	250	274	12.5	10.5	12	12	34	12	35	30	1.57
690	**630**	560	4516 **6330**	240	32	10	300	324	12.5	10.5	12	12	34	12	35	30	1.85
690	**630**	560	4516 **6335**	240	32	10	350	374	12.5	10.5	12	12	34	12	35	30	2.12
690	**630**	560	4516 **6340**	240	32	10	400	424	12.5	10.5	12	12	34	12	35	30	2.40
690	**630**	560	4516 **6350**	240	32	10	500	524	12.5	10.5	12	12	34	12	35	30	2.98
690	**630**	560	4516 **6360**	240	32	10	600	624	12.5	10.5	12	12	34	12	35	30	3.53
690	**630**	560	4516 **6380**	240	32	10	800	824	12.5	10.5	12	12	34	12	35	30	4.63

Dimensions



Parallel systems

Putting braids in parallel increases the temperature of the air near the braid, which forms a reduction coefficient

Correction factor	
	Current
	2 x current x 0.8
	3 x current x 0.65