



SIRCO PV UL98B

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

Load break switches

new



Function

SIRCO PV UL98B non fusible disconnect switches are heavy duty switches that break and make DC photovoltaic circuits on and off load. They are suitable for use in accordance with NEC Art. 690 Photovoltaic Installations. These switches are extremely durable and are tested and approved for use in the most demanding applications.

They are available in 2, 3, 4, 6 and 8 poles for all configurations from one to 4 circuits and can be used in all types of earthing systems (floating or grounded systems, single or double polarity switching), in order to suit all your requirements.

Advantages

Optimise your investment

High switching performances means less poles in series to reach the operating voltage, consequently:

- Less bridging bars required, limiting installation costs and time.
- Less heat dissipation, making it possible to be installed in a smaller enclosure.

Guarantee safety over time

SIRCO PV are extremely robust products, with all casings made from fiber glass reinforced polyester materials that allows:

- High mechanical withstand.
- High stability to temperatures (RTI of 130 °C).
- High dielectric performance (high CTI / tested according to ASTM D 2303).

Take advantage of an innovative design

The SIRCO PV are able to operate on and off load up to 500 VDC per poles, providing extremely compact solution:

- 1000 VDC (UL 98B) on a 2 poles switch.
- 1500 VDC (IEC 60947-3) on a 3 poles switch.
- Up to 4 circuits each at 1000 VDC on an 8 poles switch.

Reliability and performance

Our range of SIRCO PV load break switches is compliant with UL98B and IEC 60947-3 standards and have been tested above standards expectation, ensuring no critical current.

They are as well able to withstand 10 kA, 50 ms, allowing the use of any overcurrent protection device for line protection.

The solution for

- > Combiner box
- > Recombiner box
- > Inverter



Strong points

- > Patented switching technology
- > Positive break indication
- > Up to 1000 VDC as per UL98B
- > Up to 1500 VDC as per IEC 60947-3
- > Suitable for use in accordance with NEC Art. 690

Conformity to standards

- > UL98B Guide WHVA, file E346418
- > CSA C22.2#4, Class 4651-02, file 112964
- > NEC Art 690
- > IEC 60947-3



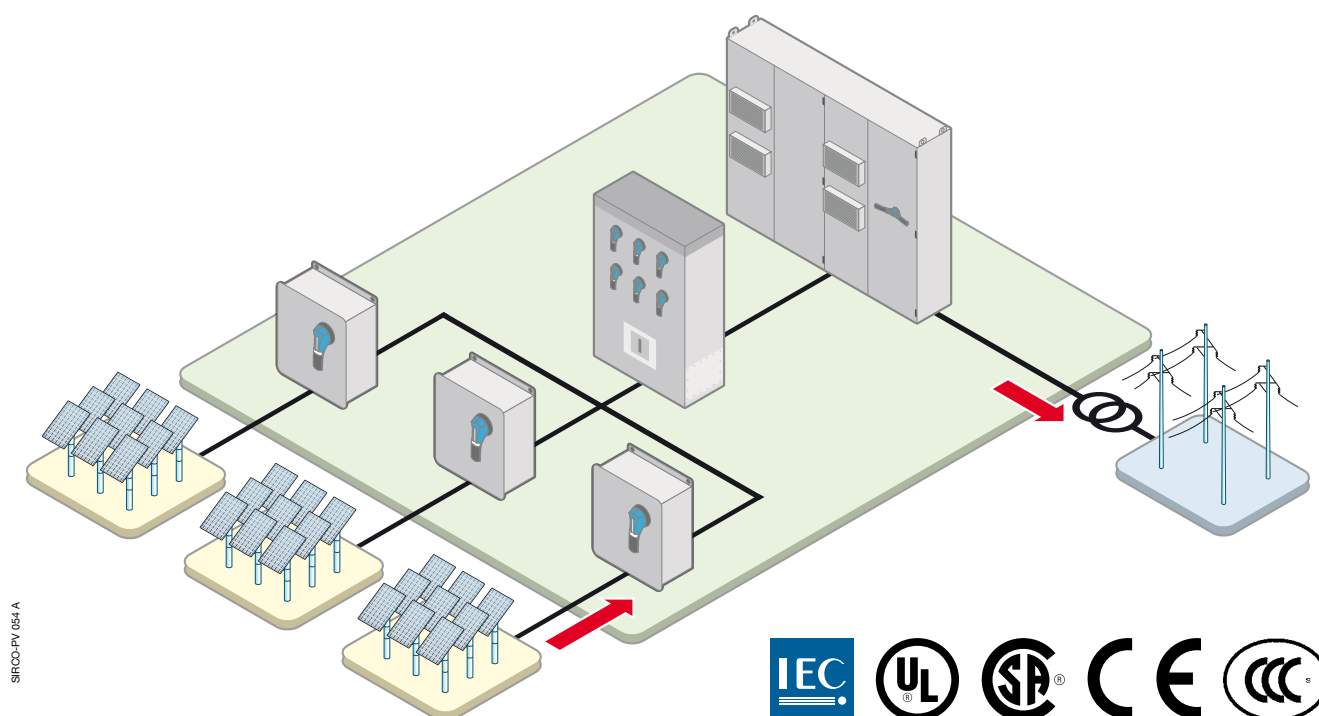
Approvals and certifications⁽¹⁾



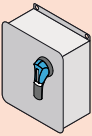
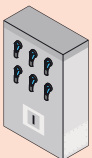
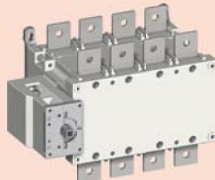
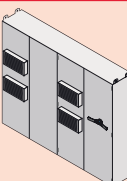
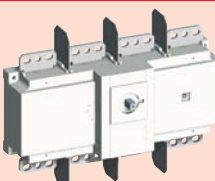
(1) Product reference on request.

Typical PV architecture

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



The SOCOMEC solutions

LEVEL OF INSTALLATION	SOCOMEK SOLUTIONS	
Combiner box		
		SIRCO PV One circuit up to 500 A at 1500 VDC
Recombiner box		
		SIRCO PV 4 circuits up to 500 A at 1000 VDC 2 circuits up to 500 A at 1500 VDC
Inverter		
		SIRCO PV One circuit up to 2000 A at 1000 VDC up to 2000 A at 1500 VDC

References

1000 VDC - Back plate mounting

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle	Bridging bar
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⁾	200 mm 7.9 inches 1400 1020 320 mm 12.6 inches 1400 1032 400 mm 15.7 inches 1400 1040 ⁽²⁾	1x 2709 1020
200 A	B4		27PV 2019			
250 A	B4		27PV 2024			
325 A	B5		27PV 2032			1x 2709 1041
400 A	B5		27PV 2039			2x 2709 1041
600 A	B6	4 P	27PV 4060	S3 type Black 4, 4X 143D 3111 ⁽¹⁾ Red/Yellow 4, 4X 143E 3111 ⁽¹⁾	200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532 400 mm 15.7 inches 1401 1540 ⁽²⁾	2x 2709 0062
800 A	B7		27DC 4081			2x 2709 0081
1200 A	B7		27DC 4121			2x 2709 0121
2000 A	B7 _{DS}	8 P	27DC 4201	V1 type Black 3R, 12 2799 7145	320 mm 12.6 inches 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⁾	200 mm 7.9 inches 1400 1020 320 mm 12.6 inches 1400 1032 400 mm 15.7 inches 1400 1040 ⁽²⁾	2x 2709 1020
200 A	B4 _{DS}		27PV 5024			4x 2709 1020
325 A	B5		27PV 4032			2x 2709 0027
400 A	B5		27PV 4039			2x 2709 0045 (2 units)
600 A	B6 _{DS}	8 P	27PV 8060	V1 type Black 3R, 12 2799 7145	320 mm 12.6 inches 4199 3018	4x 2709 0062
800 A	B7 _{DS}		27DC 8081			4x 2709 0121
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⁾	200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532 400 mm 15.7 inches 1401 1540 ⁽²⁾	4x 2709 0045

(1) Defeatable handle.

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

1500 VDC - Back plate mounting

Due to UL98B voltage limitation at 1000 VDC, these switches are certified per UL at 1000 VDC and self-certified at 1500 VDC.

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle	Bridging bar
1 PV circuit						
275 A	B5	3 P	27PV 3026	S2 type Black 1, 3R, 12 142F 2111⁽¹⁾	200 mm 7.9 inches 1400 1020	2x 2709 0027 (1 unit)
325 A	B5		27PV 3032	Red/Yellow 1, 3R, 12 142G 2111⁽¹⁾	320 mm 12.6 inches 1400 1032	
400 A	B5		27PV 3039	Black 4, 4X 142D 2111⁽¹⁾ Red/Yellow 4, 4X 142E 2111⁽¹⁾	400 mm 15.7 inches 1400 1040⁽²⁾	2x 2709 0045 (3 units)
600 A	B6 _{DS}	8 P	27PV 8060	V1 type Black 3R, 12 2799 7145	320 mm 12.6 inches 4199 3018	4x 2709 0062 (3 units)
800 A	B7 _{DS}		27DC 8081			4x 2709 0121 (2 units)
1000 A	B7 _{DS}		27DC 8101			
2 PV circuits						
275 A	B5 _{DS}	6 P	27PV 6026	S3 type Black 4, 4X 143D 3111⁽¹⁾ Red/Yellow 4, 4X 143E 3111⁽¹⁾	200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532	4x 2709 0027 (1 unit)
350 A	B5 _{DS}		27PV 6039		400 mm 15.7 inches 1401 1540⁽²⁾	4x 2709 0045 (2 units)

(1) Defeatable handle.

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

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 utilised 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 persons only). The interlocking function is restored when the door is closed back.

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



Shaft for external handle

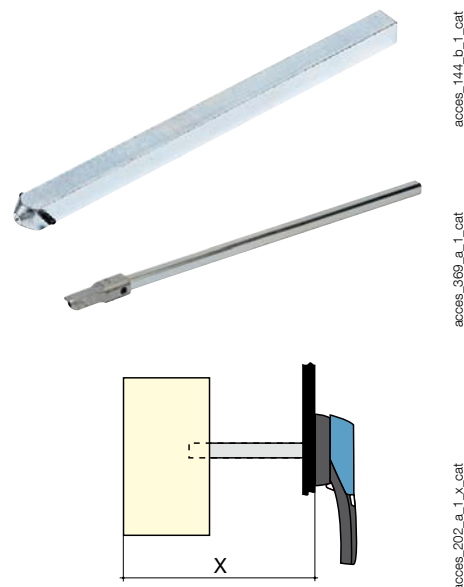
Use

Standard lengths:

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

Other lengths: please consult us.

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	S2	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
		20 ... 28.1	508 ... 714	12.6	320	4199 3018
B7 _{DS}	V1	20 ... 39.4	508 ... 795	15.7	400	4199 3019



S-type handle adapter

Use

For handles S2, S3 and S4.

Dimensions

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

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



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Alternative S-type handle cover colours

Use

For handles S2, S3 and S4.

Other colours: please consult us.

Handle colour	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



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Auxiliary contact

Use

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

Electrical characteristics

A300.

NO/NC contact

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO/NC	2799 0021
	2 contacts		2799 0022
B4 _{DS} ... B7 _{DS}	1 contact		4159 0021

Low level NO/NC auxiliary contacts

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO/NC	2799 0121
	2 contacts		2799 0122
B4 _{DS} ... B7 _{DS}	1 contact		4199 0022



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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 or bottom	1 unit	2798 3021
B5	3 P	top or bottom	1 unit	2798 3041
B5	4 P	top or bottom	1 unit	2798 4041
B6	4 P	top or bottom		2798 4061
B7	4 P	top or bottom	1 unit	2798 4121
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



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Accessories (continued)

Bridging bars for connecting poles in series

Use

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

⁽¹⁾ Other connections: refer to mounting instructions.

1000 VDC

Frame size	Rating (A)	Quantity to be ordered	Fig.	Reference
1 PV circuit				
B4	100	1	1	2709 1020
B4	200	1	1	2709 1020
B4	250	1	1	2709 1020
B5	325	1	1	2709 1041
B5	400	2	2	2709 1041
B6	600	2	3	2709 0062
B7	800	2	3	2709 0081
B7	1200	2	3	2709 0121
B7 _{DS}	2000	2	3	2709 0121
2 PV circuits				
B4 _{DS}	100	2	1	2709 1020
B4 _{DS}	200	4	4	2709 1020
B5	325	2	5	2709 0027
B5	400	2	6	2709 0045
B5	400	2	6	2709 0045
B6 _{DS}	600	4	3	2709 0062
B7 _{DS}	800	4	3	2709 0121
B7 _{DS}	1200	4	3	2709 0121
4 PV circuits				
B5 _{DS}	350	2	6	2709 0045

1500 VDC

Frame size	Rating (A)	Quantity to be ordered	Fig.	Reference
1 PV circuit				
B5	275	2	5	2709 0027
B5	325	2	5	2709 0027
B5	400	2	6	2709 0045
B6 _{DS}	600	4	3	2709 0062
B7 _{DS}	800	4	3	2709 0121
B7 _{DS}	1000	4	3	2709 0121
2 PV circuits				
B5 _{DS}	275	4	5	2709 0027
B5 _{DS}	350	4	6	2709 0045

Bridging bars for connecting poles in series (continued)

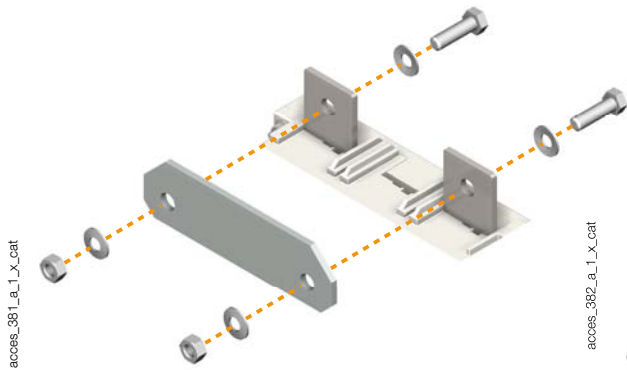


Fig. 1

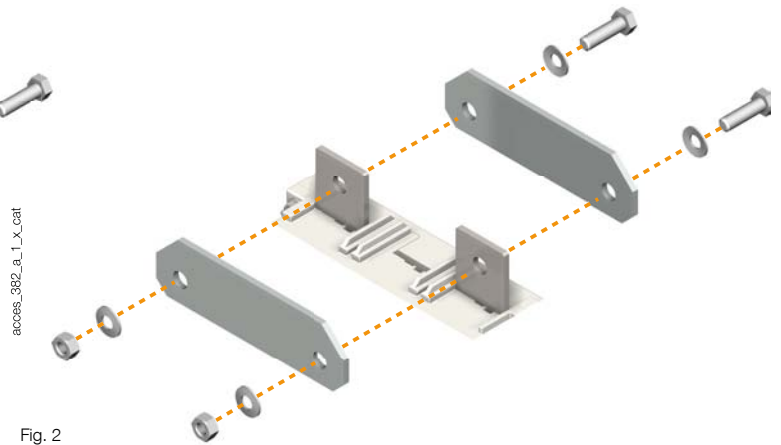


Fig. 2

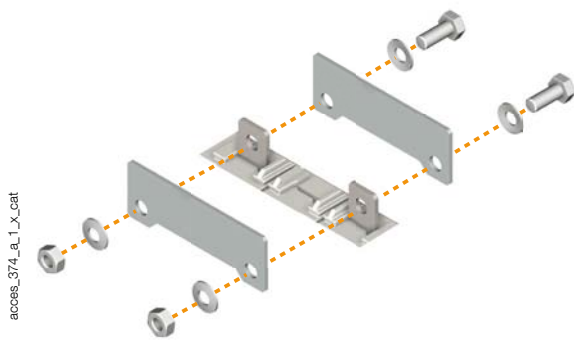


Fig. 4

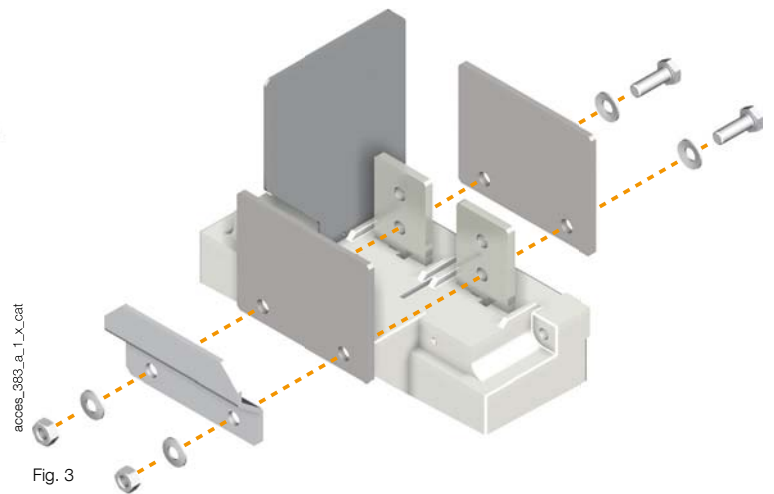


Fig. 3

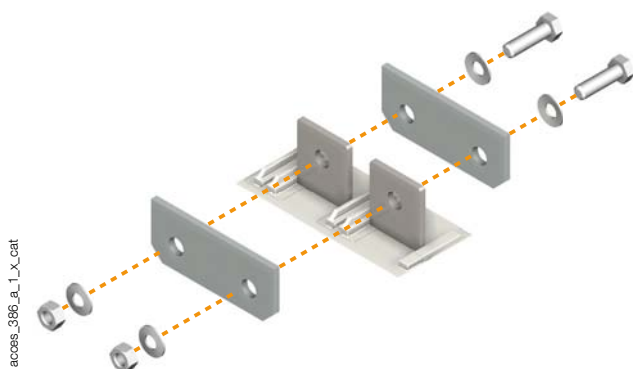


Fig. 5

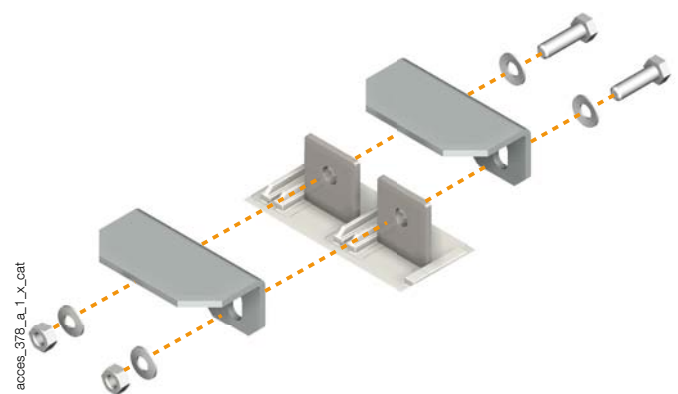


Fig. 6

Accessories (continued)

Cage terminals

Use

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

Optional fan out kit for ratings of 800 to 1200 A for connecting several cables to the switch.

Frame size	Rating max (A)	Number and size of cables	Max. number of connections per terminal	Type of cable	Quantity	Reference
B4 - B4 _{DS}	100 ... 200	1 conductor (#6-300MCM)	1	Cu / Al	2 lugs	3954 2020
		2 conductors (#4-2/0)	1	Cu / Al	2 lugs	3954 2025
B4 - B4 _{DS}	325 ... 400	1 conductor (#2-600MCM)	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



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(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.

Copper bar connection kits

Use

To allow connection between the two power terminals from a same pole for 2000 A ratings. (Fig. 1, Fig. 2 and Fig. 3)

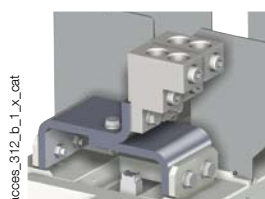
Top or bottom flat connection

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

Top or bottom edgewise connection

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

Fig. 1



access_312_b_1_x_cat

Fig. 3



Fig. 2



access_313_b_1_x_cat

access_314_b_1_x_cat

Characteristics

SIRCO PV UL98B switches have dual UL98B and IEC 60947-3 approval. Due to the difference in the standard test conditionS, an identical product can have 2 different ratings:

- a "rating" as per UL98B
- a "rated current" as per IEC 60947-3

as per standard UL98B

Rating (A)		100 A				200 A			
			Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size		Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
Number of circuits	Rated voltage	(A)				(A)			
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			
Tightening torque (lbs.in/Nm)		88.5/10				88.5/10			
Auxiliary contact									
Electrical characteristics		A300				A300			

as per standard IEC 60947-3

Rated current			160 A				250 A			
Thermal current at 40°C (A)			160				250			
Thermal current at 50°C (A)			160				250			
Thermal current at 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	Utilisation 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) Without fuse during 50 ms.

Characteristics (continued)

as per standard UL98B

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
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
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			
Tightening torque (lbs.in/Nm)		88.5/10				128.3/14.5			
Auxiliary contact									
Electrical characteristics		A300				A300			

as per standard IEC 60947-3

Rated current			315 A				275 A			
Thermal current at 40°C (A)			315				275			
Thermal current at 50°C (A)			315				275			
Thermal current at 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	Utilisation 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	2 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.

as per standard UL98B

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	-	-	-	-
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}
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			
Tightening torque (lbs.in/Nm)		128.3/14.5				128.3/14.5			
Auxiliary contact									
Electrical characteristics		A300				A300			

as per standard IEC 60947-3

Rated current			400 A				500 A			
Thermal current at 40°C (A)			400				500			
Thermal current at 50°C (A)			400				500			
Thermal current at 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	Utilisation 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 standard UL98B

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
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			
Tightening torque (lbs.in/Nm)		128.3/14.5				327.5/37			
Auxiliary contact									
Electrical characteristics		A300				A300			

as per standard IEC 60947-3

Rated current			500 A				800 A			
Thermal current at 40°C (A)			500				800			
Thermal current at 50°C (A)			500				800			
Thermal current at 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	Utilisation 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	2 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.

as per standard UL98B

Rating		800 A				1200 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	1200	4 P	4 P	B7
2 circuits	600 VDC	800	3 P	6 P	B7 _{DS}	1200	3 P	6 P	B7 _{DS}
2 circuits	1000 VDC	800	4 P	8 P	B7 _{DS}	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			
Tightening torque (lbs.in/Nm)		495.7/56				663.9/75			
Auxiliary contact									
Electrical characteristics		A300				A300			

as per standard IEC 60947-3

Rated current			1000 A				1400 A			
Thermal current at 40°C (A)			1000				1400			
Thermal current at 50°C (A)			1000				1400			
Thermal current at 60°C (A)			1000				1400			
Rated insulation voltage U _i (V)			1200				1200			
Rated impulse withstand voltage U _{imp} (kV)			12				12			
Number of circuits	Rated voltage	Utilisation 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	1400	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.

Characteristics (continued)

as per standard UL98B

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	8 P	8 P	B7 _{DS}
Short-circuit capacity at 1000 VDC (any circuit breaker)					
Prospective short-circuit current (kA rms DC)		10 ⁽¹⁾			
Connection terminals					
Min. connection wire range/ AWG		4x#2			
Max. connection wire range/ AWG		6x 600MCM ⁽²⁾			
Mechanical characteristics					
Durability (number of operating cycles)		3 500			
Tightening torque (lbs.in/Nm)		663.9/75			
Auxiliary contact					
Electrical characteristics		A300			

as per standard IEC 60947-3

Rated current			2200 A			
Thermal current at 40°C (A)			2200			
Thermal current at 50°C (A)			1850			
Thermal current at 60°C (A)			1600			
Rated insulation voltage U _i (V)			1200			
Rated impulse withstand voltage U _{imp} (kV)			12			
Number of circuits	Rated voltage	Utilisation category	(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	2200	8 P	8 P	B7 _{DS}

(1) Without fuse during 50 ms.

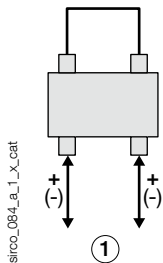
(2) Maximum 6 x 600MCM with fan out kit 2729 1203.

Pole connections in series

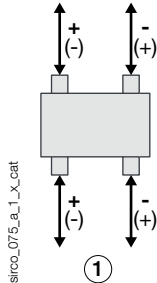
1 PV circuit - 1000 VDC

B4-B5 - 2P

Grounded

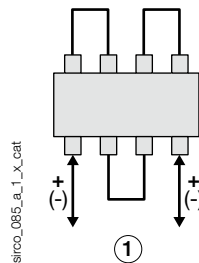


Ungrounded

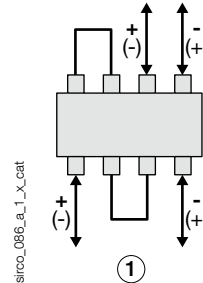


B6-B7 - 4P

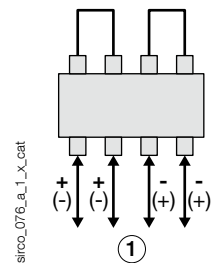
Grounded



Ungrounded

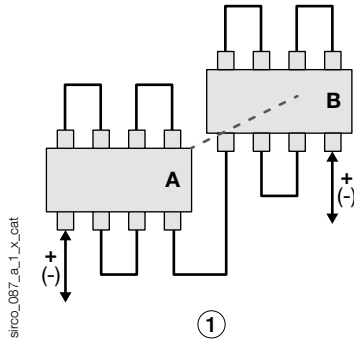


Ungrounded

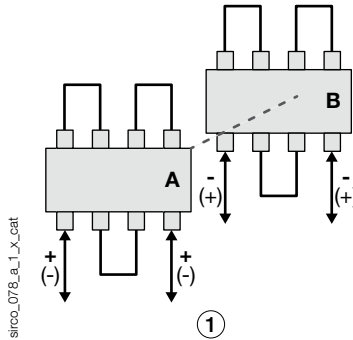


B7_{DS} - 8P

Grounded



Ungrounded

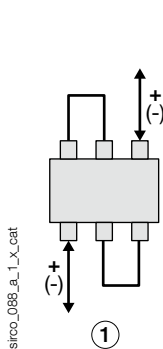


A. Front switch.
B. Rear switch.
1. Circuit 1.

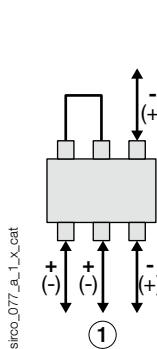
1 PV circuit - 1500 VDC

B4-B5 - 2P

Grounded

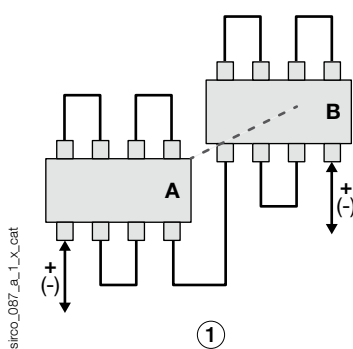


Ungrounded

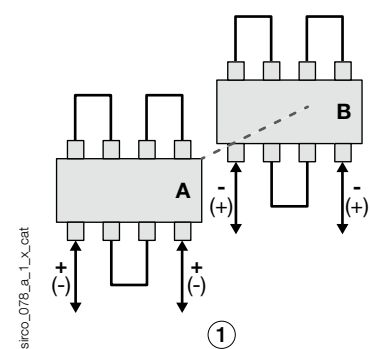


B6_{DS}-B7_{DS} - 8P

Grounded



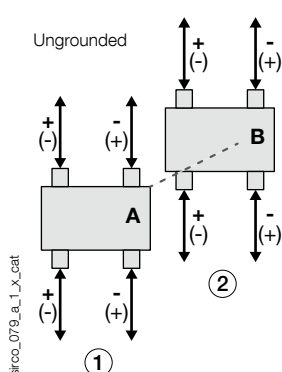
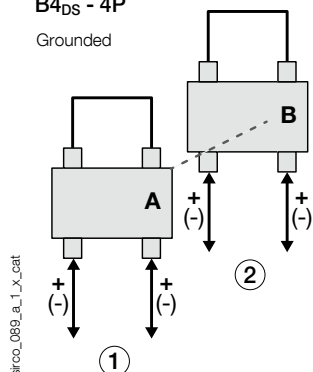
Ungrounded



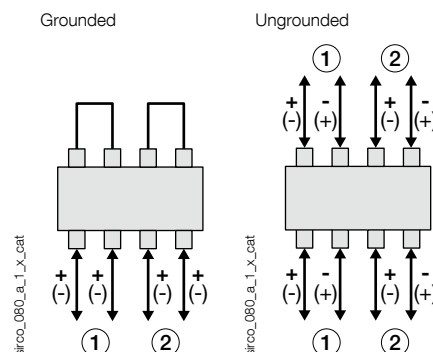
A. Front switch.
B. Rear switch.
1. Circuit 1.

2 PV circuits - 1000 VDC

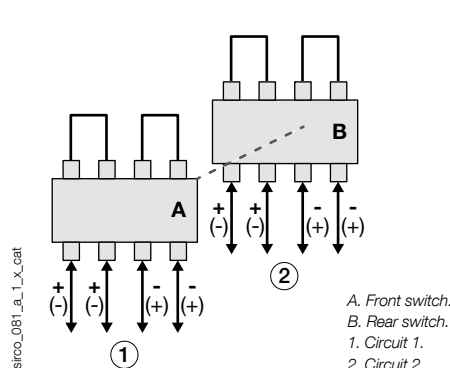
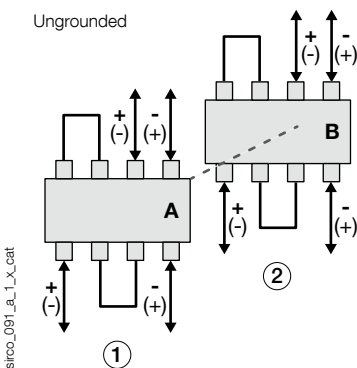
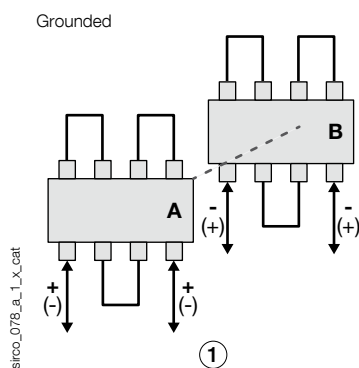
Grounded



Grounded



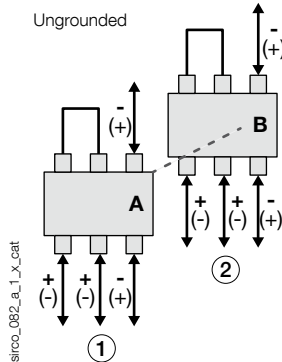
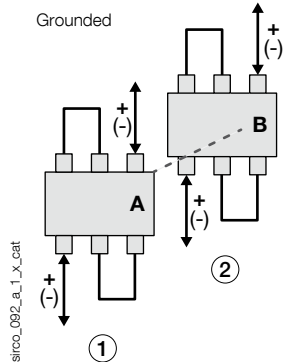
Grounded



- A. Front switch.
- B. Rear switch.
1. Circuit 1.
2. Circuit 2.

2 PV circuits - 1500 VDC

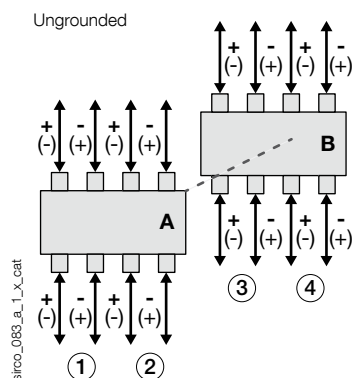
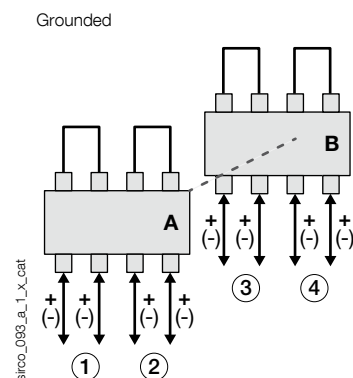
Grounded



- A. Front switch.
- B. Rear switch.
1. Circuit 1.
2. Circuit 2.

4 PV circuits - 1000 VDC

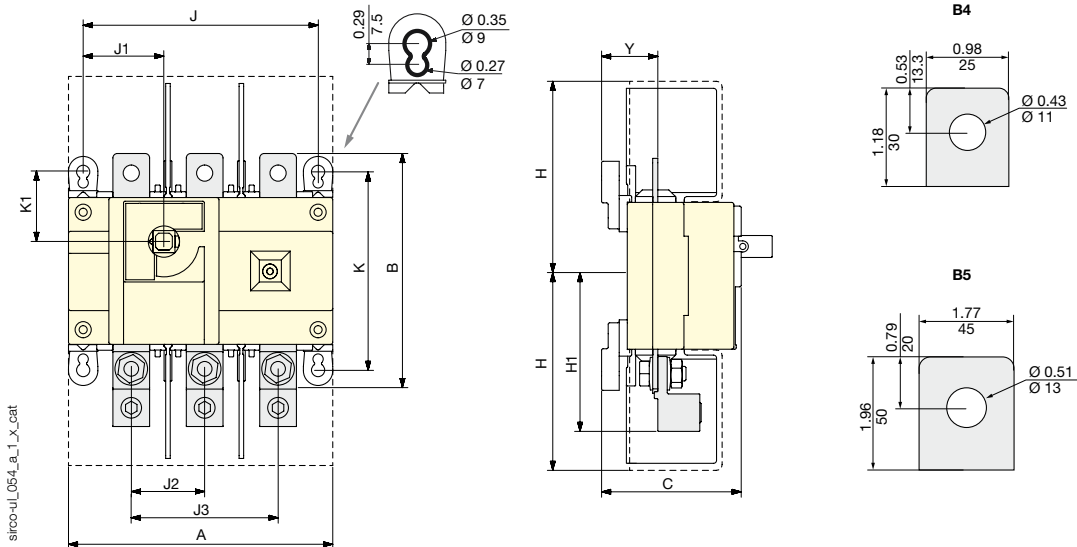
Grounded



- A. Front switch.
- B. Rear switch.
1. Circuit 1.
2. Circuit 2.
3. Circuit 3.
4. Circuit 4.

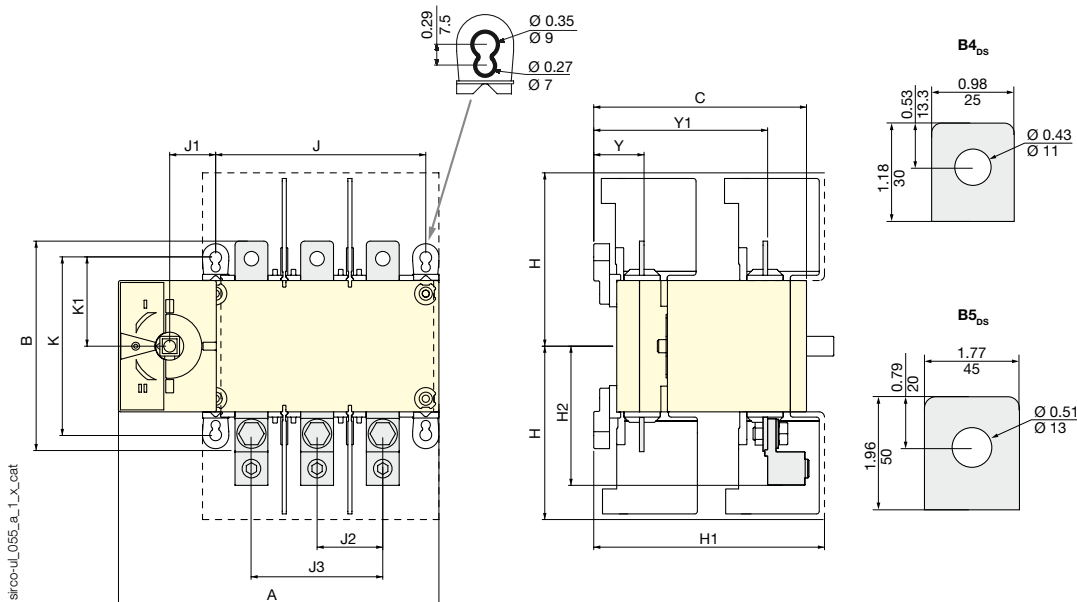
Dimensions (in / mm)

Frame size 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

Frame size B4_{DS}-B5_{DS}



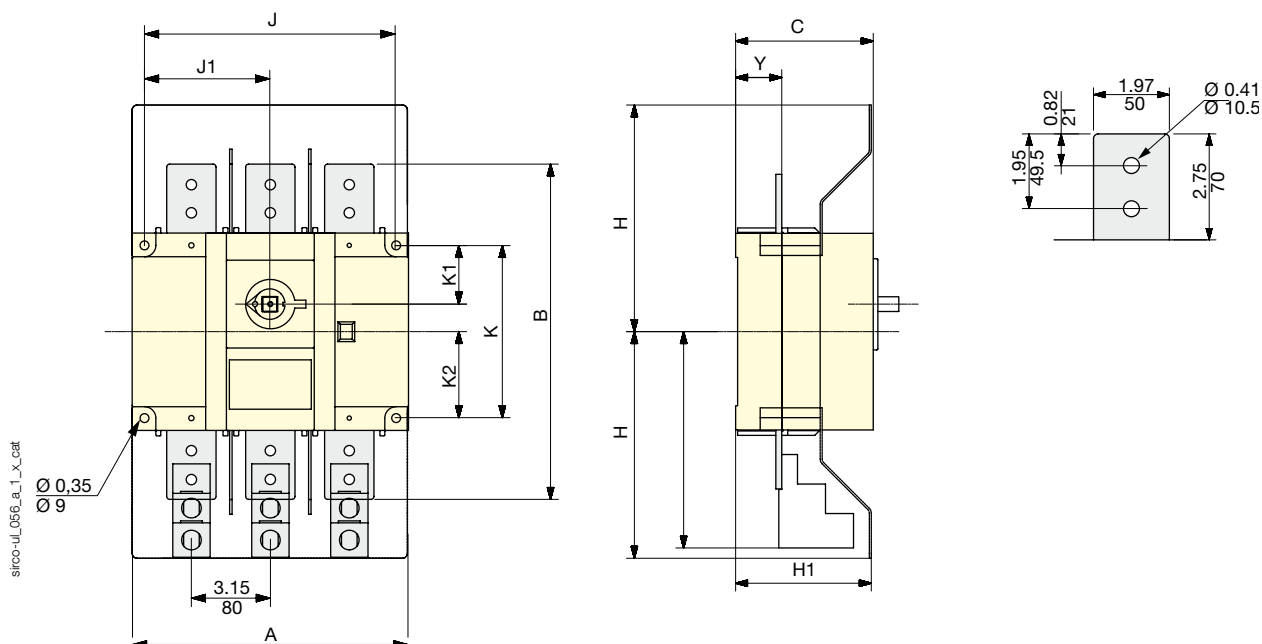
Frame size	No. of poles	Unit	A	B	C	H	H1	H1 max.	J	J1	J2	J3	K	K1	Y	Y1
B4 _{DS}	4 P	inches	9.60	6.30	6.37	5.08	6.93	4.21	6.30	1.37	-	3.93	5.31	2.65	1.51	5.21
		mm	244	160	162	129	176	107	160	35	-	100	135	67.5	38.5	132.5
B5 _{DS}	6 P	inches	11.85	10.23	9.39	8	6.51	6.53	6.26	1.37	2.56	-	7.67	2.70	2.02	7.44
		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

SIRCO PV UL98B

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

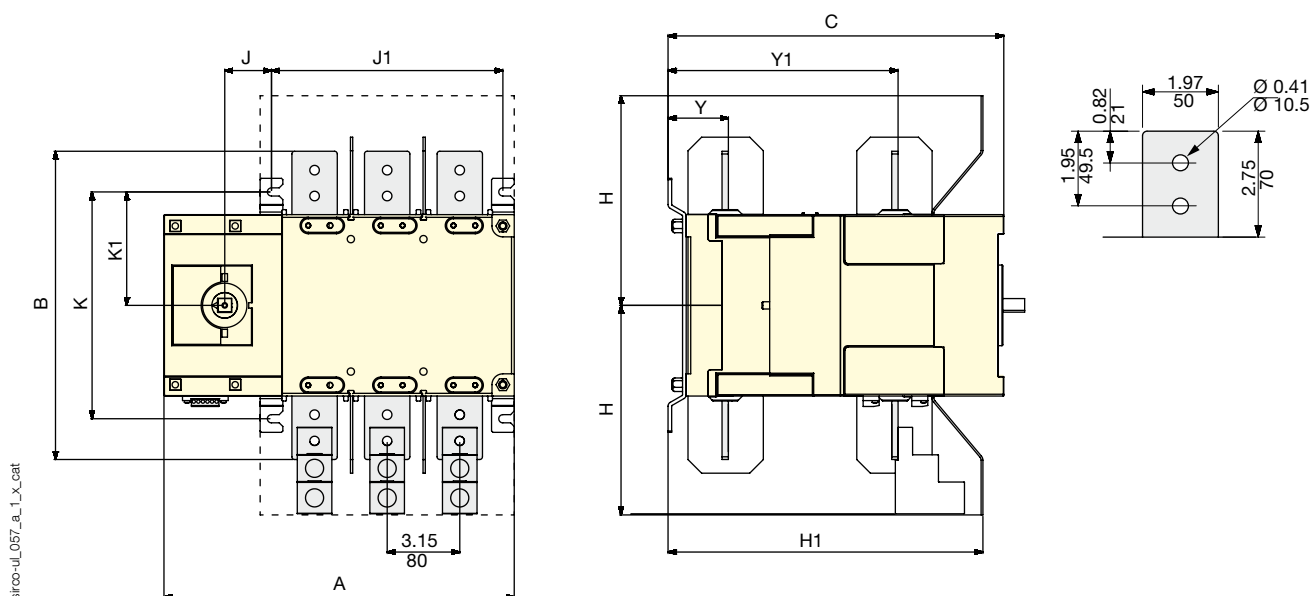
Dimensions (in / mm) (continued)

Frame size B6



Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	K2	Y
B6	4 P	inches	24.80	13.38	5.47	10.63	5.70	13.19	6.59	6.88	2.34	1.10	1.83
		mm	630	340	139	270	145	335	167.5	175	59.5	28	46.5

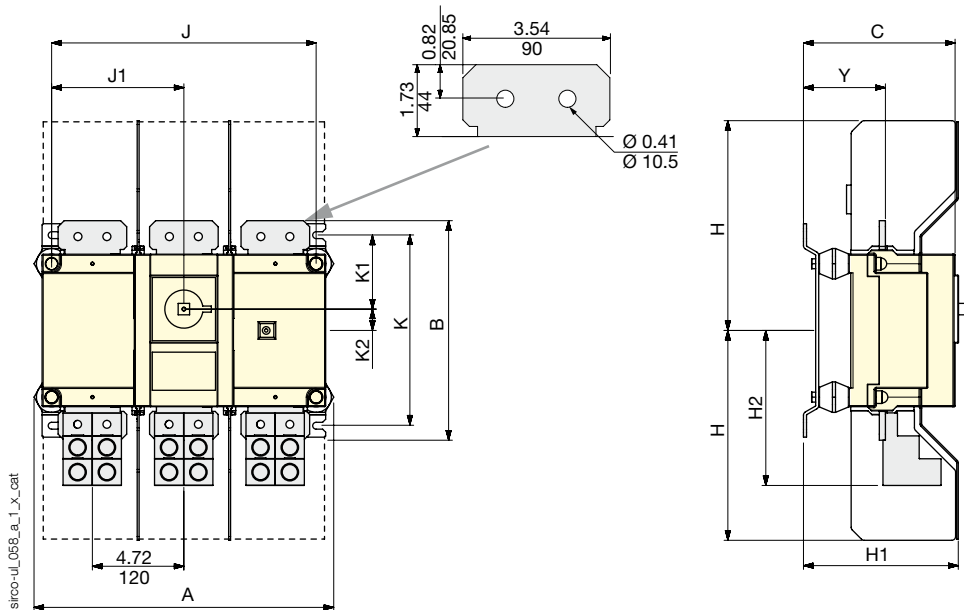
Frame size B6_{DS}



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

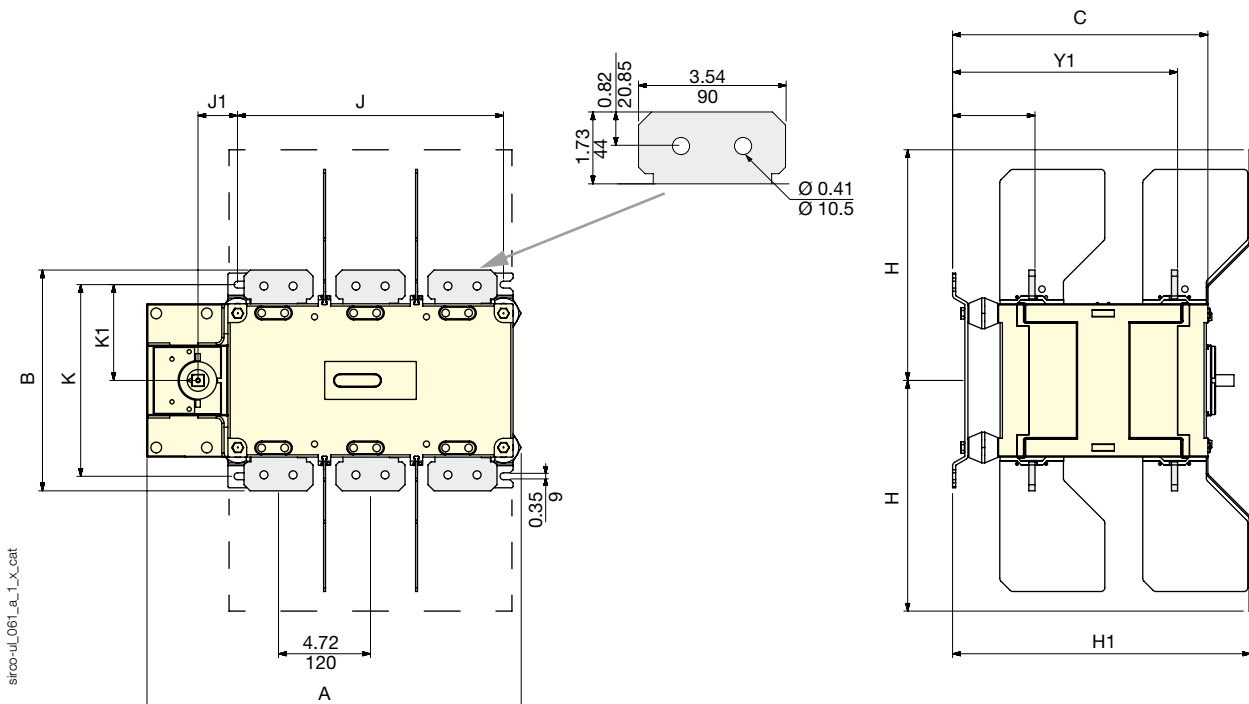
Dimensions (in / mm) (continued)

Frame size 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

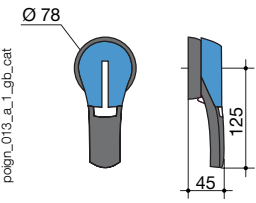
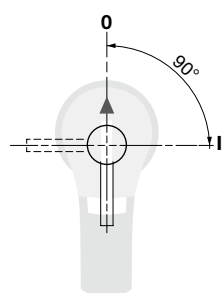
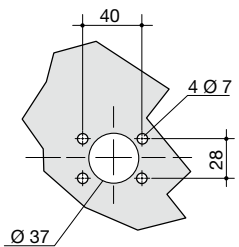
Taille de boîtier B7_{DS}



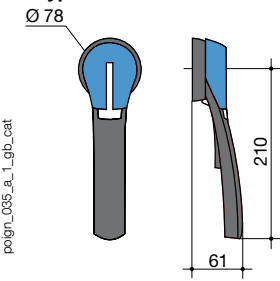
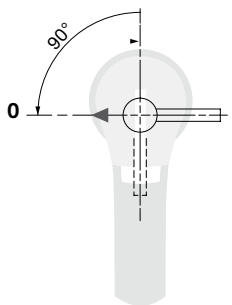
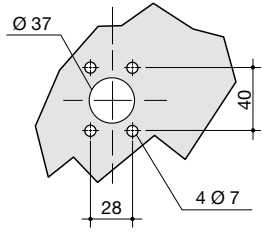
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	Y	Y1
B7 _{DS}	8 P	inches	23.95	11.33	13.11	11.85	15.31	18.38	2.02	9.84	4.92	4.23	11.55
		mm	608.5	288	333	301	389	467	51.5	250	125	107.5	293.5

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 		

B7

Handle type	Front operation Direction of operation	Door drilling
S4 type		

B6_{DS} - B7_{DS}

Handle type	Front operation Direction of operation	Door drilling
V1 type		

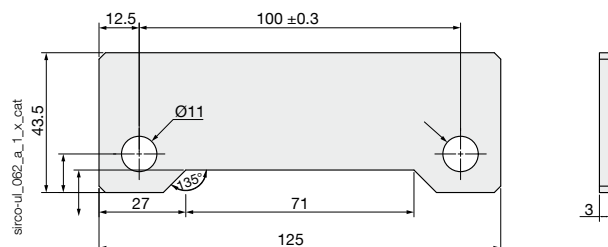
SIRCO PV UL98B

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

Bridging bars (in / mm)

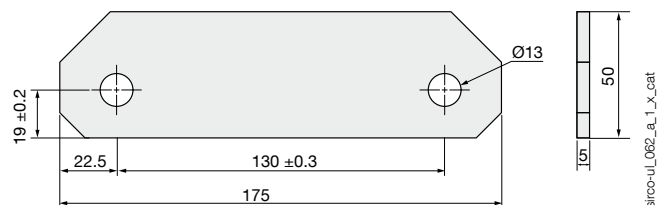
B4 - B4_{DS}

2709 1020



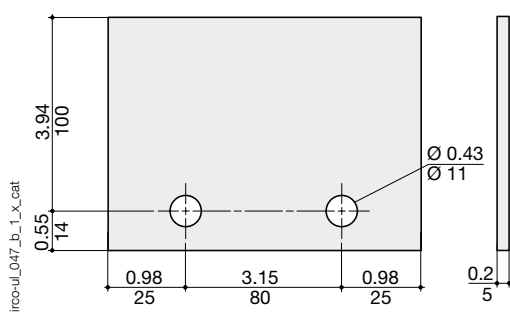
B4 - B4_{DS}

2709 1041

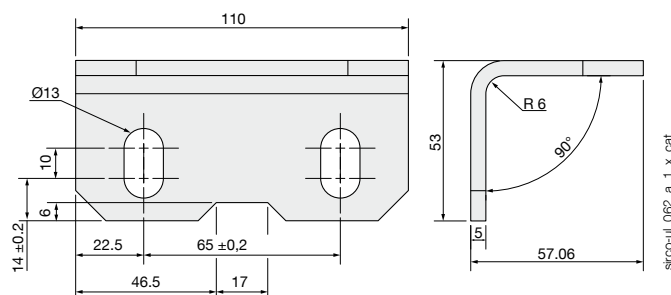


B6 - B6_{DS}

2709 0062



2709 0045

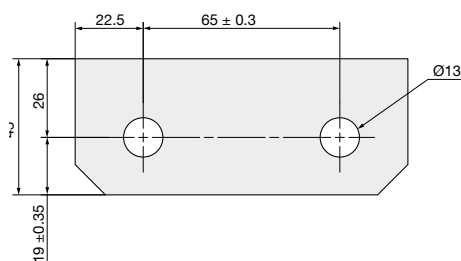
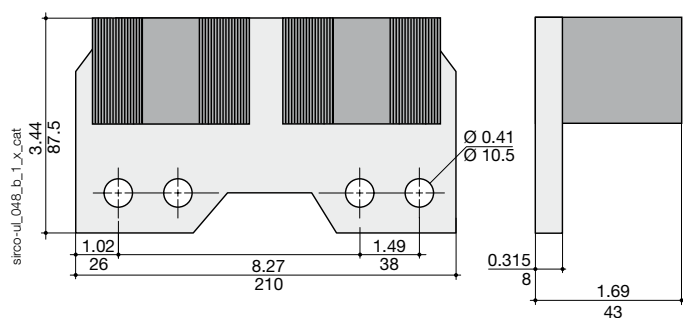


2709 0027



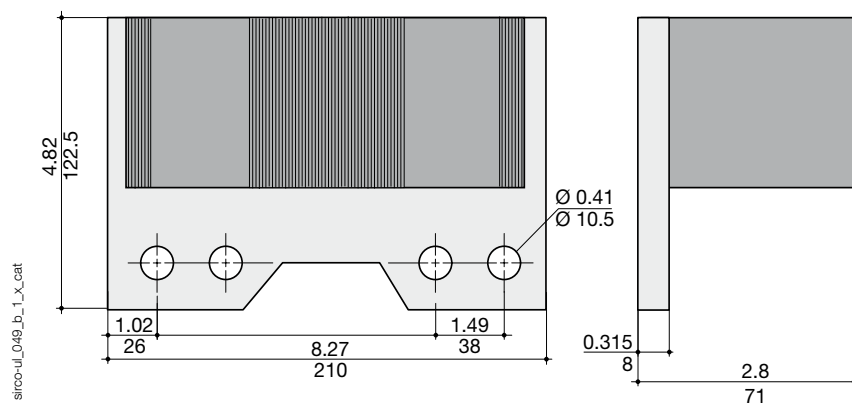
B7

2709 0081



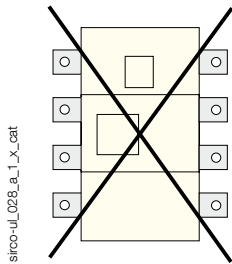
B7 - B7_{DS}

2709 0121

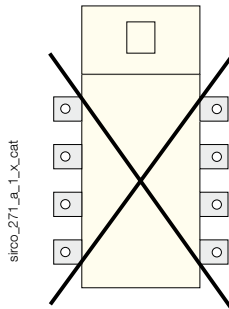


Mounting orientation

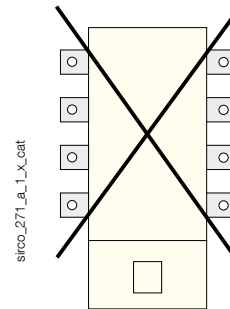
All frames



B4_{DS} - B5_{DS}

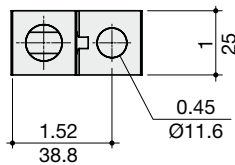


B6_{DS} - B7_{DS}

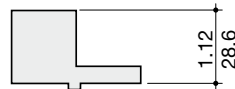


Terminal lugs (in / mm)

100 to 250 A

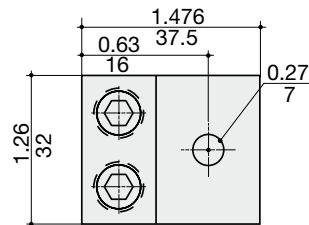


sirco-ul_028_a_1_us_cat

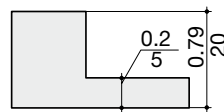


300MCM

100 to 250 A

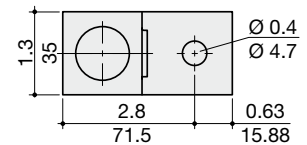


sirco-ul_038_a_1_us_cat



2/0

400 A

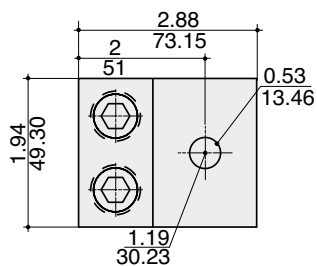


sirco-ul_010_a_1_us_cat

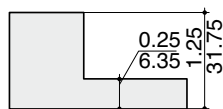


600MCM

400 A

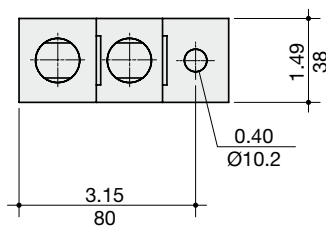


sirco-ul_026_b_1_us_cat

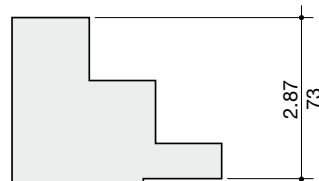


2 x 350MCM

600 to 2000 A



sirco_116_b_1_us_cat



2 x 600MCM