

SIRCO MV PV

Load break switches for photovoltaic applications
from 63 to 80 A, up to 1000 VDC



SIRCO MV PV 1000 V - 80 A
direct operation

The solution for

- > Residential buildings
- > Buildings
- > Solar parks



Strong points

- > Modular device
- > Patented switching technology
- > Performance - 1000 VDC

Conformity to standards

- > IEC 60947-3
- > IEC 60364-4-410
- > IEC 60364-7-712



Approvals and certifications⁽¹⁾



⁽¹⁾ Product reference on request.

Function

SIRCO MV PV are manually operated multipolar load break switches. They make and break under load conditions and provide optimum safety isolation for any PV circuit.

Advantages

Modular device

SIRCO MV PV are devices which are DIN rail or backplate mountable and can be integrated into a modular panel with a 45 mm front cut-out.

Patented switching technology

SIRCO MV PV with benefit from proven breaking technology based on a system of double break contacts with arc extinguishing chambers.

References

SIRCO MV PV 1000 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External front handle	Shaft for external front handle	Auxiliary contact	Bridging bar
63 A	Single PV circuit	4 P	22PV 4106	M0b type Blue 2299 5042 ⁽¹⁾ M0 type Blue 2299 5022	S0 type Black IP55 1491 0111 ⁽¹⁾⁽²⁾ Black IP65 1493 0111 ⁽²⁾ Red / Yellow IP65 1494 0111 ⁽²⁾	S0 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	1 contact NC+NO 2299 0001 ⁽³⁾ 1 contact 2 NC 2299 0011 ⁽³⁾ 1 contact NO 3999 0701 1 contact NC 3999 0702	2 pieces 2209 2016
80 A		4 P	22PV 4108					

(1) Standard.

(2) Defeatable handle.

(3) Signalling contact only.

Accessories

Direct operation handle

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

(1) Standard.

Compact M0 type direct operation handle		
Rating (A)	Handle colour	Reference
63 ... 80	Blue	2299 5022



M0b handle

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M0 handle

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Accessories

Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft. In a combiner box, located close to the solar cell strings, or located close to the inverter, we recommend to use a door interlocked external handle for safety.

Example

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

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



S0 type handle

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S1 type handle

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S0 type handle - Front operation I - 0

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

S1 type handle - Front operation I - 0

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

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

(2) Defeatable handle.

Shaft for external handle

Use

Standard lengths:

- 150 mm
- 200 mm
- 320 mm
- 400 mm

Other lengths: please consult us.



Shaft for S0 type handle for SIRCO MV PV 63 ... 80 A

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Shaft for S1 type handle for SIRCO MV PV 63 ... 80 A

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For SIRCO MV PV

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

Auxiliary contact

Use

M type

Signalisation of positions 0 and I by NO+NC or 2 NO auxiliary contacts. They can be mounted on the right side on the SIRCO MV PV. Up to 2 auxiliary contact modules can be installed.

U type

Pre-break and signalisation by NO or NC auxiliary contact.
Max 2 auxiliary contacts.

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

(1) Signalling contact only.

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



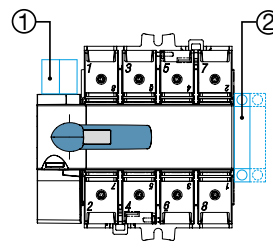
M type



U type

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M type

Auxiliary contacts configurations for SIRCO MV PV

1. Maximum 2 "U" type auxiliary contacts
2. Maximum 2 "M" type auxiliary contact modules

Terminal shrouds

Use

Top and bottom protection against direct contact with the connection parts (set of 2 units).

Advantage

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

The terminal shrouds also provide phase separation.

For SIRCO MV PV			
Rating (A)	No. of poles	Position	Reference
63 ... 80	4 P	top and bottom	2294 4016



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Bridging bars for connecting poles in series

Use

The bridging bars facilitate the connection of poles in series, allowing the below configurations:

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

Connection diagrams, see "Pole series connection" page 131.

For SIRCO MV PV		
Rating (A)	Pack	Reference
63 ... 80	1 piece	2209 0016
63 ... 80	2 pieces	2209 2016



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SIRCO MV PV

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Characteristics according to IEC 60947-3

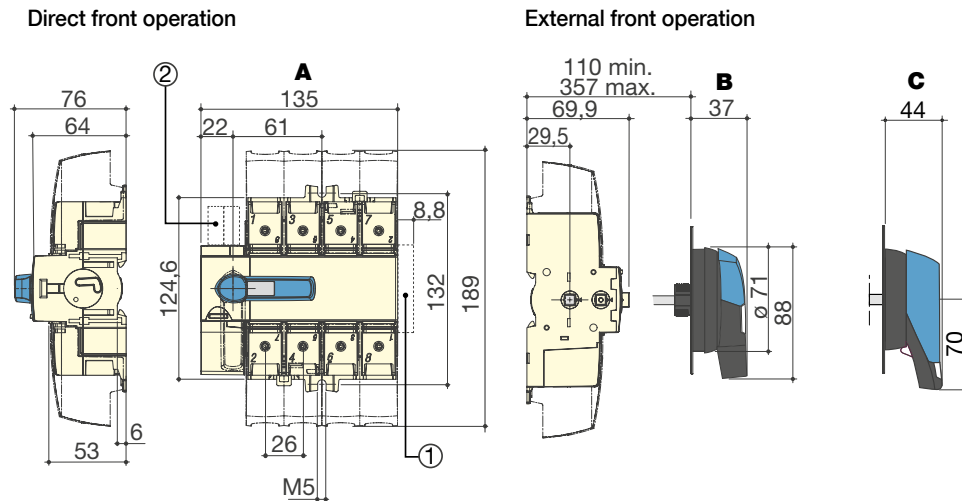
63 to 80 A

Rated current		63 A	80 A			
Thermal current I_{th} at 40°C (A)		63	80			
Thermal current I_{th} at 50°C (A)		63	80			
Thermal current I_{th} at 60°C (A)		63	80			
Rated insulation voltage U_i (V)		1000	1000			
Rated impulse withstand voltage U_{imp} (kV)		8	8			
Rated operational currents I_o (A)						
Rated voltage	Utilisation category	Circuit type	No. of poles	Number of pole(s) in series per polarity	(A)	(A)
1000 VDC ⁽¹⁾	DC-21 B	Single PV circuit	4 P	2 P + and 2 P -	63	80
Short-circuit capacity at 1000 VDC						
Rated short-time withstand current 1s. I_{ow} (kA rms)					5	5
Rated peak withstand current (kA peak) ⁽²⁾					12	12
Connection						
Maximum Cu rigid cable cross-section (mm ²)					70	70
Tightening torque min (Nm)					4	4
Tightening torque max (Nm)					5,5	5,5
Mechanical characteristics						
Operating effort (Nm)					4,2	4,2
Weight of a 3 pole device (kg)					0,7	0,7
Weight of a 4 pole device (kg)					0,9	0,9

(1) Photovoltaic load break switches SIRCO MV PV are subject to overvoltage test conditions which are 5% higher than the rated voltage. They can therefore be used at 1050 VDC in non-permanent operating conditions.
(2) For a rated operational voltage $U_o = 400$ VAC

Dimensions

SIRCO MV PV 63 to 80 A

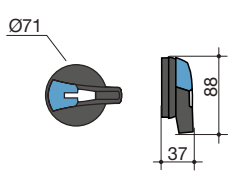
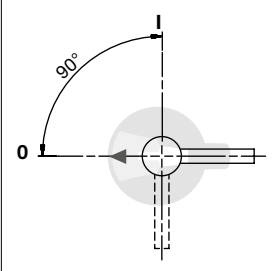
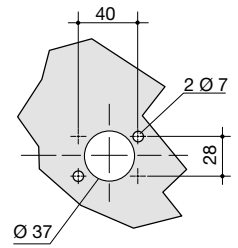
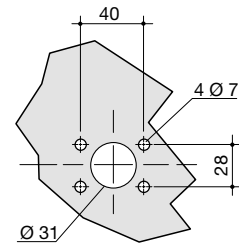
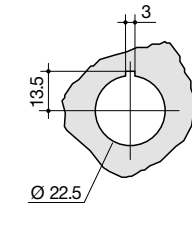
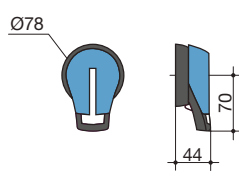
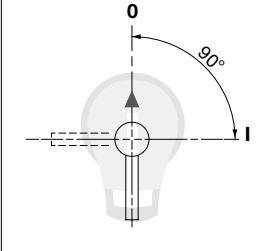
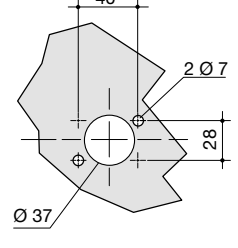
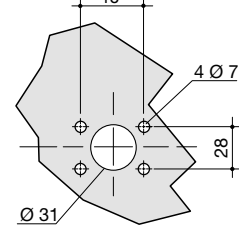


A. 4 poles
B. S0 type handle
C. S1 type handle

1. Maximum 2 "M" type auxiliary contact modules
2. Maximum 2 "U" type auxiliary contacts

Dimensions for external handles

SIRCO MV PV 63 to 80 A

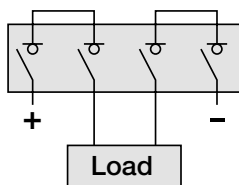
Handle type	Front operation Direction of operation	Door drilling		
S0 type 		IP55 with 2 fixing clips 	IP65 with 4 fixing screws 	With fixing nut 
S1 type 		IP55 with 2 fixing clips 	IP65 with 4 fixing screws 	

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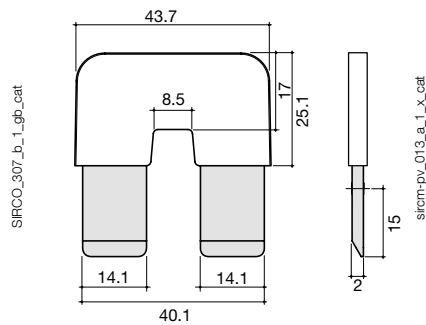
Pole series connection⁽¹⁾

4 poles - bottom / bottom



⁽¹⁾ Other connections: refer to mounting instructions.

Bridging bars 63 to 80 A



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sirco-pv_013_a_1_x_cat