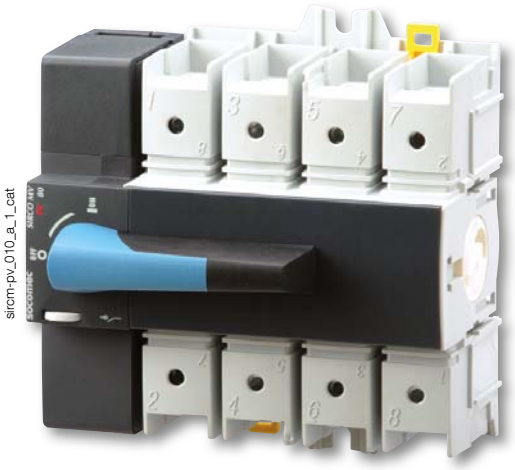
SIRCO MV PV

Load break switches for photovoltaic applications

for use up to 1000 VDC from 63 to 80 A



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) S1 type Black IP55 1411 **2111**(2) Black IP65 1413 **2111**(2) Red / Yellow IP65 1414 **2111**(2)	S0 type 150 mm 1409 **0615** 200 mm 1409 **0620** 320 mm 1409 **0632** S1 type 200 mm 1401 **0620** 320 mm 1401 **0632** 400 mm 1401 **0640**	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

M0 handle

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.

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S0 type handle

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S1 type handle

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.

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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

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.

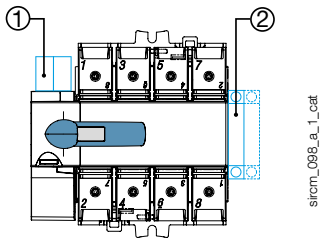
M type

U type

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
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**

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 connections in series” page 39.

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

Characteristics according to IEC 60947-3

63 to 80 A

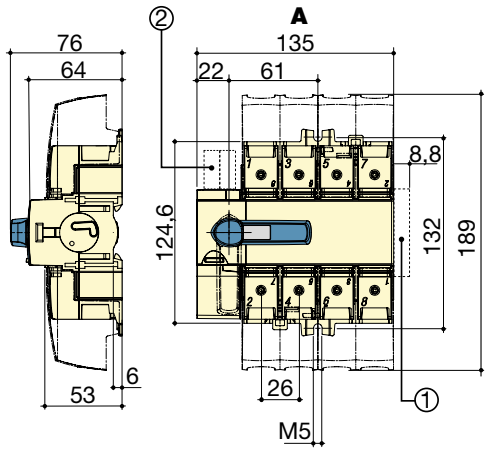
Rated current					63 A	80 A
Thermal current I_{th} at 40°C (A)					**63**	**80**
Thermal current I_{th} at 50°C (A)					**63**	**80**
Thermal current I_{th} at 60°C (A)					**63**	**80**
Rated insulation voltage U_i (V)					1000	1000
Rated impulse withstand voltage U_{imp} (kV)					8	8
Rated operational currents I_e (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_{cw} (kA rms)					5	5
Prospective short-circuit making capacity without fuses I_{cm} (kA peak)					5	5
Connection						
Maximum Cu rigid cable cross-section (mm²)					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 swiches 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.

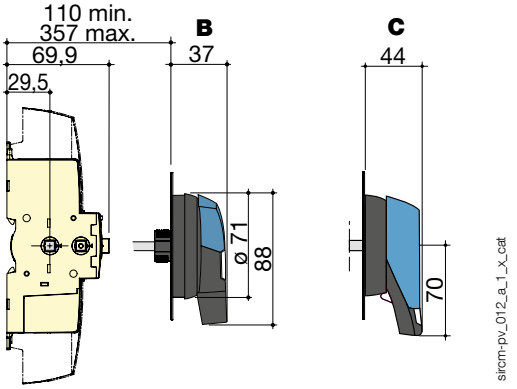
Dimensions

SIRCO MV PV 63 to 80 A

Direct front operation



External front operation



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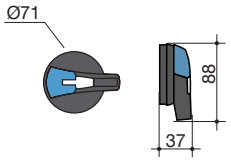
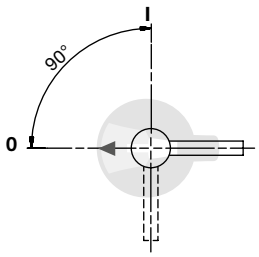
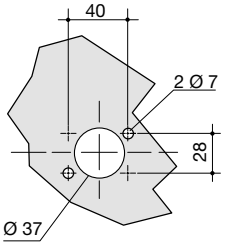
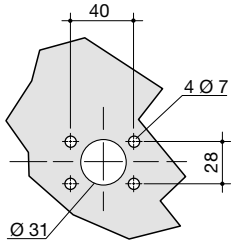
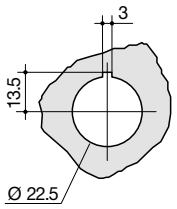
A. 4 poles
B. S0 type handle
C. S1 type handle

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
				

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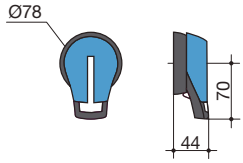
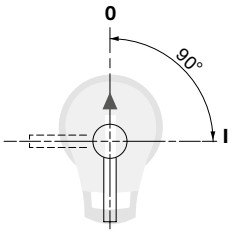
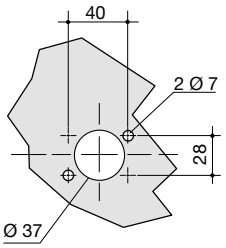
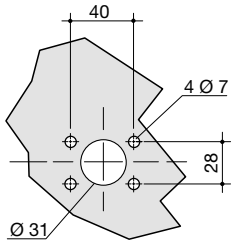
Handle type	Front operation Direction of operation	Door drilling	
S1 type		IP55 with 2 fixing clips	IP65 with 4 fixing screws
			

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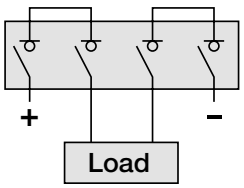
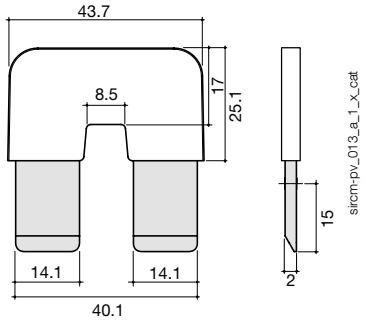
Pole series connection(1)

4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions.

Bridging bars 63 to 80 A



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