

# SIRCO MC PV UL 508I

Load break switches for photovoltaic applications  
from 25 to 45 A, up to 1000 VDC



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<sup>(1)</sup>



(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

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

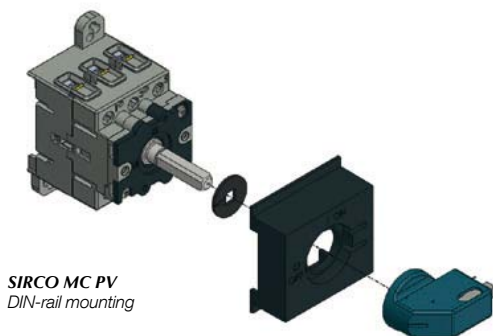
### High breaking capacity up to 1000 VDC

- 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.

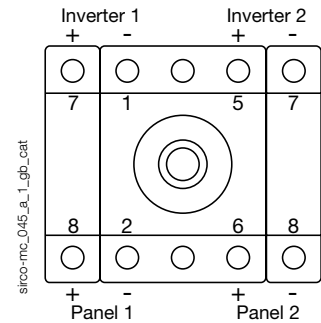
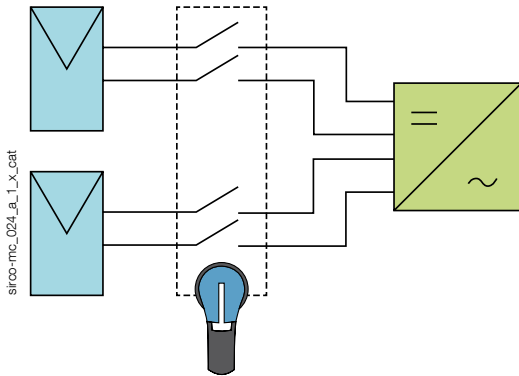
sirc0-mc\_028\_a



SIRCO MC PV  
DIN-rail mounting

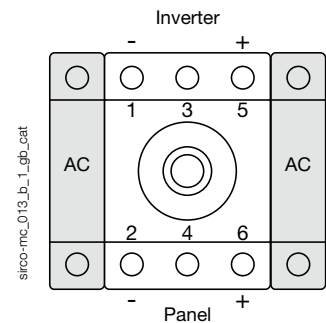
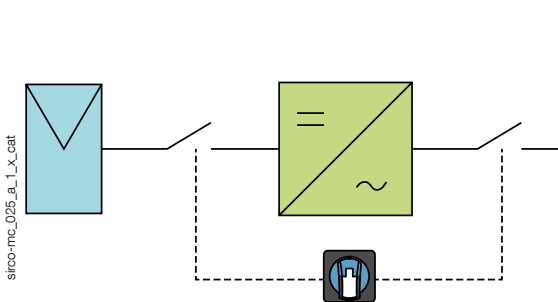
### Multi-circuit switching

- 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.



### Completely isolate the inverter within one operation

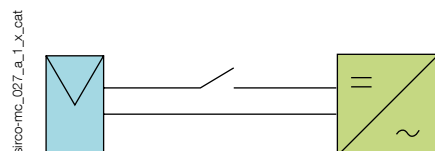
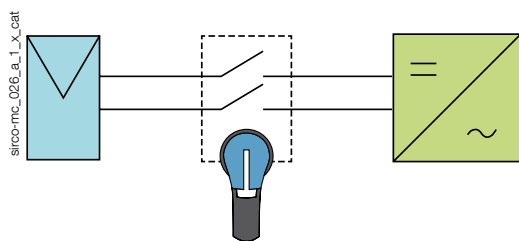
- The SIRCO MC PV with two additional AC poles can be integrated into the inverter to provide complete and simultaneous isolation of the PV and AC circuits. This improves safety and reduces the overall product size.



### 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.



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## 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 <b>2102-UL</b>	MC01 type Blue 2119 <b>1012</b>	S00 type	S00 type  265 mm 10.43 in 2107 <b>0517</b>	1 contact NC+NO 2119 <b>0001</b>	
	Dual PV circuit	4 P	21PV <b>5102-UL</b>					
45 A	Single PV circuit	4 P	21PV <b>4144</b>		MC01 type Blue 2119 <b>1412</b>			Red 4.4X 147R <b>0111</b> <sup>(1)</sup>
	Dual PV circuit	8 P	21PV <b>8144</b>					

(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 <b>4144</b>	MC01 type Black 2119 <b>1012</b>	S00 type  Black 4.4X 147D <b>0111</b> <sup>(1)</sup>	S00 type  265 mm 10.43 in 2107 <b>0517</b>	1 contact NC+NO 2119 <b>0001</b>
	Dual PV circuit	8 P	21PV <b>8144</b>	MC01 type Black 2119 <b>1412</b>			

(1) Door interlocking.

## Accessories

### Direct operation handle

#### Use

The direct operation conversion kit requires an additional 4 mm distance on each side of the 2 and 3 pole device.

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

(1) Standard handle.

2 MPPT 600 V					
Rating (A)	Handle color	Type of locking	Handle type	45 mm modular DIN front plate	Reference
25	Blue	-	MC0	yes	2119 <b>0012</b>
25	Blue	1 padlock Ø 5 mm / 0.20 in	MC01	yes	2119 <b>1012</b>
45	Blue	1 padlock Ø 5 mm / 0.20 in	MC01	yes	2119 <b>1412</b>



MC0 handle



MC01 handle

access\_305\_a\_1\_cat

access\_303\_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.



S00 handle



MC1 handle

access\_341\_a\_1\_cat

access\_302\_a\_1\_cat

### DIN-rail or back plate mounting

Rating (A)	Handle type	Handle color	Type of locking	Protection degree <sup>(1)</sup>	Reference
25 ... 45	MC1	Black	3 padlocks Ø 8 mm / 0.35 in	4.4X	2119 <b>3312</b>
25 ... 45	MC1	Red/Yellow	3 padlocks Ø 8 mm / 0.35 in	4.4X	2119 <b>3313</b>
25 ... 45	S00	Black	3 padlocks Ø 8 mm / 0.31 in	4.4X	147D <b>0111</b>
25 ... 45	S00	Red/Yellow	3 padlocks Ø 8 mm / 0.31 in	4.4X	147R <b>0111</b>

(1) Nema/UL protection degree.

## Shaft for external handle

### Use

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

### Shaft length

Device + shaft:  
- 265 mm



access\_297\_a\_1\_cat

### DIN-rail or back plate mounting

Rating (A)	Device + shaft Length	Reference
25 ... 45	265 mm / 10.43 in	2107 <b>0517<sup>(1)</sup></b>

(1) Shaft for door interlocking.

## Terminal shrouds

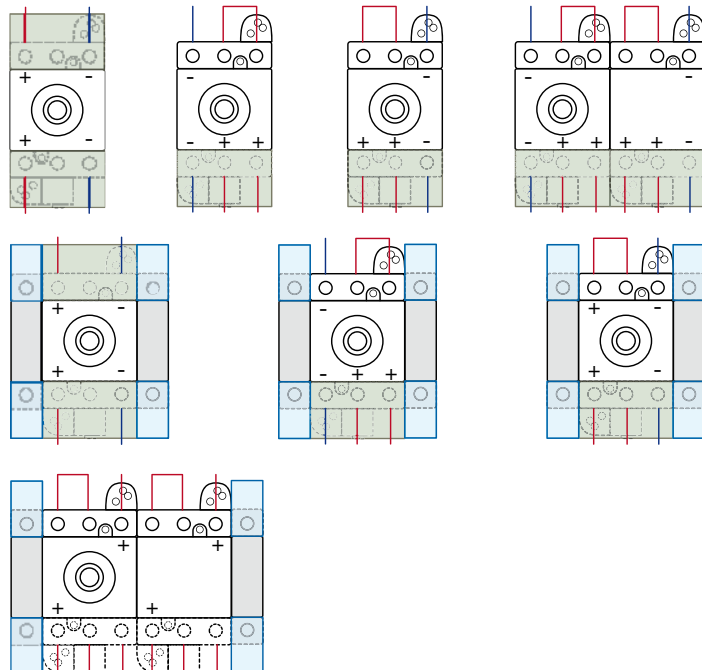
### Use

Top or bottom protection against direct contact with the terminals or connection parts.  
1 and 3 poles are available.

The SIRCO MC PV load break 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 <b>1004</b>
25 ... 45	DIN-rail	3 P	top or bottom	2194 <b>3004</b>



sirco-mc\_011\_e\_1\_cat

access\_299\_a\_1\_cat



Terminal shrouds 1 pole

access\_300\_a\_1\_cat



Terminal shrouds 3 pole

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Load break switches for photovoltaic applications

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## Characteristics

according to UL 508I

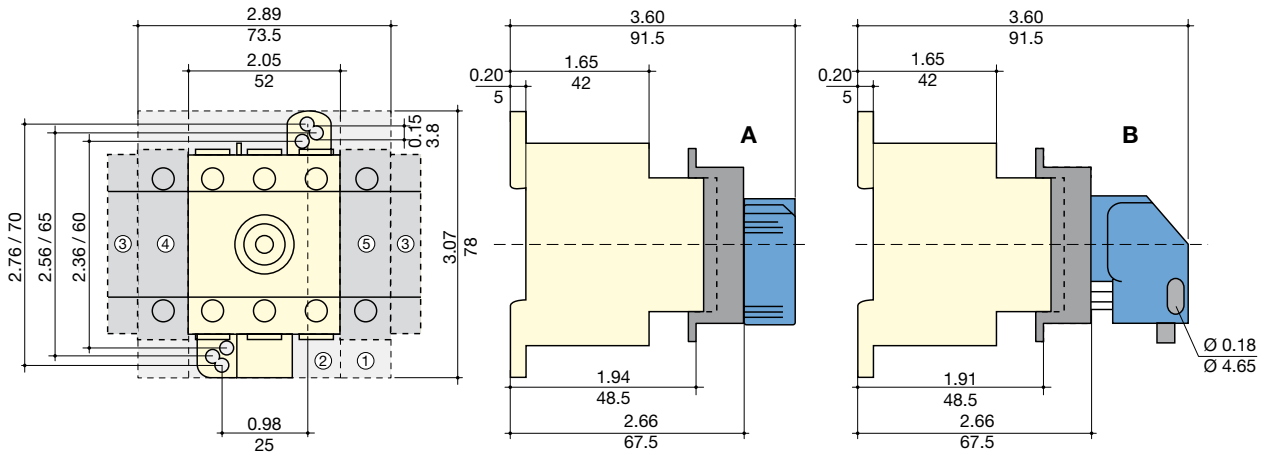
			25 A	45 A
General use rating with 200% overload extra test				
Rated voltage	Number of poles of the device	Number of PV circuits	(A)	(A)
600 VDC	2 P	1	25	-
600 VDC	4 P	1	-	45
600 VDC	2 x 2 P	2	25	-
600 VDC	2 x 4 P	2	-	45
1000 VDC	4 P	1	-	32
1000 VDC	2 x 4 P	2	-	32
Short-circuit capacity at 600 VDC				
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)		1000	1000	
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

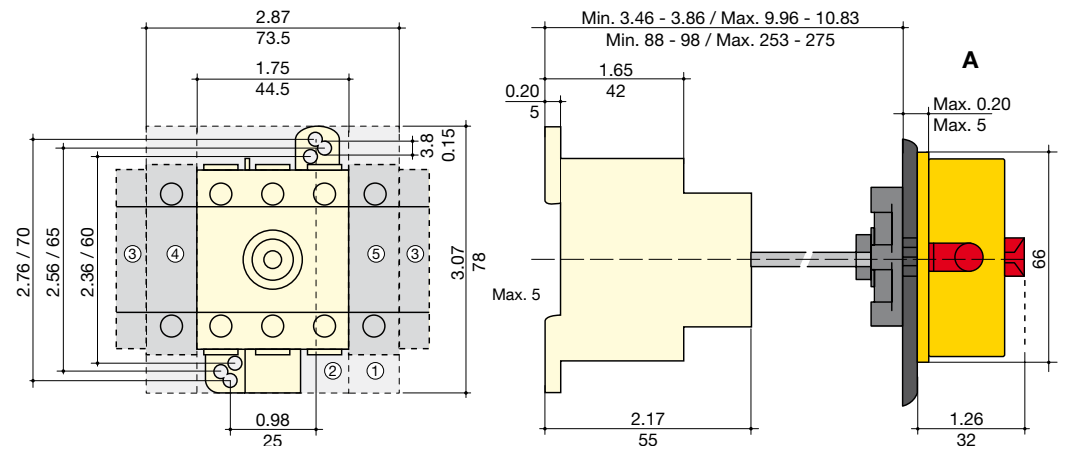


- 1. Terminal shrouds 1P.
- 2. Terminal shrouds 3P.
- 3. Auxiliary contact.

- 4. AC power pole.
- 5. AC or PV power pole.

- A. MC0 handle
- B. MC01 handle

DIN-rail mounting - External operation

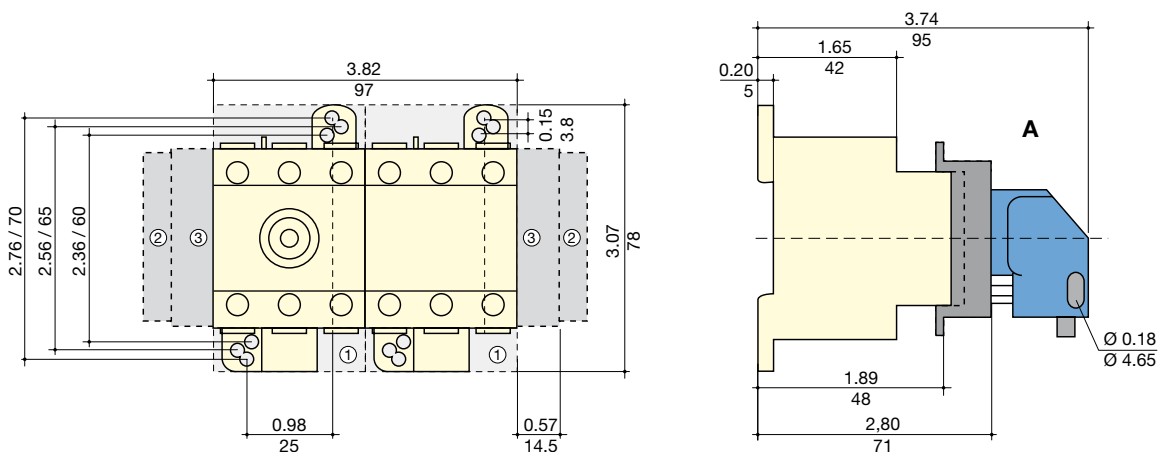


- 1. Terminal shrouds 1P.
- 2. Terminal shrouds 3P.

- 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.

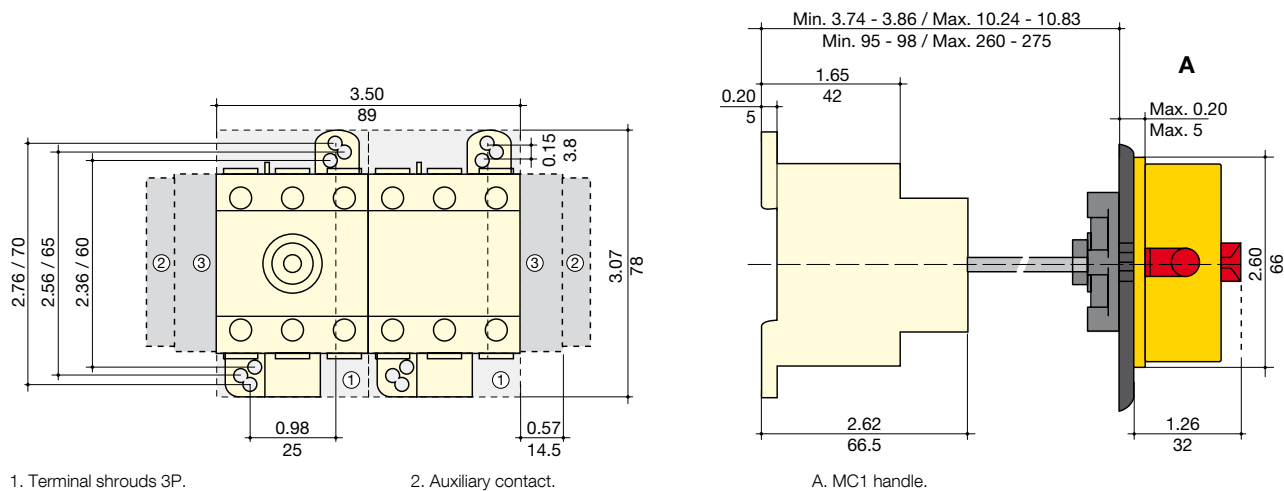
- A. MC01 handle.

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## Dimensions (continued)

### DIN-rail mounting - External operation



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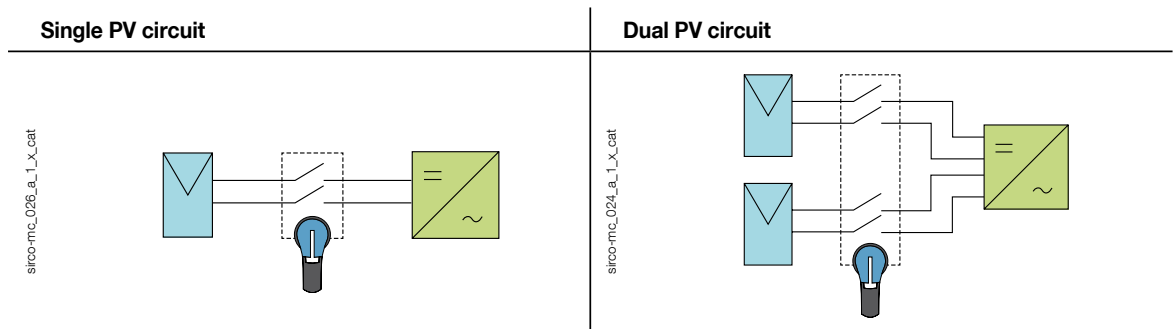
## Dimensions for external handles (in/mm)

### DIN-rail or back plate mounting

Handle type	Front operation Direction of operation	Door drilling
<p><b>MC1 type</b></p> <p>poign_001_a_1_us_cat</p>		
<p><b>S00 type</b></p> <p>poign_056_a_1_us_cat</p>		<p>With 4 fixing screws: 1.57, 40, 4 Ø 0.28, 4 Ø 7, 1.10, 28, Ø 1.22, Ø 31</p> <p>With fixing nut: 0.12, 3, 13.5, Ø 0.89, Ø 22.5</p>

## Poles connections

### Switching of polarities + and - <sup>(1)</sup>



Rating	Single PV circuit	Dual PV circuit
25 A - 600 VDC	<p><b>21PV 2102-UL</b></p> <p>sirco-mc_044_a_1_gb_cat</p>	<p><b>21PV 5102-UL</b></p> <p>sirco-mc_045_a_1_gb_cat</p>
45 A - 600 VDC 32 A - 1000 VDC	<p><b>21PV 4144</b></p> <p>sirco-mc_083_a_1_gb_cat</p>	<p><b>21PV 8144</b></p> <p>sirco-mc_065_a_1_gb_cat</p>

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