

# RSP-PV...

2,3-pole surge arresters for photovoltaic systems,  $I_{max} = 50 \text{ kA/pole}$

RSP-PV4.5-600-2P



RSP-PV4.5-1500-3P



- Category IEC / EN / VDE: class I+II / type 1+2 / B+C
- Location of use: connection box, inverter photovoltaic
- Network systems: (+/-)-PE, (+)-(-)
- Modes of protection: MOV
- Protection elements: modular (replaceable module)
- Cover: green/red flag
- Mechanical status indicator: IEC 61643-31:2018, ISO 9001, CE, RoHS
- Compliance with standards:

## Surge arresters with potential-free contact for remote fault indication

### Applications:

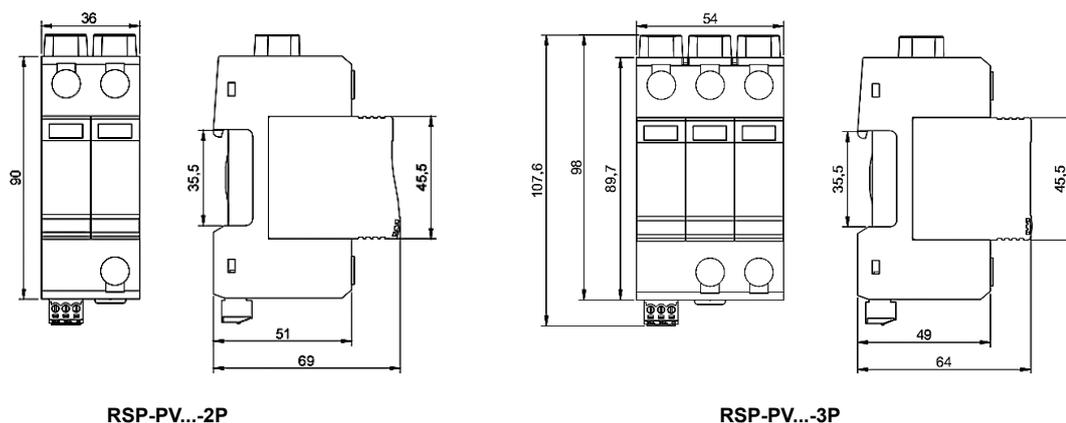
- Protection of PV strings
- Small, medium and large PV installations
- Commercial PV systems
- Solar farms

Type of arrester		RSP-PV4.5 -600-2P	RSP-PV6.0 -1000-3P	RSP-PV4.5 -1200-3P	RSP-PV4.5 -1500-3P
<b>Electrical data</b>					
Number of poles		2	3		
Nominal voltage	$U_n$	600 V DC	1 000 V DC	1 200 V DC	1 500 V DC
Max. continuous operating voltage	$U_{cpv}$	670 V DC	1 120 V DC	1 340 V DC	1 500 V DC
Nom. discharge current (8/20 $\mu$ s)	$I_n$	20 kA	20 kA	20 kA	20 kA
Max. discharge current (8/20 $\mu$ s)	$I_{max}$	50 kA	50 kA	50 kA	50 kA
Impulse discharge current (10/350 $\mu$ s)	$I_{imp}$	4,5 kA	6 kA	4,5 kA	4,5 kA
Voltage protection level	$U_p$	2,2 kV (+/-)-PE 4,0 kV (+)-(-)	3,5 kV (+/-)-PE, (+)-(-)	4,0 kV (+/-)-PE, (+)-(-)	4,5 kV (+/-)-PE, (+)-(-)
Response time	$t_A$	$\leq 25 \text{ ns}$			
Short-circuit current rating	$I_{scpv}$	1 kA			
Leakage current	$I_{pe}$	$< 0,1 \text{ mA}$			
Thermal protection		internal disconnecter inspection window (green: normal, red: failure)			
<b>General data</b>					
Ambient temperature (operating)	$T_a$	-40...+85 °C			
Operating altitude		-500...4 000 m			
Cross section of cables connected to terminals		35 mm <sup>2</sup> (single core) / 25 mm <sup>2</sup> (multi-core)			
Terminal tightening moment		max. 4,5 Nm			
Mounting		direct mounting on 35 mm rail mount (EN 60715)			
Cover protection category		IP 20 (built-in, EN 60529)			
Cover material		thermoplastic; extinguishing degree V-0 (UL 94)			
Dimensions (L x W x H) [mm]		90 x 36 x 69	89,7 x 54 x 64		
Weight		296 g	369 g	378 g	386 g
<b>Remote fault signalisation to terminals</b>					
Type of contact		potential-free (isolated contact 1 CO)			
Switching capability of contact		0,5 A / 250 V AC 0,1 A / 250 V DC, 0,2 A / 125 V DC, 0,5 A / 75 V DC			
Cross section of cables connected		1,5 mm <sup>2</sup> (wire single core)			

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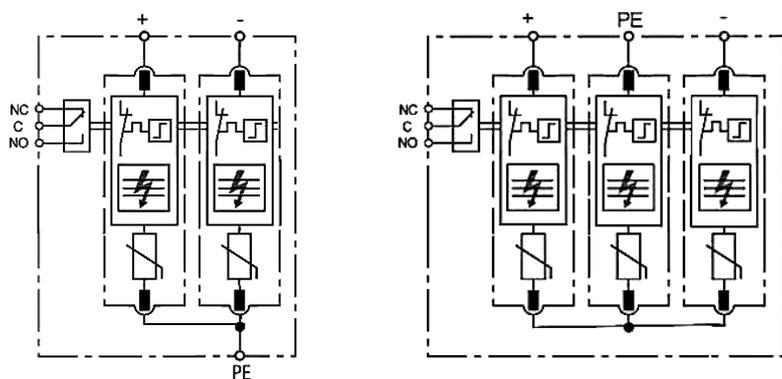
## Dimensions



RSP-PV...-2P

RSP-PV...-3P

## Connection diagrams



RSP-PV...-2P

RSP-PV...-3P

## Features:

- designed according to IEC/EN 61643-31, EN 50539-11,
- unique thermal disconnector design provides quick thermal response and secure disconnection,
- high lightning current discharge capacity up to 6 kA (10/350  $\mu\text{s}$ ), surge current capability up to 50 kA (8/20  $\mu\text{s}$ ),
- short-circuit current rating up to 1 kA, suitable for application in most DC power systems - in solar system (photovoltaic power supply system), charging system for electric vehicles etc., low voltage protection level, high reliability,
- anti-vibration module locking system with release button,
- pluggable module for easy replacement without the need to remove system wiring,
- degradation failure indication window and remote signal contact.

## Series description:

- **RSP-PV...** is the class I+II SPD for DC application such as PV (photovoltaic system) DC-side protection, especially for location of high risk exposure or LPZ 0-2 building entrances (IEC 62305-4) to against the damage from direct or close lightning strikes; is suit for the main-distribution board,
- high energy MOVs are employed to provide stable lightning & surge protection service with no follow current; notable feature is dual module redundancy for one pole, two individual MOV protection modules in parallel in one pole SPD with two indication windows, so that the SPD could keep on working in spite of one protection module fails or one indication windows turns to red - that will help to realize the uninterrupted surge protection, since user can replace the failure models according to the timing and the condition,
- must be installed in parallel on the DC networks to be protected and provide common and different modes protection; installed location are recommended at both ends of the DC power supply line (solar panel side and inverter/converter side), especially if the line routing is external and long.

## Types for reference:

- **RSP-PV4.5-600-2P**: combined, two-pole SPD (prewired of V circuit for common mode protection) - for PV systems,
- **RSP-PV6.0-1000-3P**, **RSP-PV4.5-1200-3P**, **RSP-PV4.5-1500-3P**: combined, three-pole SPD (prewired of V circuit for common mode protection) - for PV systems.