

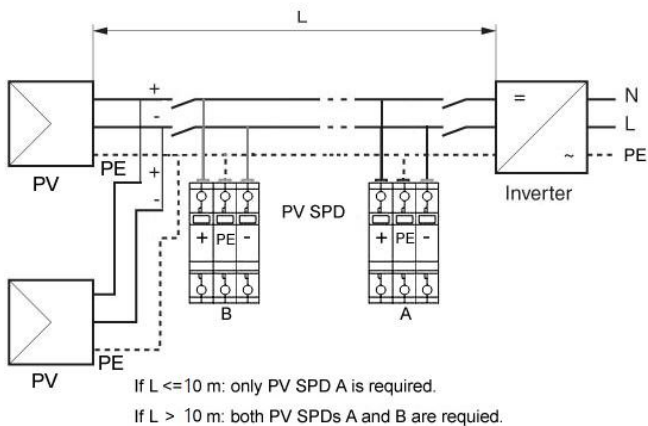
Photovoltaic system Surge Protection SPV

Nowadays, **Photovoltaic systems (PV System)** range from small, rooftop-mounted or building-integrated systems with capacities from a few to several tens of kilowatts, to large utility-scale power stations of hundreds of megawatts, and in the meanwhile the potential impact of lightning events increases with PV system size. Where lightning occurrences are frequent, unprotected PV systems can suffer repeated and significant damage to key components. This results in substantial repair and replacement costs, system downtime and the loss of revenue. Properly installed surge protective devices (SPDs) will minimize the potential impact of lightning events



PROSURGE® SPV series employ high energy Metal Oxide Varistor (MOV), and constructed with our patented thermal protection and arc extinguishing technology which ensure safe disconnection while faulty current or abnormal voltage happened. These series are of single pole, Y connection and V connection for various applications in worldwide Photovoltaic systems, while the Y connection configuration is consisting of three protective paths for both Common mode & Differential mode protection, and the V connection configuration has two protective paths for Common mode protection.

Usually, sensitive electrical equipments of photovoltaic system like AC/DC Inverter, monitoring devices and PV array should be protected by PV surge protective devices (SPDs).



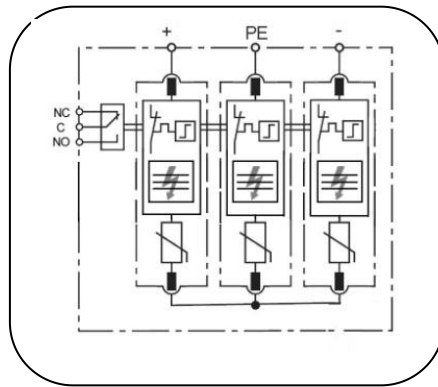
PROSURGE® SPV series are recommended for used on the dc-side of the DC-AC inverter, and **PROSURGE® SP** series on the ac-side to protect AC mains power supplies. The number and location of SPV SPDs on the DC side depend on the length of the cables between the PV array and inverter. The SPV SPD should be installed as close as possible to the inverter if the length is less than 10 meters. If it is greater than 10 meters, two SPDs are necessary, and one should be located in the box close to the PV array, another is located in

the inverter area.

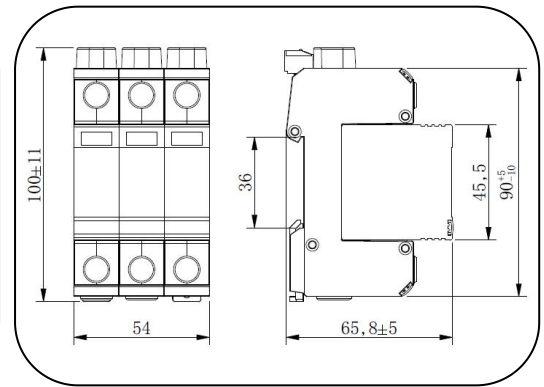
PROSURGE® SPV series are fully comply with UL1449 4th edition as Type 1ca SPDs, and Class II/T2 SPDs per IEC/EN 61643-11/31.



SPV...-V-CD-S (“Y” Configuration)



Basic circuit diagram



Dimension drawing

PROSURGE’s Type1 CA Surge Protective Devices are designed for PV/ Photovoltaic system dc-side protection against the damaging from surges and spikes caused by lightning and other electrical sources.

Technical Features

- UL1449-4th Type1 CA recognized Surge Protective Devices for PV/ Photovoltaic system.
- Y protection circuit for common mode & differential mode protection
- UL1449-4th, Short circuit current rating (SCCR) up to 50kA
- Surge capacity 50kA 8/20 per pole
- Remote alarm signal optional
- Fully comply with IEC/EN 61643-31/11, EN 50539-11 standards

Part No.	SPV600-V-CD-S	SPV800-V-CD-S	SPV1000-V-CD-S	SPV1200-V-CD-S	SPV1500-V-CD-S	
In accordance with	ANSI/UL1449-4 th ; IEC/EN 61643-31/11, EN 50539-11					
Category UL/IEC/EN	Type 1ca / Class II / T2					
Protection Mode	Common mode & Differential mode					
Nominal voltage (Vdc)	Un	600	800	1000	1200	1500
Max. permitted DC voltage	Vpdc	700	920	1120	1340	1500
Nominal discharge current(8/20)	In	20kA				
Max. discharge current(8/20)	I _{max}	50kA				
Voltage protection rating per mode	VPR	0.9kV	1.2kV	1.5kV	1.5kV	1.8kV
Voltage protection rating (“+/-” - PE)		1.8kV	2.5kV	2.5kV	3.0kV	4.0kV
Leakage (Quiescent) current	I _q	≤20μA	≤20μA	≤20μA	≤20μA	≤20μA
Short Circuit Current Rating	SCCR	50kA	50kA	50kA	50kA	50kA
Response time		≤25 ns				
Max Ambient temperature		- 40°C ~ + 85°C				
Cross-section of connection wire		Single-strand 35mm ² ; multi-strand 25mm ²				
Mounting		35mm DIN-rail in accordance with EN 50022/DIN46277-3				
Enclosure material		Thermoplastic; extinguishing degree UL94 V-0				
Degree of protection		IP20				
Installation width		3 modules, DIN 43880				
Thermal disconnecter		Internal green – normal ; red - failure				
Remote alarm contact		“-S” means with remote alarm contact				
Additional data for Remote Alarm Contacts						
Remote alarm contact type		Isolated Form C				
Switching capability Un/In		AC: 250V/0.5A		DC: 250V/0.1A; 125V/0.2A; 75V/0.5A		
Max. Size of connecting wire		Max. 1.5mm ² (or # 16AWG)				
Replaceable Model Part No.		SP350D	SP460D	SP560D	SP670D	SP825D