

# Type 1+2 PV Multipolar Surge Protector

## MDSP-PV series



### Class I • Class II • Type 1 • Type 2

- **Location of Use:** String box, Inverter
- **Mode of Protection:** (DC+) - PE, (DC-) - PE, (DC+) - (DC-)
- **Surge Ratings:**
  - $I_{total} = 12.5 \text{ kA} (10/350 \mu\text{s})$
  - $I_{total} = 40 \text{ kA} (8/20 \mu\text{s})$
- **IEC/EN/UL Category:** Class I+II / Type 1+2
- **Protective Elements:** High Energy MOV
- **Housing:** Pluggable Design
- **Compliance:**
  - IEC 61643-31
  - EN 61643-31
  - UL 1449 4th Edition

## Technical Data

### MDSP-PV1000 series

|   |                        | 600         | 1000         | 1200         | 1500         |              |
|---|------------------------|-------------|--------------|--------------|--------------|--------------|
| Maximum Continuous Operating DC Voltage           | (DC+) - PE, (DC-) - PE | $U_{CPV}$   | 600 V        | 1000 V       | 1200 V       | 1500 V       |
|   | (DC+) - (DC-)          | $U_{CPV}$   |              |              |              |              |
| Nominal Discharge Current (8/20 $\mu\text{s}$ )   |                        | $I_n$       |              | 20kA         |              |              |
| Impulse Discharge Current (10/350 $\mu\text{s}$ ) |                        | $I_{imp}$   |              | 6.25kA       |              |              |
| Total Discharge Current (10/350 $\mu\text{s}$ )   |                        | $I_{Total}$ |              | 12.5kA       |              |              |
| Total Discharge Current (8/20 $\mu\text{s}$ )     |                        | $I_{Total}$ |              | 40kA         |              |              |
| Maximum Discharge Current (8/20 $\mu\text{s}$ )   |                        | $I_{max}$   |              | 40kA         |              |              |
| Voltage Protection Level                          | (DC+) - PE, (DC-) - PE | $U_p$       | $\leq 2200V$ | $\leq 4000V$ | $\leq 4400V$ | $\leq 5200V$ |
|   | (DC+) - (DC-)          | $U_p$       |              |              |              |              |
| Response Time                                     |                        | $t_A$       |              | < 25 ns      |              |              |
| Short-Circuit Current Rating                      |                        | $I_{SCPV}$  |              | 2000A        |              |              |
| Number of Ports                                   |                        |             |              | 1            |              |              |

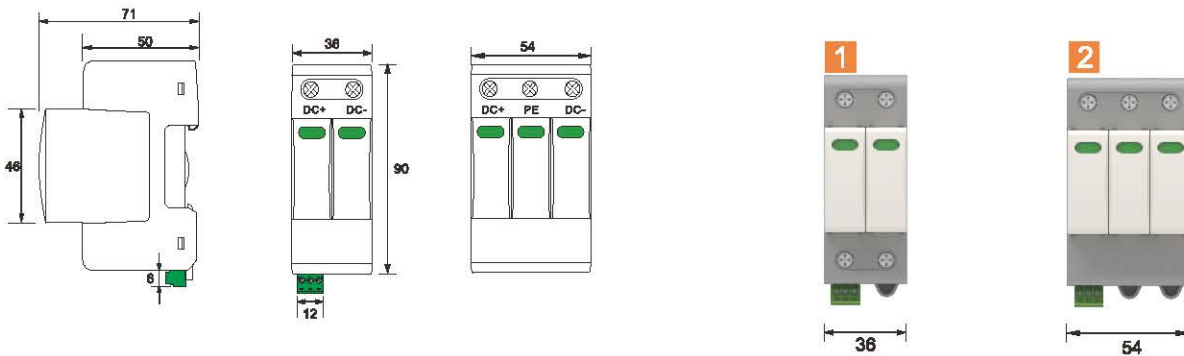
### Mechanical & Environmental

|                                    |           |  |
|------------------------------------|-----------|--|
| Operating Temperature Range        | $T_a$     | -40 °F to +158 °F [-40 °C to +70 °C]   |
| Permissible Operating Humidity     | RH        | 5%...95%   |
| Atmospheric pressure and altitude  |           | 80k Pa ... 106k Pa / -500 m ... 2000 m   |
| Terminal Screw Torque              | $M_{max}$ | 39.9 lbf·in [4.5 Nm]   |
| Conductor Cross Section (max)      |           | 2 AWG (Solid, Stranded)/ 4 AWG (Flexible)<br>35 mm <sup>2</sup> (Solid, Stranded)/ 25 mm <sup>2</sup> (Flexible) |
| Mounting                           |           | 35 mm DIN Rail, EN 60715   |
| Degree of Protection               |           | IP 20 (built-in)   |
| Housing Material                   |           | Thermoplastic: Extinguishing Degree UL 94 V-0  |
| Thermal Protection                 |           | Yes  |
| Operating State / Fault Indication |           | Green ok / Red defect  |
| Remote Contacts (RC)               |           | Option   |
| RC Switching Capacity              |           | <b>AC:</b> 250V / 0.5 A; <b>DC:</b> 250V / 0.1 A; 125 V / 0.2 A; 75 V / 0.5 A                                    |
| RC Conductor Cross Section (max)   |           | 16 AWG (Solid) / 1.5 mm <sup>2</sup> (Solid)   |

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## Dimensions - Internal Configuration

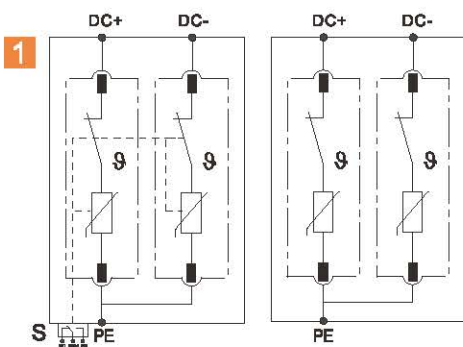
(in mm)



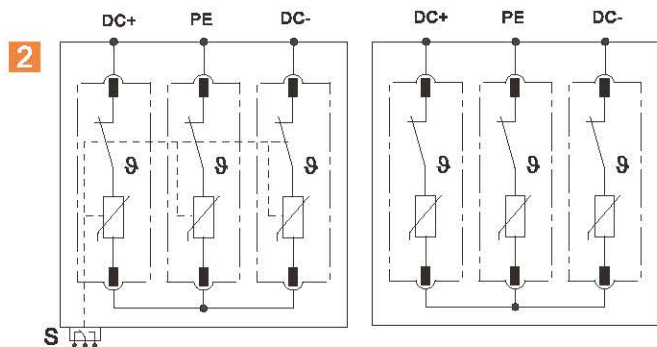
### Legend

PE Protective Earth

S Signaling Contacts (Option)

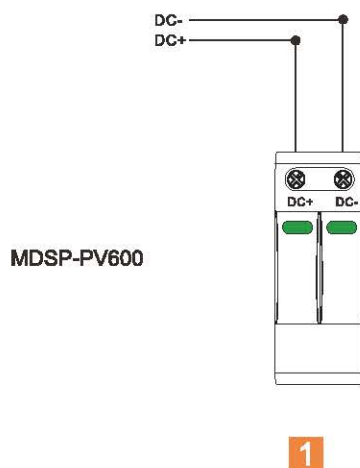


MDSP-PV600

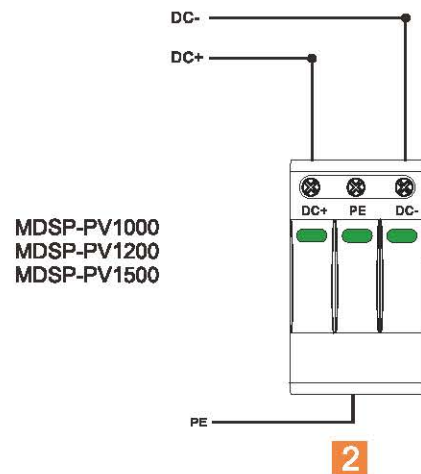


MDSP-PV1000, MDSP-PV1200, MDSP-PV1500

## Connection Diagram



MDSP-PV600



MDSP-PV1000  
MDSP-PV1200  
MDSP-PV1500