

# Type 1 Surge Protector for Photovoltaic

## DS60PV



DS60PV are Type 1 Heavy Duty Surge Protectors are designed to protect against lightning surge voltages the photovoltaic power supply networks. These units must be installed in parallel on the DC networks to be protected and provide a common mode protection. These protectors are recommended when a direct lightning strike is possible on the installation.

The DS60PV is available for the main operating voltages in photovoltaic : 500 and 1000 Vdc.

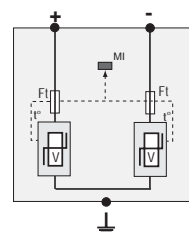
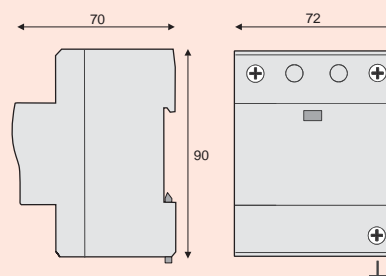
The use of type 2 surge protector is recommended at both ends of the DC power supply line (solar panels side and inverter/converter side), especially if this one is external and long distance.

The electrical diagram of the DS60PV is based on high energy MOVs equipped with specific thermal disconnectors, related failure indicators and contact for remote signaling (option). It is designed to conduct heavy lightning currents (10/350  $\mu$ s waveform) possible in case of direct strikes on installation.

The DS60PV is made with monobloc enclosure and fits on DIN rail.

- **Type 1 SPD for Photovoltaic**
- **limp : 12,5 kA (10/350  $\mu$ s wave by pole)**
- **I<sub>total</sub> : 25 kA (10/350  $\mu$ s wave)**
- **Internal disconnector, failure indicator**
- **Remote signal option**
- **Complies EN 61643-11, IEC 61643-1**

## Dimensions and Diagram



V : High energy MOV  
 Ft : Thermal fuse  
 I° : Thermal disconnection mechanism

## Characteristics

CITEL part number		DS60PV-500	DS60PV-1000
Nominal voltage network		500 Vdc	1000 Vdc
Max. operating voltage	Uc	550 Vdc	1000 Vdc
Operating current	Ic	< 1 mA	< 1 mA
Leakage current at Uc			
Follow current	If	none	none
Nominal discharge current	In	40 kA	40 kA
15 x 8/20 μs impulses			
Max. lightning current by pole	limp	12.5 kA	12.5 kA
tenue max. 10/350 μs			
Residual voltage (at limp)	Ures	1.6 kV	1.9 kV
Protection level (at In)	Up	1.7 kV	2.4 kV
<b>Associated disconnection</b>			
Thermal disconnector		internal	
<b>Mechanical characteristics</b>			
Dimensions		See diagram	
Connection		by screw terminals : 6-35 mm² / by bus	
Disconnection indicator		1 mechanical indicator	
Remote signalling		output on changeover contact (option DS60PVS)	
Mounting		Symmetrical rail 35 mm	
Operating temperature		-40/+85 °C	
Protection classe		IP20	
Housing material		Thermoplastic PEI UL94-5VA	
<b>Standards compliance</b>			
NF EN 61643-11	France	Parafoudre Basse Tension - Essais Classe I et II	
IEC 61643-1	International	Low Voltage SPD - Test Class I and II	
EN 61643-11	Europe	Parafoudre Basse Tension - Essais Classe I et II	
UL1449 ed 2	USA	Low Voltage TVSS	