

**Type 1+2 Surge Protection Device for Photovoltaic applications**

- Surge protection device for DC side upto (1500V) of systems in photovoltaic applications
- Protects equipment against induced over voltage caused by lightning strikes or switching transients
- Visual indication of varistor status- Healthy/Replace
- Contact for remote signalling (optional) of varistor status
- Replaceable varistor modules
- No follow current
- Complies with EN 50539-11 and IEC 61643-31
- 35 mm rail (EN 60715) mounting

**6P.13.9.000.1005**



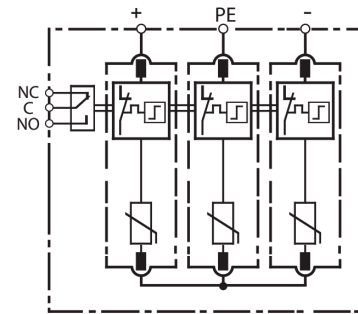
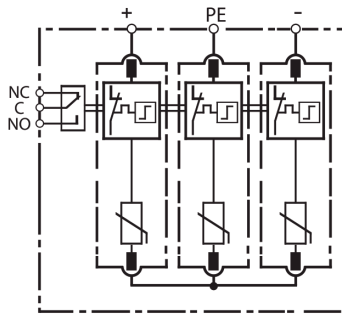
- SPD Type 1+2 ( 3 varistors) for 1000 V DC photovoltaic systems
- Replaceable varistor modules
- Visual and remote signalling (Optional) of varistor status

**6P.13.9.500.1012**



- SPD Type 1+2 ( 3 varistors) for 1500 V DC photovoltaic systems
- Replaceable varistor modules
- Visual and remote signalling (Optional) of varistor status

6P.13  
Screw terminals



For outline drawing see page 15

SPD specification		Varistor module		Varistor module	
Nominal voltage (U <sub>N</sub> )	V DC	1000		1250	
Max. operating voltage (U <sub>CPV</sub> )	V DC	1050		1500	
Lighting discharge current (10/350 μs) (I <sub>imp</sub> )	kA	5		6.25	
Total impulse current I (total, 10/350 μs))	kA	10		12.5	
Nominal discharge current (8/20 μs) (I <sub>n</sub> )	kA	20		20	
Maximum discharge current (8/20 μs) (I <sub>max</sub> )	kA	40		40	
Voltage protection level per module (U <sub>P</sub> )	kV	2		2.5	
Voltage protection level of the system U <sub>P</sub> (+ ↔ -)/(+/- ↔ PE)	kV	4		5	
Response time (t <sub>a</sub> )	ns	25		25	
Short circuit current withstand I <sub>SCPV</sub>	A	1000		1000	
Replacement module code		6P.10.9.500.0005		6P.10.9.750.0012	
Other technical data					
Ambient temperature range	°C	-40...+80			
Protection degree		IP 20			
Wire size	mm <sup>2</sup>	solid cable		stranded cable	
		1 x 2.5...1 x 35		1 x 2.5...1 x 25	
		AWG 1 x 13...1 x 2		1 x 13...1 x 4	
Wire strip length	mm	10			
Screw torque	Nm	4			
Dimension (Lx Wx H)	mm	104.7 x 54 x 65		104.7 x 54 x 65	
Remote status signalling contact specification					
Contact configuration		1 CO (SPDT)			
Rated current	A AC/DC	0.5/0.1			
Rated voltage	V AC/DC	250/250			
Wire size	mm <sup>2</sup>	solid cable		stranded cable	
		1.5		1.5	
		AWG 16		16	

Approvals (according to type)



**Type 2 Surge Protection Device for Photovoltaic applications**

- Surge protection device for protection of DC side (600 V, 1000 V and 1500 V) of systems in photovoltaic applications
- Protects equipment against induced over voltage caused by lightning strikes or switching transients

**6P.27.9.600.1020**  $U_{CPV} = 600$  V DC

**6P.23.9.000.1020**  $U_{CPV} = 1000$  V DC

**6P.23.9.500.1020**  $U_{CPV} = 1500$  V DC

- Visual indication of varistor status-Healthy/Replace
- Contact for remote signalling (Optional) of varistor status
- Replaceable varistor modules
- Complies with EN 50539-11 and IEC 61643-31
- 35 mm rail (EN 60715) mounting

**6P.27.9.600.1020**



- SPD Type 2 (2 varistors) for 600 V DC photovoltaic systems
- Replaceable varistor modules
- Visual and remote signalling (Optional) of varistor status

**6P.23.9.000.1020**



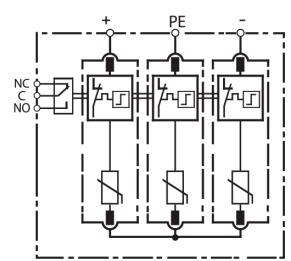
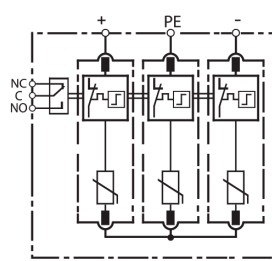
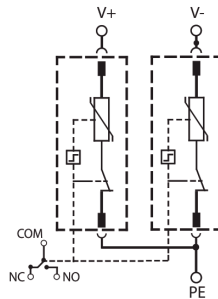
- SPD Type 2 (3 varistors) for 1000 V DC photovoltaic systems
- Replaceable varistor modules
- Visual and remote signalling (Optional) of varistor status

**6P.23.9.500.1020**



- SPD Type 2 (3 varistors) for 1500 V DC photovoltaic systems
- Replaceable varistor modules
- Visual and remote signalling (Optional) of varistor status

6P.23 / 6P.27  
Screw terminals



For outline drawing see page 15

SPD specification		Varistor module	Varistor module	Varistor module
Maximum operating voltage ( $U_{CPV}$ )	V DC	600	1000	1500
Maximum operating voltage/per module ( $U_{CPV}$ )	V DC	600	500	1500
Nominal discharge current (8/20 $\mu$ s)/per module ( $I_n$ )	kA	20	20	20
Maximum discharge current (8/20 $\mu$ s)/per module ( $I_{max}$ )	kA	40	40	40
Voltage protection level per module ( $U_p$ )	kV	2.2	2.2	2.5
Voltage protection level of the system $U_p$ (+ $\leftrightarrow$ -)/(+/- $\rightarrow$ PE)	kV	4.4/2.2	4.4/2.2	5
Response time ( $t_a$ )	ns	25	25	25
Short circuit current withstand $I_{SCPV}$	A	125	1000	1000
Replacement module code		6P.20.9.600.0020	6P.20.9.500.0020	6P.20.9.750.0020
Other technical data				
Ambient temperature range	$^{\circ}$ C	-40...+80		
Protection degree		IP20		
Wire size		solid cable		stranded cable
	mm <sup>2</sup>	1 x 2.5...1 x 35		1 x 2.5...1 x 25
	AWG	1 x 13...1 x 2		1 x 13...1 x 4
Wire strip length	mm	10		
Screw torque	Nm	4		
Dimension (Lx Wx H)	mm	98.5 x 35.8 x 65.2	104.7 x 54 x 65	104.7 x 54 x 65
Remote status signalling contact specification				
Contact configuration		1 CO (SPDT)		
Rated current	A AC/DC	0.5/0.1		
Rated voltage	V AC/DC	250/250		
Wire size		solid cable/stranded cable		
	mm <sup>2</sup>	1.5		
	AWG	16		

**Approvals** (according to type)



**Type 2+3 Surge Protection Device for low voltage AC/DC power supply systems**

- Surge protection device suitable for DC systems to protect equipment against induced over voltage or switching transients
- To be installed at the boundary of LPZ 1-LPZ 2 and LPZ 2-LPZ 3 zones
- Visual indication of status of SPD-Healthy/Replace
- Contact for remote signalling (Optional) of varistor status
- Replaceable varistor modules
- Complies with EN/IEC 61643-11
- 35 mm rail mountable

**6P.37.9.024.1002**



- SPD Type 2+3 (2 varistors)
- Visual and remote signalling (Optional) of varistor status

**6P.37.9.048.1002**



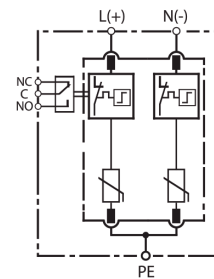
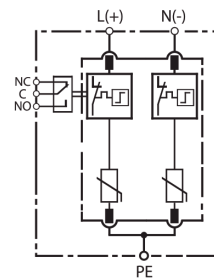
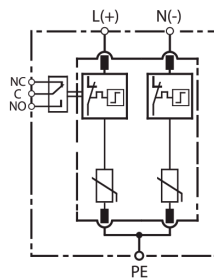
- SPD Type 2+3 (2 varistors)
- Visual and remote signalling (Optional) of varistor status

**6P.37.9.060.1002**



- SPD Type 2+3 (2 varistors) for
- Visual and remote signalling (Optional) of varistor status

6P.37  
Screw terminals



For outline drawing see page 15

SPD specification		Varistor module		Varistor module		Varistor module	
Nominal voltage (U <sub>N</sub> )	V DC	24	48	60			
Max. continuous operating voltage (U <sub>C</sub> ) V AC/DC		35/45	65/85	75/100			
Nominal discharge current (8/20 μs) (I <sub>n</sub> )	kA	10	10	10			
Maximum discharge current (8/20 μs) (I <sub>max</sub> )	kA	20	20	20			
Voltage protection level at I <sub>n</sub> (U <sub>p</sub> )	kV	0.2	0.4	0.5			
Response time (t <sub>a</sub> )	ns	25	25	25			
Maximum overcurrent protection (fuse rating gL/gG)	A	32	32	32			
Replacement module code		6P.37.9.024.0002	6P.37.9.048.0002	6P.37.9.060.0002			
Other technical data							
Ambient temperature range	°C	-40...+80					
Protection degree		IP 20					
Wire size		cross - sectional area of input/output wire Solid/Stranded					
	mm <sup>2</sup>	1 x 1.5 / 1 x 6					
Wire strip length	mm	12.5					
Screw torque	Nm	3					
Dimension (Lx Wx H)	mm	90 x 18 x 77	90 x 18 x 77	90 x 18 x 77			
Remote status signalling contact specification		1 CO (SPDT)					
Contact configuration		0.5/0.1					
Rated current	A AC/DC	250/250					
Rated voltage	V AC/DC	solid cable		stranded cable			
Wire size		1.5		1.5			
	mm <sup>2</sup>	16		16			
	AWG						
Approvals (according to type)		<b>CE</b>					