DC Surge Protection Devices Ex9UEP1+2

- **DC Surge Protection Devices suitable for Photovoltaic systems**
- **PV T1+T2 (Class I+II, Type 1+2, B+C) class SPDs**
- **Meet requirements of EN 61643-31**
- **Nominal discharge current I_n 20 kA (8/20 µs) per path**
- **Maximum discharge current I_{max} 40 kA (8/20 µs)**
- **Impulse discharge current I_{imp} 6.25 kA (10/350 µs)**
- **Max. continuous operational voltage U_{CPV} from 500 to 1500 V DC**
- **For grounded and ungrounded PV systems**
- **Plug-in module design with status indication**

DC Surge Protection devices Ex9UEP1+2 are suitable for photovoltaic applications. These SPDs are designed and tested according PV I+II class from EN 61643-31 standard.

Indication front window helps users to know the status of device and remote-signal port is able to provide remote indication and alarm.

Plug-in module design make it convenient to change module without device disconnection.

Type Key

Ex9	UEP	1+2	6.25	R	3P	1500	
Product family	Product	Class	Current	Signaling contact	Module width	Max. oper. voltage	Plug-in module
Ex9	UEP: DC Surge Protective Devices	PV T1+T2 class I+II B+C T1+T2	I_{imp} (10/350µs) 6.25 kA	R: Yes _: No	1P: 1 MU 2P: 2 MU 3P: 3 MU	500 V DC 600 V DC 750 V DC 1000 V DC 1200 V DC 1500 V DC	_: Complete device M: Plug-in module only

Certification marks

CE

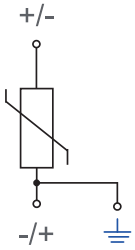
NOARK

DC Surge Protection Devices Ex9UEP1+2

Complete devices for grounded PV systems, 1-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
500 V DC	I	no	111739	Ex9UEP1+2 6.25 1P 500	1/96
500 V DC	I	yes	111740	Ex9UEP1+2 6.25R 1P 500	1/96
600 V DC	I	no	111741	Ex9UEP1+2 6.25 1P 600	1/96
600 V DC	I	yes	111742	Ex9UEP1+2 6.25R 1P 600	1/96
750 V DC	I	no	111743	Ex9UEP1+2 6.25 1P 750	1/96
750 V DC	I	yes	111744	Ex9UEP1+2 6.25R 1P 750	1/96

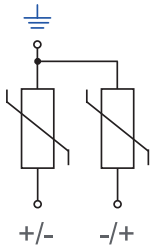
Connection diagram:



Complete devices for ungrounded PV systems, 2-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
500 V DC	U	no	111745	Ex9UEP1+2 6.25 2P 500	1/81
500 V DC	U	yes	111746	Ex9UEP1+2 6.25R 2P 500	1/81
600 V DC	U	no	111747	Ex9UEP1+2 6.25 2P 600	1/81
600 V DC	U	yes	111748	Ex9UEP1+2 6.25R 2P 600	1/81
750 V DC	U	no	111749	Ex9UEP1+2 6.25 2P 750	1/81
750 V DC	U	yes	111750	Ex9UEP1+2 6.25R 2P 750	1/81

Connection diagram:

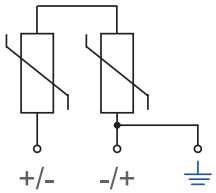


DC Surge Protection Devices Ex9UEP1+2

Complete devices for grounded PV systems, 2-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
1000 V DC	U	no	111751	Ex9UEP1+2 6.25 2P 1000	1/81
1000 V DC	U	yes	111752	Ex9UEP1+2 6.25R 2P 1000	1/81
1200 V DC	U	no	111753	Ex9UEP1+2 6.25 2P 1200	1/81
1200 V DC	U	yes	111754	Ex9UEP1+2 6.25R 2P 1200	1/81
1500 V DC	U	no	111755	Ex9UEP1+2 6.25 2P 1500	1/81
1500 V DC	U	yes	111756	Ex9UEP1+2 6.25R 2P 1500	1/81

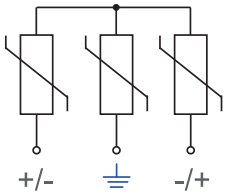
Connection diagram:



Complete devices for ungrounded PV systems, 3-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
1000 V DC	Y	no	111759	Ex9UEP1+2 6.25 3P 1000	1/54
1000 V DC	Y	yes	111760	Ex9UEP1+2 6.25R 3P 1000	1/54
1200 V DC	Y	no	111761	Ex9UEP1+2 6.25 3P 1200	1/54
1200 V DC	Y	yes	111762	Ex9UEP1+2 6.25R 3P 1200	1/54
1500 V DC	Y	no	111763	Ex9UEP1+2 6.25 3P 1500	1/54
1500 V DC	Y	yes	111764	Ex9UEP1+2 6.25R 3P 1500	1/54

Connection diagram:



Spare plug-in module

Max. oper. voltage U_{CPV}	Suitable for device	Article No.	Type	Packing
500 V DC	Ex9UEP1+2 6.25 1P 500	111765	Ex9UEP1+2 6.25 1P 500 M	1
600 V DC	Ex9UEP1+2 6.25 1P 600	111767	Ex9UEP1+2 6.25 1P 600 M	1
750 V DC	Ex9UEP1+2 6.25 1P 750	111769	Ex9UEP1+2 6.25 1P 750 M	1
500 V DC	Ex9UEP1+2 6.25 2P 500	111771	Ex9UEP1+2 6.25 2P 500 M	1
600 V DC	Ex9UEP1+2 6.25 2P 600	111773	Ex9UEP1+2 6.25 2P 600 M	1
750 V DC	Ex9UEP1+2 6.25 2P 750	111775	Ex9UEP1+2 6.25 2P 750 M	1
1000 V DC	Ex9UEP1+2 6.25 2P 1000	111777	Ex9UEP1+2 6.25 2P 1000 M	1
1200 V DC	Ex9UEP1+2 6.25 2P 1200	111779	Ex9UEP1+2 6.25 2P 1200 M	1
1500 V DC	Ex9UEP1+2 6.25 2P 1500	111781	Ex9UEP1+2 6.25 2P 1500 M	1
1000 V DC	Ex9UEP1+2 6.25 3P 1000	111785	Ex9UEP1+2 6.25 3P 1000 M	1
1200 V DC	Ex9UEP1+2 6.25 3P 1200	111787	Ex9UEP1+2 6.25 3P 1200 M	1
1500 V DC	Ex9UEP1+2 6.25 3P 1500	111789	Ex9UEP1+2 6.25 3P 1500 M	1

Technical Data Ex9UEP1+2

DC Surge Protection Devices PV T1+T2, I_{imp} = 6.25 kA (10/350 µs)

General parameters

Designed and suitable for photovoltaic applications
Modular devices, plug-in module design
Indication window helps users to know the status of device
Optional remote-signaling contact

Electrical parameters

	Ex9UEP1+2 6.25(R) 1P 500 / 600 / 750V			**Ex9UEP1+2 6.25(R) 2P 500 / 600 / 750V**			**Ex9UEP1+2 6.25(R) 2P 1000 / 1200 / 1500V**			**Ex9UEP1+2 6.25(R) 3P 1000 / 1200 / 1500V**		
Tested according to	EN 61643-31											
Classified type (test class)	PV T1+T2 (Class I+II, B+C, Type 1+2)											
Technology	MOV (Varistor)											
Protection function	thermal											
Protection mode	+ → PE − → PE + ↔ -											
Connection configuration	I [V]			U [V]			U [V]			Y [V]		
Rated operational DC voltage U_n	500	600	750	500	600	750	1000	1200	1500	1000	1200	1500
Max. continuous op. DC voltage U_{CPV} + → PE, − → PE + ↔ -	 500 500	 600 600	 750 750	 500 1000	 600 1200	 750 1500	 1000 1000	 1200 1200	 1500 1500	 1000 1000	 1200 1200	 1500 1500
Max. system voltage $U_{OC\ max}$ (according to general design rules IEC 62548, IEC/HD 60364-7-712)	545		680	545		680	1090		1365	1090		1365
Nominal frequency f	DC											
Nominal discharge current I_n (8/20 µs)	20 kA											
Max. discharge current I_{max} (8/20 µs)	40 kA											
Impulse current I_{imp} (10/350 µs) + → PE, − → PE + ↔ -	 6.25 kA 6.25 kA			 6.25 kA 6.25 kA			 6.25 kA 6.25 kA			 6.25 kA 6.25 kA		
Total impulse current I_{TOTAL} (10/350 µs) + → PE, − → PE + ↔ -	 - -			 - -			 - -			 6.25 kA 6.25 kA		
Protection voltage U_p at I_n + → PE, − → PE + ↔ -	[kV] 2.0 2.0	[kV] 2.3 2.3	[kV] 2.5 2.5	[kV] 2.0 3.8	[kV] 2.3 4.2	[kV] 2.5 5.0	[kV] 3.8 3.8	[kV] 4.2 4.2	[kV] 5.0 5.0	[kV] 3.8 3.8	[kV] 4.2 4.2	[kV] 5.0 5.0
Residual current I_{PE} at U_{REF} DC	< 50 µA											
Residual current I_{PE} at U_{REF} AC	< 1 mA											
Short-circuit current rating I_{SCPV}	1000 A											
Number of ports	1											
Type of LV system	DC, grounded PV systems			DC, ungrounded PV systems			DC, grounded PV systems			DC, ungrounded PV systems		
SPD overload behaviour mode	OCM											
Remote contact (optional)	1 changeover (CO)											
Remote contact op. voltage / current AC U_{max} / I_{max} DC U_{max} / I_{max}	 250 V AC / 1 A 250 V DC / 0.1 A; 75 V DC / 0.5 A											

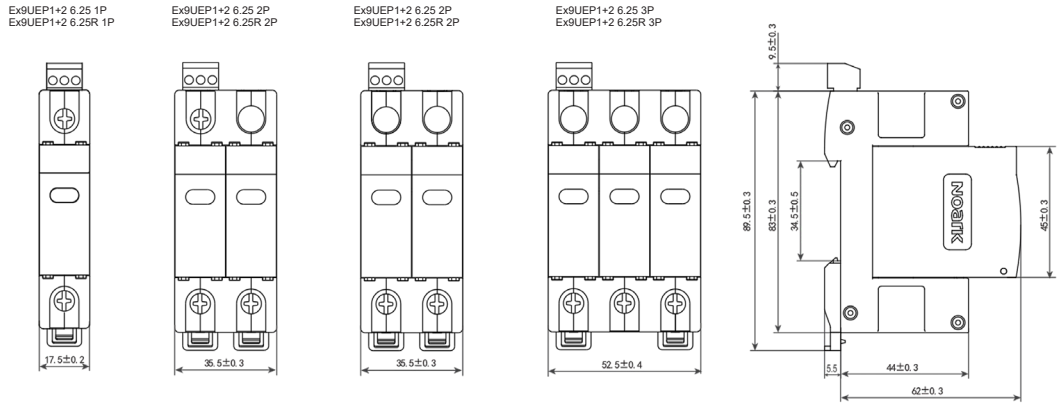
Technical Data Ex9UEP1+2

DC Surge Protection Devices PV T1+T2, I_{imp} = 6.25 kA (10/350 µs)

Mechanical parameters

Device width	17.5 mm (per module)
Device height	83 mm (89 mm including rail clip)
Frame size	45 mm
Method of mounting	fixed
Mounting	easy fastening onto 35 mm device rail (DIN)
Mounting position	arbitrary
Degree of protection	IP20
Terminals	lift, M5 screws
Terminal capacity	2.5 — 25 mm^2
Fastening torque of terminals	2 — 3.5 Nm
Remote contact terminal capacity	0.14 — 1.5 mm^2
Location	indoor
Installation class	III
Pollution degree	2
Accessibility	inaccessible
Ambient temperature	-40 — +80°C
Altitude	≤ 2000 m
Relative humidity	5 — 95 %
Weight (per pole)	0.12 kg

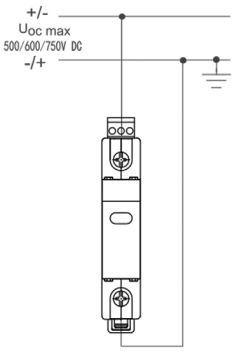
Dimensions



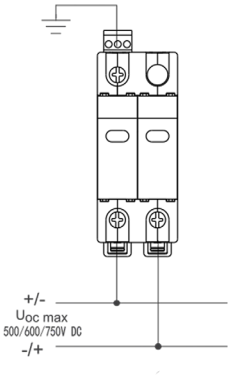
Technical Data Ex9UEP1+2

DC Surge Protection Devices PV T1+T2, I_{imp} = 6.25 kA (10/350 µs)

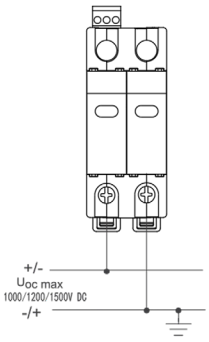
Connection diagrams, protection mode



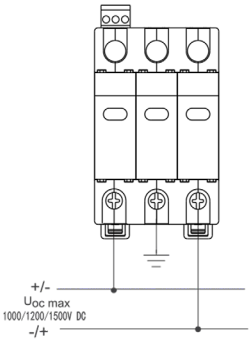
Ex9UEP1+2 6.25 1P
Ex9UEP1+2 6.25R 1P



Ex9UEP1+2 6.25 2P
Ex9UEP1+2 6.25R 2P



Ex9UEP1+2 6,25 2P
Ex9UEP1+2 6.25R 2P



Ex9UEP1+2 6.25 3P
Ex9UEP1+2 6.25R 3P