DC surge protection devices Ex9UEP

- **DC Surge Protection Devices suitable for Photovoltaic systems**
- **PV T2 (Class II, Type 2, C) class SPDs**
- **Meet requirements of EN 50539-11**
- **Nominal discharge current I_n 20 kA (8/20 µs) per path**
- **Maximum discharge current I_{max} 40 kA (8/20 µs)**
- **Max. continuous operational voltage UCPV from 600 to 1500 V DC**
- **For grounded and ungrounded PV systems**
- **Plug-in module design with status indication**
- **Optional remote indication contact**

DC Surge protection devices Ex9UEP are suitable for photovoltaic applications. These SPDs are designed and tested according PV T2 class from EN 50539-11 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		20	R	3P	1200	
Product family	Product	Class	Current	Signaling contact	Module width	Max. oper. voltage	Plug-in module
Ex9	UEP: DC Surge Protective Devices	_: PV T2 class II C T2	I_n (8/20 µs) 20 kA	R: Yes _: No	1P: 1 MU 2P: 2 MU 3P: 3 MU	600 V DC 750 V DC 1200 V DC 1500 V DC	_: Complete device M: Plug-in module only

Certification marks

CE

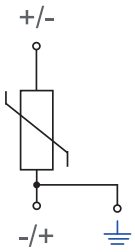
Noark

DC surge protection devices Ex9UEP

Complete devices for grounded PV systems, 1-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
600 V DC	I	no	108016	Ex9UEP 20 1P 600	1/96
600 V DC	I	yes	108017	Ex9UEP 20R 1P 600	1/96
750 V DC	I	no	110171	Ex9UEP 20 1P 750	1/96
750 V DC	I	yes	110172	Ex9UEP 20R 1P 750	1/96

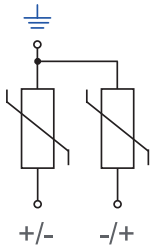
Connection diagram:



Complete devices for ungrounded PV systems, 2-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
600 V DC	U	no	108018	Ex9UEP 20 2P 600	1/81
600 V DC	U	yes	108019	Ex9UEP 20R 2P 600	1/81
750 V DC	U	no	110173	Ex9UEP 20 2P 750	1/81
750 V DC	U	yes	110174	Ex9UEP 20R 2P 750	1/81

Connection diagram:

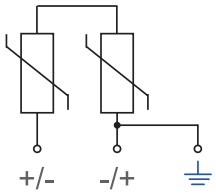


DC surge protection devices Ex9UEP

Complete devices for grounded PV systems, 2-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
1200 V DC	U	no	108020	Ex9UEP 20 2P 1200	1/81
1200 V DC	U	yes	108021	Ex9UEP 20R 2P 1200	1/81
1500 V DC	U	no	110179	Ex9UEP 20 2P 1500	1/81
1500 V DC	U	yes	110180	Ex9UEP 20R 2P 1500	1/81

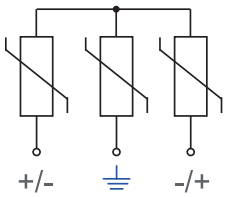
Connection diagram:



Complete devices for ungrounded PV systems, 3-pole

Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
1200 V DC	Y	no	108022	Ex9UEP 20 3P 1200	1/54
1200 V DC	Y	yes	108023	Ex9UEP 20R 3P 1200	1/54
1500 V DC	Y	no	110181	Ex9UEP 20 3P 1500	1/54
1500 V DC	Y	yes	110182	Ex9UEP 20R 3P 1500	1/54

Connection diagram:



Spare plug-in module

Max. oper. voltage U_{CPV}	Suitable for device	Article No.	Type	Packing
600 V DC	Ex9UEP 20 1P 600	108024	Ex9UEP 20 1P 600 M	1
750 V DC	Ex9UEP 20 1P 750	110183	Ex9UEP 20 1P 750 M	1
600 V DC	Ex9UEP 20 2P 600	108025	Ex9UEP 20 2P 600 M	1
750 V DC	Ex9UEP 20 2P 750	110184	Ex9UEP 20 2P 750 M	1
1200 V DC	Ex9UEP 20 2P 1200	108026	Ex9UEP 20 2P 1200 M	1
1500 V DC	Ex9UEP 20 2P 1500	110187	Ex9UEP 20 2P 1500 M	1
1200 V DC	Ex9UEP 20 3P 1200	108027	Ex9UEP 20 3P 1200 M	1
1500 V DC	Ex9UEP 20 3P 1500	110188	Ex9UEP 20 3P 1500 M	1

Technical Data Ex9UEP

DC surge protection devices PV T2, I_n = 20 kA (8/20 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

	Ex9UEP 20(R) 1P 600 / 750V		**Ex9UEP 20(R) 2P 600 / 750V**		**Ex9UEP 20(R) 2P 1200 / 1500V**		**Ex9UEP 20(R) 3P 1200 / 1500V**	
Tested according to	EN 50539-11							
Classified type (test class)	PV T2 (Class II, C, Type 2)							
Technology	MOV (Varistor)							
Protection function	thermal							
Protection mode	+ → PE − → PE + ↔ -							
Connection configuration	I		U		U		Y	
Rated operational DC voltage U_n	600 V	750 V	600 V	750 V	1200 V	1500 V	1200 V	1500 V
Max. continuous op. DC voltage U_{CPV} + → PE, − → PE + ↔ -	 600 V 600 V	 750 V 750 V	 600 V 1200 V	 750 V 1500 V	 1200 V 1200 V	 1500 V 1500 V	 1200 V 1200 V	 1500 V 1500 V
Max. system voltage $U_{OC\ max}$ (according to general design rules IEC 62548, IEC/HD 60364-7-712)	600 V	750 V	600 V	750 V	1200 V	1500 V	1200 V	1500 V
Nominal frequency f	DC							
Nominal discharge current I_n (8/20 µs)	20 kA							
Max. discharge current I_{max} (8/20 µs)	40 kA							
Total discharge current I_{TOTAL} (8/20 µs)	-		40 kA		40 kA		40 kA	
Protection voltage U_p at I_n + → PE, − → PE + ↔ -	 2.3 kV 2.3 kV	 2.5 kV 2.5 kV	 2.3 kV 4.2 kV	 2.5 kV 5 kV	 4.2 kV 4.2 kV	 5 kV 5 kV	 4.2 kV 4.2 kV	 5 kV 5 kV
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 / 0.5 A 250 V DC / 0.1 A; 75 V DC / 0.5 A							

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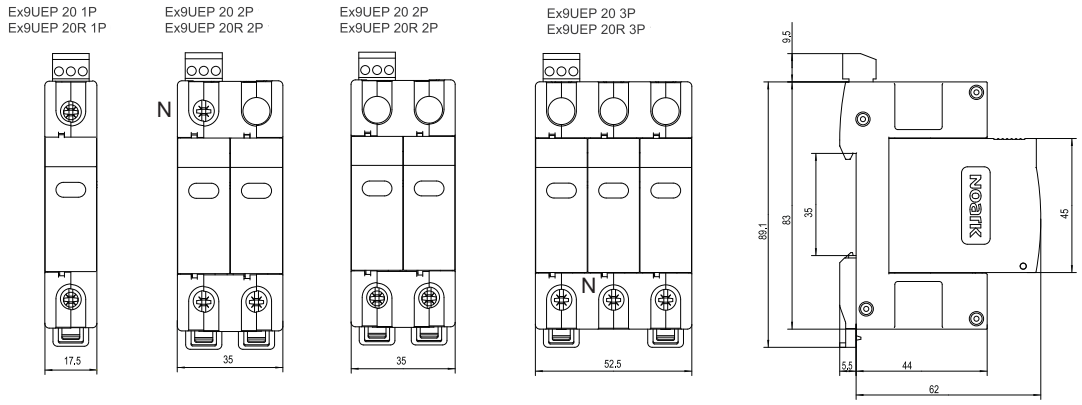
DC surge protection devices PV T2, I_n = 20 kA (8/20 µs)

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	IP40, terminals IP20
Terminals	lift, M5 screws
Terminal capacity	2.5 — 25 mm²
Fastening torque of terminals	2 — 3.5 Nm
Remote contact terminal capacity	0.14 — 1.5 mm²
Location	indoor
Installation class	III
Pollution degree	2
Accessibility	inaccessible
Ambient temperature	-40 — +70 °C
Altitude	≤ 2000 m
Relative humidity	5 — 95 %
Weight (per pole)	0.12 kg

Dimensions



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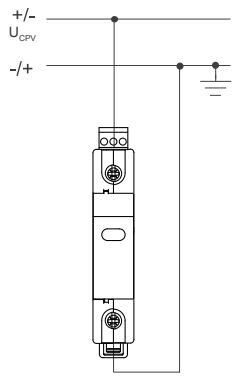
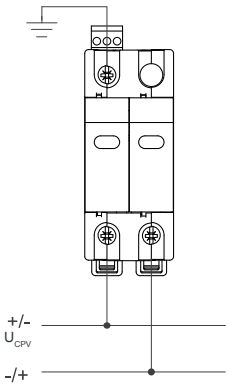
DC surge protection devices PV T2, I_n = 20 kA (8/20 µs)

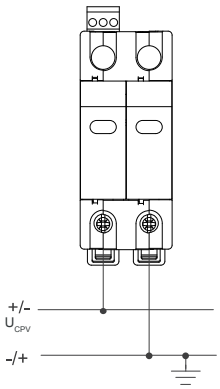
Connection diagrams, protection mode



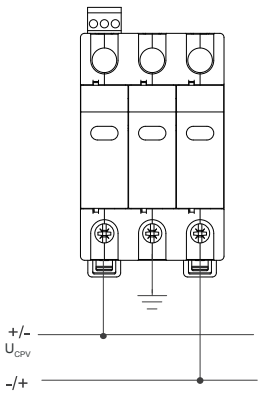
Ex9UEP 20 1P
Ex9UEP 20R 1P



Ex9UEP 20 2P
Ex9UEP 20R 2P



Ex9UEP 20 2P
Ex9UEP 20R 2P



Ex9UEP 20 3P
Ex9UEP 20R 3P