

DC Surge Protection Devices Ex9UEP



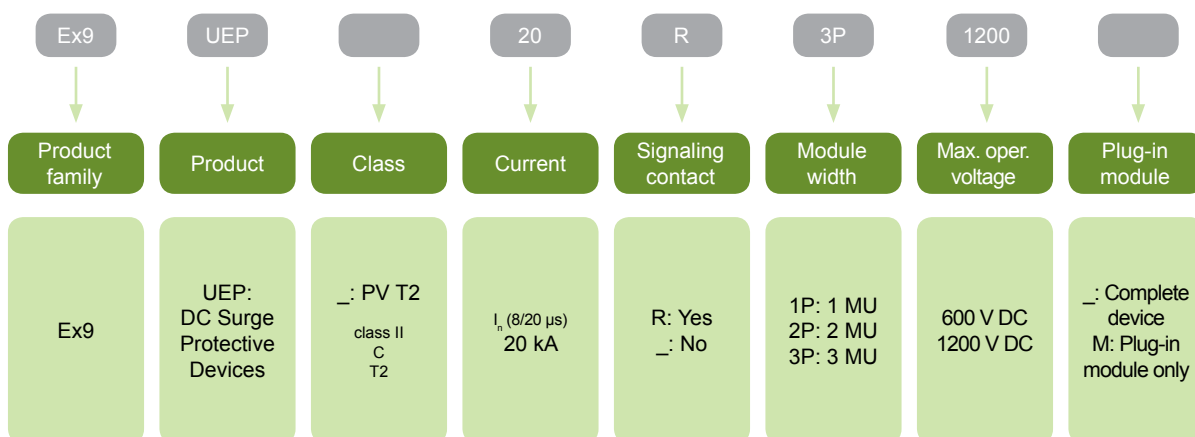
- DC Surge Protection Devices suitable for Photovoltaic systems
- PV T2 (Class II, Type 2, C) class SPDs
- Meet requirements of EN 50539-11
- Nominal discharge current I_n 20 kA (8/20 μ s) per path
- Maximum discharge current I_{max} 40 kA (8/20 μ s)
- Max. continuous operational voltage U_{CPV} 600 V DC or 1200 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



Certification marks



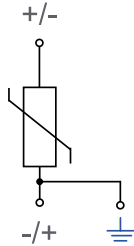
DC Surge Protection Devices Ex9UEP

600 V complete devices for grounded PV systems, width 1 MU



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

Connection diagram:

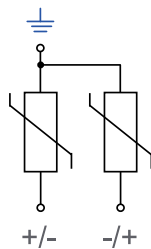


600 V complete devices for ungrounded PV systems, width 2 MU



Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
600 V DC	U	no	108018	Ex9UEP 20 2P 600	1/60
600 V DC	U	yes	108019	Ex9UEP 20R 2P 600	1/60

Connection diagram:



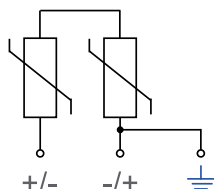
DC Surge Protection Devices Ex9UEP

1200 V complete devices for grounded PV systems, width 2 MU



Max. oper. voltage U_{CPV}	Connection configuration	Signaling contact	Article No.	Type	Packing
1200 V DC	U	no	108020	Ex9UEP 20 2P 1200	1/60
1200 V DC	U	yes	108021	Ex9UEP 20R 2P 1200	1/60

Connection diagram:

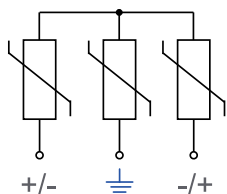


1200 V complete devices for ungrounded PV systems, width 3 MU



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

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
600 V DC	Ex9UEP 20 2P 600	108025	Ex9UEP 20 2P 600 M	1
1200 V DC	Ex9UEP 20 2P 1200	108026	Ex9UEP 20 2P 1200 M	1
1200 V DC	Ex9UEP 20 3P 1200	108027	Ex9UEP 20 3P 1200 M	1

Technical Data Ex9UEP

DC Surge Protection Devices PV T2, $I_n = 20 \text{ kA}$ (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 600V	Ex9UEP 20(R) 2P 600V	Ex9UEP 20(R) 2P 1200V	Ex9UEP 20(R) 3P 1200V
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 + ↔ -	+ → PE - → PE + ↔ -	+ → PE - → PE + ↔ -	+ → PE - → PE + ↔ -
Connection configuration	I	U	U	Y
Rated operational voltage U_n	600 V DC	600 V DC	1200 V DC	1200 V DC
Max. continuous oper. voltage U_{CPV} + → PE, - → PE + ↔ -	600 V DC 600 V DC	600 V DC 1200 V DC	1200 V DC 1200 V DC	1200 V DC 1200 V DC
Max. system voltage $U_{OC,max}$	545 V DC	545 V DC	1090 V DC	1090 V DC
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	2.3 kV 4.2 kV	4.2 kV 4.2 kV	4.2 kV 4.2 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_{SCP}	1000 A			
Number of ports	1			
Type of LV system	DC, 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 30 V DC / 0.5 A			

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DC Surge Protection Devices PV T2, $I_n = 20 \text{ kA}$ (8/20 μs)

Mechanical parameters

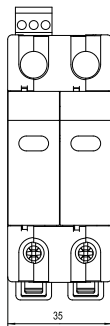
Device width	17.5 mm (per module)
Device height	83 mm (89 mm including rail clip)
Frame size	45 mm
Method of mounting	fixed
Mounting	easy fastening onto 35 mm device rail (DIN)
Mounting position	arbitrary
Degree of protection	IP40, terminals IP20
Terminals	lift, M5 screws
Terminal capacity	2.5 — 25 mm 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	-5 — +40 °C
Altitude	≤ 2000 m
Relative humidity	5 — 95 %
Weight (per pole)	0.12 kg

Dimensions

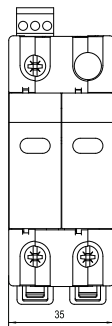
Ex9UEP 20 1P 600
Ex9UEP 20R 1P 600



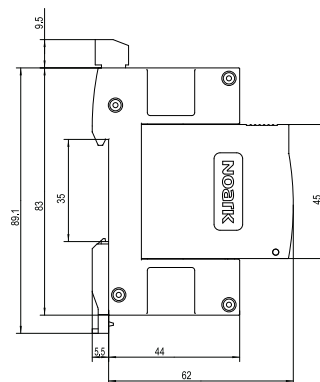
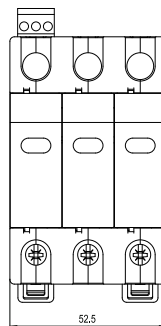
Ex9UEP 20 2P 600
Ex9UEP 20R 2P 600



Ex9UEP 20 2P 1200
Ex9UEP 20R 2P 1200



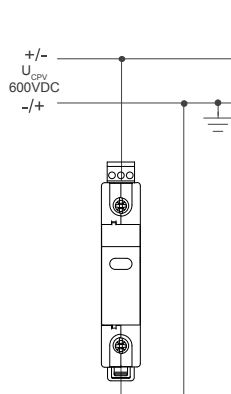
Ex9UEP 20 3P 1200
Ex9UEP 20R 3P 1200



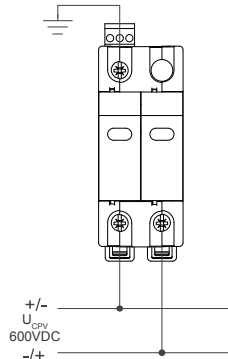
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DC Surge Protection Devices PV T2, $I_n = 20 \text{ kA}$ (8/20 μs)

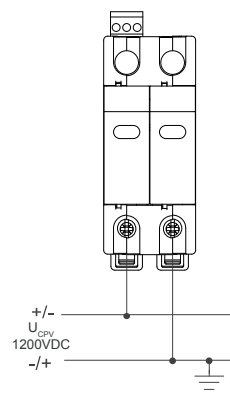
Connection diagrams, protection mode



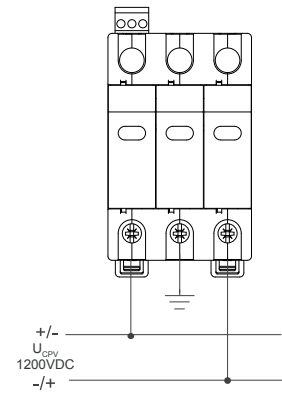
Ex9UEP 20 1P 600
Ex9UEP 20R 1P 600



Ex9UEP 20 2P 600
Ex9UEP 20R 2P 600



Ex9UEP 20 2P 1200
Ex9UEP 20R 2P 1200



Ex9UEP 20 3P 1200
Ex9UEP 20R 3P 1200