

Surge Protection Devices Ex9UE1+2, 25 kA



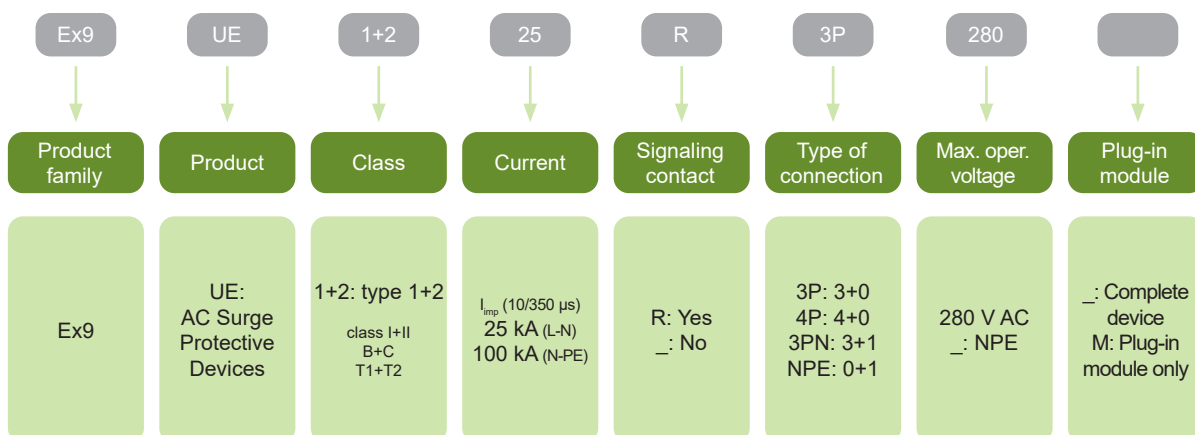
- Surge Protection Devices
- Type 1+2 (Class I+II, T1+T2, B+C)
- Tested according to EN 61643-11
- Max. impulse current I_{imp} 25 kA (10/350 μ s) per module and 100 kA for NPE module
- Maximum continuous operational voltage U_c 280 V AC
- Versions with 3+0, 3+1 and 4+0 connection
- Plug-in module design
- With and without remote indication contact
- Device status indicator

The Ex9UE1+2 25 line is a group of Class I+II Surge Protective Devices. They are intended as a protection against direct hit of lightning strokes of medium intensities. In standard three phase TN-C grid, they provides protection up to LPL I, II requirements given in EN 62305 with total lightning current introduced into electrical installation of 75 kA and total lightning stroke current 150 or 200 kA based on physical configuration and mutual position of grounding point of lightning rod, grounding point of the electrical installation and place of SPD installation.

The design of Ex9UE1+2 25 is hybrid based on combination of high energy Metal Oxide Varistors and isolation Spark Gap. This combination brings lower response time thanks to fast MOV and low voltage SG in comparison to a pure SG solution. The serial connection of MOV provides limitation of follow current characteristics for SG, but also full isolation due to serial connection of SG to MOV.

The main characteristics are defined by MOV part dominantly. Resulting protection level and response characteristics not only fulfill requirements of class I SPDs but also for class II ones. Ex9UE1+2 25 provides protection for both classes I and II. The modular design with plug in inserts allows simple and quick replacement of function modules in case of MOV is beyond if its lifespan due to high intensity or often occurrence of overvoltage peaks.

Type Key



Certification marks



Surge Protection Devices Ex9UE1+2

Type 1+2 SPDs (Class I+II, T1+T2, B+C) complete devices, $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$

- Maximum impulse current I_{imp} 25 kA (10/350 μs) per module and 100 kA (10/350 μs) for NPE (+1) module
- Nominal discharge current I_n 25 kA (8/20 μs) per module and 100 kA (8/20 μs) for NPE (+1) module
- Maximum discharge current I_{max} 60 kA (8/20 μs) per module and 100 kA (8/20 μs) for NPE (+1) module
- Maximum continuous operational voltage U_c 280 V AC per module and 255 V AC for NPE (+1) module
- Due to I_{imp} 25 kA per module suitable for LPL I - IV according to EN 62305 in standard 3-phase TN-C and TN-S installations



Operating voltage	Connection	Signaling contact	Article No.	Type	Packing
280 V AC	3+0	no	105503	Ex9UE1+2 25 3P 280	1/27
280 V AC	3+0	yes	105504	Ex9UE1+2 25R 3P 280	1/27
280 V AC	3+1	no	105505	Ex9UE1+2 25 3PN 280	1/18
280 V AC	3+1	yes	105506	Ex9UE1+2 25R 3PN 280	1/18
280 V AC	4+0	no	105507	Ex9UE1+2 25 4P 280	1/18
280 V AC	4+0	yes	105508	Ex9UE1+2 25R 4P 280	1/18

Type 1+2 spare modules, $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$



Max. oper. voltage U_c	Max. imp. current I_{imp}	Article No.	Type	
280 V AC	25 kA	105495	Ex9UE1+2 25 1P 280 M	1/81
255 V AC	100 kA	105496	Ex9UE1+2 100 NPE M	1/81

Technical Data Ex9UE1+2

Surge Protection Devices Type 1+2, $I_{imp} = 25 \text{ kA}$ (10/350 μs)

General parameters

Suitable for protection of electrical installations against transient overvoltage caused by direct and indirect lightning strokes or switching processes

Plug-in module design

Indication window and optional remote-signaling contact help users to know the status of device

Due to I_{imp} 25 kA per module suitable for LPL I - IV according to EN 62305 in standard 3-phase TN-C and TN-S installations

Electrical parameters

	3+0, 4+0, 3+1 (L-N/PE/PEN connection)	3+1 (+1 N-PE connection)
Tested according to	EN 61643-11	
Classified type (test class)	Type 1+2 (Class I+II, B+C, T1+T2)	
Technology	MOV+GTD (Varistor+Spark-gap)	GDT (Spark-gap)
Rated operational voltage U_n	230 / 400 V AC	
Reference test voltage U_{REF}	255 V AC	
Rated load current I_L	125 A	
Max. continuous operational voltage U_c	280 V AC	255 V AC
Nominal frequency f	50/60 Hz	
Nominal discharge current I_n (8/20 μs)	25 kA per pole	100 kA per pole
Max. impulse current I_{imp} (10/350 μs)	25 kA per pole	100 kA per pole
Impulse current specific energy W/R	156 kJ/ Ω	2500 kJ/ Ω
Max discharge current I_{max} (8/20 μs)	60 kA per pole	60 kA per pole, 100 kA NPE
Protection voltage U_p at I_n	1.5 kV	1.5 kV
Protection voltage U_p at I_{max}	2.0 kV	-
Protection voltage U_p at 5 kA (8/20 μs)	< 1.3 kV	-
Follow current interrupting rating I_n	-	100 A
Temporary overvoltage U_T (withstand)		
5 s	335 V	1200 V
200 ms	335 V	-
Residual current I_{PE} at U_{REF}	$\leq 1 \text{ mA}$	-
Response time	$\leq 100 \text{ ns}$	$\leq 100 \text{ ns}$
Max. back-up fuse	315 A gG	-
Short-circuit current rating I_{SCCR}	10 kA	-
Short-circuit withstand capability	25 kA	-
Current factor k	1.6	-
Number of ports	1	
Type of LV system	TN-C, TN-S, TN-C-S, TT (3+1)	
Remote contact (optional)	1 changeover (CO)	
Remote contact op. voltage / current		
AC U_{max} / I_{max}	250 V AC / 1 A	
DC U_{max} / I_{max}	30 V DC / 1 A	

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Surge Protection Devices Type 1+2, $I_{imp} = 25 \text{ kA (10/350 } \mu\text{s)}$

Table of tolerance zones at 1 mA

	Max. continuous operational voltage U_c	Voltage tolerance zone at 1mA
Ex9UE1+2 12.5	275 V	387 - 473 V
Ex9UE2 20	275 V	387 - 473 V
	320 V	459 - 561 V
	385 V	558 - 682 V
	440 V	639 - 781 V
Ex9UE2 30	350 V	504 - 616 V
	440 V	639 - 781 V
Ex9UEP 20	500/1000 V	643.5 - 786.5 V
	600/1200 V	738 - 902 V
	750/1500 V	950 - 1100 V

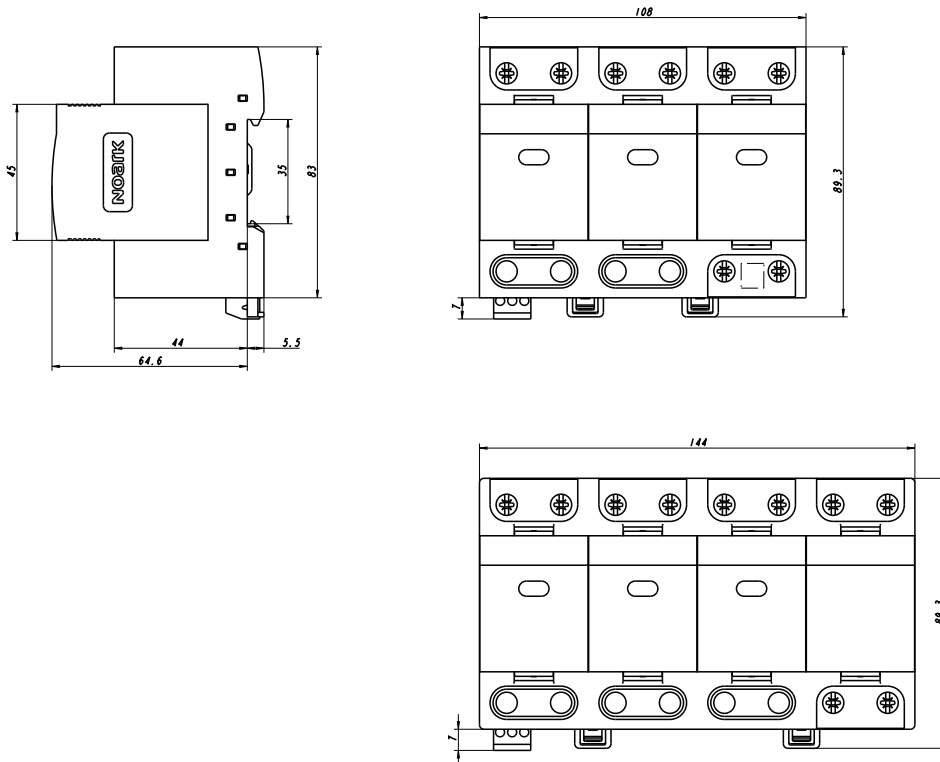
Mechanical parameters

Device width	36 mm (per pole/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	10 — 50 mm ²
Fastening torque of terminals	2.5 — 3.5 Nm
Remote contact terminal capacity	0.14 — 1.5 mm ²
Location	indoor
Ambient temperature	-40 — +80 °C
Altitude	≤ 2000 m
Relative humidity	30 — 90 %
Weight (3P / 3P+N / 4P)	0.78 / 1.00 / 1.08 kg

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Dimensions



Connection diagrams, protection mode

