

Surge Protection Devices Ex9UE2



- Surge Protection Devices
- Type 2 (Class II, T2, C)
- Tested according to EN 61643-11
- Nominal discharge current I_n 20 kA (8/20 μ s) per module and 40 kA for NPE module
- Maximum continuous operational voltage U_c from 275 V up to 440 V AC
- Versions with 1+0, 1+1, 2+0, 3+0, 3+1 and 4+0 connection
- Plug-in module design
- With and without remote indication contact
- Device status indicator

The Ex9UE2 line is a group of Class II Surge Protective Devices. They are intended as a protection against transient overvoltage caused by fast switching operations or indirect hits of lightning strokes (residuum effects).

It is recommended to install Class II SPDs every 10 – 20 meters of cable length repetitively, typically to main and sub distribution boards. The Ex9UE2 20 440 are designed for direct coordination with Class I SPDs of line Ex9UE1 35. In case of Ex9UE2 20 275, the coordination with the line Ex9UE1 35 is done by means of 10 m cable length.

The design of Ex9UE2 is based on Metal Oxide Varistors. Such design provides very low response time. 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 often occurrence of overvoltage peaks.

Type Key

Ex9	UE	1+2	12.5	R	1P	275	
Product family	Product	Class	Current	Signaling contact	Type of connection	Max. oper. voltage	Plug-in module
Ex9	UE: AC Surge Protective Devices	2: type 2 class II C T2	I_n (8/20 μ s) 20 kA (L-N) 40 kA (N-PE)	R: Yes _: No	1P: 1+0 2P: 2+0 3P: 3+0 4P: 4+0 1PN: 1+1 3PN: 3+1 NPE: 0+1	275 V AC 320 V AC 385 V AC 440 V AC _: NPE	_: Complete device M: Plug-in module only

Certification marks



Surge Protection Devices Ex9UE2

Type 2 SPD (Class II, T2, C) complete devices, $I_n = 20 \text{ kA}$ (8/20 μs)

- Nominal discharge current I_n 20 kA (8/20 μs) per module and 40 kA (8/20 μs) for NPE (+1) module
- Maximum discharge current I_{max} 40 kA (8/20 μs)



Max. oper. voltage U_c	Connection	Signaling contact	Article No.	Type	Packing
275 V AC	1+0	no	103347	Ex9UE2 20 1P 275	1/96
275 V AC	1+0	yes	103348	Ex9UE2 20R 1P 275	1/96
275 V AC	1+1	no	103349	Ex9UE2 20 1PN 275	1/60
275 V AC	1+1	yes	103350	Ex9UE2 20R 1PN 275	1/60
275 V AC	2+0	no	103351	Ex9UE2 20 2P 275	1/60
275 V AC	2+0	yes	103352	Ex9UE2 20R 2P 275	1/60
275 V AC	3+0	no	103353	Ex9UE2 20 3P 275	1/54
275 V AC	3+0	yes	103354	Ex9UE2 20R 3P 275	1/54
275 V AC	3+1	no	103355	Ex9UE2 20 3PN 275	1/45
275 V AC	3+1	yes	103356	Ex9UE2 20R 3PN 275	1/45
275 V AC	4+0	no	103357	Ex9UE2 20 4P 275	1/45
275 V AC	4+0	yes	103358	Ex9UE2 20R 4P 275	1/45
320 V AC	1+0	no	103754	Ex9UE2 20 1P 320	1/96
320 V AC	1+0	yes	103755	Ex9UE2 20R 1P 320	1/96
320 V AC	1+1	no	103756	Ex9UE2 20 1PN 320	1/60
320 V AC	1+1	yes	103757	Ex9UE2 20R 1PN 320	1/60
320 V AC	2+0	no	103758	Ex9UE2 20 2P 320	1/60
320 V AC	2+0	yes	103759	Ex9UE2 20R 2P 320	1/60
320 V AC	3+0	no	103760	Ex9UE2 20 3P 320	1/54
320 V AC	3+0	yes	103761	Ex9UE2 20R 3P 320	1/54
320 V AC	3+1	no	103762	Ex9UE2 20 3PN 320	1/45
320 V AC	3+1	yes	103763	Ex9UE2 20R 3PN 320	1/45
320 V AC	4+0	no	103764	Ex9UE2 20 4P 320	1/45
320 V AC	4+0	yes	103765	Ex9UE2 20R 4P 320	1/45
385 V AC	1+0	no	103766	Ex9UE2 20 1P 385	1/96
385 V AC	1+0	yes	103767	Ex9UE2 20R 1P 385	1/96
385 V AC	1+1	no	103768	Ex9UE2 20 1PN 385	1/60
385 V AC	1+1	yes	103769	Ex9UE2 20R 1PN 385	1/60
385 V AC	2+0	no	103770	Ex9UE2 20 2P 385	1/60
385 V AC	2+0	yes	103771	Ex9UE2 20R 2P 385	1/60
385 V AC	3+0	no	103772	Ex9UE2 20 3P 385	1/54
385 V AC	3+0	yes	103773	Ex9UE2 20R 3P 385	1/54
385 V AC	3+1	no	103774	Ex9UE2 20 3PN 385	1/45
385 V AC	3+1	yes	103775	Ex9UE2 20R 3PN 385	1/45
385 V AC	4+0	no	103776	Ex9UE2 20 4P 385	1/45
385 V AC	4+0	yes	103777	Ex9UE2 20R 4P 385	1/45
440 V AC	1+0	no	103359	Ex9UE2 20 1P 440	1/96
440 V AC	1+0	yes	103360	Ex9UE2 20R 1P 440	1/96
440 V AC	1+1	no	103361	Ex9UE2 20 1PN 440	1/60
440 V AC	1+1	yes	103362	Ex9UE2 20R 1PN 440	1/60
440 V AC	2+0	no	103363	Ex9UE2 20 2P 440	1/60
440 V AC	2+0	yes	103364	Ex9UE2 20R 2P 440	1/60
440 V AC	3+0	no	103365	Ex9UE2 20 3P 440	1/54
440 V AC	3+0	yes	103366	Ex9UE2 20R 3P 440	1/54
440 V AC	3+1	no	103367	Ex9UE2 20 3PN 440	1/45
440 V AC	3+1	yes	103368	Ex9UE2 20R 3PN 440	1/45
440 V AC	4+0	no	103369	Ex9UE2 20 4P 440	1/45
440 V AC	4+0	yes	103370	Ex9UE2 20R 4P 440	1/45

Type 2 SPD spare modules, $I_n = 20 \text{ kA}$ (8/20 μs)



Max. oper. voltage U_c	Nominal current I_n	Article No.	Type
275 V AC	20 kA	103344	Ex9UE2 20 1P 275 M
320 V AC	20 kA	103752	Ex9UE2 20 1P 320 M
385 V AC	20 kA	103753	Ex9UE2 20 1P 385 M
440 V AC	20 kA	103345	Ex9UE2 20 1P 440 M
N-PE	40 kA	103346	Ex9UE2 40 NPE M

Technical Data Ex9UE2

Surge Protection Devices Type 2, $I_n = 20 \text{ kA}$ (8/20 μs)

General parameters

Suitable for protection of electrical installations against transient overvoltage
Plug-in module design
Indication window helps users to know the status of device
Optional remote-signaling contact

Electrical parameters

	1+0, 2+0, 3+0, 4+0, 1+1, 3+1 (L-N/PE/PEN connection)				1+1, 3+1 (x+1 N-PE connection)
Tested according to	EN 61643-11				
Classified type (test class)	Type 2 (Class II, C, T2)				
Technology	MOV (Varistor)				GDT (Spark-gap)
Rated operational voltage U_n	230 / 400 V AC				
Reference test voltage U_{REF}	255 V AC				
Max. continuous operational voltage U_c	275 V AC	320 V AC	385 V AC	440 V AC	255 V AC
Nominal frequency f	50/60 Hz				
Nominal discharge current I_n (8/20 μs)	20 kA per pole				40 kA per pole
Max. impulse current I_{imp} (10/350 μs)	-				12 kA per pole
Max. discharge current I_{max} (8/20 μs)	40 kA per pole				
Protection voltage U_p at I_n	1.4 kV	1.6 kV	1.9 kV	2.2 kV	1.5 kV
Protection voltage U_p at I_{max}	2 kV	2.3 kV	2.5 kV	2.8 kV	1.5 kV
Protection voltage U_p at 5 kA (8/20 μs)	1 kV	1.15 kV	1.3 kV	1.5 kV	-
N-PE follow current interrupting rating I_{fi}	-				100 A
Temporary overvoltage U_t (withstand)	335 V	405 V	490 V	580 V	1200 V
Residual current I_{PE} at U_{REF}	$\leq 1 \text{ mA}$				-
MOV voltage of 1mA point	387-473 V	460-561 V	554-677 V	639-781 V	-
Response time	$\leq 25 \text{ ns}$				$\leq 100 \text{ ns}$
Max. back-up fuse	max. 125 A gG				-
Short-circuit withstand capability	50 kA				-
Short-circuit current rating I_{SCCR}	10 kA				-
Current factor k	1.6				-
Number of ports	1				
Type of LV system	TN-C, TN-S, TN-C-S, TT (1+1, 3+1), IT (1+1, 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 2, $I_n = 20 \text{ kA} (8/20 \mu\text{s})$

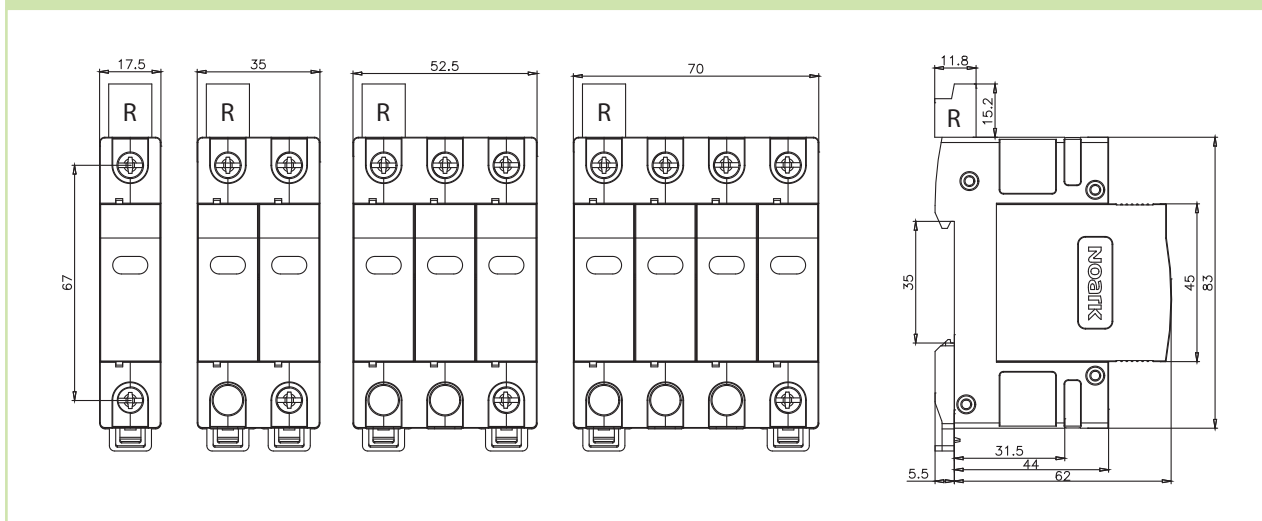
Table of tolerance zones at 1 mA

	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	17.5 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	combined lift + open mouthed, M5 screws
Terminal capacity	2.5 — 35 mm ²
Fastening torque of terminals	2 — 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 (per pole)	0.11 kg

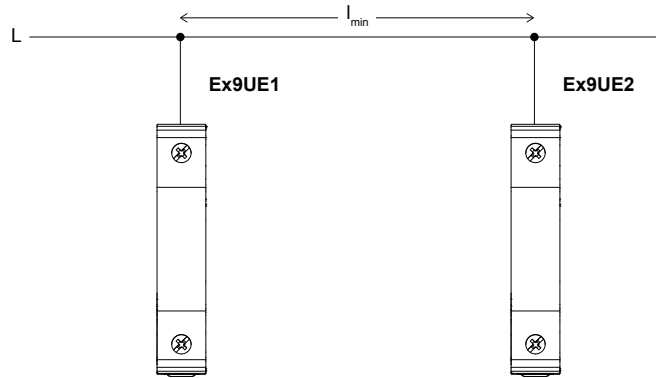
Dimensions



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SPD coordination



Class I	Class II	Min. cable length l_{min}
Ex9UE1 35	Ex9UE2 x x 440	0
Ex9UE1 35	Ex9UE2 x x 275	$\geq 10 \text{ m}$

Connection diagrams, protection mode

