

Overvoltage protection

Surge arrester

PU 1 TSG
PU 1 TSG +

NEW



- Triggered spark gap with up to 50 kA (10/350 µs) per unit
- Low response voltage of 0.9 kV or 1.5 kV
- Slim design
- Suitable for industrial and building applications
- No decoupling to connected Class II (C) surge arrestors required

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Lightning current surge arrester with spark gap

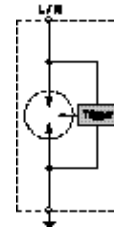
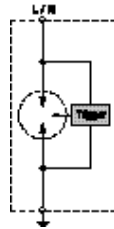
PU 1 TSG



PU 1 TSG



Schematic circuit diagram



Ordering data

Rated data

Voltage, Vn per circuit
Voltage, Vc per circuit
Requirement category (Class)
Lightning test current Iimp. (10/350µs)
Specific energy, per circuit
Safe disconnection with or without back-up fuse
Short-circuit proof with max. back-up fuse
Discharge current I _{PE}
Response time, ta, typ.
Back-up fuse max.
Protection level Up
Visual function indicator
Design
Color
Temperature
Connection in accordance with IEC 947-7-1
solid core
multiple core

Type **Part No.**

PU 1 TSG 35 kA / 0.9 kV	8561260000
230 Vac	
260 Vac	
I (B) surge arresters	
35 kA with load of 17.5As	
305 kJ/W	
3000 A / 50 Hz	
25 kA _{eff}	
2.5 mA	
1µs	
125 AgL	
<0.9 kV	
yes	
Insta IP20 / 90 x 18 x 66 mm (3.54 x 0.71 x 2.60 in.)	
grey	
-40°C...+85°C	
10...35 mm² (8...2 AWG)	
10...25 mm² (8...2 AWG)	

Type **Part No.**

PU 1 TSG 50 kA / 1.5 kV	8561230000
230 Vac	
260 Vac	
I (B) surge arresters	
50 kA with load of 25 As	
625 kJ/Ohm	
500 A / 50 Hz	
–	
0.1µA	
1µs	
125 AgL	
< 1.5 kV	
no	
Insta IP20 / 90 x 18 x 66 mm (3.54 x 0.71 x 2.60 in.)	
grey	
-40°C...+85°C	
10...35 mm² (8...2 AWG)	
10...25 mm² (8...2 AWG)	

Accessories

Cross-Connection OB unipolar 18-4
Cross-Connection OB unipolar 18-6

8619440000
8619450000

8619440000
8619450000

Markings

BZ18 L1, L2, L3, N, PE
BZ18 PE, PE, PE, PE, PE

8619460000
8619470000

8619460000
8619470000

Approvals

UL, KEMA

UL, KEMA

PU 1 TSG 8561260000

The lightning arrester in accordance with Class B (after the IEC 61643-1 (2.98) is the interface between 0 on 1 (to IEC 1312-1) as a lightning protection potential compensation for DIN VDE 0675 part for 6 (draft.11.89) /A1: 3/96) for and the Class I. The combination of several units is used for overvoltage protection in systems of type TN, TT and IT. By using an emission free spark gap, you can install these units before the electrical meter. The Lightning arrester is installed in close proximity to the electrical supply of the plant to be protected. PU1TSG 35 kA /0,9kV 260 V is the L1, L2, L3 for the neutral conductor into combination of three or four Lightning arrester between the Live Line and / or attached against the earthing system. The 3+1 are also called wiring and the 3+0/4+0 wirings (see illus. 1) here. A function display illuminates above 120 Vac also can indicate the failure of arrester electronics besides the net black-out.

PU 1 TSG 8561230000

The lightning arrester in accordance with the requirements of Class 1 (IEC 61643-1 (2.98) is the interface between 0 on 1 (to IEC 1312-1) as a lightning protection potential compensation for DIN VDE 0675 part for 6 (draft.11.89) /A1: 3/96) for and the Class I. The combination of several units are used for overvoltage protection in systems of the type TN, TT and IT. By using an emission free spark gap, you can install these units before the electrical meter. The Lightning arrester is installed in close proximity to the incoming supply of the plant to be protected. (PU1TSG 50 kA 260 V) is the L1, L2, L3 for the neutral conductor into combination of three or four Lightning arrester between the Live Line and P by a short circuit voltage without back-up fuse 500 A. The normal application is to connect between N & PE in 3 phase + switched neutral systems.

Lightning current surge arrester with spark gap

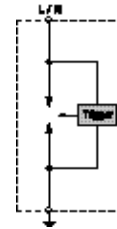
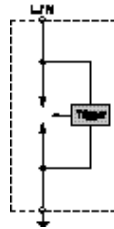
PU 1 TSG +



PU 1 TSG +



Schematic circuit diagram



Ordering data	Type	Part No.	Type	Part No.
Rated data	PU 1 TSG+ 50 kA / 0.9 kV	8561220000	PU 1 TSG+ 50 kA / 1.5 kV	8561250000
Voltage, Vn per circuit	330 Vac		440 Vac	
Voltage, Vc per circuit	330 Vac		440 Vac	
Requirement category (Class)	I (B) surge arresters		I (B) surge arresters	
Lightning test current Iimp. (10/350µs)	50 kA with load of 25 As		50 kA with load of 25 As	
Specific energy, per circuit	625 kJ/Ohm		625 kJ/Ohm	
Safe disconnection with or without back-up fuse	50 kA / 50 Hz		50 kA / 50 Hz	
Short-circuit proof with max. back-up fuse	25 kA _{eff}		25 kA _{eff}	
Discharge current I _{PE}	2.5 mA		2.5 mA	
Response time, ta, typ.	100 ns		100 ns	
Back-up fuse max.	250 AgL		250 AgL	
Protection level Up	< 0.9 kV		< 1.5 kV	
Visual function indicator	yes		yes	
Design	Insta IP20 / 151 x 36 x 81 mm (5.94 x 1.42 x 3.19 in.)		Insta IP20 / 151 x 36 x 81 mm (5.94 x 1.42 x 3.19 in.)	
Color	black		black	
Temperature	-40°C...+85°C		-40°C...+85°C	
Connection in accordance with IEC 947-7-1				
solid core	10...35 mm ² (8...2 AWG)		10...35 mm ² (8...2 AWG)	
multiple core	10...25 mm ² (8...2 AWG)		10...25 mm ² (8...2 AWG)	
Accessories				
Cross-Connection OB unipolar 18-4		8619440000		8619440000
Cross-Connection OB unipolar 18-6		8619450000		8619450000
Markings				
BZ18 L1, L2, L3, N, PE		8619460000		8619460000
BZ18 PE, PE, PE, PE, PE		8619470000		8619470000
Approvals				
	UL, KEMA		UL, KEMA	

PU 1 TSG+ 8561220000 / PU 1 TSG+ 8561250000

The lightning arrester in accordance with Class B (after the IEC 61643-1 (2.98) is the interface between 0 on 1 (to IEC 1312-1) as a lightning protection potential compensation for DIN VDE 0675 part for 6 (draft.11.89) /A1: 3/96) for and the Class I.

The combination of several units is used for overvoltage protection in systems of type TN, TT and IT. By using an emission free spark gap, you can install these units before the electrical meter. The Lightning arrester is installed in close proximity to the electrical supply of the plant to be protected.

PU1TSG+ 50 kA 330 V or 440V is the L1, L2, L3 for the neutral conductor into combination of three or four Lightning arrester between the Live Line and / or attached against the earthing system. The 3+1 are also called wiring and the 3+0/4+0 wirings here. This when mentioning the spark gap results for issues, a safe distance must be adhered of min 10 cm to potential leading parts through it. A function display illuminates above 120 Vac also can indicate the failure of arrester electronics besides the net black-out.

Lightning current surge arrester with spark gap

Lightning current surge arrester with spark gap for lightning protection potential equalization

Class I overvoltage protection (B-surge arrester)

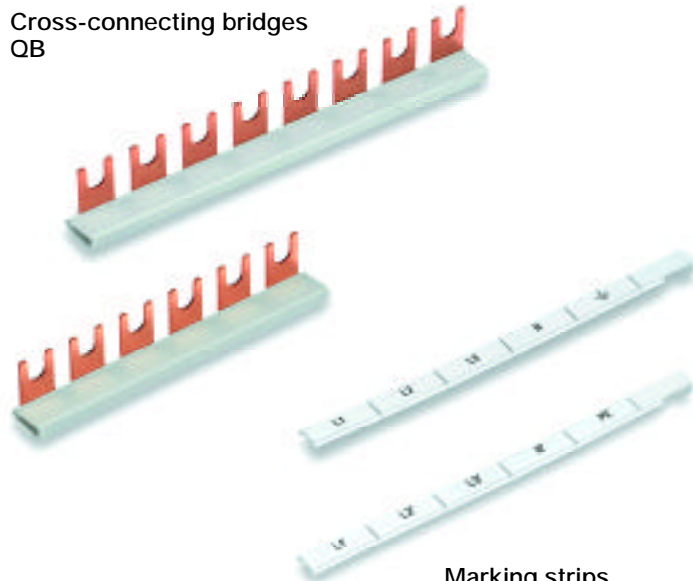
In accordance with the requirements of **Class B** (DIN VDE 0675 Part 6 (draft 11.89)/A1: 3/96) and **Class I** (in accordance with IEC 61643-1 [2.98]), lightning current surge arrester serves as a lightning protection potential equalization during interface transition from 0 to 1 (in accordance with IEC 1312-1).

With several in combination, the overvoltage protection is used in the TN, TT and IT power supplies.

The triggered spark gaps ensure the required potential equalization between building lightning protection and the grounding system of the power supply in case of lightning strikes.

Through the use of a spark gap, this product meets the requirements for Class B overvoltage protection protective equipment in accordance with the German VDEW directive (1st edition 1998).

Cross-connecting bridges QB



Marking strips BZ

Class connections for building installations

The PU1TSG 35kA Class I lightning current surge arrester can be connected between the main poles (L1, L2, L3). The N-PE spark gap is manufactured with the PU1TSG 50kA. Relatively short cables should be used for this purpose.

The triggered and unblown PU1TSG are either snapped onto the TS35 mounting rail in a switchgear cabinet or on a distribution board.

The maximum permissible operational voltage U_c is 260V AC. A decoupling to connected Class II (C) surge arresters is not necessary because triggered spark gaps with low pull-in voltage are used.

Please pay attention to the installation references.

Electrical connections for industrial installations

The PU1TSG+ 50kA/330V or 440V Class I lightning current surge arrester can be connected between the main poles (L1, L2, L3). The N-PE spark gap is manufactured with the PU1TSG 50kA. Relatively short cables should be used for this purpose.

The triggered and unblown PU1TSG+ 50kA are either snapped onto the TS35 mounting rail in a switchgear cabinet or on a distribution board. Due to the fact that emissions may arise during the response of the spark gap, a safety distance of at least 10cm must be kept from energized parts.

The maximum permissible operational voltage U_c is 330 or 440V AC. A decoupling to connected Class II (C) surge arresters for 470V is not necessary because triggered spark gaps with low pull-in voltage are used.

Please pay attention to the installation references.

Functional test, maintenance and approval

You can check the PU1TSG and PU1TSG+ overvoltage protection modules by visual inspection. A function display is illuminated from 120V AC on. This display can report a power failure or an ignition electronics failure. This functional test should be done more often during thunderstorms.

Through triggered spark gaps a very low protection level of below 1.5 kV, with high discharge current, is reached. The surge arrester PU1TSG is protected up to max. 125 AgL, depending on the conductor cross-section, and the PU1TSG+ up to 250 AgL.

The connection is rated for the following cross-sections:

solid core: 10...35 mm² (8...2 AWG)
multiple core: 10...25 mm² (8...2 AWG)

The operating temperature range is -40°C...+85°C.

The PU B lightning current surge arresters are approved by UL and KEMA. guaranteed. With these approvals the products can be used worldwide.