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## Type 2 surge arrester - VAL-SEC-T2-1S-175-FM - 2905348

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Plug-in surge arrester, in accordance with Type 2/Class II, for 1-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE), with remote indication contact.

### Why buy this product

- Varistor arrester free of leakage current
- High-performance gas-filled surge arrester for N/PE protection
- Extremely narrow design, just 12 mm per position
- High continuous voltage of 350 V AC for 230/400 V AC networks with high voltage fluctuations
- Pluggable
- Low voltage protection level of 1.5 kV
- Optical, mechanical status indicator
- With floating remote indication contact as an option
- Plugs can be checked with CHECKMASTER 2

### Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 948036

### Technical data

#### Dimensions

Height	97.9 mm
Width	25.4 mm
Depth	74.5 mm
Horizontal pitch	1.4 Div.

#### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (half sinus / 11 ms / 3x ±X, ±Y, ±Z)

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## Technical data

### Ambient conditions

Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)
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### General

Standards/specifications	IEC 61643-11 2011
	EN 61643-11 2012
IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN-S
	TT
Number of ports	One
SPD design	Combination type
Mode of protection	L-N
	L-PE
	N-PE
Mounting type	DIN rail: 35 mm
Color	light grey RAL 7035
	traffic grey A RAL 7042
Housing material	PA 6.6-FR 20% GF
	PBT-FR
Degree of pollution	2
Flammability rating according to UL 94	V-0
Type	DIN rail module, two-section, divisible
Number of positions	2
Surge protection fault message	Optical, remote indicator contact

### Protective circuit

Nominal voltage $U_N$	120 V AC (TN-S)
	120 V AC (TT)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$ (L-N)	175 V AC
Maximum continuous operating voltage $U_C$ (L-PE)	175 V AC
Maximum continuous voltage $U_C$ (N-PE)	150 V AC
Rated load current $I_L$	40 A (Biconnect M4 fork-type cable lug 6 mm <sup>2</sup> )
	63 A (TWIN ferrule 2 x 10 mm <sup>2</sup> )
Residual current $I_{PE}$	≤ 1 μA
Nominal discharge current $I_n$ (8/20) μs	20 kA
Maximum discharge current $I_{max}$ (8/20) μs	40 kA
Follow current interrupt rating $I_{fi}$ (N-PE)	100 A (150 V AC)
Short-circuit current rating $I_{SCCR}$	25 kA (in case of 315 A gG backup fuse)
	50 kA (in case of 200 A gG backup fuse)

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#### Protective circuit

Voltage protection level $U_p$ (L-N)	$\leq 0.85$ kV
Voltage protection level $U_p$ (L-PE)	$\leq 1.3$ kV
Voltage protection level $U_p$ (N-PE)	$\leq 0.95$ kV
Residual voltage $U_{res}$ (L-N)	$\leq 0.85$ kV (at $I_n$ )
	$\leq 0.75$ kV (at 10 kA)
	$\leq 0.65$ kV (at 5 kA)
	$\leq 0.63$ kV (at 4 kA)
	$\leq 0.57$ kV (at 2 kA)
Residual voltage $U_{res}$ (N-PE)	$\leq 0.4$ kV (at $I_n$ )
	$\leq 0.4$ kV (at 10 kA)
	$\leq 0.4$ kV (at 5 kA)
	$\leq 0.4$ kV (at 4 kA)
	$\leq 0.4$ kV (at 2 kA)
Front of wave sparkover voltage at 6 kV (1.2/50) $\mu$ s (N-PE)	$\leq 0.95$ kV
TOV behavior at $U_T$ (L-N)	240 V AC (5 s / withstand mode)
	240 V AC (120 min / safe failure mode)
TOV behavior at $U_T$ (N-PE)	1200 V AC (200 ms / withstand mode)
Response time $t_A$ (L-N)	$\leq 25$ ns
Response time $t_A$ (N-PE)	$\leq 100$ ns
Max. backup fuse with branch wiring	315 A (gG)
Max. backup fuse with V-type through wiring	40 A (gG / Biconnect M4 fork-type cable lug, 6 mm <sup>2</sup> )
	63 A (gG / TWIN ferrule 2x 10mm <sup>2</sup> )

#### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	PDT contact
Operating voltage	5 V AC ... 250 V AC
	125 V DC (200 mA DC)
Operating current	5 mA AC ... 1 A
	1 A (30 V DC)
Connection method	Pluggable screw connection
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section solid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16

#### Connection data

Connection method	Screw connection
Conductor cross section flexible	2.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>

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## Technical data

### Connection data

Conductor cross section solid	2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross section AWG	12 ... 4
Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	16 mm

### UL specifications

SPD Type	4CA
Maximum continuous operating voltage MCOV (L-N)	175 V AC
Maximum continuous operating voltage MCOV (L-G)	175 V AC
Maximum continuous operating voltage MCOV (N-G)	150 V AC
Nom. voltage	120 V AC
Mode of protection	L-N
	L-G
	N-G
Power distribution system	1
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-N)	1510 V
Measured limiting voltage MLV (L-G)	1630 V
Measured limiting voltage MLV (N-G)	560 V
Nominal discharge current I <sub>n</sub> (L-N)	20 kA
Nominal discharge current I <sub>n</sub> (L-G)	20 kA
Nominal discharge current I <sub>n</sub> (N-G)	20 kA
Follow current (N-G)	200 A (150 V AC)

### UL indicator/remote signaling

Operating voltage	125 V AC
Operating current	1 A
Tightening torque	2 lb <sub>F</sub> -in. ... 4 lb <sub>F</sub> -in.
Conductor cross section AWG	30 ... 14

### UL connection data

Conductor cross section AWG	14 ... 2 (solid)
	14 ... 4 (stranded)
Tightening torque	40 lb <sub>F</sub> -in. ... 50 lb <sub>F</sub> -in.

## Classifications

### eCl@ss

eCl@ss 5.1	27130801
eCl@ss 6.0	27130805
eCl@ss 8.0	27130805

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## Classifications

### eCl@ss

eCl@ss 9.0	27130805
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### ETIM

ETIM 5.0	EC000941
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## Approvals

### Approvals

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### Approvals

UL Recognized / KEMA-KEUR / cUL Recognized / CCA / IECCE CB Scheme / GL / EAC / cULus Recognized

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### Ex Approvals

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### Approvals submitted

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### Approval details

UL Recognized
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KEMA-KEUR
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cUL Recognized
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CCA
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IECEE CB Scheme
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GL
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EAC
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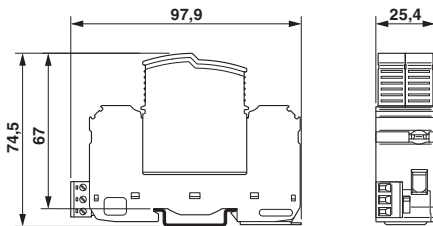
# Type 2 surge arrester - VAL-SEC-T2-1S-175-FM - 2905348

## Approvals

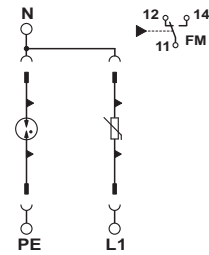
cULus Recognized US

## Drawings

Dimensional drawing



Circuit diagram



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