

# VAL-SEC-T2-2+F-120DC-FM - Type 2 surge arrester



1033788

<https://www.phoenixcontact.com/us/products/1033788>

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Pluggable surge protective device free of leakage current for 2-pos. isolated and grounded DC voltage systems with linear operating characteristic up to 120 V DC, for DIN rail mounting, 3-pos. base element with remote indication contact, three pluggable temperature-monitored protective elements, status message on each plug.

## Your advantages

- Surge protection family for universal use with optimum energy coordination from the lightning current arrester to the device protection
- Easy to maintain due to consistently pluggable protection modules
- Excellent level of information provided by mechanical/visual status indicator and remote indication contact
- More space in the control cabinet due to the narrow overall width of just 12 mm per position
- Free of leakage current so there is no influence on insulation monitoring

## Commercial data

Item number	1033788
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL01
Product key	CL1353
Catalog page	Page 59 (C-4-2019)
GTIN	4055626539973
Weight per piece (including packing)	293.2 g
Weight per piece (excluding packing)	287.57 g
Customs tariff number	85363090
Country of origin	DE

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## Technical data

### Product properties

IEC test classification	II
	T2
EN type	T2
IEC power supply system	DC
Type	DIN rail module, two-section, divisible
Product type	Surge arrester
Product family	SEC Family
Number of positions	2
Surge protection fault message	Optical, remote indicator contact

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

Nominal voltage $U_N$	100 V DC ... 120 V DC
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### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Operating voltage	5 V AC ... 250 V AC (Altitude $\leq$ 2000 m amsl)
	5 V AC ... 150 V AC (Altitude $>$ 2000 m amsl)
	125 V DC (200 mA DC)
Operating current	5 mA AC ... 1 A AC
	1 A DC (30 V DC)

### Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	4.5 Nm
Stripping length	16 mm
Conductor cross section flexible	2.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Conductor cross section rigid	2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross section AWG	12 ... 4
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>

### Remote fault indicator contact

Connection method	Plug-in/screw connection via COMBICON
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm

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Conductor cross section flexible	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section rigid	0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16

## Dimensions

Dimensional drawing	
Width	37.3 mm
Height	97.9 mm
Depth	74.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	2 Div.

## Material specifications

Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA6.6-FR 20% GF PBT-FR
Material group	I
Housing material	PA 6.6-FR 20 % GF PBT-FR

## Protective circuit

Mode of protection	(DC+) - (DC-) (DC+/DC-) - PE
Direction of action	(DC+/DC-) - PE
Nominal voltage $U_N$	100 V DC ... 120 V DC
Maximum continuous voltage $U_C$	150 V DC
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 $I_{PE}$	≤ 5 μA
Nominal discharge current $I_n$ (8/20) μs	20 kA
Maximum discharge current $I_{max}$ (8/20) μs	40 kA
Total discharge current $I_{total}$ (8/20) μs	40 kA
Short-circuit current rating $I_{SCCR}$	0.2 kA (without backup fuse) 6 kA (for 20 A gG/B backup fuse)
Voltage protection level $U_p$ (DC+) - (DC-)	≤ 1.8 kV
Voltage protection level $U_p$ (DC+/DC-) - PE	≤ 1.3 kV
Front of wave sparkover voltage at 6 kV (1.2/50) μs (DC+/DC-) - PE	≤ 1.1 kV
TOV behavior at $U_T$	174 V DC (5 s / withstand mode)
Max. backup fuse with V-type through wiring	20 A (gG / B at $I_{SCCR} > 200$ A)

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Max. backup fuse with branch wiring	20 A (gG / B at $I_{SCCR} > 200$ A)
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## Additional technical data

Maximum continuous voltage $U_C$	135 V AC (for operation in safety lighting systems)
Continuous operating current $I_{CPV}$	10 $\mu$ A

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	$\leq 6000$ m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x $\pm$ X, $\pm$ Y, $\pm$ Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

## Standards and regulations

Standards/specifications	IEC 61643-11
Note	2011

### EN 61643-11

Standards/specifications	EN 61643-11
Note	2012

## Mounting

Mounting type	DIN rail: 35 mm
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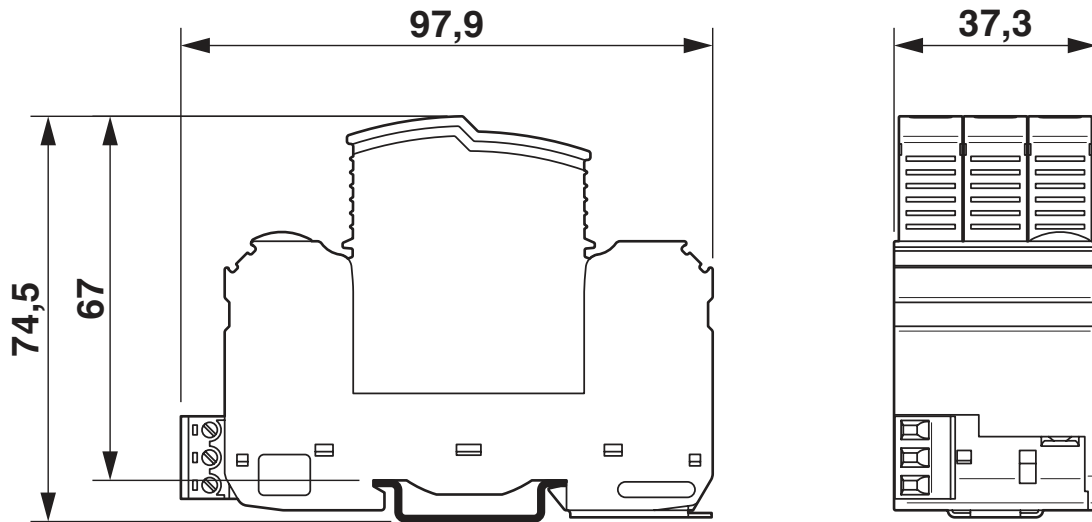


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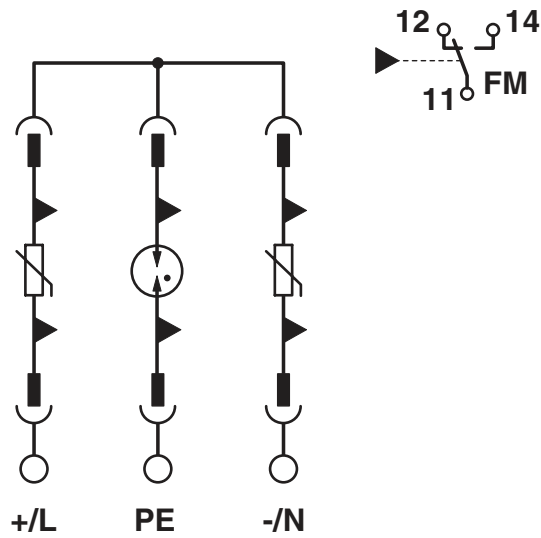
<https://www.phoenixcontact.com/us/products/1033788>

## Drawings

Dimensional drawing



Circuit diagram



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## Classifications

### ECLASS

ECLASS-11.0	27130805
ECLASS-13.0	27171302

### ETIM

ETIM 8.0	EC000941
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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## Accessories

### CLIPFIX 35 - End clamp

3022218

<https://www.phoenixcontact.com/us/products/3022218>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

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### X-PEN 0,35 - Marker pen

0811228

<https://www.phoenixcontact.com/us/products/0811228>



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm



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## EML (20XE)R - Label

0803452

<https://www.phoenixcontact.com/us/products/0803452>



Label, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, lettering field size: continuous x 20 mm

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## EML (20XE)R YE - Label

0803453

<https://www.phoenixcontact.com/us/products/0803453>



Label, Roll, yellow, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, lettering field size: continuous x 20 mm

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## ZBN 18:UNBEDRUCKT - Zack marker strip

2809128

<https://www.phoenixcontact.com/us/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## ZBN 18,LGS:L1-N,ERDE - Marker for terminal blocks

2749576

<https://www.phoenixcontact.com/us/products/2749576>



Marker for terminal blocks, Strip, white, labeled, horizontal: L1, L2, L3, N, GND, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## ZBN 18,LGS:ERDE - Marker for terminal blocks

2749589

<https://www.phoenixcontact.com/us/products/2749589>



Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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## ZBFM 5/WH:UNBEDRUCKT - Flat zack marker sheet

0803595

<https://www.phoenixcontact.com/us/products/0803595>



Flat zack marker sheet, Sheet, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 5.2 mm, lettering field size: 5 x 4.5 mm, Number of individual labels: 120

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## VAL-SEC-AGK-25 - Pick-off terminal

1452282

<https://www.phoenixcontact.com/us/products/1452282>



Pick-off terminal, can only be used in combination with VAL-SEC-T2 series, nominal voltage: 400 V, nominal current: 63 A, connection method: screw connection, rated cross-section: 25 mm<sup>2</sup>, cross-section: 1.5 mm<sup>2</sup> – 25 mm<sup>2</sup>, color: gray

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## VAL-SEC-T2-120DC-P - Type 2 surge protection plug

2907878

<https://www.phoenixcontact.com/us/products/2907878>



Replacement plug for surge protective devices from the VALVETRAB SEC product range for DC power sources.

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## VAL-SEC-T2-GDT-400DC-P - Type 2 surge protection plug

1052632

<https://www.phoenixcontact.com/us/products/1052632>



Replacement plug for surge protective devices from the VALVETRAB SEC product range for DC power sources. Protection of the path to the ground for 48 und 120 V DC.

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