

## Type 2 surge arrester - VAL-SEC-T2-2+0-120DC-FM - 2907874

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Pluggable surge protective device, in accordance with Type 2/Class II, for DC power sources with linear operating characteristics, with remote indication contact.

### Your advantages

- ✓ Varistor arrester with a low leakage current
- ✓ Extremely narrow design, just 12 mm per position
- ✓ High continuous voltage of 150 V DC for linear DC current sources with voltage fluctuations
- ✓ Pluggable
- ✓ Low voltage protection level
- ✓ Optical, mechanical status indicator
- ✓ With floating remote indication contact
- ✓ Plugs can be checked with CHECKMASTER 2



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 244594
GTIN	4055626244594
Weight per Piece (excluding packing)	220.000 g
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	97.9 mm
Width	25.4 mm

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## Technical data

### Dimensions

Depth	74.5 mm (incl. DIN rail 7.5 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	≤ 6000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

### General

IEC test classification	II
	T2
EN type	T2
IEC power supply system	DC
Mode of protection	(DC+) - (DC-)
	(DC+/DC-) - 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 $U_N$	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 $I_{PE}$	≤ 10 µA DC
Nominal discharge current $I_n$ (8/20) µs	20 kA
Maximum discharge current $I_{max}$ (8/20) µs	40 kA
Impulse discharge current (10/350) µs, charge	0.5 As

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### Technical data

#### Protective circuit

Impulse discharge current (10/350) $\mu$ s, specific energy	0.25 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu$ s, peak value $I_{imp}$	1 kA
Total discharge current $I_{total}$ (8/20) $\mu$ s	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-)	$\leq 1.8$ kV
Voltage protection level $U_p$ (DC+/DC-) - PE	$\leq 0.85$ kV
TOV behavior at $U_T$	174 V DC (5 s / withstand mode)
Response time $t_A$	$\leq 25$ ns
Max. backup fuse with V-type through wiring	20 A (gG / B at $I_{SCCR} > 200$ A)
Max. backup fuse with branch wiring	20 A (gG / B at $I_{SCCR} > 200$ A)

#### Additional technical data

Maximum continuous voltage $U_C$	135 V AC (for operation in safety lighting systems)
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#### Indicator/remote signaling

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 method	Plug-in/screw connection via COMBICON
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
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 solid	2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>
Conductor cross section AWG	12 ... 4

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### Technical data

#### Connection data

Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>

#### UL specifications

SPD Type	1
Nominal voltage	120 V DC
Mode of protection	(DC+) - (DC-)
	(DC+) - G
	(DC-) - G
Power distribution system	DC
Voltage protection rating VPR (DC+) - (DC-)	1500 V
Voltage protection rating VPR (DC+) - G	700 V
Voltage protection rating VPR (DC-) - G	700 V
Nominal discharge current I <sub>n</sub>	20 kA
Short-circuit current rating (SCCR)	50 kA

#### UL indicator/remote signaling

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

#### UL connection data

Conductor cross section AWG	10 ... 2
Tightening torque	30 lb <sub>r</sub> -in.

#### Standards and Regulations

Standards/regulations	IEC 61643-11 2011
	EN 61643-11 2012

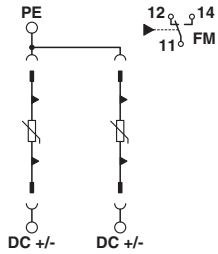
#### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

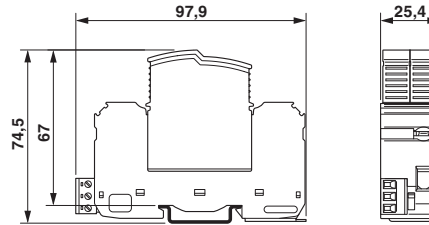
### Drawings

# Type 2 surge arrester - VAL-SEC-T2-2+0-120DC-FM - 2907874

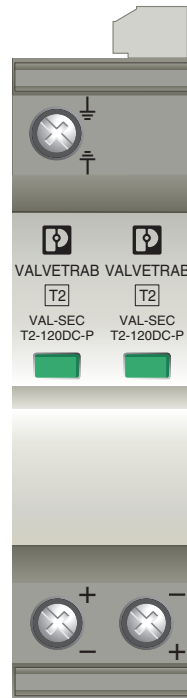
Circuit diagram



Dimensional drawing



Product drawing



## Classifications

eCl@ss

eCl@ss 10.0.1	27130805
eCl@ss 11.0	27130805
eCl@ss 5.1	27130801
eCl@ss 6.0	27130800
eCl@ss 7.0	27130805
eCl@ss 9.0	27130805

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## Classifications

### ETIM

ETIM 6.0	EC000941
ETIM 7.0	EC000941

### UNSPSC

UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

## Approvals


### Approvals

#### Approvals

EAC / DNV GL / UL Recognized / cUL Recognized / cULus Recognized


#### Ex Approvals

### Approval details

EAC			RU C-DE.*09.B.00169
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DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAE000023D
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UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
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cUL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330181
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### Approvals

cULus Recognized



### Accessories

#### Accessories

#### Device marking

Label - EML (20XE)R - 0803452



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

Label - EML (20XE)R YE - 0803453



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

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



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

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



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

### End block

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### Accessories

End clamp - CLIPFIX 35 - 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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### Labeled device marker

Marker for terminal blocks - ZBN 18,LGS:L1-N,ERDE - 2749576



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

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Marker for terminal blocks - ZBN 18,LGS:ERDE - 2749589



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

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### Marker pen

Marker pen - X-PEN 0,35 - 0811228



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

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### Terminal marking

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### Accessories

Flat zack marker sheet - ZBFM 5/WH:UNBEDRUCKT - 0803595



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

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### Spare parts

Type 2 surge protection plug - VAL-SEC-T2-120DC-P - 2907878



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