

Type 2 surge arrester - VAL-SEC-T2-2+0-48DC-FM



2907865

<https://www.phoenixcontact.com/us/products/2907865>

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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

- 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
- Extremely narrow design, just 12 mm per position
- Varistor arrester with a low leakage current

Commercial Data

Item number	2907865
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	C06
Product Key	CL1353
Catalog Page	Page 58 (C-4-2019)
GTIN	4055626244587
Weight per Piece (including packing)	209.6 g
Weight per Piece (excluding packing)	206.6 g
Customs tariff number	85363030
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
Number of positions	2
Surge protection fault message	Optical, remote indicator contact

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Electrical properties

Nominal frequency f_N	50 Hz (60 Hz)
Nominal voltage U_N	48 V DC ... 60 V DC

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 ² ... 16 mm ²
Conductor cross section solid	2.5 mm ² ... 25 mm ²
Conductor cross section AWG	12 ... 4
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm ² ... 6 mm ²

Remote fault indicator contact

Connection method	Plug-in/screw connection via COMBICON
Screw thread	M2
Tightening torque	0.25 Nm
Conductor cross section flexible	0.14 mm ² ... 1.5 mm ²

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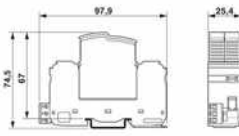


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Conductor cross section solid	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG	28 ... 16

Dimensions

Dimensional drawing	
Width	25.4 mm
Height	97.9 mm
Depth	74.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	1.4 Div.

Material specifications

Color	light grey RAL 7035
	traffic grey A RAL 7042
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	L-N
	L-PE
	N-PE
	(DC+) - (DC-)
	(DC+/DC-) - PE
Direction of action	(DC+/DC-) - PE
Nominal voltage U_N	75 V AC
Nominal voltage U_N	48 V DC ... 60 V DC
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous voltage U_C	75 V DC
	75 V AC
Rated load current I_L	40 A (Biconnect M4 fork-type cable lug 6 mm ²)
	63 A (TWIN ferrule 2 x 10 mm ²)
Residual current I_{PE}	≤ 50 µA DC
	≤ 450 µA AC
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	2 As

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Impulse discharge current (10/350) μ s, specific energy	4 kJ/ Ω
Impulse discharge current (10/350) μ s, peak value I_{imp}	4 kA
Total discharge current I_{total} (8/20) μ s	40 kA
Short-circuit current rating I_{SCCR}	0.2 kA DC (without backup fuse)
	6 kA DC (for 20 A gG/B backup fuse)
	10 kA AC (C63 A miniature circuit breaker)
	25 kA AC (for a backup fuse of up to 315 A gG)
	50 kA AC (for a backup fuse of up to 200 A gG)
Voltage protection level U_p (L-N)	≤ 0.9 kV
Voltage protection level U_p (L-PE)	≤ 0.5 kV
Voltage protection level U_p (DC+) - (DC-)	≤ 0.9 kV
Voltage protection level U_p (DC+/DC-) - PE	≤ 0.5 kV
Residual voltage U_{res} (L-N)	≤ 0.9 V (at I_n)
Residual voltage U_{res} (L-PE)	≤ 0.5 V (at I_n)
TOV behavior at U_T	87 V DC (5 s / withstand mode)
	130 V AC (120 min / withstand mode)
Response time t_A	≤ 25 ns
Max. backup fuse with V-type through wiring	20 A DC (gG / B at $I_{SCCR} > 200$ A)
Max. backup fuse with branch wiring	20 A DC (gG / B at $I_{SCCR} > 200$ A)
	315 A AC

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	≤ 6000 m (amsl (above mean sea level))
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)

Approval data

UL specifications

Short-circuit current rating (SCCR)	50 kA
Voltage protection rating VPR (DC+) - (DC-)	800 V
Voltage protection rating VPR (DC+) - G	400 V
Voltage protection rating VPR (DC-) - G	400 V
Nominal discharge current I_n	20 kA
Mode of protection	(DC+) - (DC-)
	(DC+) - G
	(DC-) - G
Nominal voltage	60 V DC
Power distribution system	DC

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SPD Type	1
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UL indicator/remote signaling

AC operating voltage	125 V AC
AC operating current	1 A AC

UL connection data

Tightening torque	30 lb _F in.
Conductor cross section AWG	10 ... 2

Standards and regulations

Standards/specifications	IEC 61643-11
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EN 61643-11

Standards/specifications	EN 61643-11
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Mounting

Mounting type	DIN rail mounting
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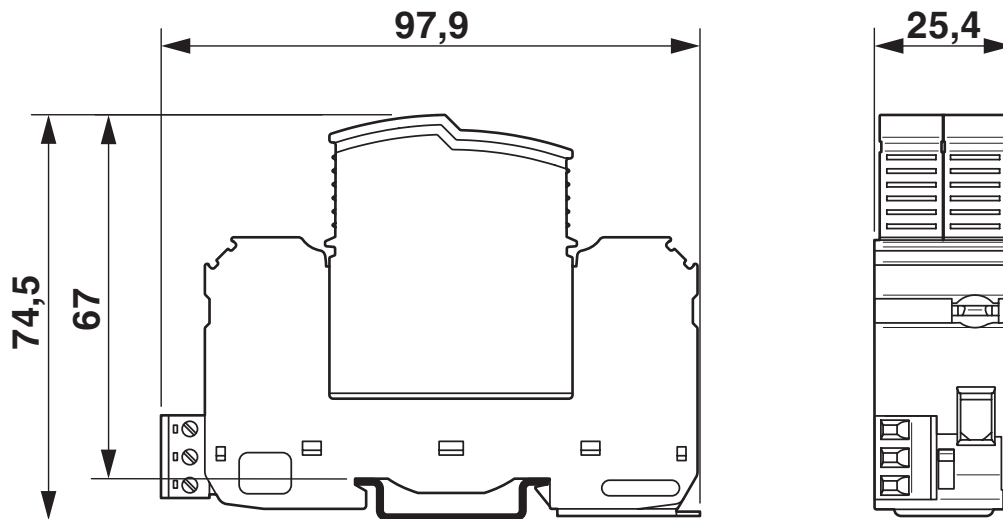
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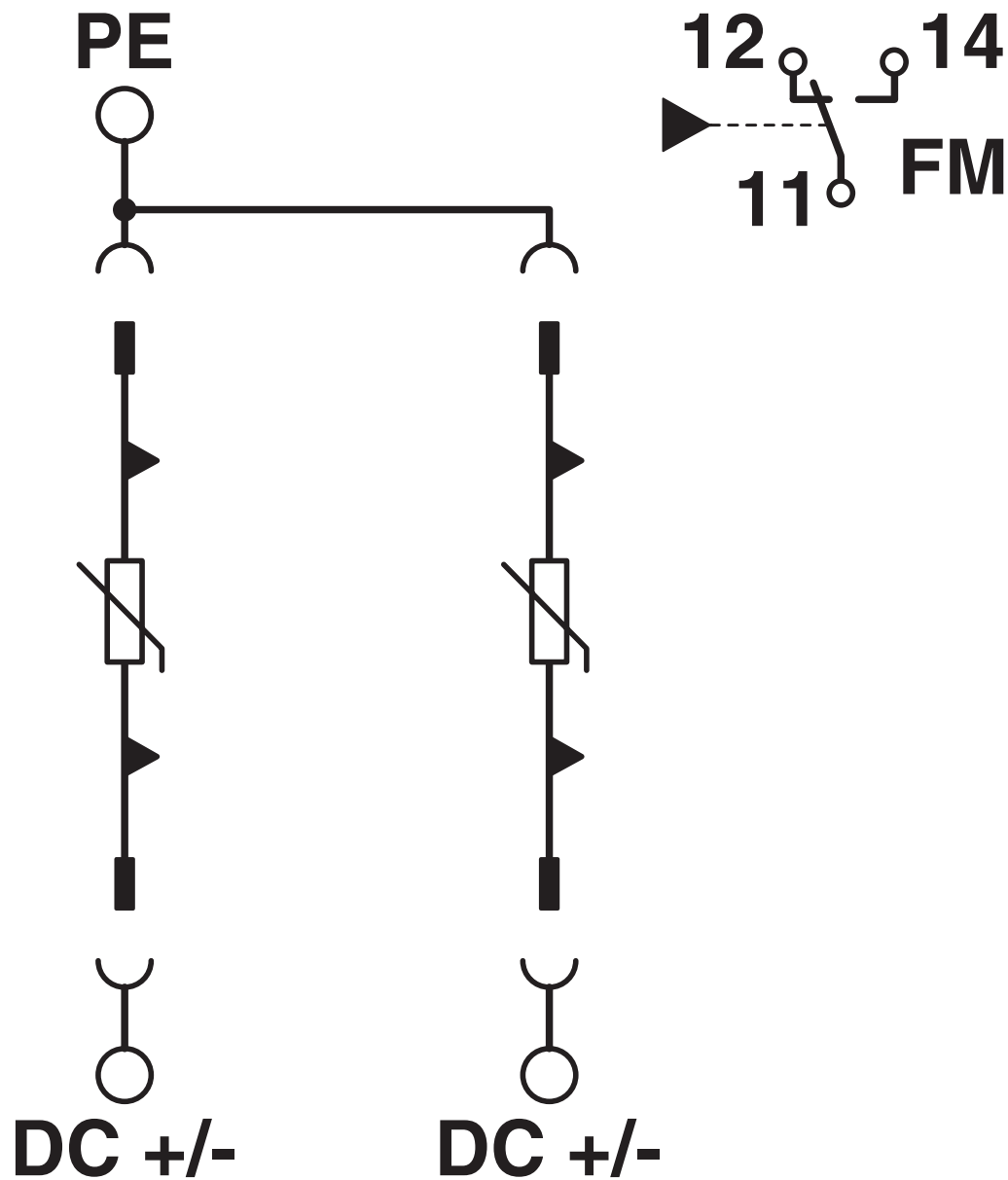


Drawings

Dimensional drawing



Circuit diagram



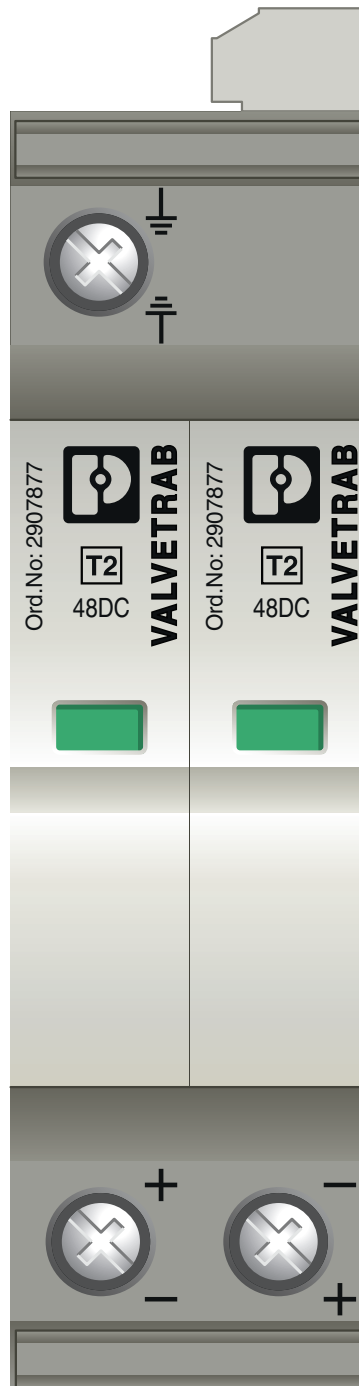
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Product drawing



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Approvals



cUL Recognized
Approval ID: FILE E 330181



UL Recognized
Approval ID: FILE E 330181



EAC
Approval ID: RU C-DE: *09.B.00169



DNV GL
Approval ID: TAE000023D

Nominal Voltage U_N

Nominal Current I_N

Cross Section AWG

Cross Section mm²

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cULus Recognized

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Classifications

ECLASS

ECLASS-9.0	27130805
ECLASS-10.0.1	27130805
ECLASS-11.0	27130805
ECLASS-12.0	27171202

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 = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

End clamp

End clamp - CLIPFIX 35 - 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

Marker pen

Marker pen - X-PEN 0,35 - 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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Label

Label - EML (20XE)R - 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

Label

Label - EML (20XE)R YE - 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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Zack marker strip

Zack marker strip - ZBN 18:UNBEDRUCKT - 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

Marker for terminal blocks

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

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

Flat zack marker sheet

Flat zack marker sheet - ZBFM 5/WH:UNBEDRUCKT - 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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Type 2 surge protection plug

Type 2 surge protection plug - VAL-SEC-T2-48DC-P - 2907877

<https://www.phoenixcontact.com/us/products/2907877>



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

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