

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Universal varistor-based plug-in lightning/surge arrester for 1-phase power supply networks with common N and PE (2-conductor system: L1, PEN), with remote indication contact.

Your advantages

- Quality proven millions of times over in the widest range of applications
- Rapid installation with bridges, thanks to industry-standard overall width of 1 HP
- Easy testing and insulation measurement, thanks to pluggable protection modules
- Surge protection for (-) 48 V DC in lightning protection level III and IV due to discharge capacity of 12.5 kA per position
- Vibration-resistant latching ensures the plug remains firmly in place

Commercial data

Item number	2801240
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL18
Product key	CL1151
Catalog page	Page 48 (C-4-2019)
GTIN	4046356750189
Weight per piece (including packing)	153.1 g
Weight per piece (excluding packing)	133.42 g
Customs tariff number	85363030
Country of origin	DE

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

Technical data

Product properties

IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
IEC power supply system	TN-C
Type	DIN rail module, two-section, divisible
Product type	Arrester combination
Product family	VALVETRAB MS
Number of positions	1
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)
-------------------------	---------------

Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact
Operating voltage	5 V AC ... 250 V AC
	125 V DC (200 mA DC)
Operating current	5 mA AC ... 1.5 A AC
	1 A DC (30 V DC)

Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm (1.5 mm ² ... 16 mm ²)
	4.5 Nm (25 mm ² ... 35 mm ²)
Stripping length	16 mm
Conductor cross section flexible	1.5 mm ² ... 25 mm ²
Conductor cross section rigid	1.5 mm ² ... 35 mm ²
Conductor cross section AWG	15 ... 2
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm ² ... 16 mm ²

Remote fault indicator contact

Connection method	Plug-in/screw connection via COMBICON
Screw thread	M2

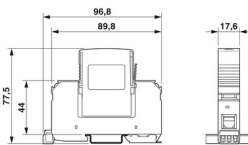
VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2

2801240

<https://www.phoenixcontact.com/us/products/2801240>

Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section flexible	0.14 mm ² ... 1.5 mm ²
Conductor cross section rigid	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG	28 ... 16

Dimensions

Dimensional drawing	
Width	17.6 mm
Height	96.8 mm
Depth	77.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	1 Div.

Material specifications

Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6/PBT
Material group	I
Housing material	PA 6.6 PBT

Mechanical properties

Mechanical data

Open side panel	No
-----------------	----

Protective circuit

Mode of protection	L-N
	L-PEN
	(L+) - (L-)
	(L-) - PE
	(L+) - PE
Direction of action	L-N / L-PEN
Nominal voltage U_N	60 V AC ± 10 % (TN)
	60 V DC ± 10 %
	-48 V DC ± 10 % (RRH)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous voltage U_C	75 V AC
	100 V DC

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

Rated load current I_L	80 A
Residual current I_{PE}	≤ 0.6 mA
Standby power consumption P_C	≤ 45 mVA
Nominal discharge current I_n (8/20) μ s	12.5 kA
Maximum discharge current I_{max} (8/20) μ s	30 kA
Impulse discharge current (10/350) μ s, charge	6.25 As
Impulse discharge current (10/350) μ s, specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μ s, peak value I_{imp}	12.5 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	≤ 0.4 kV
Residual voltage U_{res}	≤ 0.4 kV (at I_n)
	≤ 0.35 kV (at 10 kA)
	≤ 0.3 kV (at 5 kA)
	≤ 0.275 kV (at 4 kA)
	≤ 0.25 kV (at 3 kA)
TOV behavior at U_T	100 V AC (5 s / withstand mode)
	130 V DC (5 s / withstand mode)
Response time t_A	≤ 25 ns
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)
Max. backup fuse with branch wiring	160 A (gG)

Additional technical data

Maximum discharge current I_{max} (8/20) μ s	65 kA
--	-------

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (only when all terminal points are used)
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x \pm X, \pm Y, \pm Z)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approvals

UL specifications

Maximum continuous operating voltage MCOV (L+) - (L-)	100 V DC
Short-circuit current rating (SCCR)	5 kA
Voltage protection rating VPR (L+) - (L-)	400 V
Nominal discharge current I_n (L+) - (L-)	20 kA
Mode of protection	(L+) - (L-)
Nominal voltage	60 V DC

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

SPD Type	1CA
----------	-----

UL indicator/remote signaling

Operating voltage	125 V AC
AC operating current	1 A AC

UL connection data

Tightening torque	30 lb _F in.
Conductor cross section AWG	14 ... 2

Standards and regulations

Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11
Note	2012

Mounting

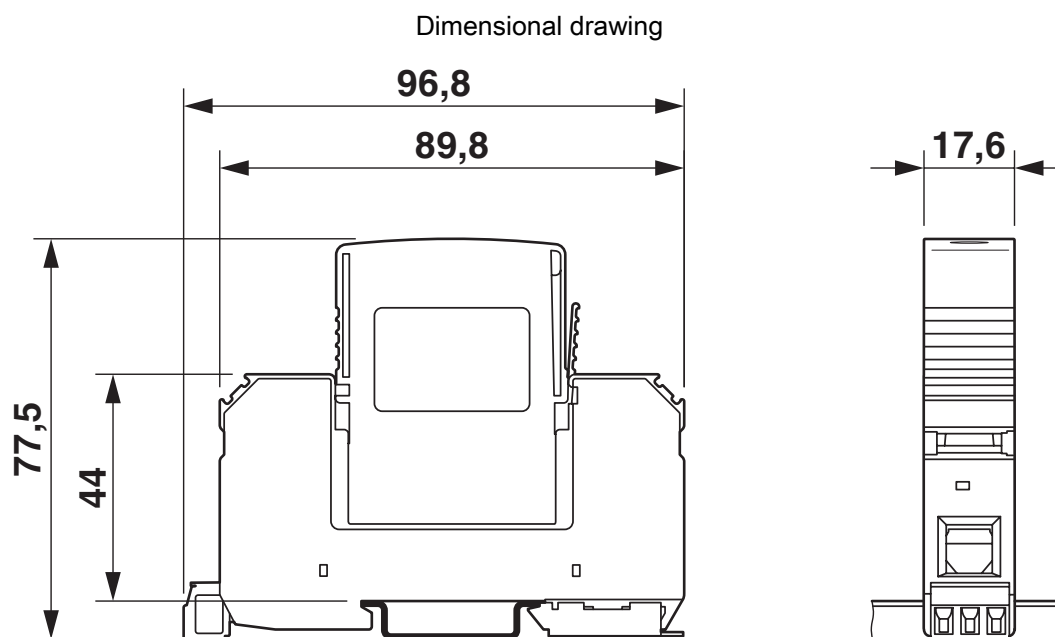
Mounting type	DIN rail: 35 mm
---------------	-----------------

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2

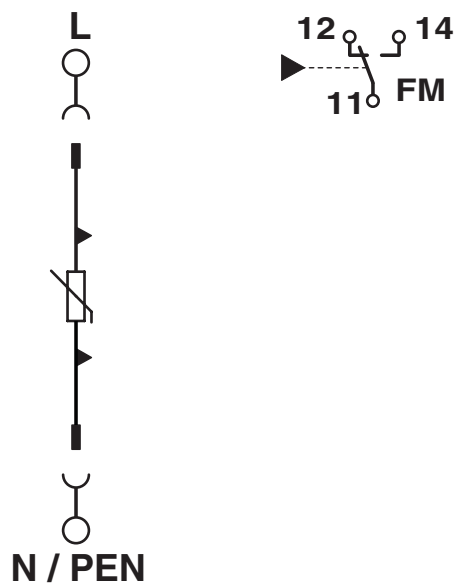
2801240

<https://www.phoenixcontact.com/us/products/2801240>

Drawings



Circuit diagram



VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2801240>



cUL Recognized
Approval ID: FILE E 330181



UL Recognized
Approval ID: FILE E 330181



IECEE CB Scheme
Approval ID: DE1-51927



EAC
Approval ID: EAC-Zulassung

CCA

Approval ID: DE1-34244



KEMA-KEUR
Approval ID: 2158241.01



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



VDE Zeichengenehmigung
Approval ID: 40037097

UAE-RoHS

Approval ID: 22-09-50977

cULus Recognized

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

Classifications

ECLASS

ECLASS-11.0	27130802
ECLASS-13.0	27171201

ETIM

ETIM 8.0	EC000381
----------	----------

UNSPSC

UNSPSC 21.0	39121600
-------------	----------

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

Environmental product compliance

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

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

Accessories

MPB 18/1-10/1.0.0 - Wiring bridge

2830443

<https://www.phoenixcontact.com/us/products/2830443>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 10 pitches with contact sequence 1-0-0

MPB 18/4- 8 - Wiring bridge

2809283

<https://www.phoenixcontact.com/us/products/2809283>



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2

2801240

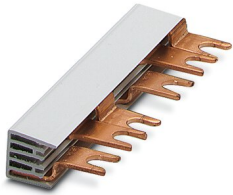
<https://www.phoenixcontact.com/us/products/2801240>

MPB 18/3- 6 - Wiring bridge

2809241

<https://www.phoenixcontact.com/us/products/2809241>

Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.



MPB 18/1-57 - Wiring bridge

2809238

<https://www.phoenixcontact.com/us/products/2809238>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.



VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2

2801240

<https://www.phoenixcontact.com/us/products/2801240>

MPB 18/1-12 - Wiring bridge

2748593

<https://www.phoenixcontact.com/us/products/2748593>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.

MPB 18/1- 9 - Wiring bridge

2748580

<https://www.phoenixcontact.com/us/products/2748580>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2

2801240

<https://www.phoenixcontact.com/us/products/2801240>

MPB 18/1- 8 - Wiring bridge

2748577

<https://www.phoenixcontact.com/us/products/2748577>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.

MPB 18/1- 6 - Wiring bridge

2748564

<https://www.phoenixcontact.com/us/products/2748564>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2

2801240

<https://www.phoenixcontact.com/us/products/2801240>

MPB 18/1- 4 - Wiring bridge

2809225

<https://www.phoenixcontact.com/us/products/2809225>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.



MPB 18/1- 3 - Wiring bridge

2809212

<https://www.phoenixcontact.com/us/products/2809212>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.



VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

MPB 18/1- 2 - Wiring bridge

2809209

<https://www.phoenixcontact.com/us/products/2809209>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.



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



VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2

2801240

<https://www.phoenixcontact.com/us/products/2801240>

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

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

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

DK-BIC-35 - Feed-through terminal block

2749880

<https://www.phoenixcontact.com/us/products/2749880>



Feed-through terminal block for VAL and FLT applications

VAL-MS-T1/T2 48/12.5/1+0-FM - Lightning/surge arrester type 1/2



2801240

<https://www.phoenixcontact.com/us/products/2801240>

VAL-MS-T1/T2 48/12.5 ST - Type 1/2 surge protection plug

2801242

<https://www.phoenixcontact.com/us/products/2801242>



L-N replacement plug for VAL-MS-T1/T2 48/12.5 plug-in lightning/surge arrester.

Phoenix Contact 2023 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com