

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638

<https://www.phoenixcontact.com/pc/products/2905638>

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.



Lightning current arrester/surge protective device for 2-pos. isolated and grounded 1,000 V DC PV systems, for DIN rail mounting, with remote indication contact, temperature-monitored protective elements, status message on the module.

Your advantages

- Space-saving installation, thanks to the compact design
- Double terminal block for safe and easy equipotential bonding connection
- Screw shafts with raised domes to ensure safe working
- Main connections with extended insertion funnels for increased resistance to creepage
- Visual display for checking the status directly on the device
- Plug-in signal connection for remote status signaling

Commercial data

Item number	2905638
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CL1231
Catalog page	Page 51 (C-4-2019)
GTIN	4046356984577
Weight per piece (including packing)	457.2 g
Weight per piece (excluding packing)	457.2 g
Customs tariff number	85363030
Country of origin	IN

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638

<https://www.phoenixcontact.com/pc/products/2905638>

Technical data

Product properties

Product type	PV arrester
Product family	VALVETRAB MB
IEC test classification	PV T1 / T2
	PV T1 / T2
EN type	T1 / T2
IEC power supply system	DC
Type	DIN rail module, one-piece
Installation location	Interior
Installation location of the disconnect device	Internal
Accessibility	Accessible
Connection configuration	Y configuration
SPD failure behavior	OCFM (Open-Circuit Failure Mode)
Surge protection fault message	Optical, remote indicator contact

Data management status

Article revision	08
------------------	----

Insulation characteristics

Pollution degree	2
------------------	---

Electrical properties

Indicator/remote signaling

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

Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm
Stripping length	16 mm
Conductor cross section flexible	2.5 mm ² ... 35 mm ²
Conductor cross section AWG	14 ... 2

Remote fault indicator contact

Connection method	Screw connection
Screw thread	M2

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638

<https://www.phoenixcontact.com/pc/products/2905638>

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	71.2 mm
Height	120 mm
Depth	65.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	4 Div.

Material specifications

Color	gray (RAL 7042)
	gray (RAL 7042)
Flammability rating according to UL 94	V-0
Insulating material	PA 6.6
	PBT
Housing material	PA 6.6

Mechanical properties

Mechanical data

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

Protective circuit

Mode of protection	(L+) - (L-)
	(L+) - PE
	(L-) - PE
Direction of action	(L+)-PE & (L-)-PE & (L+)-(L-)
Rated load current I_L	50 A
Residual current I_{PE}	$\leq 70 \mu A$ DC
	$\leq 500 \mu A$ AC
Standby power consumption P_C	≤ 70.00 mVA
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	3.125 As
Impulse discharge current (10/350) μs , specific energy	9.77 kJ/ Ω
Impulse discharge current (10/350) μs , peak value I_{imp}	6.25 kA

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638

<https://www.phoenixcontact.com/pc/products/2905638>

Total discharge current I_{total} (8/20) μs	40 kA
Total discharge current I_{total} (10/350) μs	12.5 kA
Voltage protection level U_p	≤ 3.3 kV
Residual voltage U_{res}	≤ 3.3 kV (at I_n)
	≤ 2.5 kV (at 3 kA)
	≤ 2.7 kV (at 6.25 kA)
	≤ 2.9 kV (at 10 kA)
	≤ 3.1 kV (at 15 kA)
	≤ 4 kV (at 40 kA)
Response time t_A	≤ 25 ns

PV protective circuit

Connection configuration	Y configuration
SPD failure behavior	OCFM (Open-Circuit Failure Mode)

Protective circuit DC voltage side (DC)

Open circuit voltage U_{OCSTC}	≤ 833 V DC
Maximum discharge current I_{max} (8/20) μs	40 kA
Response time t_A	≤ 25 ns
Impulse discharge current (10/350) μs , charge	3.125 As
Impulse discharge current (10/350) μs , specific energy	9.77 kJ/ Ω
Impulse discharge current (10/350) μs , peak value I_{imp}	6.25 kA
Total discharge current I_{total} (8/20) μs	40 kA
Total discharge current I_{total} (10/350) μs	12.5 kA
Insulation resistance R_{iso}	> 5 G Ω (at 500 V DC)
Nominal discharge current I_n (8/20) μs	20 kA
Rated load current I_L	50 A
Continuous operating current I_{CPV}	< 70 μA
Maximum continuous operating voltage U_{CPV}	1000 V DC
Short-circuit current rating I_{SCPV}	2000 A
Residual voltage U_{res}	≤ 3.3 kV (at I_n)
	≤ 2.5 kV (at 3 kA)
	≤ 2.7 kV (at 6.25 kA)
	≤ 2.9 kV (at 10 kA)
	≤ 3.1 kV (at 15 kA)
	≤ 4 kV (at 40 kA)
Residual current I_{PE}	≤ 70 μA DC
	≤ 500 μA AC
Voltage protection level U_p	≤ 3.3 kV
Standby power consumption P_C	≤ 70.00 mVA

Environmental and real-life conditions

Ambient conditions

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638

<https://www.phoenixcontact.com/pc/products/2905638>

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	≤ 6000 m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	50g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	5g (5 - 500 Hz/2.5 h/X, Y, Z)

Standards and regulations

Standards/specifications	EN 61643-31
Note	2019
Standards/specifications	IEC 61643-31
Note	2018

Mounting

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

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2

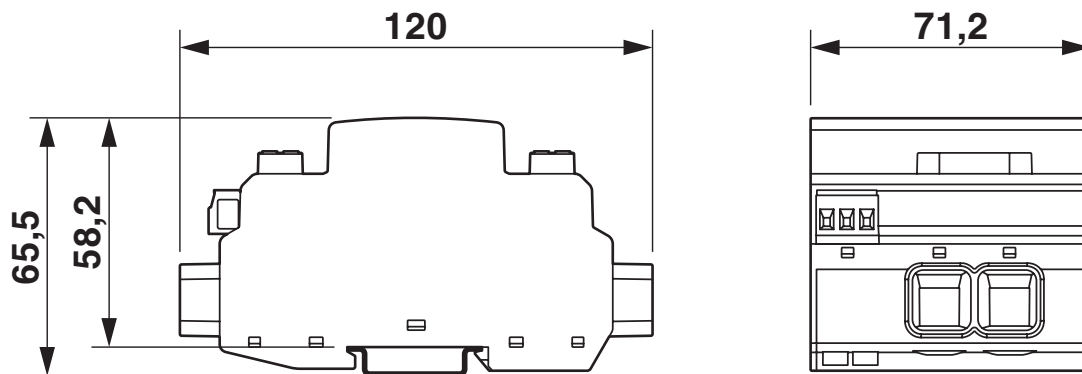


2905638

<https://www.phoenixcontact.com/pc/products/2905638>

Drawings

Dimensional drawing

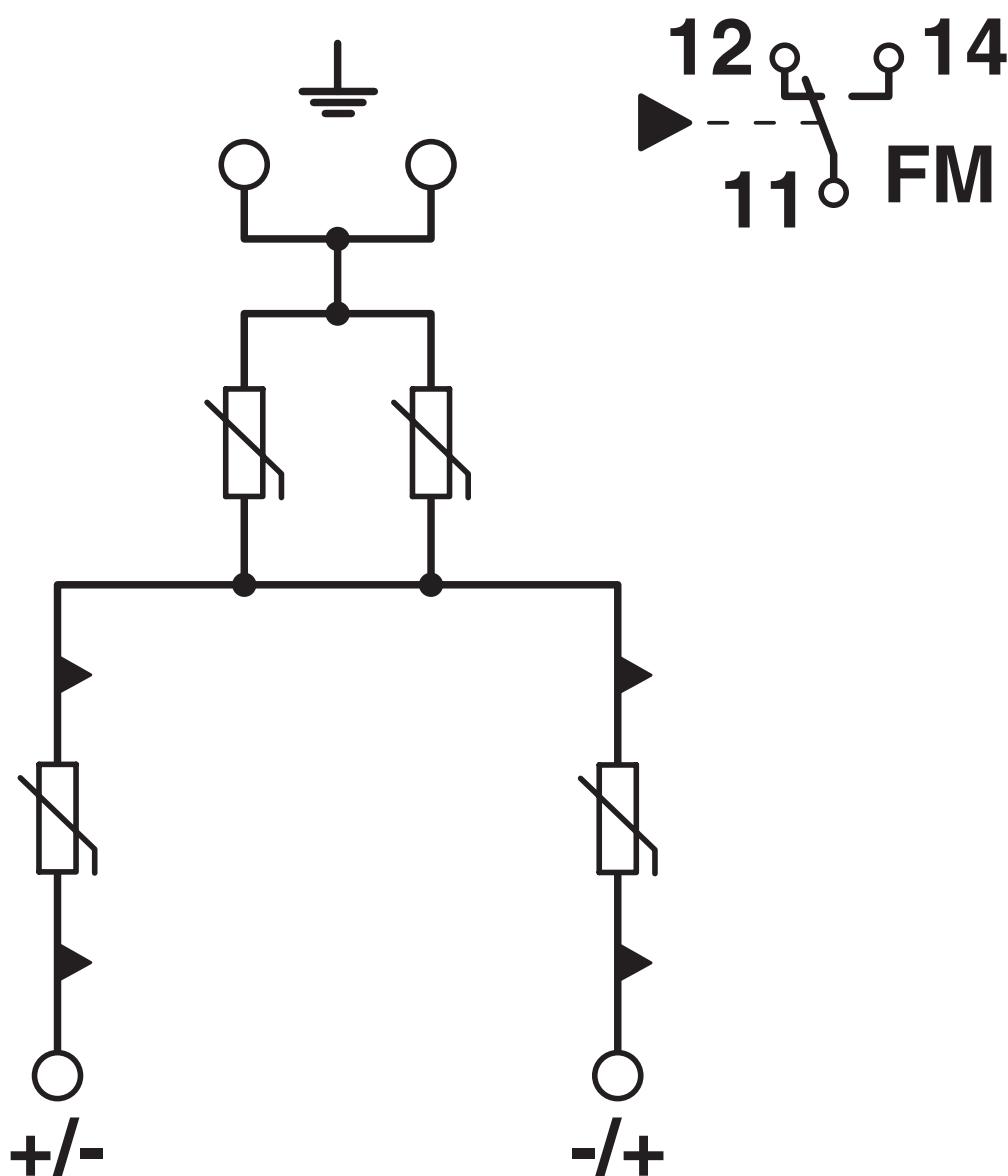


VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2

2905638

<https://www.phoenixcontact.com/pc/products/2905638>

Circuit diagram



VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638

<https://www.phoenixcontact.com/pc/products/2905638>

Approvals

📄 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2905638>



IECEE CB Scheme

Approval ID: NL-81007

CCA

Approval ID: NTR-NL 7938



KEMA-KEUR

Approval ID: 71-127691

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638
<https://www.phoenixcontact.com/pc/products/2905638>

Classifications

ECLASS

ECLASS-11.0	27130802
ECLASS-13.0	27171401

ETIM

ETIM 9.0	EC000381
----------	----------

UNSPSC

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

VAL-MB-T1/T2 1000DC-PV/2+V-FM - Lightning/surge arrester type 1/2



2905638
<https://www.phoenixcontact.com/pc/products/2905638>

Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	No substance above 0.1 wt%

Phoenix Contact 2024 © - all rights reserved
<https://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
D-32825 Blomberg
+49 (0) 5235-3 00
info@phoenixcontact.com