

# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2



2905641

<https://www.phoenixcontact.com/us/products/2905641>

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 1500 V DC PV systems, for DIN rail mounting, 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

## Commercial data

Item number	2905641
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL01
Product key	CL1231
GTIN	4046356984393
Weight per piece (including packing)	525.8 g
Weight per piece (excluding packing)	488.61 g
Customs tariff number	85354000
Country of origin	IN

# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2

2905641

<https://www.phoenixcontact.com/us/products/2905641>

## Technical data

### Notes

#### General

Note	The product is also suitable for use in photovoltaic systems with max. short-circuit current $I_{SCPV} = 15 \text{ kA}$ (in accordance with EN 50539-11: 2013).
------	---

### Product properties

Product type	PV arrester
Product family	VALVETRAB MB
IEC test classification	PV I / II PV T1 / T2
EN type	T1 / T2
IEC power supply system	DC
Type	DIN rail module, one-piece
Environment	Indoor
Installation location of the disconnect device	Internal
Accessibility	Accessible
Connection configuration	Y configuration
End-of-life mode	OCFM (Open-Circuit Failure Mode)
Surge protection fault message	optical
Number of ports	One

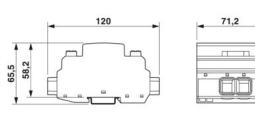
#### Insulation characteristics

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

### Connection data

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

### Dimensions

Dimensional drawing	
Width	71.2 mm
Height	120 mm

# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2



2905641

<https://www.phoenixcontact.com/us/products/2905641>

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
Protective conductor current $I_{PE}$	$\leq 100 \mu\text{A DC}$
	$\leq 540 \mu\text{A AC}$
Standby power consumption $P_C$	$\leq 150 \text{ mVA}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$	20 kA
Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$	40 kA
Impulse discharge current (10/350) $\mu\text{s}$ , charge	3.125 As
Impulse discharge current (10/350) $\mu\text{s}$ , specific energy	9.77 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu\text{s}$ , peak value $I_{imp}$	6.25 kA
Total discharge current $I_{Total}$ (8/20) $\mu\text{s}$	40 kA
Total discharge current $I_{Total}$ (10/350) $\mu\text{s}$	12.5 kA
Voltage protection level $U_p$	$\leq 4.5 \text{ kV}$
Residual voltage $U_{res}$	$\leq 4.5 \text{ kV (at } I_n)$
	$\leq 3.3 \text{ kV (at } 3 \text{ kA)}$
	$\leq 3.6 \text{ kV (at } 6.25 \text{ kA)}$
	$\leq 3.8 \text{ kV (at } 10 \text{ kA)}$
	$\leq 4.2 \text{ kV (at } 15 \text{ kA)}$
	$\leq 5.4 \text{ kV (at } 40 \text{ kA)}$
Response time $t_A$	$\leq 25 \text{ ns}$

### PV protective circuit

Connection configuration	Y configuration
End-of-life mode	OCFM (Open-Circuit Failure Mode)

# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2



2905641

<https://www.phoenixcontact.com/us/products/2905641>

## Protective circuit DC voltage side (DC)

Maximum continuous operating voltage $U_{CPV}$	1500 V DC
Short-circuit current rating $I_{SCPV}$	2000 A
Open-circuit voltage $U_{OCSTC}$	$\leq 1250$ V DC
Maximum discharge current $I_{max}$ (8/20) $\mu s$	40 kA
Response time $t_A$	$\leq 25$ ns
Impulse discharge current (10/350) $\mu s$ , charge	3.125 As
Impulse discharge current (10/350) $\mu s$ , specific energy	9.77 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu s$ , peak value $I_{imp}$	6.25 kA
Total discharge current $I_{Total}$ (8/20) $\mu s$	40 kA
Total discharge current $I_{Total}$ (10/350) $\mu s$	12.5 kA
Insulation resistance $R_{iso}$	$> 5$ G $\Omega$ (at 500 V DC)
Nominal discharge current $I_n$ (8/20) $\mu s$	20 kA
Rated load current $I_L$	50 A
Continuous operating current $I_{CPV}$	$< 100$ $\mu A$
Maximum continuous operating voltage $U_{CPV}$	1500 V DC
Short-circuit current rating $I_{SCPV}$	2000 A
Residual voltage $U_{res}$	$\leq 4.5$ kV (at $I_n$ ) $\leq 3.3$ kV (at 3 kA) $\leq 3.6$ kV (at 6.25 kA) $\leq 3.8$ kV (at 10 kA) $\leq 4.2$ kV (at 15 kA) $\leq 5.4$ kV (at 40 kA)
Protective conductor current $I_{PE}$	$\leq 100$ $\mu A$ DC $\leq 540$ $\mu A$ AC
Voltage protection level $U_p$	$\leq 4.5$ kV
Standby power consumption $P_C$	$\leq 150$ mVA

## 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	$\leq 6000$ m (amsl)
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	50g (Half-sine / 11 ms / 3x $\pm X$ , $\pm Y$ , $\pm Z$ )
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

# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2



2905641

<https://www.phoenixcontact.com/us/products/2905641>

Note	2018
------	------

## Mounting

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

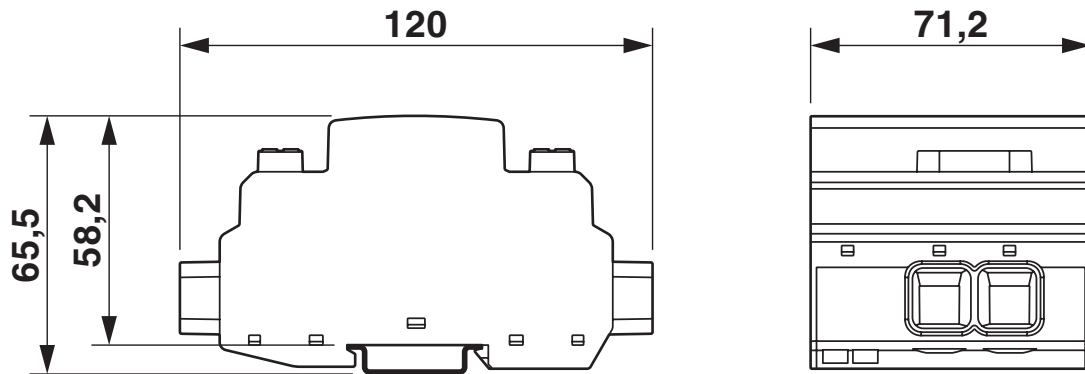
# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2

2905641

<https://www.phoenixcontact.com/us/products/2905641>

## Drawings

Dimensional drawing

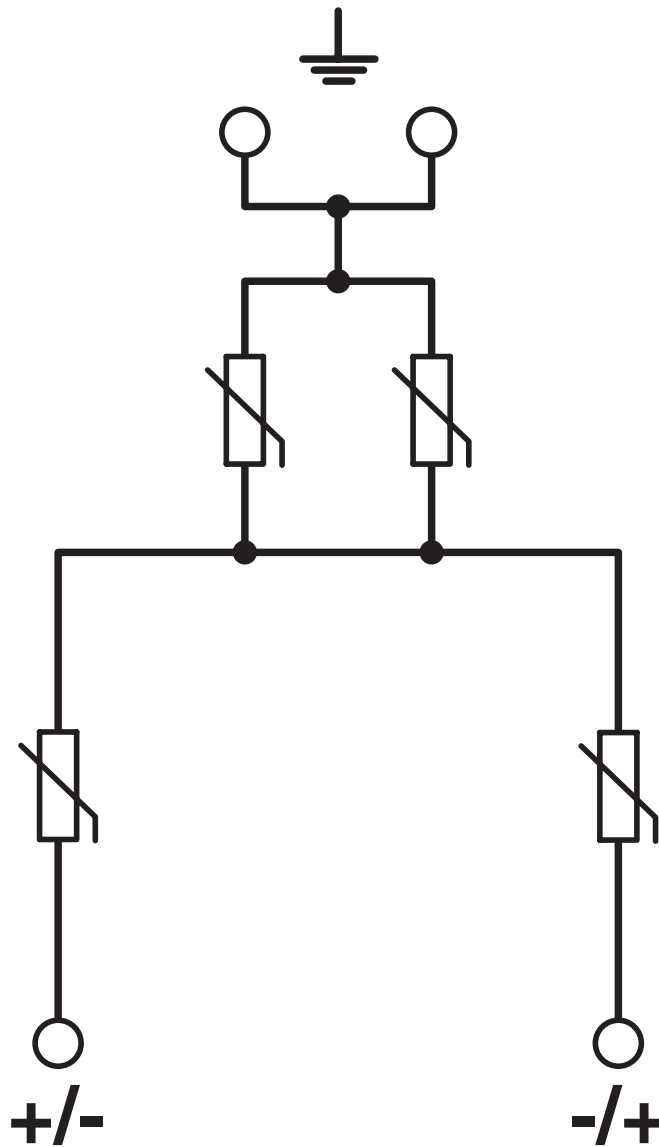


# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2

2905641

<https://www.phoenixcontact.com/us/products/2905641>

Circuit diagram



# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2



2905641

<https://www.phoenixcontact.com/us/products/2905641>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2905641>



**IECEE CB Scheme**

Approval ID: NL-81007

**CCA**

Approval ID: NTR-NL 7938



**KEMA-KEUR**

Approval ID: 71-127691

# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2



2905641

<https://www.phoenixcontact.com/us/products/2905641>

## Classifications

### ECLASS

ECLASS-13.0	27171401
ECLASS-15.0	27171401

### ETIM

ETIM 10.0	EC000381
-----------	----------

### UNSPSC

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

# VAL-MB-T1/T2 1500DC-PV/2+V - Lightning/surge arrester type 1/2



2905641

<https://www.phoenixcontact.com/us/products/2905641>

## 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 2026 © - 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](mailto:info@phoenixcon.com)