

# VAL-MB-T2 1500DC-PV/2+V - Type 2 surge arrester



2905647

<https://www.phoenixcontact.com/ae/products/2905647>

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Surge protective device for 2-pos. isolated and grounded 1,500 V DC PV voltage 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	2905647
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL1
Product key	CL1341
Catalog page	Page 72 (C-4-2019)
GTIN	4046356984225
Weight per piece (including packing)	383.6 g
Weight per piece (excluding packing)	383.6 g
Customs tariff number	85354000
Country of origin	DE

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## 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).
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### Product properties

IEC test classification	PV II PV T2
EN type	T2
IEC power supply system	DC
Type	DIN rail module, one-piece
Product type	PV arrester
Product family	VALVETRAB MB
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

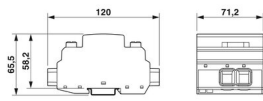
#### Insulation characteristics

Pollution degree	2
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### 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
Depth	65.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	4 Div.

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## Material specifications

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
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## 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 $I_{PE}$	$\leq 55 \mu\text{A DC}$
	$\leq 430 \mu\text{A AC}$
Standby power consumption $P_C$	$\leq 85 \text{ mVA}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$	20 kA
Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$	40 kA
Total discharge current $I_{total}$ (8/20) $\mu\text{s}$	40 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
SPD failure behavior	OCFM (Open-Circuit Failure Mode)

### Protective circuit DC voltage side (DC)

Open circuit voltage $U_{OCSTC}$	$\leq 1250 \text{ V DC}$
Maximum discharge current $I_{max}$ (8/20) $\mu\text{s}$	40 kA
Response time $t_A$	$\leq 25 \text{ ns}$
Total discharge current $I_{total}$ (8/20) $\mu\text{s}$	40 kA
Insulation resistance $R_{iso}$	$> 5 \text{ G}\Omega$ (at 500 V DC)
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$	20 kA
Rated load current $I_L$	50 A
Continuous operating current $I_{CPV}$	$< 55 \mu\text{A}$

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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)
Residual current $I_{PE}$	$\leq 55$ $\mu$ A DC
	$\leq 430$ $\mu$ A AC
Voltage protection level $U_p$	$\leq 4.5$ kV
Standby power consumption $P_C$	$\leq 85$ 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
Note	2018

## Mounting

Mounting type	DIN rail: 35 mm
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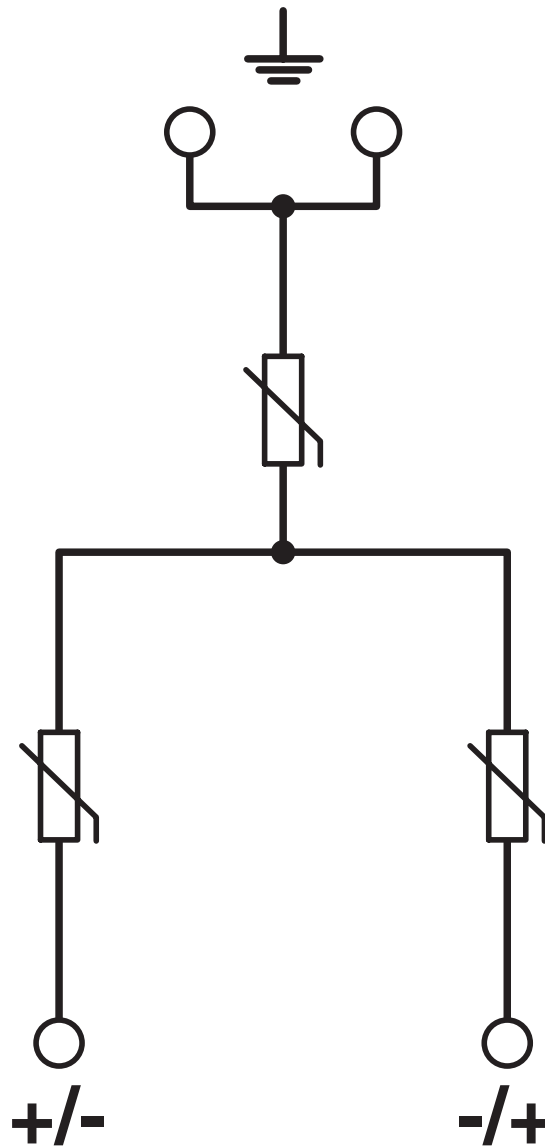
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## Drawings

Circuit diagram



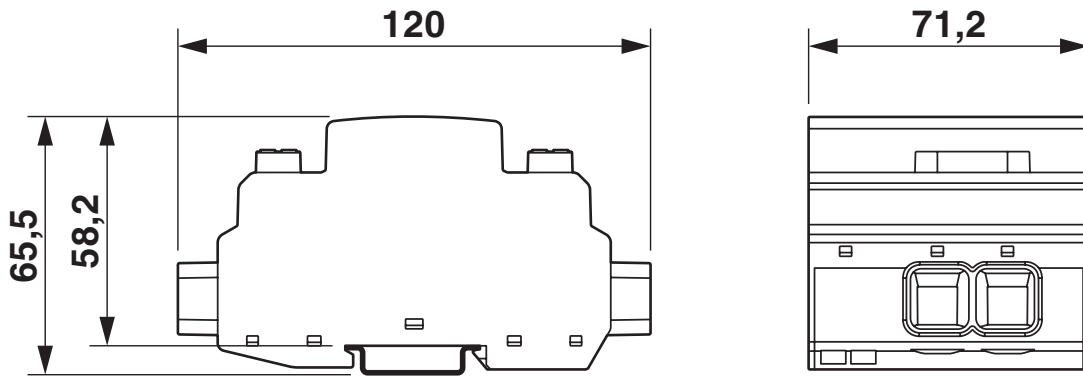
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Dimensional drawing



# VAL-MB-T2 1500DC-PV/2+V - Type 2 surge arrester



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/ae/products/2905647>



**IECEE CB Scheme**

Approval ID: NL-81007

**CCA**

Approval ID: NTR-NL 7938



**KEMA-KEUR**

Approval ID: 71-127691

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## Classifications

### ECLASS

ECLASS-11.0	27130805
ECLASS-13.0	27171402

### ETIM

ETIM 9.0	EC000941
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

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

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## Accessories

### ATP-QTTCB - Partition plate

3206238

<https://www.phoenixcontact.com/ae/products/3206238>

Partition plate, width: 2 mm, height: 102 mm, color: gray



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### X-PEN 0,35 - Marker pen

0811228

<https://www.phoenixcontact.com/ae/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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## SZK PZ2 VDE - Screwdriver

1206463

<https://www.phoenixcontact.com/ae/products/1206463>



Screwdriver, PZ crosshead, VDE insulated, size: PZ 2 x 100 mm, 2-component grip, with non-slip grip

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## SZS 0,4X2,5 VDE - Screwdriver

1205037

<https://www.phoenixcontact.com/ae/products/1205037>



Screwdriver, slot-headed, VDE insulated, size: 0.4 x 2.5 x 80 mm, 2-component grip, with non-slip grip

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