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

2905640

https://www.phoenixcontact.com/us/products/2905640

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Lightning current arrester/surge protective device for 2-pos. isolated and grounded 1,500 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	2905640
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL01
Product key	CL1231
GTIN	4046356984423
Weight per piece (including packing)	531.1 g
Weight per piece (excluding packing)	531.1 g
Customs tariff number	85354000
Country of origin	IN

Technical data

Notes

General

Note	The product is also suitable for use in photovoltaic systems with max. short-circuit current I_{SCPV} = 15 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
Number of positions	2
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, remote indicator contact
Number of ports	One

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

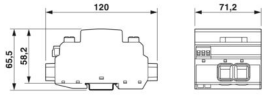
Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm
Stripping length	16 mm

Conductor cross-section flexible	2.5 mm² ... 35 mm²
Conductor cross-section AWG	14 ... 2

Remote fault indicator contact

Connection method	Screw connection
Screw thread	M2
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross-section flexible	0.14 mm² ... 1.5 mm²
Conductor cross-section rigid	0.14 mm² ... 1.5 mm²
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 HP

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}	≤ 100 µA DC
	≤ 540 µA AC
Standby power consumption P_C	≤ 150 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
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	≤ 4.5 kV
Residual voltage U_{res}	≤ 4.5 kV (at I_n)
	≤ 3.3 kV (at 3 kA)
	≤ 3.6 kV (at 6.25 kA)
	≤ 3.8 kV (at 10 kA)
	≤ 4.2 kV (at 15 kA)
	≤ 5.4 kV (at 40 kA)
Response time t_A	≤ 25 ns

PV protective circuit

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

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}	≤ 1250 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 GΩ (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}	< 100 µA
Maximum continuous operating voltage U_{CPV}	1500 V DC
Short-circuit current rating I_{SCPV}	2000 A
Residual voltage U_{res}	≤ 4.5 kV (at I_n)
	≤ 3.3 kV (at 3 kA)
	≤ 3.6 kV (at 6.25 kA)
	≤ 3.8 kV (at 10 kA)
	≤ 4.2 kV (at 15 kA)
	≤ 5.4 kV (at 40 kA)

Protective conductor current I_{PE}	≤ 100 µA DC
	≤ 540 µA AC
Voltage protection level U_p	≤ 4.5 kV
Standby power consumption P_C	≤ 150 mVA

Additional technical data

TOV behavior at U_T	Suitable for temporary voltages up to 1550 V DC

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	≤ 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

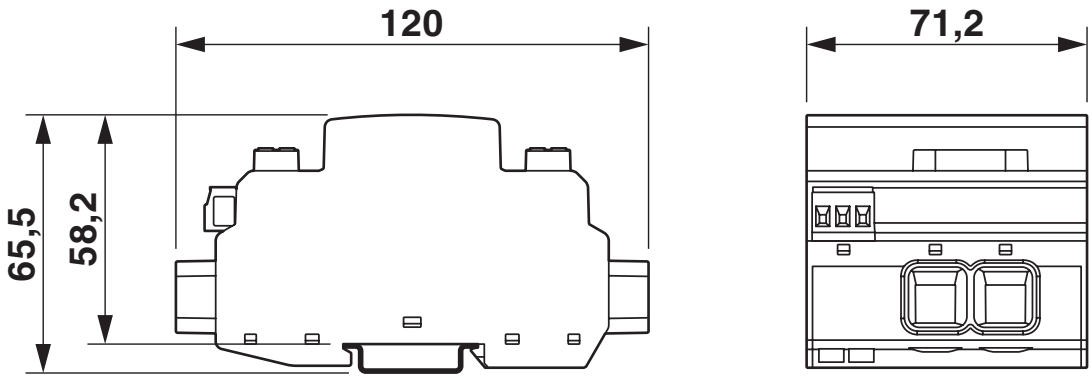
Standards/specifications	EN 61643-31
Note	2019
Standards/specifications	IEC 61643-31
Note	2018

Mounting

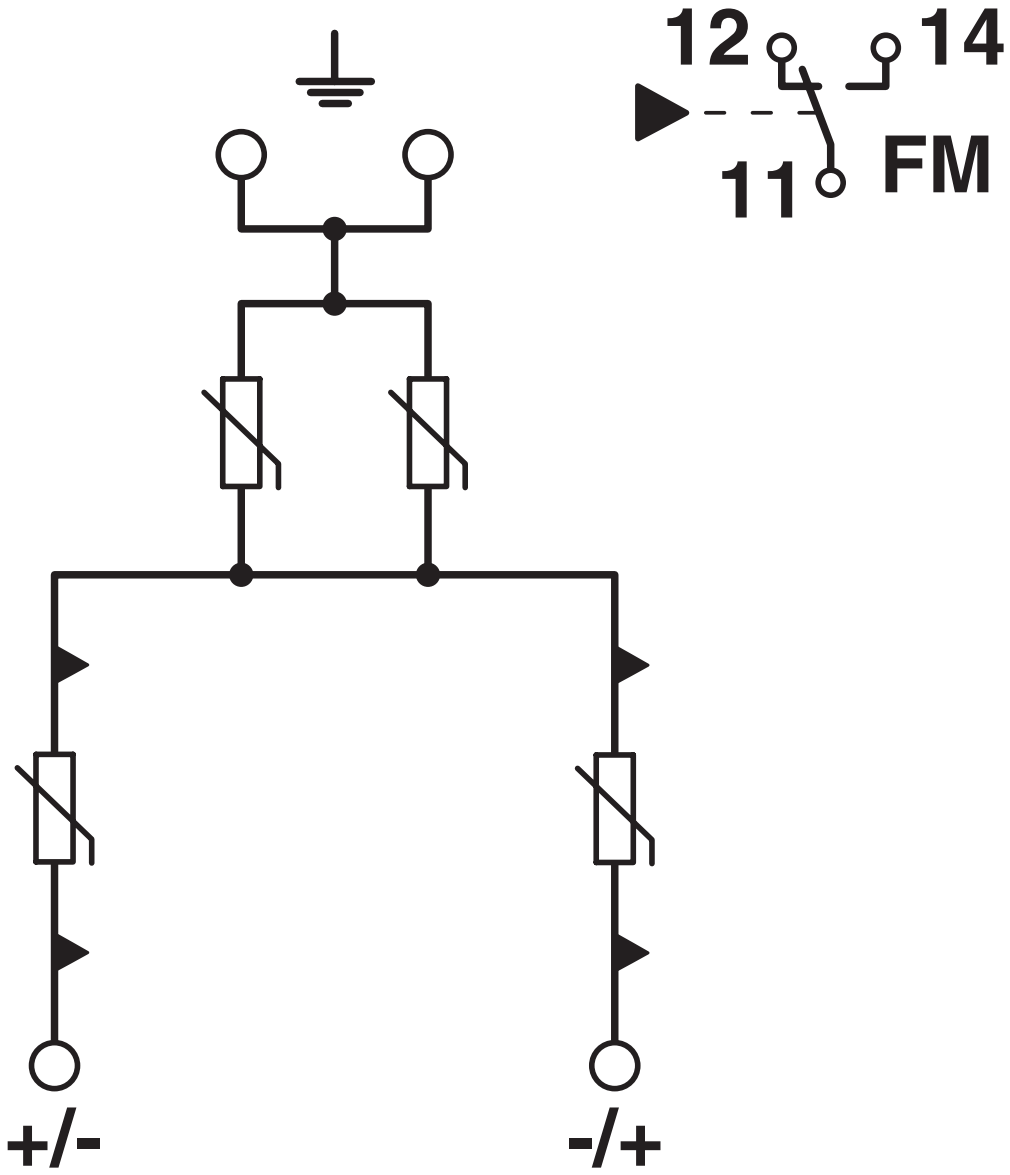
Mounting type	DIN rail: 35 mm

Drawings

Dimensional drawing



Circuit diagram



Approvals

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IECEE CB Scheme
Approval ID: NL-81007

CCA
Approval ID: NTR-NL 7938

KEMA-KEUR
Approval ID: 71-127691

Classifications

ECLASS

ECLASS-13.0	27171401
ECLASS-15.0	27171401

ETIM

ETIM 10.0	EC000381

UNSPSC

UNSPSC 21.0	39121600

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%

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