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

1683780

https://www.phoenixcontact.com/in/products/1683780

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Lightning/surge protective device, according to type 1/2 / class I/II, for linear, unipolar DC supply systems up to 1000 V DC, for DIN rail mounting, with remote indication contact.

Your advantages

- Safe operation of DC voltage supply systems thanks to reliable protection against lightning current and surge voltage events
- For use in unipolar, linear DC supply systems
- Highly versatile with a maximum altitude up to 6000 m (abovesea level)
- Space-saving installation, thanks to the compact design
- Excellent level of information provided by mechanical/visual status indicator and remote indication contact

Commercial data

Item number	1683780
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CL1391
GTIN	4067923238893
Weight per piece (including packing)	523.6 g
Weight per piece (excluding packing)	457.2 g
Country of origin	IN

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Technical data

Notes

General

Note	The DC power grid must be electrically isolated from any other AC or DC power grid.

Product properties

Product type	Surge arrester
IEC test classification	T1 / T2
EN type	T1 / T2
IEC power supply system	DC
Type	DIN rail module, one-piece
Surge protection fault message	Optical, remote indicator contact

Insulation characteristics

Overvoltage category	III (main circuit)
	II (Auxiliary circuit)
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 (Altitude ≤ 2000 m (amsl))

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

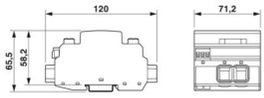
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Dimensions

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)
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6
	PBT
Housing material	PA 6.6

Protective circuit

Mode of protection	(DC+) - (DC-)
	(DC+/DC-) - PE
Direction of action	(L+)-PE & (L-)-PE & (L+)-(L-)
Nominal voltage U_N	1000 V DC
Maximum continuous voltage U_C	1000 V DC
Rated load current I_L	40 A (2x 10 mm²)
Residual 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
Short-circuit current rating I_{SCCR}	min. 800 A DC
	max. 40 kA DC
	< 800 A DC (A shutdown time of < 400 ms must be ensured)
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)

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	≤ 3.8 kV (at 10 kA)
	≤ 4.2 kV (at 15 kA)
	≤ 5.4 kV (at 40 kA)
Response time t_A	≤ 25 ns
Max. backup fuse with V-type through wiring	40 A (gG at I_{SCCR} > 800 A DC)
Max. backup fuse with branch wiring	80 A (gG at I_{SCCR} > 800 A 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	≤ 2000 m (operating voltage remote contact ≤ 250 V)
	≤ 6000 m (operating voltage remote contact ≤ 150 V)
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	IEC 61643-41
Note	Ed. 1 CDV
Standards/specifications	IEC 61643-31
Note	2018
Standards/specifications	EN 61643-31
Note	2019

Mounting

Mounting type	DIN rail: 35 mm

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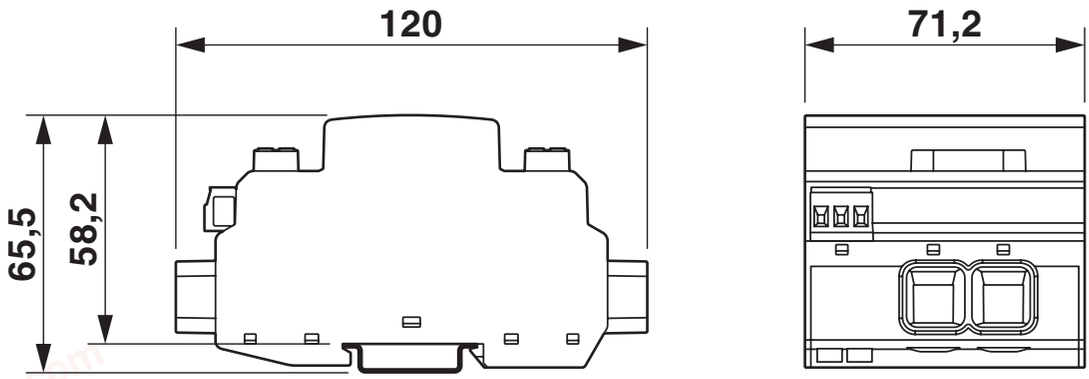
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Drawings

Dimensional drawing



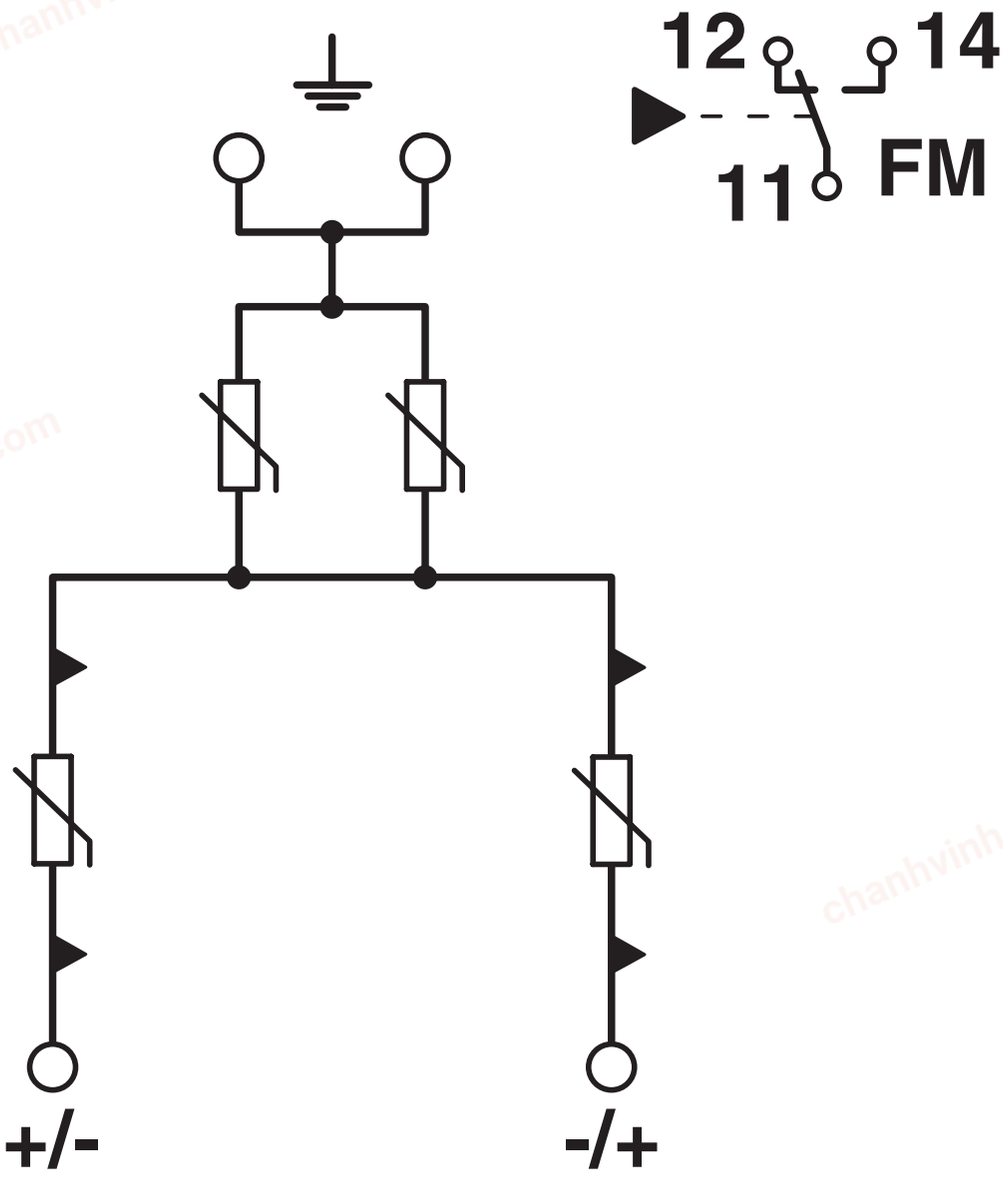
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Circuit diagram



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Classifications

ECLASS

ECLASS-13.0	27171403

ETIM

ETIM 9.0	EC001457

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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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Accessories

X-PEN 0,35 - Marker pen

0811228

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Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

ATP-QTTCB - Partition plate

3206238

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Partition plate, depth: 54 mm, width: 2 mm, height: 102 mm, color: gray



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SZK PZ2 VDE - Screwdriver

1206463

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

SZS 0,4X2,5 VDE - Screwdriver

1205037

https://www.phoenixcontact.com/in/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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