

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

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.



Universal varistor-based plug-in lightning/surge arrester for 3-phase power supply networks with separate N and PE (5-conductor system: L1, L2, L3, N, PE), for Lightning Protection Levels III and IV, with remote indication contact.

Your advantages

- Quality proven millions of times over in the widest range of applications
- Rapid installation with bridges, thanks to industry-standard overall width of 1 HP
- Easy testing and insulation measurement, thanks to pluggable protection modules
- Can be used in lightning protection level III and IV due to discharge capacity of 12.5 kA per position
- Vibration-resistant latching ensures the plug remains firmly in place
- With floating remote indication contact
- Plugs can be checked with CHECKMASTER
- Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to new latching

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Commercial Data

Item number	2800183
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	CL1151
Catalog Page	Page 46 (C-4-2019)
GTIN	4046356518550
Weight per Piece (including packing)	677 g
Weight per Piece (excluding packing)	643.8 g
Customs tariff number	85363030
Country of origin	DE

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Technical Data

Product properties

IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
IEC power supply system	TT
	TN-S
Type	DIN rail module, two-section, divisible
Product type	Arrester combination
Number of positions	4
Surge protection fault message	Optical, remote indicator contact

Insulation characteristics

Overvoltage category	III
Pollution degree	2

Electrical properties

Nominal frequency f_N	50 Hz (60 Hz)
-------------------------	---------------

Indicator/remote signaling

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

Connection data

Connection method	Screw connection
Screw thread	M5
Tightening torque	3 Nm (1.5 mm ² ... 16 mm ²)
	4.5 Nm (25 mm ² ... 35 mm ²)
Stripping length	16 mm
Conductor cross section flexible	1.5 mm ² ... 25 mm ²
Conductor cross section solid	1.5 mm ² ... 35 mm ²
Conductor cross section AWG	15 ... 2
Connection method	Fork-type cable lug
Conductor cross section flexible	1.5 mm ² ... 16 mm ²

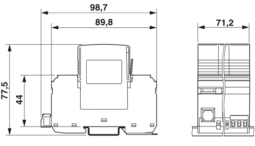
Dimensions

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Dimensional drawing	
Width	71.2 mm
Height	98.7 mm
Depth	77.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	4 Div.

Material specifications

Color	jet black RAL 9005
Flammability rating according to UL 94	V-0
CTI value of material	600
Insulating material	PA 6.6/PBT
Material group	I
Housing material	PA 6.6 PBT

Mechanical properties

Mechanical data

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

Protective circuit

Mode of protection	L-N
	L-PE
	N-PE
Direction of action	3L-N & N-PE
Nominal voltage U_N	240/415 V AC (TN-S)
	240/415 V AC (TT)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous operating voltage U_C (L-N)	335 V AC
Maximum continuous operating voltage U_C (L-PE)	335 V AC
Maximum continuous operating voltage U_C (N-PE)	264 V AC
Rated load current I_L	80 A
Residual current I_{PE}	$\leq 5 \mu A$
Standby power consumption P_C	$\leq 810 \text{ mVA}$
Nominal discharge current I_n (8/20) μs (L-N)	12.5 kA
Nominal discharge current I_n (8/20) μs (L-PE)	12.5 kA
Nominal discharge current I_n (8/20) μs (N-PE)	50 kA
Maximum discharge current I_{max} (8/20) μs	50 kA
Impulse discharge current (10/350) μs (L-N), charge	6.25 As

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Impulse discharge current (10/350) μs (L-N), specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μs (L-N), peak current value I_{imp}	12.5 kA
Impulse discharge current (10/350) μs (L-PE), charge	6.25 As
Impulse discharge current (10/350) μs (L-PE), specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μs (L-PE), peak current value I_{imp}	12.5 kA
Impulse discharge current (10/350) μs (N-PE), charge	25 As
Impulse discharge current (10/350) μs (N-PE), specific energy	625 kJ/ Ω
Impulse discharge current (10/350) μs (N-PE), peak current value I_{imp}	50 kA
Total discharge current I_{total} (8/20) μs	50 kA
Total discharge current I_{total} (10/350) μs	50 kA
Follow current interrupt rating I_{fi} (N-PE)	100 A
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_{p} (L-N)	≤ 1.2 kV
	≤ 1.6 kV (30 kA - 8/20 μs)
Voltage protection level U_{p} (L-PE)	≤ 2 kV
Voltage protection level U_{p} (N-PE)	≤ 1.7 kV
Residual voltage U_{res} (L-N)	≤ 1.2 kV (at I_{n})
	≤ 1.1 kV (at 10 kA)
	≤ 1 kV (at 5 kA)
	≤ 0.9 kV (at 3 kA)
Residual voltage U_{res} (L-PE)	≤ 2 kV (at I_{n})
	≤ 1.5 kV (at 10 kA)
	≤ 1.2 kV (at 5 kA)
	≤ 1.1 kV (at 3 kA)
Residual voltage U_{res} (N-PE)	≤ 0.6 kV (at I_{n})
	≤ 0.5 kV (at 10 kA)
	≤ 0.5 kV (at 5 kA)
	≤ 0.4 kV (at 3 kA)
TOV behavior at U_{T} (L-N)	415 V AC (5 s / withstand mode)
	457 V AC (120 min / safe failure mode)
TOV behavior at U_{T} (N-PE)	1200 V AC (200 ms / withstand mode)
Response time t_{A} (L-N)	≤ 25 ns
Response time t_{A} (L-PE)	≤ 100 ns
Response time t_{A} (N-PE)	≤ 100 ns
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)
Max. backup fuse with branch wiring	160 A (gG)

Additional technical data

Maximum discharge current I_{max} (8/20) μs	65 kA
---	-------

Environmental and real-life conditions

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

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 (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approval data

UL specifications

Maximum continuous operating voltage MCOV (L-L)	670 V AC
Maximum continuous operating voltage MCOV (L-N)	335 V AC
Maximum continuous operating voltage MCOV (L-G)	335 V AC
Maximum continuous operating voltage MCOV (N-G)	264 V AC
Nominal discharge current I_n (L-L)	20 kA
Nominal discharge current I_n (L-N)	20 kA
Nominal discharge current I_n (L-G)	20 kA
Nominal discharge current I_n (N-G)	20 kA
Mode of protection	L-L L-N L-G N-G
Nominal voltage	240/415 V AC
Power distribution system	Wye
Nominal frequency	50/60 Hz
Measured limiting voltage MLV (L-L)	3570 V
Measured limiting voltage MLV (L-N)	2630 V
Measured limiting voltage MLV (L-G)	3600 V
Measured limiting voltage MLV (N-G)	2600 V
SPD Type	4CA

UL indicator/remote signaling

AC operating voltage	125 V AC
AC operating current	1 A AC

UL connection data

Tightening torque	30 lb _F -in.
Conductor cross section AWG	10 ... 2

Standards and regulations

Standards/specifications	IEC 61643-11
Standards/specifications	EN 61643-11

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Mounting

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

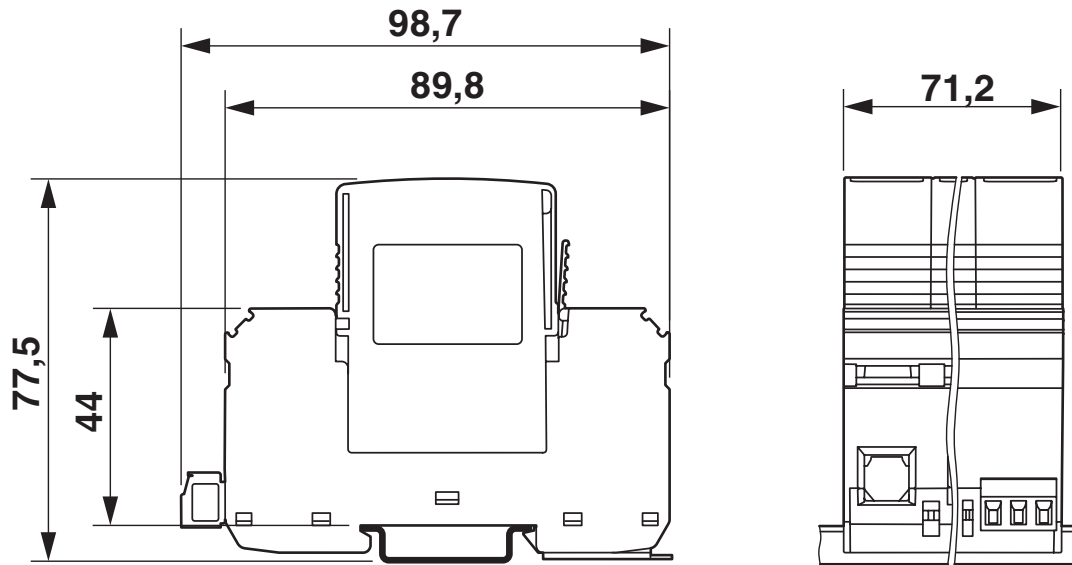
Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

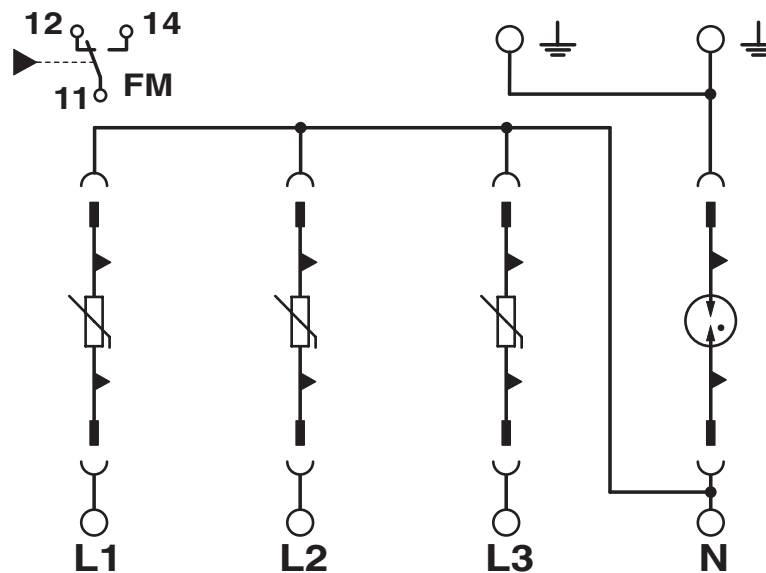
<https://www.phoenixcontact.com/pc/products/2800183>

Drawings

Dimensional drawing



Circuit diagram

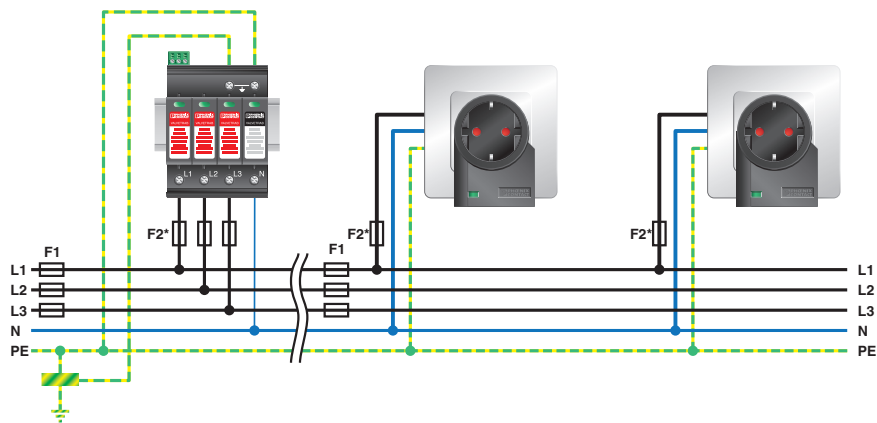


Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Application drawing



Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Approvals



cUL Recognized
Approval ID: FILE E 330181



UL Recognized
Approval ID: FILE E 330181



IECEE CB Scheme
Approval ID: AT 2584



EAC
Approval ID: EAC-Zulassung

CCA

Approval ID: NTR-AT 1906

Nominal Voltage U_N

Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-



KEMA-KEUR
Approval ID: 2162496-01



DNV GL
Approval ID: TAE00001N9

Nominal Voltage U_N

Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-



EAC
Approval ID: RU C-DE.*09.B.00169



ÖVE
Approval ID: 18583-009-08

cULus Recognized

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Classifications

ECLASS

ECLASS-9.0	27130802
ECLASS-10.0.1	27130802
ECLASS-11.0	27130802

ETIM

ETIM 8.0	EC000381
----------	----------

UNSPSC

UNSPSC 21.0	
-------------	--

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Accessories

Wiring bridge

Wiring bridge - MPB 18/1-10/1.0.0 - 2830443

<https://www.phoenixcontact.com/pc/products/2830443>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 10 pitches with contact sequence 1-0-0

Wiring bridge

Wiring bridge - MPB 18/4- 8 - 2809283

<https://www.phoenixcontact.com/pc/products/2809283>



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

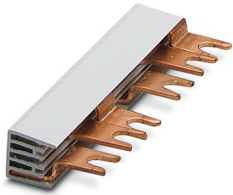
<https://www.phoenixcontact.com/pc/products/2800183>

Wiring bridge

Wiring bridge - MPB 18/3- 6 - 2809241

<https://www.phoenixcontact.com/pc/products/2809241>

Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.



Wiring bridge

Wiring bridge - MPB 18/1-57 - 2809238

<https://www.phoenixcontact.com/pc/products/2809238>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.



Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Wiring bridge

Wiring bridge - MPB 18/1-12 - 2748593

<https://www.phoenixcontact.com/pc/products/2748593>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.

Wiring bridge

Wiring bridge - MPB 18/1-9 - 2748580

<https://www.phoenixcontact.com/pc/products/2748580>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Wiring bridge

Wiring bridge - MPB 18/1- 8 - 2748577

<https://www.phoenixcontact.com/pc/products/2748577>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.

Wiring bridge

Wiring bridge - MPB 18/1- 6 - 2748564

<https://www.phoenixcontact.com/pc/products/2748564>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Wiring bridge

Wiring bridge - MPB 18/1- 4 - 2809225

<https://www.phoenixcontact.com/pc/products/2809225>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.

Wiring bridge

Wiring bridge - MPB 18/1- 3 - 2809212

<https://www.phoenixcontact.com/pc/products/2809212>



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Wiring bridge

Wiring bridge - MPB 18/1- 2 - 2809209

<https://www.phoenixcontact.com/pc/products/2809209>

Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.



Feed-through terminal block

Feed-through terminal block - DK-BIC-35 - 2749880

<https://www.phoenixcontact.com/pc/products/2749880>

Feed-through terminal block for VAL and FLT applications



Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Marker pen

Marker pen - B-STIFT - 1051993

<https://www.phoenixcontact.com/pc/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

Zack marker strip

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

<https://www.phoenixcontact.com/pc/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap in, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM

2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Marker for terminal blocks

Marker for terminal blocks - ZBN 18,LGS:ERDE - 2749589

<https://www.phoenixcontact.com/pc/products/2749589>

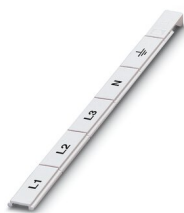


Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snap into tall marker groove, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

Marker for terminal blocks

Marker for terminal blocks - ZBN 18,LGS:L1-N,ERDE - 2749576

<https://www.phoenixcontact.com/pc/products/2749576>



Marker for terminal blocks, Strip, white, labeled, horizontal: L1, L2, L3, N, GND, mounting type: snap into tall marker groove, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

Lightning/surge arrester type 1/2 - VAL-MS-T1/T2 335/12.5/3+1-FM



2800183

<https://www.phoenixcontact.com/pc/products/2800183>

Type 1/2 surge protection plug

Type 1/2 surge protection plug - VAL-MS-T1/T2 335/12.5 ST - 2800190

<https://www.phoenixcontact.com/pc/products/2800190>



L-N replacement plug for VAL-MS-T1/T2 335/12.5 plug-in lightning/surge arrester.

Type 1/2 surge protection plug

Type 1/2 surge protection plug - F-MS-T1/T2 50 ST - 2800191

<https://www.phoenixcontact.com/pc/products/2800191>



N-PE replacement plug for VAL-MS-T1/T2 335/12.5 plug-in lightning/surge arrester.

Phoenix Contact 2022 © - 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