

VAL-MS-T1/T2 335/12.5/3+0 - Lightning/surge arrester type 1/2



2800189

<https://www.phoenixcontact.com/us/products/2800189>

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 common N and PE (4-conductor system: L1, L2, L3, PEN).

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

Commercial data

Item number	2800189
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL18
Product key	CL1151
Catalog page	Page 47 (C-4-2019)
GTIN	4046356518604
Weight per piece (including packing)	549.4 g
Weight per piece (excluding packing)	527.8 g
Customs tariff number	85363030
Country of origin	DE

VAL-MS-T1/T2 335/12.5/3+0 - Lightning/surge arrester type 1/2

2800189

<https://www.phoenixcontact.com/us/products/2800189>

Technical data

Product properties

IEC test classification	I / II
	T1 / T2
EN type	T1 / T2
IEC power supply system	TN-C
Type	DIN rail module, two-section, divisible
Product type	Arrester combination
Product family	VALVETRAB MS
Number of positions	3
Surge protection fault message	optical

Insulation characteristics

Overvoltage category	III
Pollution degree	2

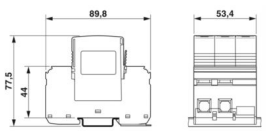
Electrical properties

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

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 rigid	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

Dimensional drawing	
Width	53.4 mm
Height	89.8 mm
Depth	77.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	3 Div.

VAL-MS-T1/T2 335/12.5/3+0 - Lightning/surge arrester type 1/2



2800189

<https://www.phoenixcontact.com/us/products/2800189>

Material specifications

Color	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-PEN
Direction of action	3L-PEN
Nominal voltage U_N	240/415 V AC (TN-C)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous voltage U_C	335 V AC
Rated load current I_L	80 A
Residual current I_{PE}	$\leq 2400 \mu\text{A}$
Standby power consumption P_C	$\leq 810.00 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	12.5 kA
Maximum discharge current I_{max} (8/20) μs	50 kA
Impulse discharge current (10/350) μs , charge	6.25 As
Impulse discharge current (10/350) μs , specific energy	39 kJ/ Ω
Impulse discharge current (10/350) μs , peak value I_{imp}	12.5 kA
Total discharge current I_{total} (8/20) μs	150 kA
Total discharge current I_{total} (10/350) μs	37.5 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	$\leq 1.2 \text{ kV}$ $\leq 1.6 \text{ kV}$ (30 kA - 8/20 μs)
Residual voltage U_{res}	$\leq 1.2 \text{ kV}$ (at I_n) $\leq 1.1 \text{ kV}$ (at 10 kA) $\leq 1 \text{ kV}$ (at 5 kA) $\leq 0.9 \text{ kV}$ (at 3 kA)
TOV behavior at U_T	415 V AC (5 s / withstand mode) 457 V AC (120 min / safe failure mode)
Response time t_A	$\leq 25 \text{ ns}$
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)
Max. backup fuse with branch wiring	160 A (gG)

VAL-MS-T1/T2 335/12.5/3+0 - Lightning/surge arrester type 1/2



2800189

<https://www.phoenixcontact.com/us/products/2800189>

Additional technical data

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

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

Approvals

UL specifications

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

UL connection data

Tightening torque	30 lb _F -in.
Conductor cross section AWG	14 ... 2

Standards and regulations

Standards/specifications	IEC 61643-11
Note	2011
Standards/specifications	EN 61643-11
Note	2012

Mounting

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

VAL-MS-T1/T2 335/12.5/3+0 - Lightning/surge arrester type 1/2



2800189

<https://www.phoenixcontact.com/us/products/2800189>

Classifications

ECLASS

ECLASS-11.0	27130802
ECLASS-13.0	27171201

ETIM

ETIM 9.0	EC000381
----------	----------

UNSPSC

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

VAL-MS-T1/T2 335/12.5/3+0 - Lightning/surge arrester type 1/2



2800189

<https://www.phoenixcontact.com/us/products/2800189>

Environmental product compliance

China RoHS

Environmentally friendly use period: unlimited = EFUP-e

No hazardous substances above threshold values

Phoenix Contact 2024 © - 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