

VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/it/products/2859181>

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.



Surge protective device combination, 4-channel, for installation on NS 35/7,5, with remote indication contact (FM) as changeover contact, voltage 230 V AC

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
- Wide range of applications due to various nominal voltages
- High degree of modularity provides individual solutions for every application

Commercial data

Item number	2859181
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CL1
Product key	CL1321
GTIN	4017918911218
Weight per piece (including packing)	411.95 g
Weight per piece (excluding packing)	381.96 g
Customs tariff number	85363030
Country of origin	CN

VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/it/products/2859181>

Technical data

Product properties

Product type	Surge arrester
Product family	VALVETRAB MS
IEC test classification	II
	T2
EN type	T2
IEC power supply system	TN-S
	TT
Type	DIN rail module, two-section, divisible
Number of positions	4
Surge protection fault message	Optical, remote indicator contact
Number of ports	One

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 ... 750 mA 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 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

Remote fault indicator contact

Connection method	Plug-in/screw connection via COMBICON
Screw thread	M2

VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/it/products/2859181>

Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross-section flexible	0.14 mm ² ... 1.5 mm ²
Conductor cross-section rigid	0.14 mm ² ... 1.5 mm ²
Conductor cross-section AWG	28 ... 16

Dimensions

Dimensional drawing	
Width	71 mm
Height	98.7 mm
Depth	65.7 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	4 Div.

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

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)	260 V AC
Rated load current I_L	80 A
Protective conductor current I_{PE}	$\leq 5 \mu A$
Standby power consumption P_C	$\leq 450 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	20 kA
Maximum discharge current I_{max} (8/20) μs	40 kA
Follow current interrupt rating I_{fi} (N-PE)	100 A
Short-circuit current rating I_{SCCR}	25 kA

VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/it/products/2859181>

Voltage protection level U_p (L-N)	≤ 1.5 kV
Voltage protection level U_p (L-PE)	≤ 1.9 kV
Voltage protection level U_p (N-PE)	≤ 1.5 kV
Residual voltage U_{res} (L-N)	≤ 1.5 kV (at I_n)
	≤ 1.3 kV (at 10 kA)
	≤ 1.2 kV (at 5 kA)
	≤ 1.1 kV (at 3 kA)
Residual voltage U_{res} (L-PE)	≤ 1.9 kV (at I_n)
	≤ 1.5 kV (at 10 kA)
	≤ 1.3 kV (at 5 kA)
	≤ 1.2 kV (at 3 kA)
Residual voltage U_{res} (N-PE)	≤ 0.4 kV (at I_n)
	≤ 0.25 kV (at 10 kA)
	≤ 0.15 kV (at 5 kA)
	≤ 0.1 kV (at 3 kA)
TOV behavior at U_T (L-N)	415 V AC (5 s / withstand mode)
	440 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)
Max. backup fuse with branch wiring	125 A (gG)

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)	25g (Half-sine / 11 ms / $3x \pm X, \pm Y, \pm Z$)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

Approvals

UL specifications

Maximum continuous operating voltage MCOV (L-L)	640 V AC
Maximum continuous operating voltage MCOV (L-N)	320 V AC
Maximum continuous operating voltage MCOV (L-G)	320 V AC
Maximum continuous operating voltage MCOV (N-G)	260 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

VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/it/products/2859181>

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)	2900 V
Measured limiting voltage MLV (L-N)	2030 V
Measured limiting voltage MLV (L-G)	2720 V
Measured limiting voltage MLV (N-G)	1370 V
SPD Type	4CA

UL indicator/remote signaling

Operating voltage	125 V AC
AC operating current	1 A AC

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 320/3+1/FM - Type 2 surge arrester

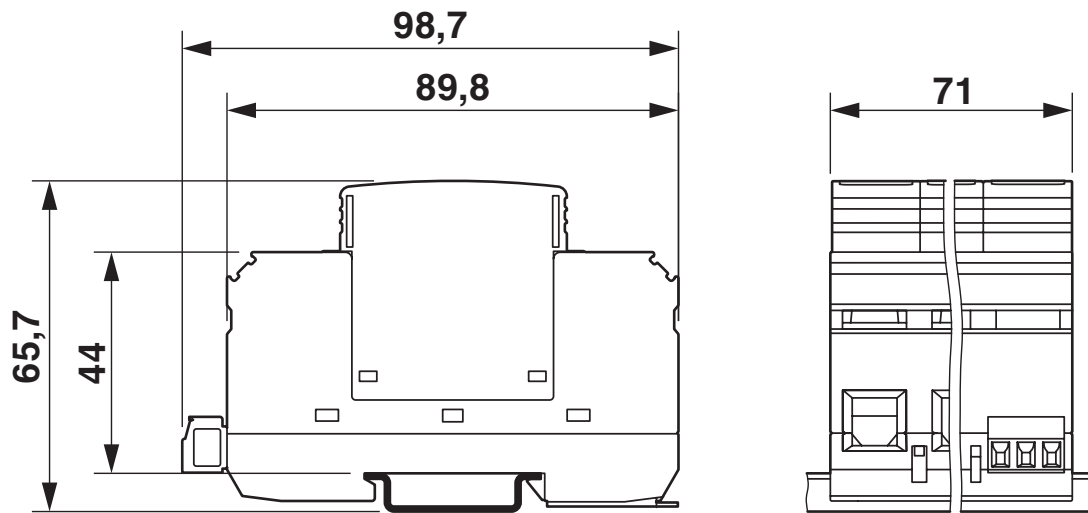
2859181

<https://www.phoenixcontact.com/it/products/2859181>



Drawings

Dimensional drawing



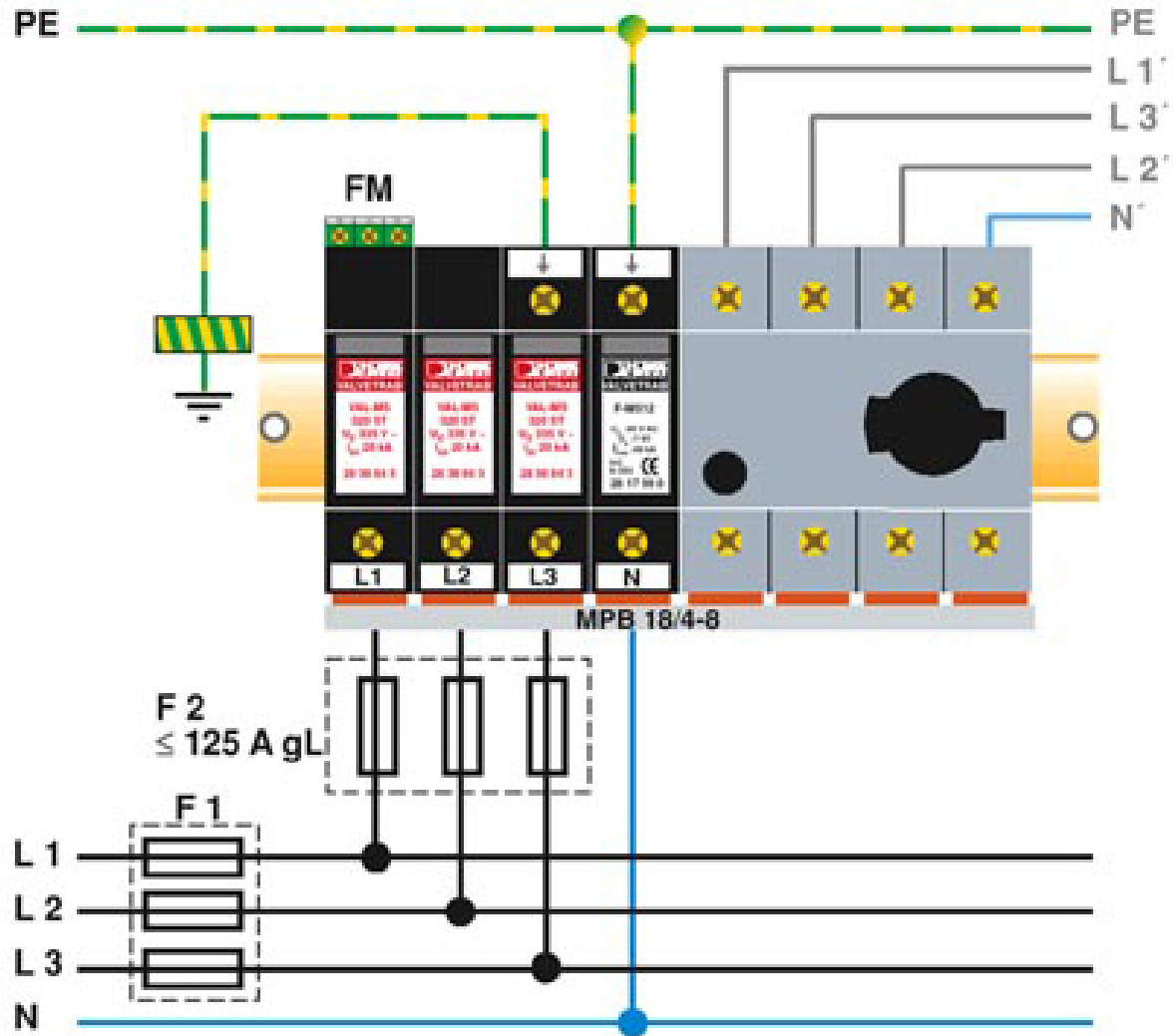
VAL-MS 320/3+1/FM - Type 2 surge arrester

2859181

<https://www.phoenixcontact.com/lt/products/2859181>



Application drawing

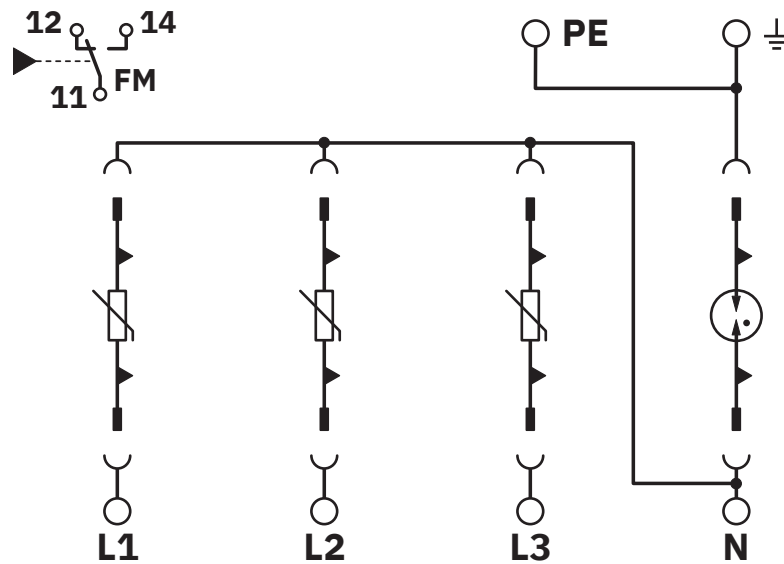


VAL-MS 320/3+1/FM - Type 2 surge arrester

2859181

<https://www.phoenixcontact.com/it/products/2859181>

Circuit diagram



VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/it/products/2859181>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/it/products/2859181>



cUL Recognized
Approval ID: FILE E 330181



UL Recognized
Approval ID: FILE E 330181



IECEE CB Scheme
Approval ID: AT 2905/M1

CCA

Approval ID: NTR-AT 1947-A



KEMA-KEUR
Approval ID: 71-148002



DNV GL
Approval ID: TAE000041M



CSA
Approval ID: 13631



ÖVE
Approval ID: 18583-001-17

UAE-RoHS

Approval ID: 22-09-51250



ÖVE
Approval ID: 18583-001-18

VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/it/products/2859181>

Classifications

ECLASS

ECLASS-13.0	27171202
ECLASS-15.0	27171202

ETIM

ETIM 10.0	EC000941
-----------	----------

UNSPSC

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

VAL-MS 320/3+1/FM - Type 2 surge arrester



2859181

<https://www.phoenixcontact.com/lt/products/2859181>

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%
-------------------------------------	----------------------------

EF3.1 Climate Change

CO2e kg	9.775 kg CO2e
---------	---------------

Phoenix Contact 2026 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact UAB
Svitrigailos str. 11B
03228 Vilnius
+370 5 2106321
balticinfo@phoenixcontact.com