

# VAL-MS 385/80/1+1 - Type 2 surge arrester



2921297

<https://www.phoenixcontact.com/us/products/2921297>

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.



Type 2 surge protective device for 3-conductor power supply systems (L1, N, PE), with plug latching.

## Commercial data

Item number	2921297
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	CL1322
GTIN	4046356290869
Weight per piece (including packing)	326.6 g
Weight per piece (excluding packing)	326.6 g
Country of origin	DE

# VAL-MS 385/80/1+1 - Type 2 surge arrester

2921297

<https://www.phoenixcontact.com/us/products/2921297>

## Technical data

### Product properties

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

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

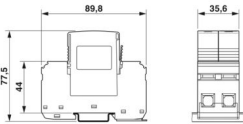
### Electrical properties

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

### Connection data

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

### Dimensions

Dimensional drawing	
Width	35.6 mm
Height	89.8 mm
Depth	77.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	2 Div.

# VAL-MS 385/80/1+1 - Type 2 surge arrester



2921297

<https://www.phoenixcontact.com/us/products/2921297>

## Material specifications

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	1L-N & N-PE
Nominal voltage $U_N$	240 V AC (TN-S)
	240 V AC (TT)
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$ (L-N)	385 V AC
Maximum continuous operating voltage $U_C$ (N-PE)	264 V AC
Rated load current $I_L$	80 A
Protective conductor current $I_{PE}$	$\leq 5 \mu A$
Standby power consumption $P_C$	$\leq 231 \text{ mVA}$
Nominal discharge current $I_n$ (8/20) $\mu s$	40 kA
Maximum discharge current $I_{max}$ (8/20) $\mu s$	80 kA
Impulse discharge current (10/350) $\mu s$ (L-N), charge	1.25 As
Impulse discharge current (10/350) $\mu s$ (L-N), specific energy	1.56 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu s$ (L-N), peak current value $I_{imp}$	2.5 kA
Impulse discharge current (10/350) $\mu s$ (L-PE), charge	1.25 As
Impulse discharge current (10/350) $\mu s$ (L-PE), specific energy	1.56 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu s$ (L-PE), peak current value $I_{imp}$	2.5 kA
Impulse discharge current (10/350) $\mu s$ (N-PE), charge	5 As
Impulse discharge current (10/350) $\mu s$ (N-PE), specific energy	25 kJ/ $\Omega$
Impulse discharge current (10/350) $\mu s$ (N-PE), peak current value $I_{imp}$	10 kA
Total discharge current $I_{Total}$ (8/20) $\mu s$	80 kA
Total discharge current $I_{Total}$ (10/350) $\mu s$	5 kA
Follow current interrupt rating $I_{fi}$ (N-PE)	100 A (264 V AC)
Short-circuit current rating $I_{SCCR}$	25 kA
Voltage protection level $U_p$ (L-N)	$\leq 2 \text{ kV}$
Voltage protection level $U_p$ (L-PE)	$\leq 2 \text{ kV}$
Voltage protection level $U_p$ (N-PE)	$\leq 1.7 \text{ kV}$
Residual voltage $U_{res}$ (L-N)	$\leq 2 \text{ kV}$ (at $I_n$ )
	$\leq 1.3 \text{ kV}$ (at 10 kA)

# VAL-MS 385/80/1+1 - Type 2 surge arrester



2921297

<https://www.phoenixcontact.com/us/products/2921297>

	≤ 1.2 kV (at 5 kA)
	≤ 1.15 kV (at 3 kA)
Residual voltage $U_{res}$ (L-PE)	≤ 2 kV (at $I_n$ )
	≤ 1.5 kV (at 10 kA)
	≤ 1.4 kV (at 5 kA)
	≤ 1.3 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)	480 V AC (5 s / withstand mode)
	457 V AC (120 min / withstand 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 <sup>2</sup> )
Max. backup fuse with branch wiring	250 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)	30g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

## Approvals

### UL specifications

Maximum continuous operating voltage MCOV (L-N)	385 V AC
Maximum continuous operating voltage MCOV (L-G)	385 V AC
Maximum continuous operating voltage MCOV (N-G)	264 V AC
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-N
	L-G
	N-G
Nominal voltage	240 V AC
Power distribution system	Single phase
Nominal frequency	50/60 Hz

# VAL-MS 385/80/1+1 - Type 2 surge arrester



2921297

<https://www.phoenixcontact.com/us/products/2921297>

Measured limiting voltage MLV (L-N)	2710 V
Measured limiting voltage MLV (L-G)	3730 V
Measured limiting voltage MLV (N-G)	2590 V
SPD Type	4CA

## UL connection data

Tightening torque	30 lb <sub>f</sub> -in.
Conductor cross-section AWG	10 ... 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
---------------	-----------------

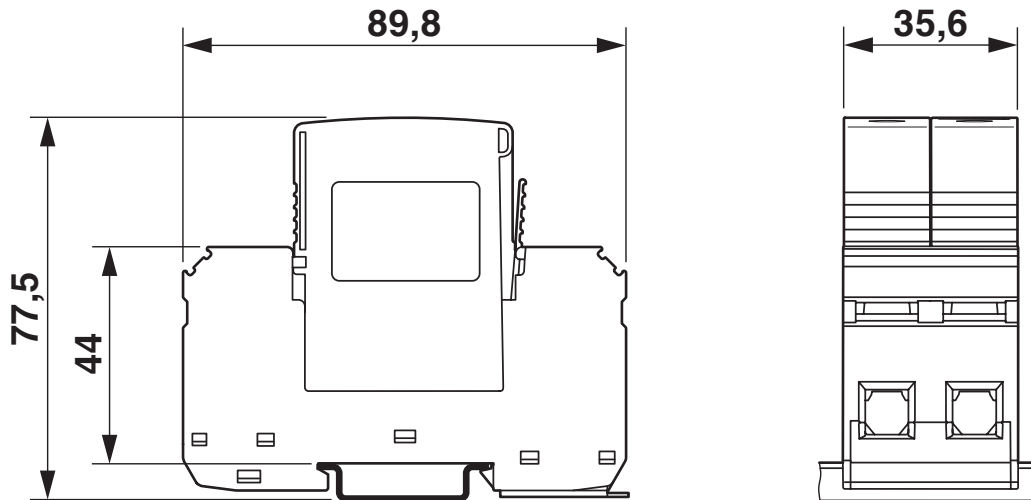
# VAL-MS 385/80/1+1 - Type 2 surge arrester

2921297

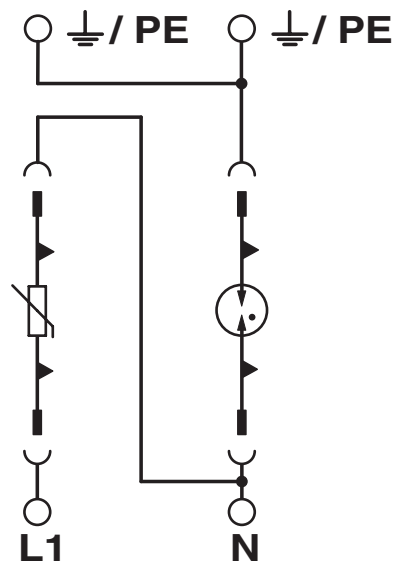
<https://www.phoenixcontact.com/us/products/2921297>

## Drawings

Dimensional drawing



Circuit diagram



# VAL-MS 385/80/1+1 - Type 2 surge arrester



2921297

<https://www.phoenixcontact.com/us/products/2921297>

## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
---	--------------------

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
-------------------------------------	----------------------------

Phoenix Contact 2026 © - 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](mailto:info@phoenixcon.com)