

VAL-MS 385/80/3+0-FM - Type 2 surge arrester



2921080

<https://www.phoenixcontact.com/us/products/2921080>

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Type 2 surge protective device for 4-conductor power supply systems (L1, L2, L3, PEN), with plug latching and 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
- Wide range of applications due to various nominal voltages
- High degree of modularity provides individual solutions for every application

Commercial data

Item number	2921080
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Product key	CL1322
Catalog page	Page 49 (C-6-2015)
GTIN	4046356280099
Weight per piece (including packing)	480.1 g
Weight per piece (excluding packing)	480.1 g
Country of origin	DE

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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-C
Type	DIN rail module, two-section, divisible
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)
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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 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
Tightening torque	0.25 Nm
Stripping length	7 mm
Conductor cross section flexible	0.14 mm ² ... 1.5 mm ²

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Conductor cross section rigid	0.14 mm ² ... 1.5 mm ²
Conductor cross section AWG	28 ... 16

Dimensions

Dimensional drawing	
Width	53.4 mm
Height	98.7 mm
Depth	77.5 mm (incl. DIN rail 7.5 mm)
Horizontal pitch	3 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-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	385 V AC
Rated load current I_L	80 A
Residual current I_{PE}	$\leq 1800 \mu A$
Standby power consumption P_C	$\leq 690.00 \text{ mVA}$
Nominal discharge current I_n (8/20) μs	40 kA
Maximum discharge current I_{max} (8/20) μs	80 kA
Impulse discharge current (10/350) μs , charge	1.25 As
Impulse discharge current (10/350) μs , specific energy	1.56 kJ/ Ω
Impulse discharge current (10/350) μs , peak value I_{imp}	2.5 kA
Total discharge current I_{total} (8/20) μs	200 kA
Total discharge current I_{total} (10/350) μs	7.5 kA
Short-circuit current rating I_{SCCR}	25 kA
Voltage protection level U_p	$\leq 2 \text{ kV}$
Residual voltage U_{res}	$\leq 2 \text{ kV}$ (at I_n) $\leq 1.3 \text{ kV}$ (at 10 kA) $\leq 1.2 \text{ kV}$ (at 5 kA)

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	≤ 1.15 kV (at 3 kA)
TOV behavior at U_T	480 V AC (5 s / withstand mode)
	457 V AC (120 min / withstand mode)
Response time t_A	≤ 25 ns
Max. backup fuse with V-type through wiring	80 A (gG - 16 mm ²)
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-L)	385 V AC
Maximum continuous operating voltage MCOV (L-G)	385 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)	3860 V
Measured limiting voltage MLV (L-G)	2710 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	10 ... 2

Standards and regulations

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

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Note	2012
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Mounting

Mounting type	DIN rail: 35 mm
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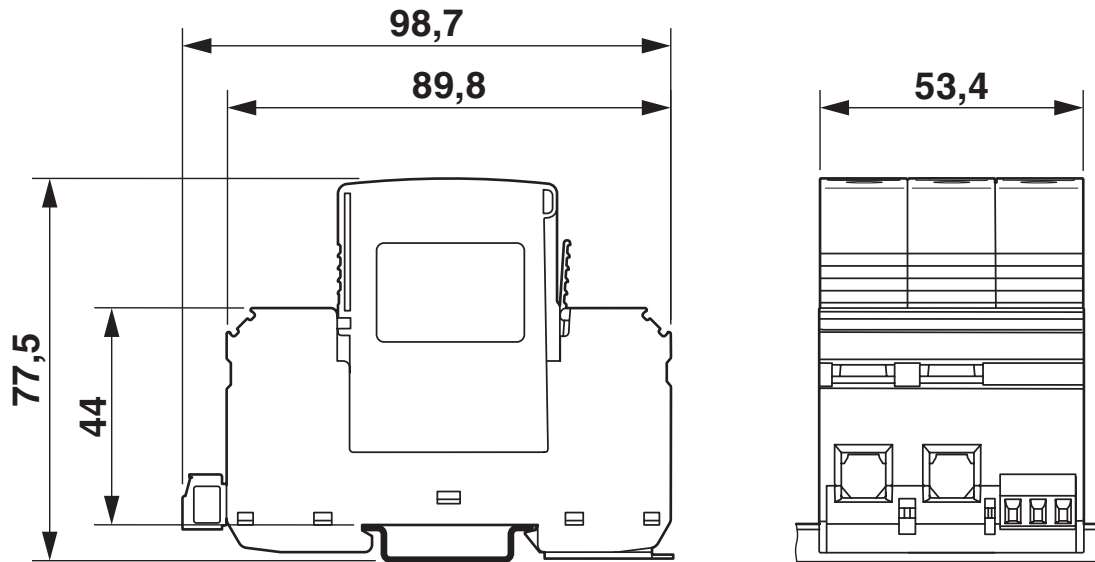
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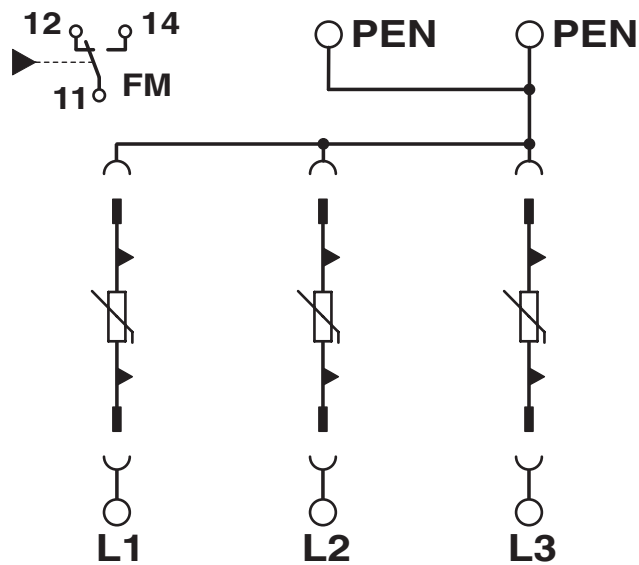
<https://www.phoenixcontact.com/us/products/2921080>

Drawings

Dimensional drawing



Circuit diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2921080>



cUL Recognized

Approval ID: FILE E 330181



UL Recognized

Approval ID: FILE E 330181



IECEE CB Scheme

Approval ID: AT 3003



EAC

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

CCA

Approval ID: NTR-AT 1955



KEMA-KEUR

Approval ID: 2171147.01



DNV GL

Approval ID: TAE00001N9

UAE-RoHS

Approval ID: 22-09-51251

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Classifications

ECLASS

ECLASS-11.0	27130805
ECLASS-13.0	27171202

ETIM

ETIM 9.0	EC000941
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UNSPSC

UNSPSC 21.0	39121600
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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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

VAL-MS 385/80 ST - Type 2 surge protection plug

2920353

<https://www.phoenixcontact.com/us/products/2920353>



Type 2 surge protection plug with varistor for VAL-MS 385/80/..., thermal monitoring, visual fault warning.

SZK PZ2 VDE - Screwdriver

1206463

<https://www.phoenixcontact.com/us/products/1206463>



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

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VAL-MS 385/80 ST - Type 2 surge protection plug

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Type 2 surge protection plug with varistor for VAL-MS 385/80/..., thermal monitoring, visual fault warning.

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