

# VAL-MS-AR 350 VF/FM - Type 2 surge arrester



2801490

<https://www.phoenixcontact.com/us/products/2801490>

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The VAL-MS-AR 350 VF/FM is a hybrid SPD with a gas discharge tube in series with a metal oxide varistor and thermal monitor, ideal for applications where no leakage current can be tolerated.

The VAL-MS BE-AR/FM base provides a disconnect that separates the field wire from the protected mode for field diagnosis and dry contacts for remote function monitoring. Independent input and output terminals are on the same side with ground terminals on the opposite end. All terminals are high-current screw clamping for stripped or ferruled, solid or stranded wires.

## Your advantages

- Separate field and house wire termination
- Tool-free field wire disconnect and test point
- IP20 touch safe when connected
- VF plug has zero leakage current

## Commercial data

Item number	2801490
Packing unit	10 pc
Minimum order quantity	10 pc
Note	Made to order (non-returnable)
Sales key	CL18
Product key	CL1321
GTIN	4046356879538
Weight per piece (including packing)	222.222 g
Weight per piece (excluding packing)	222.222 g
Customs tariff number	85363010
Country of origin	DE

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## Technical data

### Product properties

Product type	Surge protection for NEMA power supply units
Product family	VALVETRAB MS
IEC test classification	II T2
EN type	T2
Type	DIN rail module, two-section, divisible
Surge protection fault message	Optical, remote indicator contact

### Electrical properties

Nominal frequency $f_N$	50 Hz (60 Hz)
Nominal voltage $U_N$	230 V AC
Nominal current $I_N$	76 A (at 30 °C ambient temperature)

### Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	Changeover contact, 1-pos.
Maximum operating voltage $U_{max. AC}$	250 V AC
Max. operating current $I_{max}$	1.5 A AC (250 V AC) 1.5 A DC (30 V DC)

### Connection data

Connection method	Screw terminal block
Tightening torque	3 Nm ... 4.5 Nm (Ground) 1.5 Nm ... 1.8 Nm (House) 2.5 Nm ... 3 Nm (Field)
Conductor cross-section flexible	1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup> (16 mm strip length) 0.5 mm <sup>2</sup> ... 15 mm <sup>2</sup> (10 mm strip length) 1.5 mm <sup>2</sup> ... 25 mm <sup>2</sup> (14 mm strip length)
Conductor cross-section rigid	1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup> (16 mm strip length) 0.5 mm <sup>2</sup> ... 15 mm <sup>2</sup> (10 mm strip length) 1.5 mm <sup>2</sup> ... 25 mm <sup>2</sup> (14 mm strip length)
Conductor cross-section AWG	15 ... 2 (16 mm strip length) 20 ... 6 (10 mm strip length) 12 ... 4 (14 mm strip length)

### Remote fault indicator contact

Connection method	Screw connection
Screw thread	M2
Tightening torque, min	0.25 Nm
Tightening torque	2 lb <sub>f</sub> -in. ... 4 lb <sub>f</sub> -in. (UL)
Stripping length	7 mm

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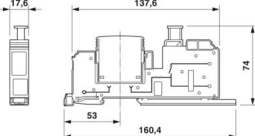


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Conductor cross-section flexible min.	0.14 mm <sup>2</sup>
Conductor cross-section flexible max.	1.5 mm <sup>2</sup>
Conductor cross-section, rigid min.	0.14 mm <sup>2</sup>
Conductor cross-section, rigid max.	1.5 mm <sup>2</sup>

## Dimensions

Dimensional drawing	
Width	17.7 mm
Height	160 mm
Depth	75 mm

## Material specifications

Color	black (RAL 9005) black (RAL 9005)
Flammability rating according to UL 94	V0
Housing material	PA

## Protective circuit

Direction of action	1L-N/PE
Nominal frequency $f_N$	50 Hz (60 Hz)
Maximum continuous operating voltage $U_C$	350 V AC
Rated load current $I_L$	55 A (with 6 AWG)
Nominal discharge current $I_n$ (8/20) $\mu$ s	10 kA
Maximum discharge current $I_{max}$ (8/20) $\mu$ s	20 kA
Total discharge current $I_{Total}$ (8/20) $\mu$ s	20 kA
Total discharge current $I_{Total}$ (10/350) $\mu$ s	3 kA
Voltage protection level $U_p$	$\leq 1.2$ kV
Total surge current (10/350) $\mu$ s	3 kA
Total surge current (8/20) $\mu$ s	15 kA
Max. backup fuse with branch wiring	125 A (gG) 125 A (gG)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20 (when disconnect closed) IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Altitude	max. 3000 m
Permissible humidity (operation)	5 % ... 95 %

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Permissible humidity (storage/transport)	5 % ... 95 %
Shock (operation)	10g
Vibration (operation)	2g (0 Hz ... 200 Hz)

## Mounting

Mounting type	DIN rail mounting with additional retaining screw
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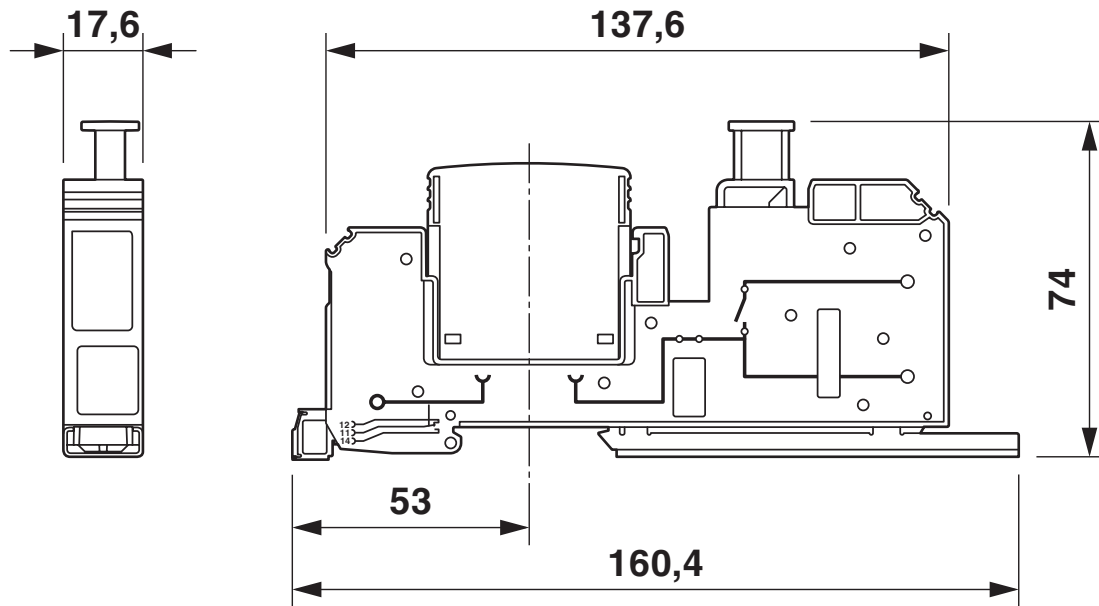
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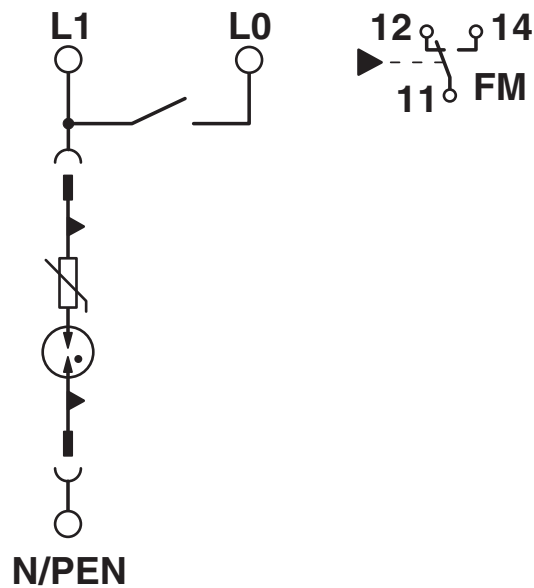
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## Drawings

Dimensional drawing



Circuit diagram



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## Classifications

### ECLASS

ECLASS-13.0

27171202

### UNSPSC

UNSPSC 21.0

39121620

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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Not applicable, Not qualified for the European market
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### 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.)	Lead(CAS: 7439-92-1)
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