

Type 2 surge arrester - VAL-MS 350 VF/FM - 2856579

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Surge voltage arrester consisting of base element with remote indicator contact and protective plug with a connection in series with a varistor and a gas-filled spark gap, for mounting on NS 35/7.5, nominal voltage: 230 V AC, 1-channel

Your advantages

- ✓ Single-channel, DIN-rail mountable protective devices
- ✓ Consists of base element and plug
- ✓ Mechanical coding of all slots
- ✓ Optical, mechanical status indication for the individual arresters
- ✓ Disconnect device on each individual plug
- ✓ Base element with/without floating remote indication contact



Key Commercial Data

| | |
|--------------|---|
| Packing unit | 1 pc |
| GTIN |  4 017918 876852 |
| GTIN | 4017918876852 |

Technical data

Dimensions

| | |
|------------------|---------------------------------|
| Height | 96.8 mm |
| Width | 17.6 mm |
| Depth | 65.7 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 1 Div. |

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 (above mean sea level)) |

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Ambient conditions

| | |
|----------------------------------|---|
| Permissible humidity (operation) | 5 % ... 95 % |
| Shock (operation) | 25g (Half-sine / 11 ms / 3x ±X, ±Y, ±Z) |
| Vibration (operation) | 5g (10 ... 500 Hz / 2.5 h / X, Y, Z) |

General

| | |
|--|---|
| IEC test classification | II |
| | T2 |
| EN type | T2 |
| IEC power supply system | TN |
| | TT |
| | IT |
| Mode of protection | L-N |
| | L-PE |
| | L-PEN |
| Mounting type | DIN rail: 35 mm |
| Color | jet black RAL 9005 |
| Housing material | PA 6.6 |
| | PBT |
| Degree of pollution | 2 |
| Flammability rating according to UL 94 | V-0 |
| Type | DIN rail module, two-section, divisible |
| Number of positions | 1 |
| Surge protection fault message | Optical, remote indicator contact |

Additional descriptions

| | |
|------|---|
| Note | Usable in all low-voltage systems between L-N or L-PEN. Only usable in IT Systems between L-PE, if the exposed-conductive-parts (bodies) of the equipment of the low-voltage installation is connected to the earthing arrangement of the transformer substation. (interconnected earthing arrangement of the HV-transformer substation with the bodies of the LV-installation. $R_E = R_A$ accordance to IEC 60364-4-442 / VDE 0100-442 Fig. 44D / Example a) |
|------|---|

Protective circuit

| | |
|--|----------------------|
| Nominal voltage U_N | 240/415 V AC (TN) |
| | 240/415 V AC (TT) |
| | 230 V AC (IT) |
| Nominal frequency f_N | 50 Hz (60 Hz) |
| Maximum continuous voltage U_C | 350 V AC |
| Rated load current I_L | 80 A |
| Residual current I_{PE} | $\leq 5 \mu A$ |
| Standby power consumption P_C | $\leq 2 \text{ mVA}$ |
| Nominal discharge current I_n (8/20) μs | 10 kA |
| Maximum discharge current I_{max} (8/20) μs | 20 kA |

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Protective circuit

| | |
|--|-------------------------------------|
| Short-circuit current rating I_{SCCR} | 25 kA |
| Voltage protection level U_p | ≤ 1.5 kV |
| Residual voltage U_{res} | ≤ 1.2 kV (at I_n) |
| | ≤ 1.2 kV (at 10 kA) |
| | ≤ 1.1 kV (at 5 kA) |
| Front of wave sparkover voltage at 6 kV (1.2/50) μ s | ≤ 1.5 kV |
| TOV behavior at U_T | 415 V AC (5 s / withstand mode) |
| | 440 V AC (120 min / withstand mode) |
| Response time t_A | ≤ 100 ns |
| Max. backup fuse with V-type through wiring | 80 A (gG) |
| Max. backup fuse with branch wiring | 125 A (gG) |

Indicator/remote signaling

| | |
|----------------------------------|--|
| Switching function | PDT contact |
| Operating voltage | 5 V AC ... 250 V AC |
| | 30 V DC |
| Operating current | 5 mA AC ... 1 A AC |
| | 1 A DC |
| 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 |
| Conductor cross section solid | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 28 ... 16 |

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 solid | 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 |

UL specifications

| | |
|---|----------|
| SPD Type | 4CA |
| Maximum continuous operating voltage MCOV (L-N) | 350 V AC |
| Nom. voltage | 240 V AC |

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UL specifications

| | |
|---------------------------------------|----------|
| Mode of protection | L-N |
| Power distribution system | 1 |
| Nominal frequency | 50/60 Hz |
| Measured limiting voltage MLV (L-N) | 2420 V |
| Nominal discharge current I_n (L-N) | 10 kA |

UL indicator/remote signaling

| | |
|-----------------------------|------------------------|
| Operating voltage | 125 V AC |
| Operating current | 1 A AC |
| Tightening torque | 4 lb _F -in. |
| Conductor cross section AWG | 30 ... 14 |

UL connection data

| | |
|-----------------------------|-------------------------|
| Conductor cross section AWG | 10 ... 2 |
| Tightening torque | 30 lb _F -in. |

Standards and Regulations

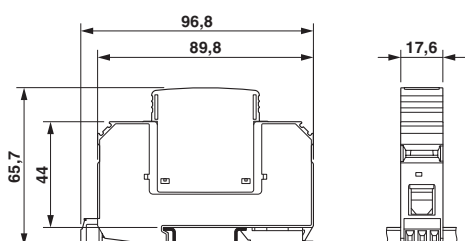
| | |
|-----------------------|-------------------|
| Standards/regulations | IEC 61643-11 2011 |
| | EN 61643-11 2012 |

Environmental Product Compliance

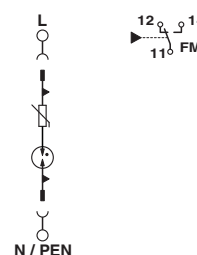
| | |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 |
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

Drawings

Dimensional drawing



Circuit diagram



Approvals

Approvals

Approvals

IECEE CB Scheme / UL Recognized / KEMA-KEUR / ÖVE / cUL Recognized / CCA / CSA / EAC / EAC / cULus Recognized

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Approvals

Ex Approvals

Approval details

| | | | |
|------------------|--|---|---------------------|
| IECEE CB Scheme | | http://www.iecee.org/ | AT 2905/M1 |
| UL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 330181 |
| KEMA-KEUR | | http://www.dekra-certification.com | 2170208.01 |
| ÖVE | | https://www.ove.at/en/certification-pz/certification-register/ | 18583-001-13 |
| cUL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 330181 |
| CCA | | | NTR-AT 1947-A |
| CSA | | http://www.csagroup.org/services-industries/product-listing/ | 13631 |
| EAC | | | EAC-Zulassung |
| EAC | | | RU C-DE.A*30.B01561 |
| cULus Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | |

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