

VAL-MS 350 VF ST - Type 2 surge protection plug



2856595

<https://www.phoenixcontact.com/us/products/2856595>

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Surge protection connector type 2 with series connection consisting of varistor and gas-filled spark gap for VAL-MS base element, thermal monitoring, visual fault warning. Design: 350 V AC

Commercial data

| | |
|--------------------------------------|--------------------|
| Item number | 2856595 |
| Packing unit | 10 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL18 |
| Product key | CL1321 |
| Catalog page | Page 71 (C-4-2019) |
| GTIN | 4017918876869 |
| Weight per piece (including packing) | 38.26 g |
| Weight per piece (excluding packing) | 37.8 g |
| Customs tariff number | 85363030 |
| Country of origin | DE |

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Technical data

Notes

General

| | |
|------|--|
| 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) |
|------|--|

Product properties

| | |
|--|---|
| Product type | Replacement plug |
| Product family | VALVETRAB MS |
| IEC test classification | II T2 |
| EN type | T2 |
| IEC power supply system | TN TT IT |
| Type | DIN rail module, two-section, divisible |
| Number of positions | 1 |
| Surge protection fault message | optical |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.12 |

Data management status

| | |
|------------------|----|
| Article revision | 13 |
|------------------|----|

Insulation characteristics

| | |
|----------------------|-----|
| Overvoltage category | III |
| Pollution degree | 2 |

Electrical properties

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

Connection data

| | |
|-------------------|-----------|
| Connection method | pluggable |
|-------------------|-----------|

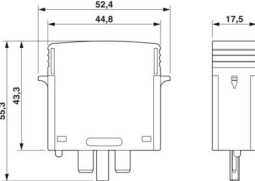
Dimensions

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| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 17.5 mm |
| Height | 52.4 mm |
| Depth | 55.3 mm |
| Horizontal pitch | 1 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 |
| Material group | I |
| Housing material | PA 6.6 |

Protective circuit

| | |
|--|--|
| Mode of protection | L-N L-PE L-PEN |
| Direction of action | 1L-N/PE |
| 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 |
| Residual current I_{PE} | $\leq 5 \mu A$ |
| Standby power consumption P_C | $\leq 2.00 \text{ mVA}$ |
| Nominal discharge current I_n (8/20) μs | 10 kA |
| Maximum discharge current I_{max} (8/20) μs | 20 kA |
| Short-circuit current rating I_{SCCR} | 25 kA |
| Voltage protection level U_p | $\leq 1.5 \text{ kV}$ |
| Residual voltage U_{res} | $\leq 1.2 \text{ kV}$ (at I_n) $\leq 1.2 \text{ kV}$ (at 10 kA) $\leq 1.1 \text{ kV}$ (at 5 kA) |
| Front of wave sparkover voltage at 6 kV (1.2/50) μs | $\leq 1.5 \text{ kV}$ |
| TOV behavior at U_T | 415 V AC (5 s / withstand mode) 440 V AC (120 min / withstand mode) |
| Response time t_A | $\leq 100 \text{ ns}$ |
| Max. backup fuse with branch wiring | 125 A (gG) |

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Additional technical data

| | |
|--|------------------|
| Impulse discharge current (10/350) μ s, charge | 0.25 As |
| Impulse discharge current (10/350) μ s, specific energy | 62.5 J/ Ω |
| Impulse discharge current (10/350) μ s, peak value I_{imp} | 500 A |

Environmental and real-life conditions

Ambient conditions

| | |
|---|--|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40 °C ... 80 °C |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C |
| Altitude | \leq 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-N) | 350 V AC |
| Nominal discharge current I_n (L-N) | 10 kA |
| Mode of protection | L-N |
| Nominal voltage | 350 V AC |
| Power distribution system | Single phase |
| Nominal frequency | 50/60 Hz |
| Measured limiting voltage MLV (L-N) | 1610 V |
| SPD Type | 4CA |

Standards and regulations

| | |
|--------------------------|--------------|
| Standards/specifications | IEC 61643-11 |
| Note | 2011 |
| Standards/specifications | EN 61643-11 |
| Note | 2012 |

Mounting

| | |
|---------------|-----------------|
| Mounting type | on base element |
|---------------|-----------------|

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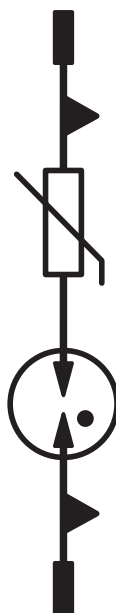
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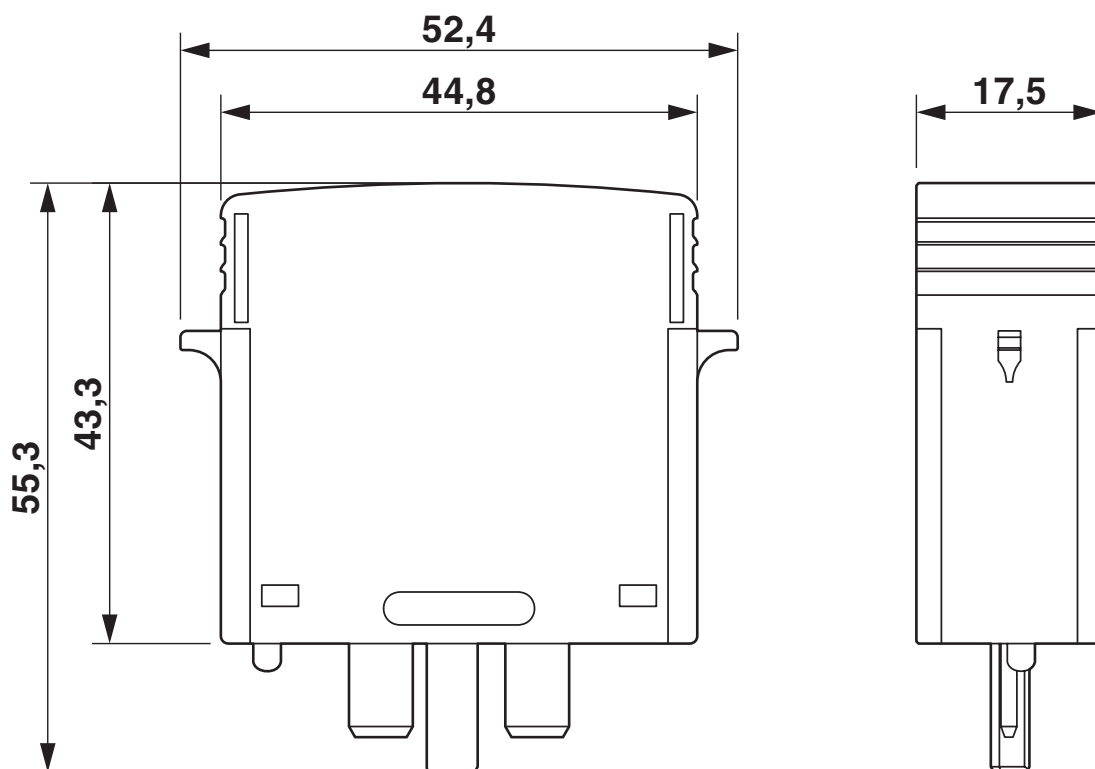


Drawings

Circuit diagram



Dimensional drawing



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Approvals

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cUL Recognized

Approval ID: FILE E 330181



UL Recognized

Approval ID: FILE E 330181



IECEE CB Scheme

Approval ID: AT 2905/M1



EAC

Approval ID: EAC-Zulassung

CCA

Approval ID: NTR-AT 1947-A



KEMA-KEUR

Approval ID: 71-113273 REV.1



EAC

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



CSA

Approval ID: 13631



ÖVE

Approval ID: 18583-001-17

UAE-RoHS

Approval ID: 22-09-51251

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27130890 |
| ECLASS-13.0 | 27171292 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC002496 |
|----------|----------|

UNSPSC

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

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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% |
|-------------------------------------|----------------------------|

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