

Type 2 surge arrester - VAL-MS 750/30/3+0-FM



2920272

<https://www.phoenixcontact.com/us/products/2920272>

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Surge arrester for 4-conductor power supply systems (L1, L2, L3, PEN), consisting of a base element with remote indication contact and protective connectors, for mounting on NS 35.

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
- Can be used in high-performance industrial networks and wind turbine generators (stator) due to the high nominal voltage

Commercial Data

| | |
|--------------------------------------|--------------------|
| Item number | 2920272 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales Key | C06 |
| Product Key | CL1321 |
| Catalog Page | Page 65 (C-4-2019) |
| GTIN | 4046356157896 |
| Weight per Piece (including packing) | 409 g |
| Weight per Piece (excluding packing) | 393 g |
| Customs tariff number | 85363030 |
| Country of origin | DE |

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Technical Data

Notes

General

| | |
|------|---|
| Note | For use in all low-voltage systems between L-PEN. Only for use in IT systems between L-PE if the bodies of the equipment in the low-voltage system are connected to the grounding system of the transformer station. (common grounding of the HV transformer station and the bodies of the LV consumer's installation. $R_E = R_A$ according to IEC 60364-4-442/VDE 0100-442 Figure 44D/example a) |
|------|---|

Product properties

| | |
|--|---|
| IEC test classification | II T2 |
| EN type | T2 |
| IEC power supply system | TN-C IT |
| Type | DIN rail module, two-section, divisible |
| Distance between live and grounded parts | 8 mm |
| Product type | Surge arrester |
| Number of positions | 3 |
| 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) |
|-------------------------|---------------|

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 |

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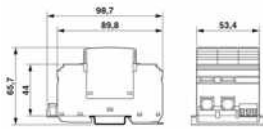
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| | |
|----------------------------------|--|
| Conductor cross section solid | 1.5 mm ² ... 35 mm ² |
| Conductor cross section AWG | 15 ... 2 |
| Connection method | Fork-type cable lug |
| Conductor cross section flexible | 1.5 mm ² ... 16 mm ² |

Remote fault indicator contact

| | |
|----------------------------------|--|
| Connection method | Plug-in/screw connection via COMBICON |
| Screw thread | M2 |
| Tightening torque | 0.25 Nm |
| 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 |

Dimensions

| | |
|---------------------|---|
| Dimensional drawing |  |
| Width | 53.4 mm |
| Height | 98.7 mm |
| Depth | 65.7 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 3 Div. |

Material specifications

| | |
|--|--------------------|
| Color | jet 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-PE |
| | L-PEN |
| Direction of action | 3L-PEN |
| | 3L-PE |
| Nominal voltage U_N | 554/960 V AC (TN-C) |
| | 690 V AC (IT) |
| Nominal frequency f_N | 50 Hz (60 Hz) |
| Maximum continuous voltage U_C | 760 V AC |
| Rated load current I_L | 80 A |
| Residual current I_{PE} | ≤ 1.5 mA |

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| | |
|--|---|
| Standby power consumption P_C | ≤ 1200 mVA |
| Nominal discharge current I_n (8/20) μ s | 15 kA |
| Maximum discharge current I_{max} (8/20) μ s | 30 kA |
| Short-circuit current rating I_{SCCR} | 25 kA |
| Voltage protection level U_p | ≤ 2.9 kV |
| Residual voltage U_{res} | ≤ 2.9 kV (at I_n) |
| | ≤ 2.7 kV (at 10 kA) |
| | ≤ 2.5 kV (at 5 kA) |
| | ≤ 2.3 kV (at 3 kA) |
| TOV behavior at U_T | 1000 V AC (5 s / withstand mode) |
| | 1056 V AC (120 min / safe failure mode) |
| Response time t_A | ≤ 25 ns |
| Max. backup fuse with V-type through wiring | 80 A (gG) |
| Max. backup fuse with branch wiring | 100 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 (above mean sea level)) |
| 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) |

Approval data

UL specifications

| | |
|---|-----------|
| Maximum continuous operating voltage MCOV (L-L) | 1500 V AC |
| Maximum continuous operating voltage MCOV (L-G) | 750 V AC |
| Nominal discharge current I_n (L-L) | 10 kA |
| Nominal discharge current I_n (L-G) | 10 kA |
| Mode of protection | L-L |
| | L-G |
| Nominal voltage | 690 V AC |
| Power distribution system | Delta |
| Nominal frequency | 50/60 Hz |
| Measured limiting voltage MLV (L-L) | 4810 V |
| Measured limiting voltage MLV (L-G) | 2560 V |
| SPD Type | 4CA |

UL indicator/remote signaling

| | |
|----------------------|----------|
| AC operating voltage | 125 V AC |
| AC operating current | 1 A AC |

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UL connection data

| | |
|-----------------------------|-------------------------|
| Tightening torque | 30 lb _F ·in. |
| Conductor cross section AWG | 14 ... 2 |

Standards and regulations

| | |
|--------------------------|--------------|
| Standards/specifications | IEC 61643-11 |
| Standards/specifications | EN 61643-11 |

Mounting

| | |
|---------------|-----------------|
| Mounting type | DIN rail: 35 mm |
|---------------|-----------------|

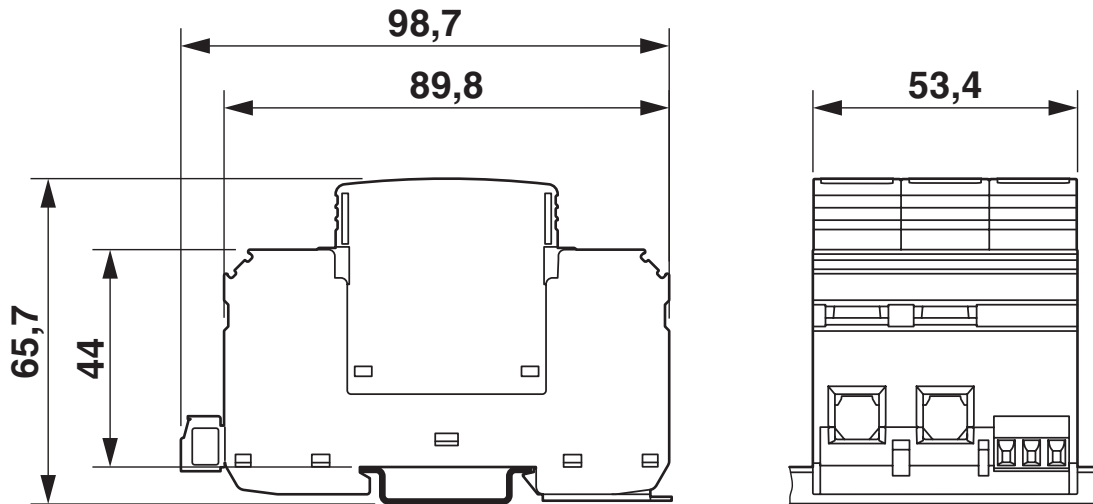
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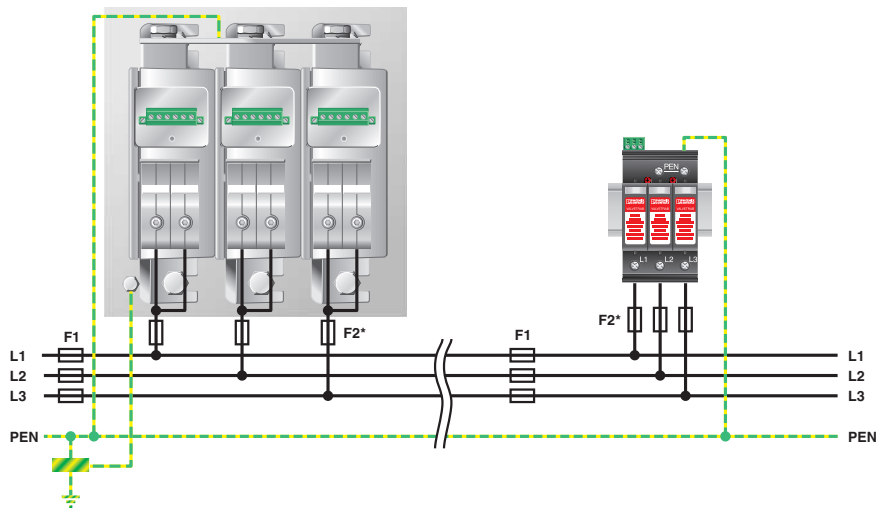
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Drawings

Dimensional drawing



Application drawing

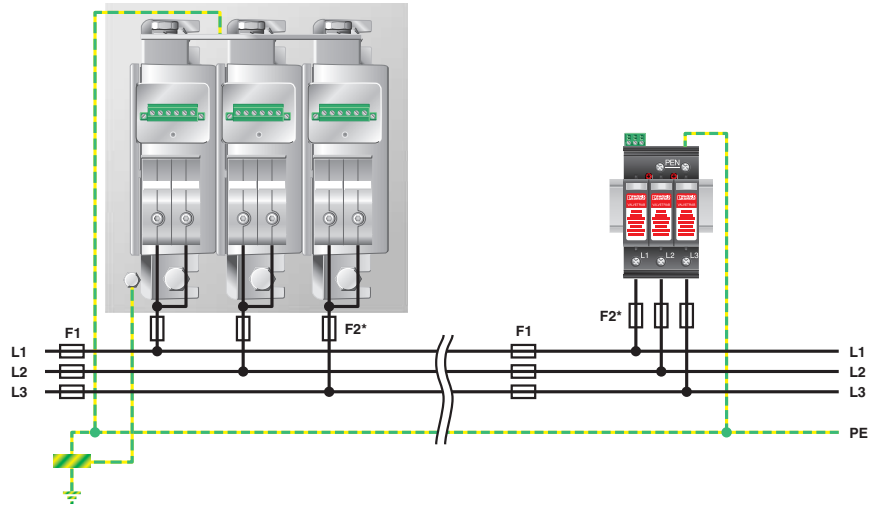


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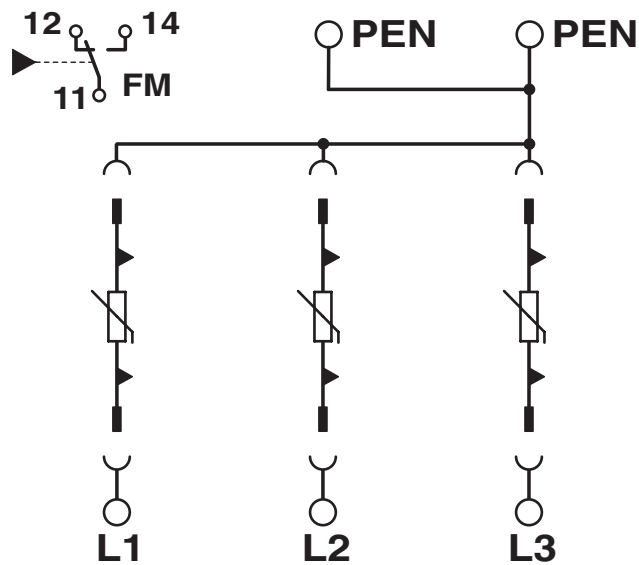
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Application drawing



Circuit diagram



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Approvals



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

Nominal Voltage U_N

Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-



KEMA-KEUR
Approval ID: 71-113273 REV.1



DNV GL
Approval ID: TAE000041M

Nominal Voltage U_N

Nominal Current I_N

Cross Section AWG

Cross Section mm^2

-

-



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



CSA
Approval ID: 13631



ÖVE
Approval ID: 18583-001-16

cULus Recognized

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Classifications

ECLASS

| | |
|---------------|----------|
| ECLASS-9.0 | 27130805 |
| ECLASS-10.0.1 | 27130805 |
| ECLASS-11.0 | 27130805 |
| ECLASS-12.0 | 27171202 |

ETIM

| | |
|----------|----------|
| ETIM 8.0 | EC000941 |
|----------|----------|

UNSPSC

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

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Environmental Product Compliance

| | |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

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Accessories

Marker for terminal blocks

Marker for terminal blocks - ZBN 18,LGS:ERDE - 2749589

<https://www.phoenixcontact.com/us/products/2749589>



Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

Marker for terminal blocks

Marker for terminal blocks - ZBN 18,LGS:L1-N,ERDE - 2749576

<https://www.phoenixcontact.com/us/products/2749576>



Marker for terminal blocks, Strip, white, labeled, horizontal: L1, L2, L3, N, GND, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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Zack marker strip

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

<https://www.phoenixcontact.com/us/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

Marker pen

Marker pen - B-STIFT - 1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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Feed-through terminal block

Feed-through terminal block - DK-BIC-35 - 2749880

<https://www.phoenixcontact.com/us/products/2749880>



Feed-through terminal block for VAL and FLT applications

Wiring bridge

Wiring bridge - MPB 18/3- 6 - 2809241

<https://www.phoenixcontact.com/us/products/2809241>



Wiring bridge for modules with connecting pitch 17.5 mm, 3-phase, 6-pos.

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Partition plate

Partition plate - ATP-QTTCB - 3206238

<https://www.phoenixcontact.com/us/products/3206238>

Partition plate, length: 102 mm, width: 2 mm, height: 54 mm, color: gray



Type 2 surge protection plug

Type 2 surge protection plug - VAL-MS 750/30-ST - 2920256

<https://www.phoenixcontact.com/us/products/2920256>



Type 2 surge protection plug with a varistor for VAL-MS base element, thermal monitoring, visual fault warning. Design: 750 V AC

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