

Type 2 surge arrester - VAL-SEC-T2-3C-440-FM



2909968

<https://www.phoenixcontact.com/pc/products/2909968>

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Plug-in surge arrester, in accordance with Type 2/Class II, for 3-phase power supply networks with combined PE and N installed in one conductor (4-conductor system: L1, L2, L3, PEN), with remote indication contact.

Your advantages

- Surge protection family for universal use with optimum energy coordination from the lightning current arrester to the device protection
- Easy to maintain due to consistently pluggable protection modules
- Excellent level of information provided by mechanical/visual status indicator and remote indication contact
- More space in the control cabinet due to the narrow overall width of just 12 mm per position and use without separate backup fuse up to 315 A gG
- Low voltage protection level at high nominal voltage for optimum protection of the subsequent installation
- Extremely narrow design, just 12 mm per position
- Varistor arrester with a low leakage current

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Commercial Data

| | |
|--------------------------------------|--------------------|
| Item number | 2909968 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Product Key | CL1351 |
| Catalog Page | Page 53 (C-4-2019) |
| GTIN | 4055626409054 |
| Weight per Piece (including packing) | 328.4 g |
| Weight per Piece (excluding packing) | 310 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

| | |
|--------------------------------|---|
| IEC test classification | II T2 |
| EN type | T2 |
| IEC power supply system | TN-C |
| Type | DIN rail module, two-section, divisible |
| 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 125 V DC (200 mA DC) |
| Operating current | 5 mA AC ... 1 A AC 1 A DC (30 V DC) |

Connection data

| | |
|----------------------------------|--|
| Connection method | Screw connection |
| Screw thread | M5 |
| Tightening torque | 4.5 Nm |
| Stripping length | 16 mm |
| Conductor cross section flexible | 2.5 mm ² ... 16 mm ² |
| Conductor cross section solid | 2.5 mm ² ... 25 mm ² |
| Conductor cross section AWG | 12 ... 4 |

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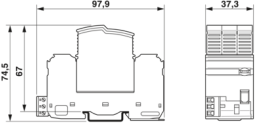


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| | |
|----------------------------------|---|
| Connection method | Fork-type cable lug |
| Conductor cross section flexible | 1.5 mm ² ... 6 mm ² |

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 37.3 mm |
| Width | 37.3 mm |
| Height | 97.9 mm |
| Height | 97.9 mm |
| Depth | 74.5 mm (incl. DIN rail 7.5 mm) |
| Depth | 74.5 mm |
| Horizontal pitch | 2 Div. |

Material specifications

| | |
|--|--|
| Color | light grey RAL 7035 traffic grey A RAL 7042 |
| Flammability rating according to UL 94 | V-0 |
| CTI value of material | 600 |
| Insulating material | PA6.6-FR 20% GF PBT-FR |
| Material group | I |
| Housing material | PA 6.6-FR 20 % GF PBT-FR |

Protective circuit

| | |
|---|---|
| Mode of protection | L-PEN |
| Direction of action | 3L-N/PE |
| Nominal voltage U_N | 400/690 V AC (TN-C) 400 V AC (IT) |
| Nominal frequency f_N | 50 Hz (60 Hz) |
| Maximum continuous voltage U_C | 440 V AC |
| Rated load current I_L | 40 A (Biconnect M4 fork-type cable lug 6 mm ²) 63 A (TWIN ferrule 2 x 10 mm ²) |
| Standby power consumption P_C | ≤ 540 mVA |
| Nominal discharge current I_n (8/20) μs | 20 kA |
| Maximum discharge current I_{max} (8/20) μs | 40 kA |
| Short-circuit current rating I_{SCCR} | 25 kA (for a backup fuse of up to 315 A gG) 50 kA (for a backup fuse of up to 200 A gG) |
| Voltage protection level U_p | ≤ 1.9 kV ≤ 1.9 kV (at I_n) |

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| | |
|---|--|
| Residual voltage U_{res} | ≤ 1.65 kV (at 10 kA) |
| | ≤ 1.5 kV (at 5 kA) |
| | ≤ 1.45 kV (at 4 kA) |
| | ≤ 1.35 kV (at 2 kA) |
| TOV behavior at U_T | 581 V AC (5 s / withstand mode) |
| | 762 V AC (120 min / safe failure mode) |
| Response time t_A | ≤ 25 ns |
| Max. backup fuse with V-type through wiring | 40 A (gG / Biconnect M4 fork-type cable lug, 6 mm ²) |
| | 63 A (gG / TWIN ferrule 2x 10mm ²) |
| Max. backup fuse with branch wiring | 315 A (gG) |

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 | ≤ 2000 m (amsl (above mean sea level)) |
| Permissible humidity (operation) | 5 % ... 95 % |
| Shock (operation) | 30g (Half-sine / 11 ms / 3x $\pm X$, $\pm Y$, $\pm Z$) |
| Vibration (operation) | 5g (10 ... 500 Hz / 2.5 h / X, Y, Z) |

Standards and regulations

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

Mounting

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

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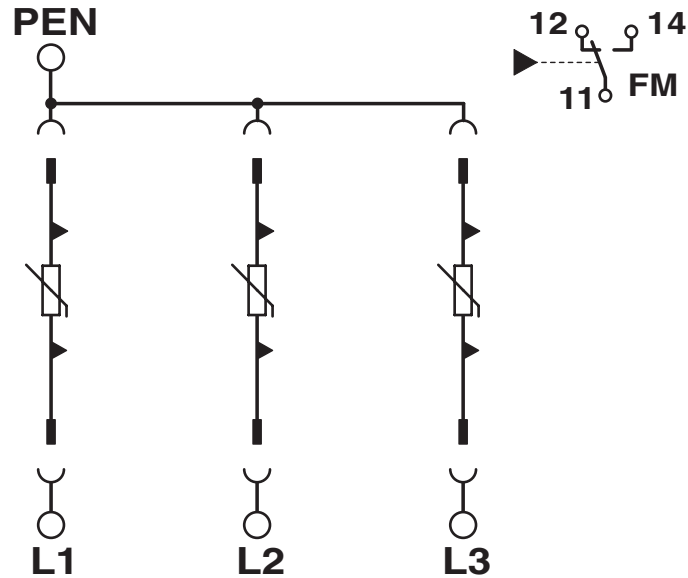


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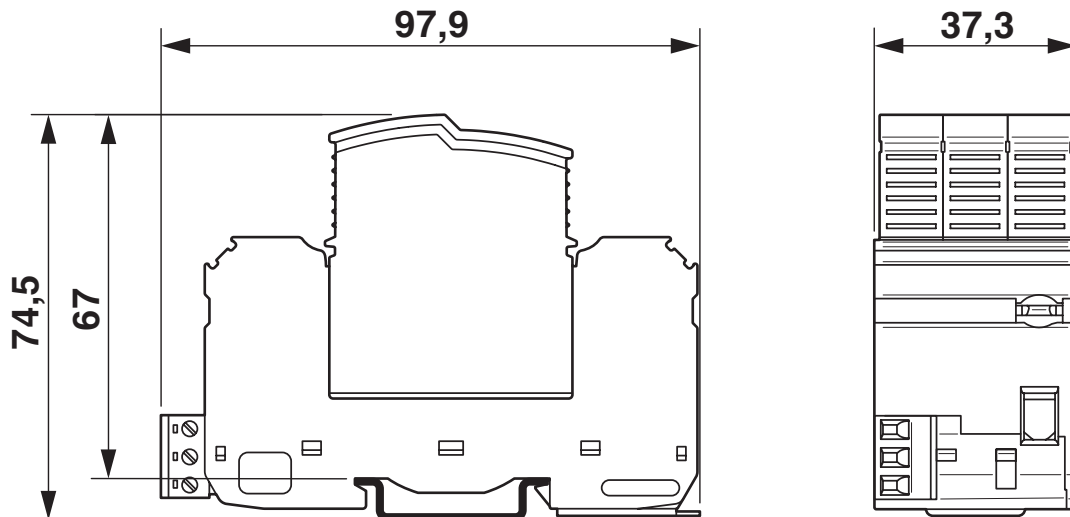
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Drawings

Circuit diagram



Dimensional drawing



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Approvals



EAC

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



DNV GL

Approval ID: TAE000023D

| | Nominal Voltage U_N | Nominal Current I_N | Cross Section AWG | Cross Section mm^2 |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | | | - | - |

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Classifications

ECLASS

| | |
|---------------|----------|
| ECLASS-9.0 | 27130805 |
| ECLASS-10.0.1 | 27130805 |
| ECLASS-11.0 | 27130805 |

ETIM

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

UNSPSC

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

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Environmental Product Compliance

REACH SVHC

Lead 7439-92-1

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Accessories

Marker pen

Marker pen - X-PEN 0,35 - 0811228

<https://www.phoenixcontact.com/pc/products/0811228>



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

End clamp

End clamp - CLIPFIX 35 - 3022218

<https://www.phoenixcontact.com/pc/products/3022218>



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, width: 9.5 mm, color: gray

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Label

Label - EML (20XE)R - 0803452

<https://www.phoenixcontact.com/pc/products/0803452>



Label, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: adhesive, lettering field size: continuous x 20 mm

Label

Label - EML (20XE)R YE - 0803453

<https://www.phoenixcontact.com/pc/products/0803453>



Label, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: adhesive, lettering field size: continuous x 20 mm

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Flat zack marker sheet

Flat zack marker sheet - ZBFM 5/WH:UNBEDRUCKT - 0803595

<https://www.phoenixcontact.com/pc/products/0803595>

Flat zack marker sheet, Sheet, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap in, for terminal block width: 5.2 mm, lettering field size: 5 x 4.5 mm, Number of individual labels: 120



Zack marker strip

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128

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

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



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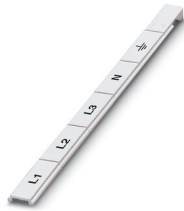
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Marker for terminal blocks

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

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



Marker for terminal blocks, Strip, white, labeled, horizontal: L1, L2, L3, N, GND, mounting type: snap into tall marker groove, 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:ERDE - 2749589

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



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

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Type 2 surge protection plug

Type 2 surge protection plug - VAL-SEC-T2-440-P - 2909969

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Replacement plug for surge arresters from the VALVETRAB SEC product range for L-N and L-PEN paths.

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