

## Type 2 surge arrester - VAL-SEC-T2-4+0-440-FM - 1076468

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Plug-in surge arrester, in accordance with Type 2/Class II, for 3-phase power supply networks with separate N and PE (5-conductor system: L1, L2, L3, N, PE), with remote indication contact.



COMPLETE line

### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                                    |
| GTIN         | <br>4 055626 784809 |
| GTIN         | 4055626784809                                                                                           |

### Technical data

#### Dimensions

|                  |                                 |
|------------------|---------------------------------|
| Height           | 97.9 mm                         |
| Width            | 49.2 mm                         |
| Depth            | 74.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 2.7 Div.                        |

#### 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 ±X, ±Y, ±Z) |
| Vibration (operation)                   | 5g (10 ... 500 Hz / 2.5 h / X, Y, Z)    |

#### General

|                         |    |
|-------------------------|----|
| IEC test classification | II |
|                         | T2 |
| EN type                 | T2 |

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## Technical data

### General

|                                        |                                         |
|----------------------------------------|-----------------------------------------|
| IEC power supply system                | TN-S                                    |
|                                        | IT                                      |
| Mode of protection                     | L-N                                     |
|                                        | L-PE                                    |
|                                        | N-PE                                    |
| Mounting type                          | DIN rail: 35 mm                         |
| Color                                  | light grey RAL 7035                     |
|                                        | traffic grey A RAL 7042                 |
| Housing material                       | PA 6.6-FR 20 % GF                       |
|                                        | PBT-FR                                  |
| Degree of pollution                    | 2                                       |
| Flammability rating according to UL 94 | V-0                                     |
| Type                                   | DIN rail module, two-section, divisible |
| Number of positions                    | 3                                       |
| Surge protection fault message         | Optical, remote indicator contact       |

### Additional descriptions

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note | Usable in all low-voltage systems between L-N or L-PEN.<br>Only usable in IT Systems between L-PE and N-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. RE = RA accordance to IEC 60364-4-442 / VDE 0100-442 Fig. 44D / Example a) |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Protective circuit

|                                               |                                                            |
|-----------------------------------------------|------------------------------------------------------------|
| Nominal voltage $U_N$                         | 400/690 V AC (TN-S)                                        |
|                                               | 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 <sup>2</sup> ) |
|                                               | 63 A (TWIN ferrule 2 x 10 mm <sup>2</sup> )                |
| Standby power consumption $P_C$               | ≤ 720 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 $U_p$ (L-N)          | ≤ 4 kV                                                     |
| Voltage protection level $U_p$ (L-PE)         | ≤ 1.9 kV                                                   |
| Voltage protection level $U_p$ (N-PE)         | ≤ 1.9 kV                                                   |
| Residual voltage $U_{res}$ (L-N)              | ≤ 4 kV (at $I_n$ )                                         |
|                                               | ≤ 3.5 kV (at 10 kA)                                        |
|                                               | ≤ 3.2 kV (at 5 kA)                                         |

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## Technical data

### Protective circuit

|                                             |                                                                  |
|---------------------------------------------|------------------------------------------------------------------|
|                                             | $\leq 3.1$ kV (at 4 kA)                                          |
|                                             | $\leq 2.85$ kV (at 2 kA)                                         |
| Residual voltage $U_{res}$ (L-PE)           | $\leq 1.9$ kV (at $I_n$ )                                        |
|                                             | $\leq 1.65$ kV (at 10 kA)                                        |
|                                             | $\leq 1.5$ kV (at 5 kA)                                          |
|                                             | $\leq 1.45$ kV (at 4 kA)                                         |
|                                             | $\leq 1.35$ kV (at 2 kA)                                         |
| Residual voltage $U_{res}$ (N-PE)           | $\leq 1.9$ kV (at $I_n$ )                                        |
|                                             | $\leq 1.65$ kV (at 10 kA)                                        |
|                                             | $\leq 1.5$ kV (at 5 kA)                                          |
|                                             | $\leq 1.45$ kV (at 4 kA)                                         |
|                                             | $\leq 1.35$ 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 $t_A$                         | $\leq 25$ ns                                                     |
| Max. backup fuse with V-type through wiring | 40 A (gG / Biconnect M4 fork-type cable lug, 6 mm <sup>2</sup> ) |
|                                             | 63 A (gG / TWIN ferrule 2x 10mm <sup>2</sup> )                   |
| Max. backup fuse with branch wiring         | 315 A (gG)                                                       |

### Indicator/remote signaling

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Switching function               | PDT 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 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 <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section solid    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG      | 28 ... 16                                    |

### 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 <sup>2</sup> ... 16 mm <sup>2</sup> |
| Conductor cross section solid    | 2.5 mm <sup>2</sup> ... 25 mm <sup>2</sup> |
| Conductor cross section AWG      | 12 ... 4                                   |

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### Technical data

#### Connection data

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

#### Standards and Regulations

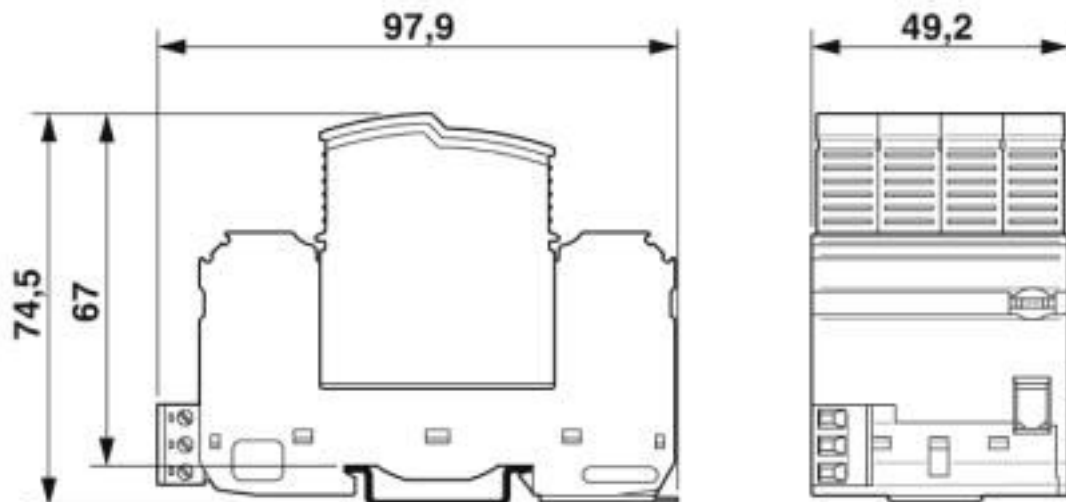
|                       |                   |
|-----------------------|-------------------|
| Standards/regulations | IEC 61643-11 2011 |
|                       | EN 61643-11 2012  |

#### Environmental Product Compliance

|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

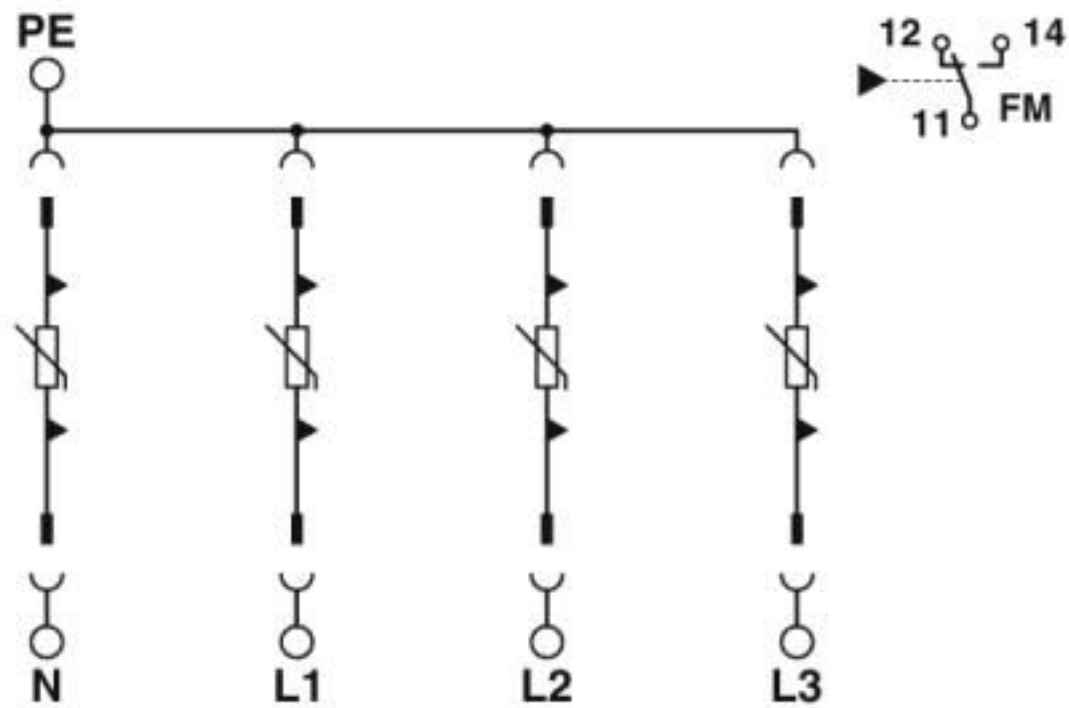
### Drawings

Dimensional drawing



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Circuit diagram



Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27130805 |
| eCl@ss 11.0   | 27130805 |
| eCl@ss 8.0    | 27130805 |
| eCl@ss 9.0    | 27130805 |

ETIM

|          |          |
|----------|----------|
| ETIM 5.0 | EC000941 |
| ETIM 6.0 | EC000941 |
| ETIM 7.0 | EC000941 |

Accessories

Accessories

Bridge

Wiring bridge - MPB SET VAL-CP-3S - 2880684



Wiring bridge set, consisting of three flexible bridges 15 cm black, 1 bridge 27 cm blue.

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## Accessories

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### Device marking

Label - EML (20XE)R - 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

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Label - EML (20XE)R YE - 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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Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, 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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Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, 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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### End block

End clamp - CLIPFIX 35 - 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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### Labeled device marker

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### Accessories

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

### Marker pen

Marker pen - X-PEN 0,35 - 0811228



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

### Terminal marking

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



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

### Spare parts

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



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

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