

## Type 1 surge protection device - VAL-US-240D/40/2+0-FM - 2910369

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Surge protective device, two channel with remote indicator contact for 240 V AC corner-grounded DELTA.



### Key Commercial Data

|              |                                                                                      |
|--------------|--------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                 |
| GTIN         |  |
| GTIN         | 4055626445083                                                                        |

### Technical data

#### Dimensions

|                  |         |
|------------------|---------|
| Height           | 96.8 mm |
| Width            | 35.6 mm |
| Depth            | 65.5 mm |
| Horizontal pitch | 2 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))        |
| 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 |

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## Technical data

### General

|                                        |                                         |
|----------------------------------------|-----------------------------------------|
| IEC power supply system                | TN-C                                    |
|                                        | IT                                      |
| Mode of protection                     | 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                    | 2                                       |
| Surge protection fault message         | Optical, remote indicator contact       |

### Additional descriptions

|      |                                       |
|------|---------------------------------------|
| Note | Additional information for IT systems |
|------|---------------------------------------|

### Protective circuit

|                                                    |                                        |
|----------------------------------------------------|----------------------------------------|
| Nominal voltage $U_N$                              | 240 V AC (IT)                          |
|                                                    | 240/415 V AC (TN-C)                    |
| Nominal frequency $f_N$                            | 50 Hz (60 Hz)                          |
| Maximum continuous voltage $U_C$                   | 275 V AC                               |
| Nominal discharge current $I_n$ (8/20) $\mu s$     | 20 kA                                  |
| Maximum discharge current $I_{max}$ (8/20) $\mu s$ | 40 kA                                  |
| Short-circuit current rating $I_{SCCR}$            | 25 kA                                  |
| Voltage protection level $U_p$                     | $\leq 1.35$ kV                         |
| Residual voltage $U_{res}$                         | $\leq 1.35$ kV (at $I_n$ )             |
|                                                    | $\leq 1.1$ kV (at 10 kA)               |
|                                                    | $\leq 1$ kV (at 5 kA)                  |
|                                                    | $\leq 0.9$ kV (at 3 kA)                |
| TOV behavior at $U_T$                              | 335 V AC (5 s / withstand mode)        |
|                                                    | 440 V AC (120 min / safe failure mode) |
| Response time $t_A$                                | $\leq 25$ ns                           |
| 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 ... 750 mA AC                 |
|                    | 1 A DC                                |
| Connection method  | Plug-in/screw connection via COMBICON |
| Screw thread       | M2                                    |

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## Technical data

### Indicator/remote signaling

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| 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                | 3 Nm (1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup> )  |
|                                  | 4.5 Nm (25 mm <sup>2</sup> ... 35 mm <sup>2</sup> ) |
| Stripping length                 | 16 mm                                               |
| Conductor cross section flexible | 1.5 mm <sup>2</sup> ... 25 mm <sup>2</sup>          |
| Conductor cross section solid    | 1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>          |
| Conductor cross section AWG      | 15 ... 2                                            |
| Connection method                | Fork-type cable lug                                 |
| Conductor cross section flexible | 1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>          |

### UL specifications

|                                                 |                                          |
|-------------------------------------------------|------------------------------------------|
| SPD Type                                        | 1                                        |
| Maximum continuous operating voltage MCOV (L-L) | 550 V                                    |
| Maximum continuous operating voltage MCOV (L-G) | 275 V AC                                 |
| Nom. voltage                                    | 240 V AC (3-phase corner-grounded Delta) |
| Mode of protection                              | L-L                                      |
|                                                 | L-G                                      |
| Power distribution system                       | Delta                                    |
| Nominal frequency                               | 50/60 Hz                                 |
| Voltage protection rating VPR (L-L)             | 1800 V                                   |
| Voltage protection rating VPR (L-G)             | 1000 V                                   |
| Nominal discharge current I <sub>n</sub>        | 20 kA                                    |
| Maximum Surge Current per Phase                 | 40 kA                                    |
| Short-circuit current rating (SCCR)             | 200 kA                                   |

### UL indicator/remote signaling

|                             |                                                   |
|-----------------------------|---------------------------------------------------|
| Operating voltage           | 125 V AC                                          |
| Operating current           | 1 A AC                                            |
| Tightening torque           | 2 lb <sub>F</sub> -in. ... 4 lb <sub>F</sub> -in. |
| Conductor cross section AWG | 30 ... 14                                         |

### UL connection data

|                             |                         |
|-----------------------------|-------------------------|
| Conductor cross section AWG | 10 ... 2                |
| Tightening torque           | 30 lb <sub>F</sub> -in. |

## Type 1 surge protection device - VAL-US-240D/40/2+0-FM - 2910369

### Technical data

#### Standards and Regulations

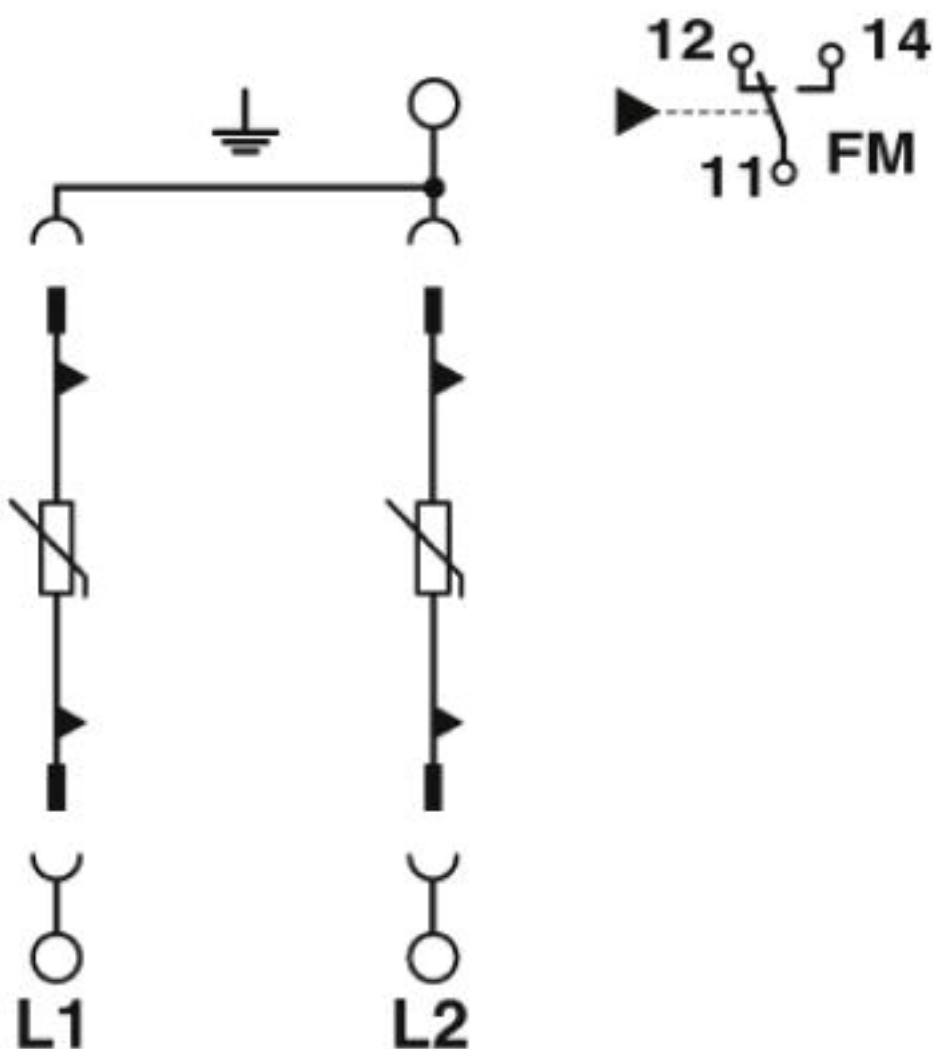
|                       |                   |
|-----------------------|-------------------|
| Standards/regulations | IEC 61643-11 2011 |
|                       | EN 61643-11 2012  |

#### Environmental Product Compliance

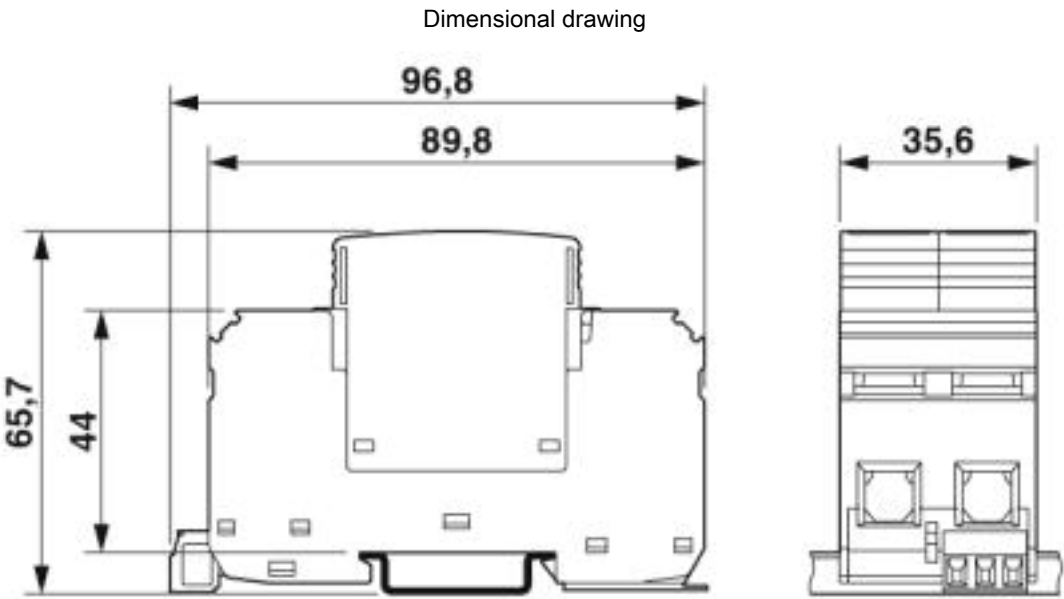
|            |                |
|------------|----------------|
| REACH SVHC | Lead 7439-92-1 |
|------------|----------------|

### Drawings

Circuit diagram



Type 1 surge protection device - VAL-US-240D/40/2+0-FM - 2910369



Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27130805 |
| eCl@ss 6.0    | 27130800 |
| eCl@ss 7.0    | 27130805 |
| eCl@ss 8.0    | 27130805 |
| eCl@ss 9.0    | 27130805 |

ETIM

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

Approvals

Approvals

Approvals

UL Listed / cUL Listed / cULus Listed

Ex Approvals

Approval details

## Type 1 surge protection device - VAL-US-240D/40/2+0-FM - 2910369

### Approvals

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 330181

cUL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 330181

cULus Listed



### Accessories

#### Accessories

#### Bridge

Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 600 mm

Wiring bridge - MPB F600X16/ 1GS - 2818355



Wiring bridge flexible, diameter: 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 600 mm

Wiring bridge - MPB F200X16/ 1GS - 2818339



Wiring bridge flexible, diameter 16 mm<sup>2</sup>, with a fork-type cable lug on one side, length: 200 mm

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### Accessories

Wiring bridge - MPB 18/1-10/1.0.0 - 2830443



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 10 pitches with contact sequence 1-0-0

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Wiring bridge - MPB 18/4-12 - 2809296



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 12-pos.

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Wiring bridge - MPB 18/4- 8 - 2809283



Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.

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Wiring bridge - MPB 18/3- 6 - 2809241



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

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Wiring bridge - MPB 18/1-57 - 2809238



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 57-pos.

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## Type 1 surge protection device - VAL-US-240D/40/2+0-FM - 2910369

### Accessories

Wiring bridge - MPB 18/1-12 - 2748593



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 12-pos.

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Wiring bridge - MPB 18/1- 9 - 2748580



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 9-pos.

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Wiring bridge - MPB 18/1- 8 - 2748577



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 8-pos.

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Wiring bridge - MPB 18/1- 6 - 2748564



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 6-pos.

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Wiring bridge - MPB 18/1- 4 - 2809225



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 4-pos.

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## Type 1 surge protection device - VAL-US-240D/40/2+0-FM - 2910369

### Accessories

Wiring bridge - MPB 18/1- 3 - 2809212



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 3-pos.

Wiring bridge - MPB 18/1- 2 - 2809209



Wiring bridge for modules with connecting pitch 17.5 mm, 1-phase, 2-pos.

### Device marking

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

### Feed-through terminal block

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



Feed-through terminal block for VAL and FLT applications

### Labeled device marker

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

## Type 1 surge protection device - VAL-US-240D/40/2+0-FM - 2910369

### 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

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### Marker pen

Marker pen - B-STIFT - 1051993



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

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### Spare parts

Type 1 surge protection plug - VAL-US-240D/40-P - 2910337



UL Recognized type 1 SPD and IEC type 2 surge protection plug with a varistor and thermal disconnect for use with VAL-US base elements, mechanical and visual fault warning

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