

# VAL-US-120/40/3+0-FM - Type 1 surge protection device



2910353

<https://www.phoenixcontact.com/us/products/2910353>

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Surge protective device, three-channel with remote indicator contact for 120/240 V split-phase or 120/208 V Wye three-phase AC, 4-wire.

## Commercial data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 2910353            |
| Packing unit                         | 1 pc               |
| Sales key                            | CL17               |
| Product key                          | CL132U             |
| Catalog page                         | Page 95 (C-4-2019) |
| GTIN                                 | 4055626444932      |
| Weight per piece (including packing) | 312 g              |
| Weight per piece (excluding packing) | 285 g              |
| Customs tariff number                | 85363030           |
| Country of origin                    | DE                 |

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## Technical data

### 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 protection for NEMA power supply units |
| Product family                 | VALVETRAB US                                 |
| 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                | 4.5 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 rigid    | 1.5 mm <sup>2</sup> ... 35 mm <sup>2</sup>           |
| Conductor cross section AWG      | 15 ... 2   |

### Remote fault indicator contact

|                                  |  |
|----------------------------------|--|
| Connection method                | Screw connection                             |
| 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 rigid    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |

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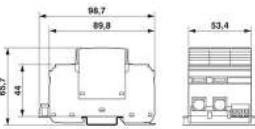


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|                             |           |
|-----------------------------|-----------|
| Conductor cross section AWG | 28 ... 16 |
|-----------------------------|-----------|

## 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

|  |               |
|--|---------------|
| 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<br>PBT |

## Protective circuit

|  |   |
|--|---|
| Mode of protection                             | L-PEN   |
| Direction of action                            | 3L-GND  |
| Nominal voltage $U_N$                          | 120/208 V AC (TN-C)   |
| Nominal frequency $f_N$                        | 50 Hz (60 Hz)   |
| Rated load current $I_L$                       | 80 A  |
| Standby power consumption $P_C$                | $\leq 400$ mVA  |
| Nominal discharge current $I_n$ (8/20) $\mu$ s | 20 kA   |
| Short-circuit current rating $I_{SCCR}$        | 25 kA   |
| Voltage protection level $U_p$                 | $\leq 0.9$ kV   |
| Residual voltage $U_{res}$                     | $\leq 0.9$ kV (at $I_n$ )<br>$\leq 0.75$ kV (at 10 kA)<br>$\leq 0.6$ kV (at 5 kA)<br>$\leq 0.55$ kV (at 3 kA) |
| TOV behavior at $U_T$                          | 208 V AC (5 s / withstand mode)<br>240 V AC (120 min / safe failure mode)                                     |
| Response time $t_A$                            | $\leq 25$ ns  |
| Max. backup fuse with V-type through wiring    | 80 A (gG)   |
| Max. backup fuse with branch wiring            | 125 A (gG)  |

## Environmental and real-life conditions

### Ambient conditions

|                      |   |
|----------------------|---|
| Degree of protection | IP20 (only when all terminal points are used) |
|----------------------|---|

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|   |   |
|---|---|
| Ambient temperature (operation)         | -40 °C ... 80 °C                        |
| Ambient temperature (storage/transport) | -40 °C ... 80 °C                        |
| Altitude                                | ≤ 2000 m (amsl)                         |
| 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)    |

## Approvals

### UL specifications

|   |  |
|---|--|
| Maximum continuous operating voltage MCOV (L-L) | 350 V AC   |
| Maximum continuous operating voltage MCOV (L-N) | 350 V (120/240S)   |
| Maximum continuous operating voltage MCOV (L-G) | 175 V AC   |
| Maximum continuous operating voltage MCOV (N-G) | 175 V (120/240S)   |
| Short-circuit current rating (SCCR)             | 200 kA   |
| Voltage protection rating VPR (L-L)             | 1200 V   |
| Voltage protection rating VPR (L-N)             | 1200 V (120/240S)  |
| Voltage protection rating VPR (L-G)             | 700 V  |
| Voltage protection rating VPR (N-G)             | 700 V (120/240S)   |
| UL type   | type 1   |
| Nominal discharge current $I_n$                 | 20 kA  |
| Maximum Surge Current per Phase                 | 40 kA  |
| Mode of protection                              | L-L<br>L-G   |
| Nominal voltage                                 | 120/208 V AC (3-phase Wye)<br>120/240 V AC (Split phase) |
| Power distribution system                       | Wye  |
| Nominal frequency                               | 50/60 Hz   |
| SPD Type  | 1  |

### UL indicator/remote signaling

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

### UL connection data

|                             |                         |
|-----------------------------|-------------------------|
| Tightening torque           | 30 lb <sub>f</sub> -in. |
| Conductor cross section AWG | 14 ... 2                |

## Standards and regulations

### Air clearances and creepage distances

|                          |                          |
|--------------------------|--------------------------|
| Standards/regulations    | EN 60664-1 / EN 61643-11 |
| Standards/specifications | IEC 61643-11             |
| Note                     | 2011                     |
| Standards/specifications | EN 61643-11              |
| Note                     | 2012                     |

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## Mounting

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

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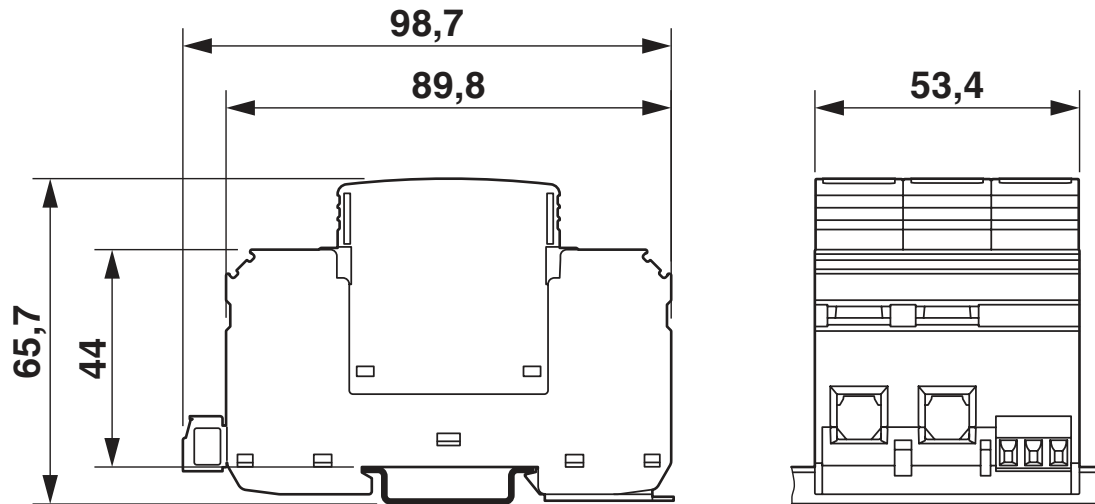


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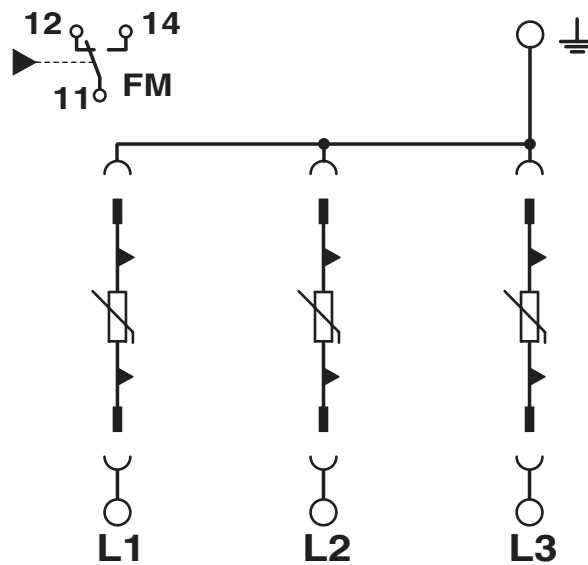
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## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2910353>



**UL Listed**

Approval ID: FILE E 330181



**cUL Listed**

Approval ID: FILE E 330181

**cULus Listed**

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27130805 |
| ECLASS-13.0 | 27171202 |

### ETIM

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

### UNSPSC

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



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## Accessories

### MPB F600X16/ 1GS - Wiring bridge

2818355

<https://www.phoenixcontact.com/us/products/2818355>



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

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### MPB F200X16/ 1GS - Wiring bridge

2818339

<https://www.phoenixcontact.com/us/products/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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## MPB 18/1-10/1.0.0 - Wiring bridge

2830443

<https://www.phoenixcontact.com/us/products/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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## MPB 18/4-12 - Wiring bridge

2809296

<https://www.phoenixcontact.com/us/products/2809296>



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

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## MPB 18/4- 8 - Wiring bridge

2809283

<https://www.phoenixcontact.com/us/products/2809283>

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



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## MPB 18/3- 6 - Wiring bridge

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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## MPB 18/1-57 - Wiring bridge

2809238

<https://www.phoenixcontact.com/us/products/2809238>



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

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## MPB 18/1-12 - Wiring bridge

2748593

<https://www.phoenixcontact.com/us/products/2748593>



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

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## MPB 18/1- 9 - Wiring bridge

2748580

<https://www.phoenixcontact.com/us/products/2748580>



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

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## MPB 18/1- 8 - Wiring bridge

2748577

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

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## MPB 18/1- 6 - Wiring bridge

2748564

<https://www.phoenixcontact.com/us/products/2748564>

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



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## MPB 18/1- 4 - Wiring bridge

2809225

<https://www.phoenixcontact.com/us/products/2809225>

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



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## MPB 18/1- 3 - Wiring bridge

2809212

<https://www.phoenixcontact.com/us/products/2809212>

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



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## MPB 18/1- 2 - Wiring bridge

2809209

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



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

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

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

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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## ZBN 18:UNBEDRUCKT - Zack marker strip

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

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## B-STIFT - Marker pen

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

2749880

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

Feed-through terminal block for VAL and FLT applications



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## VAL-US-120/40-P - Type 1 surge protection plug

2910335

<https://www.phoenixcontact.com/us/products/2910335>



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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