

VAL-US-277/80/4+0-FM - Type 1 surge protection device



2910380

<https://www.phoenixcontact.com/us/products/2910380>

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Surge protective device, four channel with remote indicator contact for 277/480 V AC, 4-wire plus ground.

Your advantages

- With floating remote indication contact
- UL open terminal listed SPD
- Optical, mechanical status indication for the individual arresters
- Multi-channel type 2 protective devices
- Mechanical coding of all slots
- Disconnect device on each individual plug

Commercial data

| | |
|--------------------------------------|--------------------|
| Item number | 2910380 |
| Packing unit | 1 pc |
| Sales key | CL17 |
| Product key | CL132U |
| Catalog page | Page 97 (C-4-2019) |
| GTIN | 4055626445182 |
| Weight per piece (including packing) | 605.3 g |
| Weight per piece (excluding packing) | 605.3 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-S |
| Type | DIN rail module, two-section, divisible |
| Product type | Surge protection for NEMA power supply units |
| Product family | VALVETRAB US |
| Number of positions | 4 |
| 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 |
| Conductor cross section rigid | 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 |
| Stripping length | 7 mm |

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| | |
|----------------------------------|--|
| Conductor cross section flexible | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section rigid | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 28 ... 16 |

Dimensions

| | |
|---------------------|---------------------------------|
| Dimensional drawing | |
| Width | 71 mm |
| Height | 98.7 mm |
| Depth | 77.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 4 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 PBT |

Protective circuit

| | |
|--|--------------------------|
| Mode of protection | L-N |
| | L-PE |
| | N-PE |
| Direction of action | 3L-N & N-GND |
| Nominal voltage U_N | 240/415 V AC (TN-S) |
| Nominal frequency f_N | 50 Hz (60 Hz) |
| Maximum continuous operating voltage U_C (L-PE) | 385 V AC |
| Maximum continuous operating voltage U_C (N-PE) | 358 V AC |
| Residual current I_{PE} | $\leq 600 \mu A$ |
| Nominal discharge current I_n (8/20) μs | 40 kA |
| Maximum discharge current I_{max} (8/20) μs | 80 kA |
| Short-circuit current rating I_{SCCR} | 25 kA |
| Voltage protection level U_p (L-N) | ≤ 4 kV |
| Voltage protection level U_p (L-PE) | ≤ 2 kV |
| Voltage protection level U_p (N-PE) | ≤ 2 kV |
| Residual voltage U_{res} (L-PE) | ≤ 2 kV (at I_n) |
| | ≤ 1.5 kV (at 10 kA) |
| | ≤ 1.4 kV (at 5 kA) |
| | ≤ 1.3 kV (at 3 kA) |
| | ≤ 2 kV (at I_n) |

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| | |
|-------------------------------------|--|
| Residual voltage U_{res} (N-PE) | ≤ 1.5 kV (at 10 kA) |
| | ≤ 1.4 kV (at 5 kA) |
| | ≤ 1.3 kV (at 3 kA) |
| TOV behavior at U_T (L-N) | 480 V AC (5 s / withstand mode) |
| | 530 V AC (120 min / safe failure mode) |
| 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) |
| 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) | 30g (Half-sine / 11 ms / 3x $\pm X$, $\pm Y$, $\pm Z$) |
| Vibration (operation) | 7.5g (10 ... 500 Hz / 2.5 h / X, Y, Z) |

Approvals

UL specifications

| | |
|---|--------------|
| Maximum continuous operating voltage MCOV (L-L) | 750 V AC |
| Maximum continuous operating voltage MCOV (L-N) | 750 V AC |
| Maximum continuous operating voltage MCOV (L-G) | 385 V AC |
| Maximum continuous operating voltage MCOV (N-G) | 385 V AC |
| Short-circuit current rating (SCCR) | 200 kA |
| Voltage protection rating VPR (L-L) | 2500 V |
| Voltage protection rating VPR (L-N) | 2500 V |
| Voltage protection rating VPR (L-G) | 1500 V |
| Voltage protection rating VPR (N-G) | 1200 V |
| UL type | type 1 |
| Nominal discharge current I_n | 20 kA |
| Maximum Surge Current per Phase | 80 kA |
| Mode of protection | L-L |
| | L-N |
| | L-G |
| | N-G |
| Nominal voltage | 277/480 V AC |
| 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 |

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UL connection data

| | |
|-----------------------------|-------------------------|
| Tightening torque | 30 lb _F -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 |

Mounting

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

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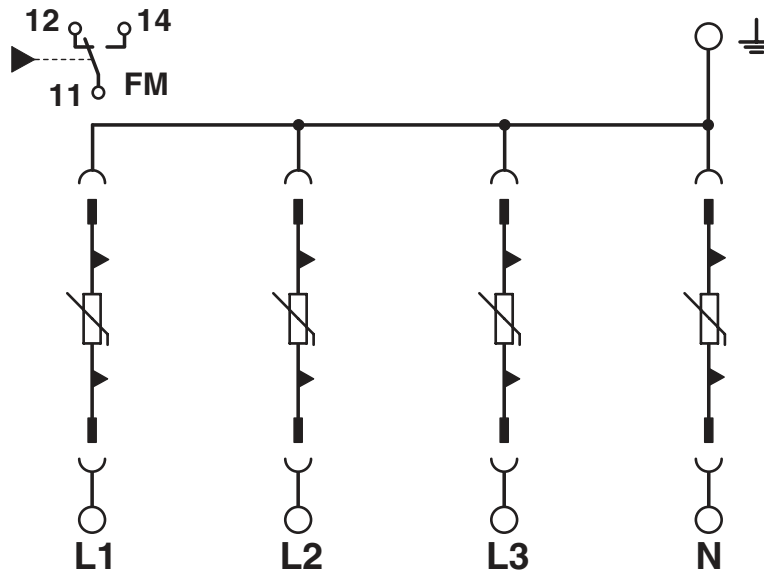


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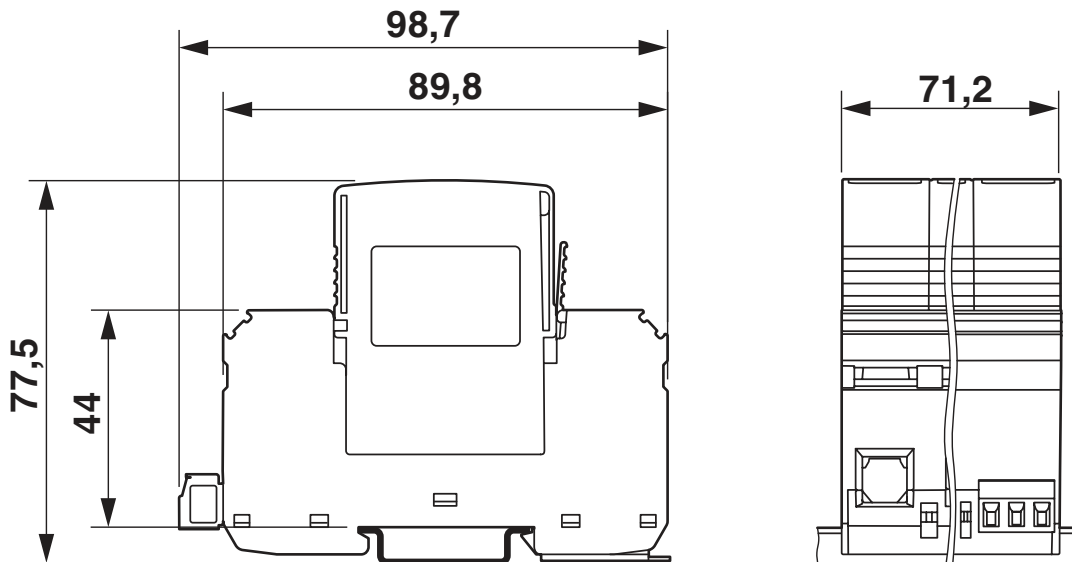
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Drawings

Circuit diagram



Dimensional drawing



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Approvals

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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 mm², with a fork-type cable lug on one side, length: 600 mm

MPB F200X16/ 1GS - Wiring bridge

2818339

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Wiring bridge flexible, diameter 16 mm², 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

MPB 18/4-12 - Wiring bridge

2809296

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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

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



MPB 18/3- 6 - Wiring bridge

2809241

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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.

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.

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

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

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.



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

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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

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

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



VAL-US-277/80-P - Type 1 surge protection plug

2910331

<https://www.phoenixcontact.com/us/products/2910331>



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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