

VAL-US-120/65/1+1-FM - Type 1 surge protection device



2910356

<https://www.phoenixcontact.com/us/products/2910356>

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Surge protective device, two channel with remote indicator contact for 120 V AC, 2-wire plus ground.

Your advantages

- With floating remote indication contact
- UL open terminal listed SPD
- Thermal disconnect device for each individual plug
- Mechanical coding of all slots
- Optical, mechanical status indication for the individual arresters
- Pluggable

Commercial data

| | |
|--------------------------------------|--------------------|
| Item number | 2910356 |
| Packing unit | 1 pc |
| Sales key | CL17 |
| Product key | CL115U |
| Catalog page | Page 93 (C-4-2019) |
| GTIN | 4055626444963 |
| Weight per piece (including packing) | 302 g |
| Weight per piece (excluding packing) | 277 g |
| Customs tariff number | 85363030 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|--------------------------------|--|
| IEC test classification | I / II |
| | T1 / T2 |
| EN type | T1 / T2 |
| IEC power supply system | TN-S |
| | TT |
| Type | DIN rail module, two-section, divisible |
| Product type | Surge protection for NEMA power supply units |
| Product family | VALVETRAB US |
| Number of positions | 2 |
| 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 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 |

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 ² ... 1.5 mm ² |

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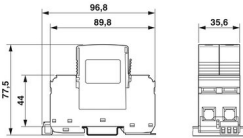


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| | |
|-------------------------------|--|
| Conductor cross section rigid | 0.14 mm ² ... 1.5 mm ² |
| Conductor cross section AWG | 28 ... 16 |

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 35.6 mm |
| Height | 96.8 mm |
| Depth | 77.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 2 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 | 1L-N & N-GND |
| Nominal voltage U_N | 120 V AC (TN-S) |
| | 120 V AC (TT) |
| Nominal frequency f_N | 50 Hz (60 Hz) |
| Maximum continuous operating voltage U_C (L-N) | 175 V AC |
| Maximum continuous operating voltage U_C (N-PE) | 264 V AC |
| Rated load current I_L | 80 A |
| Residual current I_{PE} | $\leq 5 \mu A$ |
| Nominal discharge current I_n (8/20) μs (L-N) | 12.5 kA |
| Nominal discharge current I_n (8/20) μs (L-PE) | 12.5 kA |
| Nominal discharge current I_n (8/20) μs (N-PE) | 50 kA |
| Total discharge current I_{total} (10/350) μs | 25 kA |
| Follow current interrupt rating I_{fi} (N-PE) | 100 A (264 V AC) |
| Short-circuit current rating I_{SCCR} | 25 kA |
| Voltage protection level U_p (L-N) | ≤ 0.8 kV |
| Voltage protection level U_p (L-PE) | ≤ 2 kV |
| Voltage protection level U_p (N-PE) | ≤ 1.7 kV |
| | ≤ 0.8 kV (at I_n) |

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| | |
|---|--|
| Residual voltage U_{res} (L-N) | ≤ 0.75 kV (at 10 kA) |
| | ≤ 0.65 kV (at 5 kA) |
| | ≤ 0.6 kV (at 3 kA) |
| 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) |
| Residual voltage U_{res} (N-PE) | ≤ 0.6 kV (at I_n) |
| | ≤ 0.5 kV (at 10 kA) |
| | ≤ 0.5 kV (at 5 kA) |
| | ≤ 0.4 kV (at 3 kA) |
| TOV behavior at U_T (L-N) | 208 V AC (5 s / withstand mode) |
| | 240 V AC (120 min / safe failure mode) |
| TOV behavior at U_T (N-PE) | 1200 V AC (200 ms / withstand mode) |
| Response time t_A (L-N) | ≤ 25 ns |
| Response time t_A (L-PE) | ≤ 100 ns |
| Response time t_A (N-PE) | ≤ 100 ns |
| Max. backup fuse with V-type through wiring | 80 A (gG) |
| Max. backup fuse with branch wiring | 160 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-N) | 175 V AC |
| Maximum continuous operating voltage MCOV (L-G) | 175 V AC |
| Maximum continuous operating voltage MCOV (N-G) | 264 V AC |
| Short-circuit current rating (SCCR) | 200 kA |
| Voltage protection rating VPR (L-N) | 700 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 | 65 kA |
| | L-N |

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| | |
|---------------------------|--------------|
| Mode of protection | L-G |
| | N-G |
| Nominal voltage | 120 V AC |
| Power distribution system | Single phase |
| 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 _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 |
|---------------|-----------------|

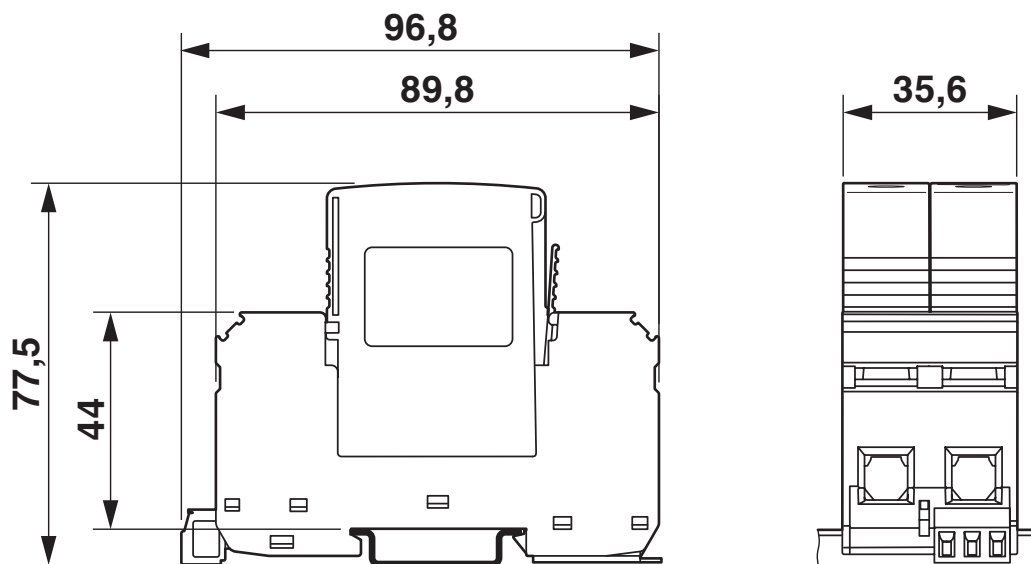
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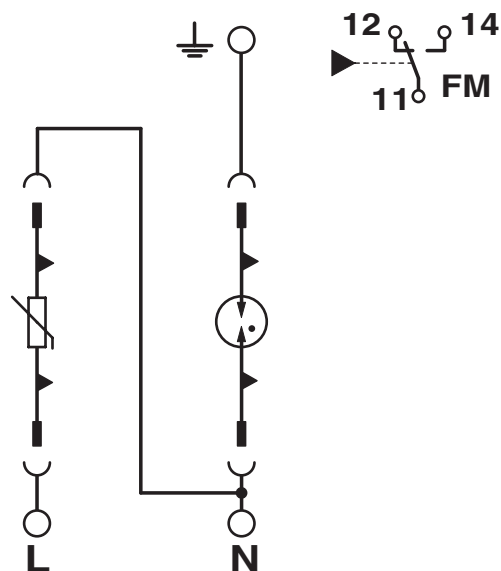
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Drawings

Dimensional drawing



Circuit diagram




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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2910356>



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

<https://www.phoenixcontact.com/us/products/2818339>



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

<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

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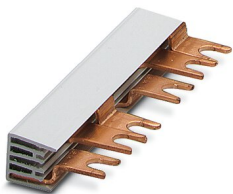


Wiring bridge for modules with connecting pitch 17.5 mm, 4-phase, 8-pos.

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

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

MPB 18/1-12 - Wiring bridge

2748593

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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

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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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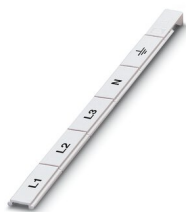


Marker for terminal blocks, Strip, white, labeled, horizontal: Grounding symbol, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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

DK-BIC-35 - Feed-through terminal block

2749880

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Feed-through terminal block for VAL and FLT applications

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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

VAL-US-120/65-P - Type 1 surge protection plug

2910330

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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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GDT-US-NG/80-P - Type 1 surge protection plug

2910332

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

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