

# VAL-US-277/80/4+0-FM - Surge protection device



2910380

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

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Surge protective device, UL Listed type 1 and IEC type 2, 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
- Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to new latching
- Multi-channel type 2 arresters

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2910380       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL17          |
| Product key                          | CL132U        |
| 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

|                                |                                              |
|--------------------------------|----------------------------------------------|
| Product type                   | Surge protection for NEMA power supply units |
| Product family                 | VALVETRAB US                                 |
| IEC test classification        | II                                           |
|                                | T2                                           |
| EN type                        | T2                                           |
| IEC power supply system        | TN-S                                         |
| Type                           | DIN rail module, two-section, divisible      |
| 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 <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                                            |
| Connection method                | Fork-type cable lug                                 |
| Conductor cross section flexible | 1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>          |

### 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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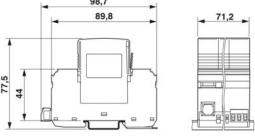


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|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Conductor cross section flexible | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section rigid    | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| 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

|                                        |                  |
|----------------------------------------|------------------|
| Color                                  | black (RAL 9005) |
| 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    |

## Mechanical properties

### Mechanical data

|                 |    |
|-----------------|----|
| Open side panel | No |
|-----------------|----|

## Protective circuit

|                                                            |                             |
|------------------------------------------------------------|-----------------------------|
| Mode of protection                                         | L-PE                        |
|                                                            | N-PE                        |
| Direction of action                                        | 3L-N & N-GND                |
| Nominal voltage U <sub>N</sub>                             | 240/415 V AC (TN-S)         |
|                                                            | 277/480 V AC (TN-S)         |
| Nominal frequency f <sub>N</sub>                           | 50 Hz (60 Hz)               |
| Maximum continuous operating voltage U <sub>C</sub> (L-PE) | 385 V AC                    |
| Maximum continuous operating voltage U <sub>C</sub> (N-PE) | 385 V AC                    |
| Protective conductor current I <sub>PE</sub>               | ≤ 600 μA                    |
| Nominal discharge current I <sub>n</sub> (8/20) μs         | 40 kA                       |
| Maximum discharge current I <sub>max</sub> (8/20) μs       | 80 kA                       |
| Short-circuit current rating I <sub>SCCR</sub>             | 25 kA                       |
| Voltage protection level U <sub>p</sub>                    | ≤ 2 kV                      |
| Residual voltage U <sub>res</sub>                          | ≤ 2 kV (at I <sub>n</sub> ) |
|                                                            | ≤ 1.3 kV (at 10 kA)         |

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|                                     |                                     |
|-------------------------------------|-------------------------------------|
| TOV behavior at $U_T$               | $\leq 1.2$ kV (at 5 kA)             |
|                                     | $\leq 1.15$ kV (at 3 kA)            |
|                                     | 480 V AC (5 s / withstand mode)     |
|                                     | 457 V AC (120 min / withstand mode) |
|                                     | 530 V AC (safe failure mode)        |
| Response time $t_A$                 | $\leq 25$ ns                        |
| 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                                | $\leq 2000$ 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 <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                     |

## Mounting

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

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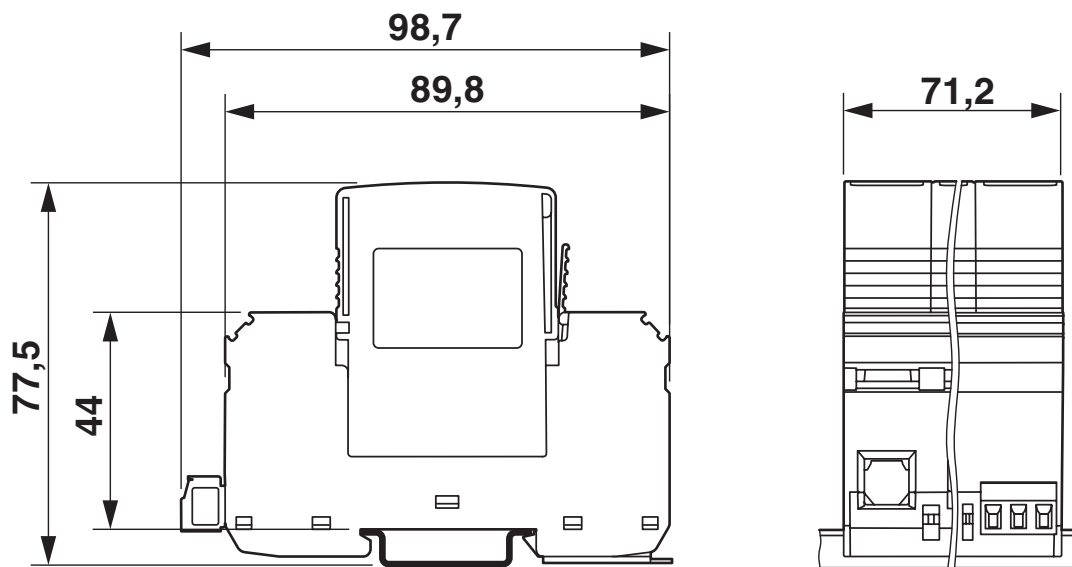
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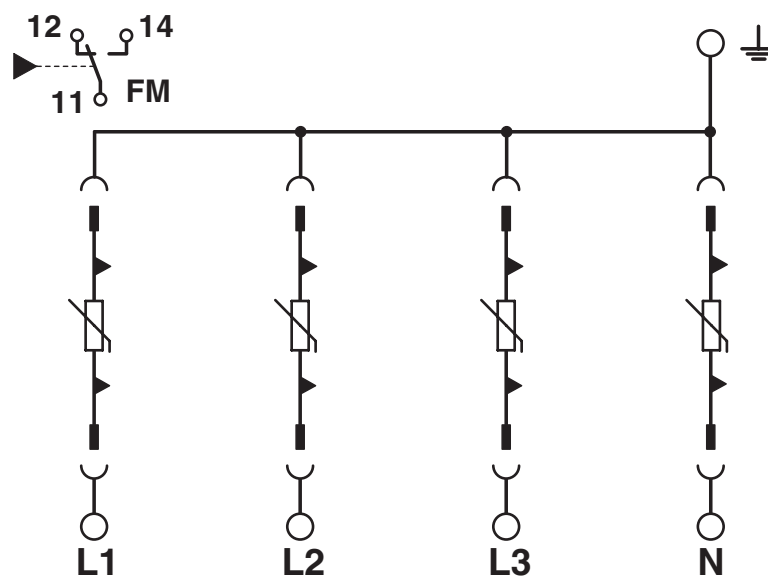


## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2910380>



**UL Listed**

Approval ID: FILE E 330181



**cUL Listed**

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27171202 |
| ECLASS-15.0 | 27171202 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000941 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|-----------------------------------------|--------------------|

### China RoHS

|                                        |                                          |
|----------------------------------------|------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-E                                   |
|                                        | No hazardous substances above the limits |

### EU REACH SVHC

|                                     |                            |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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