

# VAL-US-277/40/1+0-FM - Surge protection device



2910372

<https://www.phoenixcontact.com/us/products/2910372>

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Surge protective device, UL Listed type 1 and IEC type 2, single channel with remote indication contact for 277 V AC.

## Your advantages

- With floating remote indication contact
- Optical, mechanical status indication for the individual arresters
- Mechanical coding of all slots

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2910372       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL17          |
| Product key                          | CL132U        |
| GTIN                                 | 4055626445113 |
| Weight per piece (including packing) | 148 g         |
| Weight per piece (excluding packing) | 123 g         |
| Customs tariff number                | 85363030      |
| Country of origin                    | DE            |

## 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-C                                         |
| Type                           | DIN rail module, two-section, divisible      |
| Number of positions            | 1                                            |
| 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 ... 750 mA 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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|                                  |                                              |
|----------------------------------|----------------------------------------------|
| 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               | 17.6 mm                         |
| Height              | 96.8 mm                         |
| Depth               | 65.7 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch    | 1 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-PEN                                                                                                       |
| Direction of action                                | 1L-GND                                                                                                      |
| Nominal voltage $U_N$                              | 277 V AC (TN-C)                                                                                             |
| Nominal frequency $f_N$                            | 50 Hz (60 Hz)                                                                                               |
| Maximum continuous operating voltage $U_C$         | 385 V AC                                                                                                    |
| Protective conductor current $I_{PE}$              | $\leq 450 \mu A$                                                                                            |
| 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 $U_p$                     | $\leq 1.8$ kV                                                                                               |
| Residual voltage $U_{res}$                         | $\leq 1.8$ kV (at $I_n$ )<br>$\leq 1.6$ kV (at 10 kA)<br>$\leq 1.4$ kV (at 5 kA)<br>$\leq 1.3$ kV (at 3 kA) |
| TOV behavior at $U_T$                              | 480 V AC (5 s / withstand mode)                                                                             |

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|                                     |                                        |
|-------------------------------------|----------------------------------------|
|                                     | 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)                       | 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 | 385 V AC                |
| Short-circuit current rating (SCCR)       | 200 kA                  |
| Voltage protection rating VPR             | 1500 V                  |
| UL type                                   | type 1                  |
| Nominal discharge current $I_n$           | 20 kA                   |
| Maximum Surge Current per Phase           | 40 kA                   |
| Mode of protection                        | L-N<br>L-G              |
| Nominal voltage                           | 277 V AC (Single-phase) |
| 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 <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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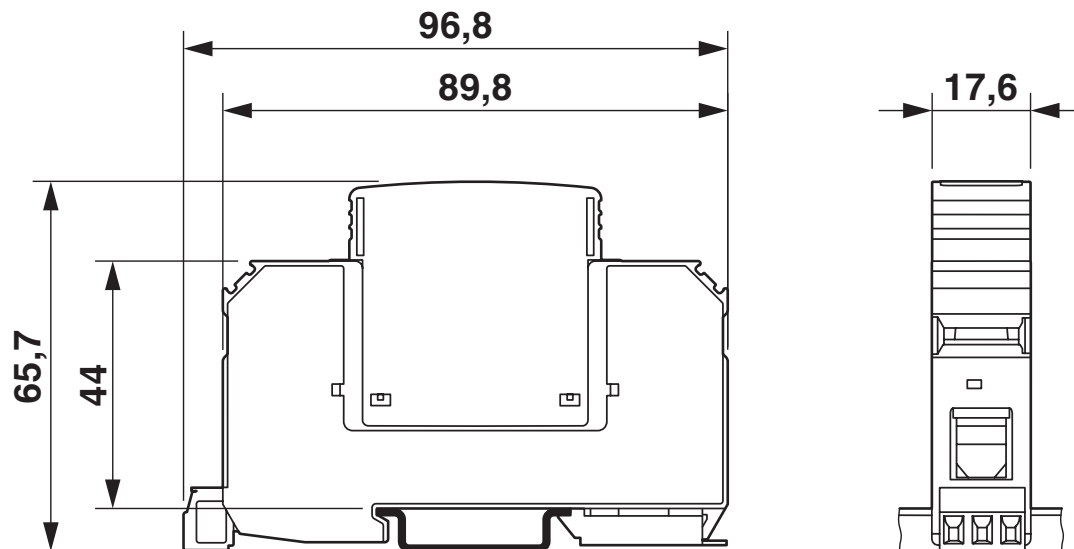
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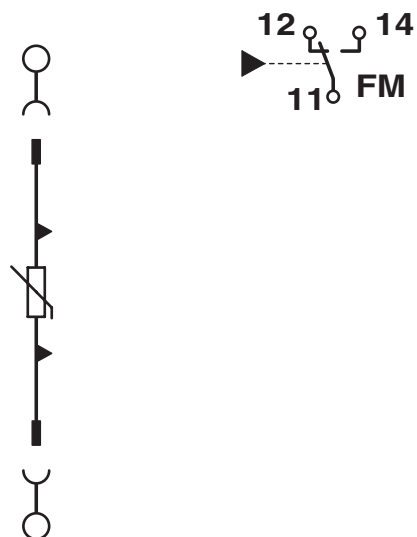


## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

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**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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