

VAL-SEC-T2-2S-175-FM - Type 2 surge arrester



2905351

<https://www.phoenixcontact.com/us/products/2905351>

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Plug-in surge arrester, in accordance with Type 2/Class II, for 2-phase power supply networks with separate N and PE (4-conductor system: L1, L2, N, PE), with remote indication contact.

Your advantages

- Surge protection family for universal use with optimum energy coordination from the lightning current arrester to the device protection
- Easy to maintain due to consistently pluggable protection modules
- Excellent level of information provided by mechanical/visual status indicator and remote indication contact
- More space in the control cabinet due to the narrow overall width of just 12 mm per position and use without separate backup fuse up to 315 A gG

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2905351 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | CL01 |
| Product key | CL1351 |
| GTIN | 4046356948241 |
| Weight per piece (including packing) | 293.3 g |
| Weight per piece (excluding packing) | 295.8 g |
| Customs tariff number | 85363090 |
| Country of origin | DE |

Technical data

Product properties

| | |
|--------------------------------|---|
| Product type | Surge arrester |
| Product family | SEC Family |
| IEC test classification | II T2 |
| EN type | T2 |
| IEC power supply system | TN-S TT |
| Type | DIN rail module, two-section, divisible |
| 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 125 V DC (200 mA DC) |
| Operating current | 5 mA AC ... 1 A AC 1 A DC (30 V DC) |

Connection data

| | |
|----------------------------------|--|
| Connection method | Screw connection |
| Screw thread | M5 |
| Tightening torque | 4.5 Nm |
| Stripping length | 16 mm |
| Conductor cross-section flexible | 2.5 mm ² ... 16 mm ² |
| Conductor cross-section rigid | 2.5 mm ² ... 25 mm ² |
| Conductor cross-section AWG | 12 ... 4 |
| Connection method | Fork-type cable lug |
| Conductor cross-section flexible | 1.5 mm ² ... 6 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 | 37.3 mm |
| Height | 97.9 mm |
| Depth | 74.5 mm (incl. DIN rail 7.5 mm) |
| Horizontal pitch | 2 Div. |

Material specifications

| | |
|--|-----------------------------|
| Color (Male connector) | light gray (RAL 7035) |
| Color (Base element) | gray (RAL 7042) |
| Flammability rating according to UL 94 | V-0 |
| CTI value of material | 600 |
| Insulating material | PA6.6-FR 20% GF PBT-FR |
| Material group | I |
| Housing material | PA 6.6-FR 20 % GF PBT-FR |

Protective circuit

| | |
|--|--|
| Mode of protection | L-N |
| | L-PE |
| | N-PE |
| Direction of action | 2L-N & N-PE |
| Nominal voltage U_N | 120/208 V AC (TN-S) |
| | 120/208 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 (L-PE) | 175 V AC |
| Maximum continuous operating voltage U_C (N-PE) | 150 V AC |
| Rated load current I_L | 40 A (Biconnect M4 fork-type cable lug 6 mm ²) |
| | 63 A (TWIN ferrule 2 x 10 mm ²) |
| Protective conductor current I_{PE} | ≤ 1 μ A |
| Standby power consumption P_C | ≤ 280 mVA |
| Nominal discharge current I_n (8/20) μ s | 20 kA |
| Maximum discharge current I_{max} (8/20) μ s | 40 kA |
| Follow current interrupt rating I_{fi} (N-PE) | 100 A (150 V AC) |

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|---|--|
| Short-circuit current rating I_{SCCR} | 25 kA (for a backup fuse of up to 315 A gG) |
| | 50 kA (for a backup fuse of up to 200 A gG) |
| Voltage protection level U_p (L-N) | ≤ 0.85 kV |
| Voltage protection level U_p (L-PE) | ≤ 1.3 kV |
| Voltage protection level U_p (N-PE) | ≤ 0.95 kV |
| Residual voltage U_{res} (L-N) | ≤ 0.85 kV (at I_n) |
| | ≤ 0.75 kV (at 10 kA) |
| | ≤ 0.65 kV (at 5 kA) |
| | ≤ 0.63 kV (at 4 kA) |
| | ≤ 0.57 kV (at 2 kA) |
| Residual voltage U_{res} (N-PE) | ≤ 0.4 kV (at I_n) |
| | ≤ 0.4 kV (at 10 kA) |
| | ≤ 0.4 kV (at 5 kA) |
| | ≤ 0.4 kV (at 4 kA) |
| | ≤ 0.4 kV (at 2 kA) |
| TOV behavior at U_T (L-N) | 240 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 | 40 A (gG / Biconnect M4 fork-type cable lug, 6 mm ²) |
| | 63 A (gG / TWIN ferrule 2x 10mm ²) |
| Max. backup fuse with branch wiring | 315 A (gG) |

Environmental and real-life conditions

Ambient conditions

| | |
|---|---|
| Degree of protection | IP20 |
| 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) | 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) | 175 V AC |
| Maximum continuous operating voltage MCOV (L-G) | 175 V AC |
| Maximum continuous operating voltage MCOV (N-G) | 150 V AC |
| Nominal discharge current I_n (L-L) | 20 kA |
| Nominal discharge current I_n (L-N) | 20 kA |

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| | |
|---------------------------------------|------------------|
| Nominal discharge current I_n (L-G) | 20 kA |
| Nominal discharge current I_n (N-G) | 20 kA |
| Mode of protection | L-L |
| | L-N |
| | L-G |
| | N-G |
| Nominal voltage | 120/208 V AC |
| Power distribution system | Wye |
| Nominal frequency | 50/60 Hz |
| Measured limiting voltage MLV (L-L) | 2010 V |
| Measured limiting voltage MLV (L-N) | 1510 V |
| Measured limiting voltage MLV (L-G) | 1630 V |
| Measured limiting voltage MLV (N-G) | 560 V |
| Follow current (L-G) | 200 A (150 V AC) |
| SPD Type | 4CA |

UL indicator/remote signaling

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

UL connection data

| | |
|-----------------------------|---|
| Tightening torque | 40 lb _F -in. ... 50 lb _F -in. |
| Conductor cross-section AWG | 14 ... 2 (solid) |
| | 14 ... 4 (flexible) |

Standards and regulations

Air clearances and creepage distances

| | |
|--------------------------|---|
| Standards/regulations | DIN VDE 0110-1 / IEC 60664-1 / IEC 61643-11 / UL 1449 |
| Standards/specifications | IEC 61643-11 |
| Note | 2011 |

EN 61643-11

| | |
|--------------------------|-------------|
| Standards/specifications | EN 61643-11 |
| Note | 2012 |

Mounting

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

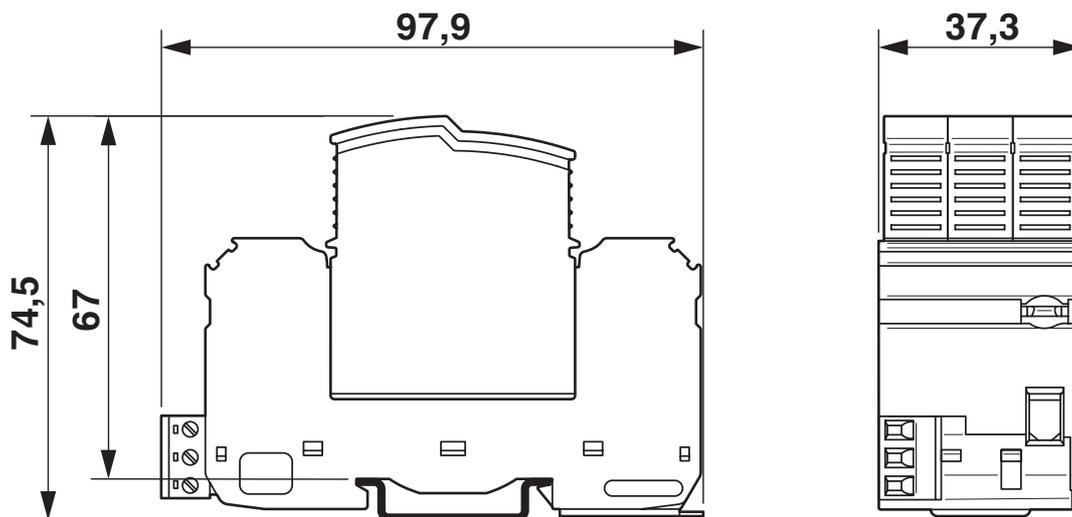
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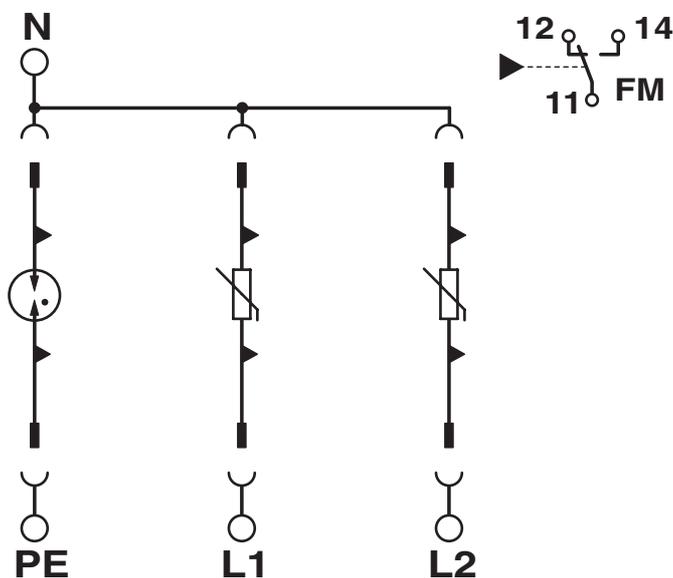
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Drawings

Dimensional drawing



Circuit diagram



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Approvals

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cUL Recognized
Approval ID: FILE E 330181



UL Recognized
Approval ID: FILE E 330181



IECEE CB Scheme
Approval ID: NL-34356

CCA

Approval ID: NTR-NL 7347



KEMA-KEUR
Approval ID: 2196453.01



DNV GL
Approval ID: TAE000023D

UAE-RoHS

Approval ID: 23-10-88707

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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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