

## Surge protection plug - CTM 1X2-110AC - 2838539

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LSA-PLUS plug (COMTRAB CTM) for floating signal circuits, for protecting a double wire from analog and digital telecommunications interfaces (up to 50 Mbps). Nominal voltage: 110 V AC

### Your advantages

- ✓ The CTM 10-MAG surge protection magazine can be freely fitted with various protective plugs
- ✓ Can be used in LSA-PLUS disconnect and control strips or CT-TERMIBLOCK
- ✓ Typical installation locations include marshalling distributors
- ✓ Space-saving LSA-PLUS connection technology
- ✓ Modular compact protection for high-density networks



### Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 10 pc   |
| GTIN         | <br>4 017918 819569 |
| GTIN         | 4017918819569   |

### Technical data

#### Dimensions

|        |         |
|--------|---------|
| Height | 21 mm   |
| Width  | 9.4 mm  |
| Depth  | 52.4 mm |

#### Ambient conditions

|                                 |  |
|---------------------------------|--|
| Ambient temperature (operation) | -25 °C ... 75 °C                       |
| Altitude                        | ≤ 2000 m (amsl (above mean sea level)) |
| Degree of protection            | IP20                                   |

#### General

|  |                    |
|--|--------------------|
| Housing material                       | PA 6.6             |
| Flammability rating according to UL 94 | V-0                |
| Color                                  | jet black RAL 9005 |

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## Technical data

### General

|  |  |
|--|--|
| Overvoltage category   | II   |
| Degree of pollution  | 2  |
| Mounting type  | On CT-TERMIBLOCK and LSA-PLUS disconnect strip |
| Type   | LSA-PLUS module                                |
| Direction of action  | Line-Line & Line-Earth Ground                  |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.10                              |
| Transmission speed   | 42 Mbps  |

### Protective circuit

|   |  |
|---|--|
| IEC test classification   | B2   |
|   | C1   |
|   | C2   |
|   | C3   |
|   | D1   |
| Nominal voltage $U_N$   | 110 V AC                                     |
| Maximum continuous voltage $U_C$                                      | 60 V DC                                      |
|   | 125 V AC                                     |
| Rated current   | 380 mA AC (25 °C)                            |
|   | 150 mA DC (25 °C)                            |
| Operating effective current $I_C$ at $U_C$                            | $\leq 5 \mu\text{A}$ (in the signal circuit) |
| Residual current $I_{PE}$   | $\leq 2 \mu\text{A}$ (per path)              |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-line)      | 5 kA   |
| Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-earth)     | 5 kA   |
| Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-earth) | 1 kA   |
| Total discharge current $I_{total}$ (8/20) $\mu\text{s}$              | 10 kA  |
| Total discharge current $I_{total}$ (10/350) $\mu\text{s}$            | 2.5 kA                                       |
| Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)    | 100 A  |
| Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)   | 100 A  |
| Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike    | $\leq 260 \text{ V}$                         |
| Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike   | $\leq 800 \text{ V}$                         |
| Residual voltage at $I_n$ (line-line)                                 | $\leq 10 \text{ V}$                          |
| Residual voltage at $I_n$ (line-earth)                                | $\leq 55 \text{ V}$                          |
| Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)    | $\leq 10 \text{ V}$                          |
| Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)   | $\leq 12 \text{ V}$                          |
| Voltage protection level $U_p$ (line-line)                            | $\leq 260 \text{ V}$ (C2 - 10 kV / 5 kA)     |
|   | $\leq 260 \text{ V}$ (C3 - 100 A)            |
| Voltage protection level $U_p$ (line-earth)                           | $\leq 800 \text{ V}$ (C2 - 10 kV / 5 kA)     |
|   | $\leq 800 \text{ V}$ (C3 - 100 A)            |
| Voltage protection level $U_p$ static (line-line)                     | $\leq 10 \text{ V}$ (C2 - 10 kV / 5 kA)      |
|   | $\leq 10 \text{ V}$ (C3 - 100 A)             |

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## Technical data

### Protective circuit

|  |   |
|--|---|
| Voltage protection level $U_p$ static (line-earth)     | $\leq 60$ V (C2 - 10 kV / 5 kA)             |
|  | $\leq 12$ V (C3 - 100 A)                    |
| Response time $t_A$ (line-line)                        | $\leq 1$ ns                                 |
| Response time $t_A$ (line-earth)                       | $\leq 100$ ns                               |
| Input attenuation aE, sym.                             | typ. 0.3 dB ( $\leq 1.8$ MHz/100 $\Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), sym. in 100 Ohm system | typ. 20 MHz                                 |
| Capacity (line-line)                                   | typ. 100 pF                                 |
| Resistance per path                                    | 3.3 $\Omega$ 20 %                           |
| Surge protection fault message                         | none  |
| Max. required back-up fuse                             | 150 mA (T/IEC 60127-2/3)                    |
| Impulse durability (line-line)                         | B2 - 4 kV / 100 A                           |
|  | C2 - 10 kV / 5 kA                           |
|  | C3 - 100 A                                  |
| Impulse durability (line-earth)                        | B2 - 4 kV / 100 A                           |
|  | C2 - 10 kV / 5 kA                           |
|  | C3 - 100 A                                  |
|  | D1 - 1 kA                                   |
| Alternating current carrying capacity (line-earth)     | 5 A - 1 s                                   |

### Connection data

|                       |   |
|-----------------------|---|
| Connection method     | can be plugged into COMTRAB-TERMIBLOCK and LSA-PLUS disconnect and switching strips |
| Connection method IN  | COMTRAB plug-in system  |
| Connection method OUT | COMTRAB plug-in system  |
| Connection technology | LSA-PLUS  |

### Connection, equipotential bonding

|                   |                |
|-------------------|----------------|
| Connection method | Spring contact |
|-------------------|----------------|

### Standards and Regulations

|                          |  |
|--------------------------|--|
| Standards/specifications | IEC 61643-21 2000 + corrigendum 2001 + A1:2008, modified + A2:2012 |
|                          | EN 61643-21 2001 + A1:2009 + A2:2013                               |

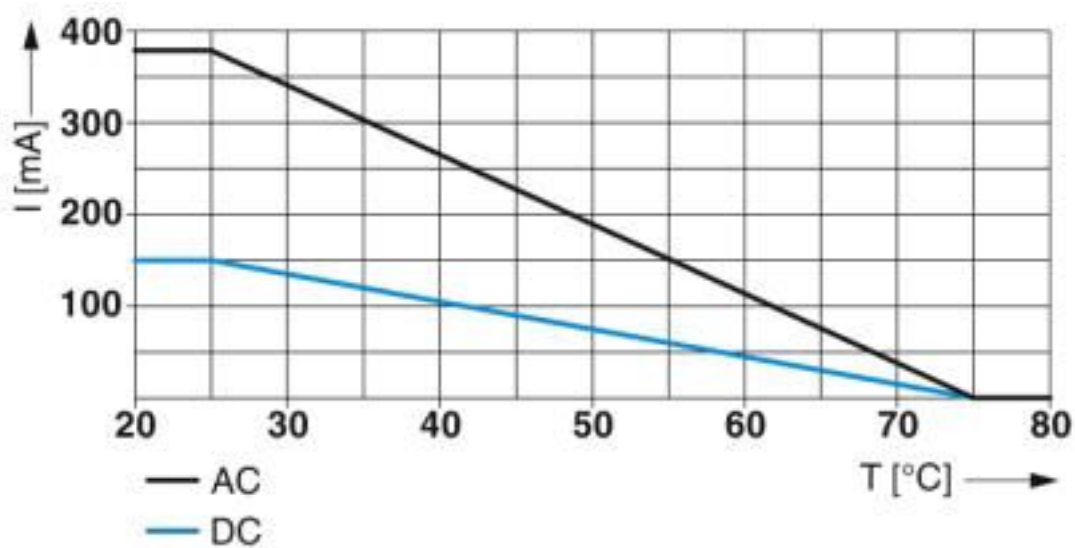
### Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

## Drawings

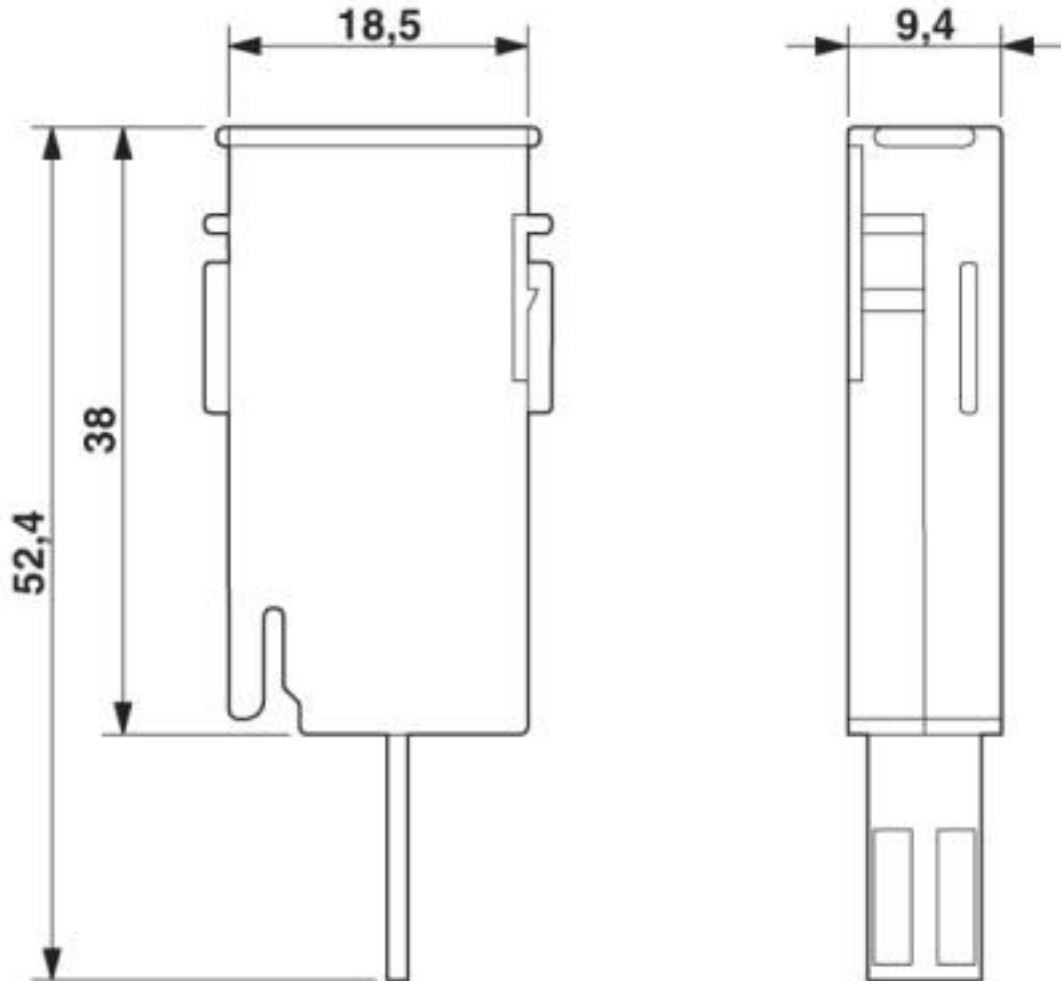
# Surge protection plug - CTM 1X2-110AC - 2838539

Diagram

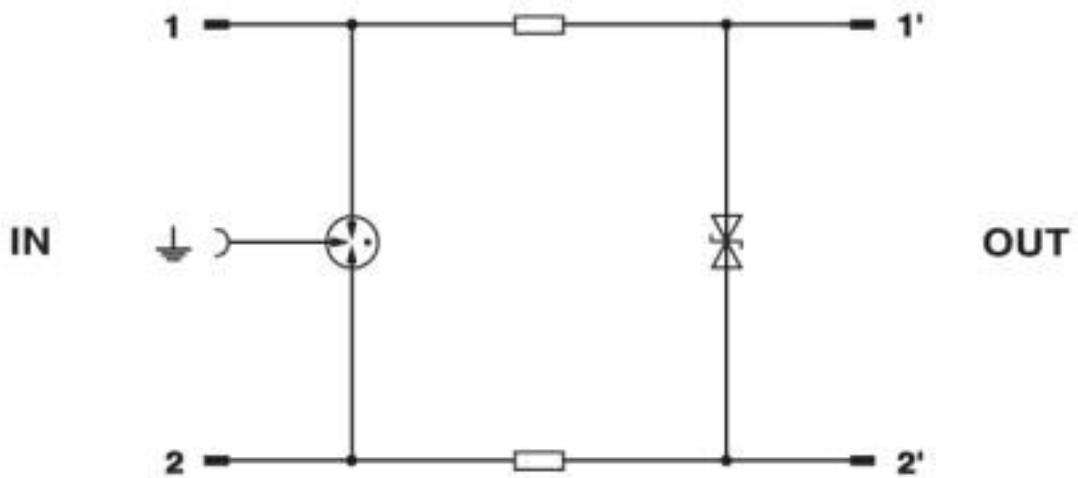


# Surge protection plug - CTM 1X2-110AC - 2838539

Dimensional drawing



Circuit diagram



# Surge protection plug - CTM 1X2-110AC - 2838539

## Classifications

### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27130807 |
| eCl@ss 4.0    | 27130800 |
| eCl@ss 4.1    | 27130800 |
| eCl@ss 5.0    | 27130800 |
| eCl@ss 5.1    | 27130800 |
| eCl@ss 6.0    | 27130800 |
| eCl@ss 7.0    | 27130807 |
| eCl@ss 8.0    | 27130807 |
| eCl@ss 9.0    | 27130807 |

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000943 |
| ETIM 3.0 | EC000943 |
| ETIM 4.0 | EC000943 |
| ETIM 5.0 | EC000943 |
| ETIM 6.0 | EC000943 |
| ETIM 7.0 | EC000943 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30212010 |
| UNSPSC 7.0901 | 39121610 |
| UNSPSC 11     | 39121610 |
| UNSPSC 12.01  | 39121610 |
| UNSPSC 13.2   | 39121620 |
| UNSPSC 18.0   | 39121620 |
| UNSPSC 19.0   | 39121620 |
| UNSPSC 20.0   | 39121620 |
| UNSPSC 21.0   | 39121620 |

## Approvals

### Approvals

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Approvals

UL Listed / EAC

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Ex Approvals

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### Approval details

# Surge protection plug - CTM 1X2-110AC - 2838539

## Approvals

|           |  |   |               |
|-----------|--|---|---------------|
| UL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 138168 |
|-----------|--|---|---------------|

|     |  |                         |
|-----|--|-------------------------|
| EAC |  | RU C-<br>DE.*09.B.00169 |
|-----|--|-------------------------|

## Accessories

### Necessary add-on products

Disconnect strip - CT 10-TL - 2765356



LSA-PLUS disconnect strip to hold the CTM and CT 10 protection modules. Version: 10 double conductors, dimension A: 124 mm.

Grounding rail - CT 1-10-ES - 2765547



Ground rail for CTM protective plug when used in combination with LSA-PLUS disconnect strip. Version: 10 double conductors

Screw termination block - CT-TERMIBLOCK 10 DA - 0441711



Screw termination block with disconnect contacts for accommodating protective plugs CT and CTM. Use in MCR and telecommunications systems. Design: 10 double wires

Magazine - CTM 10-MAG - 2838610



Magazine with a grounding rail to accommodate up to 10 LSA-PLUS protective plugs (COMTRAB CTM), to insert in CT-TERMIBLOCK or LSA-PLUS disconnect strip

## Additional products

## Surge protection plug - CTM 1X2-110AC - 2838539

### Accessories

#### Mounting clip - CT 10-MB/ 3 - 2765372



Mounting clip, for holding 3 disconnect or ground wire strips. Version: 10 double conductors, dimensions: A 104.5 mm, B 65 mm.

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#### Mounting clip - CT 10-MB/10 - 2765385



Mounting clip, for holding 10 disconnect or ground wire strips. Version: 10 double conductors, dimensions: A 104.5 mm, dimensions B 245.5 mm

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#### Cable feed-through sleeve - CT-KDT - 2765518



Cable bush for assembly troughs, for protection of the lines guided through the laminated frame

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#### Short-circuit connector - CTM EST - 2838649



LSA-PLUS grounding plug (COMTRAB CTM) to short-circuit and ground potentials in CT-TERMIBLOCK... and disconnect strip CT 10...

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#### Shield connection - SSA 3-6 - 2839295



Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black



## Surge protection plug - CTM 1X2-110AC - 2838539

### Accessories

Shield connection - SSA 5-10 - 2839512



Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black

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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>

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