

# CTM 1X2-110AC - Surge protection plug



2838539

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

- Space-saving due to compact design
- Flexible fields of application with modular protective plug
- Can be used in LSA-PLUS disconnect and control strips or CT-TERMIBLOCK via adapted connection technology

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2838539       |
| Packing unit                         | 10 pc         |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL03          |
| Product key                          | CL3211        |
| GTIN                                 | 4017918819569 |
| Weight per piece (including packing) | 9.9 g         |
| Weight per piece (excluding packing) | 9.9 g         |
| Customs tariff number                | 85363010      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                                                                |                                             |
|----------------------------------------------------------------|---------------------------------------------|
| Product type                                                   | Surge protection for information technology |
| Product family                                                 | COMTRAB                                     |
| IEC test classification                                        | B2                                          |
|                                                                | C1                                          |
|                                                                | C2                                          |
|                                                                | C3                                          |
|                                                                | D1                                          |
| Type                                                           | LSA-PLUS module                             |
| Surge protection fault message                                 | none                                        |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.10                           |
| Wire pairs per module                                          | 1                                           |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Pollution degree     | 2  |

### Electrical properties

|                       |          |
|-----------------------|----------|
| Nominal voltage $U_N$ | 110 V AC |
|-----------------------|----------|

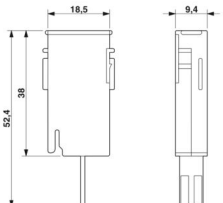
### Connection data

|                   |                                                                                     |
|-------------------|-------------------------------------------------------------------------------------|
| Connection method | can be plugged into COMTRAB-TERMIBLOCK and LSA-PLUS disconnect and switching strips |
|-------------------|-------------------------------------------------------------------------------------|

### Interfaces

|                    |         |
|--------------------|---------|
| Transmission speed | 42 Mbps |
|--------------------|---------|

### Dimensions

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

### Material specifications

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

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|                                        |        |
|----------------------------------------|--------|
| Flammability rating according to UL 94 | V-0    |
| Housing material                       | PA 6.6 |

## Mechanical properties

### Mechanical data

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

## Protective circuit

|                                                                 |                                             |
|-----------------------------------------------------------------|---------------------------------------------|
| Direction of action                                             | Line-Line & Line-Earth Ground               |
| Maximum continuous operating 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 $U_C$                      | $\leq 5 \mu A$ (in the signal circuit)      |
| Protective conductor current $I_{PE}$                           | $\leq 2 \mu A$ (per path)                   |
| Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)      | 5 kA                                        |
| Nominal discharge current $I_n$ (8/20) $\mu s$ (line-ground)    | 5 kA                                        |
| Pulse discharge current $I_{imp}$ (10/350) $\mu s$ (line-earth) | 1 kA                                        |
| Total discharge current $I_{Total}$ (8/20) $\mu s$              | 10 kA                                       |
| Total discharge current $I_{Total}$ (10/350) $\mu s$            | 2.5 kA                                      |
| Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-line)    | 100 A                                       |
| Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-earth)   | 100 A                                       |
| Output voltage limitation at 1 kV/ $\mu s$ (line-line) spike    | $\leq 260 V$                                |
| Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike   | $\leq 800 V$                                |
| Residual voltage at $I_n$ (conductor-conductor)                 | $\leq 10 V$                                 |
| Residual voltage at $I_n$ (conductor-ground)                    | $\leq 55 V$                                 |
| Residual voltage with $I_{an}$ (10/1000) $\mu s$ (line-line)    | $\leq 10 V$                                 |
| Residual voltage with $I_{an}$ (10/1000) $\mu s$ (line-earth)   | $\leq 12 V$                                 |
| Voltage protection level $U_p$ (line-line)                      | $\leq 260 V$ (C2 - 10 kV / 5 kA)            |
|                                                                 | $\leq 260 V$ (C3 - 100 A)                   |
| Voltage protection level $U_p$ (line-earth)                     | $\leq 800 V$ (C2 - 10 kV / 5 kA)            |
|                                                                 | $\leq 800 V$ (C3 - 100 A)                   |
| Voltage protection level $U_p$ static (line-line)               | $\leq 10 V$ (C2 - 10 kV / 5 kA)             |
|                                                                 | $\leq 10 V$ (C3 - 100 A)                    |
| 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 $\Omega$ system     | typ. 20 MHz                                 |
| Capacity (Core-Core)                                            | 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)                    |

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|                                                    |                   |
|----------------------------------------------------|-------------------|
| 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         |

## Environmental and real-life conditions

### Ambient conditions

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

## Standards and regulations

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

## Mounting

|               |                                                |
|---------------|------------------------------------------------|
| Mounting type | On CT-TERMIBLOCK and LSA-PLUS disconnect strip |
|---------------|------------------------------------------------|

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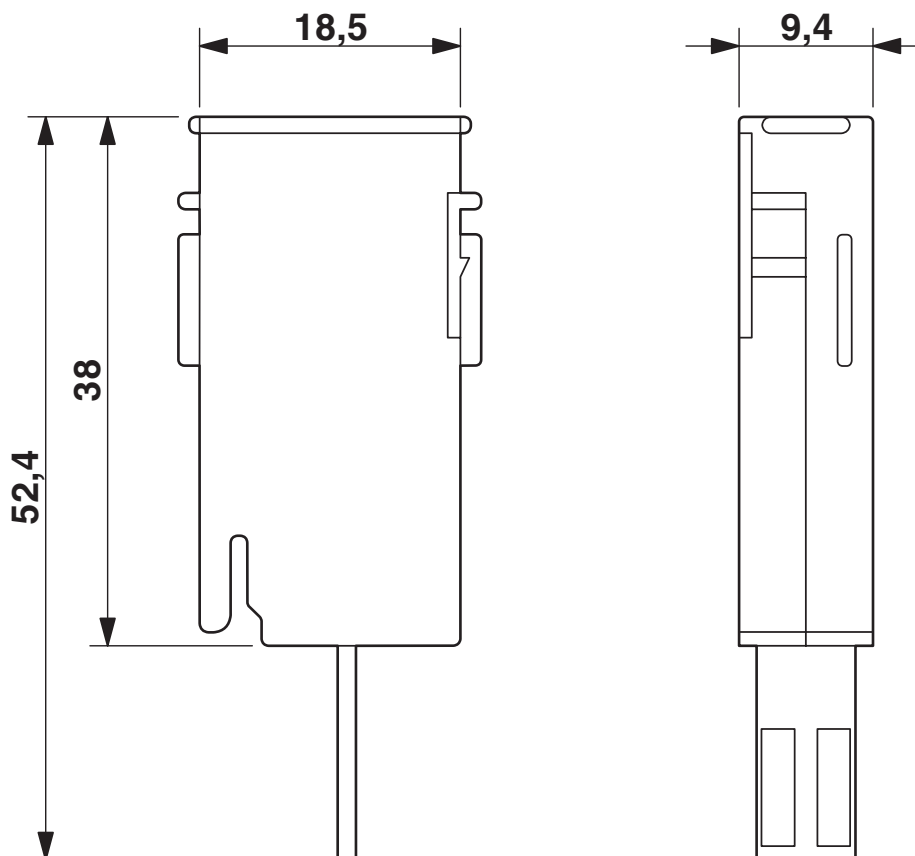
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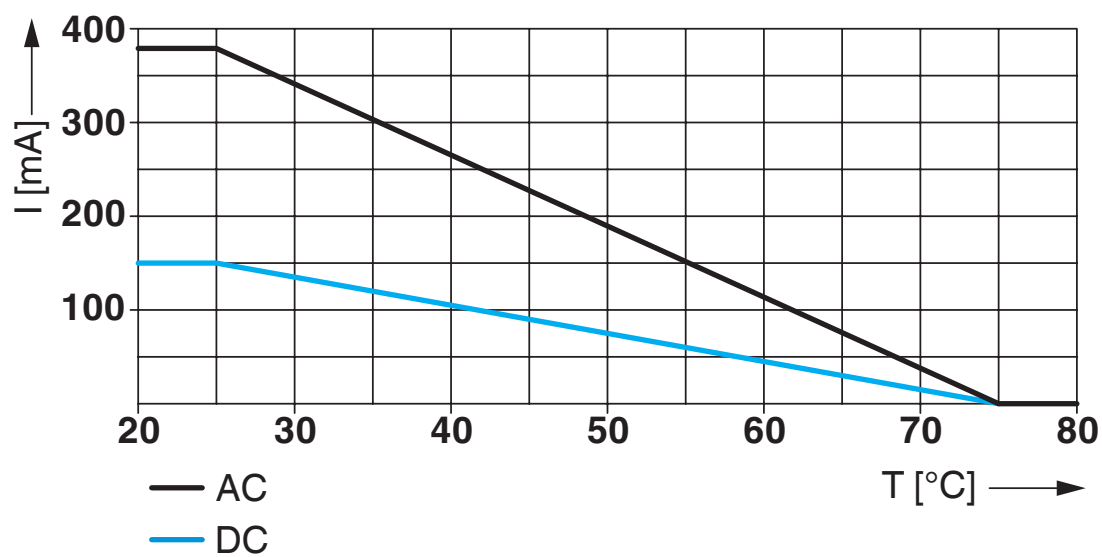


## Drawings

Dimensional drawing



Diagram



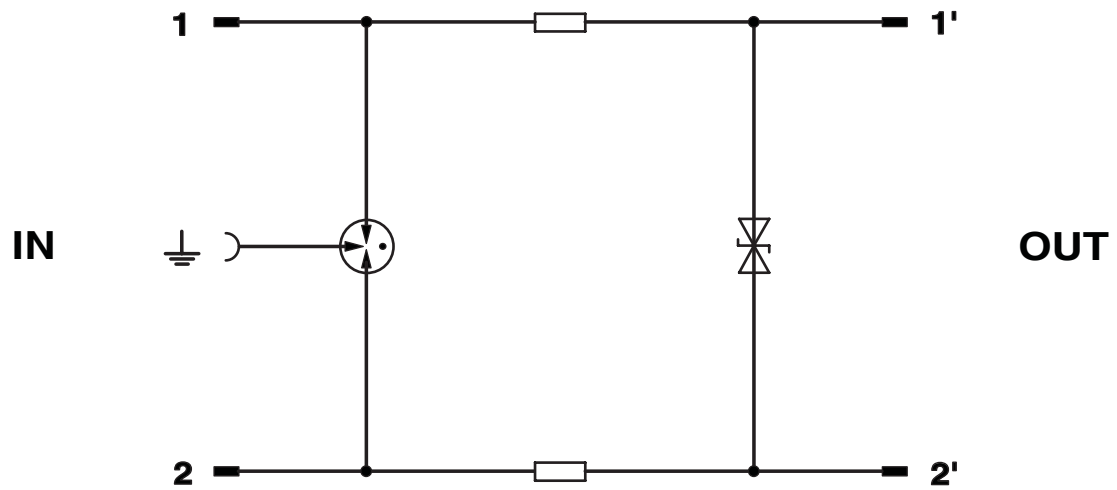
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Circuit diagram



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## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2838539>



**UL Listed**

Approval ID: FILE E 138168

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27171501 |
| ECLASS-15.0 | 27171501 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000943 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

### EU RoHS

|                                         |              |
|-----------------------------------------|--------------|
| Fulfills EU RoHS substance requirements | Yes          |
| Exemption                               | 7(a), 7(c)-I |

### China RoHS

|                                        |                                                                                                                                                                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environment friendly use period (EFUP) | EFUP-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1)                 |
| SCIP                                | 175f04d9-e65e-4189-a01e-f824d657583b |

### EF3.0 Climate Change

|         |              |
|---------|--------------|
| CO2e kg | 1.78 kg CO2e |
|---------|--------------|

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