

# CTM 2X1- 60DC - Surge protection plug



2838542

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LSA-PLUS plug with protective circuit for 2-conductor signal circuits grounded on one side.  
Nominal voltage: 60 V DC

## 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                          | 2838542       |
| Packing unit                         | 10 pc         |
| Minimum order quantity               | 1 pc          |
| Sales key                            | CL03          |
| Product key                          | CL3211        |
| GTIN                                 | 4017918819576 |
| Weight per piece (including packing) | 10.61 g       |
| Weight per piece (excluding packing) | 10.58 g       |
| Customs tariff number                | 85363010      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                                                                |                                     |
|----------------------------------------------------------------|-------------------------------------|
| Product type                                                   | Surge protection for MCR 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                   |

### Insulation characteristics

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

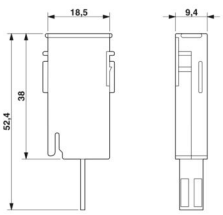
### Electrical properties

|                       |         |
|-----------------------|---------|
| Nominal voltage $U_N$ | 60 V DC |
|-----------------------|---------|

### Connection data

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

### Dimensions

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

### Material specifications

|                                        |                  |
|----------------------------------------|------------------|
| Color                                  | black (RAL 9005) |
|                                        | copper color     |
| Flammability rating according to UL 94 | V-0              |
| Housing material                       | PA 6.6           |

### Mechanical properties

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## 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                                     |
|                                                                   | 50 V AC                                     |
| Rated current                                                     | 380 mA AC (25 °C)                           |
|                                                                   | 150 mA DC (25 °C)                           |
| Operating effective current $I_C$ at $U_C$                        | $\leq 70 \mu A$                             |
| Protective conductor current $I_{PE}$                             | $\leq 2 \mu A$                              |
| 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-earth)     | 100 A                                       |
| Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike     | $\leq 160 V$                                |
| Output voltage limitation at 1 kV/ $\mu s$ (line-earth) static    | $\leq 160 V$                                |
| Residual voltage at $I_n$ (conductor-ground)                      | $\leq 95 V$                                 |
| Residual voltage with $I_{an}$ (10/1000) $\mu s$ (line-earth)     | $\leq 16 V$                                 |
| Voltage protection level $U_p$ (line-earth)                       | $\leq 240 V$ (C2 - 10 kV / 5 kA)            |
|                                                                   | $\leq 150 V$ (C3 - 100 A)                   |
| Voltage protection level $U_p$ static (line-earth)                | $\leq 85 V$ (C2 - 10 kV / 5 kA)             |
|                                                                   | $\leq 16 V$ (C3 - 100 A)                    |
| Response time $t_A$ (line-earth)                                  | $\leq 1 ns$                                 |
| Input attenuation aE, asym.                                       | typ. 0.3 dB ( $\leq 500 kHz / 100 \Omega$ ) |
| Cut-off frequency $f_g$ (3 dB), asym. (PE) in 100 $\Omega$ system | typ. 2 MHz                                  |
| Capacity (Core-Earth)                                             | typ. 1 nF                                   |
| Resistance per path                                               | 3.3 $\Omega$ 20 %                           |
| Surge protection fault message                                    | none                                        |
| 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                        | $\leq 2000 m$ (amsl) |

## Standards and regulations

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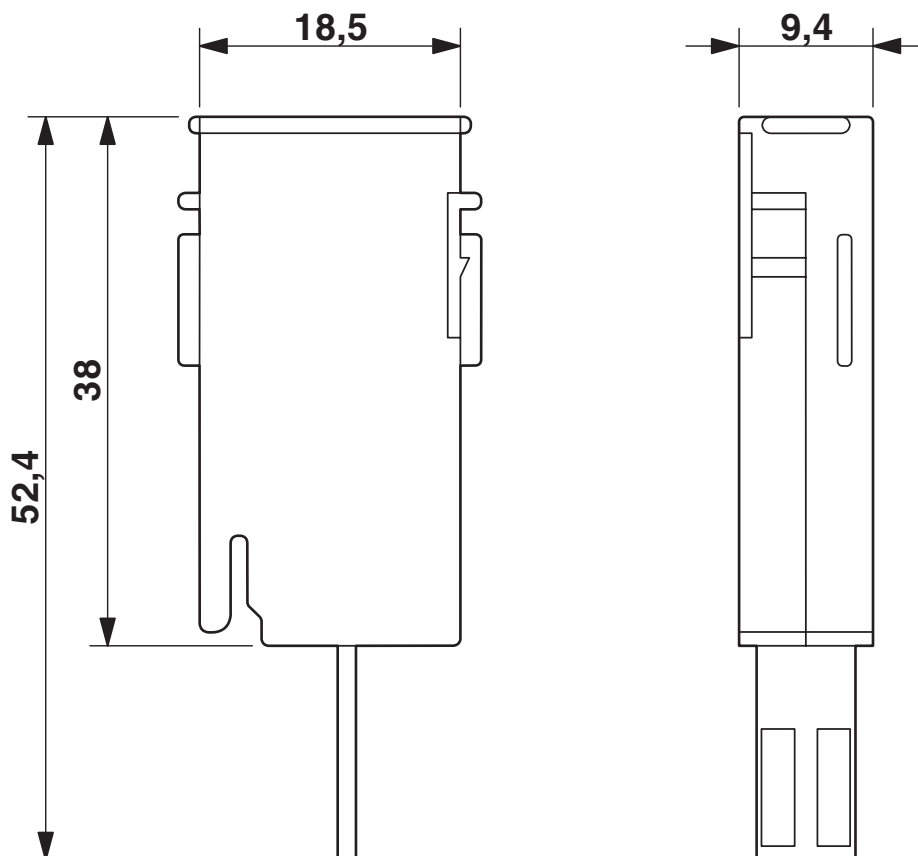
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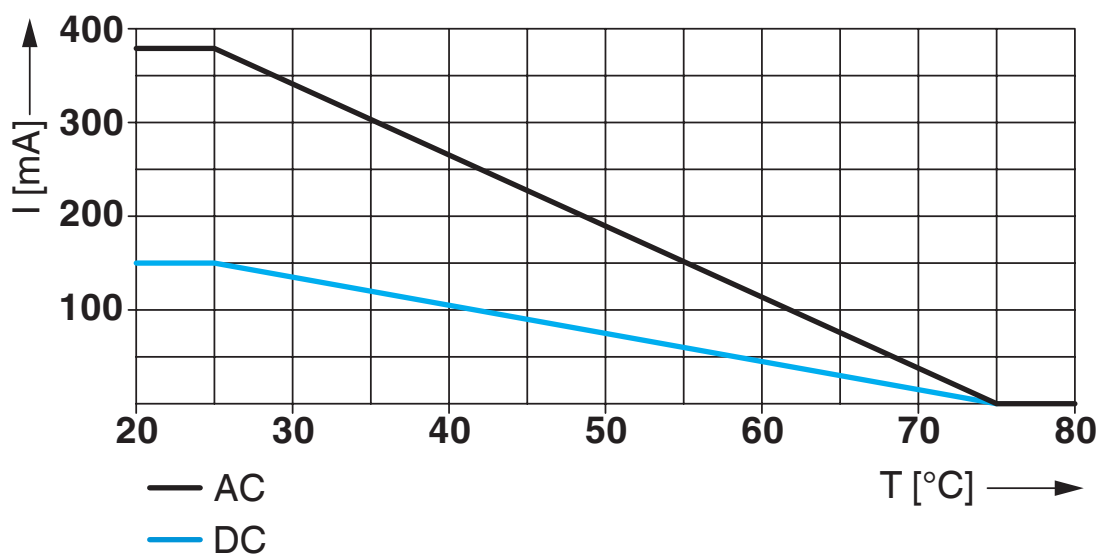


## Drawings

Dimensional drawing



Diagram



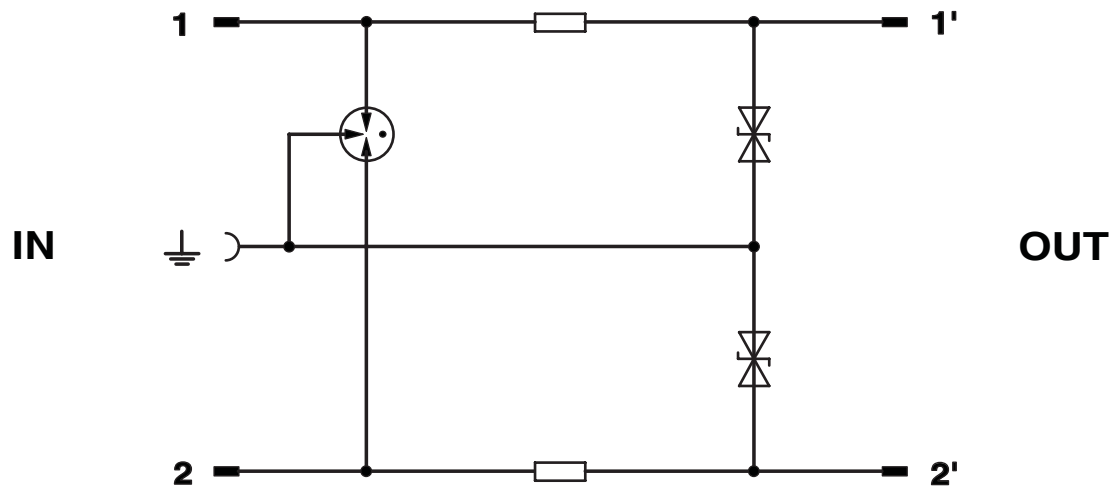
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Circuit diagram



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## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2838542>



**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(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.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

### EF3.0 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 1.832 kg CO2e |
|---------|---------------|

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