

# CTM 1X2- 60DC

Order No.: 2838568

The illustration shows version CTM 1x2- 24 DC




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LSA-PLUS plug (COMTRAB CTM) with protection for conductor pairs in floating signal circuits. Nominal voltage: 60 V DC



## Commercial data

|                          |  |
|--------------------------|--|
| GTIN (EAN)               | <br>4 017918 819736 |
| sales group              | J460   |
| Pack                     | 10 pcs.  |
| Customs tariff           | 85363010   |
| Catalog page information | Page 114 (TT-2009)   |

## Product notes

WEEE/RoHS-compliant since:  
01/03/2007



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## Technical data

### General

|                                    |       |
|------------------------------------|-------|
| Housing material                   | PA    |
| Inflammability class acc. to UL 94 | V0    |
| Color                              | black |

|  |  |
|--|--|
| Standards for air and creepage distances                       | DIN VDE 0110-1                                 |
|  | IEC 60664-1: 1992-10                           |
| Surge voltage category   | II   |
| Pollution degree   | 2  |
| Total surge current (8/20) $\mu$ s                             | 10 kA  |
| Total surge current (10/350) $\mu$ s                           | 2.5 kA   |
| Ambient temperature (operation)                                | -25 °C ... 75 °C                               |
| Mounting type  | On CT-TERMIBLOCK and LSA-PLUS disconnect strip |
| Design   | LSA-PLUS module                                |
| Number of positions  | 2  |
| Degree of protection   | IP20   |
| Direction of action  | Line-Line & Line-Earth Ground                  |
| Arrester can be tested with CHECKMASTER from software version: | From SW rev. 1.10                              |
| Width  | 9.50 mm  |
| Height   | 53.50 mm                                       |
| Length   | 21.00 mm                                       |

**Protective circuit**

|  |               |
|--|---------------|
| IEC category                                   | B2            |
|  | C1            |
|  | C2            |
|  | C3            |
|  | D1            |
| VDE requirement class                          | B2            |
|  | C1            |
|  | C2            |
|  | C3            |
|  | D1            |
| Nominal voltage $U_N$                          | 60 V DC       |
| Maximum continuous operating voltage $U_C$     | $\pm$ 65 V DC |
|  | 50 V AC       |
| Maximum continuous voltage $U_C$ (wire-wire)   | $\pm$ 65 V DC |
|  | 50 V AC       |
| Maximum continuous voltage $U_C$ (wire-ground) | 72 V DC       |
| Nominal current $I_N$                          | 380 mA (25°C) |

|   |  |
|---|--|
| Operating effective current $I_c$ at $U_c$  | $\leq 70 \mu\text{A}$  |
| Ground conductor current $I_{PE}$   | $\leq 2 \mu\text{A}$   |
| Nominal discharge surge current $I_n$ (8/20) $\mu\text{s}$<br>(Core-Core)           | 5 kA   |
| Nominal discharge surge current $I_n$ (8/20) $\mu\text{s}$<br>(Core-Earth)          | 5 kA   |
| Total surge current (8/20) $\mu\text{s}$  | 10 kA  |
| Max. discharge surge current $I_{max}$ (8/20) $\mu\text{s}$<br>maximum (Core-Earth) | 10 kA (in total)   |
| Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-<br>Core)              | 100 A  |
| Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-<br>Earth)             | 100 A  |
| Lightning test current (10/350) $\mu\text{s}$ , peak value $I_{imp}$                | 1 kA   |
| Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Core)<br>spike               | $\leq 160 \text{ V}$   |
| Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Earth)<br>spike              | $\leq 700 \text{ V}$   |
| Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Core)<br>static              | $\leq 160 \text{ V}$   |
| Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Earth)<br>static             | $\leq 700 \text{ V}$   |
| Residual voltage at $I_n$ , (conductor-conductor)                                   | $\leq 95 \text{ V}$  |
| Residual voltage at $I_n$ , (conductor-ground)                                      | $\leq 60 \text{ V}$  |
| Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (conductor-<br>conductor)    | $\leq 35 \text{ V}$  |
| Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (conductor-<br>ground)       | $\leq 12 \text{ V}$  |
| Protection level $U_p$ (Core-Core)  | $\leq 200 \text{ V}$ (C2, 10 kV/5 kA, spike)<br>$\leq 95 \text{ V}$ (C2, 10 kV/5 kA, static)<br>$\leq 160 \text{ V}$ (C3, 7.5 kV/100 A, spike)<br>$\leq 35 \text{ V}$ (C3, 7.5 kV/100 A, static) |
| Protection level $U_p$ (Core-Earth)   | $\leq 700 \text{ V}$ (C2, 10 kV/5 kA, spike)<br>$\leq 90 \text{ V}$ (C2, 10 kV/5 kA, static)<br>$\leq 700 \text{ V}$ (C3, 7.5 kV/100 A, spike)<br>$\leq 12 \text{ V}$ (C3, 7.5 kV/100 A, static) |
| Response time $t_A$ (Core-Core)   | $\leq 1 \text{ ns}$  |
| Response time $t_A$ (Core-Earth)  | $\leq 100 \text{ ns}$  |
| Input attenuation $a_E$ , sym.  | 0.3 dB ( $\leq 500 \text{ kHz}$ )  |

|  |                                 |
|--|---------------------------------|
| Cut-off frequency $f_g$ (3 dB), sym. in 100 Ohm system                       | 2 MHz                           |
| Capacity (Core-Core)   | 1.2 nF ( $f=1$ MHz / $V_R=0$ V) |
| Resistance in series   | 3.3 $\Omega$ 10 %               |
|  | 3.3 $\Omega$                    |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)                | C2 (4 kV/2 kA)                  |
|  | C3 (100 A)                      |
|  | B2 (4 kV / 100 A)               |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)               | C2 (4 kV / 2 kA)                |
|  | C3 (100 A)                      |
|  | B2 (4 kV / 100 A)               |
|  | D1 (1 kA)                       |
| Alternating current carrying capacity in acc. with IEC 61643-21 (Core-Earth) | 5 A - 1 s                       |

#### Connection data

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

#### Connection, equipotential bonding

|                    |                |
|--------------------|----------------|
| Type of connection | Spring contact |
|--------------------|----------------|

#### Connection, protective circuit

|                       |              |
|-----------------------|--------------|
| Standards/regulations | IEC 61643-21 |
|-----------------------|--------------|

#### Certificates / Approvals



Certification

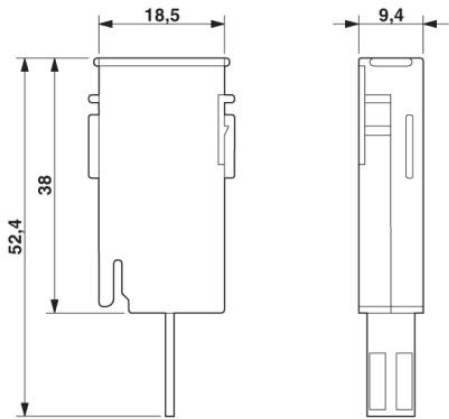
GOST, UL

**Additional products**

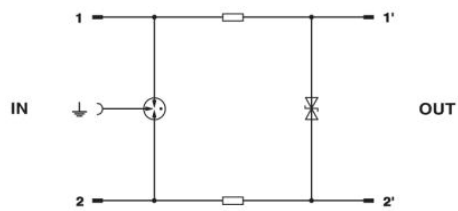
| Item            | Designation         | Description  |
|-----------------|---------------------|--|
| <b>Assembly</b> |                     |  |
| 0441711         | CT-TERMIBLOCK 10 DA | Screw termination block with disconnect contacts for accommodating protective plugs CT and CTM. Use in MCR and telecommunications systems. Design: 10 double wires |
| 2839295         | SSA 3-6             | shield fast connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black   |
| 2839512         | SSA 5-10            | Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black  |
| <b>General</b>  |                     |  |
| 2765547         | CT 1-10-ES          | Ground rail for CTM protective plug when used in combination with LSA-PLUS disconnect strip. Version: 10 double conductors   |
| 2765372         | CT 10-MB/ 3         | Mounting clip, for holding 3 disconnect or ground wire strips. Version: 10 double conductors, dimensions: A 104.5 mm, B 65 mm.                                     |
| 2765385         | CT 10-MB/10         | Mounting clip, for holding 10 disconnect or ground wire strips. Version: 10 double conductors, dimensions: A 104.5 mm, dimensions B 245.5 mm                       |
| 2765356         | CT 10-TL            | LSA-PLUS disconnect strip to hold the CTM and CT 10 protection modules. Version: 10 double conductors, dimension A: 124 mm.  |
| 2765518         | CT-KDT              | Cable bush for assembly troughs, for protection of the lines guided through the laminated frame  |
| 2838610         | CTM 10-MAG          | 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            |
| 2838649         | CTM EST             | LSA-PLUS grounding plug (COMTRAB CTM) to short-circuit and ground potentials in CT-TERMIBLOCK... and disconnect strip CT 10...                                     |

## Diagrams/Drawings

### Dimensioned drawing



### Circuit diagram



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