

## CTM 1X2- 24DC

Order No.: 2838513



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LSA-PLUS plug (COMTRAB CTM) with protection for conductor pairs  
in floating signal circuits. Nominal voltage: 24 V DC



### Commercial data

|                          |                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------|
| GTIN (EAN)               | <br>4 017918 819545 |
| Note                     | Made-to-order                                                                                          |
| sales group              | J460                                                                                                   |
| Pack                     | 10 pcs.                                                                                                |
| Customs tariff           | 85363010                                                                                               |
| Catalog page information | Page 114 (TT-2009)                                                                                     |

### Product notes

WEEE/RoHS-compliant since:  
06/07/2006



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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 $U_N$                          | 24 V DC       |
| Maximum continuous operating voltage $U_C$     | $\pm 30$ V DC |
|                                                | 21 V AC       |
| Maximum continuous voltage $U_C$ (wire-wire)   | $\pm 30$ V DC |
|                                                | 21 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 $U_C$                                 | $\leq 5 \mu A$                         |
| Ground conductor current $I_{PE}$                                          | $\leq 2 \mu A$                         |
| Nominal discharge surge current $I_n$ (8/20) $\mu s$ (Core-Core)           | 5 kA                                   |
| Nominal discharge surge current $I_n$ (8/20) $\mu s$ (Core-Earth)          | 5 kA                                   |
| Total surge current (8/20) $\mu s$                                         | 10 kA                                  |
| Max. discharge surge current $I_{max}$ (8/20) $\mu s$ maximum (Core-Earth) | 10 kA (in total)                       |
| Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (Core-Core)               | 100 A                                  |
| Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (Core-Earth)              | 100 A                                  |
| Lightning test current (10/350) $\mu s$ , peak value $I_{imp}$             | 1 kA                                   |
| Output voltage limitation at 1 kV/ $\mu s$ (Core-Core) spike               | $\leq 70 V$                            |
| Output voltage limitation at 1 kV/ $\mu s$ (Core-Earth) spike              | $\leq 700 V$                           |
| Output voltage limitation at 1 kV/ $\mu s$ (Core-Core) static              | $\leq 70 V$                            |
| Output voltage limitation at 1 kV/ $\mu s$ (Core-Earth) static             | $\leq 700 V$                           |
| Residual voltage at $I_n$ , (conductor-conductor)                          | $\leq 45 V$                            |
| Residual voltage at $I_n$ , (conductor-ground)                             | $\leq 60 V$                            |
| Residual voltage with $I_{an}$ (10/1000) $\mu s$ (conductor-conductor)     | $\leq 25 V$                            |
| Residual voltage with $I_{an}$ (10/1000) $\mu s$ (conductor-ground)        | $\leq 12 V$                            |
| Protection level $U_P$ (Core-Core)                                         | $\leq 70 V$ (C2, 10 kV/5 kA, spike)    |
|                                                                            | $\leq 45 V$ (C2, 10 kV/5 kA, static)   |
|                                                                            | $\leq 45 V$ (C3, 7.5 kV/100 A, spike)  |
|                                                                            | $\leq 25 V$ (C3, 7.5 kV/100 A, static) |
| Protection level $U_P$ (Core-Earth)                                        | $\leq 700 V$ (C2, 10 kV/5 kA, spike)   |
|                                                                            | $\leq 60 V$ (C2, 10 kV/5 kA, static)   |
|                                                                            | $\leq 700 V$ (C3, 7.5 kV/100 A, spike) |
|                                                                            | $\leq 12 V$ (C3, 7.5 kV/100 A, static) |
| Response time $t_A$ (Core-Core)                                            | $\leq 1 ns$                            |
| Response time $t_A$ (Core-Earth)                                           | $\leq 100 ns$                          |
| Input attenuation aE, sym.                                                 | 0.3 dB ( $\leq 600 kHz$ )              |

|                                                                              |                                 |
|------------------------------------------------------------------------------|---------------------------------|
| Cut-off frequency $f_g$ (3 dB), sym. in 100 Ohm system                       | 2.7 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

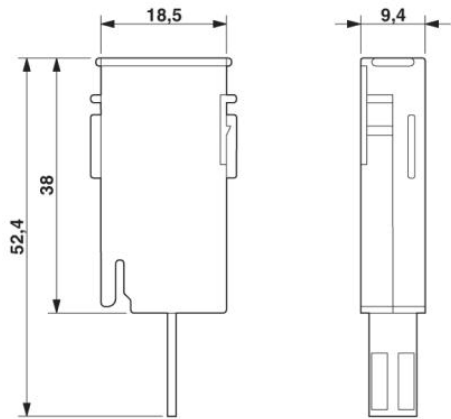
GOST, UL

#### Additional products

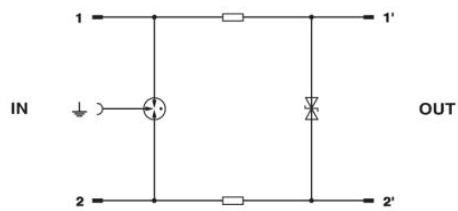
| Item            | Designation         | Description                                                                                                                                                        |
|-----------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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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