

## Surge protection plug - CTM 1X2- 60DC - 2838568

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

### 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
- ✓ Space-saving LSA-PLUS connection technology
- ✓ Typical installation locations include marshalling distributors
- ✓ Modular compact protection for high-density networks



### Key Commercial Data

Packing unit	10 pc
GTIN	 4 017918 819736
GTIN	4017918819736

### 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

#### Protective circuit

IEC test classification	B2
	C1
	C2
	C3
	D1
Nominal voltage $U_N$	60 V DC
Maximum continuous 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 $U_C$	$\leq 70 \mu\text{A}$
Residual current $I_{PE}$	$\leq 2 \mu\text{A}$
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	$\leq 160 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 700 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) static	$\leq 700 \text{ V}$
Residual voltage at $I_n$ (line-line)	$\leq 95 \text{ V}$
Residual voltage at $I_n$ (line-earth)	$\leq 60 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	$\leq 35 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)	$\leq 12 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 200 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 160 \text{ V}$ (C3 - 100 A)
Voltage protection level $U_p$ (line-earth)	$\leq 700 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 700 \text{ V}$ (C3 - 100 A)
Voltage protection level $U_p$ static (line-line)	$\leq 95 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 35 \text{ V}$ (C3 - 100 A)

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## Technical data

### Protective circuit

Voltage protection level $U_p$ static (line-earth)	$\leq 90$ 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 ( $\leq 500$ kHz / 100 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 100 Ohm system	typ. 2 MHz
Capacity (line-line)	typ. 1.2 nF
Resistance per path	3.3 $\Omega$ 20 %
Surge protection fault message	none
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
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### Standards and Regulations

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

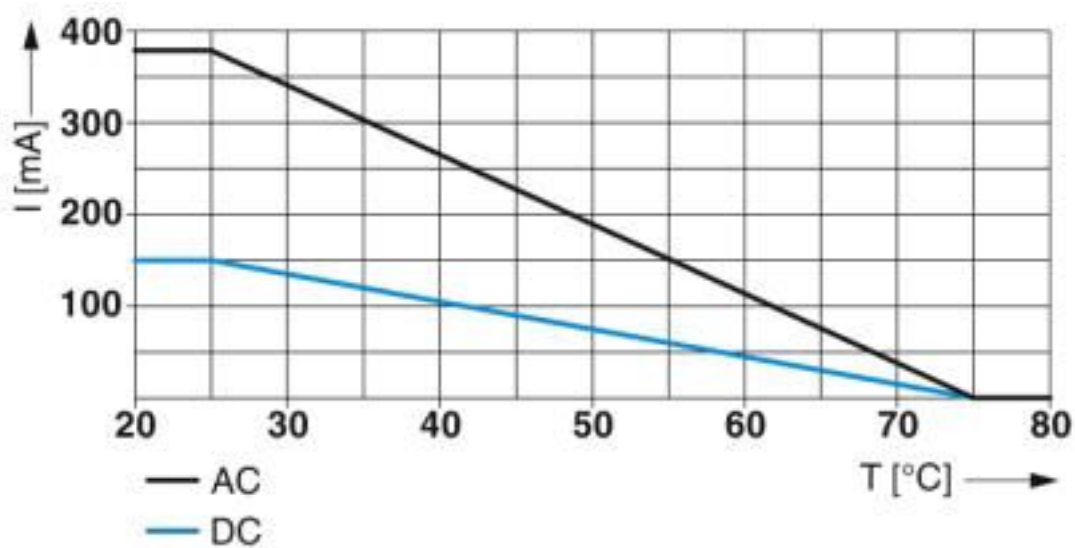
### Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

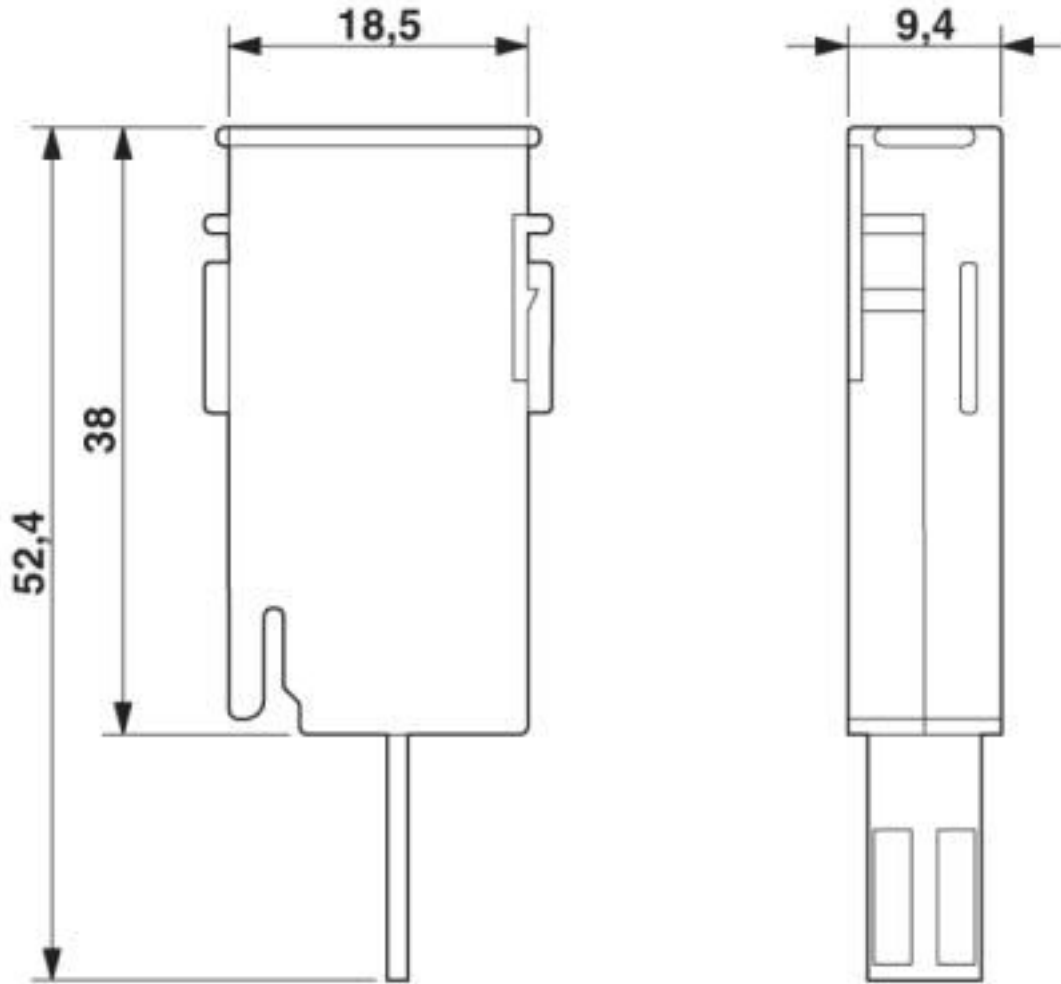
# Surge protection plug - CTM 1X2- 60DC - 2838568

Diagram

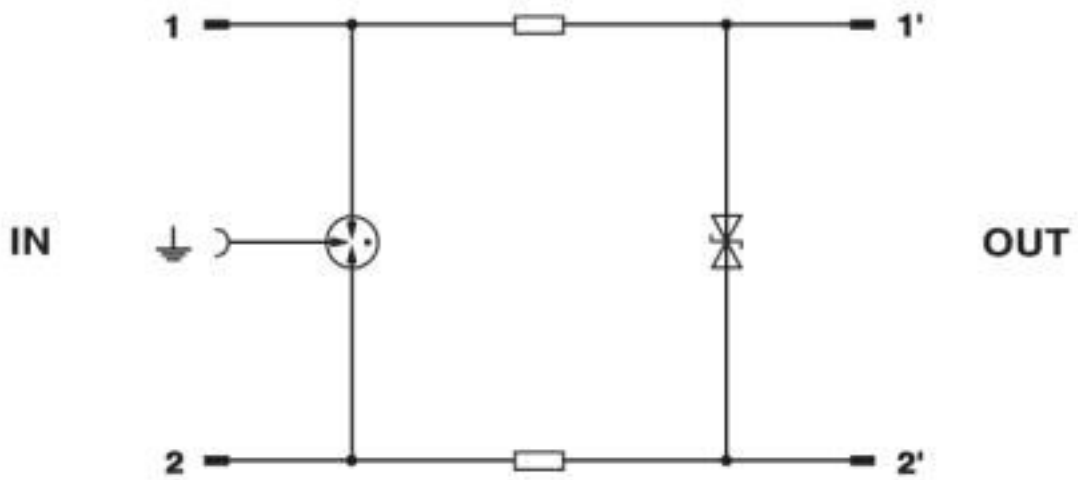


# Surge protection plug - CTM 1X2- 60DC - 2838568

Dimensional drawing



Circuit diagram



# Surge protection plug - CTM 1X2- 60DC - 2838568

## 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- 60DC - 2838568

## 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
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EAC			RU C- DE.*09.B.00169
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## 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- 60DC - 2838568

### 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



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### 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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