

# CTM 2X1-180DC-GS-P - Surge protection plug



2838623

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LSA-PLUS protective plug (COMTRAB CTM) with power cross and coarse surge protection for 2 signal lines. Nominal voltage: 180 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	2838623
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL03
Product key	CL3211
GTIN	4017918948375
Weight per piece (including packing)	8.38 g
Weight per piece (excluding packing)	8.34 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	A2
	B1
	B2
	B3
	C1
	C2
	C3
	D1
	D2
	VDE requirement class
B1	
B2	
B3	
C1	
C2	
C3	
D1	
D2	
Type	LSA-PLUS module
Surge protection fault message	none
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 2.20
Wire pairs per module	1

### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### Electrical properties

Near-end crosstalk attenuation aN between adjacent articles	70 dB (up to 1 MHz 100 Ω system)
	50 dB (up to 10 MHz 100 Ω system)
	30 dB (up to 100 MHz, 100 Ω system)
Nominal voltage $U_N$	180 V DC

### Connection data

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

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Dimensional drawing	
Width	9.5 mm
Height	21 mm
Depth	53.5 mm

## Material specifications

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

## Mechanical properties

### Mechanical data

Open side panel	No
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## Protective circuit

Direction of action	Line-Line & Line-Earth Ground
Nominal voltage $U_N$	180 V DC
Maximum continuous operating voltage $U_C$	$\pm 180$ V DC
Rated current	120 mA (25 °C)
Operating effective current $I_C$ at $U_C$	$\leq 2$ $\mu$ 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	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
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (line-earth)	10 kA (in total)
Nominal pulse current $I_{an}$ (10/1000) $\mu$ s (line-earth)	200 A
Output voltage limitation at 1 kV/ $\mu$ s (line-earth) spike	$\leq 800$ V
Output voltage limitation at 1 kV/ $\mu$ s (line-earth) static	$\leq 800$ V
Residual voltage at $I_n$ (conductor-ground)	$\leq 70$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (line-earth)	$\leq 28$ V
Voltage protection level $U_p$ (line-earth)	$\leq 900$ V (C2 - 10 kV/5 kA, spike) $\leq 70$ V (C2 - 10 kV/5 kA, static) $\leq 1$ kV (C3 - 7.5 kV / 100 A, spike) $\leq 30$ V (C3 - 7.5 kV / 100 A, static)
Response time $t_A$ (line-earth)	$\leq 100$ ns 0.5 dB ( $\leq 10$ MHz)

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Input attenuation aE, asym.	0.6 dB (up to 60 MHz in 100 Ω system)
	1 dB (up to 100 MHz, 100 Ω)
Cut-off frequency fg (3 dB), asym. (PE) in 100 Ω system	> 100 MHz
Capacity (Core-Earth)	5 pF (f=1 MHz / V <sub>R</sub> = 0 V)
Resistance per path	5.5 Ω ±1.5 Ω (Symmetry:±0.5 Ω)
Surge protection fault message	none
Impulse durability (line-earth)	C2 - 4 kV / 2 kA
	C3 - 100 A
	B2 - 4 kV / 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)	-40 °C ... 85 °C

## Standards and regulations

VDE requirement class	A2
	B1
	B2
	B3
	C1
	C2
	C3
	D1
	D2

### Standards Information technology specification

Standards/regulations	IEC 61643-21
	IEC 61643-21

### Air clearances and creepage distances

Standards/regulations	DIN VDE 0110-1 / IEC 60664-1
Standards/specifications	IEC 61643-21
Note	2002

## Mounting

Mounting type	On CT-TERMIBLOCK and LSA-PLUS disconnect strip
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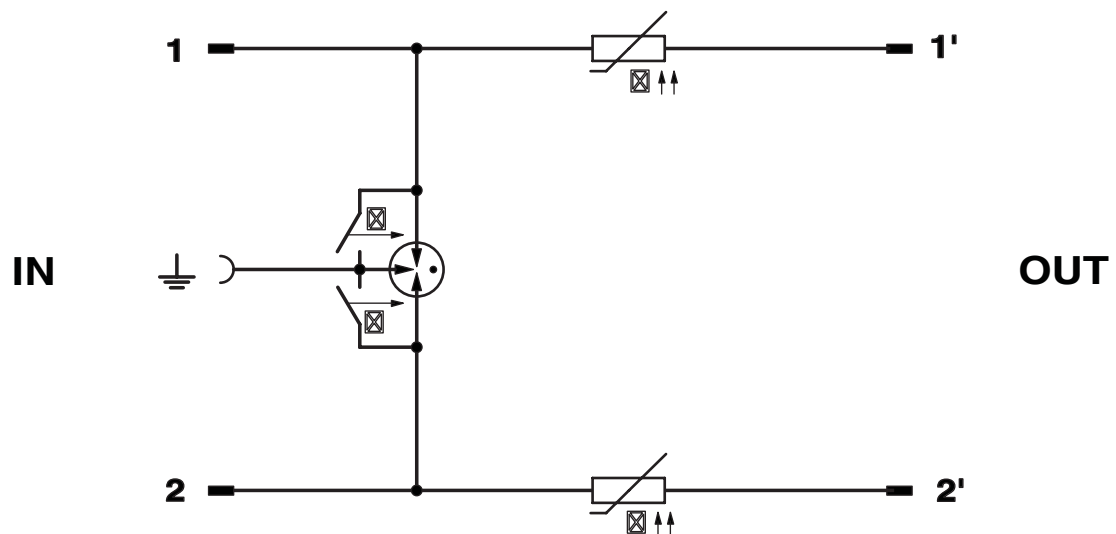
<https://www.phoenixcontact.com/us/products/2838623>

## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

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**UL Listed**

Approval ID: FILE E 138168

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## Classifications

### ECLASS

ECLASS-13.0	27171503
ECLASS-15.0	27171503

### ETIM

ETIM 10.0	EC001625
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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### EF3.1 Climate Change

CO2e kg	2.376 kg CO2e
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