

# CTM 2X1- 24DC - Surge protection plug

2838500

<https://www.phoenixcontact.com/us/products/2838500>

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LSA-PLUS plug (COMTRAB CTM) with protective circuit for 2-conductor signal circuits grounded on one side. Nominal voltage: 24 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	2838500
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL03
Product key	CL3211
GTIN	4017918819538
Weight per piece (including packing)	10.58 g
Weight per piece (excluding packing)	10.384 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
VDE requirement class	B2
	C1
	C2
	C3
	D1
Type	LSA-PLUS module
Number of positions	2
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

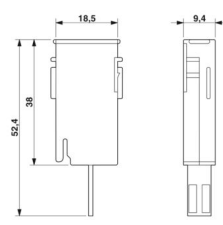
### Electrical properties

Nominal voltage $U_N$	24 V DC
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### Connection data

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

Dimensional drawing	
Width	9.5 mm
Height	21 mm
Depth	53.5 mm

### Material specifications

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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 $U_N$	24 V DC
Maximum continuous operating voltage $U_C$	$\pm 30$ V DC
	21 V AC
Rated current	380 mA AC (25 °C)
Operating effective current $I_C$ at $U_C$	$\leq 5$ $\mu$ 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
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)	100 A
Output voltage limitation at 1 kV/ $\mu$ s (line-earth) spike	55 V
Output voltage limitation at 1 kV/ $\mu$ s (line-earth) static	$\leq 45$ V
Residual voltage at $I_n$ (conductor-ground)	$\leq 50$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (line-earth)	$\leq 15$ V
Voltage protection level $U_p$ (line-earth)	$\leq 100$ 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)
	$\leq 15$ V (C3 - 7.5 kV / 100 A, static)
Response time $t_A$ (line-earth)	$\leq 1$ ns
Input attenuation aE, asym.	0.3 dB ( $\leq 700$ kHz)
Cut-off frequency $f_g$ (3 dB), asym. (PE) in 100 $\Omega$ system	2.7 MHz
Capacity (Core-Earth)	1.2 nF ( $f=1$ MHz / $V_R=0$ V)
Resistance per path	3.3 $\Omega$ 10 %
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

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## Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 75 °C

## Standards and regulations

VDE requirement class	B2
	C1
	C2
	C3
	D1

## 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	2000

## Mounting

Mounting type	On CT-TERMBLOCK and LSA-PLUS disconnect strip
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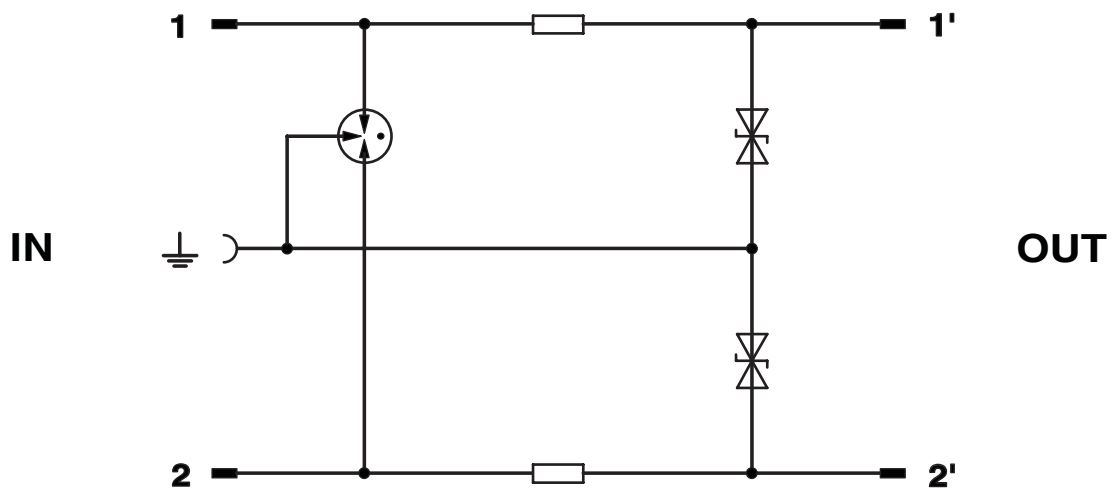
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## Drawings

Dimensional drawing



Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2838500>



**UL Listed**

Approval ID: FILE E 138168

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## Classifications

### ECLASS

ECLASS-13.0	27171501
ECLASS-15.0	27171501

### ETIM

ETIM 10.0	EC001466
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### UNSPSC

UNSPSC 21.0	39121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 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.)	Lead(CAS: 7439-92-1)
SCIP	9d76fbce-22bc-4c7a-9386-deedc63127d1

### EF3.1 Climate Change

CO2e kg	1.561 kg CO2e
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