

# LIT 1X2-24 - Surge protection device



2804610

<https://www.phoenixcontact.com/us/products/2804610>

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Surge protection in a one-piece 6.2 mm wide DIN rail module for one floating signal circuit in 2-conductor technology. Tested in accordance with the following types of protection in Ex areas: Ex ia IIC / Ex iaD. HART-compatible.

## Your advantages

- Space saving with a narrow overall width of just 6 mm
- Cost-optimized with tailored product features
- Universal use with extended nominal voltage range

## Commercial data

Item number	2804610
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL02
Product key	CL2211
GTIN	4046356428330
Weight per piece (including packing)	64.86 g
Weight per piece (excluding packing)	53 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	LINETRAB
IEC test classification	C1
	C2
	C3
	D1
Type	DIN rail module, one-piece
Wire pairs per module	1

### Insulation characteristics

Overvoltage category	III
Pollution degree	2

### Electrical properties

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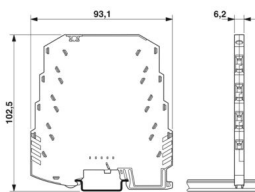
### Connection data

Connection method	Screw connection
Screw thread	M3
Tightening torque	0.8 Nm
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section AWG	24 ... 14

### Ex data

Maximum inner capacitance $C_i$	typ. 1.3 nF
Max. internal inductance $L_i$	< 1 $\mu$ H
Max. input current $I_i$	350 mA ( $T_4 / \leq 80^\circ\text{C}$ )
	200 mA ( $T_5 / \leq 50^\circ\text{C}$ )
	150 mA ( $T_6 / \leq 40^\circ\text{C}$ )
Max. input voltage $U_i$	36 V DC
max. input power $P_i$	3.00 W
Maximum inner time factor ( $R_i/L_i$ )	0.2 $\mu$ s

### Dimensions

Dimensional drawing	
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Width	6.2 mm
Height	93.1 mm
Depth	102.5 mm (incl. DIN rail 7.5 mm)

## Material specifications

Color	anthracite gray (RAL 7016)
Flammability rating according to UL 94	V-0
Insulating material	PBT
Housing material	PBT

## 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 $U_C$	36 V DC
	25 V AC
Rated current	350 mA (40 °C)
Operating effective current $I_C$ at $U_C$	$\leq 2 \mu\text{A}$
Protective conductor 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-ground)	5 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$ (line-earth)	500 A
	1 kA (in total)
Total discharge current $I_{Total}$ (8/20) $\mu\text{s}$	10 kA
	20 kA (1x)
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-line)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (line-earth)	10 kA
	20 kA (in total)
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	50 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)	50 A
	100 A (in total)
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) spike	$\leq 60 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) spike	$\leq 650 \text{ V}$
Residual voltage at $I_n$ (conductor-conductor)	$\leq 70 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	$\leq 50 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 70 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 50 \text{ V}$ (C3 - 10 A)
	$\leq 55 \text{ V}$ (C3 - 50 A)
Voltage protection level $U_p$ (line-earth)	$\leq 650 \text{ V}$ (C1 - 500 V / 250 A)
	$\leq 700 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 650 \text{ V}$ (C3 - 10 A)

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	≤ 700 V (C3 - 50 A)
Response time $t_A$ (line-line)	≤ 1 ns
Response time $t_A$ (line-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 0.7 dB (1 MHz/50 Ω)
	typ. 0.3 dB (350 kHz/150 Ω)
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ω system	typ. 6 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ω system	typ. 2 MHz
Capacity	≤ 1.3 nF (per channel)
Resistance per path	3.3 Ω ±20 %
Surge protection fault message	none
Max. required back-up fuse	315 mA (T)
Impulse durability (line-line)	C2 - 10 kV / 5 kA
	C3 - 50 A
Impulse durability (line-earth)	C1 - 1 kV / 500 A
	C2 - 10 kV / 5 kA
	C3 - 50 A
	D1 - 500 A
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 ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl)

## Approvals

### Conformity/Approvals

ATEX	⊕ II 1 G Ex ia IIC T4...T6
	⊕ II 1 D Ex iaD 20 T85 °C...135 °C
IECEX	Ga Ex ia IIC T4...T6
	Ex iaD 20 T85 °C...T135 °C

## Standards and regulations

Standards/specifications	EN 61643-21
Note	A2:2013
Standards/specifications	EN 60079-0
Note	2018
Standards/specifications	EN 60079-11
Note	2012
Standards/specifications	IEC 60079-0
Note	2017
Standards/specifications	IEC 60079-11

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Note	2011
Standards/specifications	GB/T 3836.1
Note	2021
Standards/specifications	GB/T 3836.4
Note	2021

## Mounting

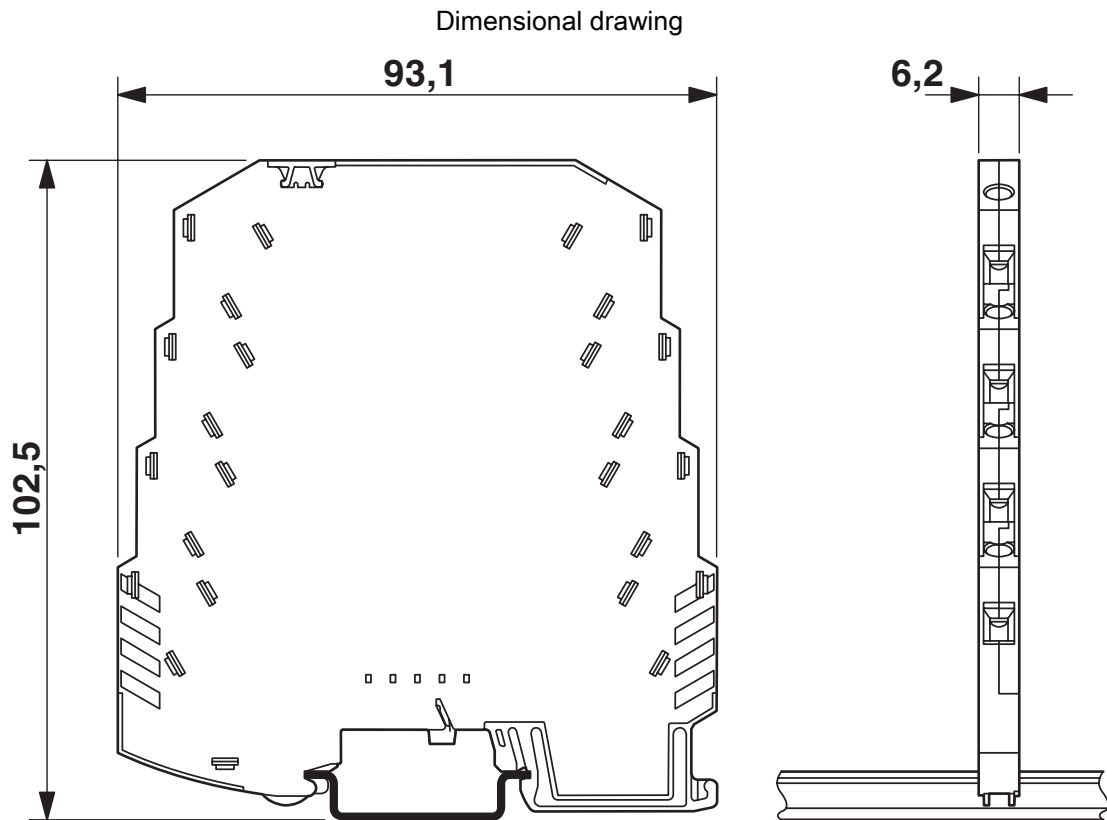
Mounting type	DIN rail: 35 mm
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# LIT 1X2-24 - Surge protection device

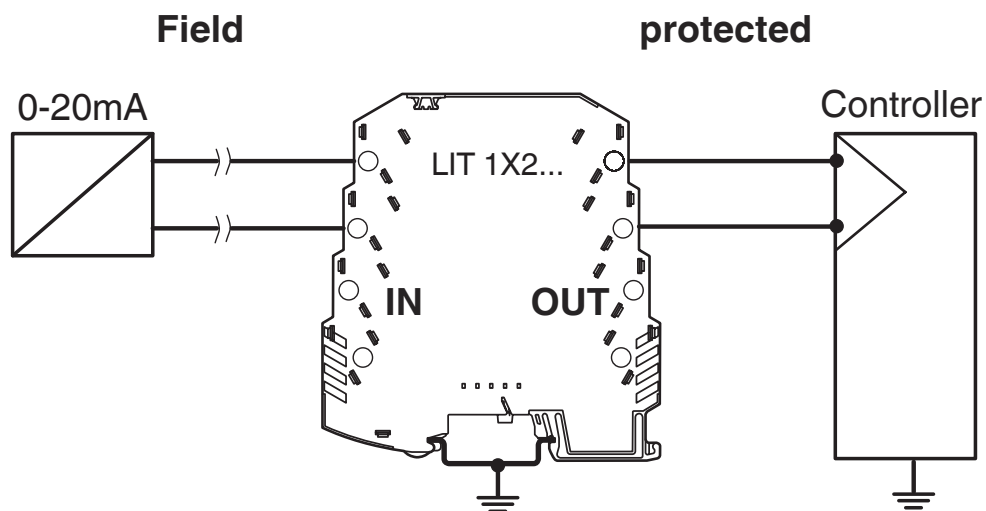
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## Drawings



Application drawing

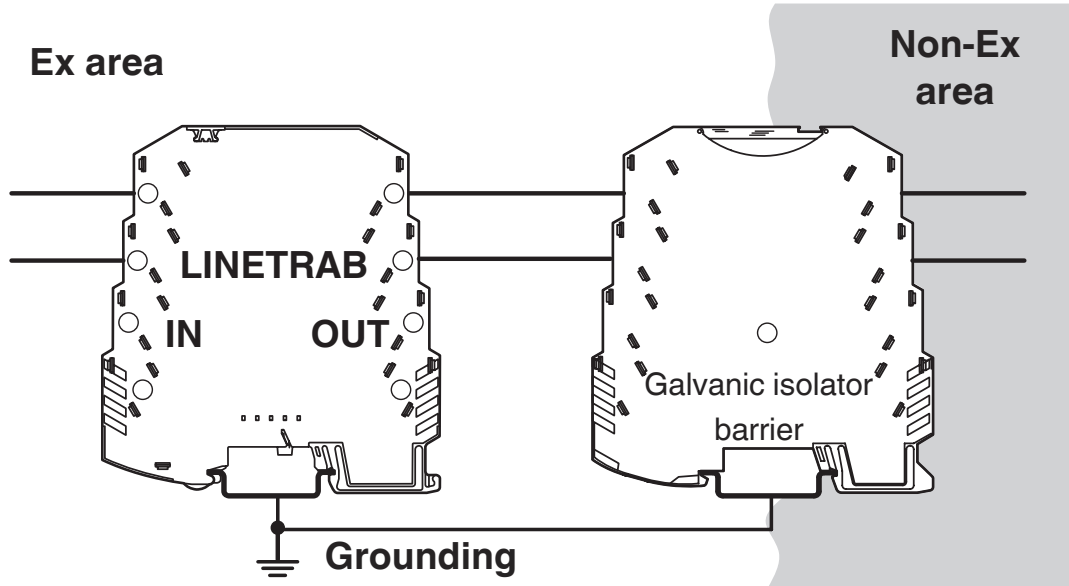


# LIT 1X2-24 - Surge protection device

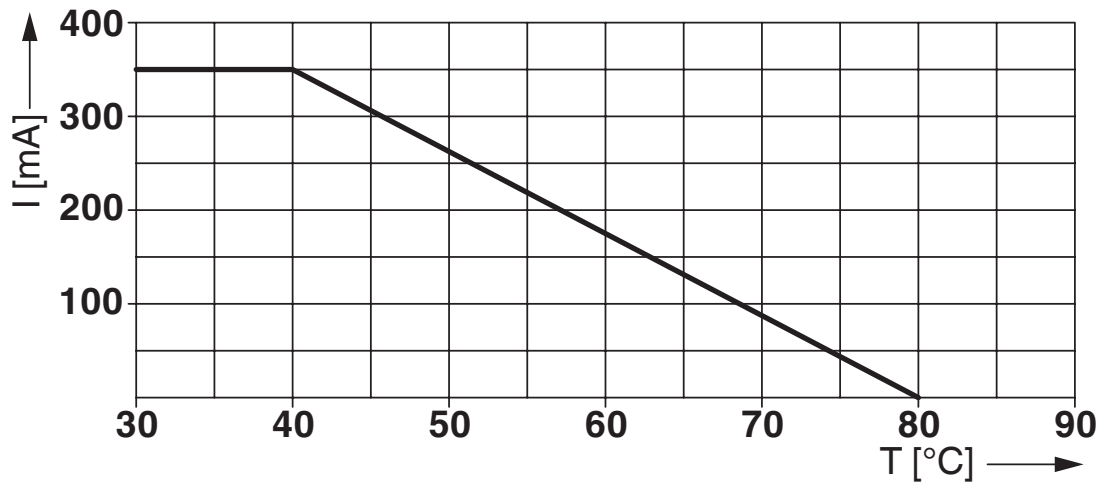
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Application drawing



Diagram



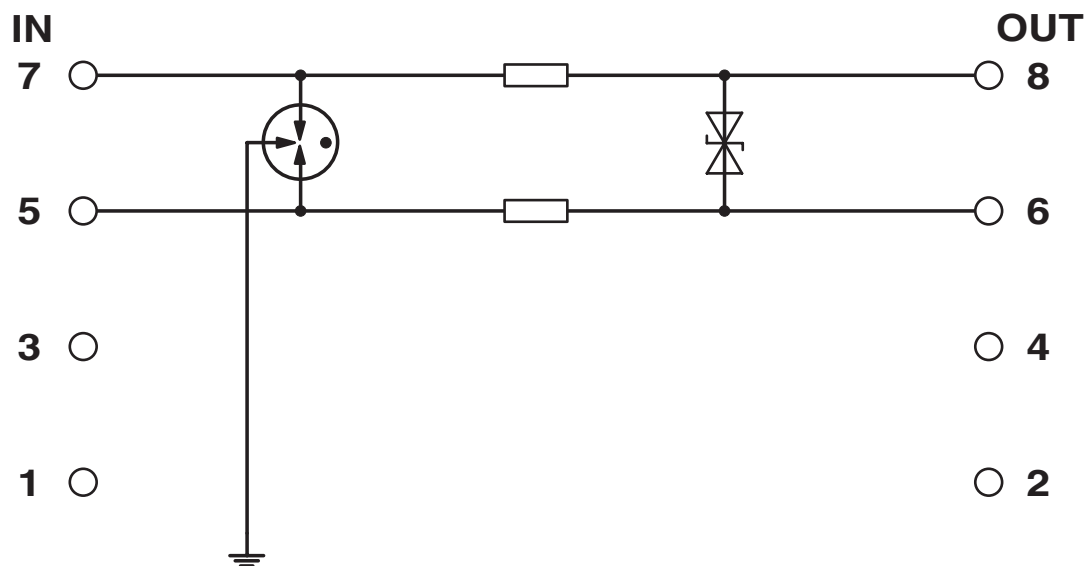
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Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2804610>



**DNV GL**

Approval ID: TAE00001N8



**UL Listed**

Approval ID: FILE E 138168

**UAE-RoHS**

Approval ID: 23-10-88889



**ATEX**

Approval ID: KEMA 09ATEX0051 X



**IECEx**

Approval ID: IECEx KEM 09.0018X



**CCC**

Approval ID: 2025322304006665



**NEPSI-EX**

Approval ID: GYJ20.1176X



**UKCA-EX**

Approval ID: DEKRA 21UKEX0233 X



**CCC**

Approval ID: 2025322304006665

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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	39121620
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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	6159ad9d-3e85-4844-87e7-af02ce7a5544

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