

# LIT 1X2-24 - Surge protection device



2804610

<https://www.phoenixcontact.com/in/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	CL2
Product Key	CL2211
Catalog Page	Page 124 (C-4-2019)
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

IEC test classification	C1
	C2
	C3
	D1
Type	DIN rail module, one-piece
Product type	Surge protection for MCR technology
Product family	LINETRAB
Surge protection fault message	none
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

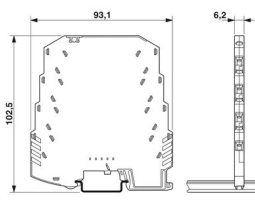
Maximum inner capacitance $C_i$	typ. 1.3 nF
Max. internal inductance $L_i$	< 1 $\mu$ H
Max. input current $I_i$	350 mA ( $T_4 / \leq 80^\circ\text{C}$ )
	200 mA ( $T_5 / \leq 50^\circ\text{C}$ )
	150 mA ( $T_6 / \leq 40^\circ\text{C}$ )
Max. input voltage $U_i$	36 V DC
max. input power $P_i$	3 W
Maximum inner time factor ( $R_i/L_i$ )	0.2 $\mu$ s

### Dimensions

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

## Material specifications

Color	anthracite grey 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
Maximum continuous voltage $U_C$	36 V DC
	25 V AC
Rated current	350 mA (40 °C)
Operating effective current $I_C$ at $U_C$	$\leq 2 \mu A$
Residual current $I_{PE}$	$\leq 2 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)	5 kA
Nominal discharge surge current $I_n$ (8/20) $\mu s$ (Core-Earth)	5 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu s$ (line-earth)	500 A
	1 kA (in total)
Total discharge current $I_{total}$ (8/20) $\mu s$	10 kA
	20 kA (1x)
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-line)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-earth)	10 kA
	20 kA (in total)
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-line)	50 A
Nominal pulse current $I_{an}$ (10/1000) $\mu s$ (line-earth)	50 A
	100 A (in total)
Output voltage limitation at 1 kV/ $\mu s$ (line-line) spike	$\leq 60 V$
Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike	$\leq 650 V$
Residual voltage at $I_n$ (conductor-conductor)	$\leq 70 V$
Residual voltage with $I_{an}$ (10/1000) $\mu s$ (line-line)	$\leq 50 V$

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Voltage protection level $U_p$ (line-line)	$\leq 70$ V (C2 - 10 kV / 5 kA)
	$\leq 50$ V (C3 - 10 A)
	$\leq 55$ V (C3 - 50 A)
Voltage protection level $U_p$ (line-earth)	$\leq 650$ V (C1 - 500 V / 250 A)
	$\leq 700$ V (C2 - 10 kV / 5 kA)
	$\leq 650$ V (C3 - 10 A)
	$\leq 700$ V (C3 - 50 A)
Response time $t_A$ (line-line)	$\leq 1$ ns
Response time $t_A$ (line-earth)	$\leq 100$ ns
Input attenuation aE, sym.	typ. 0.7 dB (1 MHz / 50 $\Omega$ )
	typ. 0.3 dB (350 kHz / 150 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 $\Omega$ system	typ. 6 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 $\Omega$ system	typ. 2 MHz
Capacity	$\leq 1.3$ nF (per channel)
Resistance per path	3.3 $\Omega \pm 20$ %
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	$\leq 2000$ m (amsl (above mean sea level))

## Approvals

### Conformity/Approvals

ATEX	<input type="checkbox"/> II 1 G Ex ia IIC T4...T6
	<input type="checkbox"/> 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
Standards/specifications	EN 60079-0
Standards/specifications	EN 60079-11

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Standards/specifications	EN 60079-26
Standards/specifications	IEC 60079-0
Standards/specifications	IEC 60079-11
Standards/specifications	IEC 60079-26

## Mounting

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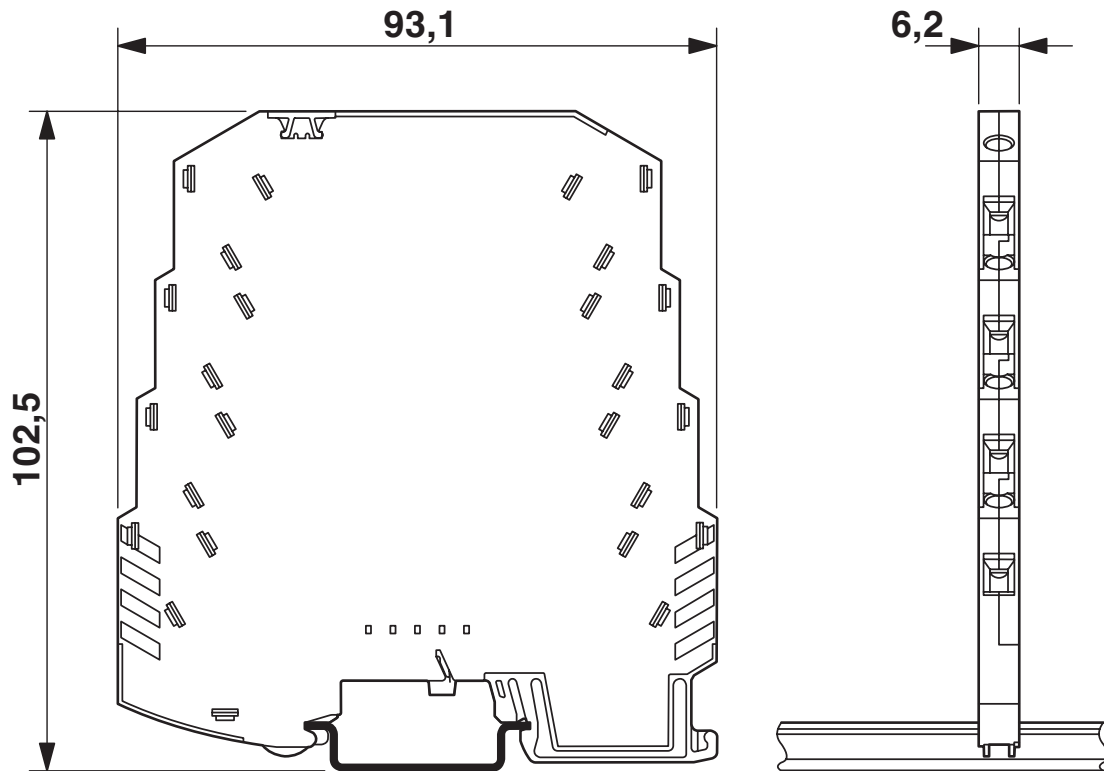
# LIT 1X2-24 - Surge protection device

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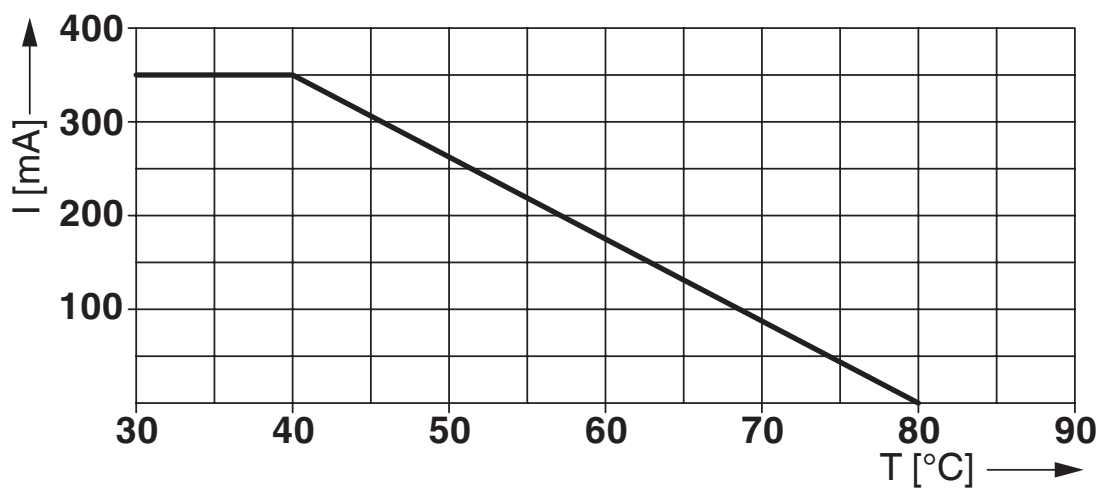
<https://www.phoenixcontact.com/in/products/2804610>

## Drawings

Dimensional drawing



Diagram

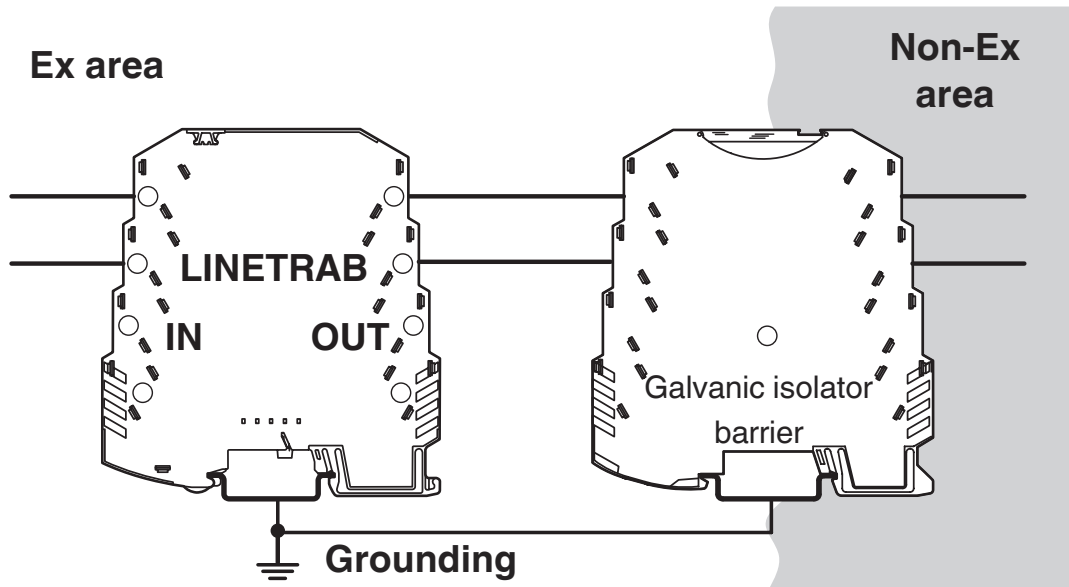


# LIT 1X2-24 - Surge protection device

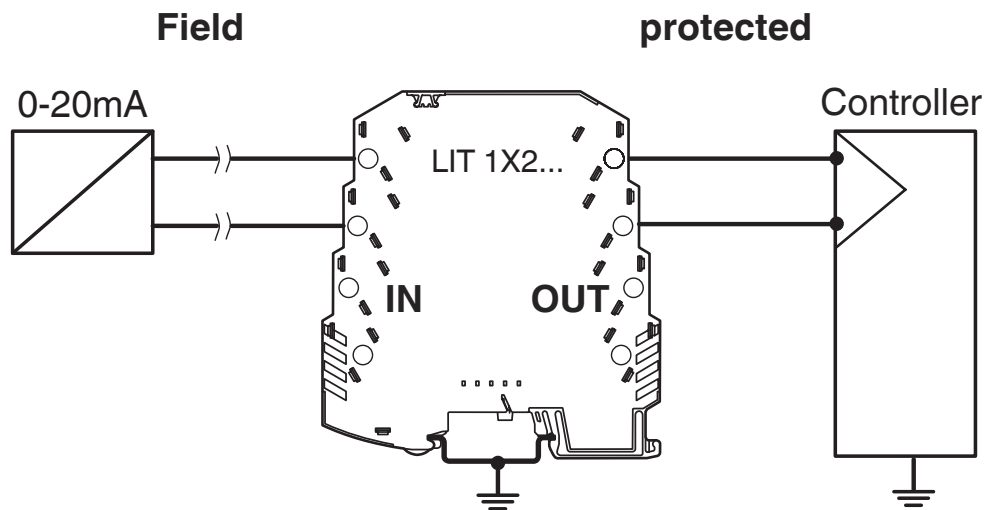
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Application drawing



Application drawing



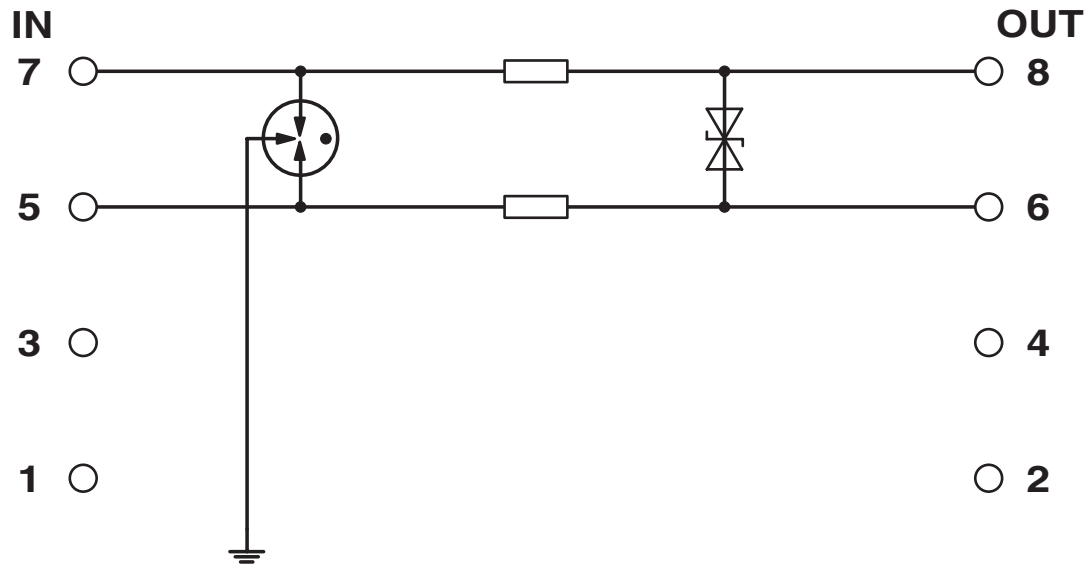
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Circuit diagram





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## Approvals



**EAC**

Approval ID: EAC-Zulassung



**DNV GL**

Approval ID: TAE00001N8



**EAC**

Approval ID: RU C-DE.\*09.B.00169



**UL Listed**

Approval ID: FILE E 138168



**ATEX**

Approval ID: KEMA 09ATEX0051 X



**EAC Ex**

Approval ID: RU C-DE.\*\*87.B.00420



**IECEX**

Approval ID: IECEX KEM 09.0018X



**CCC**

Approval ID: 2020322316000816



**NEPSI**

Approval ID: GYJ20.1176X

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## Classifications

### ECLASS

ECLASS-11.0

27130807

### ETIM

ETIM 8.0

EC000943

### UNSPSC

UNSPSC 21.0

39121600

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## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### VIP-CAB-FLK16/FR/FR/0,14/2,0M - Cable

2900156

<https://www.phoenixcontact.com/in/products/2900156>



Round cable set; controller: MINI-Analog, TRABTECH LINETRAB LIT; connection 1: IDC/FLK socket strip (1x 16-position, 90 °-out put); connection 2: IDC/FLK socket strip (1x 16-position, 90 °-out put); cable length: 2 m

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### VIP-CAB-FLK16/FR/FR/0,14/1,0M - Cable

2900155

<https://www.phoenixcontact.com/in/products/2900155>



Round cable set; controller: MINI-Analog, TRABTECH LINETRAB LIT; connection 1: IDC/FLK socket strip (1x 16-position, 90 °-out put); connection 2: IDC/FLK socket strip (1x 16-position, 90 °-out put); cable length: 1 m

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## UC-TM 6 - Marker for terminal blocks

0818085

<https://www.phoenixcontact.com/in/products/0818085>



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

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## UC-TM 6 OG - Marker for terminal blocks

0818328

<https://www.phoenixcontact.com/in/products/0818328>



Marker for terminal blocks, Sheet, orange, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

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## UC-TM 6 YE - Marker for terminal blocks

0818331

<https://www.phoenixcontact.com/in/products/0818331>



Marker for terminal blocks, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

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## UC-TM 6 BU - Marker for terminal blocks

0818344

<https://www.phoenixcontact.com/in/products/0818344>



Marker for terminal blocks, Sheet, blue, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

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## UC-TM 6 RD - Marker for terminal blocks

0818357

<https://www.phoenixcontact.com/in/products/0818357>



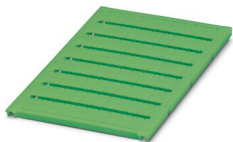
Marker for terminal blocks, Sheet, red, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

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## UC-TM 6 GN - Marker for terminal blocks

0818360

<https://www.phoenixcontact.com/in/products/0818360>



Marker for terminal blocks, Sheet, green, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

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PHOENIX CONTACT (I) Pvt. Ltd.  
A-58/2, Okhla Industrial Area, Phase - II, New Delhi-110 020

+91.1275.71420  
[info@phoenixcontact.co.in](mailto:info@phoenixcontact.co.in)