

## Surge protection device - LIT 1X2-24 - 2804610

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Surge protection in the one-piece 6.2 mm DIN rail module for one floating signal circuit in 2-wire technology. Tested according to the protection types in Ex areas Ex ia IIC/Ex iaD. HART-compatible.

### Product Features

- ✓ Can be used in binary, analog, and intrinsically safe circuits
- ✓ Protection of up to four signal wires over a design width of 6.2 mm



### Key commercial data

Packing unit	1 PCE
GTIN	 4 046356 428330
Custom tariff number	85363010
Country of origin	GERMANY

### Technical data

#### Dimensions

Height	93 mm
Width	6.2 mm
Depth	102.5 mm

#### Ambient conditions

Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Degree of protection	IP20

#### General

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### Technical data

#### General

Housing material	PBT
Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	IEC 60664-1
	EN 60079-11
Mounting type	DIN rail: 35 mm
Design	Rail-mountable module, one-piece
Direction of action	Line-Line & Line-Earth Ground

#### Protective circuit

IEC test classification	C1
	C2
	C3
	D1
Nominal voltage $U_N$	24 V DC
Maximum continuous operating voltage $U_C$	25 V AC
	36 V DC
Nominal current $I_N$	350 mA (40°C)
Operating effective current $I_C$ at $U_C$	$\leq 2 \mu\text{A}$
Residual current $I_{PE}$	$\leq 2 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (Core-Core)	5 kA
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (Core-Earth)	5 kA
	10 kA (Total)
Total surge current (8/20) $\mu\text{s}$	20 kA
Total surge current (10/350) $\mu\text{s}$	1 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (Core-Core)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu\text{s}$ maximum (Core-Earth)	10 kA
	20 kA (Total)
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-Core)	50 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (Core-Earth)	50 A
	100 A (Total)
Impulse discharge current (10/350) $\mu\text{s}$ , peak value $I_{imp}$	500 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Core) spike	$\leq 60 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (Core-Earth) spike	$\leq 650 \text{ V}$
Residual voltage at $I_n$ , (conductor-conductor)	$\leq 70 \text{ V}$
Residual voltage with $I_{an}$ (10/1000) $\mu\text{s}$ (conductor-conductor)	$\leq 50 \text{ V}$
Voltage protection level $U_p$ (Core-Core)	$\leq 70 \text{ V}$ (C2 - 10 kV / 5 kA)

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#### Protective circuit

	$\leq 50$ V (C3 - 10 A)
	$\leq 80$ V (D1 - 500 A)
Voltage protection level $U_p$ (Core-Earth)	$\leq 650$ V (C1 - 500 V / 250 A)
	$\leq 700$ V (C2 - 10 kV / 5 kA)
	$\leq 700$ V (D1 - 500 A)
Response time $t_A$ (Core-Core)	$\leq 1$ ns
Response time $t_A$ (Core-Earth)	$\leq 100$ ns
Input attenuation $a_E$ , 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 Ohm system	typ. 6 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	typ. 2 MHz
Capacity	$\leq 1.3$ nF (per channel)
Resistance in series	3.3 $\Omega$ 20 %
Max. required back-up fuse	315 mA
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C2 (10 kV/5 kA)
	C3 (25 A)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 (10 kV/5 kA)
	C3 (25 A)
	D1 (500 A)
Alternating current carrying capacity in acc. with IEC 61643-21 (Core-Earth)	5 A - 1 s

#### Connection data

Connection method	Screw connection
Connection type IN	Screw terminal blocks
Connection type OUT	Screw terminal blocks
Screw thread	M3
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section solid min.	0.14 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	26
Conductor cross section AWG/kcmil max	12

#### Connection, equipotential bonding

Connection method	DIN rail NS35
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#### Standards and Regulations

Standards/regulations	IEC 61643-21
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## Technical data

### Standards and Regulations

	DIN EN 61643-21
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## Classifications

### eCl@ss

eCl@ss 4.0	27140201
eCl@ss 4.1	27130801
eCl@ss 5.0	27130801
eCl@ss 5.1	27130801
eCl@ss 6.0	27130807
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807

### ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943

### UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

## Approvals

### Approvals

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Approvals

UL Listed / GL

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Ex Approvals

IECEX / ATEX

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## Surge protection device - LIT 1X2-24 - 2804610

### Approvals

Approvals submitted

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#### Approval details

UL Listed 

GL

### Accessories

#### Accessories

##### Cable/conductor

Cable - VIP-CAB-FLK16/FR/FR/0,14/2,0M - 2900156



Assembled round cable with two molded 16-pos. socket strips (1:1 connection). The cable has 90° connectors on both sides for connecting MINI-Analog and TRABTECH LINETRAB LIT; cable length: 2 m

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Cable - VIP-CAB-FLK16/FR/FR/0,14/1,0M - 2900155



Assembled round cable with two molded 16-pos. socket strips (1:1 connection). The cable has 90° connectors on both sides for connecting MINI-Analog and TRABTECH LINETRAB LIT; cable length: 1 m

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Cable - VIP-CAB-FLK16/FR/FR/0,14/0,5M - 2900154



Assembled round cable with two molded 16-pos. socket strips (1:1 connection). The cable has 90° connectors on both sides for connecting MINI-Analog and TRABTECH LINETRAB LIT; cable length: 0.5 m

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### Marking

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### Accessories

#### Marker for terminal blocks - UC-TM 6 - 0818085



Marker for terminal blocks, Sheet, white, Unlabeled, Can be labeled with: BLUEMARK CLED, BLUEMARK LED, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 5.6 x 10.5 mm

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#### Marker for terminal blocks - UC-TM 6 OG - 0818328



Marker for terminal blocks, Sheet, orange, Unlabeled, Can be labeled with: BLUEMARK CLED, BLUEMARK LED, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 5.6 x 10.5 mm

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#### Marker for terminal blocks - UC-TM 6 YE - 0818331



Marker for terminal blocks, Sheet, yellow, Unlabeled, Can be labeled with: BLUEMARK CLED, BLUEMARK LED, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 5.6 x 10.5 mm

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#### Marker for terminal blocks - UC-TM 6 BU - 0818344



Marker for terminal blocks, Sheet, blue, Unlabeled, Can be labeled with: BLUEMARK CLED, BLUEMARK LED, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 5.6 x 10.5 mm

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#### Marker for terminal blocks - UC-TM 6 RD - 0818357



Marker for terminal blocks, Sheet, red, Unlabeled, Can be labeled with: BLUEMARK CLED, BLUEMARK LED, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 5.6 x 10.5 mm

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## Accessories

Marker for terminal blocks - UC-TM 6 GN - 0818360



Marker for terminal blocks, Sheet, green, Unlabeled, Can be labeled with: BLUEMARK CLED, BLUEMARK LED, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 6.2 mm, Lettering field: 5.6 x 10.5 mm

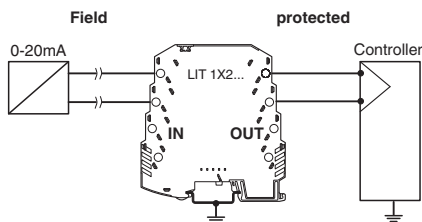
System adapter - MINI MCR-SL-V8-FLK 16-A - 2811268



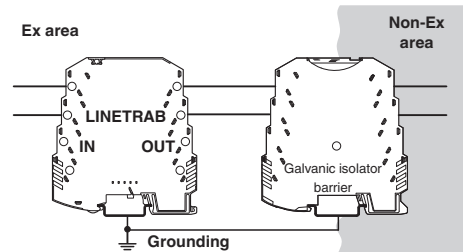
Eight MINI analog signal converters with screw connection method can be connected to a control system using a system adapter and system cabling with a minimum of wiring and very low error risk.

## Drawings

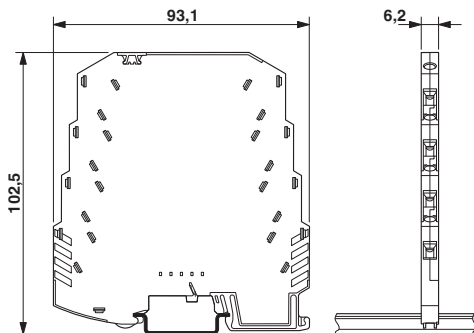
Application drawing



Application drawing



Dimensioned drawing



Circuit diagram

