

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 pc |
| Weight per Piece (excluding packing) | 60.0 GRM |
| 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

| | |
|------------------|-----|
| Housing material | PBT |
|------------------|-----|

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Technical data

General

| | |
|--|----------------------------------|
| Inflammability class according to UL 94 | V-0 |
| Color | black |
| Standards for air and creepage distances | IEC 60664-1 |
| | EN 60079-11 |
| Mounting type | DIN rail: 35 mm |
| Type | 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) μs (Core-Core) | 5 kA |
| Nominal discharge current I_n (8/20) μs (Core-Earth) | 5 kA |
| | 10 kA (Total) |
| Total surge current (8/20) μs | 20 kA |
| Total surge current (10/350) μs | 1 kA |
| Max. discharge current I_{max} (8/20) μs maximum (Core-Core) | 10 kA |
| Max. discharge current I_{max} (8/20) μs maximum (Core-Earth) | 10 kA |
| | 20 kA (Total) |
| Nominal pulse current I_{an} (10/1000) μs (Core-Core) | 50 A |
| Nominal pulse current I_{an} (10/1000) μs (Core-Earth) | 50 A |
| | 100 A (Total) |
| Impulse discharge current (10/350) μs , peak value I_{imp} | 500 A |
| Output voltage limitation at 1 kV/ μs (Core-Core) spike | $\leq 60 \text{ V}$ |
| Output voltage limitation at 1 kV/ μs (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) μs (conductor-conductor) | $\leq 50 \text{ V}$ |
| Voltage protection level U_p (Core-Core) | $\leq 70 \text{ V}$ (C2 - 10 kV / 5 kA) |
| | $\leq 50 \text{ V}$ (C3 - 10 A) |

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Protective circuit

| | |
|--|---|
| | $\leq 80 \text{ V (D1 - 500 A)}$ |
| Voltage protection level U_p (Core-Earth) | $\leq 650 \text{ V (C1 - 500 V / 250 A)}$ |
| | $\leq 700 \text{ V (C2 - 10 kV / 5 kA)}$ |
| | $\leq 700 \text{ V (D1 - 500 A)}$ |
| Response time t_A (Core-Core) | $\leq 1 \text{ ns}$ |
| Response time t_A (Core-Earth) | $\leq 100 \text{ ns}$ |
| Input attenuation a_E , sym. | typ. $0.7 \text{ dB (1 MHz / 50 } \Omega)$ |
| | typ. $0.3 \text{ dB (350 kHz / 150 } \Omega)$ |
| 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 | $\leq 1.3 \text{ nF (per channel)}$ |
| Resistance in series | $3.3 \Omega \text{ } 20 \%$ |
| 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

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|--|-----------------------|
| 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^2 |
| Conductor cross section stranded max. | 2.5 mm^2 |
| Conductor cross section solid min. | 0.14 mm^2 |
| Conductor cross section solid max. | 2.5 mm^2 |
| Conductor cross section AWG/kcmil min. | 26 |
| Conductor cross section AWG/kcmil max | 12 |

Connection, equipotential bonding

| | |
|-------------------|---------------|
| Connection method | DIN rail NS35 |
|-------------------|---------------|

Standards and Regulations

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|-----------------------|--------------|
| Standards/regulations | IEC 61643-21 |
|-----------------------|--------------|

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Technical data

Standards and Regulations

| | |
|--|-----------------|
| | DIN EN 61643-21 |
|--|-----------------|

Classifications

eCl@ss

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|------------|----------|
| 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

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|----------|----------|
| ETIM 2.0 | EC000943 |
| ETIM 3.0 | EC000943 |
| ETIM 4.0 | EC000943 |
| ETIM 5.0 | EC000943 |

UNSPSC

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

Approvals

Approvals

Approvals

UL Listed / GL

Ex Approvals

IECEX / ATEX / INMETRO

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Approvals

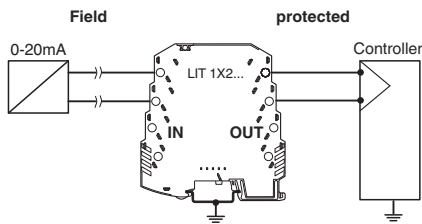
Approvals submitted

Approval details

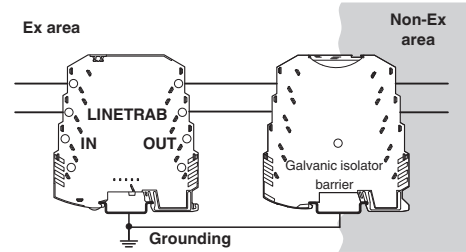


Drawings

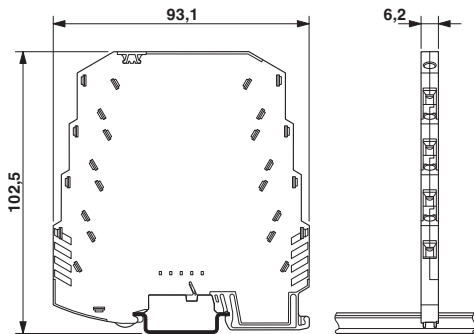
Application drawing



Application drawing



Dimensioned drawing



Circuit diagram

