LIT 1X2-24 - Surge protection device

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

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

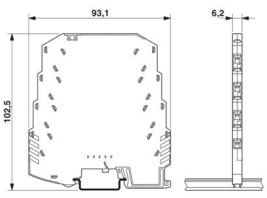
Connection data

Connection method	Screw connection
Screw thread	M3
Tightening torque	0.8 Nm
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 14

Ex data

Maximum inner capacitance C_i	typ. 1.3 nF
Max. internal inductance L_i	< 1 µH
Max. input current I_i	350 mA (T4 / ≤ 80°C)
	200 mA (T5 / ≤ 50 °C)
	150 mA (T6 / ≤ 40 °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 µs

Dimensions

Dimensional drawing	

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

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	≤ 2 µA
Protective conductor current I_{PE}	≤ 2 µA
Nominal discharge current I_n (8/20) µs (line-line)	5 kA
Nominal discharge current I_n (8/20) µs (line-ground)	5 kA
Pulse discharge current I_{imp} (10/350) µs (line-earth)	500 A
	1 kA (in total)
Total discharge current I_{Total} (8/20) µs	10 kA
	20 kA (1x)
Max. discharge current I_{max} (8/20) µs maximum (line-line)	10 kA
Max. discharge current I_{max} (8/20) µs maximum (line-earth)	10 kA
	20 kA (in total)
Nominal pulse current Ian (10/1000) µs (line-line)	50 A
Nominal pulse current Ian (10/1000) µs (line-earth)	50 A
	100 A (in total)
Output voltage limitation at 1 kV/µs (line-line) spike	≤ 60 V
Output voltage limitation at 1 kV/µs (line-earth) spike	≤ 650 V
Residual voltage at I_n (conductor-conductor)	≤ 70 V
Residual voltage with Ian (10/1000) µs (line-line)	≤ 50 V
Voltage protection level U_p (line-line)	≤ 70 V (C2 - 10 kV / 5 kA)
	≤ 50 V (C3 - 10 A)
	≤ 55 V (C3 - 50 A)
Voltage protection level U_p (line-earth)	≤ 650 V (C1 - 500 V / 250 A)
	≤ 700 V (C2 - 10 kV / 5 kA)
	≤ 650 V (C3 - 10 A)

	≤ 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 fg (3 dB), sym. in 50 Ω system	typ. 6 MHz
Cut-off frequency fg (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	Ⓔx II 1 G Ex ia IIC T4...T6
	Ⓔx 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

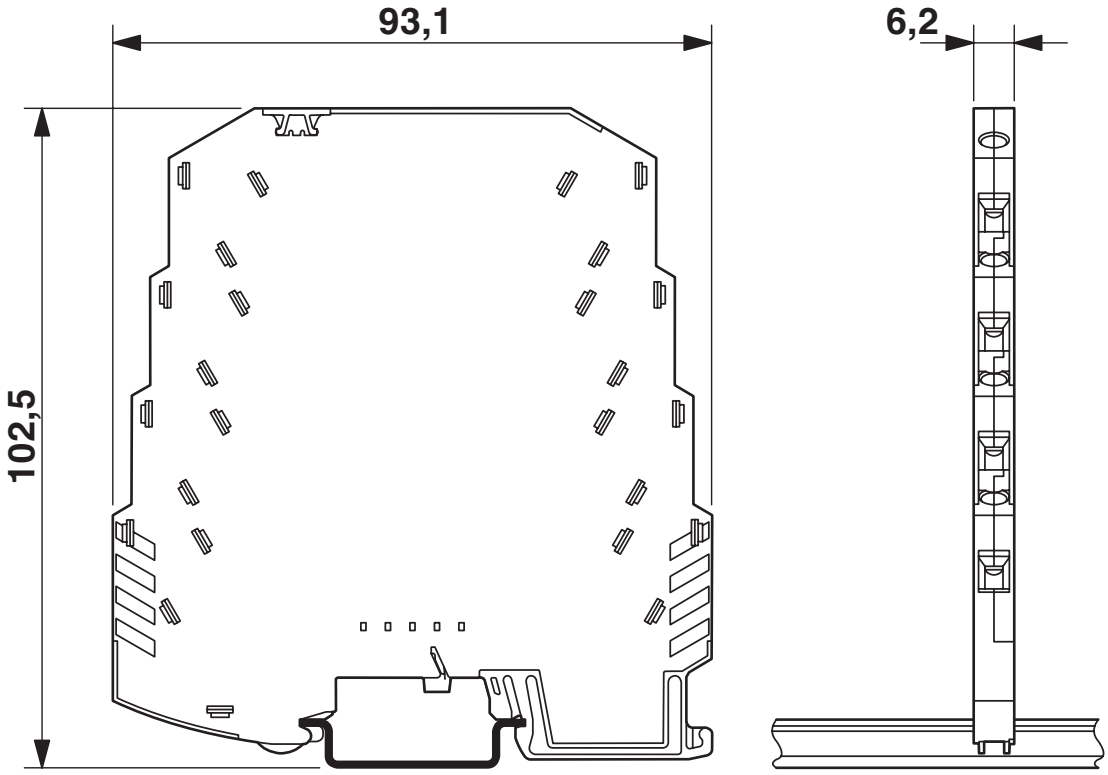
Note	2011
Standards/specifications	GB/T 3836.1
Note	2021
Standards/specifications	GB/T 3836.4
Note	2021

Mounting

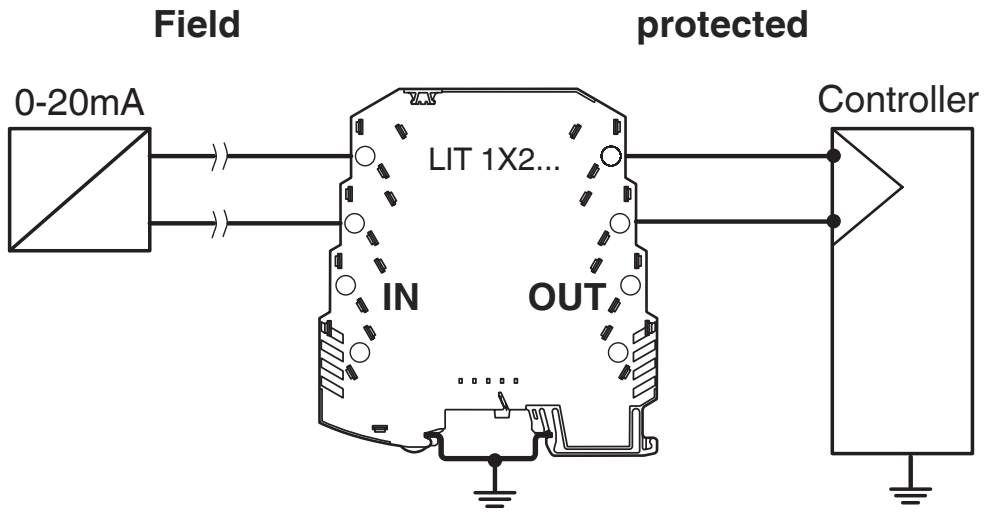
Mounting type	DIN rail: 35 mm

Drawings

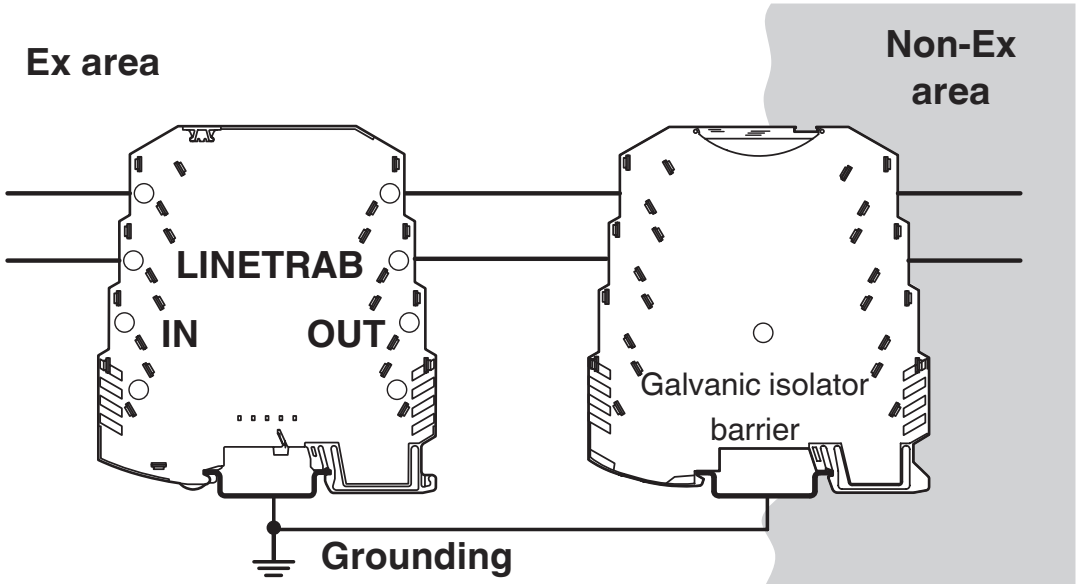
Dimensional drawing



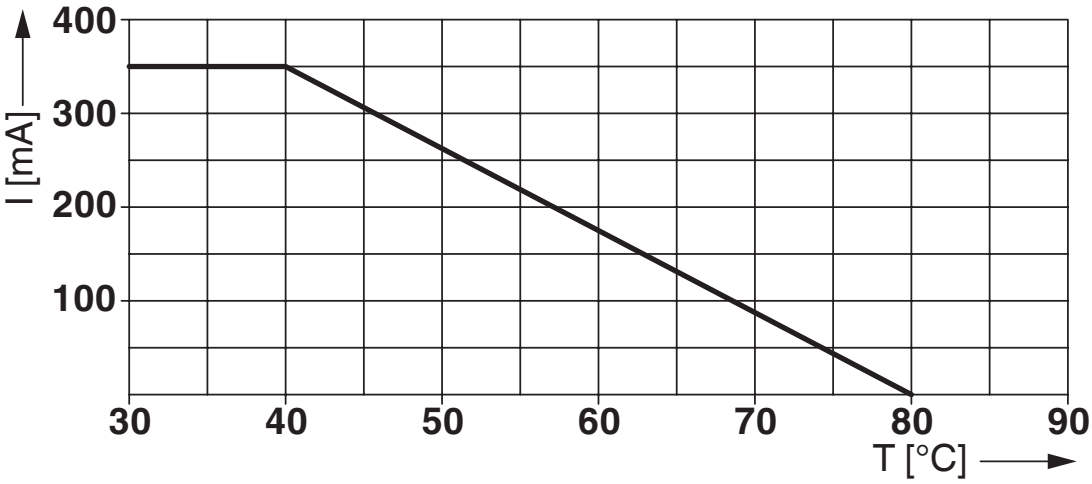
Application drawing



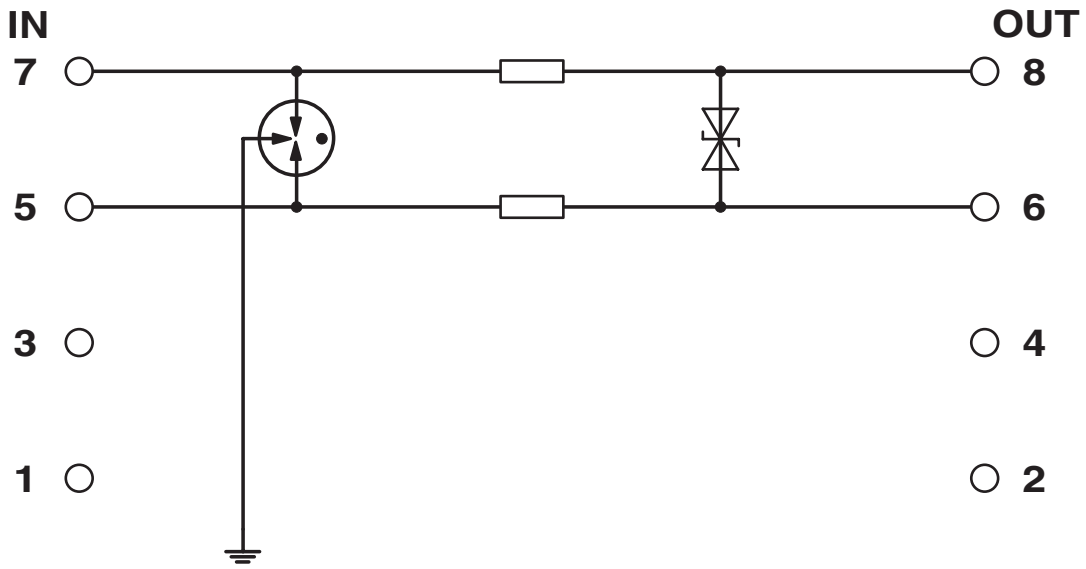
Application drawing



Diagram



Circuit diagram



Approvals

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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

Classifications

ECLASS

ECLASS-13.0	27171501
ECLASS-15.0	27171501

ETIM

ETIM 10.0	EC001466

UNSPSC

UNSPSC 21.0	39121620

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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