

Surge protection device - TT-ST-M-EX(I)-24DC - 2859424

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Spring-cage modular terminal block with integrated three-stage surge protection for a floating Ex-i signal circuit, separate PE connection, nominal voltage: 24 V DC, for mounting on NS 35

Product Features

- ✓ Disconnection of signal circuits by disconnect knife
- ✓ Conductors can be led up to Ex protection zone 0
- ✓ Can be used in Ex protection zones 1 and 2
- ✓ Multi-stage modular terminal blocks with spring-cage connection



Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	28.48 GRM
Custom tariff number	85363030
Country of origin	Germany

Technical data

Dimensions

Height	100 mm
Width	6.2 mm
Depth	63.5 mm

Ambient conditions

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

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Technical data

General

Housing material	PA 6.6
Inflammability class according to UL 94	V-2
Color	blue
Standards for air and creepage distances	EN 60079-11
Mounting type	DIN rail: 35 mm
Type	Double-level terminal block with disconnect knife
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	30 V DC
Maximum continuous voltage U_C (wire-ground)	30 V DC
Nominal current I_N	200 mA ($T_A < 40^\circ\text{C}$)
Operating effective current I_C at U_C	$\leq 10 \mu\text{A}$
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
Total surge current (8/20) μs	10 kA
Total surge current (10/350) μs	2 kA
Max. discharge current I_{max} (8/20) μs maximum (Core-Earth)	5 kA
	5 kA
Nominal pulse current I_{an} (10/1000) μs (Core-Core)	100 A
Nominal pulse current I_{an} (10/1000) μs (Core-Earth)	100 A
Impulse discharge current (10/350) μs , peak value I_{imp}	1 kA
Output voltage limitation at 1 kV/ μs (Core-Core) spike	$\leq 40 \text{ V}$
Output voltage limitation at 1 kV/ μs (Core-Earth) spike	$\leq 1.5 \text{ kV}$
Output voltage limitation at 1 kV/ μs (Core-Core) static	$\leq 40 \text{ V}$
Output voltage limitation at 1 kV/ μs (Core-Earth) static	$\leq 1.5 \text{ kV}$
Residual voltage at I_n , (conductor-conductor)	$\leq 40 \text{ V}$
Residual voltage with I_{an} (10/1000) μs (conductor-conductor)	$\leq 45 \text{ V}$
Voltage protection level U_p (Core-Core)	$\leq 60 \text{ V}$ (C2 -5 kA)
Voltage protection level U_p (Core-Earth)	$\leq 1.5 \text{ kV}$ (C2 -5 kA)
Response time t_A (Core-Core)	$\leq 1 \text{ ns}$

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Protective circuit

Response time t_A (Core-Earth)	≤ 100 ns
Input attenuation a_E , sym.	typ. 1 dB (≤ 400 kHz/50 Ω)
	typ. 0.4 dB (≤ 150 kHz / 150 Ω)
Cut-off frequency f_g (3 dB), sym. in 50 Ohm system	typ. 3 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ohm system	typ. 1 MHz
Resistance in series	6.6 $\Omega \pm 20$ % (per path)
	6.6 Ω
Surge protection fault message	None
Max. required back-up fuse	200 mA (e.g. T in acc. with IEC 127-2/III)
Surge current resistance (conductor-conductor)	C2 - 10 kV/5 kA
Surge current resistance (conductor-ground)	C2 - 10 kV/5 kA
	D1 - 1kA
Alternating current carrying capacity (conductor-ground)	2.5 A (1 s)

Connection data

Connection method	Spring-cage connection
Connection type IN	Spring-cage
Connection type OUT	Spring-cage
Conductor cross section stranded min.	0.5 mm ²
Conductor cross section stranded max.	2.5 mm ²
Conductor cross section solid min.	0.5 mm ²
Conductor cross section solid max.	4 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

Standards and Regulations

Standards/regulations	IEC 61643-21
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General

Maximum inner capacitance C_i	4 nF
Maximum inner inductance L_i	1 μ H
Max. input current I_i	200 mA ($T_4 \leq 85^\circ\text{C}$)
	200 mA ($T_5 \leq 55^\circ\text{C}$)
	200 mA ($T_6 / \leq 40^\circ\text{C}$)
Max. input voltage U_i	30 V
Maximum input power P_i	1.6 W
Insulation voltage to ground	500 V ± 10 %

Conformity / approvals

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Conformity / approvals

ATEX	# II 1G Ex ia IIC T4...T6 Ga
	# II 1D Ex ia IIIC T135°C...T85°C Da
IECEX	Ex ia IIC T4...T6 Ga
	Ex ia IIIC T135 °C...T85 °C Da

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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UL Listed / GL

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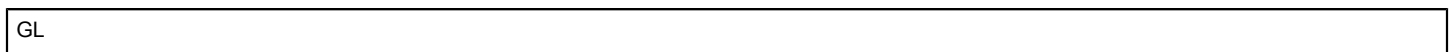
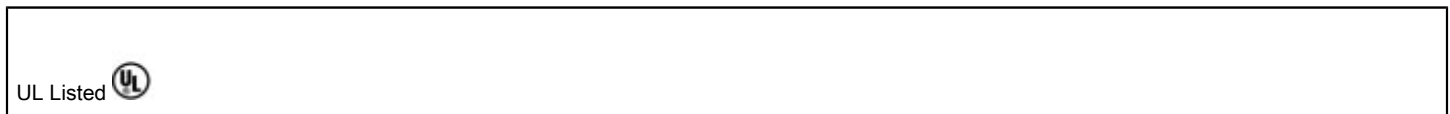
Approvals

Ex Approvals

IECEX / ATEX / INMETRO

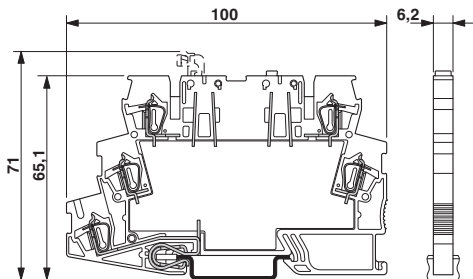
Approvals submitted

Approval details

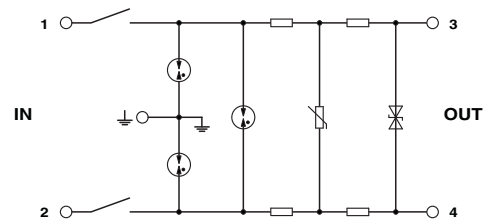


Drawings

Dimensioned drawing

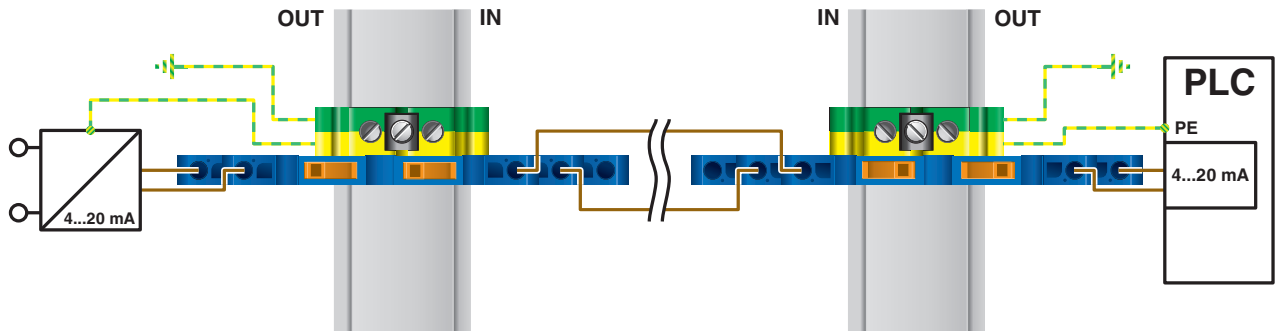


Circuit diagram



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Application drawing



Application drawing

