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

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

Technical data

General

Housing material	PA 6.6
Inflammability class according to UL 94	V2
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 °C)
Operating effective current I_C at U_C	≤ 10 µA
Residual current I_{PE}	≤ 2 µA
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 Ian (10/1000) µs (Core-Core)	100 A
Nominal pulse current Ian (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	≤ 40 V
Output voltage limitation at 1 kV/µs (Core-Earth) spike	≤ 1.5 kV
Output voltage limitation at 1 kV/µs (Core-Core) static	≤ 40 V
Output voltage limitation at 1 kV/µs (Core-Earth) static	≤ 1.5 kV
Residual voltage at I_n, (conductor-conductor)	≤ 40 V
Residual voltage with Ian (10/1000)µs (conductor-conductor)	≤ 45 V
Voltage protection level U_P (Core-Core)	≤ 60 V (C2 -5 kA)
Voltage protection level U_P (Core-Earth)	≤ 1.5 kV (C2 -5 kA)
Response time tA (Core-Core)	≤ 1 ns

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

Technical data

Protective circuit

Response time tA (Core-Earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 1 dB (≤ 400 kHz/50 Ω)
	typ. 0.4 dB (≤ 150 kHz / 150 Ω)
Cut-off frequency fg (3 dB), sym. in 50 Ohm system	typ. 3 MHz
Cut-off frequency fg (3 dB), sym. in 150 Ohm system	typ. 1 MHz
Resistance in series	6.6 Ω ±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 carrying capacity in acc. with IEC 61643-21 (Core-Core)	C2 (10 kV/5 kA)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 (10 kV/5 kA)
	D1 - 1kA
Alternating current carrying capacity in acc. with IEC 61643-21 (Core-Earth)	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 mm²
Conductor cross section stranded max.	2.5 mm²
Conductor cross section solid min.	0.5 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	12

Standards and Regulations

Standards/regulations	IEC 61643-21

General

Maximum inner capacitance C_i	4 nF
Maximum inner inductance L_i	1 µH
Max. input current I_i	200 mA (T4/≤ 85°C)
	200 mA (T5/≤ 55°C)
	200 mA (T6 / ≤ 40 °C)
Max. input voltage U_i	30 V
Maximum input power Pi	1.6 W
Insulation voltage to ground	500 V ±10 %

Conformity / approvals

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

Technical data

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

Approvals

UL Listed / GL

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

Approvals

Ex Approvals

IECEx / ATEX / INMETRO

Approvals submitted

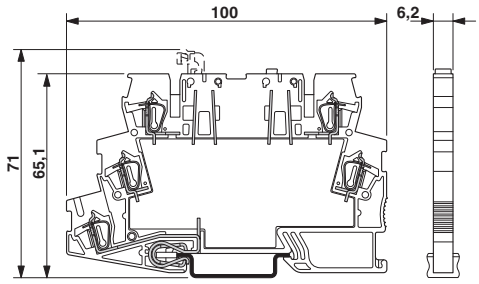
Approval details

UL Listed

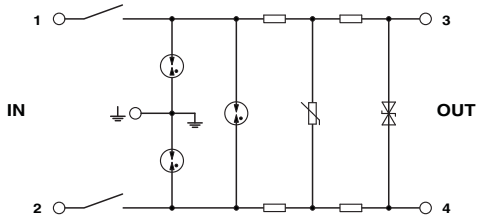
GL

Drawings

Dimensioned drawing

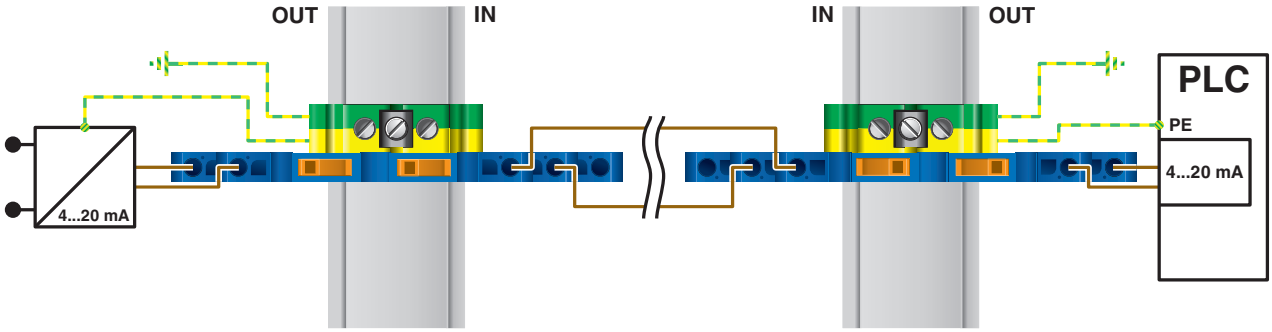


Circuit diagram



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

Application drawing



Application drawing