Surge protection device - TT-EX(I)-M-24DC - 2803865

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Modular terminal block with two-stage surge protection for a floating Ex-i signal circuit, disconnect knife on both signal paths, separate PE connection, nominal voltage: 24 V DC

Why buy this product

- Versions with and without disconnect knife
- To terminate a row of TERMITRAB TT... devices, covers are available in the corresponding colors
- Other voltage levels available on request
- Multi-stage modular terminal blocks with screw connection technology
- Protection of a floating double wire in intrinsically safe circuits
- Use in Ex protection zones 1 and 2
- Conductors can be led up to Ex protection zone 0
- Disconnection of signal circuits by disconnect knife

Key Commercial Data

Packing unit	14 pc
GTIN	4 046356 310550
GTIN	4046356310550

Technical data

Dimensions

Height	94.8 mm
Width	6.2 mm
Depth	69.1 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Degree of protection	IP20 (with end cover)

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Technical data

General

Housing material	PA 6.6
Flammability rating according to UL 94	V-0
Color	sky blue RAL 5015
Mounting type	DIN rail: 35 mm
Type	Double-level terminal block with PE foot – separate PE connection
Number of positions	2
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 voltage U_C	30 V DC
	21 V AC
Rated current	250 mA (40 °C)
Operating effective current I_C at U_C	≤ 5 µA
Residual current I_{PE}	≤ 1 µA
Nominal discharge current I_n (8/20) µs (line-line)	5 kA
Nominal discharge current I_n (8/20) µs (line-earth)	5 kA
Pulse discharge current I_{imp} (10/350) µs (line-earth)	500 A
Total discharge current I_{total} (8/20) µs	10 kA
Nominal pulse current Ian (10/1000) µs (line-line)	100 A
Nominal pulse current Ian (10/1000) µs (line-earth)	100 A
Output voltage limitation at 1 kV/µs (line-line) spike	≤ 44 V
Output voltage limitation at 1 kV/µs (line-earth) spike	≤ 1.5 kV
Output voltage limitation at 1 kV/µs (line-line) static	≤ 44 V
Output voltage limitation at 1 kV/µs (line-earth) static	≤ 1.5 kV
Residual voltage at I_n (line-line)	≤ 40 V
Residual voltage at I_n (line-earth)	≤ 110 V
Voltage protection level U_p (line-line)	≤ 70 V (C2 - 10 kV / 5 kA)
Voltage protection level U_p (line-earth)	≤ 1.5 kV (C2 - 10 kV / 5 kA)
Response time t_A (line-line)	≤ 1 ns
Response time t_A (line-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 1 dB (≤ 1 MHz / 50 Ω)
	typ. 0.3 dB (≤ 200 kHz / 150 Ω)
Cut-off frequency fg (3 dB), sym. in 50 Ohm system	typ. 6 MHz
Cut-off frequency fg (3 dB), sym. in 150 Ohm system	typ. 2 MHz
Resistance in series	4.7 Ω ±20 %

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Protective circuit

Surge protection fault message	none
Max. required back-up fuse	250 mA
Impulse durability (line-line)	C2 - 10 kV/5 kA
Impulse durability (line-earth)	C2 - 10 kV/5 kA
	D1 - 500 A

Connection data

Connection method	Screw connection
Connection method IN	Screw terminal blocks
Connection method OUT	Screw terminal blocks
Screw thread	M3
Tightening torque	0.6 Nm
Stripping length	8 mm
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section solid	0.2 mm² ... 4 mm²
Conductor cross section AWG	24 ... 14

Standards and Regulations

Standards/specifications	EN 61643-21 2001 + A1:2009 + A2:2013
	EN 60079-0 2012
	EN 60079-11 2012
	EN 60079-26 2007
	IEC 60079-0 2011
	IEC 60079-11 2011
	IEC 60079-26 2006

General

Maximum inner capacitance C_i	2 nF
Max. internal inductance L_i	1 µH
Maximum inner time factor (R_i/L_i)	0.1 µs
Max. input current I_i	250 mA (T_A < 40 °C)
Max. input voltage U_i	30 V DC
max. input power P_i	0.75 W
Ambient temperature (operation)	-40 °C ... 40 °C (T6 / 85 °C)
	-40 °C ... 50 °C (T5 / T 100 °C)
	-40 °C ... 80 °C (T4 / 135 °C)

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

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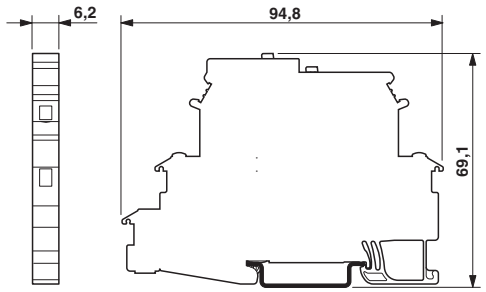
Environmental Product Compliance

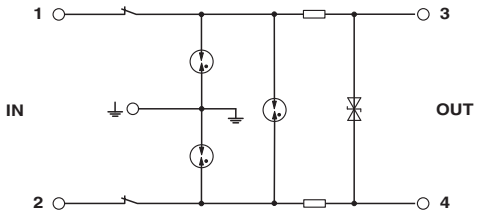
REACh SVHC	Lead 7439-92-1

Drawings

Dimensional drawing



Circuit diagram



Approvals

Approvals

Approvals

EAC / EAC / UL Listed

Ex Approvals

IECEx / ATEX

Approval details

EAC		RU C-DE.A*30.B01561
EAC		EAC-Zulassung
UL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 138168

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