Surge protection device - TT-ST-2-PE/S2-24DC - 2801458

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Double-level modular terminal block with two-stage surge protection for one two-wire impedance-sensitive signal circuit, separate ground connection, nominal voltage: 24 V DC.

Key Commercial Data

Packing unit	10 pc
GTIN	4 046356 769204
GTIN	4046356769204

Technical data

Dimensions

Height	100 mm
Width	6.2 mm
Depth	63.5 mm (incl. DIN rail 7.5 mm)

Ambient conditions

Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Degree of protection	IP20

General

Housing material	PA 6.6
Flammability rating according to UL 94	V-0
Color	black
Standards for cearances and creepage distances	IEC 60664-1
Mounting type	DIN rail: 35 mm
Type	Double-level terminal block

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Technical data

General

Number of positions	2
Direction of action	Line-Line & Line-Earth Ground

Protective circuit

IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Nominal voltage U_N	24 V DC
Maximum continuous voltage U_C	30 V DC
	21 V AC
Rated current	6 A (40 °C)
Operating effective current I_C at U_C	≤ 1 µA
Residual current I_{PE}	≤ 1 µA
Nominal discharge current I_n (8/20) µs (line-line)	300 A
Nominal discharge current I_n (8/20) µs (line-earth)	5 kA
Pulse discharge current I_{imp} (10/350) µs	500 A (per path)
Total discharge current I_{total} (8/20) µs	5 kA
Nominal pulse current Ian (10/1000) µs (line-line)	25 A
Nominal pulse current Ian (10/1000) µs (line-earth)	50 A
Output voltage limitation at 1 kV/µs (line-line) spike	≤ 45 V
Output voltage limitation at 1 kV/µs (line-earth) spike	≤ 800 V
Output voltage limitation at (8/20) µs (line-line)	≤ 50 V (at 300 A)
Output voltage limitation at (8/20) µs (line-earth)	≤ 750 V (at 500 A)
	≤ 1.25 kV (at 5 kA)
Residual voltage at I_n (line-line)	≤ 50 V (at 300 A)
Residual voltage at I_n (line-earth)	≤ 750 V (at 500 A)
	≤ 1.25 kV (at 5 kA)
Residual voltage with Ian (10/1000) µs (line-line)	≤ 45 V (at 25 A)
Residual voltage with Ian (10/1000) µs (line-earth)	≤ 1.1 kV (at 50 A)
Voltage protection level U_p (line-line)	≤ 50 V (C1 - 0,6 kV / 300 A)
	≤ 45 V (C3 - 25 A)
	≤ 45 V (1 kV/µs)
Voltage protection level U_p (line-earth)	≤ 1.25 kV (C2 - 10 kV / 5 kA)
	≤ 1.1 kV (C3 - 50 A)
	≤ 750 V (C1 - 1 kV/500 A)
	≤ 800 V (1 kV/µs)

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Protective circuit

Response time t_A (line-line)	≤ 1 ns
Response time t_A (line-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 0.3 dB (330 kHz/150 Ω)
	typ. 0.3 dB (1.1 kHz / 50 Ω)
Cut-off frequency fg (3 dB), sym. in 50 Ohm system	typ. 3.3 MHz
Cut-off frequency fg (3 dB), sym. in 150 Ohm system	typ. 1 MHz
Capacity (line-line)	≤ 2 nF
Surge protection fault message	none
Max. required back-up fuse	6.3 A (T/IEC 60127-2/3)
Impulse durability (line-line)	C1 - 0.6 kV / 300 A
	C3 - 25 A
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	D1 - 500 A
	C1 - 1 kV / 500 A
	C3 - 50 A
Pulse reset time (line-earth)	≤ 700 ms, at U_c and 10 A
Overload failure mode (line-line)	Mode 2

Connection data

Connection method	Spring-cage connection
Connection method IN	Spring-cage
Connection method OUT	Spring-cage
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section solid	0.2 mm² ... 4 mm²
Conductor cross section AWG	24 ... 12

Connection, equipotential bonding

Connection method	Spring-cage connection
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12

Standards and Regulations

Standards/specifications	IEC 61643-21/A1 2008
	EN 61643-21/A1 2009

Environmental Product Compliance

	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e

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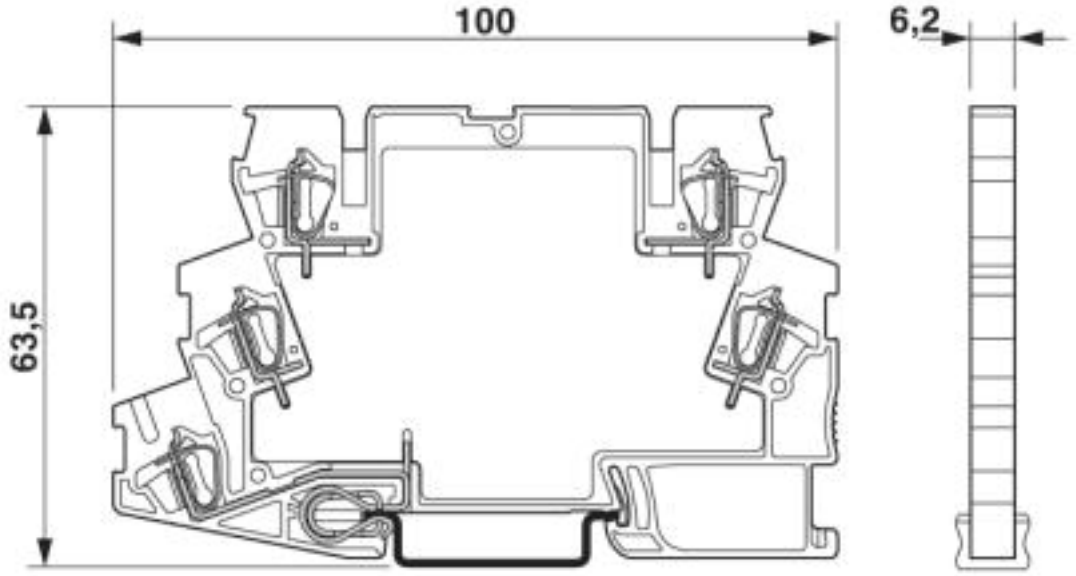
Environmental Product Compliance

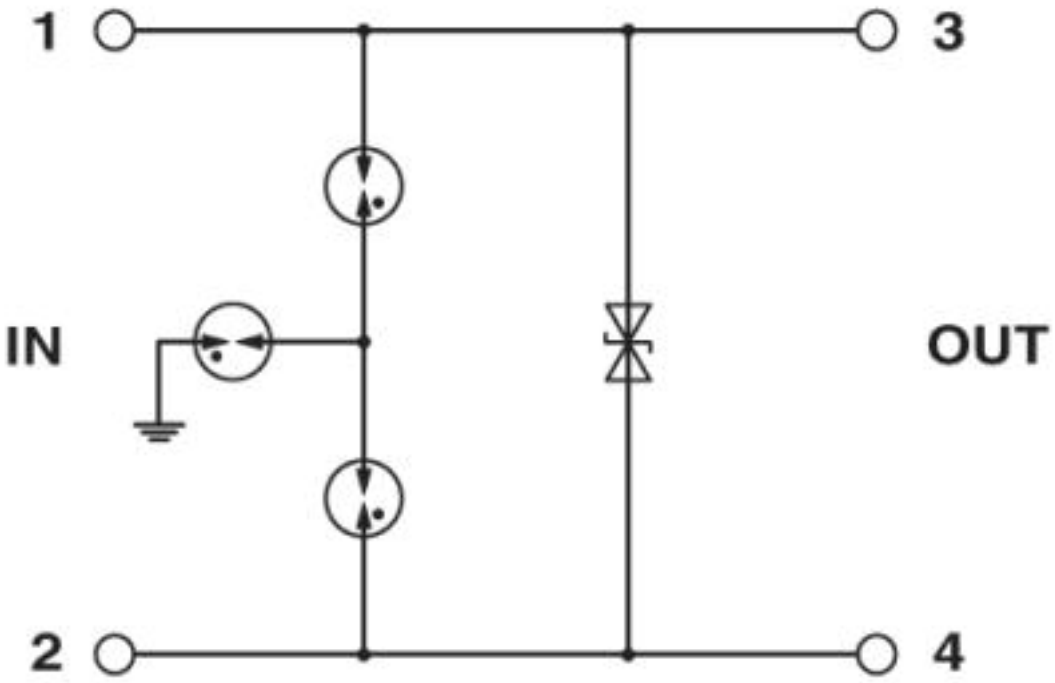
	No hazardous substances above threshold values

Drawings

Dimensional drawing



Circuit diagram



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Approvals

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DNV GL / UL Listed

Ex Approvals

Approval details

DNV GL		https://approvalfinder.dnvgl.com/	TAE00001N7
UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 138168

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