

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 clearances and creepage distances	IEC 60664-1
Mounting type	DIN rail: 35 mm
Type	Double-level terminal block

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

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	$\leq 1 \mu A$
Residual current I_{PE}	$\leq 1 \mu A$
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 I_{an} (10/1000) μs (line-line)	25 A
Nominal pulse current I_{an} (10/1000) μs (line-earth)	50 A
Output voltage limitation at 1 kV/ μs (line-line) spike	$\leq 45 V$
Output voltage limitation at 1 kV/ μs (line-earth) spike	$\leq 800 V$
Output voltage limitation at (8/20) μs (line-line)	$\leq 50 V$ (at 300 A)
Output voltage limitation at (8/20) μs (line-earth)	$\leq 750 V$ (at 500 A)
	$\leq 1.25 kV$ (at 5 kA)
Residual voltage at I_n (line-line)	$\leq 50 V$ (at 300 A)
Residual voltage at I_n (line-earth)	$\leq 750 V$ (at 500 A)
	$\leq 1.25 kV$ (at 5 kA)
Residual voltage with I_{an} (10/1000) μs (line-line)	$\leq 45 V$ (at 25 A)
Residual voltage with I_{an} (10/1000) μs (line-earth)	$\leq 1.1 kV$ (at 50 A)
Voltage protection level U_p (line-line)	$\leq 50 V$ (C1 - 0,6 kV / 300 A)
	$\leq 45 V$ (C3 - 25 A)
	$\leq 45 V$ (1 kV/ μs)
Voltage protection level U_p (line-earth)	$\leq 1.25 kV$ (C2 - 10 kV / 5 kA)
	$\leq 1.1 kV$ (C3 - 50 A)
	$\leq 750 V$ (C1 - 1 kV/500 A)
	$\leq 800 V$ (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 f_g (3 dB), sym. in 50 Ohm system	typ. 3.3 MHz
Cut-off frequency f_g (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 mm ² ... 2.5 mm ²
Conductor cross section solid	0.2 mm ² ... 4 mm ²
Conductor cross section AWG	24 ... 12

Connection, equipotential bonding

Connection method	Spring-cage connection
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	4 mm ²
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

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

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

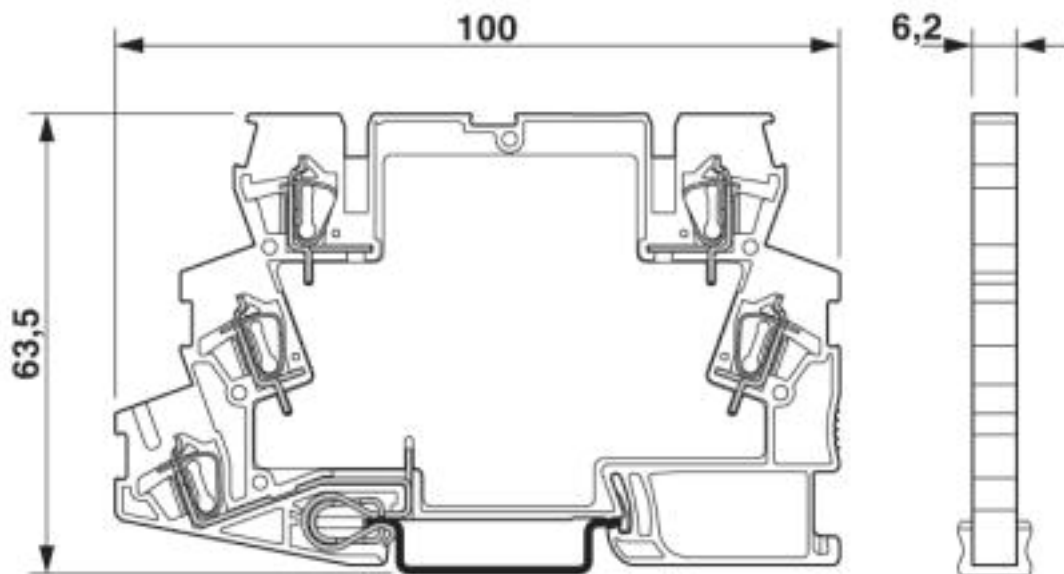
Technical data

Environmental Product Compliance

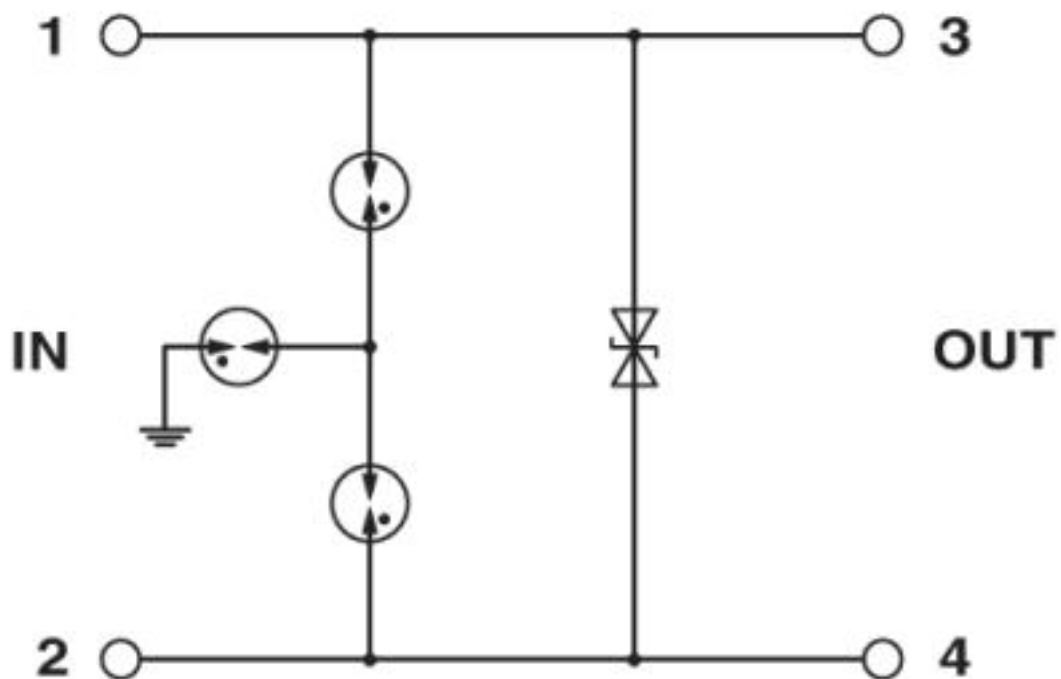
	No hazardous substances above threshold values
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Drawings

Dimensional drawing



Circuit diagram



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

Classifications

eCl@ss

eCl@ss 10.0.1	27130807
eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800
eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
eCl@ss 7.0	27130807
eCl@ss 8.0	27130807
eCl@ss 9.0	27130807

ETIM

ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943
ETIM 6.0	EC000943
ETIM 7.0	EC000943

UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

Approvals

Approvals

Approvals

DNV GL / UL Listed

Ex Approvals

Approval details

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

Approvals

DNV GL



<https://approvalfinder.dnvgl.com/>

TAE00001N7

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 138168

Accessories

Accessories

End cover

End cover - TT-D-STTCO-BK - 2858894



End cover for TERMITRAB TT-ST-..., width: 2.2 mm, color: Black

Labeled terminal marker

Zack Marker strip, flat - ZBF 6,LGS:FORTL.ZAHLEN - 0808749



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

Marker pen

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

Terminal marking

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

Accessories

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

Zack Marker strip, flat - ZBF 6/WH-100:UNBEDRUCKT - 0808736



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

Additional products

Shield connection - SSA 3-6 - 2839295



Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm², color: black

Shield connection - SSA 5-10 - 2839512



Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable: 200 mm, 1 mm², color: black

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PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
<http://www.phoenixcontact.com>