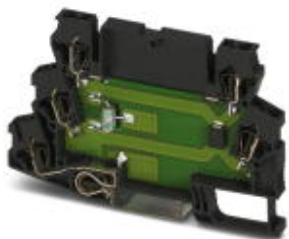


# Surge protection device - TT-ST-2-PE/S1-24DC - 2801055


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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 678704
GTIN	4046356678704

## Technical data

### Dimensions

Height	100 mm
Width	6.2 mm
Depth	63.5 mm

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 80 °C
Altitude	max. 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
Note on clearances and creepage distances	2007
Mounting type	DIN rail: 35 mm
Type	Double-level terminal block
Number of positions	2
Direction of action	Line-Line & Line-Earth Ground

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## Technical data

### Protective circuit

IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Nominal voltage $U_N$	24 V DC (21 V AC)
Maximum continuous voltage $U_C$	30 V DC
	21 V AC
Rated current	350 mA
Operating effective current $I_C$ at $U_C$	$\leq 1 \mu\text{A}$
Residual current $I_{PE}$	$\leq 1 \mu\text{A}$
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-line)	300 A
Nominal discharge current $I_n$ (8/20) $\mu\text{s}$ (line-earth)	5 kA
Pulse discharge current $I_{imp}$ (10/350) $\mu\text{s}$	500 A (per path)
Total discharge current $I_{total}$ (8/20) $\mu\text{s}$	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-line)	10 A
Nominal pulse current $I_{an}$ (10/1000) $\mu\text{s}$ (line-earth)	50 A
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-line) static	$\leq 45 \text{ V}$
Output voltage limitation at 1 kV/ $\mu\text{s}$ (line-earth) static	$\leq 950 \text{ V}$
Output voltage limitation at (8/20) $\mu\text{s}$ (line-line)	$\leq 50 \text{ V}$ (at 300 A)
Output voltage limitation at (8/20) $\mu\text{s}$ (line-earth)	$\leq 950 \text{ V}$ (at 5 kA)
Residual voltage at $I_n$ (line-line)	$\leq 50 \text{ V}$
Residual voltage at $I_n$ (line-earth)	$\leq 950 \text{ V}$
Voltage protection level $U_p$ (line-line)	$\leq 50 \text{ V}$ (C1 - 0,6 kV / 300 A)
	$\leq 45 \text{ V}$ (C3 - 10 A)
Voltage protection level $U_p$ (line-earth)	$\leq 950 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 950 \text{ V}$ (C3 - 50 A)
Response time $t_A$ (line-line)	$\leq 1 \text{ ns}$
Response time $t_A$ (line-earth)	$\leq 100 \text{ ns}$
Input attenuation aE, sym.	typ. 0.1 dB (500 kHz/50 $\Omega$ )
	typ. 0.1 dB (200 kHz/150 $\Omega$ )
Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system	3 MHz
Cut-off frequency $f_g$ (3 dB), sym. in 150 Ohm system	1 MHz
Capacity (line-line)	$\leq 2 \text{ nF}$
Surge protection fault message	none
Max. required back-up fuse	370 mA
Impulse durability (line-line)	C1 - 0.6 kV / 300 A

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## Technical data

### Protective circuit

	C3 - 10 A, 50 A
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	D1 - 500 A
Alternating current carrying capacity (line-earth)	5 A - 1 s (typical)

### Connection data

Connection method	Spring-cage connection
Connection method IN	Spring-cage
Connection method OUT	Spring-cage
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

### Standards and Regulations

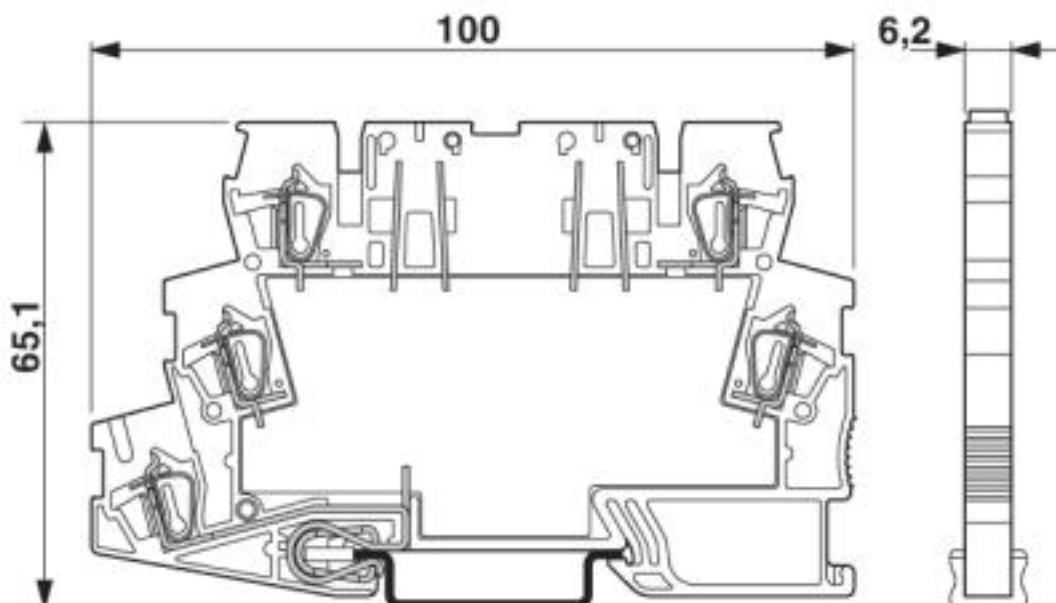
Standards/specifications	IEC 61643-21/A1 2008
	EN 61643-21/A1 2009

### Environmental Product Compliance

	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

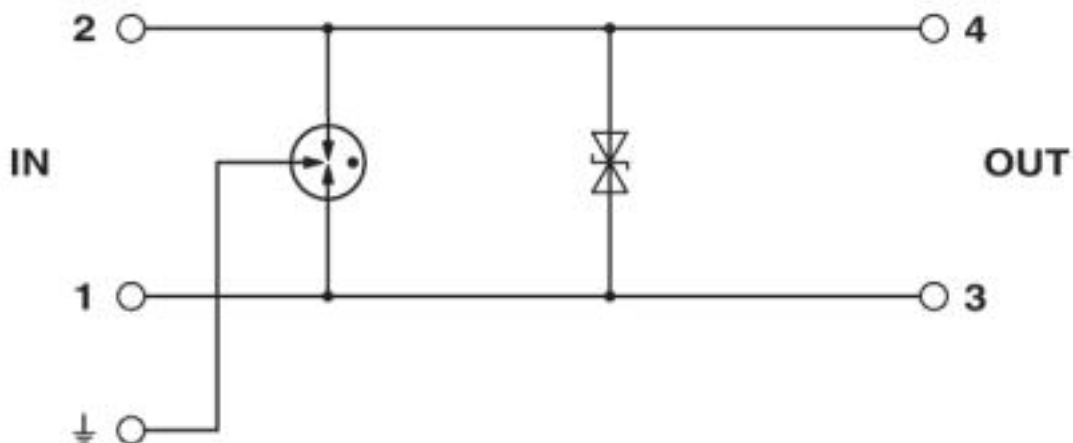
## Drawings

Dimensional drawing



# Surge protection device - TT-ST-2-PE/S1-24DC - 2801055

Circuit diagram



## Approvals

Approvals

Approvals

DNV GL / UL Listed / EAC

Ex Approvals

## Approval details

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