

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	1 pc
Weight per Piece (excluding packing)	24.0 GRM
Custom tariff number	85365019
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 ... 85 °C
Degree of protection	IP20

General

Housing material	PA 6.6
Inflammability class according to UL 94	V0
Color	black
Standards for air and creepage distances	IEC 60664-1
Mounting type	DIN rail: 35 mm

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Technical data

General

Type	Double-level terminal block
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 operating voltage U_C	30 V DC
	21 V AC
Nominal current I_N	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 (Core-Core)	300 A
Nominal discharge current I_n (8/20) μs (Core-Earth)	5 kA
Total surge current (8/20) μs	5 kA
Nominal pulse current I_{an} (10/1000) μs (Core-Core)	25 A
Nominal pulse current I_{an} (10/1000) μs (Core-Earth)	50 A
Impulse discharge current (10/350) μs , peak value I_{imp}	500 A (per path)
Output voltage limitation at 1 kV/ μs (Core-Core) spike	$\leq 45 V$
Output voltage limitation at 1 kV/ μs (Core-Earth) spike	$\leq 800 V$
Output voltage limitation at (8/20) μs (core-core)	$\leq 50 V$ (at 300 A)
Output voltage limitation at (8/20) μs (core-earth)	$\leq 750 V$ (at 500 A)
	$\leq 1.25 kV$ (at 5 kA)
Residual voltage at I_n , (conductor-conductor)	$\leq 50 V$ (at 300 A)
Residual voltage at I_n , (conductor-ground)	$\leq 750 V$ (at 500 A)
	$\leq 1.25 kV$ (at 5 kA)
Residual voltage with I_{an} (10/1000) μs (conductor-conductor)	$\leq 45 V$ (at 25 A)
Residual voltage with I_{an} (10/1000) μs (conductor-ground)	$\leq 1.1 kV$ (at 50 A)
Voltage protection level U_P (Core-Core)	$\leq 50 V$ (C1 - 0,6 kV / 300 A)
	$\leq 45 V$ (C3 - 25 A)

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Protective circuit

	$\leq 45 \text{ V (1 kV/}\mu\text{s)}$
Voltage protection level U_p (Core-Earth)	$\leq 1.25 \text{ kV (C2 - 10 kV / 5 kA)}$
	$\leq 1.1 \text{ kV (C3 - 50 A)}$
	$\leq 750 \text{ V (C1 - 1 kV/500 A)}$
	$\leq 800 \text{ V (1 kV/}\mu\text{s)}$
Response time t_A (Core-Core)	$\leq 1 \text{ ns}$
Response time t_A (Core-Earth)	$\leq 100 \text{ ns}$
Input attenuation a_E , 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 (Core-Core)	$\leq 2 \text{ nF}$
Surge protection fault message	None
Max. required back-up fuse	6.3 A (T/IEC 60127-2/3)
Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)	C1 - 0,6 kV / 300 A
	C3 - 25 A
Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)	C2 - 10 kV / 5 kA
	D1 - 500 A
	C1 - 1 kV / 500 A
	C3 (50 A)
Pulse reset time t_r in acc. with IEC 61643-21 (Core-Earth)	$\leq 700 \text{ ms, at } U_c \text{ and } 10 \text{ A}$
Overload fault mode in acc. with IEC 61643-21 (Core-Core)	Mode 2

Connection data

Connection method	Spring-cage connection
Connection type IN	Spring-cage
Connection type OUT	Spring-cage
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded 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/kcmil min.	24
Conductor cross section AWG/kcmil max	12

Connection, equipotential bonding

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Conductor cross section AWG/kcmil max	12

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 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

Ex Approvals

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

Approvals

Approvals submitted

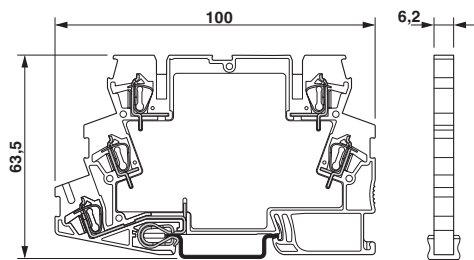
Approval details

UL Listed 

GL

Drawings

Dimensioned drawing



Circuit diagram

