PT 2X1-24DC-ST - Surge protection plug

2856087

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Surge protection plug for the base element, coarse and fine protection for two signal wires with common reference potential, common mode voltage coarse protection to ground. Design: 24 V DC

Your advantages

- Easy testing and documentation with CHECKMASTER 2 with pluggable protective modules
- Maximum ease of maintenance, thanks to the 2-piece design
- Easy selection for all possible demands in MCR applications with a complete product portfolio
- The signal is not influenced during maintenance work, thanks to the impedance-neutral insertion and removal of protective plugs

Commercial data

Item number	2856087
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	0712*
Product key	CL2111
Catalog page	Page 134 (C-4-2019)
GTIN	4017918599164
Weight per piece (including packing)	20.44 g
Weight per piece (excluding packing)	20.1 g
Customs tariff number	85363010
Country of origin	DE

Technical data

Product properties

Product type	Surge protection for MCR technology
Product family	PLUGTRAB PT
IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Type	Male
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00

Insulation characteristics

Overvoltage category	III
Pollution degree	2

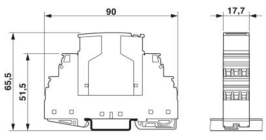
Electrical properties

Nominal voltage U_N	24 V DC

Connection data

Connection method	Screw connection (in connection with the base element)
Screw thread	M3
Tightening torque	0.8 Nm
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section rigid	0.2 mm² ... 4 mm²
Conductor cross section AWG	24 ... 12

Dimensions

Dimensional drawing	
Width	17.5 mm
Height	44.8 mm
Depth	51.7 mm
Horizontal pitch	1 Div.
Complete module width	17.7 mm
Complete module height	90 mm

Complete module depth	65.5 mm

Material specifications

Color	black (RAL 9005)
	copper color
Flammability rating according to UL 94	V-0
Housing material	PA 6.6

Mechanical properties

Mechanical data

Open side panel	No

Protective circuit

Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Maximum continuous voltage U_C	28 V DC
	20 V AC
Rated current	300 mA (45 °C)
Operating effective current I_C at U_C	≤ 5 µA
Residual current I_{PE}	≤ 1 µA (with PT 2X1+F-BE)
	≤ 10 µA (Directly grounded)
Nominal discharge current I_n (8/20) µs (line-ground)	10 kA
Pulse discharge current I_{imp} (10/350) µs	2.5 kA (per path)
Total discharge current I_{Total} (8/20) µs	20 kA
Max. discharge current I_{max} (8/20) µs maximum (line-earth)	10 kA
Nominal pulse current Ian (10/1000) µs (line-earth)	30 A
Output voltage limitation at 1 kV/µs (line-earth) spike	≤ 45 V
	≤ 600 V (with PT 2X1+F-BE)
Output voltage limitation at 1 kV/µs (line-earth) static	≤ 40 V
Residual voltage at I_n (conductor-ground)	≤ 40 V
Residual voltage with Ian (10/1000) µs (line-earth)	≤ 50 V
Voltage protection level U_p (line-earth)	≤ 60 V (C1 - 1 kV / 500 A)
	≤ 80 V (C2 - 10 kV / 5 kA)
	≤ 70 V (6 kV / 3 kA)
	≤ 50 V (C3 - 30 A)
Response time t_A (line-earth)	≤ 1 ns
Input attenuation aE, asym.	0.5 dB (≤ 1 MHz)
	0.3 dB (≤ 400 kHz / 150 Ω)
Cut-off frequency fg (3 dB), asym. (PE) in 50 Ω system	typ. 4.5 MHz
Capacity (Core-Earth)	typ. 0.7 nF
Resistance per path	4.7 Ω ±10 % (7-8/11-12)
Surge protection fault message	none
Max. required back-up fuse	315 mA (T)
Impulse durability (line-earth)	C2 - 10 kV / 5 kA

	D1 - 2.5 kA

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 85 °C

Standards and regulations

VDE requirement class	C1
	C2
	C3
	D1

Air clearances and creepage distances

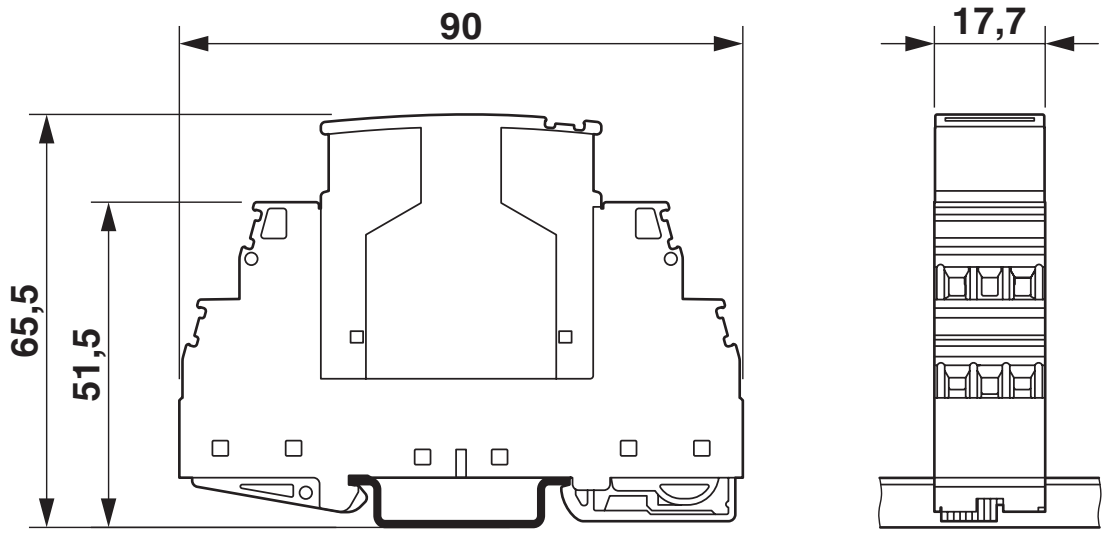
Standards/regulations	VDE 0110-1 / IEC 60664-1
Standards/specifications	EN 61643-21/A1
Note	2009
Standards/specifications	IEC 61643-21/A1
Note	2008
Standards/specifications	UL 497B

Mounting

Mounting type	on base element

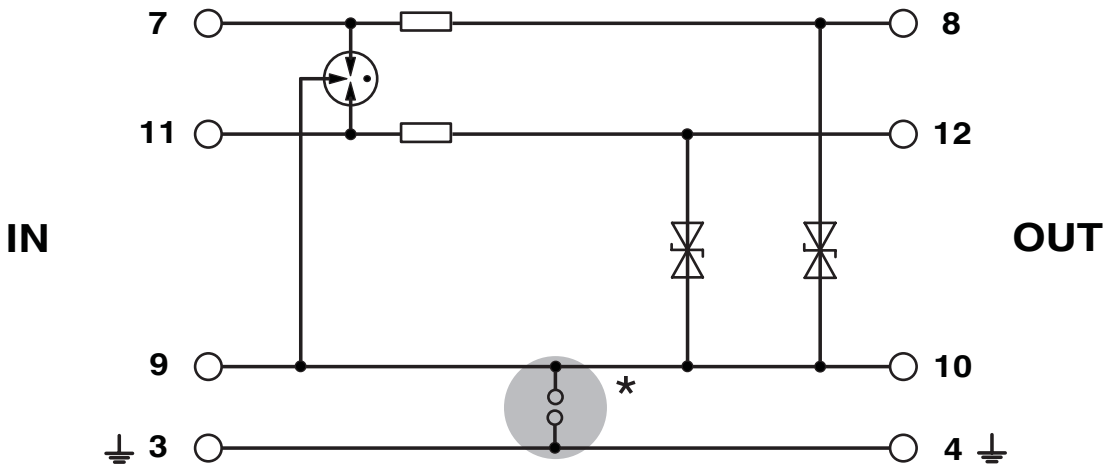
Drawings

Dimensional drawing



The figure shows the complete module consisting of a base element and connector

Circuit diagram



Approvals

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EAC
Approval ID: EAC-Zulassung

DNV GL
Approval ID: TAE00001N6

EAC
Approval ID: RU C-DE.*09.B.00169

UL Listed
Approval ID: FILE E 138168

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	24 V	0.3 A	-	-

cUL Listed
Approval ID: FILE E 333250

UL Listed
Approval ID: FILE E 333250

Classifications

ECLASS

ECLASS-13.0	27171501

ETIM

ETIM 9.0	EC000943

UNSPSC

UNSPSC 21.0	39121600

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	481df695-0cac-430a-a05c-cc4a45aa6308

EF3.0 Climate Change

CO2e kg	0.496 kg CO2e

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