

PT 1X2-24AC-ST - Surge protection plug



2856058

<https://www.phoenixcontact.com/us/products/2856058>

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PT protective connector with protective circuit for a 2-wire floating signal circuit. HART-compatible.

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	2856058
Packing unit	10 pc
Minimum order quantity	1 pc
Sales key	CL21
Product key	CL2111
GTIN	4017918599188
Weight per piece (including packing)	24.3 g
Weight per piece (excluding packing)	22.56 g
Customs tariff number	85363010
Country of origin	DE

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Technical data

Notes

General

Note	Technical data is valid in association with the following specified base elements:
	PT 1X2+F-BE 2856126
	PT 1X2-BE 2856113

Product properties

Product type	Surge protection for MCR technology
Product family	PLUGTRAB PT
IEC test classification	C1
	C2
	C3
	D1
Type	Male
Number of positions	2
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00
Wire pairs per module	1

Insulation characteristics

Overvoltage category	III
Pollution degree	2

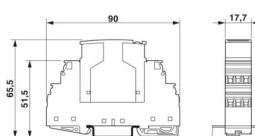
Electrical properties

Nominal voltage U_N	24 V AC
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Connection data

Connection method	Screw connection (in connection with the base element)
Screw thread	M3
Tightening torque	0.5 Nm
Conductor cross-section flexible	0.2 mm ² ... 2.5 mm ²
Conductor cross-section rigid	0.2 mm ² ... 4 mm ²
Conductor cross-section AWG	24 ... 12

Dimensions

Dimensional drawing	
Width	17.7 mm

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Height	45 mm
Depth	52 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
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Protective circuit

Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Nominal voltage U_N	24 V AC
Maximum continuous operating voltage U_C	40 V DC 28 V AC
Rated current	450 mA (45 °C)
Operating effective current I_C at U_C	≤ 5 A
Protective conductor current I_{PE}	≤ 1 μ A (with PT 1X2+F-BE) ≤ 2 μ A (with PT 1X2-BE)
Nominal discharge current I_n (8/20) μ s (line-line)	10 kA
Nominal discharge current I_n (8/20) μ s (line-ground)	10 kA
Pulse discharge current I_{imp} (10/350) μ s	2.5 kA
Total discharge current I_{Total} (8/20) μ s	20 kA
Max. discharge current I_{max} (8/20) μ s maximum (line-line)	10 kA
Max. discharge current I_{max} (8/20) μ s maximum (line-earth)	10 kA
Nominal pulse current I_{an} (10/1000) μ s (line-line)	23 A
Output voltage limitation at 1 kV/ μ s (line-line) spike	≤ 55 V
Output voltage limitation at 1 kV/ μ s (line-earth) spike	≤ 450 V (with PT 1X2-BE) ≤ 1 kV (with PT 1X2+F-BE)
Output voltage limitation at 1 kV/ μ s (line-line) static	≤ 55 V
Output voltage limitation at 1 kV/ μ s (line-earth) static	≤ 25 V (with PT 1X2-BE) ≤ 50 V (with PT 1X2+F-BE)
Residual voltage at I_n (conductor-conductor)	≤ 55 V
Residual voltage with I_{an} (10/1000) μ s (line-line)	≤ 65 V
Voltage protection level U_p (line-line)	≤ 80 V (C2 - 10 kV / 5 kA)
Voltage protection level U_p (line-earth)	≤ 450 V (C1 - 1 kV / 500 A with PT 1X2-BE)

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	≤ 1000 V (C2 - 10 kV / 5 kA with PT 1X2+F-BE)
Voltage protection level U_p static (line-line)	≤ 50 V (C2 - 10 kV / 5 kA)
Voltage protection level U_p static (line-earth)	≤ 50 V (C2 - 10 kV / 5 kA with PT 1X2-BE) ≤ 100 V (C2 - 10 kV / 5 kA with PT 1X2+F-BE)
Response time t_A (line-line)	≤ 1 ns
Response time t_A (line-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 0.5 dB (≤ 1.5 MHz / 50 Ω) typ. 0.2 dB (≤ 500 kHz / 150 Ω) typ. 0.1 dB (≤ 100 kHz / 600 Ω)
Cut-off frequency f_g (3 dB), sym. in 50 Ω system	typ. 8 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ω system	typ. 3 MHz
Cut-off frequency f_g (3 dB), sym. in 600 Ω system	typ. 800 kHz
Capacity (Core-Core)	typ. 1.1 nF
Capacity (Core-Earth)	typ. 4 pF (with PT 1X2-BE) typ. 2 pF (with PT 1X2+F-BE)
Resistance per path	2.2 Ω ±10 %
Surge protection fault message	none
Max. required back-up fuse	500 mA (T)
Impulse durability (line-line)	C2 - 10 kV / 5 kA C3 - 23 A
Impulse durability (line-earth)	C1 - 1 kV / 500 A 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
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m (amsl)

Standards and regulations

Standards/specifications	IEC 61643-21
Note	2000 + corrigendum 2001 + A1:2008, modified + A2:2012
Standards/specifications	EN 61643-21
Note	2001 + A1:2009 + A2:2013
Standards/specifications	GB/T 3836.1
Note	2021
Standards/specifications	GB/T 3836.3
Note	2021

Mounting

Mounting type	on base element
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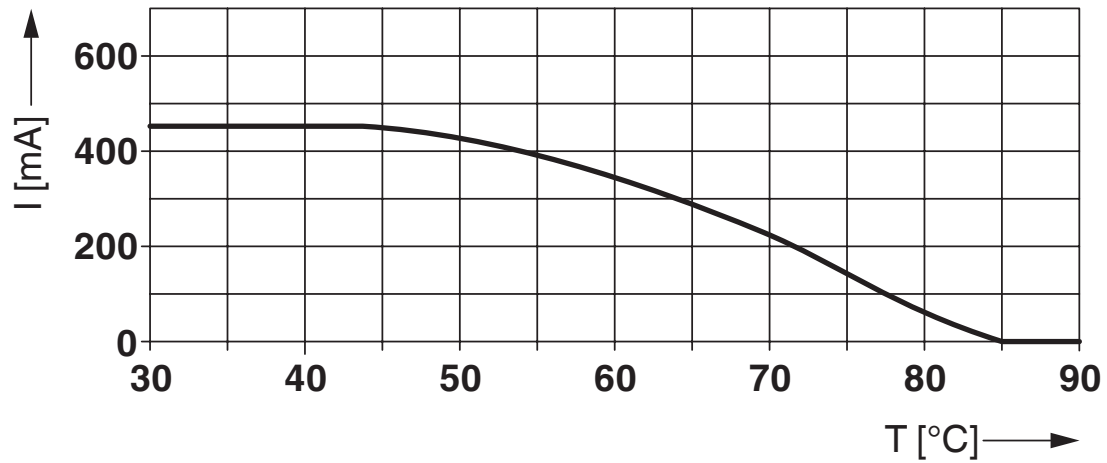
Drawings

Dimensional drawing



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

Diagram



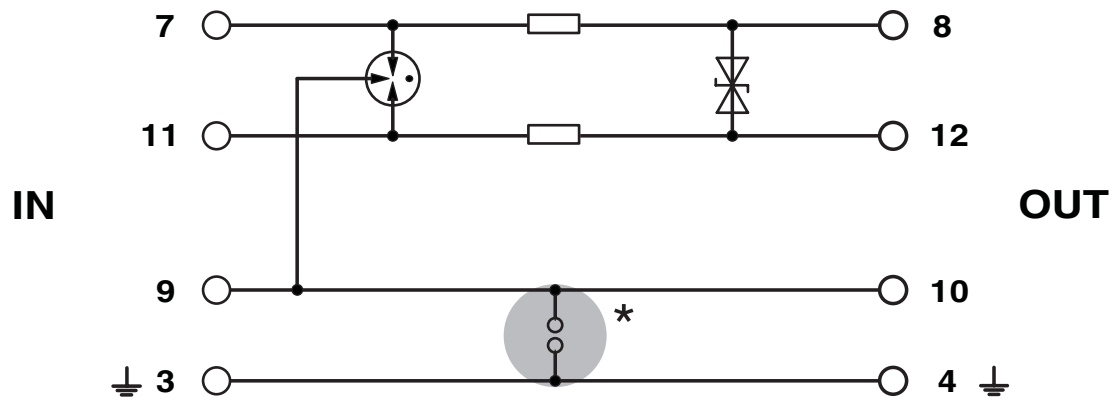
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Circuit diagram



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Approvals


To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2856058>


 UL Listed Approval ID: FILE E 138168				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
	34 V	0.45 A	-	-


 CCC Approval ID: 2020322316003150				
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 cUL Listed Approval ID: FILE E 333250				
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 UL Listed Approval ID: FILE E 333250				
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 ATEX Approval ID: DEKRA 22ATEX0044 X				
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 IECEx Approval ID: IECEx DEK 22.0031X				
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 UKCA-EX Approval ID: DEKRA 22UKEX6005X				
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 NEPSI-EX Approval ID: GYJ20.1180X				
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Classifications

ECLASS

ECLASS-13.0	27171501
ECLASS-15.0	27171501

ETIM

ETIM 10.0	EC001466
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UNSPSC

UNSPSC 21.0	39121600
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a)

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	5ba550df-0349-42d1-9f72-2f0001791c2c

EF3.1 Climate Change

CO2e kg	0.927 kg CO2e
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