

Surge protection plug - PT 2X2-24DC-ST - 2838228

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PT protective connector with protective circuit for two 2-wire floating signal circuits. 24 V DC nominal voltage. HART-compatible.

Why buy this product

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Installed in conjunction with the PT 2x2...-BE base element
- ✓ Maximum ease of maintenance thanks to the two-piece design
- ✓ Base element remains an integral part of the installation
- ✓ Consistent plug-in signal circuit protection
- ✓ Protection for two separate floating signal circuits
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



Key Commercial Data

Packing unit	1 STK
GTIN	 4 017918 182649
GTIN	4017918182649
Weight per Piece (excluding packing)	25.110 g
Custom tariff number	85363010
Country of origin	Germany

Technical data

Dimensions

Height	44.8 mm
Width	17.5 mm

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Technical data

Dimensions

Depth	51.7 mm
Horizontal pitch	1 Div.
Complete module height	90 mm
Complete module width	17.7 mm
Complete module depth	65.5 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Degree of protection	IP20

General

Housing material	PA 6.6
Flammability rating according to UL 94	V-0
Color	jet black RAL 9005
Overvoltage category	2
Degree of pollution	III
Mounting type	on base element
Type	Male
Direction of action	Line-Line & Line-Signal Ground/Shield & optional Signal Ground/Shield-Earth Ground
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00

Additional descriptions

Note	Technical data is valid in association with the following specified base elements:
	PT 2X2+F-BE 2839224
	PT 2X2-BE 2839208

Protective circuit

IEC test classification	C1
	C2
	C3
	D1
Nominal voltage U_N	24 V DC
Maximum continuous voltage U_C	28 V DC
	20 V AC
Rated current	450 mA (45°C)
Operating effective current I_C at U_C	≤ 5 μ A

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Technical data

Protective circuit

Residual current I_{PE}	$\leq 1 \mu\text{A}$ (with PT 2X2+F-BE)
	$\leq 4 \mu\text{A}$ (with PT 2X2-BE)
Nominal discharge current I_n (8/20) μs (Core-Core)	10 kA
Nominal discharge current I_n (8/20) μs (core-earth)	10 kA
Pulse discharge current I_{imp} (10/350) μs	2.5 kA
Total discharge current I_{total} (8/20) μs	20 kA
Max. discharge current I_{max} (8/20) μs maximum (Core-Core)	10 kA
Max. discharge current I_{max} (8/20) μs maximum (Core-Earth)	10 kA
Nominal pulse current I_{an} (10/1000) μs (Core-Core)	25 A
Output voltage limitation at 1 kV/ μs (core-core) spike	$\leq 45 \text{ V}$
Output voltage limitation at 1 kV/ μs (core-earth) spike	$\leq 450 \text{ V}$ (with PT 2X2-BE)
	$\leq 1 \text{ kV}$ (with PT 2X2+F-BE)
Output voltage limitation at 1 kV/ μs (core-core) static	$\leq 40 \text{ V}$
Output voltage limitation at 1 kV/ μs (core-earth) static	$\leq 25 \text{ V}$ (with PT 2X2-BE)
	$\leq 50 \text{ V}$ (with PT 2X2+F-BE)
Residual voltage at I_n (conductor-conductor)	$\leq 40 \text{ V}$
Residual voltage at I_n (conductor-GND)	$\leq 450 \text{ V}$
Residual voltage with I_{an} (10/1000) μs (conductor-conductor)	$\leq 50 \text{ V}$
Voltage protection level U_p (core-core)	$\leq 70 \text{ V}$ (C1 - 1 kV/500 A)
	$\leq 60 \text{ V}$ (C2 - 6 kV / 3 kA)
	$\leq 70 \text{ V}$ (C2 - 10 kV / 5 kA)
	$\leq 50 \text{ V}$ (C3 - 25 A)
Voltage protection level U_p (core-ground)	$\leq 450 \text{ V}$ (C1 - 1 kV / 500 A with PT 2X2-BE)
	$\leq 500 \text{ V}$ (C2 - 6 kV / 3 kA with PT 2X2-BE)
	$\leq 550 \text{ V}$ (C2 - 10 kV / 5 kA with PT 2X2-BE)
	$\leq 1000 \text{ V}$ (C2 - 10 kV / 5 kA with PT 2X2+F-BE)
Voltage protection level U_p static (core-core)	$\leq 40 \text{ V}$ (C2 - 10 kV / 5 kA)
Voltage protection level U_p static (core-ground)	$\leq 50 \text{ V}$ (C2 - 10 kV / 5 kA with PT 2X2-BE)
	$\leq 100 \text{ V}$ (C2 - 10 kV / 5 kA with PT 2X2+F-BE)
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. 0.5 dB ($\leq 1 \text{ MHz} / 50 \Omega$)
	typ. 0.3 dB ($\leq 400 \text{ kHz} / 150 \Omega$)
	typ. 0.1 dB ($\leq 70 \text{ kHz} / 600 \Omega$)
Cut-off frequency f_g (3 dB), sym. in 50 Ohm system	typ. 4.5 MHz
Cut-off frequency f_g (3 dB), sym. in 150 Ohm system	typ. 1.5 MHz

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Technical data

Protective circuit

Cut-off frequency f_g (3 dB), sym. in 600 Ohm system	typ. 600 kHz
Capacity (core-core)	typ. 1.4 nF
Capacity (core-earth)	typ. 8 pF (with PT 2X2-BE)
	typ. 2 pF (with PT 2X2+F-BE)
Resistance in series	2.2 Ω \pm 10 %
Surge protection fault message	none
Max. required back-up fuse	500 mA (T)
Impulse durability (conductor-conductor)	C1 - 1 kV/500 A
	C2 - 6 kV/3 kA
	C2 - 10 kV/5 kA
	C3 - 25 A
Impulse durability (conductor-ground)	C1 - 1 kV/500 A
	C2 - 6 kV/3 kA
	C2 - 10 kV/5 kA
	D1 - 2.5 kA

Connection data

Connection method	Screw connection (in connection with the base element)
Screw thread	M3
Tightening torque	0.5 Nm
Stripping length	8 mm
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

Standards and Regulations

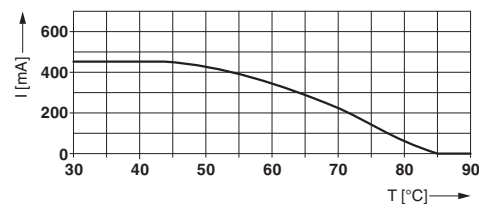
Standards/specifications	IEC 61643-21 2000 + corrigendum 2001 + A1:2008, modified + A2:2012
	EN 61643-21 2001 + A1:2009 + A2:2013

Drawings

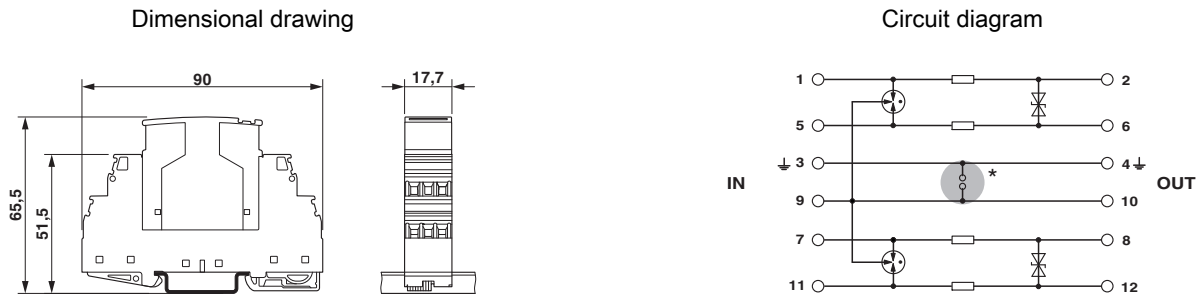
Pictogram



Diagram



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

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
eCl@ss 9.0	27130807

ETIM

ETIM 2.0	EC000943
ETIM 3.0	EC000943
ETIM 4.0	EC000943
ETIM 5.0	EC000943
ETIM 6.0	EC000943

UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620

Approvals

Approvals

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Approvals

Approvals

UL Listed / EAC / EAC / DNV GL

Ex Approvals

UL Listed / cUL Listed / ATEX / cULus Listed

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 138168
Nominal current I _N		0.45 A	
Nominal voltage U _N		24 V	

EAC		EAC-Zulassung
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EAC		RU C-DE.A*30.B01561
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DNV GL	http://exchange.dnv.com/tari/	TAE00001N6
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Accessories

Accessories

Device marking

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into tall marker groove, for terminal block width: 18 mm, lettering field size: 18 x 5 mm

Labeled terminal marker

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Accessories

Zack Marker strip, flat - ZBF 5,LGS:FORTL.ZAHLEN - 0808671



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 1 - 10, 11 - 20, etc. up to 491 - 500, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,LGS:GERADE ZAHLEN - 0810821



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 2 - 20, 22 - 40, etc. up to 82 - 100, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,LGS:UNGERADE ZAHLEN - 0810863



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: Odd numbers 1 - 19, 21 - 39, etc. up to 81 - 99, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm

Zack Marker strip, flat - ZBF 5,QR:FORTL.ZAHLEN - 0808697



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 - 10, 11 - 20, etc. up to 91 - 100, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm

Marker pen

Marker pen - X-PEN 0,35 - 0811228



Marker pen without ink cartridge, for manual labeling of markers, labeling extremely wipe-proof, line thickness 0.35 mm

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Accessories

Terminal marking

Zack Marker strip, flat - ZBF 5:UNBEDRUCKT - 0808642



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm

Zack Marker strip, flat - ZBF 5/WH-100:UNBEDRUCKT - 0808668



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm

Necessary add-on products

Surge protection base element - PT 2X2-BE - 2839208



Base element for protective plug PT with protective circuit for two 2-wire floating signal circuit, bridge between the connections 3-4 (GND) and 9-10, for mounting on NS 35/7.5 and NS 35/15, housing width: 17.5 mm

Surge protection base element - PT 2X2+F-BE - 2839224



Base element for protective plug PT with protective circuit for two 2-wire floating signal circuit, gas-filled surge arrester between the connections 3-4 (GND) and 9-10, for mounting on NS 35/7.5 and NS 35/15, housing width: 17.5 mm

Additional products

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Accessories

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
