

PT 5-HF-12 DC-ST - Surge protection plug



2838775

<https://www.phoenixcontact.com/in/products/2838775>

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Protective plug PT with HF protective circuit for 4 signal wires. Nominal voltage: 12 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	2838775
Packing unit	10 pc
Minimum order quantity	1 pc
Sales Key	CL3
Product Key	CL3121
Catalog Page	Page 173 (C-4-2019)
GTIN	4017918480646
Weight per Piece (including packing)	26.593 g
Weight per Piece (excluding packing)	25.6 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 2X2+F-BE 2839224
	PT 2X2-BE 2839208

Product properties

IEC test classification	C1
	C2
	C3
	D1
Type	Male
Product type	Surge protection for information technology
Product family	PLUGTRAB PT
Number of positions	5
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.10
Wire pairs per module	2

Insulation characteristics

Overvoltage category	III
Pollution degree	2

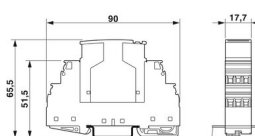
Electrical properties

Nominal voltage U_N	12 V DC
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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 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	jet black RAL 9005
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
Maximum continuous voltage U_C	14 V DC
	9.8 V AC
Rated current	450 mA (45 °C)
Operating effective current I_C at U_C	$\leq 5 \mu\text{A}$
Residual current I_{PE}	$\leq 5 \mu\text{A}$ (with PT 2X2-BE)
	$\leq 1 \mu\text{A}$ (with PT 2X2+F-BE)
Nominal discharge current I_n (8/20) μs (line-line)	10 kA
Nominal discharge surge current I_n (8/20) μs (Core-Earth)	20 kA (in total)
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 (line-line)	10 kA
Max. discharge current I_{max} (8/20) μs maximum (line-earth)	20 kA (in total)
Nominal pulse current I_{an} (10/1000) μs (line-line)	67 A
Output voltage limitation at 1 kV/ μs (line-line) spike	$\leq 55 \text{ V}$
Output voltage limitation at 1 kV/ μs (line-earth) spike	$\leq 55 \text{ V}$ (with PT 2X2-BE)
	$\leq 700 \text{ V}$ (with PT 2X2+F-BE)
Output voltage limitation at 1 kV/ μs (line-line) static	$\leq 25 \text{ V}$
Output voltage limitation at 1 kV/ μs (line-earth) static	$\leq 25 \text{ V}$ (with PT 2X2-BE)
	$\leq 40 \text{ V}$ (with PT 2X2+F-BE)
Residual voltage at I_n (conductor-conductor)	$\leq 25 \text{ V}$
Residual voltage at I_n (conductor-ground)	$\leq 40 \text{ V}$ (with PT 2X2-BE)
Residual voltage at I_n (line-signalground)	$\leq 25 \text{ V}$ (with PT 2X2-BE)
Residual voltage with I_{an} (10/1000) μs (line-line)	$\leq 25 \text{ V}$
Residual voltage with I_{an} (10/1000) μs (line-signalground)	$\leq 25 \text{ V}$
	$\leq 80 \text{ V}$ (C1 - 1 kV / 500 A)

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Voltage protection level U_p (line-line)	≤ 100 V (C2 - 10 kV / 5 kA)
	≤ 50 V (C3 - 25 A)
	≤ 80 V (6 kV / 3 kA)
Voltage protection level U_p (line-earth)	≤ 85 V (C1 - 1 kV / 500 A with PT 2X2-BE)
	≤ 140 V (C2 - 10 kV / 5 kA with PT 2X2-BE)
	≤ 100 V (6 kV / 3 kA with PT 2X2-BE)
	≤ 50 V (C3 - 25 A with PT 2X2-BE)
Voltage protection level U_p (line-signalground)	≤ 50 V (C3 - 25 A with PT 2X2-BE)
	≤ 140 V (C2 - 10 kV / 5 kA with PT 2X2-BE)
Voltage protection level U_p static (line-line)	≤ 25 V (C2 - 10 kV / 5 kA)
	≤ 27 V (C3 - 25 A)
Voltage protection level U_p static (line-earth)	≤ 45 V (C2 - 10 kV / 5 kA with PT 2X2-BE)
	≤ 27 V (C3 - 25 A with PT 2X2-BE)
Voltage protection level U_p static (line-signalground)	≤ 25 V (C2 - 10 kV / 5 kA with PT 2X2-BE)
	≤ 27 V (C3 - 25 A)
Response time t_A	≤ 500 ns
Input attenuation aE, sym.	typ. 0.3 dB (≤ 5 MHz / 100 Ω)
Cut-off frequency f_g (3 dB), sym. in 100 Ω system	typ. 60 MHz
Capacity (Core-Core)	typ. 30 pF
Resistance per path	2.2 $\Omega \pm 10$ %
Surge protection fault message	none
Max. required back-up fuse	500 mA (T)
Impulse durability (line-line)	C2 - 10 kV / 5 kA
	C3 - 67 A
Impulse durability (line-earth)	C2 - 10 kV / 5 kA
	C3 - 67 A
	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	≤ 4000 m (amsl (above mean sea level))

Approvals

Conformity/Approvals

UL, USA / Canada	Class I, Div. 2, Groups A, B, C, D T4A
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Standards and regulations

Standards/specifications	EN 61643-21
Standards/specifications	IEC 61643-21

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Mounting

Mounting type	on base element
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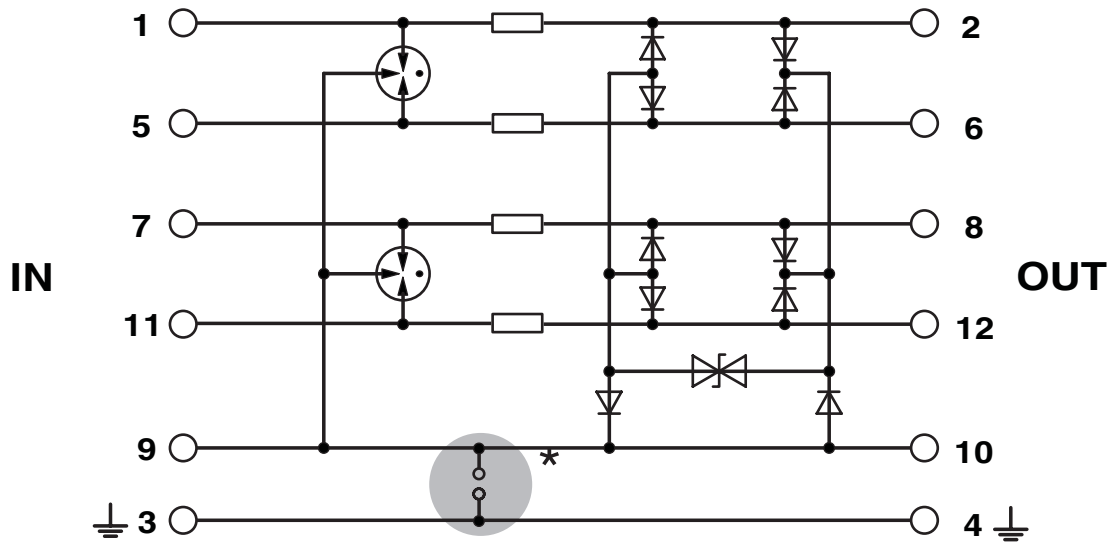
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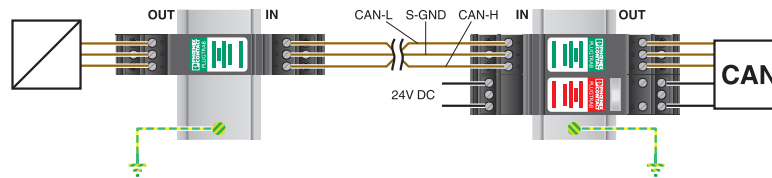
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Drawings

Circuit diagram



Application drawing

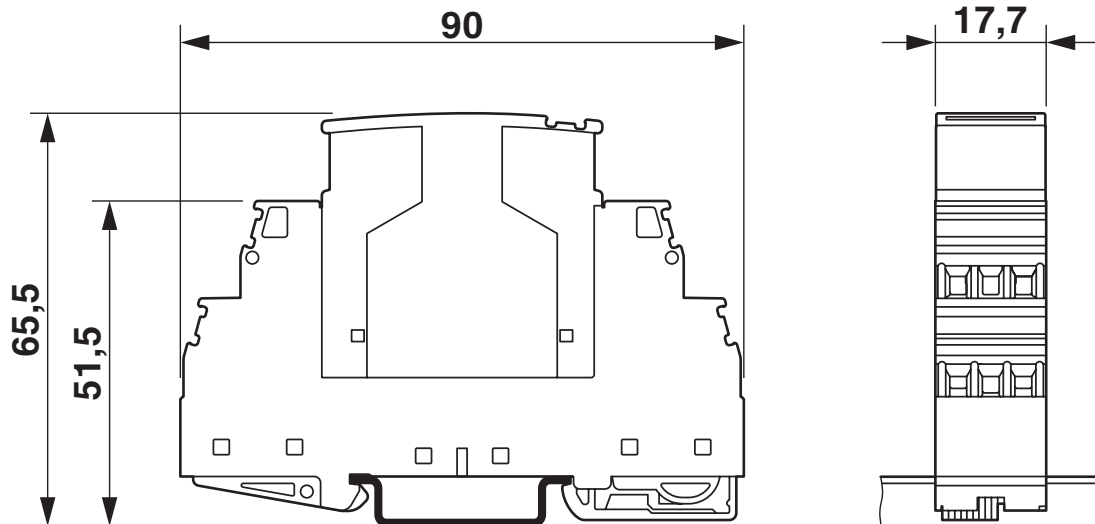


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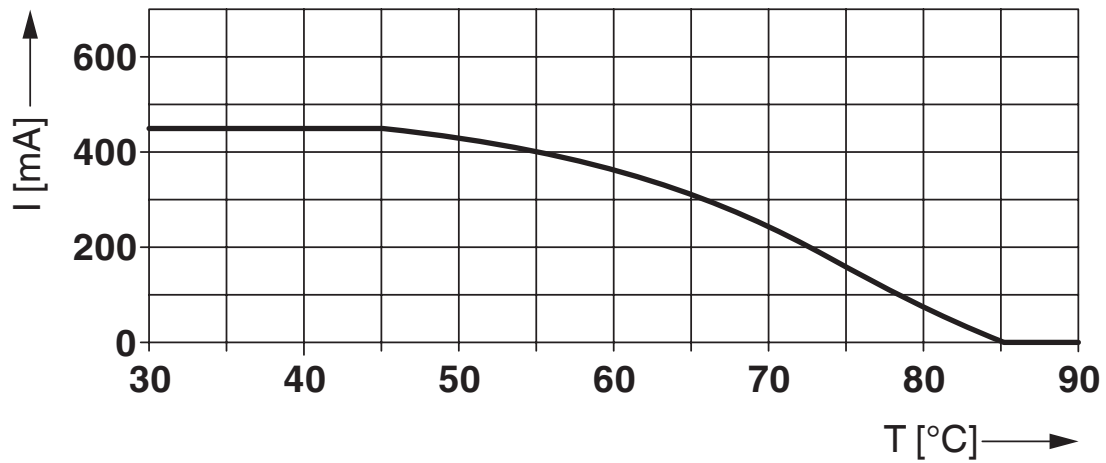
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Dimensional drawing



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

Diagram



The figure shows the derating curve in conjunction with PT 2X2-BE or PT 2X2+F-BE

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Approvals



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
	12 V	0.45 A	-	-



cUL Listed

Approval ID: FILE E 333250



UL Listed

Approval ID: FILE E 333250

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Classifications

ECLASS

ECLASS-11.0

27130807

ETIM

ETIM 8.0

EC000943

UNSPSC

UNSPSC 21.0

39121600

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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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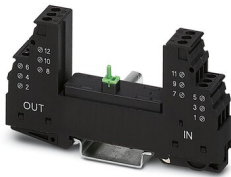
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Mandatory Accessories

PT 2X2-BE - Surge protection base-element

2839208

<https://www.phoenixcontact.com/in/products/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

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

2839224

<https://www.phoenixcontact.com/in/products/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

Accessories

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X-PEN 0,35 - Marker pen

0811228

<https://www.phoenixcontact.com/in/products/0811228>



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

ZBF 5:UNBEDRUCKT - Zack Marker strip, flat

0808642

<https://www.phoenixcontact.com/in/products/0808642>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.1 x 5.2 mm, Number of individual labels: 10

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

0808668

<https://www.phoenixcontact.com/in/products/0808668>



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 1000

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

0808671

<https://www.phoenixcontact.com/in/products/0808671>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 491 ... 500, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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

0810821

<https://www.phoenixcontact.com/in/products/0810821>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: consecutive even numbers 2 ... 20, 22 ... 40, etc. up to 82 ... 100, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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

0810863

<https://www.phoenixcontact.com/in/products/0810863>



Zack Marker strip, flat, Strip, white, labeled, printed horizontally: Odd numbers 1 - 19, 21 - 39, etc. up to 81 - 99, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

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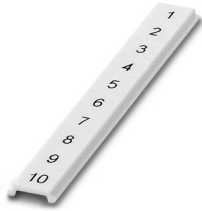
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ZBF 5,QR:FORTL.ZAHLEN - Zack Marker strip, flat

0808697

<https://www.phoenixcontact.com/in/products/0808697>



Zack Marker strip, flat, Strip, white, labeled, Printed vertically: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snapped, for terminal block width: 5 mm, lettering field size: 5.15 x 5.15 mm, Number of individual labels: 10

ZBN 18:UNBEDRUCKT - Zack marker strip

2809128

<https://www.phoenixcontact.com/in/products/2809128>



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snapped, for terminal block width: 18 mm, lettering field size: 18 x 5 mm, Number of individual labels: 5

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SSA 3-6 - Shield connection

2839295

<https://www.phoenixcontact.com/in/products/2839295>

Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable:
200 mm, 1 mm², color: black



SSA 5-10 - Shield connection

2839512

<https://www.phoenixcontact.com/in/products/2839512>

Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable:
200 mm, 1 mm², color: black



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