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PT 2XEX(I)-24DC-ST - Surge protection plug

2838225

https://www.phoenixcontact.com/pc/products/2838225

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PT protective plug with protective circuit for two 2-wire floating Ex i signal circuits. Nominal voltage: 24 V DC, 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	2838225
Packing unit	10 pc
Minimum order quantity	1 pc
Product key	CL2113
Catalog page	Page 156 (C-4-2019)
GTIN	4017918182861
Weight per piece (including packing)	46.48 g
Weight per piece (excluding packing)	21.09 g
Customs tariff number	85363010
Country of origin	DE

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Technical data

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	4
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00
Wire pairs per module	2

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	0.5 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 ... 14

Ex data

Maximum inner capacitance C_i	1.3 nF
Max. internal inductance L_i	1 µH
Max. input current I_i	325 mA (T4 / ≤ 80°C)
	325 mA (T5 / ≤ 55 °C)
	325 mA (T6 / ≤ 40 °C)
Max. input voltage U_i	30 V DC
max. input power P_i	3.00 W
Maximum inner time factor (R_i/L_i)	≤ 0.2 µs
Ambient temperature (operation)	-40 °C ... 80 °C (T4)
	-40 °C ... 55 °C (T5)
	-40 °C ... 40 °C (T6)

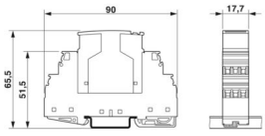
Dimensions

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Dimensional drawing	
Width	17.7 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	blue (RAL 5015)
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 & Signal Ground/Shield-Earth Ground
Maximum continuous voltage U_C	30 V DC
	21 V AC
Rated current	325 mA (40 °C)
Operating effective current I_C at U_C	≤ 5 µA
Residual current I_{PE}	≤ 4 µA
Nominal discharge current I_n (8/20) µs (line-line)	10 kA
Nominal discharge current I_n (8/20) µs (line-ground)	10 kA
Pulse discharge current I_{imp} (10/350) µs (line-line)	1 kA
Pulse discharge current I_{imp} (10/350) µs (line-earth)	2 kA (in total)
Total discharge current I_{total} (8/20) µs	20 kA
Total discharge current I_{total} (10/350) µs	2 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 Ian (10/1000) µs (line-line)	30 A
Output voltage limitation at 1 kV/µs (line-line) spike	≤ 45 V
Output voltage limitation at 1 kV/µs (line-earth) spike	≤ 1 kV
Output voltage limitation at 1 kV/µs (line-line) static	≤ 45 V
Output voltage limitation at 1 kV/µs (line-earth) static	≤ 1 kV
Residual voltage at I_n (conductor-conductor)	≤ 45 V

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Residual voltage with Ian (10/1000) µs (line-line)	≤ 50 V
Voltage protection level U_p (line-line)	≤ 45 V (C1 - 0.5 kV / 250 A)
	≤ 50 V (C1 - 1 kV / 500 A)
	≤ 60 V (C2 - 2 kV/1 kA)
	≤ 100 V (C2 - 10 kV / 5 kA)
	≤ 50 V (C3 - 10 A)
	≤ 50 V (C3 - 25 A)
	≤ 150 V (D1 - 1 kA)
Voltage protection level U_p (line-earth)	≤ 1 kV (C1 - 1 kV / 500 A)
	≤ 1 kV (C2 - 2 kV/1 kA)
	≤ 1 kV (C2 - 10 kV / 5 kA)
	≤ 1 kV (D1 - 1 kA)
Response time t_A (line-line)	≤ 1 ns
Response time t_A (line-earth)	≤ 100 ns
Input attenuation aE, sym.	typ. 0.5 dB (≤ 900 kHz/50 Ω)
	typ. 0.2 dB (≤ 300 kHz / 150 Ω)
	typ. 0.1 dB (≤ 60 kHz/600 Ω)
Cut-off frequency fg (3 dB), sym. in 50 Ω system	typ. 4.5 MHz
Cut-off frequency fg (3 dB), sym. in 150 Ω system	typ. 1.6 MHz
Cut-off frequency fg (3 dB), sym. in 600 Ω system	typ. 400 kHz
Resistance per path	2.2 Ω ±10 %
Surge protection fault message	none
Max. required back-up fuse	315 mA (T)
Impulse durability (line-line)	C1 - 0.5 kV / 250 A
	C1 - 1 kV / 500 A
	C2 - 2 kV / 1 kA
	C2 - 10 kV / 5 kA
	C3 - 10 A
	C3 - 25 A
	D1 - 1 kA
Impulse durability (line-earth)	C1 - 1 kV / 500 A
	C2 - 2 kV / 1 kA
	C2 - 10 kV / 5 kA
	D1 - 1 kA
Alternating current carrying capacity (line-earth)	10 A - 1 s

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)

Approvals

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Conformity/Approvals

ATEX	II 1G Ex ia IIC T4...T6 Ga
	II 1D Ex ia IIIC T135 °C...T85 °C Da
IECEx	Ex ia IIC T4...T6 Ga
	Ex ia IIIC T135 °C...T85 °C Da

Standards and regulations

Standards/specifications	EN 61643-21
Note	A2:2013
Standards/specifications	EN 60079-0
Note	2018
Standards/specifications	EN 60079-11
Note	2012
Standards/specifications	IEC 61643-21
Note	A2:2012
Standards/specifications	IEC 60079-0
Note	2017
Standards/specifications	IEC 60079-11
Note	2011

Mounting

Mounting type	on base element

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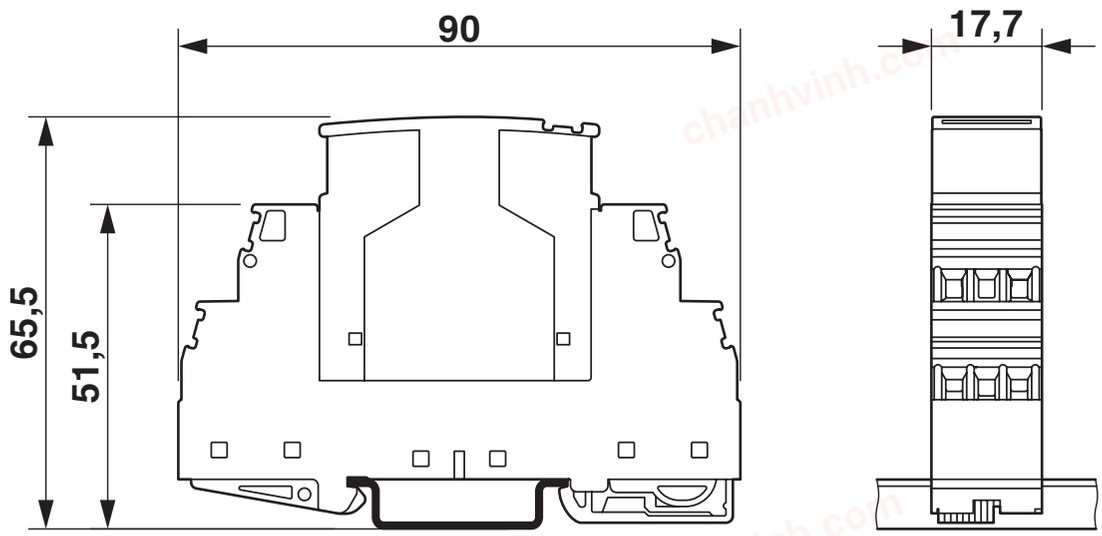
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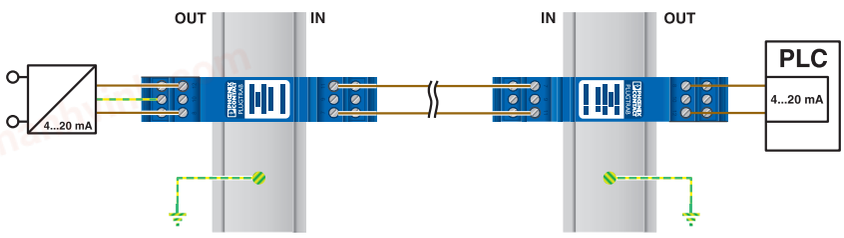
Drawings

Dimensional drawing

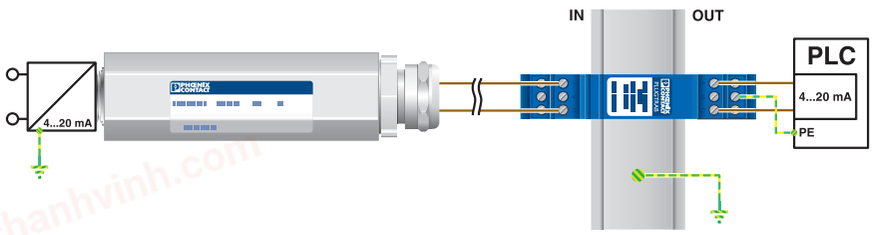


The figure shows the complete module consisting of a base element and connector

Application drawing



Application drawing



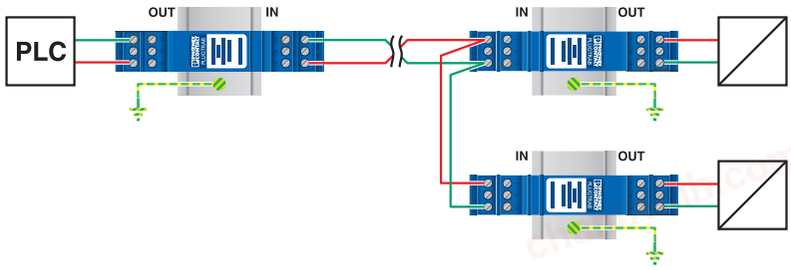
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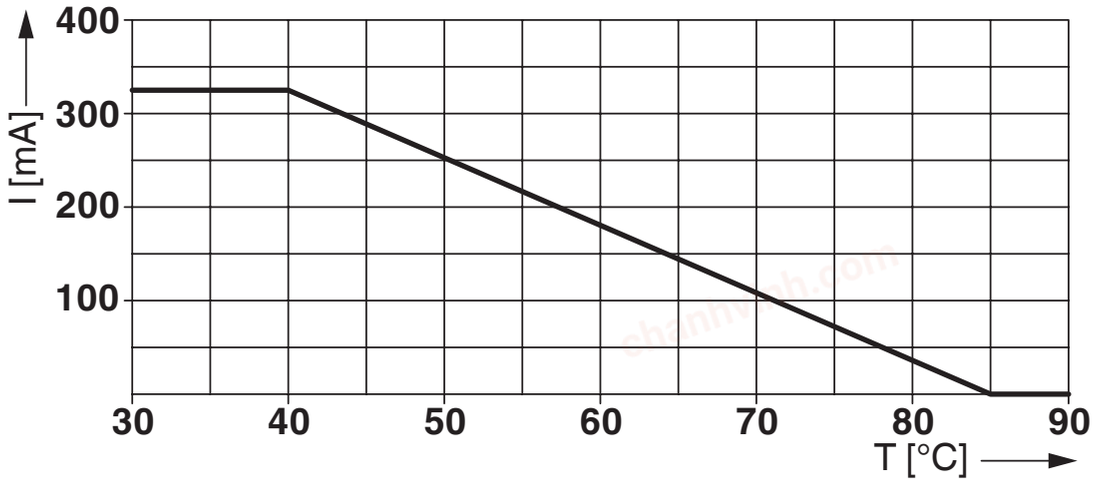
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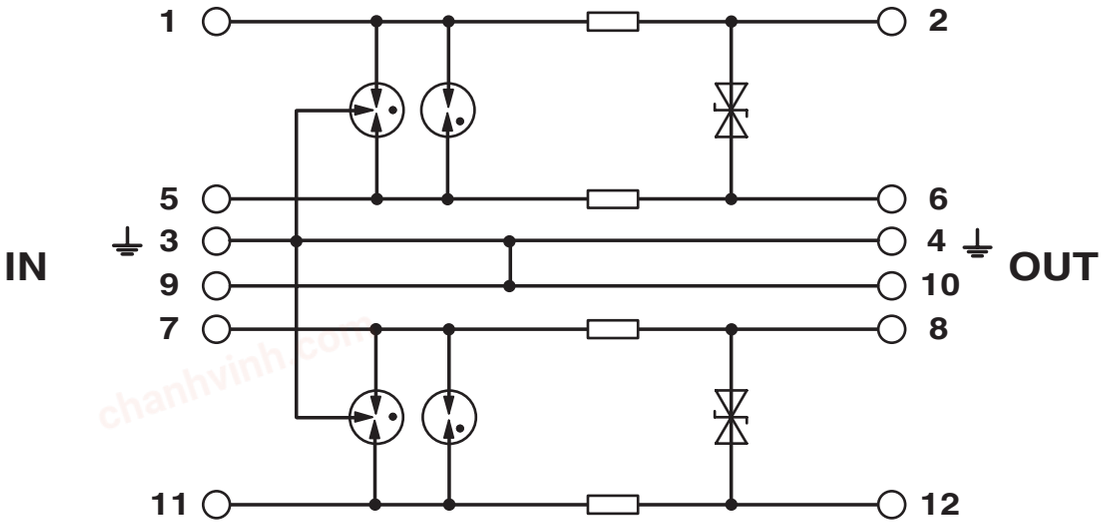
Application drawing



Diagram



Circuit diagram



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Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/pc/products/2838225

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	0.47 A	-	-

ATEX
Approval ID: KEMA 00ATEX1099 X

EAC Ex
Approval ID: RU C-DE.**87.B.00420

IECEx
Approval ID: IECEx KEM 10.0063X

CCC
Approval ID: 2020322316001009

cUL Listed
Approval ID: FILE E 333250

UL Listed
Approval ID: FILE E 333250

INMETRO
Approval ID: DNV 19.0031 X

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NEPSI-EX
Approval ID: GYJ20.1177X

UKCA-EX
Approval ID: DEKRA 21UKEX0234 X

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Classifications

ECLASS

ECLASS-13.0	27171502

ETIM

ETIM 9.0	EC001625

UNSPSC

UNSPSC 21.0	39121620

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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	aaa90750-e2d0-419b-94dd-65920b3fd1f2

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