

## Surge protection plug - PT 2XEX(I)-24DC-ST - 2838225

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PT protective connector with protective circuit for two 2-wire floating Ex-i signal circuits. Nominal voltage: 24 V DC

### Product Features

- Plugs can be checked with CHECKMASTER
- Maximum ease of maintenance thanks to the two-piece design
- Tailored to the special requirements of intrinsically safe circuits
- Base element remains an integral part of the installation
- Consistent plug-in signal circuit protection
- Impedance-neutral disconnection of plug for test and maintenance purposes



### Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	27.25 g
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	45 mm
Width	17.7 mm
Depth	52 mm
Horizontal pitch	1 Div.
Complete module height	90 mm
Complete module width	17.7 mm

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### Technical data

#### Dimensions

Complete module depth	65.5 mm
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#### Ambient conditions

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

#### General

Housing material	PA 6.6
Flammability rating according to UL 94	V-0
Color	blue
Standards for clearances and creepage distances	VDE 0110-1
	IEC 60664-1
	EN 60079-11
Mounting type	On base element
Type	DIN rail module, two-section, divisible
Number of positions	4
Direction of action	Line-Line & Line-Signal Ground/Shield & Signal Ground/Shield-Earth Ground
Arrester can be tested with CHECKMASTER from software version:	From SW rev. 1.00

#### Protective circuit

IEC test classification	C1
	C2
	C3
	D1
VDE requirement class	C1
	C2
	C3
	D1
Nominal voltage $U_N$	24 V DC
Maximum continuous voltage $U_C$	30 V DC
	21 V AC
Maximum continuous voltage $U_C$ (wire-wire)	30 V DC
	21 V AC
Nominal current $I_N$	325 mA (40°C)
Operating effective current $I_C$ at $U_C$	$\leq 5 \mu A$
Residual current $I_{PE}$	$\leq 4 \mu A$
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Core)	10 kA
Nominal discharge current $I_n$ (8/20) $\mu s$ (Core-Earth)	10 kA

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### Technical data

#### Protective circuit

Total surge current (8/20) $\mu$ s	20 kA
Total surge current (10/350) $\mu$ s	2 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (Core-Core)	10 kA
Max. discharge current $I_{max}$ (8/20) $\mu$ s maximum (Core-Earth)	10 kA
Nominal pulse current $I_{an}$ (10/1000) $\mu$ s (Core-Core)	30 A
Impulse discharge current (10/350) $\mu$ s, peak value $I_{imp}$	1 kA (core-core)
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) spike	$\leq 1$ kV
Output voltage limitation at 1 kV/ $\mu$ s (Core-Core) static	$\leq 45$ V
Output voltage limitation at 1 kV/ $\mu$ s (Core-Earth) static	$\leq 1$ kV
Residual voltage at $I_n$ (conductor-conductor)	$\leq 45$ V
Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-conductor)	$\leq 50$ V
Voltage protection level $U_p$ (core-core)	$\leq 100$ V (C2 - 10 kV / 5 kA)
	$\leq 50$ V (C1 - 1 kV/500 A)
	$\leq 50$ V (C3 - 25 A)
	$\leq 150$ V (D1 - 1 kA)
Voltage protection level $U_p$ (core-ground)	$\leq 1$ kV (C2 - 10 kV / 5 kA)
	$\leq 1$ kV (C1 - 1 kV/500 A)
	$\leq 1$ kV (D1 - 1 kA)
Response time $t_A$ (Core-Core)	$\leq 1$ ns
Response time $t_A$ (Core-Earth)	$\leq 100$ ns
Input attenuation aE, sym.	typ. 0.5 dB (900 kHz/50 $\Omega$ )
	typ. 0.2 dB (300 kHz / 150 $\Omega$ )
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. 1.6 MHz
Resistance in series	$\leq 2.2 \Omega \pm 10 \%$
	$\leq 2.2 \Omega \pm 10 \%$
Surge protection fault message	None
Max. required back-up fuse	315 mA (e.g. T in acc. with IEC 127-2/III)
Impulse durability (conductor-conductor)	C2 - 10 kV/5 kA
Impulse durability (conductor-ground)	C2 - 10 kV/5 kA
	D1 - 1 kA
Alternating current carrying capacity (conductor-ground)	10 A - 1 s

#### Connection data

Connection method	Screw connection (in connection with the base element)
Connection type IN	PLUGTRAB plug-in system
Connection type OUT	PLUGTRAB plug-in system

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### Technical data

#### Connection data

Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	4 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12

#### Standards and Regulations

Standards/regulations	EN 61643-21
	EN 60079-0
	EN 60079-11
	EN 60079-26
	EN 61241-0
	EN 61241-11

#### General

Maximum inner capacitance C <sub>i</sub>	1.3 nF
Maximum inner inductance L <sub>i</sub>	1 µH
Maximum inner time factor (R <sub>i</sub> /L <sub>i</sub> )	≤ 0.2 µs
Max. input current I <sub>i</sub>	325 mA (T4 / ≤ 80 °C)
	325 mA (T5/≤ 55 °C)
	325 mA (T6 / ≤ 40 °C)
Max. input voltage U <sub>i</sub>	30 V DC
Maximum input power P <sub>i</sub>	3 W
Insulation voltage to ground	500 V AC
Ambient temperature (operation)	-40 °C ... 80 °C (T4)
	-40 °C ... 55 °C (T5)
	-40 °C ... 40 °C (T6)

#### 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

#### Classifications

eCl@ss

eCl@ss 4.0	27140201
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## Classifications

### eCl@ss

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

### 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

UL Listed / GL / EAC / EAC

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#### Ex Approvals

ATEX / UL Listed / cUL Listed / IECEx / INMETRO / cULus Listed

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Approvals submitted

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### Approval details

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## Approvals

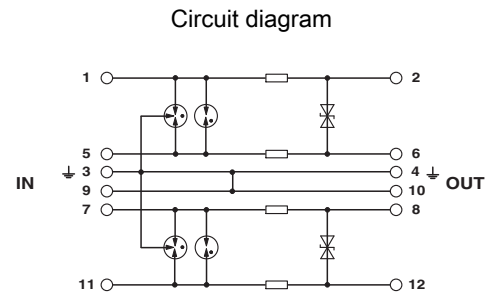
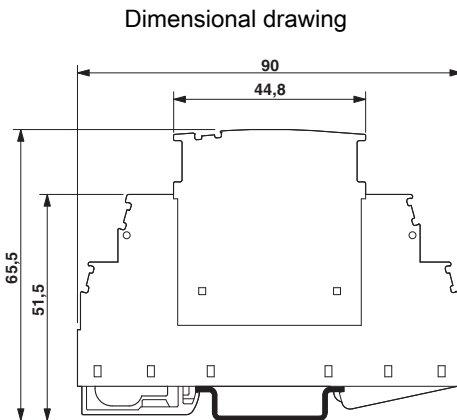
UL Listed	
Nominal current $I_N$	0.47 A
Nominal voltage $U_N$	24 V

GL

EAC

EAC

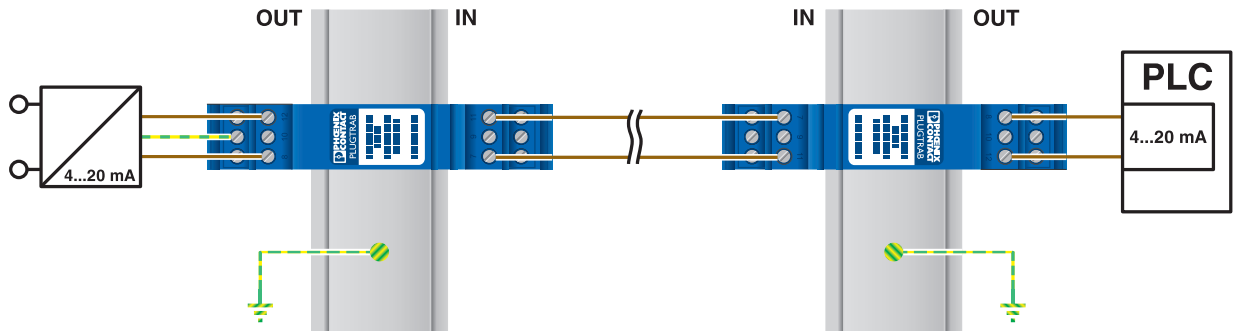
## Drawings



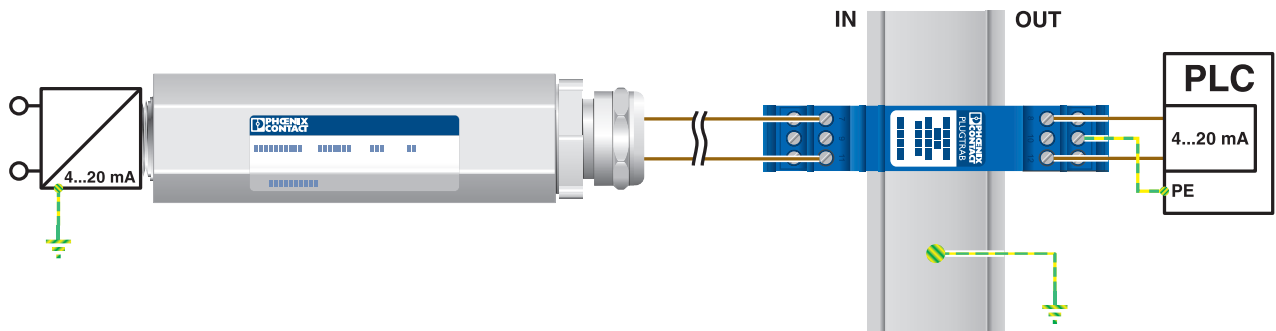
The figure shows the complete module consisting of a base element and connector

# Surge protection plug - PT 2XEX(I)-24DC-ST - 2838225

Application drawing



Application drawing



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Application drawing

