

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

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



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

### Your advantages

- ✓ 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	10 pc
GTIN	
GTIN	4017918182861
Weight per Piece (excluding packing)	21.090 g
Custom tariff number	85363010
Country of origin	Germany

### Technical data

#### Dimensions

Height	44.8 mm
Width	17.5 mm
Depth	51.7 mm
Horizontal pitch	1 Div.
Complete module height	90 mm
Complete module width	17.7 mm

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

## Technical data

### Dimensions

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	sky blue RAL 5015
Mounting type	on base element
Type	Male
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
Nominal voltage $U_N$	24 V DC
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-earth)	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 $I_{an}$ (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

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

### Technical data

#### Protective circuit

Output voltage limitation at 1 kV/μs (line-earth) static	≤ 1 kV
Residual voltage at I <sub>n</sub> (line-line)	≤ 45 V
Residual voltage with I <sub>an</sub> (10/1000) μs (line-line)	≤ 50 V
Voltage protection level U <sub>p</sub> (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 <sub>p</sub> (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 <sub>A</sub> (line-line)	≤ 1 ns
Response time t <sub>A</sub> (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 f <sub>g</sub> (3 dB), sym. in 50 Ohm system	typ. 4.5 MHz
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 150 Ohm system	typ. 1.6 MHz
Cut-off frequency f <sub>g</sub> (3 dB), sym. in 600 Ohm 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

#### Connection data

Connection method	Screw connection (in connection with the base element)
Screw thread	M3

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

## Technical data

### Connection data

Tightening torque	0.5 Nm
Stripping length	8 mm
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section solid	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

### Standards and Regulations

Standards/specifications	EN 61643-21 A2:2013
	EN 60079-0 2012
	EN 60079-11 2012
	EN 60079-26 2007
	IEC 61643-21 A2:2012
	IEC 60079-0 2011
	IEC 60079-11 2011
	IEC 60079-26 2006

### General

Maximum inner capacitance C <sub>i</sub>	1.3 nF
Max. internal 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
max. input power P <sub>i</sub>	3 W
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

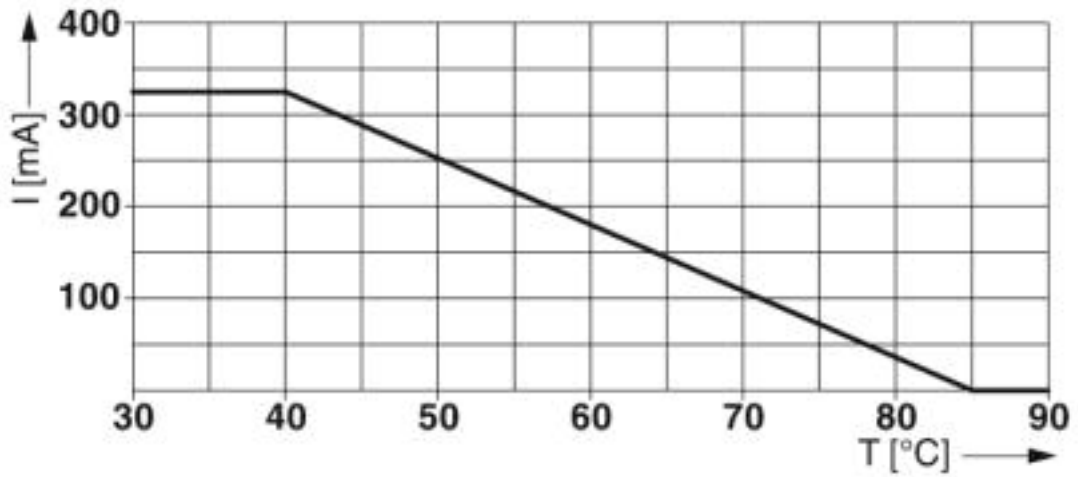
### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

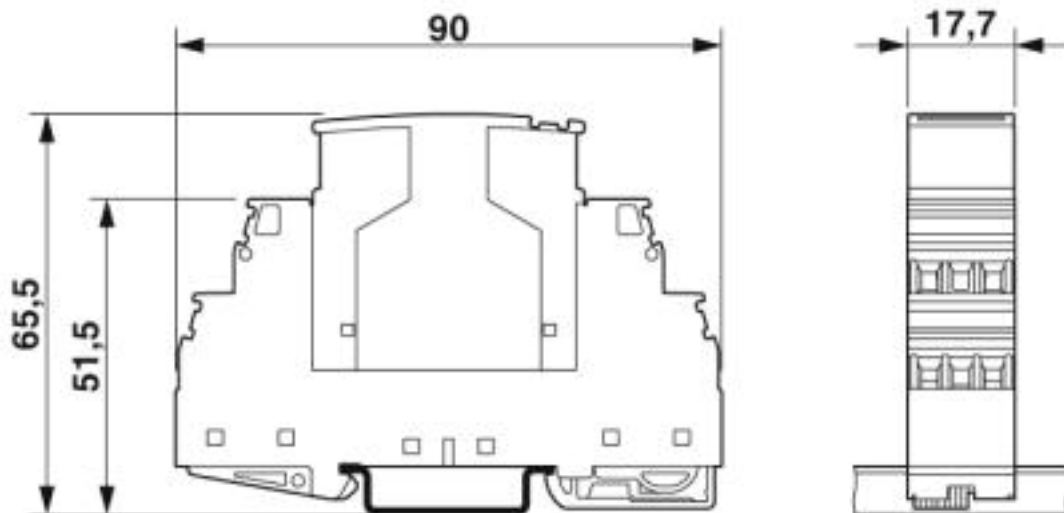
## Drawings

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

Diagram



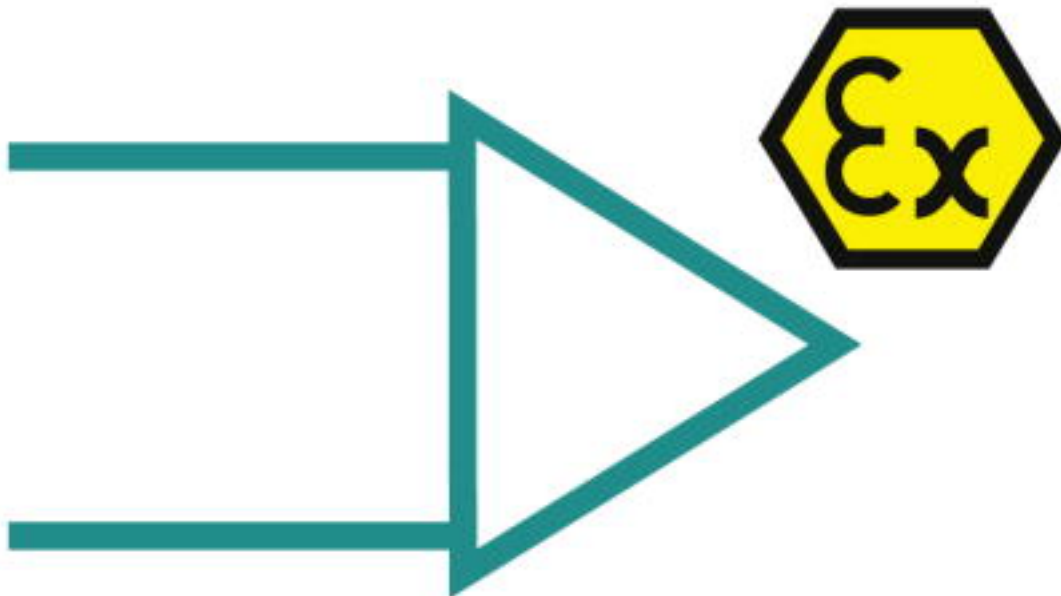
Dimensional drawing



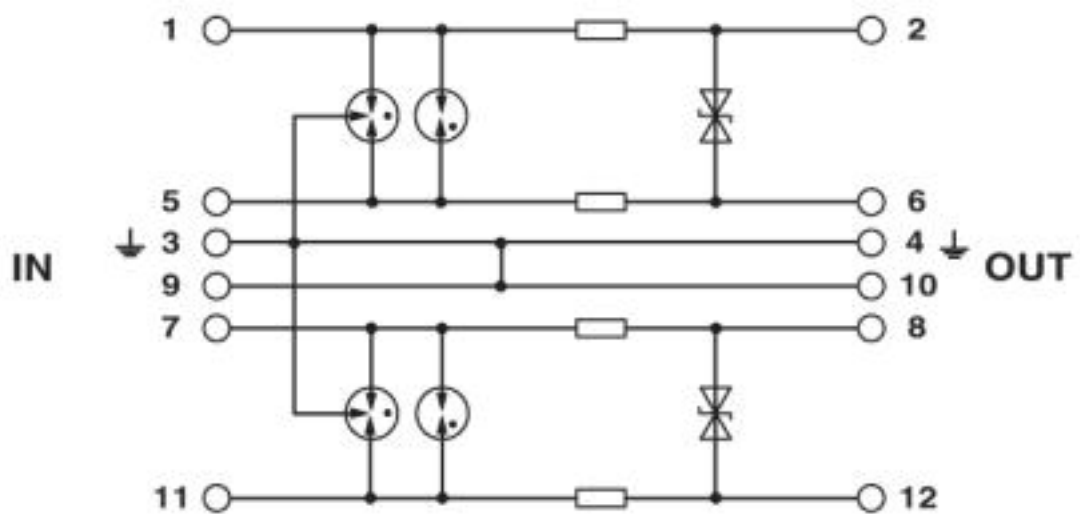
The figure shows the complete module consisting of a base element and connector

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

Pictogram

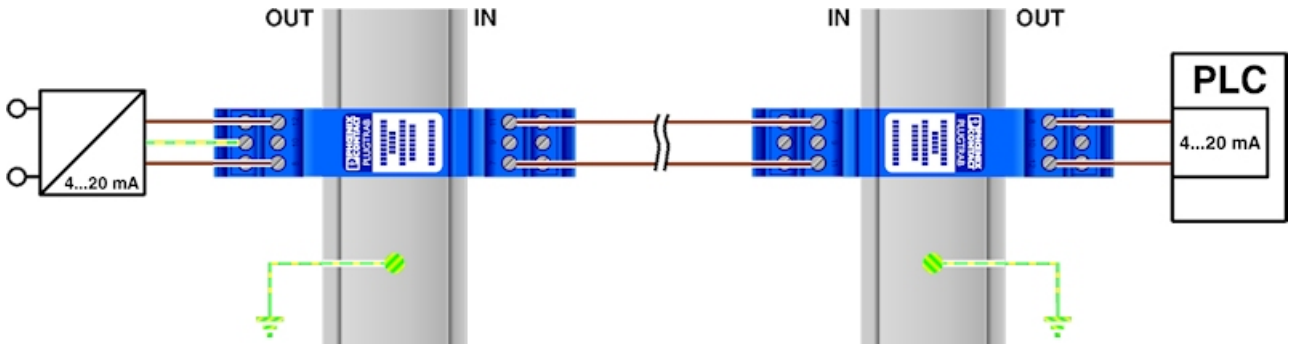


Circuit diagram

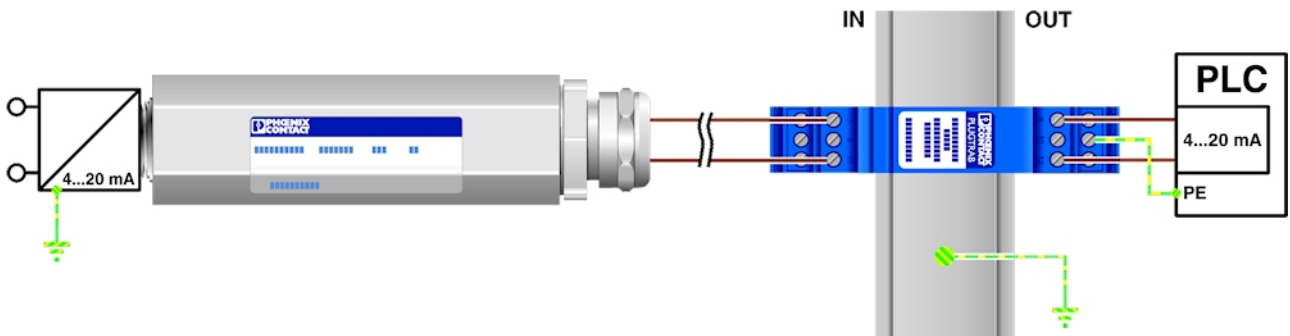


# Surge protection plug - PT 2XEX(I)-24DC-ST - 2838225

Application drawing

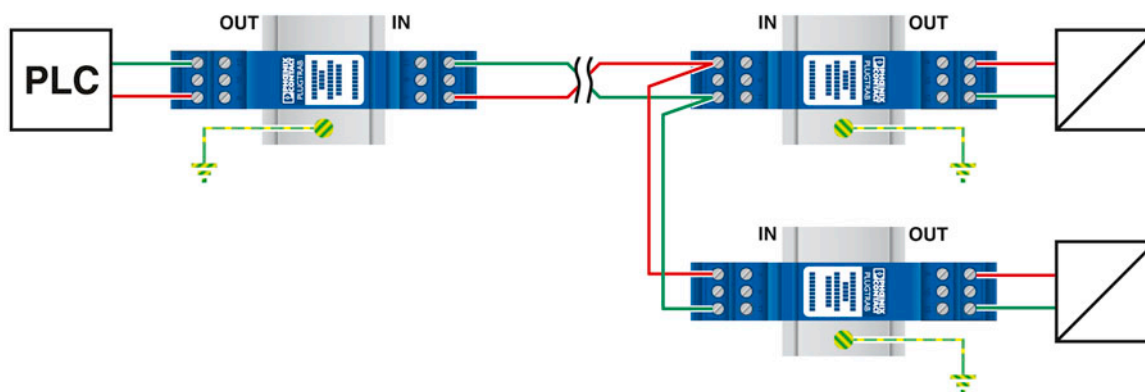


Application drawing



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

Application drawing



## Classifications

### eCl@ss

eCl@ss 4.0	27130800
eCl@ss 4.1	27130800
eCl@ss 5.0	27130800
eCl@ss 5.1	27130800
eCl@ss 6.0	27130800
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
ETIM 7.0	EC000943



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

## Classifications

### UNSPSC

UNSPSC 6.01	30212010
UNSPSC 7.0901	39121610
UNSPSC 11	39121610
UNSPSC 12.01	39121610
UNSPSC 13.2	39121620
UNSPSC 18.0	39121620
UNSPSC 19.0	39121620
UNSPSC 20.0	39121620
UNSPSC 21.0	39121620

## Approvals

### Approvals

#### Approvals

DNV GL / UL Listed / EAC / EAC

#### Ex Approvals

IECEx / ATEX / UL Listed / cUL Listed / EAC Ex / cULus Listed

### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAE00001N6
--------	--	---	------------

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 138168
Nominal voltage UN	24 V		
Nominal current IN	0.47 A		

EAC		EAC-Zulassung
-----	--	---------------

EAC		RU C- DE.A*30.B01561
-----	--	-------------------------

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

### 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, Number of individual labels: 5

---

### Labeled terminal marker

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, Number of individual labels: 10

---

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, Number of individual labels: 10

---

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, Number of individual labels: 10

---

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, Number of individual labels: 10

---

### Marker pen

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

### Accessories

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

---

### Terminal marking

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



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

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, Number of individual labels: 10

---

### Necessary add-on products

Surge protection base element - PT 2XEX(I)-BE - 2839279



Base element for protective plug PT with protective circuit for two 2-core floating EEx ia signal circuits. Mounting on NS 35/7.5 and NS 35/15, housing width: 17.5 mm

---

### Additional products

Shield connection - SSA 3-6 - 2839295



Shield fast connection for 3 ... 6 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black

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

### Accessories

Shield connection - SSA 5-10 - 2839512



Shield fast connection for 5 ... 10 mm cable diameter. Potential connecting cable: 200 mm, 1 mm<sup>2</sup>, color: black