

## Surge protection connector - PT 1X2-12DC-ST - 2856029

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://download.phoenixcontact.com>)



PT protective connector with protective circuit for a 2-wire floating signal circuit. HART-compatible.

The figure shows the PT 1x2-48DC-ST version

### Why buy this product

- ✓ Plugs can be checked with CHECKMASTER
- ✓ Installed in conjunction with the PT 1x2...-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 a floating signal circuit
- ✓ Impedance-neutral disconnection of plug for test and maintenance purposes



### Key commercial data

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit           | 1                                                                                                       |
| Minimum order quantity | 1                                                                                                       |
| Catalog page           | Page 94 (TT-2011)                                                                                       |
| GTIN                   | <br>4 017918 599218 |
| Custom tariff number   | 85363010                                                                                                |
| Country of origin      | GERMANY                                                                                                 |

### Technical data

#### General

|                                          |                  |
|------------------------------------------|------------------|
| Housing material                         | PA 6.6           |
| Inflammability class according to UL 94  | V0               |
| Color                                    | black            |
| Standards for air and creepage distances | VDE 0110-1       |
| Standards for air and creepage distances | IEC 60664-1      |
| Total surge current (8/20) $\mu$ s       | 20 kA            |
| Ambient temperature (operation)          | -40 °C ... 85 °C |

# Surge protection connector - PT 1X2-12DC-ST - 2856029

## Technical data

### General

|                                                                |                                                                                     |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Mounting type                                                  | On base element                                                                     |
| Design                                                         | DIN rail module, two-section, divisible                                             |
| Degree of protection                                           | IP20                                                                                |
| 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                                                                   |
| Width                                                          | 17.7 mm                                                                             |
| Height                                                         | 45 mm                                                                               |
| Depth                                                          | 52 mm                                                                               |
| Pitch unit                                                     | 1 Div.                                                                              |

### Protective circuit

|                                                                              |                            |
|------------------------------------------------------------------------------|----------------------------|
| IEC category                                                                 | C1                         |
| IEC category                                                                 | C2                         |
| IEC category                                                                 | C3                         |
| IEC category                                                                 | D1                         |
| VDE requirement class                                                        | C1                         |
| VDE requirement class                                                        | C2                         |
| VDE requirement class                                                        | C3                         |
| VDE requirement class                                                        | D1                         |
| Nominal voltage UN                                                           | 12 V DC                    |
| Maximum continuous operating voltage UC                                      | 13 V DC                    |
| Maximum continuous operating voltage UC                                      | 9 V AC                     |
| Maximum continuous voltage UC (wire-wire)                                    | 13 V DC                    |
| Maximum continuous voltage UC (wire-ground)                                  | 9 V AC                     |
| Nominal current IN                                                           | 450 mA (45°C)              |
| Operating effective current IC at UC                                         | ≤ 5 µA                     |
| Ground conductor current IPE                                                 | ≤ 2 µA (Directly grounded) |
| Ground conductor current IPE                                                 | ≤ 1 µA (BE: 1x2+F)         |
| Nominal discharge surge current In (8/20) µs (Core-Core)                     | 10 kA                      |
| Nominal discharge surge current In (8/20) µs (Core-Earth)                    | 10 kA                      |
| Total surge current (8/20) µs                                                | 20 kA                      |
| Max. discharge surge current I <sub>max</sub> (8/20) µs maximum (Core-Core)  | 10 kA                      |
| Max. discharge surge current I <sub>max</sub> (8/20) µs maximum (Core-Earth) | 10 kA                      |
| Nominal pulse current I <sub>an</sub> (10/1000) µs (Core-Core)               | 67 A                       |
| Lightning test current (10/350) µs, peak value I <sub>imp</sub>              | 2.5 kA                     |
| Output voltage limitation at 1 kV/µs (Core-Core) spike                       | ≤ 20 V                     |
| Output voltage limitation at 1 kV/µs (Core-Earth) spike                      | ≤ 450 V                    |
| Output voltage limitation at 1 kV/µs (Core-Earth) spike                      | ≤ 1 kV (BE: 1x2+F)         |
| Output voltage limitation at 1 kV/µs (Core-Core) static                      | ≤ 18 V                     |
| Residual voltage at In, (conductor-conductor)                                | ≤ 18 V                     |

# Surge protection connector - PT 1X2-12DC-ST - 2856029

## Technical data

### Protective circuit

|                                                                        |                                  |
|------------------------------------------------------------------------|----------------------------------|
| Residual voltage with $I_{an}$ (10/1000) $\mu$ s (conductor-conductor) | $\leq 23$ V                      |
| Protection level UP (Core-Core)                                        | $\leq 50$ V                      |
| Protection level UP (Core-Earth)                                       | $\leq 450$ V                     |
| Response time $t_A$ (Core-Core)                                        | $\leq 1$ ns                      |
| Response time $t_A$ (Core-Earth)                                       | $\leq 100$ ns                    |
| Input attenuation aE, sym.                                             | 0.5 dB ( $\leq 600$ kHz)         |
| Cut-off frequency $f_g$ (3 dB), sym. in 50 Ohm system                  | Typ. 3 MHz                       |
| Capacity (Core-Core)                                                   | 3 nF                             |
| Resistance in series                                                   | 2.2 $\Omega$ (1-2/5-6/7-8/11-12) |
| Max. required back-up fuse                                             | 500 mA (e.g. T (IEC 127-2/III))  |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-Core)          | C2 (10 kV/5 kA)                  |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)         | C2 (10 kV/5 kA)                  |
| Surge carrying capacity in acc. with IEC 61643-21 (Core-Earth)         | D1 (2.5 kA)                      |

### Connection, protective circuit

|                       |                 |
|-----------------------|-----------------|
| Standards/regulations | IEC 61643-21    |
| Standards/regulations | DIN EN 61643-21 |
| Standards/regulations | UL 497B         |

## Classifications

### eclass

|            |          |
|------------|----------|
| 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 |

### etim

|          |          |
|----------|----------|
| ETIM 2.0 | EC000943 |
| ETIM 3.0 | EC000943 |
| ETIM 4.0 | EC000943 |

### unspsc

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

## Approvals

### Approvals

## Surge protection connector - PT 1X2-12DC-ST - 2856029

### Approvals

---

#### Approvals

UL Listed / GOST / GL

---

#### Ex Approvals

UL Listed / cUL Listed / ATEX / cULus Recognized

---

#### Approvals submitted

---

### Approval details

|                                                                                             |        |
|---------------------------------------------------------------------------------------------|--------|
| UL Listed  |        |
| Nominal current I <sub>N</sub>                                                              | 0.45 A |
| Nominal voltage U <sub>N</sub>                                                              | 12 V   |

|                                                                                          |
|------------------------------------------------------------------------------------------|
| GOST  |
|------------------------------------------------------------------------------------------|

|    |
|----|
| GL |
|----|

### Accessories

#### Accessories

#### Marking

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

---

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



Zack Marker strip, flat, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.1 x 5.2 mm

## Surge protection connector - PT 1X2-12DC-ST - 2856029

### Accessories

---

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



Zack Marker strip, flat, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into flat marker groove, For terminal block width: 5 mm, Lettering field: 5.15 x 5.15 mm

---

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: 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: 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: 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: 5.15 x 5.15 mm

---

## Surge protection connector - PT 1X2-12DC-ST - 2856029

### Accessories

Zack marker strip - ZBN 18:UNBEDRUCKT - 2809128



Zack marker strip, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 18 mm, Lettering field: 18 x 5 mm

---

### Necessary add-on products

Surge protection base element - PT 1X2-BE - 2856113



Base element for protective plug PT with protective circuit for a 2-core floating signal circuit. Mounting on NS 35/7.5 und NS 35/15, housing width: 17.5 mm.

---

Surge protection base element - PT 1X2+F-BE - 2856126



Base element for protective plug PT with protective circuit for a 2-core floating signal circuit. Integrated gas arrester as coarse protection between GND and PE. Mounting on NS 35/7.5 und NS 35/15, housing width: 17.5 mm.

---

### Additional products

Shield connection - SSA 3-6 - 2839295



shield fast connections for conductor diameter 3 - 6 mm. Potential connection cable: 200 mm, black

---

Shield connection - SSA 5-10 - 2839512



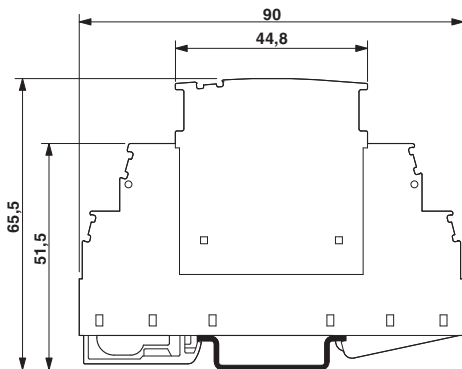
Shield fast connection for conductor diameters 5 - 10 mm. Potential connection cable: 200 mm, black

---

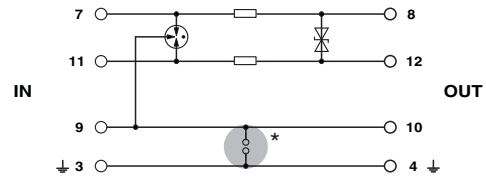
### Drawings

## Surge protection connector - PT 1X2-12DC-ST - 2856029

Dimensioned drawing



Circuit diagram



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

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9