

# D-UFB-PB - Surge protection device



2880642

<https://www.phoenixcontact.com/us/products/2880642>

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Fine surge protection in a 9-pos. D-SUB plug for PROFIBUS-DP applications with a transmission speed of up to 12 Mbps.



## Your advantages

- Space saving with use directly at the interface
- Can be in applications up to 12 Mbps with adapted protective circuit
- Adjustment of the transmission properties with switchable termination resistor

## Commercial data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2880642             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales key                            | CL03                |
| Product key                          | CL3113              |
| Catalog page                         | Page 155 (C-4-2017) |
| GTIN                                 | 4046356048989       |
| Weight per piece (including packing) | 52.8 g              |
| Weight per piece (excluding packing) | 52.8 g              |
| Customs tariff number                | 85363010            |
| Country of origin                    | DE                  |

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## Technical data

### Product properties

|                                |                                             |
|--------------------------------|---------------------------------------------|
| Product type                   | Surge protection for information technology |
| Product family                 | DATATRAB                                    |
| IEC test classification        | C1                                          |
|                                | C3                                          |
|                                | B2                                          |
| VDE requirement class          | C1                                          |
|                                | C3                                          |
|                                | B2                                          |
| Type                           | Connecting plug                             |
| Number of positions            | 4                                           |
| Surge protection fault message | none                                        |
| Pin assignment                 | 3, 5, 6, 8                                  |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Pollution degree     | 2  |

### Connection data

#### D-SUB connection

|                   |                 |
|-------------------|-----------------|
| Connection method | D-SUB connector |
|-------------------|-----------------|

#### PCB connection

|                                       |                                              |
|---------------------------------------|----------------------------------------------|
| Connection method                     | Screw connection                             |
| Stripping length                      | 5 mm                                         |
| Conductor cross section, rigid min.   | 0.14 mm <sup>2</sup>                         |
| Conductor cross section, rigid max.   | 1.5 mm <sup>2</sup>                          |
| Conductor cross section flexible min. | 0.14 mm <sup>2</sup>                         |
| Conductor cross section flexible max. | 1 mm <sup>2</sup>                            |
| Conductor cross section AWG min.      | 26                                           |
| Conductor cross section AWG max.      | 16                                           |
| Connection method                     | Screw connection & D-SUB-9                   |
| Screw thread                          | M2                                           |
| Tightening torque                     | 0.25 Nm                                      |
| Conductor cross section flexible      | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section rigid         | 0.14 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> |
| Conductor cross section AWG           | 26 ... 16                                    |

### Dimensions

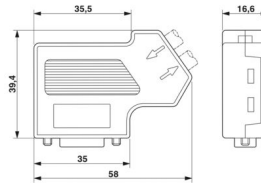
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## Dimensional drawing



|        |         |
|--------|---------|
| Width  | 44.5 mm |
| Height | 58 mm   |
| Depth  | 16.6 mm |

## External dimensions

|                        |        |
|------------------------|--------|
| External diameter min. | 7.6 mm |
| External diameter max. | 8.4 mm |

## Material specifications

|                  |                   |
|------------------|-------------------|
| Color            | silver-colored    |
| Housing material | ABS, metal-plated |

## Mechanical properties

### Mechanical data

|                             |       |
|-----------------------------|-------|
| Open side panel             | No    |
| Insertion/withdrawal cycles | > 200 |

## Protective circuit

|                                                                      |                                  |
|----------------------------------------------------------------------|----------------------------------|
| Direction of action                                                  | Line-Line & Line-Earth Ground    |
| Maximum continuous voltage $U_C$                                     | 5.2 V DC                         |
| Rated current                                                        | 250 mA (25 °C)                   |
| Operating effective current $I_C$ at $U_C$                           | $\leq 100 \mu A$                 |
| Residual current $I_{PE}$                                            | $\leq 100 \mu A$                 |
| Nominal discharge current $I_n$ (8/20) $\mu s$ (line-line)           | 350 A                            |
| Nominal discharge current $I_n$ (8/20) $\mu s$ (line-ground)         | 350 A                            |
| Total discharge current $I_{total}$ (8/20) $\mu s$                   | 350 A                            |
| Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-line)  | 350 A                            |
| Max. discharge current $I_{max}$ (8/20) $\mu s$ maximum (line-earth) | 350 A                            |
| Output voltage limitation at 1 kV/ $\mu s$ (line-line) spike         | $\leq 20 V$                      |
| Output voltage limitation at 1 kV/ $\mu s$ (line-earth) spike        | $\leq 20 V$                      |
| Output voltage limitation at 1 kV/ $\mu s$ (line-line) static        | $\leq 14 V$                      |
| Output voltage limitation at 1 kV/ $\mu s$ (line-earth) static       | $\leq 14 V$                      |
| Output voltage limitation (10/700) $\mu s$ (line-line)               | $\leq 15 V$ ( $U_o=4 kV$ )       |
| Output voltage limitation (10/700) $\mu s$ (line-earth)              | $\leq 15 V$ ( $U_o=4 kV$ )       |
| Residual voltage at $I_n$ (conductor-conductor)                      | $\leq 25 V$                      |
| Residual voltage at $I_n$ (conductor-ground)                         | $\leq 25 V$                      |
|                                                                      | $\leq 25 V$ (C1 - 500 V / 250 A) |

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|                                                             |                                          |
|-------------------------------------------------------------|------------------------------------------|
| Voltage protection level $U_p$ (line-line)                  | $\leq 15 \text{ V}$ (C3 - 25 A)          |
|                                                             | $\leq 15 \text{ V}$ (B2 - 4 kV / 100 A)  |
| Voltage protection level $U_p$ (line-earth)                 | $\leq 25 \text{ V}$ (C1 - 500 V / 250 A) |
|                                                             | $\leq 15 \text{ V}$ (C3 - 25 A)          |
|                                                             | $\leq 15 \text{ V}$ (B2 - 4 kV / 100 A)  |
| Response time $t_A$ (line-line)                             | $\leq 500 \text{ ns}$                    |
| Response time $t_A$ (line-earth)                            | $\leq 500 \text{ ns}$                    |
| Cut-off frequency $f_g$ (3 dB), sym. in 100 $\Omega$ system | typ. 70 MHz                              |
| Inductivity in series                                       | 0.11 $\mu\text{H}$                       |
| Surge protection fault message                              | none                                     |
| Impulse durability (line-line)                              | C1 - 500 V / 250 A                       |
|                                                             | C3 - 2 kV / 25 A                         |
| Impulse durability (line-earth)                             | C1 - 500 V / 250 A                       |
|                                                             | C3 - 2 kV/25 A                           |

## Environmental and real-life conditions

### Ambient conditions

|                                         |                  |
|-----------------------------------------|------------------|
| Degree of protection                    | IP40             |
| Ambient temperature (operation)         | -20 °C ... 75 °C |
| Ambient temperature (storage/transport) | -20 °C ... 75 °C |

## Standards and regulations

|                       |    |
|-----------------------|----|
| VDE requirement class | C1 |
|                       | C3 |
|                       | B2 |

### Air clearances and creepage distances

|                       |                              |
|-----------------------|------------------------------|
| Standards/regulations | IEC 60664-1 / DIN VDE 0110-1 |
|-----------------------|------------------------------|

### Standards Information technology specification

|                          |                 |
|--------------------------|-----------------|
| Standards/regulations    | IEC 61643-21    |
|                          | DIN EN 61643-21 |
|                          | IEC 61643-21    |
|                          | DIN EN 61643-21 |
| Standards/specifications | IEC 61643-21    |

## Mounting

|               |                                         |
|---------------|-----------------------------------------|
| Mounting type | Direct assembly on the device interface |
|---------------|-----------------------------------------|

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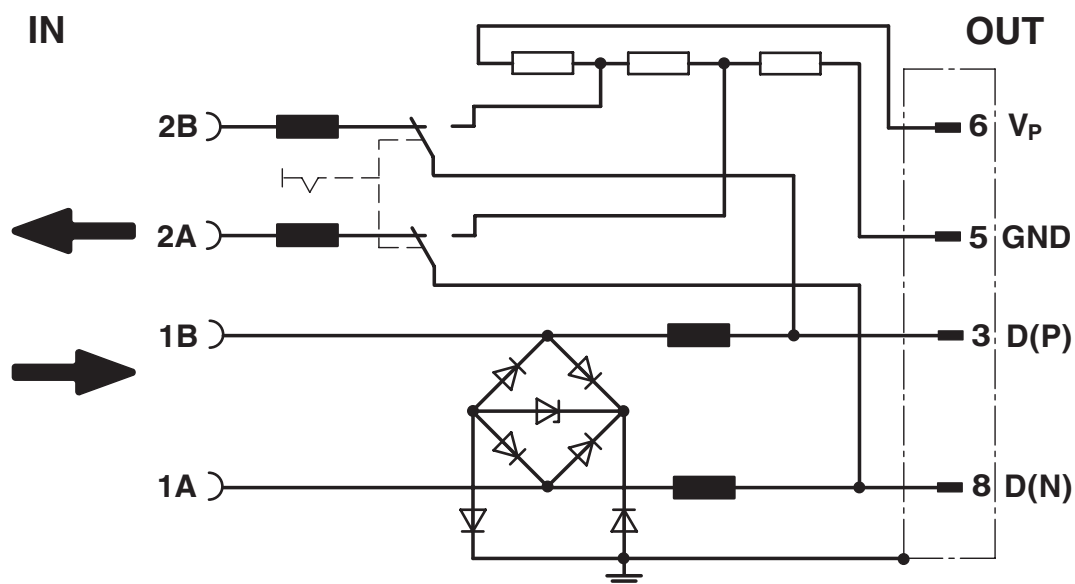
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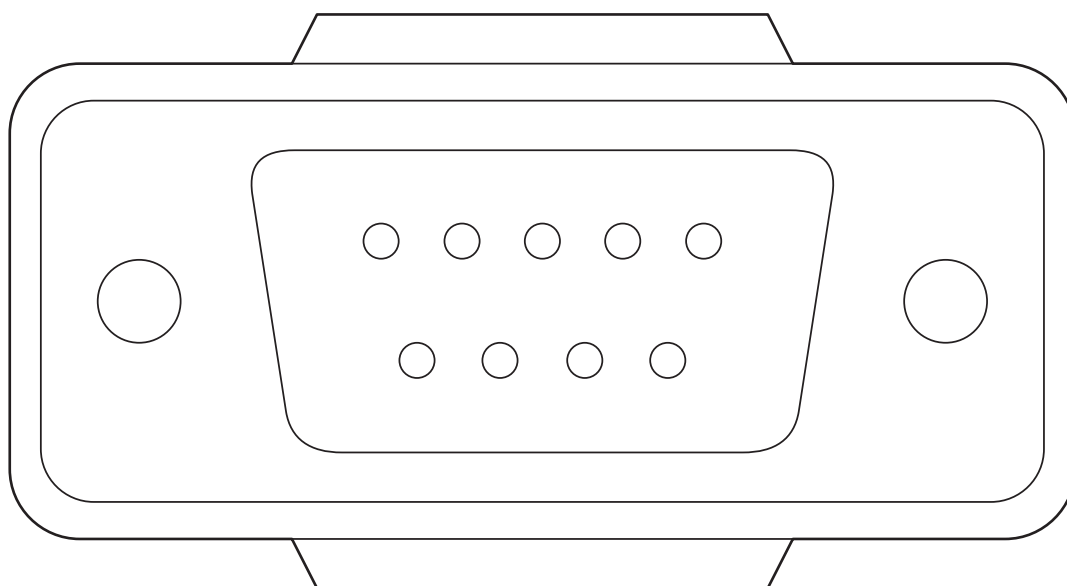


## Drawings

Circuit diagram



Product drawing



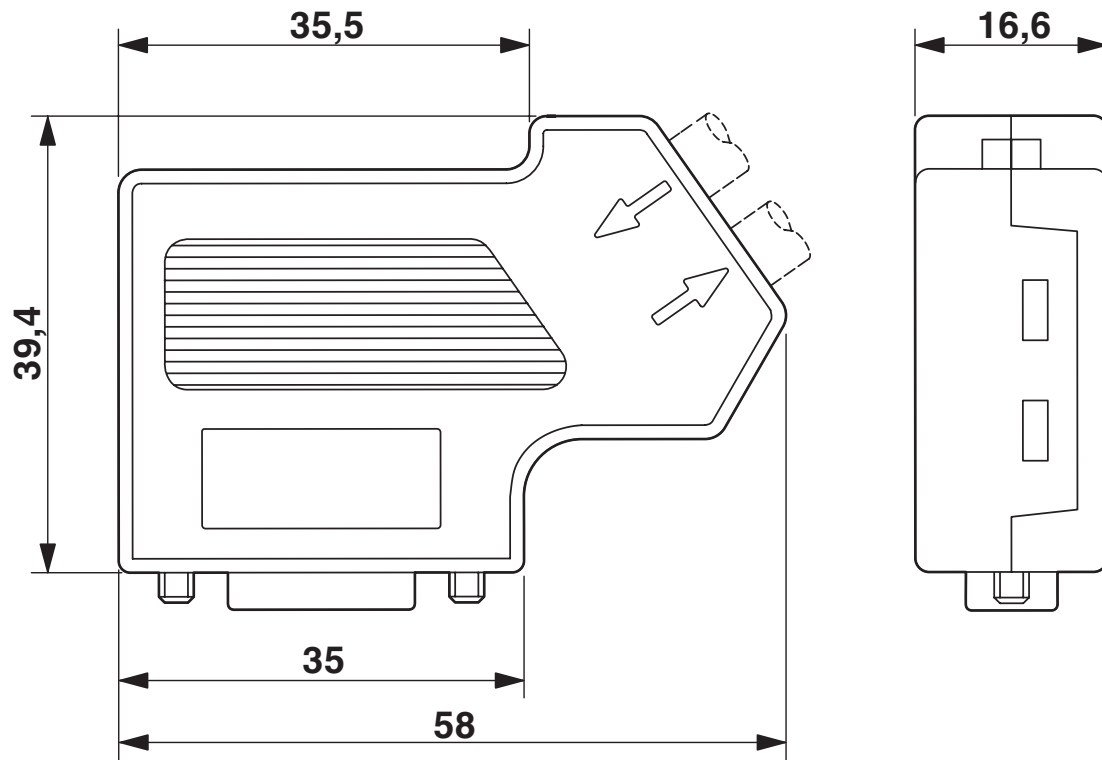
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Dimensional drawing



Dimensional drawing: D-UFB-PB

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27130807 |
| ECLASS-13.0 | 27171503 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC000943 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121600 |
|-------------|----------|

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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                                | 9bc3aad8-885e-4321-8a11-8cd8837f9d1d |

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)