

# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578

<https://www.phoenixcontact.com/pc/products/1416578>

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 documentation. Our general terms of use for downloads are valid.



Device connector rear mounting, PROFINET CAT5 (100 Mbps) CAT5 (100 Mbps), 4-position, Socket, straight, M12-SPEEDCON, coding: D, on free cable end, Rear mounting, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1239136

## Your advantages

- Preassembled with cables in various standard lengths for immediate use
- Customer-specific assemblies and cable lengths can be supplied
- Sealed on the cable side for optimum tightness of seal
- Cable designs for all common networks and fieldbuses
- For high transmission safety: shield connection to the housing with optional EMC nut

## Commercial data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 1416578            |
| Packing unit                         | 1 pc               |
| Minimum order quantity               | 1 pc               |
| Product key                          | ABQDGI             |
| Catalog page                         | Page 240 (PC-2009) |
| GTIN                                 | 4046356479318      |
| Weight per piece (including packing) | 184.7 g            |
| Weight per piece (excluding packing) | 179.5 g            |
| Customs tariff number                | 85444290           |
| Country of origin                    | DE                 |

# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578

<https://www.phoenixcontact.com/pc/products/1416578>

## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Sensor type          | PROFINET                |
| Number of positions  | 4                       |
| No. of cable outlets | 1                       |
| Coding               | D                       |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Interfaces

|                      |                                          |
|----------------------|------------------------------------------|
| Bus system           | PROFINET                                 |
| Signal type/category | PROFINET CAT5 (IEC 11801:2002), 100 Mbps |

### Electrical properties

|                                         |                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------|
| Rated surge voltage                     | 2.5 kV                                                                                       |
| Contact resistance                      | $\leq 3 \text{ m}\Omega$                                                                     |
| Insulation resistance                   | $\geq 100 \text{ M}\Omega$                                                                   |
| Nominal voltage $U_N$                   | 48 V AC                                                                                      |
|                                         | 60 V DC                                                                                      |
| Nominal current $I_N$                   | 4 A (Plug/socket in accordance with IEC 61076-2-101, cable technical data is to be observed) |
| Transmission medium                     | Copper                                                                                       |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002)                                                                        |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Material specifications

|                                        |                      |
|----------------------------------------|----------------------|
| Flammability rating according to UL 94 | V0                   |
| Seal material                          | FKM                  |
| Contact material                       | CuZn                 |
| Contact surface material               | Ni/Au                |
| Contact carrier material               | PA 6.6               |
| Material for screw connection          | Brass, nickel-plated |

### Connector

#### Connection 1

|                   |          |
|-------------------|----------|
| Head design       | Socket   |
| Head cable outlet | straight |

# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578

<https://www.phoenixcontact.com/pc/products/1416578>

|                   |          |
|-------------------|----------|
| Head thread type  | M12      |
| Head locking type | SPEEDCON |
| Coding            | D        |

## Connection 2

|             |                |
|-------------|----------------|
| Head design | free cable end |
|-------------|----------------|

## Cable/line

PROFINET RADOX® railway application CAT5 reinforced [936]

|                                            |                                                                                    |
|--------------------------------------------|------------------------------------------------------------------------------------|
| Dimensional drawing                        |  |
| Cable weight                               | 81 g/m                                                                             |
| Number of positions                        | 4                                                                                  |
| Shielded                                   | yes                                                                                |
| Cable type                                 | PROFINET RADOX® railway application CAT5 reinforced [936]                          |
| Conductor structure                        | 1x4xAWG22/7, SF/TQ                                                                 |
| Signal speed                               | 66 c                                                                               |
| Conductor structure signal line            | 7x 0.25 mm                                                                         |
| AWG signal line                            | 22                                                                                 |
| Conductor cross section                    | 4x 0.34 mm²                                                                        |
| Wire diameter incl. insulation             | 1.95 mm                                                                            |
| External cable diameter                    | 7.25 mm ±0.3 mm                                                                    |
| Outer sheath, material                     | PE-X                                                                               |
| External sheath, color                     | black RAL 9005                                                                     |
| Conductor material                         | silver-plated Cu litz wires                                                        |
| Material wire insulation                   | PE-X                                                                               |
| Single wire, color                         | white-blue, orange-yellow                                                          |
| Thickness, outer sheath                    | ≥ 0.80 mm                                                                          |
| Overall twist                              | Star quad                                                                          |
| Optical shield covering                    | 100 %                                                                              |
| Max. conductor resistance                  | ≤ 54.4 Ω/km                                                                        |
| Coupling resistance                        | 200.00 mΩ/m (f ≤ 30 MHz)                                                           |
| Wave impedance                             | 100 Ω ±5 Ω (f = 100 MHz)                                                           |
| Working capacitance                        | ≤ 65 pF (Line-line)<br>≤ 100 pF (Line-shield)                                      |
| Nominal voltage, cable                     | 300 V AC                                                                           |
| Test voltage                               | 2000 V AC (50 Hz, 5 minutes)                                                       |
| Minimum bending radius, fixed installation | 6 x D                                                                              |

# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578

<https://www.phoenixcontact.com/pc/products/1416578>

|                                               |                                                      |
|-----------------------------------------------|------------------------------------------------------|
| Minimum bending radius, flexible installation | 10 x D                                               |
| Smallest bending radius, fixed installation   | 44 mm                                                |
| Smallest bending radius, movable installation | 73 mm                                                |
| Near end crosstalk attenuation (NEXT)         | 80 dB (with 1 MHz)                                   |
|                                               | 76 dB (at 4 MHz)                                     |
|                                               | 67 dB (at 10 MHz)                                    |
|                                               | 60 dB (at 31.5 MHz)                                  |
|                                               | 56 dB (at 62.5 MHz)                                  |
|                                               | 53 dB (at 100 MHz)                                   |
| Return attenuation (RL)                       | 35 dB (at 4 MHz)                                     |
|                                               | 35 dB (at 10 MHz)                                    |
|                                               | 35 dB (at 31.5 MHz)                                  |
|                                               | 33 dB (at 62.5 MHz)                                  |
|                                               | 33 dB (at 100 MHz)                                   |
| Remote crosstalk attenuation (FEXT)           | 80 dB (with 1 MHz)                                   |
|                                               | 70 dB (at 4 MHz)                                     |
|                                               | 65 dB (at 10 MHz)                                    |
|                                               | 58 dB (at 31.5 MHz)                                  |
|                                               | 59 dB (at 62.5 MHz)                                  |
|                                               | 67 dB (at 100 MHz)                                   |
| Shield attenuation                            | 2 dB (with 1 MHz)                                    |
|                                               | 4 dB (at 4 MHz)                                      |
|                                               | 6.5 dB (at 10 MHz)                                   |
|                                               | 10.5 dB (at 31.5 MHz)                                |
|                                               | 14 dB (at 62.5 MHz)                                  |
|                                               | 18 dB (at 100 MHz)                                   |
|                                               | 40.00 dB (30 MHz ≤ f ≤ 100 MHz)                      |
| Halogen-free                                  | in accordance with EN 50267-2-1                      |
| Flame resistance                              | EN 60332-1-2                                         |
|                                               | EN 50266                                             |
|                                               | EN 60332-3-25                                        |
|                                               | NF C32-070, 2.1                                      |
|                                               | NF C32-070, 2.2                                      |
|                                               | UL 1685, 12 (FT4)                                    |
|                                               | in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01) |
| Fume corrosiveness                            | EN 50267-2-2                                         |
| Fume toxicity                                 | BS 6853 B.1                                          |
|                                               | EN 50305, 9.2                                        |
| Concentration of fumes                        | BS 6853 D.8.7                                        |
|                                               | EN 61034-2                                           |
|                                               | UL 1685, 12 (FT4)                                    |
| Resistance to oil                             | according to IRM 902, 72 h at 100 °C                 |
| Fire protection in rail vehicles              | BS 6853 (Category Ia, Ib, II)                        |
|                                               | GM/RT 2130 (Category Ia, Ib, II)                     |

# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578

<https://www.phoenixcontact.com/pc/products/1416578>

|                                 |                                                            |
|---------------------------------|------------------------------------------------------------|
|                                 | EN 45545 (Risk level HL1 - HL3)                            |
|                                 | DIN 5510 (Fire protection level 1, 2, 3, 4)                |
|                                 | NF F16-101 (Category A1, A2, B)                            |
|                                 | NF F16-101 (Class C/F0)                                    |
|                                 | NFPA 130                                                   |
|                                 | UNI CEI 11170 (Risk level LR1 - LR4)                       |
| Other resistance                | Resistance to fuels (according to IRM 903, 168 h at 70 °C) |
| Ambient temperature (operation) | -50 °C ... 90 °C (cable, fixed installation)               |
|                                 | -40 °C ... 90 °C (Cable, flexible installation)            |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Degree of protection            | IP65/IP67                                       |
| Ambient temperature (operation) | -25 °C ... 85 °C (Plug / socket)                |
|                                 | -40 °C ... 85 °C (without mechanical actuation) |

## Standards and regulations

### M12

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-101 |

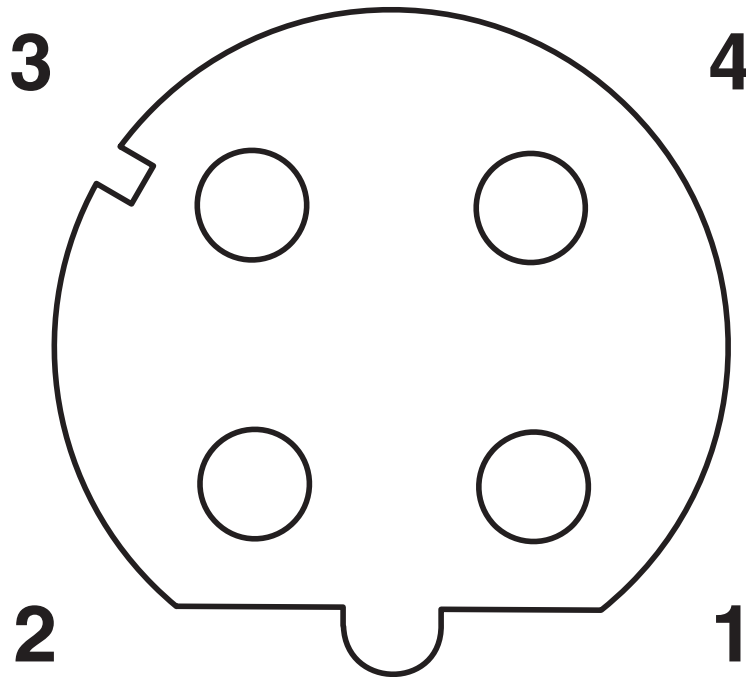
# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting

1416578

<https://www.phoenixcontact.com/pc/products/1416578>

## Drawings

Schematic diagram



Connector pin assignment

# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578

<https://www.phoenixcontact.com/pc/products/1416578>

## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1416578>



**EAC**

Approval ID: 19060508

# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578

<https://www.phoenixcontact.com/pc/products/1416578>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060308 |
| ECLASS-12.0 | 27060308 |
| ECLASS-13.0 | 27060308 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001262 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|



# VS-M12FSBP-OE-936-2,0 - Device connector rear mounting



1416578  
<https://www.phoenixcontact.com/pc/products/1416578>

## Environmental product compliance

|                                         |                                                                                                                                                                                                                                   |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EU RoHS                                 |                                                                                                                                                                                                                                   |
| Fulfills EU RoHS substance requirements | Yes                                                                                                                                                                                                                               |
| Exemption                               | 6(c)                                                                                                                                                                                                                              |
| 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                                    | 6a80c294-e3f2-4caf-8228-9558858ebc93                                                                                                                                                                                              |

Phoenix Contact 2024 © - all rights reserved  
<https://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstraße 8  
D-32825 Blomberg  
+49 (0) 5235-3 00  
[info@phoenixcontact.com](mailto:info@phoenixcontact.com)