


# VS-M12MSD/2,0-93X/M12MSDOD

Order No.: 1454231



<http://eshop.phoenixcontact.de/phoenix/treeViewClick.do?UID=1454231>

Sensor/Actuator cable, 4-position, Radox GKW S halogen-free, Black-gray RAL 7021, shielded, Plug, straightLink:M12, D - data, on Plug, straight M12, D - data, Cable length: 2 m

| Commercial data          |  |
|--------------------------|--|
| GTIN (EAN)               | <br>4 046356 568845 |
| Note                     | Made-to-order  |
| sales group              | D117   |
| Pack                     | 1 pcs.   |
| Customs tariff           | 85444210   |
| Catalog page information | Page 221 (PC-2011)   |

#### Product notes

WEEE/RoHS-compliant since:  
03/04/2010



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| Technical data        |      |
|-----------------------|------|
| <b>General data</b>   |      |
| Rated current at 40°C | 4 A  |
| Rated voltage         | 60 V |
| Number of positions   | 4    |
| Length of cable       | 2 m  |

|                                 |   |
|---------------------------------|---|
| Ambient temperature (operation) | -40 °C ... 105 °C   |
|                                 | -40 °C ... 85 °C (On sudden changes in temperature (according to IEC 60512-11-4)) |

### General characteristics

|                             |                               |
|-----------------------------|-------------------------------|
| Standards/regulations       | M12 connector IEC 61076-2-101 |
| Coding                      | D - data                      |
| Pollution degree            | 3                             |
| Degree of protection        | IP65/IP68/IP69K               |
| Insertion/withdrawal cycles | ≥ 100                         |
| Torque                      | 0.4 Nm (M12 connector)        |
| Contact material            | CuSn                          |
| Contact surface material    | Ni/Au                         |
| Contact carrier material    | PP                            |
| Material of grip body       | PP                            |
| Material, knurls            | High-grade steel              |
| Sealing material            | FPM                           |

### Conductor data

|   |   |
|---|---|
| Cable type                              | Ethernet                                      |
| Cable type (abbreviation)               | 936   |
| Cable structure                         | 1x4xAWG22/7; SF/Q                             |
| Conductor cross section                 | 0.34 mm <sup>2</sup>                          |
| AWG signal line                         | 22  |
| Conductor structure signal line         | 7x 0.25 mm                                    |
| Core diameter including insulation      | 1.95 mm                                       |
| Thickness, insulation                   | min. 0.8 mm (Outer cable sheath)              |
| External cable diameter                 | 7.25 mm                                       |
| Wire colors                             | white, orange, blue, yellow                   |
| External sheath, color                  | Black RAL 9005                                |
| Conductor resistance                    | ≤ 54.4 Ω/km (at 20°C)                         |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)  |
| Working capacitance                     | ≤ 65 pF (core-core)<br>≤ 100 pF (core-shield) |
| Wave impedance                          | 100 Ω ±5% (f = 100 MHz)                       |
| Shield attenuation                      | 40 dB (30 MHz ≤ f ≤ 100 MHz)                  |
| Coupling resistance                     | 200.00 mΩ/m (f ≤ 30 MHz)                      |

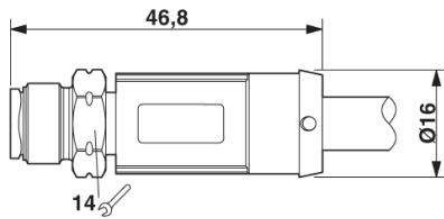
|   |  |
|---|--|
| Nominal voltage, conductor                  | 300 V  |
| Test voltage, conductor                     | 1500 V   |
| Overall twist                               | 4 wires, twisted   |
| Shielding                                   | Plastic-coated aluminum foil, tinned copper braided shield   |
| Optical shield covering                     | 100 %  |
| Outer sheath, material                      | Radox GWK S  |
| Material conductor insulation               | Radox Com  |
| Conductor material                          | silver-plated Cu litz wires  |
| Cable weight                                | 67 kg/km   |
| Smallest bending radius, fixed installation | > 43.5 mm  |
| Ambient temperature (operation)             | -40 °C ... 90 °C (cable, fixed installation)<br>-25 °C ... 90 °C (cable, flexible installation)  |
| Special properties                          | Fire protection in rail vehicles as per DIN 5510-2 Fire protection level 1, 2, 3, 4<br>Fire protection in rail vehicles as per BS 6853 Cables inside and outside the vehicle, Cat. Ia, Ib, II<br>manufactured as per EN 50288-2-2 multi-strand metallic data and control cables<br>Fire protection in rail vehicles according to CEI 11170 |
| Resistance to oil                           | as per EN 50306-3 section 4.8  |
| Other resistance                            | Resistance to acids and alkalis as per EN 50306-3 section 4.10<br>Resistance to fuels as per EN 50306-3 section 4.9  |

### Accessories

| Item         | Designation     | Description   |
|--------------|-----------------|---|
| <b>Tools</b> |                 |   |
| 1212513      | SAC BIT M12-W14 | SAC nut, for assembling M12 connectors with hexagonal high-grade steel knurl, with 4 mm hexagonal drive |
| 1208429      | TSD 04 SAC      | Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors            |

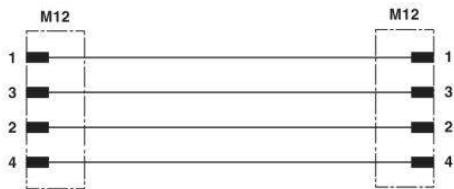
## Diagrams/Drawings

### Dimensioned drawing



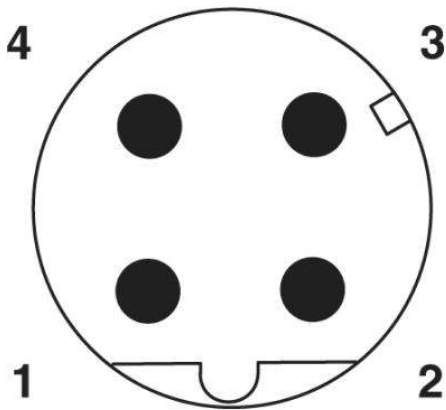
M12 x 1 male connector, straight

### Circuit diagram



Contact assignment of the M12 plug

### Schematic diagram



Pin assignment M12 male connector, 4-pos., D-coded, male side

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