


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

Order No.: 1454202



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

Commercial data	
GTIN (EAN)	
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) ≤ 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)

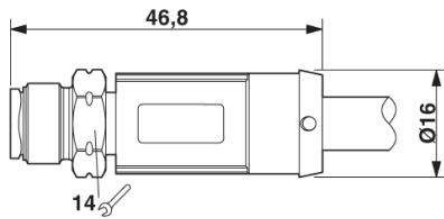
Nominal voltage, conductor	300 V
Test voltage, conductor	1500 V
Overall twist	4 wires, twisted
Shielding	Plastic-coated aluminum foil, tinned copper braided shield
Optical shield covering	100 %
Outer sheath, material	Radox GWK S
Material conductor insulation	Radox Com
Conductor material	silver-plated 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) -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 Fire protection in rail vehicles as per BS 6853 Cables inside and outside the vehicle, Cat. Ia, Ib, II manufactured as per EN 50288-2-2 multi-strand metallic data and control cables 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 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

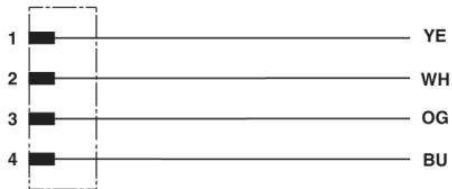
## Diagrams/Drawings

### Dimensioned drawing



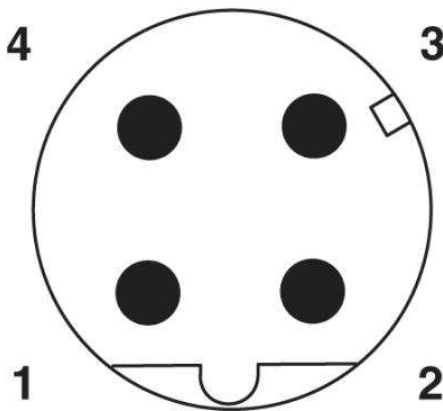
M12 x 1 male connector, straight

### Circuit diagram



Contact assignment of the M12 plug

### Schematic diagram



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

**Address**

PHOENIX CONTACT Inc., USA  
586 Fulling Mill Road  
Middletown, PA 17057, USA  
Phone (800) 888-7388  
Fax (717) 944-1625  
<http://www.phoenixcon.com>



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