

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



1416578

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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)	179.1 g
Weight per piece (excluding packing)	179.5 g
Customs tariff number	85444290
Country of origin	DE

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## 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	$\geq 100$
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### 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

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Head thread type	M12
Head locking type	SPEEDCON
Coding	D

## Connection 2

Head design	free cable end
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## Cable/line

PROFINET RADOX<sup>®</sup> railway application CAT5 reinforced [936]

Dimensional drawing	
Cable weight	81 g/m
Number of positions	4
Shielded	yes
Cable type	PROFINET RADOX <sup>®</sup> 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 mm <sup>2</sup>
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	≥ 0.8 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) ≤ 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

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Minimum bending radius, flexible installation	10 x D
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 loss (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 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)
	EN 45545 (Risk level HL1 - HL3)
	DIN 5510 (Fire protection level 1, 2, 3, 4)

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	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

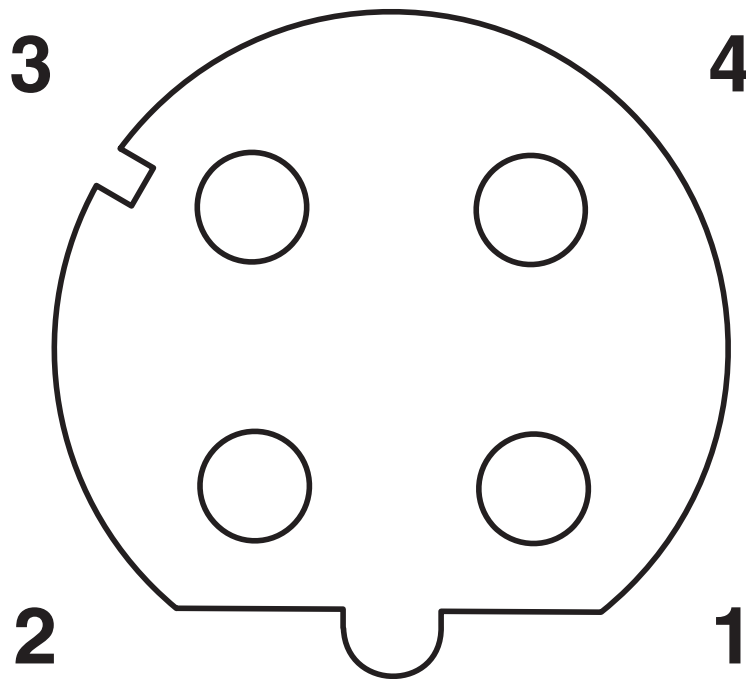
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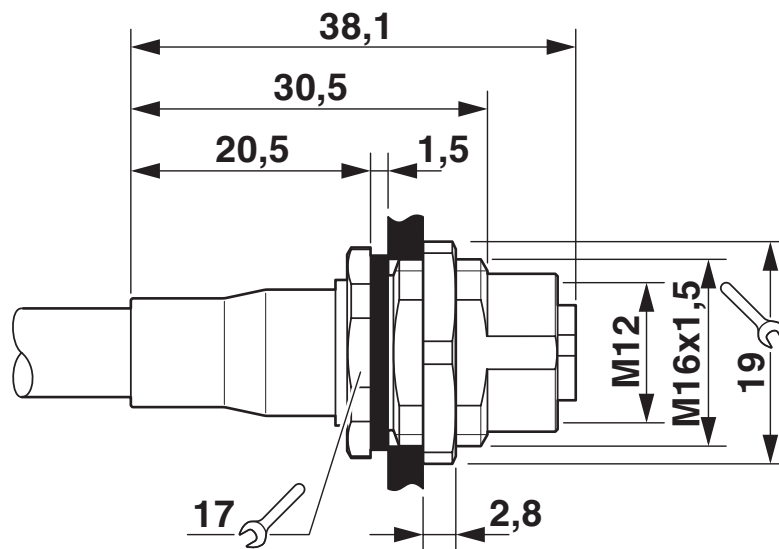
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## Drawings

Schematic diagram



Dimensional drawing



Dimensional drawing

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## Approvals

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**EAC**

Approval ID: 19060508

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## Classifications

### ECLASS

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

### ETIM

ETIM 8.0	EC002599
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### UNSPSC

UNSPSC 21.0	26121600
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## Environmental product compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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