

# VS-M12FSBP-M12MS-936-LI/1,14 - Device connector rear mounting



1403162

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Device connector rear mounting, cable length: 1.14 m, number of positions: 4, 100 Mbps, CAT5, connection method: Bus line, PROFINET, 1x4xAWG22/7, SF/TQ, black RAL 9005

## Commercial data

Item number	1403162
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	AB25
Product key	ABQSAH
GTIN	4046356641760
Weight per piece (including packing)	141.3 g
Weight per piece (excluding packing)	124.931 g
Customs tariff number	85444290
Country of origin	PL

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## Technical data

### Product properties

Product type	Data cable preassembled
Application	Data
	On the device side
Number of positions	4
Thread type	M12

### Insulation characteristics

Overvoltage category	II
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### Interfaces

Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
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### Electrical properties

Nominal voltage $U_N$	48 V AC
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 speed	100 Mbps

### Connection data

#### Connection technology

Connection method	Bus line
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#### Conductor connection

Contact connection type	Socket
Connection method	Bus line
Tightening torque	0.4 Nm (M12 connector)

### Connector

#### Connection 1

Type	Plug straight M12
Locking type	SPEEDCON
Coding type	D (Data)
Handle color	black
Material	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carrier)
	TPU, hardly inflammable, self-extinguishing (Grip body)
	Zinc die-cast, nickel-plated (Screw connection)

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Insertion/withdrawal cycles	≥ 100
Insulation resistance	≥ 100 MΩ
Tightening torque	0.4 Nm
Degree of protection	IP67
Ambient temperature (operation)	-25 °C ... 90 °C


## Connection 2

Type	Flush-type female connector straight M12
Coding type	D (Data)
Material	CuZn (Contact) Ni/Au (Contact surface) PA 6.6 (Contact carrier) FKM (O-ring) Zinc die-cast, nickel-plated (Housing)
Insertion/withdrawal cycles	≥ 100
Degree of protection	IP67
Ambient temperature (operation)	-40 °C ... 85 °C

## Cable/line

Cable length	1.14 m
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## 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 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

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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)
	≤ 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
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

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Flame resistance	IEC 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)
	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)

## Standards and regulations

Standard designation	M12 circular connector
Standards/specifications	according to IEC 61076-2-101

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## Drawings

Schematic diagram



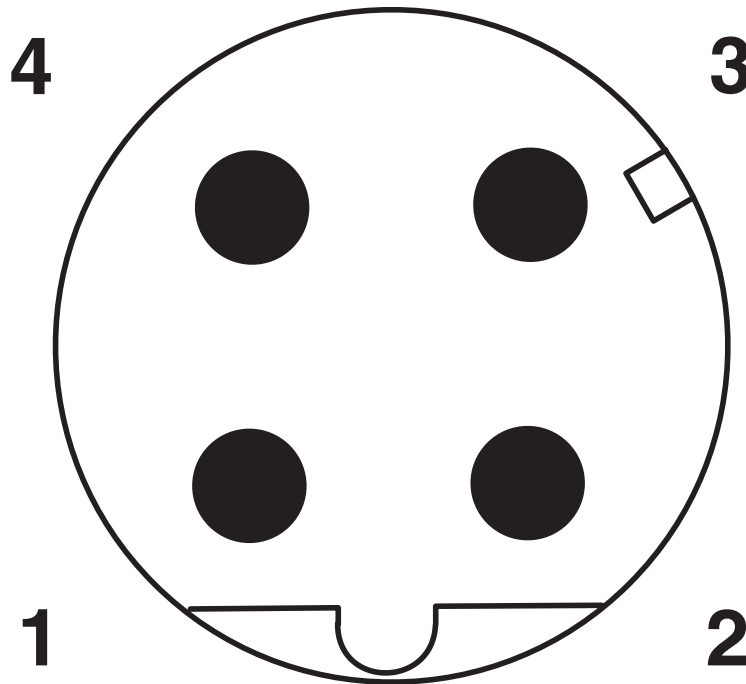
Pin assignment M12 socket, 4-pos., D-coded, female side

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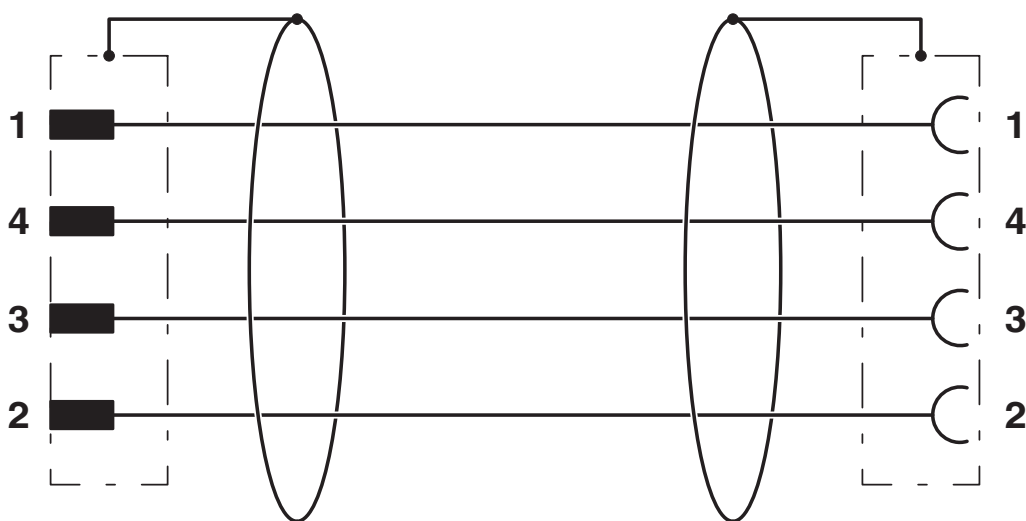
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Schematic diagram



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

Circuit diagram



Contact assignment of the M12 plugs

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## Approvals

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**EAC**

Approval ID: 19060508

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## Classifications

### ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

### ETIM

ETIM 10.0	EC001855
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### UNSPSC

UNSPSC 21.0	39121400
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## 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	855ed5df-1099-4049-9c85-62dfd889a631

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