

# VS-FSBPXS-OE-94F/5,0 - Device connector rear mounting

1424164

<https://www.phoenixcontact.com/us/products/1424164>

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Device connector rear mounting, Ethernet CAT6<sub>A</sub> (10 Gbps) CAT6<sub>A</sub>, 8-position, Socket, straight, M12-SPEEDCON, X-coding, on free cable end, Bus line, cable length: 5 m, For railway applications, this item is expected to be lead-free from Q2 2026 in accordance with RoHS II without exception 6c (Pb < 0.1%), a lead-free alternative is possible on request in advance

## 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	1424164
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	AB25
Product key	ABQDGI
GTIN	4046356692649
Weight per piece (including packing)	270.5 g
Weight per piece (excluding packing)	246.51 g
Customs tariff number	85444290
Country of origin	DE

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## Technical data

### Notes

Notes on operation	The electrical and mechanical data specified assume that the connector pair is correctly locked and mounted. If the connector is unlocked and if there is a danger of contamination, the connector must be sealed using a protective cap > IP54. Influences arising from litz wires, cables or PCB assembly must also be taken into consideration.
Order information:	Lock nut is included in the scope of delivery
Note on the contact	Contact connection method: Crimp connection

### Safety note

Safety note	WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.
	<ul style="list-style-type: none"> <li>• WARNING: Commission properly functioning products only. The products must be regularly inspected for damage. Decommission defective products immediately. Replace damaged products. Repairs are not possible.</li> </ul>
	<ul style="list-style-type: none"> <li>• WARNING: Only electrically qualified personnel may install and operate the product. They must observe the following safety notes. The qualified personnel must be familiar with the basics of electrical engineering. They must be able to recognize and prevent danger. The relevant symbol on the packaging indicates that only personnel familiar with electrical engineering are allowed to install and operate the product.</li> </ul>
	<ul style="list-style-type: none"> <li>• The products are suitable for applications in plant, controller, and electrical device engineering.</li> </ul>
	<ul style="list-style-type: none"> <li>• When operating the connectors in outdoor applications, they must be separately protected against environmental influences.</li> </ul>
	<ul style="list-style-type: none"> <li>• Assembled products may not be manipulated or improperly opened.</li> </ul>
	<ul style="list-style-type: none"> <li>• Only use mating connectors that are specified in the technical data of the standards listed (e.g. the ones listed in the product accessories online at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a>).</li> </ul>
	<ul style="list-style-type: none"> <li>• When using the product in direct connection with third-party manufacturers, the user is responsible.</li> </ul>
	<ul style="list-style-type: none"> <li>• For operating voltages &gt; 50 V AC, conductive connector housings must be grounded</li> </ul>
	<ul style="list-style-type: none"> <li>• Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.</li> </ul>
<ul style="list-style-type: none"> <li>• Observe the corresponding technical data. You will find information: <ul style="list-style-type: none"> <li>o On the product</li> <li>o On the packing label</li> <li>o In the supplied documentation</li> <li>o Online at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a> under the product</li> </ul> </li> </ul>	
<ul style="list-style-type: none"> <li>• Only use tools recommended by Phoenix Contact</li> </ul>	
<ul style="list-style-type: none"> <li>• Use a protective cap to protect connectors that are not in use. The suitable accessories are available online in the accessory section of the product at <a href="https://www.phoenixcontact.com/products">phoenixcontact.com/products</a></li> </ul>	

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	<ul style="list-style-type: none"><li>• Ensure that the protective or functional ground has been properly connected.</li><li>• VDE 0100/1.97 § 411.1.3.2 and DIN EN 60 204/11.98 § 14.1.3 are applicable when combining several circuits in a cable and/or connector</li><li>• The connector warms up in normal operation. Depending on the ambient conditions, the surface of the connector can continue to warm up. In this case, the user is responsible for posting warnings (e.g. DIN EN ISO 13732-1:2008-12).</li></ul>
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## Product properties

Product type	Data cable preassembled
Application	Railway applications
	On the device side
Number of positions	8
No. of cable outlets	1
Coding	X
Thread type	M12

## Insulation characteristics

Overvoltage category	III
Degree of pollution	3

## Interfaces

Bus system	Ethernet
Signal type/category	Ethernet CAT6 <sub>A</sub> , 10 Gbps

## Signaling

Status display	no
Status display present	no

## Electrical properties

Rated surge voltage	0.8 kV
Contact resistance	≤ 3 mΩ
Insulation resistance	≥ 100 MΩ
Nominal voltage U <sub>N</sub>	50 V AC
	60 V DC
Nominal current I <sub>N</sub>	0.5 A (Plug/socket in accordance with IEC 61076-2-101, cable technical data is to be observed)
Transmission medium	Copper
Transmission speed	10 Gbps
Transmission characteristics (category)	CAT6 <sub>A</sub>

## Mechanical properties

### Mechanical data

Insertion/withdrawal cycles	≥ 100
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## Material specifications

Material Housing	GD-Zn
Material Housing surface	Ni
Material Insulating body	PPA
Material Contact	CuZn
Material Contact surface	Au
Material Seal	FKM
Flammability rating according to UL 94	V0
Seal material	FKM

## Connection data

### Connection technology

Connection method	Bus line
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### Conductor connection

Contact connection type	Socket
Connection method	Bus line
Tightening torque	2 Nm ... 3 Nm (Installation-side)

## Connector

### Connection 1

Head design	Socket
Head cable outlet	straight
Head thread type	M12
Head locking type	SPEEDCON
Coding	X


### Connection 2

Head design	free cable end
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## Cable/line

Cable length	5 m
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### Ethernet 10 Gbit [94F]

Dimensional drawing	
UL AWM Style	21238 (80 °C / 600 V)
Number of positions	8

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Shielded	yes
Cable type	Ethernet 10 Gbit [94F]
Conductor structure	4x2xAWG26/7; S/FTP
AWG signal line	26
Conductor cross-section	4x 2x 0.14 mm <sup>2</sup>
Wire diameter incl. insulation	1 mm ±0.05 mm
External cable diameter	6.40 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	water blue RAL 5021
Conductor material	Bare Cu litz wires
Material wire insulation	Foamed PE
Single wire, color	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Twisted pairs	2 cores to the pair
Overall twist	4 pairs for core
Optical shield covering	70 %
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 290.00 Ω/km
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
Nominal voltage, cable	≤ 100 V
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000.00 V (50 Hz, 1 min.)
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	8 x D
Smallest bending radius, fixed installation	26 mm
Smallest bending radius, movable installation	51 mm
Halogen-free	according to IEC 60754-1
Flame resistance	according to IEC 60332-1-2
	in accordance with UN ECE-R 118.03
	according to CSA C 22.2 No. 210-FT1
Resistance to oil	in accordance with DIN EN 60811-404
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-20 °C ... 80 °C (Cable, flexible installation)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65
	IP67
Ambient temperature (operation) (male connector/female connector)	-25 °C ... 85 °C (Plug / socket)
	-40 °C ... 85 °C (without mechanical actuation)
UL Type Rating	Type 4 (indoor use only)

## Standards and regulations

Standard designation	M12 circular connector
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Standards/specifications	according to IEC 61076-2-109
Standard designation	Shock, vibration
Standards/specifications	according to EN 50155
Standard designation	Shock, vibration
Standards/specifications	according to EN 61373:2011

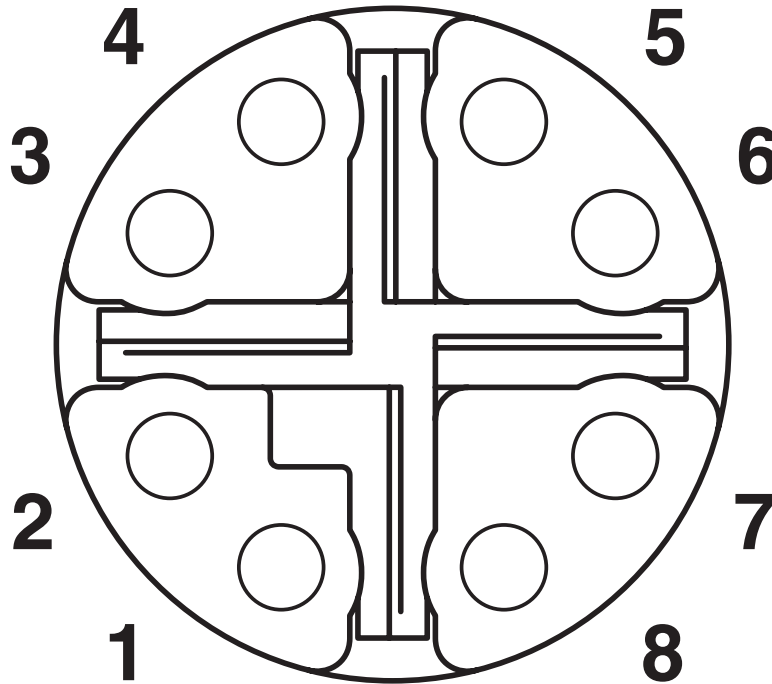
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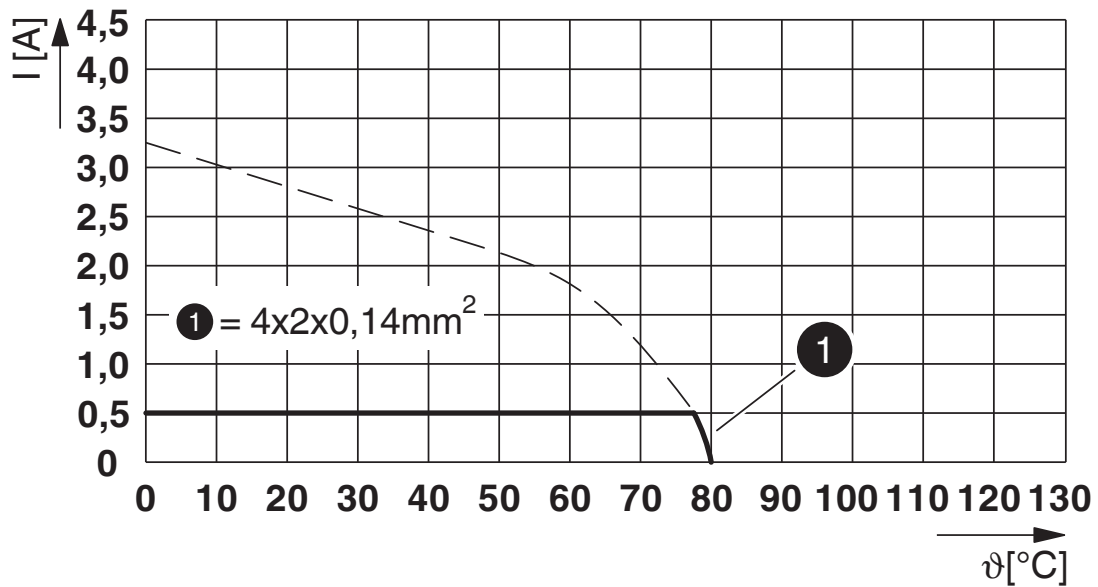
## Drawings

Schematic diagram



M12 socket pin assignment, 8-pos, view of socket side

Diagram



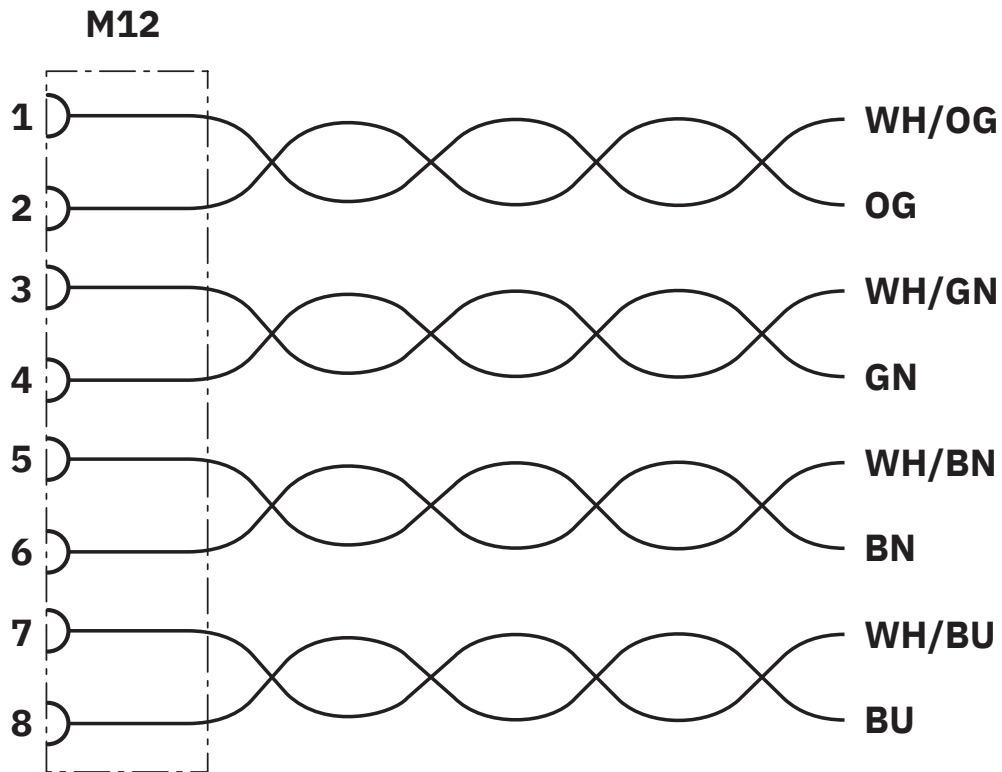
I = current strength, T = ambient temperature

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## Circuit diagram



Contact assignment of the M12 socket

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1424164>

 <b>cUL Recognized</b> Approval ID: E335024-20120308				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	60 V	0.5 A	-	-

 <b>UL Recognized</b> Approval ID: E335024-20120308				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	60 V	0.5 A	-	-

 <b>EAC</b> Approval ID: 19060508	
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## Classifications

### ECLASS

ECLASS-13.0	27440103
ECLASS-15.0	27440103

### ETIM

ETIM 10.0	EC003570
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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	73df6054-0ece-446c-afb6-0ea914931fcb

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)