

VS-M12FSEC-OE-93E-LI/5,0 - Device connector front mounting



1404245

<https://www.phoenixcontact.com/us/products/1404245>

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Device connector front mounting, Ethernet CAT5 (100 Mbps), Ethernet, 4-position, PUR, water blue RAL 5021, shielded, Socket, straight, M12-SPEEDCON, coding: D, on free cable end, Front mounting, Cable lug connection, cable length: 5 m, Ethernet flexible CAT5, 2-pair, Alternative product in accordance with RoHS II without Exemption 6c (Pb < 0.1 %) item no.: 1260716

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 | 1404245 |
| Packing unit | 1 pc |
| Minimum order quantity | 50 pc |
| Product key | ABQDEI |
| GTIN | 4046356681759 |
| Weight per piece (including packing) | 227.7 g |
| Weight per piece (excluding packing) | 220 g |
| Country of origin | DE |

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Technical data

Notes

| | |
|---------|--|
| General | 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. |
| General | Lock nut is included in the scope of delivery |

Safety note

| | |
|-------------|--|
| Safety note | <p>WARNING: The connectors may not be plugged in or disconnected under load. Ignoring the warning or improper use may damage persons and/or property.</p> <ul style="list-style-type: none">• 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.• 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.• The products are suitable for applications in plant, controller, and electrical device engineering.• When operating the connectors in outdoor applications, they must be separately protected against environmental influences.• Assembled products may not be manipulated or improperly opened.• 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 phoenixcontact.com/products).• When using the product in direct connection with third-party manufacturers, the user is responsible.• For operating voltages > 50 V AC, conductive connector housings must be grounded• Ensure that when laying the cable, the tensile load on the connectors does not exceed the upper limit specified in the standards.• Observe the corresponding technical data. You will find information:<ul style="list-style-type: none">o On the producto On the packing labelo In the supplied documentationo Online at phoenixcontact.com/products under the product• Only use tools recommended by Phoenix Contact• Use a protective cap to protect connectors that are not in use. The suitable accessories are available online in the accessory |
|-------------|--|

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section of the product at [phoenixcontact.com/products](https://www.phoenixcontact.com/products)

- Ensure that the protective or functional ground has been properly connected.

- 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

- 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).

Product properties

| | |
|----------------------|-------------------------|
| Product type | Data cable preassembled |
| Sensor type | Ethernet |
| Number of positions | 4 |
| No. of cable outlets | 1 |
| Shielded | yes |
| Thread type | M12 |

Insulation characteristics

| | |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution | 3 |

Interfaces

| | |
|----------------------|--|
| Bus system | Ethernet |
| Signal type/category | Ethernet CAT5 (IEC 11801:2002), 100 Mbps |
| | Ethernet |

Electrical properties

| | |
|---|--|
| 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 | ≥ 100 |
|-----------------------------|------------|

Material specifications

| | |
|--|------|
| Flammability rating according to UL 94 | V0 |
| Contact material | CuZn |

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| | |
|--------------------------|--------|
| Contact surface material | Ni/Au |
| Contact carrier material | PA 6.6 |
| Outer sheath, material | PUR |

Connection data

Connection technology

| | |
|-------------------|----------------------|
| Connection method | Cable lug connection |
|-------------------|----------------------|

Conductor connection

| | |
|-------------------------|----------------------|
| Contact connection type | Socket |
| Connection method | Cable lug connection |

Connector

Connection 1

| | |
|-------------------|----------|
| Head design | Socket |
| Head cable outlet | straight |
| Head thread type | M12 |
| Head locking type | SPEEDCON |
| Coding | D |


Connection 2

| | |
|-------------|----------------|
| Head design | free cable end |
|-------------|----------------|

Cable/line

| | |
|--------------|-----|
| Cable length | 5 m |
|--------------|-----|

Ethernet flexible CAT5, 2-pair [93E]

| | |
|------------------------------|--|
| Dimensional drawing |  |
| Cable weight | 42 kg/km |
| UL AWM Style | 20963 (80°C/30 V) |
| Wiring standards/regulations | Electrical requirements EN 50288-2-2 |
| Number of positions | 4 |
| Shielded | yes |
| Cable type | Ethernet flexible CAT5, 2-pair [93E] |
| Conductor structure | 2x2xAWG26/7, SF/UTP |
| Signal runtime | 5.3 ns/m |

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| | |
|--|---|
| Conductor structure signal line | 7x 0.16 mm |
| AWG signal line | 26 |
| Conductor cross section | 2x 2x 0.14 mm ² |
| Wire diameter incl. insulation | 0.98 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/orange-orange, white/green-green |
| Thickness, outer sheath | 1.20 mm |
| Twisted pairs | 2 cores to the pair |
| Overall twist | Two pairs with two fillers to the core |
| Optical shield covering | 70 % |
| Insulation resistance | ≥ 500 MΩ*km |
| Coupling resistance | ≤ 100.00 mΩ/m (at 10 MHz) |
| Loop resistance | ≤ 290.00 Ω/km |
| Wave impedance | 100 Ω ±5 Ω (at 100 MHz) |
| Cable capacity | approx. 45 nF/km (at 1 kHz) |
| Nominal voltage, cable | ≤ 100 V (Peak value, not for high-power applications) |
| Test voltage Core/Core | 700 V (50 Hz, 1 min.) |
| Test voltage Core/Shield | 700.00 V (50 Hz, 1 min.) |
| Current carrying capacity of cable | 2.00 A (according to DIN VDE 0891-1) |
| 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 | 52 mm |
| Tensile strength | ≤ 80 N |
| Near end crosstalk attenuation (NEXT) | 65.3 dB (with 1 MHz) |
| | 56.3 dB (at 4 MHz) |
| | 50.3 dB (at 10 MHz) |
| | 47.2 dB (at 16 MHz) |
| | 45.8 dB (at 20 MHz) |
| | 42.9 dB (at 31.25 MHz) |
| | 38.4 dB (at 62.5 MHz) |
| | 35.3 dB (at 100 MHz) |
| Power-summated near end crosstalk attenuation (PSNEXT) | 62.3 dB (with 1 MHz) |
| | 53.3 dB (at 4 MHz) |
| | 47.3 dB (at 10 MHz) |
| | 44.2 dB (at 16 MHz) |
| | 42.8 dB (at 20 MHz) |
| | 39.9 dB (at 31.25 MHz) |

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| | |
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| Return attenuation (RL) | 35.4 dB (at 62.5 MHz) |
| | 32.3 dB (at 100 MHz) |
| | 23 dB (at 4 MHz) |
| | 24.1 dB (at 8 MHz) |
| | 25 dB (at 10 MHz) |
| | 25 dB (at 16 MHz) |
| | 25 dB (at 20 MHz) |
| | 23.6 dB (at 31.25 MHz) |
| | 21.5 dB (at 62.5 MHz) |
| Shield attenuation | 20.1 dB (at 100 MHz) |
| | 3.2 dB (with 1 MHz) |
| | 6 dB (at 4 MHz) |
| | 9.5 dB (at 10 MHz) |
| | 12.1 dB (at 16 MHz) |
| | 13.6 dB (at 20 MHz) |
| | 17.1 dB (at 31.25 MHz) |
| | 24.8 dB (at 62.5 MHz) |
| | 32 dB (at 100 MHz) |
| Halogen-free | according to IEC 60754-1 |
| Flame resistance | according to IEC 60332-1-2 |
| | in acc. to UL VW1 |
| | in accordance with UN ECE-R 118.03 |
| Resistance to oil | in accordance with EN 60811-2-1 |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |
| | -20 °C ... 80 °C (Cable, flexible installation) |
| Ambient temperature (installation) | -20 °C ... 80 °C |

Environmental and real-life conditions

Ambient conditions

| | |
|---------------------------------|---|
| Degree of protection | IP67 |
| | 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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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-11.0 | 27440103 |
| ECLASS-12.0 | 27440103 |
| ECLASS-13.0 | 27440103 |

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC003570 |
|----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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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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