

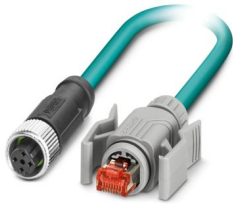
# NBC-FSD/ 1,0-93E/R4MC SCO - Network cable



1407388

<https://www.phoenixcontact.com/us/products/1407388>

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Network cable, Ethernet CAT5 (100 Mbps), 4-position, PUR halogen-free, water blue RAL 5021, shielded, Socket straight M12 SPEEDCON, coding: D / IP67, on Plug straight RJ45 Clip locking / IP67, cable length: 1 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1407388       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CJI        |
| GTIN                                 | 4046356775168 |
| Weight per piece (including packing) | 86.47 g       |
| Weight per piece (excluding packing) | 86.47 g       |
| Customs tariff number                | 85444210      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                     |                         |
|---------------------|-------------------------|
| Product type        | Data cable preassembled |
| Application         | Standard                |
| Number of positions | 4                       |
| Shielded            | yes                     |
| Coding              | D                       |

### Interfaces

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

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Electrical properties

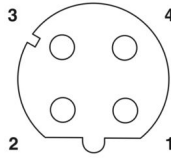
|   |                       |
|---|-----------------------|
| Nominal voltage $U_N$                   | 48 V AC               |
|   | 60 V DC               |
| Nominal current $I_N$                   | 1 A                   |
| Transmission medium                     | Copper                |
| Transmission speed                      | 100 Mbps              |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |

### Material specifications

|               |     |
|---------------|-----|
| Seal material | NBR |
|---------------|-----|

### Connector

#### Connection 1

|                             |   |
|-----------------------------|---|
| Dimensional drawing         |  <p>Pin assignment M12 socket, 4-pos., D-coded, female side</p> |
| Type                        | M12 Socket, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D   |
| Number of positions         | 4   |
| Shielded                    | yes   |
| Shielding                   | Advanced Shielding Technology   |
| Signal type/category        | Ethernet CAT5 (IEC 11801), 100 Mbps   |
| Insertion/withdrawal cycles | ≥ 100   |

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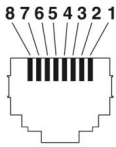


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|  |   |
|--|---|
| Insulation resistance                  | ≥ 100 MΩ                                    |
| Overvoltage category                   | II  |
| Degree of pollution                    | 3   |
| Tightening torque                      | 0.4 Nm                                      |
| Material Contact                       | CuSn  |
| Material Contact surface               | Ni/Au                                       |
| Material Contact carrier               | PA 6.6                                      |
| Material Screw connection              | Die-cast zinc, nickel-plated                |
| Material Grip body                     | TPU, hardly inflammable, self-extinguishing |
| Material Seal                          | FKM   |
| Flammability rating according to UL 94 | V0  |
| Degree of protection                   | IP65<br>IP67                                |
| Ambient temperature (operation)        | -25 °C ... 85 °C                            |
| Standard designation                   | M12 connector                               |
| Standards/regulations                  | IEC 61076-2-101                             |

## Connection 2

|  |   |
|--|---|
| Dimensional drawing                    |  <p>Connector pin assignment plug RJ45</p> |
| Type                                   | RJ45 Plug, straight   |
| Insertion/withdrawal cycles            | ≥ 750   |
| Insulation resistance                  | ≥ 100 MΩ  |
| Overvoltage category                   | I   |
| Degree of pollution                    | 2   |
| Material Contact                       | CuSn  |
| Material Contact surface               | Ni/Au   |
| Material Contact carrier               | PC  |
| Material Housing                       | PA  |
| Color (Housing)                        | gray  |
| Flammability rating according to UL 94 | V2  |
| Degree of protection                   | IP67  |
| Ambient temperature (operation)        | -20 °C ... 70 °C  |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 1 m |
|--------------|-----|


Ethernet flexible CAT5, 2-pair [93E]

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|   |  |
|---|--|
| 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   |
| Conductor structure signal line               | 7x 0.16 mm   |
| AWG signal line                               | 26   |
| Conductor cross-section                       | 2x 2x 0.14 mm <sup>2</sup>   |
| 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   |

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|  |   |
|--|---|
| 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)                          |
|  | 35.4 dB (at 62.5 MHz)                           |
|  | 32.3 dB (at 100 MHz)                            |
| Return attenuation (RL)                                | 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)                           |
|  | 20.1 dB (at 100 MHz)                            |
| Shield attenuation                                     | 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

# NBC-FSD/ 1,0-93E/R4MC SCO - Network cable



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|   |                                   |
|---|-----------------------------------|
| Degree of protection  | IP65 (M12 connector)              |
|   | IP67 (M12 connector)              |
|   | IP67 (RJ45 connector)             |
|   | IP65/IP67                         |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 85 °C (M12 connector)  |
|   | -25 °C ... 60 °C (RJ45 connector) |

## Standards and regulations

### M12

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-101 |

Drawings

Dimensional drawing



M12 x 1 socket, straight, shielded

Dimensional drawing



RJ45-connector, IP67

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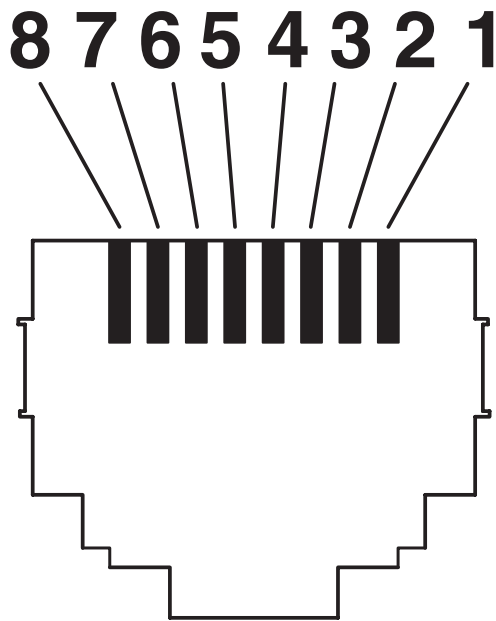
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Schematic diagram



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

Schematic diagram

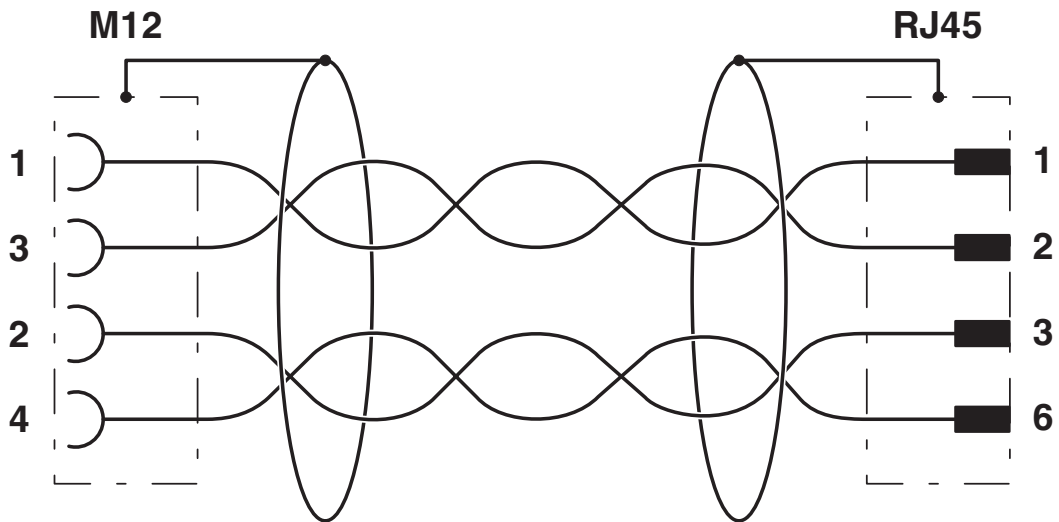


Connector pin assignment plug RJ45

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Circuit diagram



Contact assignment of the M12 socket and the RJ45 plug

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 27060307 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

### China RoHS

|  |  |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E                                   |
|  | No hazardous substances above the limits |

### EU REACH SVHC

|                                     |   |
|-------------------------------------|---|
| REACH candidate substance (CAS No.) | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1) |
| SCIP                                | c7ab79ce-2899-45c1-b098-ae4a06fa0728                        |

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