

# NBC-FSD/10,0-93K/R4AC SCO - Network cable



1411542

<https://www.phoenixcontact.com/nl/products/1411542>

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Network cable, Sercos CAT5 (100 Mbps), 4-position, PVC/PVC, signal red RAL 3020, shielded, Socket straight M12 SPEEDCON, coding: D / IP67, on Plug straight RJ45 / IP20, cable length: 10 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1411542       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | AF1CJO        |
| Product key                          | AF1CJO        |
| GTIN                                 | 4046356933834 |
| Weight per piece (including packing) | 693 g         |
| Weight per piece (excluding packing) | 693 g         |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

## Technical data

### Product properties

|                     |          |
|---------------------|----------|
| Application         | Standard |
| Sensor type         | Sercos   |
| Number of positions | 4        |
| Shielded            | yes      |
| Coding              | D        |

### Interfaces

|                      |                                   |
|----------------------|-----------------------------------|
| Bus system           | Sercos III                        |
| Signal type/category | Sercos 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) |

### Connector

#### Connection 1

|                                 |                                                         |
|---------------------------------|---------------------------------------------------------|
| Type                            | Socket straight M12 SPEEDCON / IP67                     |
| Number of positions             | 4                                                       |
| Locking type                    | SPEEDCON                                                |
| Coding type                     | D (Data)                                                |
| Handle color                    | black                                                   |
| Material                        | CuSn (Contact)                                          |
|                                 | Ni/Au (Contact surface)                                 |
|                                 | TPU GF (Contact carrier)                                |
|                                 | TPU, hardly inflammable, self-extinguishing (Grip body) |
|                                 | Zinc die-cast, nickel-plated (Screw connection)         |
| Insertion/withdrawal cycles     | $\geq 100$                                              |
| Insulation resistance           | $\geq 100 \text{ M}\Omega$                              |
| Tightening torque               | 0.4 Nm                                                  |
| Degree of protection            | IP67                                                    |
| Ambient temperature (operation) | -25 °C ... 90 °C                                        |

#### Connection 2

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|                                 |                                                                                   |
|---------------------------------|-----------------------------------------------------------------------------------|
| Type                            | Plug straight RJ45 / IP20                                                         |
| Number of positions             | 4 (8)                                                                             |
| Handle color                    | black                                                                             |
| Material                        | CuSn (Contact)<br>Ni/Au (Contact surface)<br>PA (Contact carrier)<br>PA (Housing) |
| Insertion/withdrawal cycles     | ≥ 750                                                                             |
| Degree of protection            | IP20                                                                              |
| Ambient temperature (operation) | -25 °C ... 80 °C                                                                  |

## Cable/line

|              |      |
|--------------|------|
| Cable length | 10 m |
|--------------|------|

## Sercos III [93K]

|                                 |                               |
|---------------------------------|-------------------------------|
| Dimensional drawing             |                               |
| Cable weight                    | 68 kg/km                      |
| UL AWM Style                    | 21694 (60 °C / 600 V)         |
| Number of positions             | 4                             |
| Shielded                        | yes                           |
| Cable type                      | Sercos III [93K]              |
| Conductor structure             | 1x4xAWG22/7, SF/TQ            |
| Signal runtime                  | 5.3 ns/m                      |
| 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  | approx. 1.55 mm               |
| External cable diameter         | 6.50 mm ±0.2 mm               |
| Outer sheath, material          | PVC                           |
| External sheath, color          | signal red RAL 3020           |
| Conductor material              | Tin-plated Cu litz wires      |
| Material wire insulation        | PE                            |
| Single wire, color              | white, yellow, blue, orange   |
| Thickness, outer sheath         | approx. 0.90 mm               |
| Type of pair shielding          | Aluminum-lined polyester foil |
| Overall twist                   | Star quad                     |
| Max. conductor resistance       | ≤ 120 Ω/km                    |

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|                                               |                                                         |
|-----------------------------------------------|---------------------------------------------------------|
| Insulation resistance                         | $\geq 0.5 \text{ G}\Omega \cdot \text{km}$              |
| Coupling resistance                           | $\leq 20.00 \text{ m}\Omega/\text{m}$ (at 10 Hz)        |
| Wave impedance                                | $100 \text{ }\Omega \pm 15 \text{ }\Omega$ (at 100 MHz) |
| Nominal voltage, cable                        | 600 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    | 3 x D                                                   |
| Minimum bending radius, flexible installation | 7 x D                                                   |
| Smallest bending radius, fixed installation   | 20 mm                                                   |
| Smallest bending radius, movable installation | 46 mm                                                   |
| Flame resistance                              | according to UL 1685 (CSA FT 4)                         |
| Resistance to oil                             | Resistant to oil to a limited extent                    |
| Other resistance                              | UV resistant (according to UL 1581, Section 1200)       |
| Ambient temperature (operation)               | -40 °C ... 70 °C (cable, fixed installation)            |
|                                               | -40 °C ... 70 °C (Cable, flexible installation)         |
| Ambient temperature (installation)            | -20 °C ... 60 °C                                        |

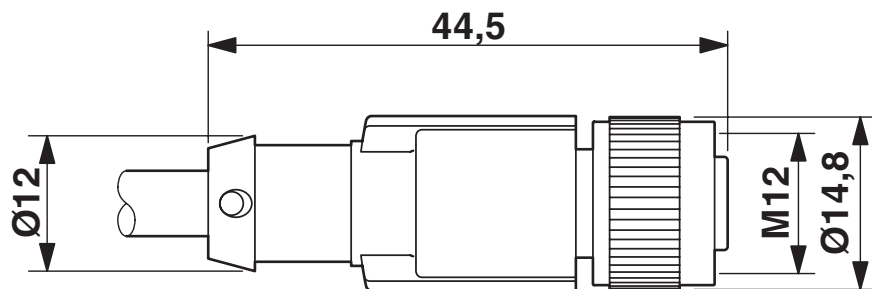
## Standards and regulations

### M12

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

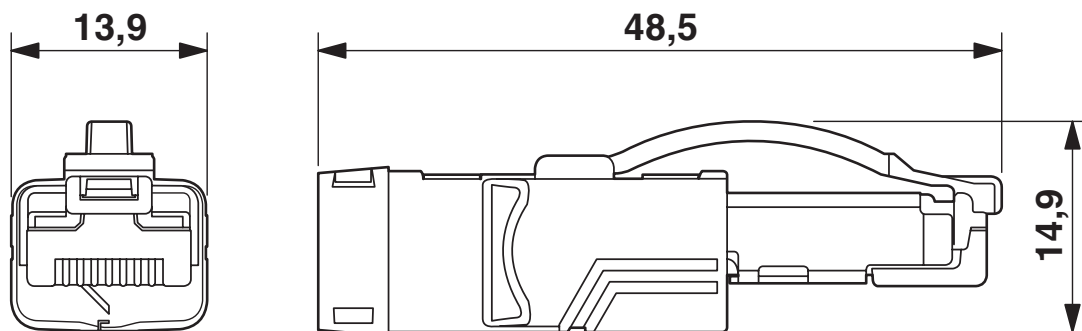
## Drawings

Dimensional drawing



M12 x 1 socket, straight, shielded

Dimensional drawing

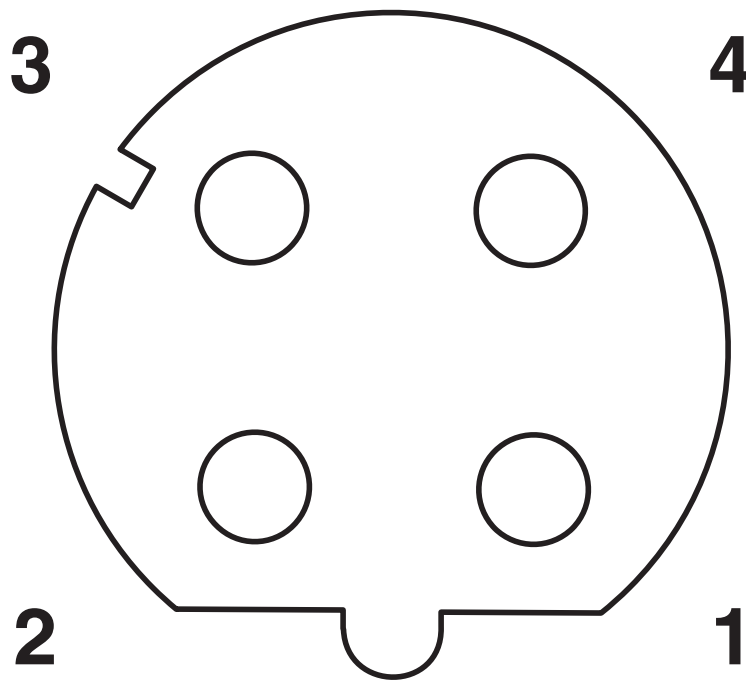


RJ45 connector, IP20

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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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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/nl/products/1411542>

**EAC-RoHS**  
Approval ID: RU D-DE.HB35.B.00387

|                                                                                   |                                             |                                |                   |                               |
|-----------------------------------------------------------------------------------|---------------------------------------------|--------------------------------|-------------------|-------------------------------|
|  | <b>cULus Listed</b><br>Approval ID: E335024 |                                |                   |                               |
|                                                                                   | Nominal voltage U <sub>N</sub>              | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                             |                                             |                                |                   |                               |
|                                                                                   | 60 V                                        | 0.5 A                          | -                 | -                             |

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## Classifications

### ECLASS

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

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC001855 |
|-----------|----------|

### UNSPSC

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

## 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.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

## EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 3,972 kg CO2e |
|---------|---------------|