

## Network cable - NBC-FSD/ 5,0-93B/R4RC SCO - 1407546

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Network cable, PROFINET CAT5 (100 Mbps), PROFINET CAT5e (100 Mbps), 4-position, PVC/PVC, Green RAL 6018, shielded, Plug Straight RJ45 Push Pull / IP67, on Socket Straight M12 SPEEDCON / IP67, Coding: D, Cable length: 5 m



### Key commercial data

|                      |          |
|----------------------|----------|
| Packing unit         | 1 pc     |
| Custom tariff number | 85444210 |
| Country of origin    | Poland   |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 5 m |
|-----------------|-----|

#### Ambient conditions

|                      |                       |
|----------------------|-----------------------|
| Degree of protection | IP65 (M12 connector)  |
|                      | IP67 (M12 connector)  |
|                      | IP67 (RJ45 connector) |

#### General data

|                       |                                                                                                                                                                                                                      |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note                  | This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 8.2 Connectors for Outside Environment (Balanced cabling) |
| Rated current at 40°C | 1 A                                                                                                                                                                                                                  |
| Rated voltage         | 50 V                                                                                                                                                                                                                 |
| Number of positions   | 4                                                                                                                                                                                                                    |
| Signal type/category  | PROFINET CAT5 (IEC 11801:2002), 100 Mbps                                                                                                                                                                             |
|                       | PROFINET CAT5e (TIA 568B:2001), 100 Mbps                                                                                                                                                                             |
| Standards/regulations | M12 connector IEC 61076-2-101                                                                                                                                                                                        |

## Network cable - NBC-FSD/ 5,0-93B/R4RC SCO - 1407546

### Technical data

#### Characteristics head 1

|                                          |                                        |
|------------------------------------------|----------------------------------------|
| Head type                                | Plug Straight RJ45 Push Pull / IP67    |
| No. of positions (pin connector pattern) | 4 (8)                                  |
| Color                                    | silver                                 |
| Material (component)                     | CuSn (Contact)                         |
|                                          | Ni/Au (Contact surface)                |
|                                          | PC (Contact carriers)                  |
|                                          | Zinc die-cast, nickel-plated (Housing) |
| Insertion/withdrawal cycles              | ≥ 750                                  |
| Ambient temperature (operation)          | -40 °C ... 70 °C                       |

#### Characteristics head 2

|                                          |                                                    |
|------------------------------------------|----------------------------------------------------|
| Head type                                | Socket Straight M12 SPEEDCON / IP67                |
| No. of positions (pin connector pattern) | 4                                                  |
| Coding                                   | D (Data)                                           |
| Color                                    | black                                              |
| Material (component)                     | CuSn (Contact)                                     |
|                                          | Ni/Au (Contact surface)                            |
|                                          | TPU GF (Contact carriers)                          |
|                                          | TPU, hardly inflammable, self-extinguishing (Grip) |
|                                          | Zinc die-cast, nickel-plated (Screw connection)    |
| Contact resistance                       | ≤ 5 mΩ                                             |
| Insulation resistance                    | ≥ 100 MΩ                                           |
| Insertion/withdrawal cycles              | ≥ 100                                              |
| Torque                                   | 0.4 Nm                                             |
| Ambient temperature (operation)          | -25 °C ... 90 °C                                   |

#### Cable

|                                    |                                          |
|------------------------------------|------------------------------------------|
| Cable type                         | PROFINET PVC stranded CAT5e              |
| Cable type (abbreviation)          | 93B                                      |
| UL AWM style                       | 21694                                    |
| Signal type/category               | PROFINET CAT5 (IEC 11801:2002), 100 Mbps |
|                                    | PROFINET CAT5e (TIA 568B:2001), 100 bps  |
| Cable structure                    | 1x4xAWG22/7; SF/TQ                       |
| Conductor cross section            | 4x 0.34 mm <sup>2</sup>                  |
| AWG signal line                    | 22                                       |
| Conductor structure signal line    | 7x 0.25 mm                               |
| Core diameter including insulation | approx. 1.5 mm                           |
| Wire colors                        | White, yellow, blue, orange              |

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## Technical data

### Cable

|                                               |                                                    |
|-----------------------------------------------|----------------------------------------------------|
| Overall twist                                 | Star quad                                          |
| Shielding                                     | Aluminum-coated foil, tinned copper braided shield |
| Optical shield covering                       | 85 %                                               |
| External sheath, color                        | Green RAL 6018                                     |
| Outer sheath thickness                        | approx. 0.9 mm                                     |
| External cable diameter D                     | 6.5 mm $\pm$ 0.2 mm                                |
| Minimum bending radius, fixed installation    | 3 x D                                              |
| Minimum bending radius, flexible installation | 7 x D                                              |
| Torsion force                                 | $\pm$ 180 °/m (30,000 torsion cycles)              |
| Cable weight                                  | 67 kg/km                                           |
| Outer sheath, material                        | PVC                                                |
| Material, inner sheath                        | PVC                                                |
| Material conductor insulation                 | PE                                                 |
| Conductor material                            | Tin-plated Cu litz wires                           |
| Insulation resistance                         | $\geq$ 500 M $\Omega$ *km                          |
| Loop resistance                               | $\leq$ 120 $\Omega$ (per kilometer)                |
| Working capacitance                           | 52 pF                                              |
| Wave impedance                                | 100 $\Omega$ $\pm$ 15 $\Omega$ (at 100 MHz)        |
| Signal runtime                                | 5.3 ns/m                                           |
| Coupling resistance                           | $\leq$ 20.00 m $\Omega$ /m                         |
| Nominal voltage, cable                        | 600 V                                              |
| Test voltage Core/Core                        | 2000 V (50 Hz, 1 min.)                             |
| Test voltage Core/Shield                      | 2000 V (50 Hz, 1 min.)                             |
| 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                                   |
| Ambient temperature (storage/transport)       | -50 °C ... 70 °C                                   |

## Classifications

### eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27060307 |
| eCl@ss 4.1 | 27060307 |
| eCl@ss 5.0 | 27060307 |

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#### eCl@ss

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|------------|----------|
| eCl@ss 5.1 | 27060307 |
| eCl@ss 6.0 | 27060307 |
| eCl@ss 7.0 | 27060307 |
| eCl@ss 8.0 | 27060307 |

#### ETIM

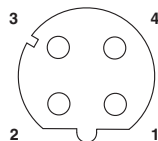
|          |          |
|----------|----------|
| ETIM 3.0 | EC000830 |
| ETIM 4.0 | EC001855 |
| ETIM 5.0 | EC001855 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 31261501 |
| UNSPSC 7.0901 | 31261501 |
| UNSPSC 11     | 31261501 |
| UNSPSC 12.01  | 31261501 |
| UNSPSC 13.2   | 31261501 |

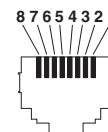
### Drawings

Schematic diagram



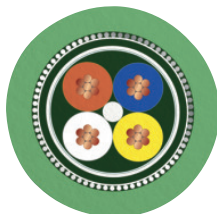
Pin assignment M12 socket, 4-pos., D-coded, female side

Schematic diagram



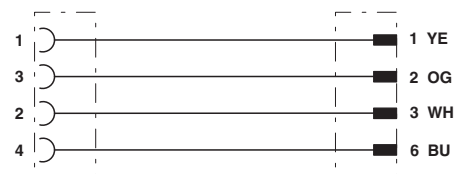
Connector pin assignment plug RJ45

Cable cross section



PROFINET PVC stranded CAT5e [93B]

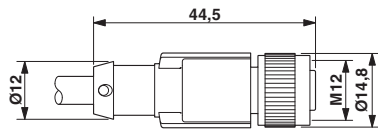
Circuit diagram



Contact assignment of the M12 socket and the RJ45 plug

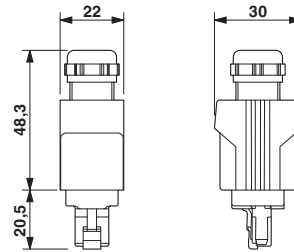
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Dimensioned drawing



M12 x 1 socket, straight, shielded

Dimensioned drawing



RJ45 Push-Pull connector, IP67