

# NBC-MS/ 5,0-94B/R4QC SCO - Network cable



1407432

<https://www.phoenixcontact.com/us/products/1407432>

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON, coding: A / IP67, on Plug straight RJ45 Push Pull / IP67, cable length: 5 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1407432       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CMI        |
| GTIN                                 | 4046356775540 |
| Weight per piece (including packing) | 281.5 g       |
| Weight per piece (excluding packing) | 247.95 g      |
| Customs tariff number                | 85444210      |
| Country of origin                    | PL            |

## Technical data

### Notes

|         |                                                                                                             |
|---------|-------------------------------------------------------------------------------------------------------------|
| General | Further products with variable cable type and variable cable length can be found in the accessories section |
|---------|-------------------------------------------------------------------------------------------------------------|

### Product properties

|                     |                         |
|---------------------|-------------------------|
| Product type        | Data cable preassembled |
| Application         | Standard                |
| Sensor type         | Ethernet                |
| Number of positions | 8                       |
| Shielded            | yes                     |
| Coding              | A                       |

### Interfaces

|                      |                                            |
|----------------------|--------------------------------------------|
| Bus system           | Ethernet                                   |
| Signal type/category | Ethernet CAT5 (based on IEC 11801), 1 Gbps |

### Signaling

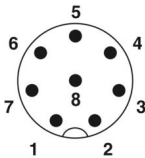
|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Electrical properties

|                                         |                       |
|-----------------------------------------|-----------------------|
| Nominal voltage $U_N$                   | 30 V AC               |
|                                         | 30 V DC               |
| Nominal current $I_N$                   | 1 A                   |
| Transmission medium                     | Copper                |
| Transmission speed                      | 1 Gbps                |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |

### Connector

#### Connection 1

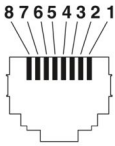
|                     |                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensional drawing | <br>Pin assignment M12 plug, 8-pos., A-coded, view plug side |
| Type                | M12 Plug, angled, 8-position, shielded (Advanced Shielding Technology), Keying: A                                                                |
| Number of positions | 8                                                                                                                                                |
| Shielded            | yes                                                                                                                                              |
| Shielding           | Advanced Shielding Technology                                                                                                                    |

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|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Signal type/category                   | Ethernet CAT5, 1 bps                        |
| Insertion/withdrawal cycles            | ≥ 100                                       |
| Insulation resistance                  | ≥ 100 Ω                                     |
| Overvoltage category                   | II                                          |
| Degree of pollution                    | 3                                           |
| Tightening torque                      | 0.4 Nm (M12 connector)                      |
| Material Contact                       | CuZn                                        |
| 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                                          |
| 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, 8-position, Push Pull                                                                                    |
| Number of positions                    | 8                                                                                                                             |
| Signal type/category                   | Ethernet CAT5 (IEC 11801:2002), 1 Gbps                                                                                        |
| Insertion/withdrawal cycles            | ≥ 750                                                                                                                         |
| Overvoltage category                   | I                                                                                                                             |
| Degree of pollution                    | 2                                                                                                                             |
| Material Contact                       | CuSn                                                                                                                          |
| Material Contact surface               | Ni/Au                                                                                                                         |
| Material Contact carrier               | PC                                                                                                                            |
| Material Housing                       | PA-GF                                                                                                                         |
| Color (Housing)                        | black                                                                                                                         |
| Flammability rating according to UL 94 | V0                                                                                                                            |
| Degree of protection                   | IP67<br>IP65                                                                                                                  |
| Ambient temperature (operation)        | -40 °C ... 70 °C                                                                                                              |

## Cable/line

# NBC-MS/ 5,0-94B/R4QC SCO - Network cable



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|                                               |                                                                                    |
|-----------------------------------------------|------------------------------------------------------------------------------------|
| Cable length                                  | 5 m                                                                                |
| Ethernet flexible CAT5, 4-pair [94B]          |                                                                                    |
| Dimensional drawing                           |  |
| Cable weight                                  | 47 kg/km                                                                           |
| UL AWM Style                                  | 20963 (80°C/30 V)                                                                  |
| Number of positions                           | 8                                                                                  |
| Shielded                                      | yes                                                                                |
| Cable type                                    | Ethernet flexible CAT5, 4-pair [94B]                                               |
| Conductor structure                           | 4x2xAWG26/7, SF/UTP                                                                |
| Signal runtime                                | 5.3 ns/m                                                                           |
| Conductor structure signal line               | 7x 0.16 mm                                                                         |
| AWG signal line                               | 26                                                                                 |
| Conductor cross section                       | 4x 2x 0.14 mm <sup>2</sup>                                                         |
| Wire diameter incl. insulation                | 0.96 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         |
| Thickness, outer sheath                       | 1.05 mm                                                                            |
| Twisted pairs                                 | 2 cores to the pair                                                                |
| Overall twist                                 | 4 pairs for core                                                                   |
| Optical shield covering                       | 70 %                                                                               |
| Insulation resistance                         | ≥ 5 GΩ*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                                | 48 nF/km (at 1 kHz)                                                                |
| Nominal voltage, cable                        | ≤ 100 V                                                                            |
| Test voltage Core/Core                        | 700 V (50 Hz, 1 min.)                                                              |
| Test voltage Core/Shield                      | 700.00 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                                                                              |

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|                                                        |                                                 |
|--------------------------------------------------------|-------------------------------------------------|
| Smallest bending radius, movable installation          | 52 mm                                           |
| Tensile strength                                       | ≤ 100 N                                         |
| Near end crosstalk attenuation (NEXT)                  | 71.3 dB (with 1 MHz)                            |
|                                                        | 62.3 dB (at 4 MHz)                              |
|                                                        | 56.3 dB (at 10 MHz)                             |
|                                                        | 53.2 dB (at 16 MHz)                             |
|                                                        | 51.8 dB (at 20 MHz)                             |
|                                                        | 48.9 dB (at 31.25 MHz)                          |
|                                                        | 44.4 dB (at 62.5 MHz)                           |
|                                                        | 41.3 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                      |
| 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

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|                                                                   |                                   |
|-------------------------------------------------------------------|-----------------------------------|
| Degree of protection                                              | IP65 (M12 connector)              |
|                                                                   | IP67 (M12 connector)              |
|                                                                   | IP67 (RJ45 connector)             |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (M12 connector)  |
|                                                                   | -40 °C ... 70 °C (RJ45 connector) |

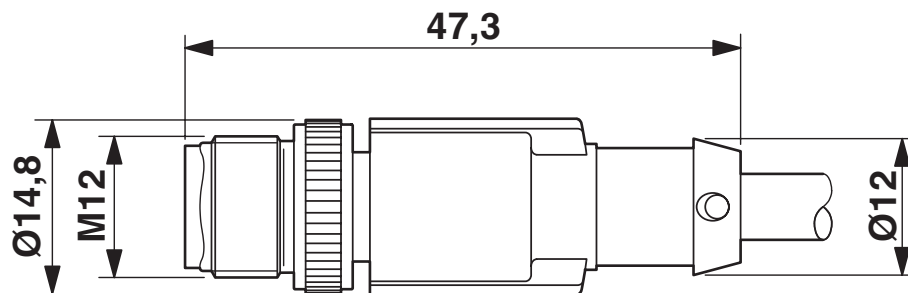
## Standards and regulations

### M12

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

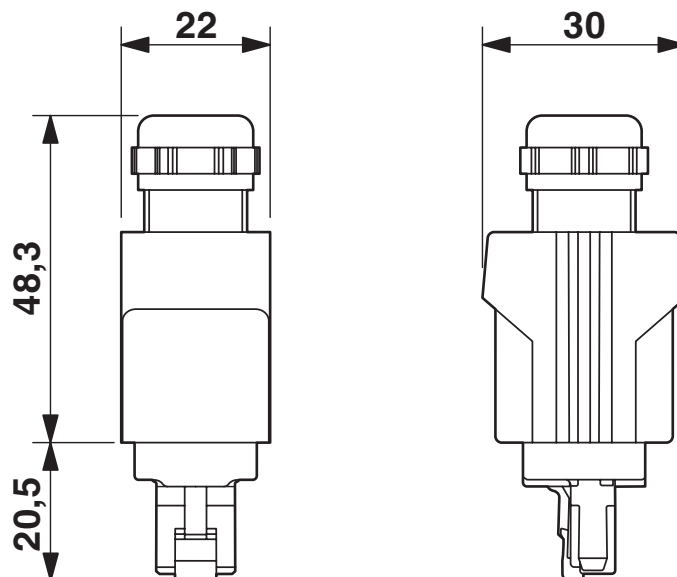
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing

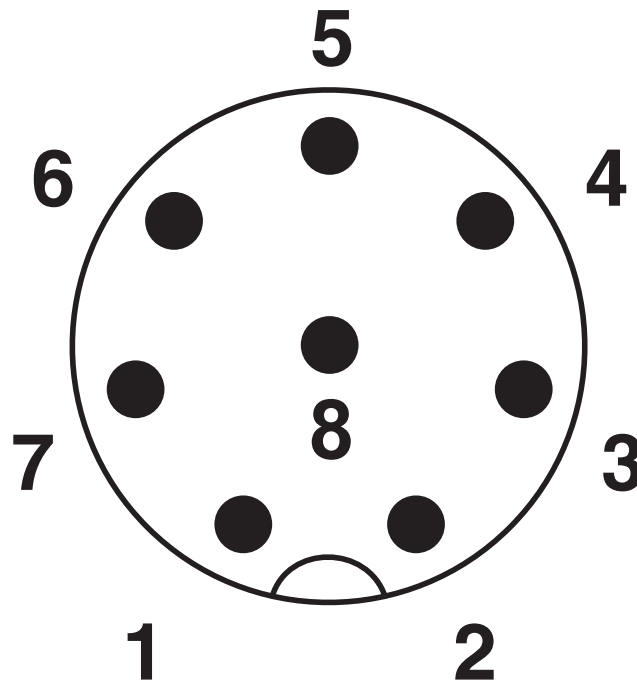


RJ45 Push-Pull connector, IP67

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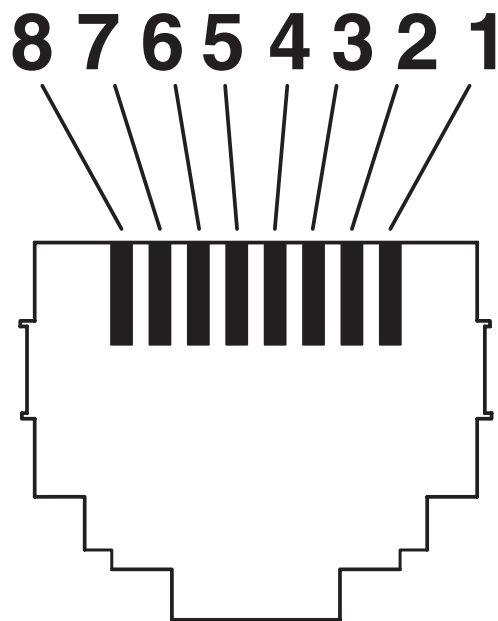
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Schematic diagram



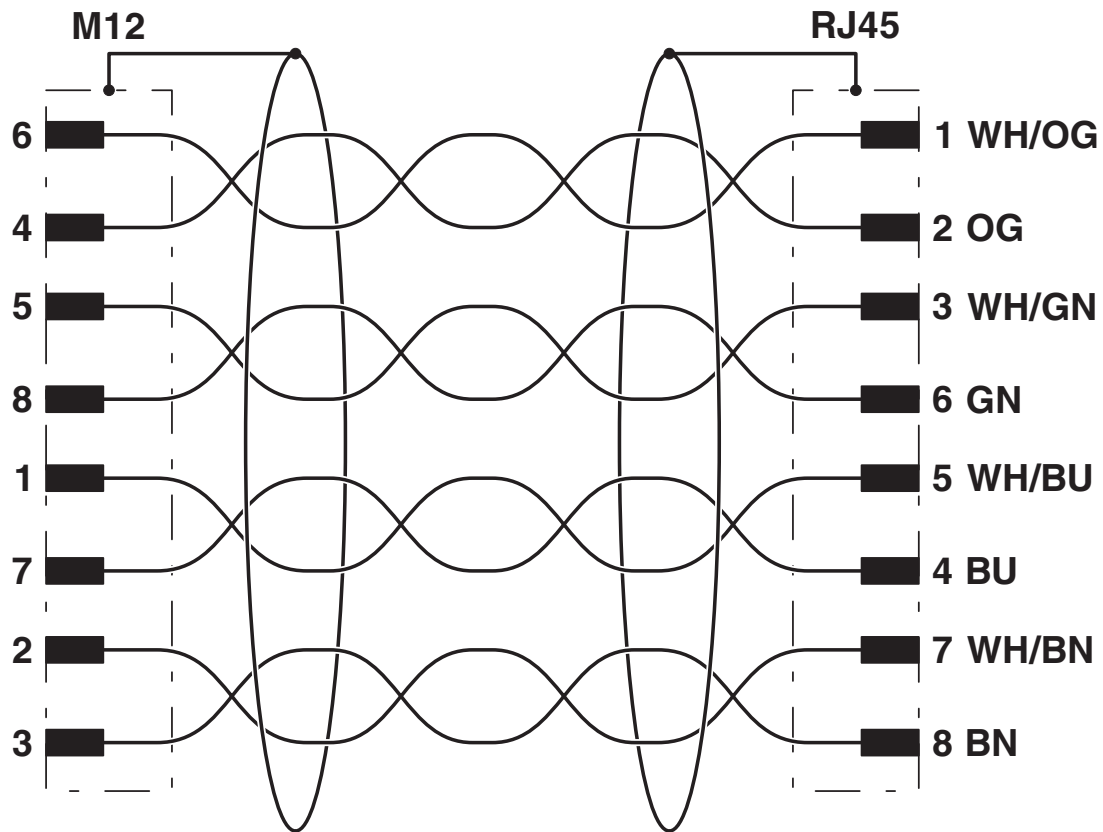
Pin assignment M12 plug, 8-pos., A-coded, view plug side

Schematic diagram



Connector pin assignment plug RJ45

Circuit diagram



Contact assignment of the M12 and 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 |
|-------------|----------|

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                                    | bf5d3c3a-110c-439d-ad30-ddc0ff7b75e9                        |