

# Network cable - NBC-MS/ 1,0-94B/R4AC SCO - 1407414


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Network cable, Ethernet CAT5 (1 Gbps), 8-position, PUR, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON / IP67, coding: A, on Plug straight RJ45 / IP20, cable length: 1 m



## Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 1 pc  |
| GTIN         | <br>4 046356 775366 |
| GTIN         | 4046356775366   |

## Technical data

### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 1 m |
|-----------------|-----|

### Ambient conditions

|                                 |                                   |
|---------------------------------|-----------------------------------|
| Degree of protection            | IP65 (M12 connector)              |
|                                 | IP67 (M12 connector)              |
|                                 | IP20 (RJ45 connector)             |
| Ambient temperature (operation) | -25 °C ... 90 °C (M12 connector)  |
|                                 | -20 °C ... 70 °C (RJ45 connector) |

### General data

|                       |   |
|-----------------------|---|
| Note                  | Further products with variable cable type and variable cable length can be found in the accessories section |
| Rated current at 40°C | 1 A   |
| Rated voltage         | 30 V AC   |
|                       | 30 V DC   |
| Number of positions   | 8   |
| Signal type/category  | Ethernet CAT5 (on the basis of IEC 11801), 1 Gbps   |
| Standards/regulations | M12 connector IEC 61076-2-101   |
| Contact material      | CuSn  |

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## Technical data

### General data

|                          |         |
|--------------------------|---------|
| Contact carrier material | TPU GF  |
| Contact surface material | Ni/Au   |
| Housing material         | Plastic |

### Characteristics head 1

|  |  |
|--|--|
| Head type                                | Plug straight M12 SPEEDCON / IP67                  |
| No. of positions (pin connector pattern) | 8  |
| Coding                                   | A (Standard)                                       |
| Color                                    | black  |
| Material (component)                     | CuZn (Contact)                                     |
|  | Ni/Au (Contact surface)                            |
|  | TPU GF (Contact carriers)                          |
|  | TPU, hardly inflammable, self-extinguishing (Grip) |
|  | Zinc die-cast, nickel-plated (Screw connection)    |
| Insulation resistance                    | ≥ 100 MΩ   |
| Insertion/withdrawal cycles              | ≥ 100  |
| Torque                                   | 0.4 Nm   |
| Ambient temperature (operation)          | -25 °C ... 90 °C                                   |

### Characteristics head 2

|  |                           |
|--|---------------------------|
| Head type                                | Plug straight RJ45 / IP20 |
| No. of positions (pin connector pattern) | 8 (8)                     |
| Color                                    | gray                      |
|  | gray / black              |
| Material (component)                     | CuSn (Contact)            |
|  | Ni/Au (Contact surface)   |
|  | PC (Contact carriers)     |
|  | PA (Housing)              |
| Insertion/withdrawal cycles              | ≥ 750                     |
| Ambient temperature (operation)          | -25 °C ... 60 °C          |

### Standards and Regulations

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

### Cable

|                           |                                   |
|---------------------------|-----------------------------------|
| Cable type                | Ethernet, flexible, CAT5          |
| Cable type (abbreviation) | 94B                               |
| UL AWM style              | 20963 (80°C/30 V)                 |
| Signal type/category      | Ethernet CAT5 (IEC 11801), 1 Gbps |
| Cable structure           | 4x2xAWG26/7; SF/UTP               |
| Conductor cross section   | 4x 2x 0.14 mm <sup>2</sup>        |
| AWG signal line           | 26                                |

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## Technical data

### Cable

|  |  |
|--|--|
| Conductor structure signal line                        | 7x 0.16 mm   |
| Core diameter including insulation                     | 0.96 mm  |
| Wire colors  | white/blue-blue, white/orange-orange, white/green-green, white/brown-brown |
| Twisted pairs  | 2 cores to the pair  |
| Overall twist  | 4 pairs for core   |
| Shielding  | Aluminum-coated foil, tinned copper braided shield                         |
| Optical shield covering                                | 70 %   |
| External sheath, color                                 | water blue RAL 5021  |
| Outer sheath thickness                                 | 1.05 mm  |
| External cable diameter D                              | 6.4 mm ±0.2 mm   |
| Minimum bending radius, fixed installation             | 4 x D  |
| Minimum bending radius, flexible installation          | 8 x D  |
| Tensile strength GRP                                   | ≤ 100 N  |
| Cable weight   | 47 kg/km   |
| Outer sheath, material                                 | PUR  |
| Material conductor insulation                          | Foamed PE  |
| Conductor material                                     | Bare Cu litz wires   |
| Insulation resistance                                  | ≥ 500 MΩ*km  |
| Loop resistance  | ≤ 290.00 Ω/km  |
| Cable capacity   | 48 nF/km (at 1 kHz)  |
| Wave impedance   | 100 Ω ±5 Ω (at 100 MHz)  |
| 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)   |
| Attenuation  | 3.2 dB (with 1 MHz)  |
|  | 6 dB (at 4 MHz)  |
|  | 9.5 dB (at 10 MHz)   |

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## Technical data

### Cable

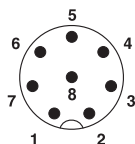
|   |   |
|---|---|
|   | 12.1 dB (at 16 MHz)                             |
|   | 13.6 dB (at 20 MHz)                             |
|   | 17.1 dB (at 31.25 MHz)                          |
|   | 24.8 dB (at 62.5 MHz)                           |
|   | 32 dB (at 100 MHz)                              |
| Return loss (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)                            |
| Signal runtime                          | 5.3 ns/m  |
| Coupling resistance                     | ≤ 100.00 mΩ/m (at 10 MHz)                       |
| Nominal voltage, cable                  | ≤ 100 V   |
| Test voltage Core/Core                  | 700 V (50 Hz, 1 min.)                           |
| Test voltage Core/Shield                | 700 V (50 Hz, 1 min.)                           |
| Flame resistance                        | according to IEC 60332-1-2                      |
| Halogen-free                            | according to IEC 60754-1                        |
| Resistance to oil                       | according to 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                                |
| Ambient temperature (storage/transport) | -20 °C ... 80 °C                                |

### Environmental Product Compliance

|            |   |
|------------|---|
| REACH SVHC | Lead 7439-92-1  |
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

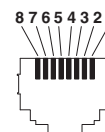
## Drawings

Schematic diagram



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

Schematic diagram



Connector pin assignment plug RJ45

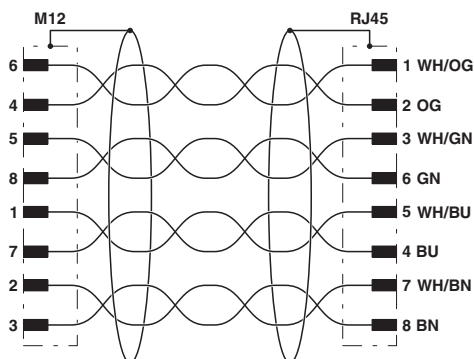
# Network cable - NBC-MS/ 1,0-94B/R4AC SCO - 1407414

Cable cross section



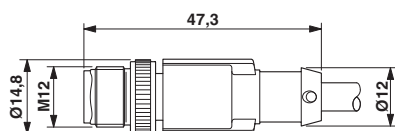
Ethernet, flexible, CAT5 [94B]

Circuit diagram



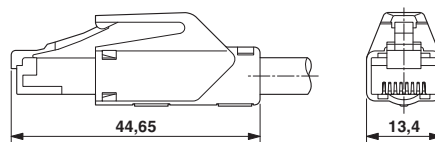
Contact assignment of the M12 and RJ45 plug

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



RJ45 connector, IP20

## Approvals

Approvals

Approvals

UL Listed / EAC

Ex Approvals

## Approval details

|                    |       |   |               |
|--------------------|-------|---|---------------|
| UL Listed          |       | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 335024 |
| Nominal voltage UN | 30 V  |   |               |
| Nominal current IN | 0.5 A |   |               |

## Network cable - NBC-MS/ 1,0-94B/R4AC SCO - 1407414

### Approvals

EAC



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