

# NBC-M12MSD/ 5,0-93B/R4QC - Network cable



1407522

<https://www.phoenixcontact.com/us/products/1407522>

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Plug straight RJ45 / IP67, cable length: 5 m

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1407522       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF04          |
| Product key                          | AF1CJN        |
| GTIN                                 | 4046356778275 |
| Weight per piece (including packing) | 371.1 g       |
| Weight per piece (excluding packing) | 231.167 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                     |

### Interfaces

|                      |                                      |
|----------------------|--------------------------------------|
| Signal type/category | PROFINET CAT5 (IEC 11801), 100 Mbps  |
|                      | EtherCAT® CAT5 (IEC 11801), 100 Mbps |

### 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 |

### Connector

#### Connection 1

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

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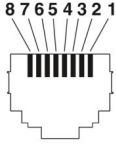


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|  |   |
|--|---|
| Material Screw connection              | Die-cast zinc, nickel-plated                |
| Material Grip body                     | TPU, hardly inflammable, self-extinguishing |
| Material Seal                          | FKM   |
| 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, 4-position, Push Pull   |
| Number of positions                    | 4  |
| Signal type/category                   | PROFINET CAT5 (IEC 11801), 100 Mbps<br>EtherCAT® CAT5 (IEC 11801)  |
| 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-GF  |
| Color (Housing)                        | black  |
| Flammability rating according to UL 94 | V2   |
| Degree of protection                   | IP67   |
| Ambient temperature (operation)        | -40 °C ... 70 °C   |

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 5 m |
|--------------|-----|

PROFINET PVC stranded CAT5 [93B]

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|   |  |
|---|--|
| Dimensional drawing                           |    |
| UL AWM Style                                  | 21695 (80 °C / 600 V)  |
| Number of positions                           | 4  |
| Shielded                                      | yes  |
| Cable type                                    | PROFINET PVC stranded CAT5 [93B]   |
| Conductor structure                           | 1x4xAWG22/7, SF/TQ   |
| AWG signal line                               | 22   |
| Conductor cross-section                       | 4x 0.34 mm <sup>2</sup>  |
| Wire diameter incl. insulation                | 1.5 mm ±0.1 mm   |
| External cable diameter                       | 6.50 mm ±0.2 mm  |
| Outer sheath, material                        | PVC  |
| External sheath, color                        | green RAL 6018   |
| Conductor material                            | Tin-plated Cu litz wires   |
| Material wire insulation                      | PE   |
| Single wire, color                            | white, yellow, blue, orange  |
| Overall twist                                 | Star quad  |
| Optical shield covering                       | 85 %   |
| Insulation resistance                         | ≥ 5 GΩ*km  |
| Loop resistance                               | ≤ 120.00 Ω/km  |
| Wave impedance                                | 100 Ω ±5 Ω (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    | 4 x D  |
| Minimum bending radius, flexible installation | 8 x D  |
| Flame resistance                              | UL 1581, Section 1060 and UL 2556, Section 9.3 (FT1)<br>UL 1685 (CSA FT 4)<br>UL 1581, Section 1100 and UL 2556, Section 9.1 (HFT/FT2) |
| Resistance to oil                             | OIL RES I according to UL 2256   |
| Other resistance                              | UV resistant (according to UL 1581, Section 1200)  |
| Ambient temperature (operation)               | -40 °C ... 80 °C (cable, fixed installation)<br>-10 °C ... 70 °C (Cable, flexible installation)  |

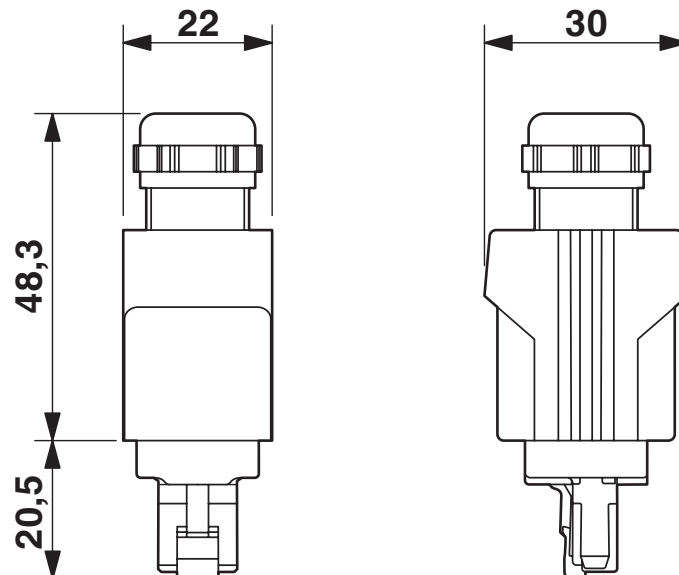
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



RJ45 Push-Pull connector, IP67

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Schematic diagram



Pin assignment M12 male connector, 4-pos., D-coded, male side

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Schematic diagram



Connector pin assignment plug RJ45

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Circuit diagram



Contact assignment of the M12 and RJ45 plug

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1407522>



**EAC-RoHS**

Approval ID: RU D-DE.HB35.B.00387

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## Classifications

### ECLASS

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

### 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)<br>2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329)(CAS: 3147-75-9) |
| SCIP                                | 8a79c96b-442b-4226-ae6a-970b26357f74  |

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