

NBC-M12MSD/ 2,0-93C/M12FSD - Network cable



1038762

<https://www.phoenixcontact.com/us/products/1038762>

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PUR halogen-free, green RAL 6018, shielded (Advanced Shielding Technology), Plug straight M12, coding: D / IP67, on Socket straight M12, coding: D / IP67, cable length: 2 m

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 1038762 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | BF04 |
| Product key | AF1CJN |
| GTIN | 4055626592947 |
| Weight per piece (including packing) | 167.5 g |
| Weight per piece (excluding packing) | 167.5 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

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Technical data

Notes

| | |
|---------|--|
| General | This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 10.1 Cord Sets for Balanced Cabling |
| 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 | PROFINET |
| Number of positions | 4 |
| No. of cable outlets | 1 |
| Shielded | yes |
| Coding | D |

Insulation characteristics

| | |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution | 3 |

Interfaces

| | |
|----------------------|---|
| Bus system | PROFINET |
| Signal type/category | PROFINET CAT5 (IEC 11801), 100 Mbps EtherCAT® 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 | 4 A |
| Transmission medium | Copper |
| Transmission speed | 100 Mbps |
| Transmission characteristics (category) | CAT5 (IEC 11801:2002) |

Material specifications

| | |
|--|----|
| Flammability rating according to UL 94 | V0 |
|--|----|

Connector

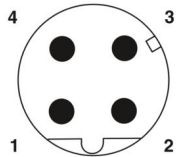
Connection 1

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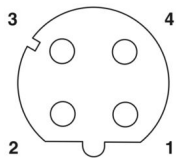


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| | |
|--|---|
| Dimensional drawing |  <p>Pin assignment M12 male connector, 4-pos., D-coded, male side</p> |
| Type | M12 Plug, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D |
| Number of positions | 4 |
| Shielded | yes |
| Shielding | Advanced Shielding Technology |
| Signal type/category | EtherCAT® CAT5 (IEC 11801), 100 Mbps 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 |
| 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 IP67 |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-101 |

Connection 2

| | |
|---------------------|---|
| Dimensional drawing |  <p>Pin assignment M12 socket, 4-pos., D-coded, female side</p> |
| Type | M12 Socket, straight, 4-position, shielded (Advanced Shielding Technology), Keying: D |
| Number of positions | 4 |
| Shielded | yes |
| Shielding | Advanced Shielding Technology |

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| | |
|--|---|
| Signal type/category | EtherCAT® CAT5 (IEC 11801), 100 Mbps 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 |
| 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 IP67 |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-101 |

Cable/line

| | |
|--------------|-----|
| Cable length | 2 m |
|--------------|-----|

PROFINET drag chain CAT5 [93C]

| | |
|--------------------------------|--|
| Dimensional drawing |  |
| UL AWM Style | 20233 (80°C/300 V) |
| Number of positions | 4 |
| Shielded | yes |
| Cable type | PROFINET drag chain CAT5 [93C] |
| Conductor structure | 1x4xAWG22/7, SF/TQ |
| AWG signal line | 22 |
| Conductor cross-section | 4x 0.34 mm ² |
| Wire diameter incl. insulation | 1.5 mm ±0.05 mm |
| External cable diameter | 6.50 mm ±0.2 mm |
| Outer sheath, material | PUR |
| External sheath, color | green RAL 6018 |
| Conductor material | Tin-plated Cu litz wires |

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| | |
|---|---|
| Material wire insulation | PE |
| Single wire, color | white, yellow, blue, orange |
| Overall twist | Star quad |
| Optical shield covering | 85 % |
| Insulation resistance | ≥ 500 MΩ*km |
| Loop resistance | ≤ 120.00 Ω/km |
| Wave impedance | 100 Ω ±15 Ω (at 1 ... 100 MHz) |
| Nominal voltage, cable | ≤ 300 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 | 5 x D |
| Minimum bending radius, flexible installation | 7.5 x D |
| Dynamic load capacity (bending) | Max. bending cycles: 3000000, Bending radius: 200 mm, Traversing path: 10 m, Traversing rate: 4 m/s, Acceleration: 4 m/s ² |
| Dynamic load capacity (torsion) | Torsion: ±30 °/m |
| Halogen-free | according to IEC 60754-1 |
| Flame resistance | according to IEC 60332-1-2 in accordance with UN ECE-R 118.03 according to CSA C 22.2 No. 210-FT1 |
| Resistance to oil | in accordance with DIN EN 60811-404 |
| Other resistance | UV resistant |
| Special properties | Flexible cable conduit capable |
| Ambient temperature (operation) | -40 °C ... 70 °C (cable, fixed installation) -40 °C ... 70 °C (Cable, flexible installation) |

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



M12 x 1 socket, straight, shielded

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Schematic diagram



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

Schematic diagram

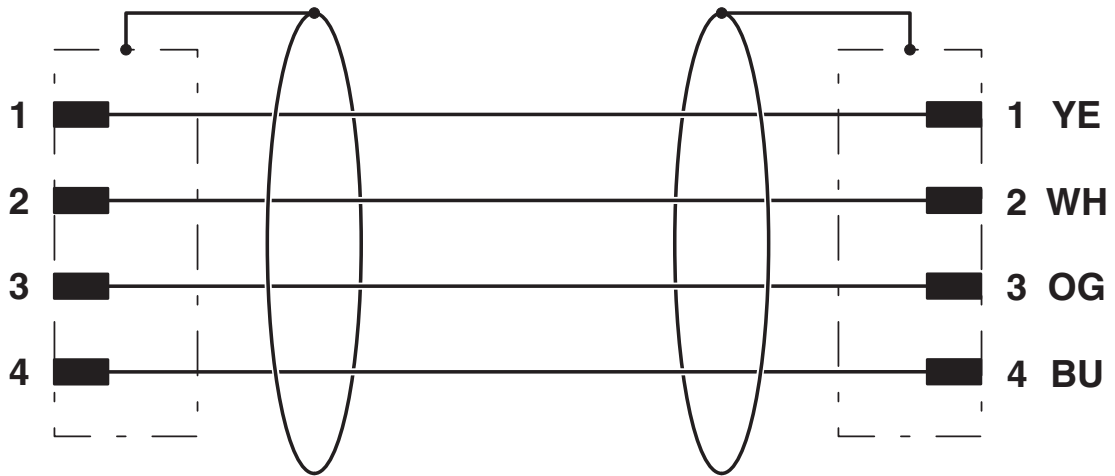


Pin assignment M12 socket, 4-pos., D-coded, female side

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Circuit diagram



Contact assignment of the M12 plugs

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Approvals

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|  cULus Listed Approval ID: E335024 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 250 V | 4 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 |
|-------------|----------|

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

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