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# NBC-M12MSY/10,0-94H/M12MSY - Hybrid cable

1328195

https://www.phoenixcontact.com/in/products/1328195

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Hybrid cable, Ethernet hybrid CAT5 (100 Mbps), 8-position, PUR halogen-free, black RAL 9005, shielded (Advanced Shielding Technology), Plug straight M12, coding: Y / IP65/IP67, on Plug straight M12, coding: Y / IP65/IP67, cable length: 10 m, Power with Ethernet (PWE)

## Commercial data

| | |
|---|---|
| Item number | 1328195 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | ***** |
| Product key | AF1CMJ |
| GTIN | 4063151620271 |
| Weight per piece (including packing) | 1,148 g |
| Weight per piece (excluding packing) | 1,133 g |
| Customs tariff number | 85444290 |
| Country of origin | PL |

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## Technical data

### Product properties

| | |
|---|---|
| Product type | Data cable preassembled |
| Application | Standard |
| Sensor type | Ethernet hybrid |
| Number of positions | 8 |
| No. of cable outlets | 1 |
| Shielded | yes |
| Coding | Y |

### Interfaces

| | |
|---|---|
| Bus system | Ethernet |
| Signal type/category | Ethernet hybrid CAT5 (IEC 11801), 100 Mbps |

### Signaling

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

### Electrical properties

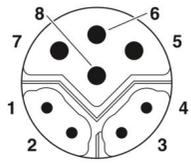
| | |
|---|---|
| Nominal voltage $U_N$ | 48 V AC (Power and data) |
| | 50 V DC (Power and data) |
| Nominal current $I_N$ | 6 A (Power) |
| | 0.5 A (Data) |
| Transmission medium | Copper |

### Material specifications

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

### Connector

Connection 1

| | |
|---|---|
| Dimensional drawing | <br>M12 hybrid plug pin assignment, 8-pos., Y-coded, pin side view |
| Type | M12 Plug, straight, 8-position, shielded (Advanced Shielding Technology), Keying: Y |
| Number of positions | 8 |
| Shielded | yes |
| Shielding | Advanced Shielding Technology |
| Signal type/category | EtherCAT® CAT5 (IEC 11801), 100 Mbps |

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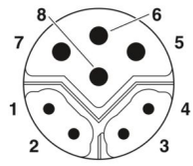
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| | |
|---|---|
| | PROFINET CAT5 (IEC 11801), 100 Mbps |
| Insertion/withdrawal cycles | ≥ 100 |
| Insulation resistance | ≥ 100 MΩ |
| Overvoltage category | III |
| Degree of pollution | 3 |
| Tightening torque | 0.4 Nm |
| Material Contact | CuZn |
| 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 |
| Degree of protection | IP65 |
| | IP67 |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation | M12 connector |
| Standards/regulations | IEC 61076-2-113 |

Connection 2

| | |
|---|---|
| Dimensional drawing | <br>M12 hybrid plug pin assignment, 8-pos., Y-coded, pin side view |
| Type | M12 Plug, straight, 8-position, shielded (Advanced Shielding Technology), Keying: Y |
| Number of positions | 8 |
| Shielded | yes |
| Shielding | Advanced Shielding Technology |
| Signal type/category | EtherCAT® CAT5 (IEC 11801), 100 Mbps |
| | PROFINET CAT5 (IEC 11801), 100 Mbps |
| Insertion/withdrawal cycles | ≥ 100 |
| Insulation resistance | ≥ 100 MΩ |
| Overvoltage category | III |
| Degree of pollution | 3 |
| Tightening torque | 0.4 Nm |
| 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 |

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| | |
|---|---|
| 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 61076-2-113 |

## Cable/line

| | |
|---|---|
| Cable length | 10 m |

Ethernet hybrid [94H]

| | |
|---|---|
| Dimensional drawing |  |
| Cable weight | 110 kg/km |
| UL AWM Style | 20233 (80°C/300 V) |
| Number of positions | 8 |
| Shielded | yes |
| Cable type | Ethernet hybrid [94H] |
| Conductor structure | 1x4x AWG 26+1x4x AWG 18 |
| Conductor structure signal line | 19x 0.10 mm |
| AWG signal line | 26 |
| Conductor structure, voltage supply | 19x 0.20 mm |
| AWG power supply | 18 |
| Conductor cross section | 4x 0.15 mm² (Data) |
| | 4x 0.85 mm² (Power) |
| Wire diameter incl. insulation | 1.05 mm (Data) |
| | 1.4 mm (Power) |
| External cable diameter | 8.80 mm ±0.2 mm |
| Outer sheath, material | PUR |
| External sheath, color | black RAL 9005 |
| Conductor material | Bare Cu litz wires |
| Material wire insulation | PP (Data) |
| | PP (Power) |
| Single wire, color | white/orange, orange, white/green, green, white, blue, brown, black |
| Overall twist | 1 star quad and 4 wires with 2 fillers |
| Optical shield covering | 85 % |
| Insulation resistance | ≥ 5 GΩ*km |

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| | |
|---|---|
| Loop resistance | ≤ 280.00 Ω/km (Data) |
| | ≤ 45.00 Ω/km (Power) |
| Wave impedance | 100 Ω ±15 Ω (4 MHz ... 100 MHz) |
| Working capacitance | nom. 50 nF (per kilometer) |
| Differential impedance | 100 Ω ±5 % (at 100 MHz) |
| Nominal voltage, cable | ≤ 125 V (Peak value, not for high-power applications) |
| 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 |
| Smallest bending radius, fixed installation | 36 mm |
| Smallest bending radius, movable installation | 71 mm |
| Dynamic load capacity (bending) | Max. bending cycles: 2000000, Bending radius: 15 x D, Traversing path: 4.5 m, Traversing rate: 3 m/s, Acceleration: 3 m/s², Ambient temperature: -20 °C ... 60 °C |
| Tensile strength | 85 N (in accordance with DIN EN 50565-1 for flexible installation) |
| | 295 N (in accordance with DIN EN 50565-1 for fixed installation) |
| Near end crosstalk attenuation (NEXT) | 56.3 dB (at 4 MHz) |
| | 50.3 dB (at 10 MHz) |
| | 47.2 dB (at 16 MHz) |
| | 45.8 dB (at 20 MHz) |
| | 42.9 dB (at 31.25 MHz) |
| | 38.4 dB (at 62.5 MHz) |
| | 35.3 dB (at 100 MHz) |
| Shield attenuation | 6.2 dB (at 4 MHz) |
| | 9.8 dB (at 10 MHz) |
| | 12.4 dB (at 16 MHz) |
| | 13.9 dB (at 20 MHz) |
| | 17.6 dB (at 31.25 MHz) |
| | 25.4 dB (at 62.5 MHz) |
| | 32.8 dB (at 100 MHz) |
| | ≥ 80.00 dB (30 MHz ... 100 MHz) |
| Halogen-free | according to IEC 60754-1 |
| | in accordance with DIN VDE 0472 part 815 |
| Flame resistance | in accordance with UL 1581, Section 1060 |
| | in acc. with UL 1581, section 1061 |
| | in accordance with UL 2556, Section 9.3 |
| Resistance to oil | in accordance with IEC 60811-404 |
| | According to DIN EN 50363-10-2 |
| Other resistance | Low adhesion |
| | Hydrolysis resistance (DIN EN 50396) |
| Special properties | Free of substances which would hinder coating with paint or varnish |
| | Silicone-free |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation) |

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# NBC-M12MSY/10,0-94H/M12MSY - Hybrid cable

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| | |
|---|---|
| | -30 °C ... 70 °C (Cable, flexible installation) |

## Environmental and real-life conditions

### Ambient conditions

| | |
|---|---|
| Degree of protection | IP65 |
| | IP67 |
| | IP65/IP67 |

## Standards and regulations

| | |
|---|---|
| Standard designation | M12 connector |
| Standards/specifications | IEC 61076-2-113 |

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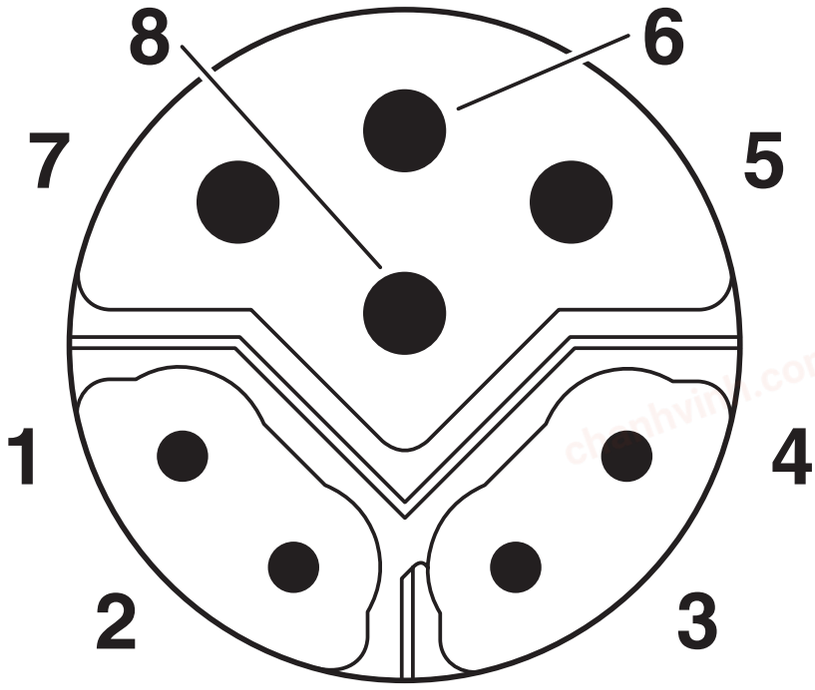
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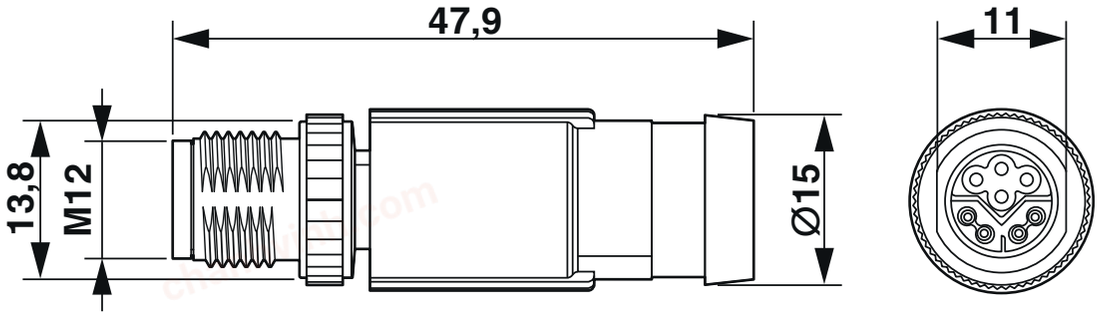
## Drawings

Schematic diagram




M12 hybrid plug pin assignment, 8-pos., Y-coded, pin side view

Dimensional drawing




Plug, M12 x 1, straight, shielded

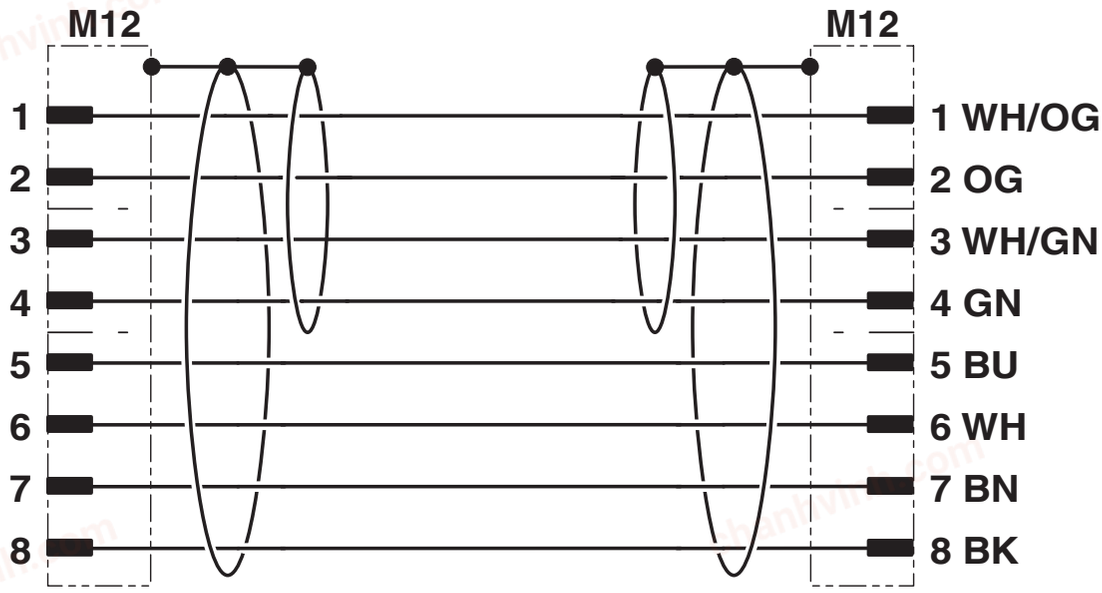
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Circuit diagram




Contact assignment of the M12 plugs

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## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/in/products/1328195

**UL Listed**
Approval ID: E221474

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| Power | 30 V | 6 A | - | - 18 |
| Data | 42 V | 0.5 A | - | - 26 |

**cUL Listed**
Approval ID: E221474

| | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $mm^2$ |
|---|---|---|---|---|
| Power | 30 V | 6 A | - 18 | - |
| Data | 42 V | 0.5 A | - 26 | - |

**cULus Listed**

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## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-11.0 | 27060307 |
| ECLASS-12.0 | 27060307 |
| ECLASS-13.0 | 27060307 |

### ETIM

| | |
|---|---|
| ETIM 9.0 | 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% |

EF3.0 Climate Change

| | |
|---|---|
| CO2e kg | 20.081 kg CO2e |

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## Accessories

### PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

https://www.phoenixcontact.com/in/products/1430873

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



### SAC-M12-EXCLIP-M - Locking clip

1558988

https://www.phoenixcontact.com/in/products/1558988

Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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## TSD 04 SAC - Torque screwdriver

1208429

https://www.phoenixcontact.com/in/products/1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

## TSD-M 1,2NM - Torque screwdriver

1212224

https://www.phoenixcontact.com/in/products/1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0. 3 - 1.2 Nm

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## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

https://www.phoenixcontact.com/in/products/1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

## SAC BIT M12-D15 - Tool

1208432

https://www.phoenixcontact.com/in/products/1208432




Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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