

NBC-MSY/10,0-94H/MSY SCO - Hybrid cable



1407494

<https://www.phoenixcontact.com/us/products/1407494>

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

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 1407494 |
| Packing unit | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | BF04 |
| Product key | AF1CML |
| GTIN | 4046356777933 |
| Weight per piece (including packing) | 906.6 g |
| Weight per piece (excluding packing) | 906.6 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 | 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

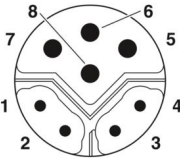
| | |
|------------------------|----|
| Status display | no |
| Status display present | no |

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 |
| Transmission speed | 100 Mbps |

Connector

Connection 1

| | |
|-----------------------------|--|
| Dimensional drawing |  <p>M12 hybrid plug pin assignment, 8-pos., Y-coded, pin side view</p> |
| 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 |

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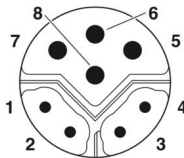


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| | |
|--|---|
| Insulation resistance | ≥ 100 MΩ |
| Overvoltage category | III |
| Degree of pollution | 3 |
| Tightening torque | 0.4 Nm |
| Material Contact | CuZn |
| Material Contact surface | Ni/Au |
| Material Contact carrier | PA 6.6 |
| Material 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 |  <p>M12 hybrid plug pin assignment, 8-pos., Y-coded, pin side view</p> |
| 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 |
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| Flammability rating according to UL 94 | V0 |
| Degree of protection | IP65 |

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| | |
|---------------------------------|------------------|
| | 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 | 87 kg/km |
| UL AWM Style | 20963 (80°C/30 V) |
| Number of positions | 8 |
| Shielded | yes |
| Cable type | Ethernet hybrid [94H] |
| Conductor structure | 1x4xAWG26 + 1x4xAWG20 |
| Conductor structure signal line | 19x 0.10 mm |
| AWG signal line | 26 |
| Conductor structure, voltage supply | 19x 0.20 mm |
| AWG power supply | 20 |
| Conductor cross-section | 4x 0.15 mm ² (Data) 4x 0.6 mm ² (Power) |
| Wire diameter incl. insulation | 1.05 mm (Data) 1.4 mm (Power) |
| External cable diameter | 7.60 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 |
| Loop resistance | ≤ 280.00 Ω/km (Data) ≤ 34.60 Ω/km (Power) |

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| | |
|---|--|
| Wave impedance | 100 Ω \pm 15 Ω (4 MHz ... 100 MHz) |
| Working capacitance | nom. 50 nF (per kilometer) |
| Differential impedance | 100 Ω \pm 5 % (at 100 MHz) |
| Nominal voltage, cable | \leq 50 V (Peak value, not for high-power applications) |
| Test voltage Core/Core | 1500 V (50 Hz, 1 min.) |
| Test voltage Core/Shield | 1500.00 V (50 Hz, 1 min.) |
| Minimum bending radius, fixed installation | 5 x D |
| Minimum bending radius, flexible installation | 10 x D |
| Smallest bending radius, fixed installation | 38 mm |
| Smallest bending radius, movable installation | 76 mm |
| Dynamic load capacity (bending) | Max. bending cycles: 2000000, Traversing path: 4.5 m, Traversing rate: 3 m/s, Acceleration: 4 m/s ² |
| Tensile strength | 70 N (in accordance with DIN EN 50565-1 for flexible installation) 240 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 dB (at 4 MHz) 9.5 dB (at 10 MHz) 12.1 dB (at 16 MHz) 13.5 dB (at 20 MHz) 17.1 dB (at 31.25 MHz) 24.8 dB (at 62.5 MHz) 32 dB (at 100 MHz) \geq 80.00 dB (30 MHz ... 125 MHz) |
| Halogen-free | according to IEC 60754 in accordance with DIN VDE 0472 part 815 |
| Flame resistance | in acc. with UL 1581, section 1061 in acc. with UL 1581, section 1061 |
| Resistance to oil | according to IEC 60811-2-1 according to VDE 0282 Part 10 |
| Other resistance | Low adhesion |
| Special properties | Free of substances which would hinder coating with paint or varnish Silicone-free |
| Ambient temperature (operation) | -40 $^{\circ}$ C ... 90 $^{\circ}$ C (cable, fixed installation) -30 $^{\circ}$ C ... 70 $^{\circ}$ C (Cable, flexible installation) |

Environmental and real-life conditions

Ambient conditions

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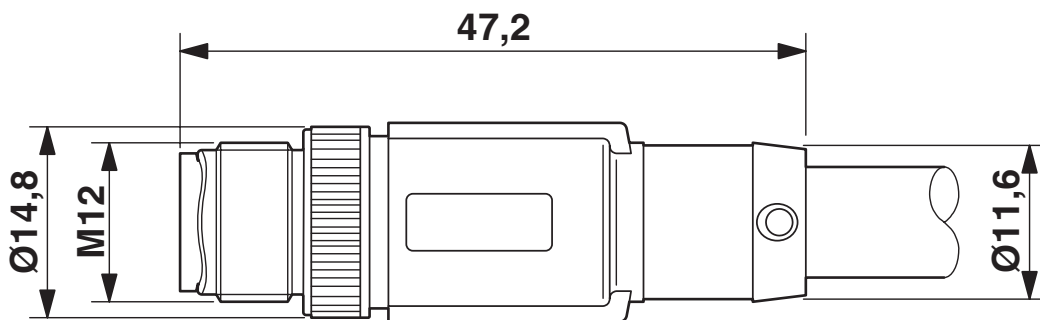
| | |
|---|----------------------------------|
| Degree of protection | IP65 |
| | IP67 |
| | IP65/IP67 |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (M12 connector) |

Standards and regulations

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

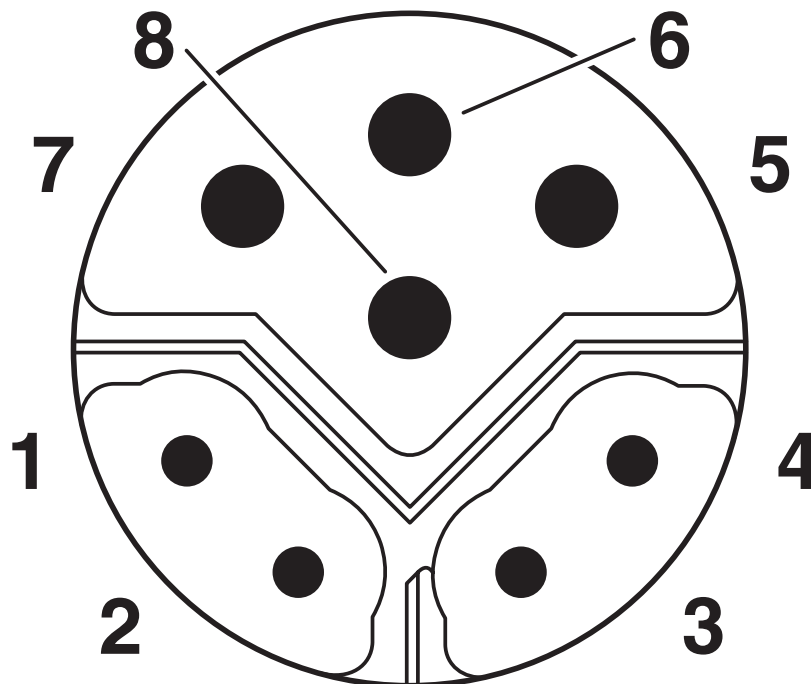
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



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

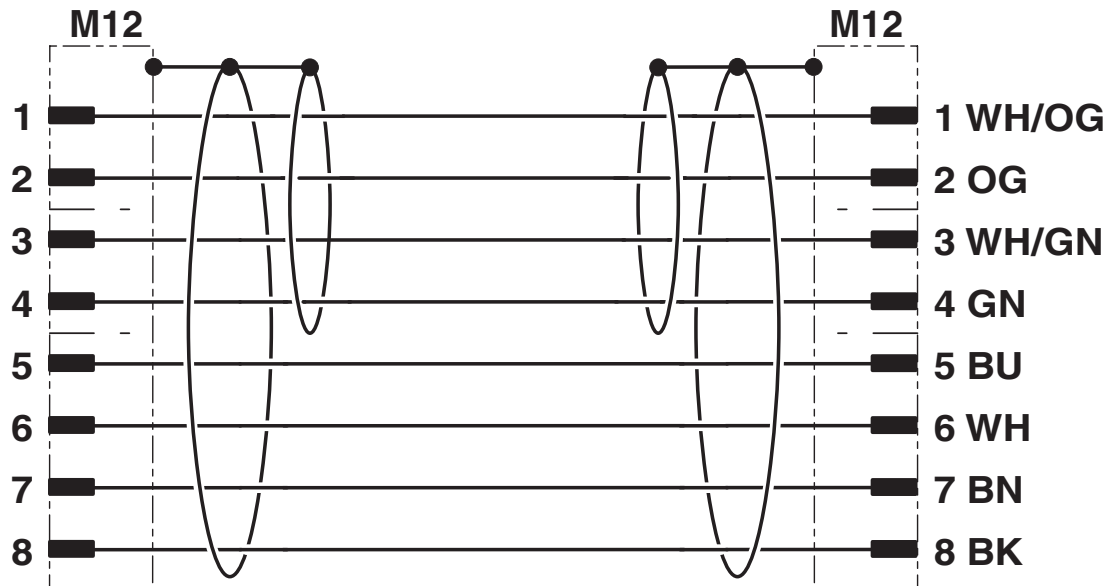
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Circuit diagram



Contact assignment of the M12 plugs

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

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