

# NBC-M12MRY/0,3-94H/M12FSY - Hybrid cable



1334664

<https://www.phoenixcontact.com/pc/products/1334664>

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Hybrid cable, Ethernet hybrid CAT5 (100 Mbps), 8-position halogen-free, shielded (Advanced Shielding Technology), Plug angled M12, coding: Y / IP65/IP67, on Socket straight M12, coding: Y / IP65/IP67, cable length: 0.3 m, Power with Ethernet (PWE)

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1334664                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 15 pc                          |
| Note                                 | Made to order (non-returnable) |
| Product key                          | BF1CML                         |
| GTIN                                 | 4063151634346                  |
| Weight per piece (including packing) | 89.4 g                         |
| Weight per piece (excluding packing) | 89.4 g                         |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Sensor type          | Ethernet hybrid         |
| Number of positions  | 8                       |
| Application          | Standard                |
| 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

|                             |                                                    |
|-----------------------------|----------------------------------------------------|
| Type                        | Plug angled M12 / IP65/IP67                        |
| Number of positions         | 8 (4+4)                                            |
| Coding type                 | Y (Hybrid)                                         |
| Shielded                    | yes                                                |
| Handle color                | black                                              |
| Material                    | CuZn (Contact)                                     |
|                             | Ni/Au (Contact surface)                            |
|                             | PA (Contact carrier, data)                         |
|                             | PA (Contact carrier, power)                        |
|                             | TPU, hardly inflammable, self-extinguishing (Grip) |
| Insertion/withdrawal cycles | Zinc die-cast, nickel-plated (Screw connection)    |
|                             | ≥ 100                                              |

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|                                 |                  |
|---------------------------------|------------------|
| Contact resistance              | ≤ 5 mΩ           |
| Insulation resistance           | ≥ 100 MΩ         |
| Tightening torque               | 0.4 Nm           |
| Degree of protection            | IP65/IP67        |
| Ambient temperature (operation) | -25 °C ... 90 °C |
| Number of positions             | 8                |
| Insertion/withdrawal cycles     | 100              |

## Connection 2

|                                 |                                                                                                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                            | Socket straight M12 / IP65/IP67                                                                                                                                                                                 |
| Number of positions             | 8 (4+4)                                                                                                                                                                                                         |
| Coding type                     | Y (Hybrid)                                                                                                                                                                                                      |
| Shielded                        | yes                                                                                                                                                                                                             |
| Handle color                    | black                                                                                                                                                                                                           |
| Material                        | CuZn (Contact)<br>Ni/Au (Contact surface)<br>PA (Contact carrier, data)<br>PA (Contact carrier, power)<br>TPU, hardly inflammable, self-extinguishing (Grip)<br>Zinc die-cast, nickel-plated (Screw connection) |
| Insertion/withdrawal cycles     | ≥ 100                                                                                                                                                                                                           |
| Tightening torque               | 0.4 Nm                                                                                                                                                                                                          |
| Ambient temperature (operation) | -25 °C ... 90 °C                                                                                                                                                                                                |
| Number of positions             | 8                                                                                                                                                                                                               |
| Degree of protection            | IP65/IP67                                                                                                                                                                                                       |

## Cable/line

|              |       |
|--------------|-------|
| Cable length | 0.3 m |
|--------------|-------|

## Ethernet hybrid [94H]

|                                 |                                                                                      |
|---------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| 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                                                                                   |

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|                                               |                                                                     |
|-----------------------------------------------|---------------------------------------------------------------------|
| Conductor cross section                       | 4x 0.15 mm <sup>2</sup> (Data)                                      |
|                                               | 4x 0.85 mm <sup>2</sup> (Power)                                     |
| Wire diameter incl. insulation                | 1.05 mm (Data)                                                      |
|                                               | 1.4 mm (Power)                                                      |
| External cable diameter                       | 8.8 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)                                                |
|                                               | ≤ 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 V (50 Hz, 1 min.)                                              |
| Minimum bending radius, fixed installation    | 4 x D                                                               |
| Minimum bending radius, flexible installation | 8 x D                                                               |
| Max. bending cycles                           | 2000000                                                             |
| 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 dB (30 MHz ... 100 MHz)                                        |
| Halogen-free                                  | according to IEC 60754-1                                            |

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|                                 |                                                                     |
|---------------------------------|---------------------------------------------------------------------|
| Flame resistance                | in accordance with DIN VDE 0472 part 815                            |
|                                 | 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)                        |
|                                 | -30 °C ... 70 °C (Cable, flexible installation)                     |

## Environmental and real-life conditions

### Ambient conditions

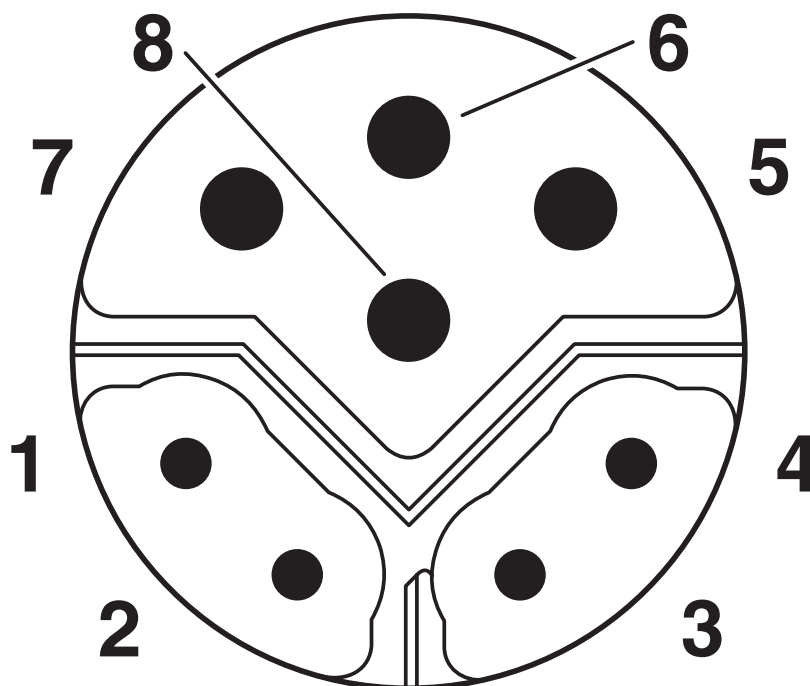
|                      |           |
|----------------------|-----------|
| Degree of protection | IP65      |
|                      | IP67      |
|                      | IP65/IP67 |

## Standards and regulations

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

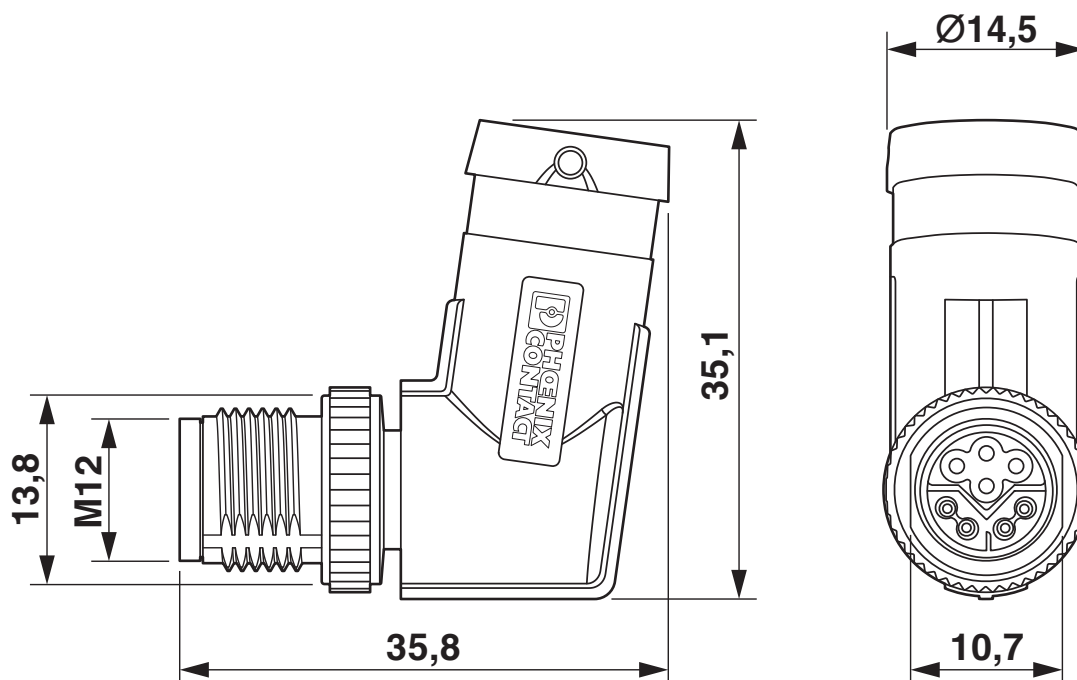
## Drawings

Schematic diagram

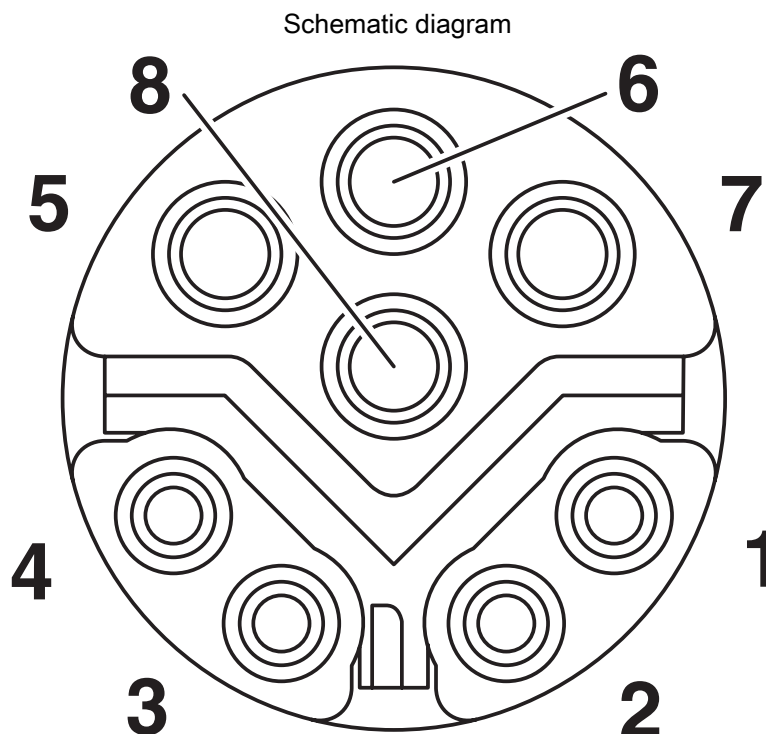


M12 hybrid plug pin assignment, 8-pos., Y-coded, pin side view

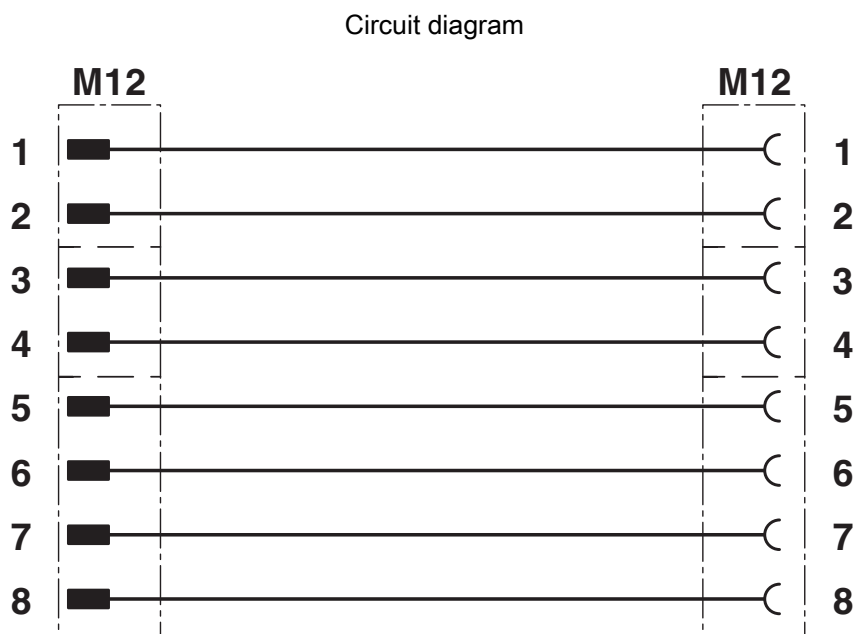
Dimensional drawing



M12 x 1 male plug, angled, shielded



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



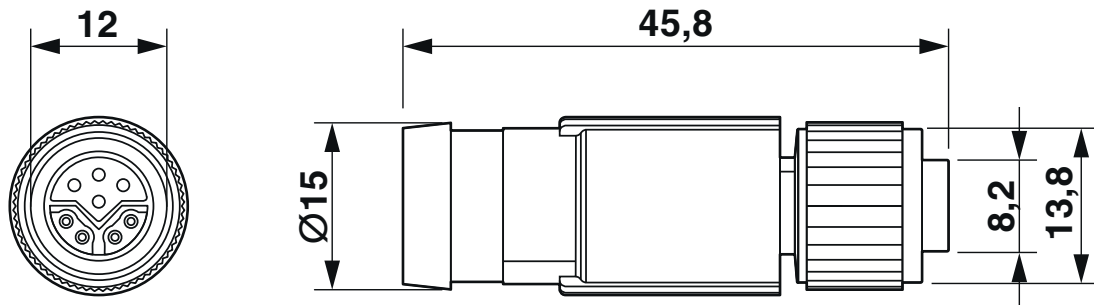
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Dimensional drawing



M12 x 1 socket, straight, shielded

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1334664>



### UL Listed

Approval ID: E221474

|       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|-------|-----------------------|-----------------------|-------------------|-----------------------------|
| Power | 48 V                  | 6 A                   | -                 | - 18                        |
| Data  | 50 V                  | 0.5 A                 | -                 | - 26                        |



### cUL Listed

Approval ID: E221474

|       | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
|-------|-----------------------|-----------------------|-------------------|-----------------------------|
| Power | 48 V                  | 6 A                   | - 18              | -                           |
| Data  | 50 V                  | 0.5 A                 | - 26              | -                           |

### cULus Listed

# NBC-M12MRY/0,3-94H/M12FSY - Hybrid cable



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## Classifications

### ECLASS

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

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

|            |                                                         |
|------------|---------------------------------------------------------|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

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## Accessories

### TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/pc/products/1208429>



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

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

1212224

<https://www.phoenixcontact.com/pc/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/pc/products/1212600>



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

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## SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/pc/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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## PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

<https://www.phoenixcontact.com/pc/products/1430873>

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



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

1558988

<https://www.phoenixcontact.com/pc/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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## PROT-M12 MS-PA-CHAIN - Screw plug

1430899

<https://www.phoenixcontact.com/pc/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



## SAC-M12-EXCLIP-F - Locking clip

1558991

<https://www.phoenixcontact.com/pc/products/1558991>

Locking clip for the socket 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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