

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Network cable, Ethernet CAT6<sub>A</sub> (10 Gbps) CAT6<sub>A</sub> (10 Gbps), 8-position, PUR halogen-free, water blue RAL 5021, shielded (Advanced Shielding Technology), Plug straight M12 / IP67, coding: X, on Plug angled M12 / IP67, coding: X, cable length: 5 m



### Key Commercial Data

|                      |   |
|----------------------|---|
| Packing unit         | 1 pc  |
| GTIN                 | <br>4 055626 806310 |
| GTIN                 | 4055626806310   |
| Custom tariff number | 85444290  |
| Country of origin    | Poland  |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 5 m |
|-----------------|-----|

#### Ambient conditions

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

#### General data

|                       |                                      |
|-----------------------|--------------------------------------|
| Rated current at 40°C | 0.5 A                                |
| Rated voltage         | 48 V AC<br>60 V DC                   |
| Number of positions   | 8                                    |
| Signal type/category  | Ethernet CAT6 <sub>A</sub> , 10 Gbps |
| Standards/regulations | M12 connector IEC 61076-2-109        |

# Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

## Technical data

### General data

|   |                   |
|---|-------------------|
| Transmission characteristics (category) | CAT6 <sub>A</sub> |
| Transmission speed                      | 10 Gbps           |

### Characteristics head 1

|  |  |
|--|--|
| Head type                                | Plug straight M12 / IP67                           |
| No. of positions (pin connector pattern) | 8  |
| Coding                                   | X (Data)   |
| Color                                    | black  |
| Material (component)                     | CuZn (Contact)                                     |
|  | Ni/Au (Contact surface)                            |
|  | PA 6.6 (Contact carriers)                          |
|  | TPU, hardly inflammable, self-extinguishing (Grip) |
|  | Zinc die-cast, nickel-plated (Screw connection)    |
| Insulation resistance                    | ≥ 100 MΩ   |
| Insertion/withdrawal cycles              | ≥ 100  |
| Torque                                   | 0.4 Nm   |
| Ambient temperature (operation)          | -25 °C ... 90 °C                                   |

### Characteristics head 2

|  |  |
|--|--|
| Head type                                | Plug angled M12 / IP67                             |
| No. of positions (pin connector pattern) | 8  |
| Coding                                   | X (Data)   |
| Color                                    | black  |
| Material (component)                     | CuZn (Contact)                                     |
|  | Ni/Au (Contact surface)                            |
|  | PA 6.6 (Contact carriers)                          |
|  | TPU, hardly inflammable, self-extinguishing (Grip) |
|  | Zinc die-cast, nickel-plated (Screw connection)    |
| Insulation resistance                    | ≥ 100 MΩ   |
| Insertion/withdrawal cycles              | ≥ 100  |
| Torque                                   | 0.4 Nm   |
| Ambient temperature (operation)          | -25 °C ... 90 °C                                   |

### Standards and Regulations

|                          |                               |
|--------------------------|-------------------------------|
| Standards/specifications | M12 connector IEC 61076-2-109 |
|--------------------------|-------------------------------|

### Cable

|                           |                  |
|---------------------------|------------------|
| Cable type                | Ethernet 10 Gbit |
| Cable type (abbreviation) | 94F              |

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Technical data

#### Cable

|   |  |
|---|--|
| UL AWM style                                  | 20963 (80°C/30 V)  |
| Signal type/category                          | Ethernet CAT6 <sub>A</sub> , 10 Gbps                                       |
| Cable structure                               | 4x2xAWG26/7; S/FTP   |
| Conductor cross section                       | 4x 2x 0.14 mm <sup>2</sup>   |
| AWG signal line                               | 26   |
| Conductor structure signal line               | 7x 0.16 mm   |
| Core diameter including insulation            | 1.04 mm  |
| Wire colors                                   | white/blue-blue, white/orange-orange, white/green-green, white/brown-brown |
| Twisted pairs                                 | 2 cores to the pair  |
| Type of pair shielding                        | Aluminum-lined foil  |
| Overall twist                                 | 4 pairs for core   |
| Shielding                                     | Tinned copper braided shield   |
| Optical shield covering                       | 70 %   |
| External sheath, color                        | water blue RAL 5021  |
| Outer sheath thickness                        | 0.65 mm  |
| External cable diameter D                     | 6.4 mm ±0.2 mm   |
| Minimum bending radius, fixed installation    | 4 x D  |
| Minimum bending radius, flexible installation | 8 x D  |
| Tensile strength GRP                          | ≤ 100 N  |
| Cable weight                                  | 42 kg/km   |
| Outer sheath, material                        | PUR  |
| Material conductor insulation                 | Foamed PE  |
| Conductor material                            | Bare Cu litz wires   |
| Insulation resistance                         | ≥ 500 MΩ*km  |
| Loop resistance                               | ≤ 290.00 Ω/km  |
| Cable capacity                                | 47 nF/km   |
| Wave impedance                                | 100 Ω ±5 Ω (at 100 MHz)  |
| Near end crosstalk attenuation (NEXT)         | 75.3 dB (with 1 MHz)   |
|   | 66.3 dB (at 4 MHz)   |
|   | 61.8 dB (at 8 MHz)   |
|   | 60.3 dB (at 10 MHz)  |
|   | 57.2 dB (at 16 MHz)  |
|   | 55.8 dB (at 20 MHz)  |
|   | 54.3 dB (at 25 MHz)  |
|   | 52.8 dB (at 31.25 MHz)   |
|   | 48.4 dB (at 62.5 MHz)  |

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Technical data

#### Cable

|  |                        |
|--|------------------------|
|  | 45.3 dB (at 100 MHz)   |
|  | 40.8 dB (at 200 MHz)   |
|  | 39.3 dB (at 250 MHz)   |
|  | 38.1 dB (at 300 MHz)   |
|  | 36.3 dB (at 400 MHz)   |
|  | 34.8 dB (at 500 MHz)   |
| Power-summated near end crosstalk attenuation (PSNEXT) | 72.3 dB (with 1 MHz)   |
|  | 63.3 dB (at 4 MHz)     |
|  | 58.8 dB (at 8 MHz)     |
|  | 57.3 dB (at 10 MHz)    |
|  | 54.2 dB (at 16 MHz)    |
|  | 52.8 dB (at 20 MHz)    |
|  | 51.3 dB (at 25 MHz)    |
|  | 49.9 dB (at 31.25 MHz) |
|  | 45.4 dB (at 62.5 MHz)  |
|  | 42.3 dB (at 100 MHz)   |
|  | 37.8 dB (at 200 MHz)   |
|  | 36.3 dB (at 250 MHz)   |
|  | 35.1 dB (at 300 MHz)   |
|  | 33.3 dB (at 400 MHz)   |
|  | 31.8 dB (at 500 MHz)   |
| Attenuation  | 3.1 dB (with 1 MHz)    |
|  | 5.7 dB (at 4 MHz)      |
|  | 8 dB (at 8 MHz)        |
|  | 8.9 dB (at 10 MHz)     |
|  | 11.2 dB (at 16 MHz)    |
|  | 12.6 dB (at 20 MHz)    |
|  | 14.1 dB (at 25 MHz)    |
|  | 15.8 dB (at 31.25 MHz) |
|  | 22.5 dB (at 62.5 MHz)  |
|  | 28.7 dB (at 100 MHz)   |
|  | 41.4 dB (at 200 MHz)   |
|  | 46.6 dB (at 250 MHz)   |
|  | 51.4 dB (at 300 MHz)   |
|  | 60.1 dB (at 400 MHz)   |
|  | 67.9 dB (at 500 MHz)   |
| Return loss (RL)                                       | 20 dB (with 1 MHz)     |

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Technical data

#### Cable

|   |   |
|---|---|
|   | 23 dB (at 4 MHz)                                |
|   | 24.5 dB (at 8 MHz)                              |
|   | 25 dB (at 10 MHz)                               |
|   | 25 dB (at 16 MHz)                               |
|   | 25 dB (at 20 MHz)                               |
|   | 24.2 dB (at 25 MHz)                             |
|   | 23.3 dB (at 31.25 MHz)                          |
|   | 20.7 dB (at 62.5 MHz)                           |
|   | 19 dB (at 100 MHz)                              |
|   | 16.4 dB (at 200 MHz)                            |
|   | 15.6 dB (at 250 MHz)                            |
|   | 15.6 dB (at 300 MHz)                            |
|   | 15.6 dB (at 400 MHz)                            |
|   | 15.6 dB (at 500 MHz)                            |
| Signal runtime                          | 5.13 ns/m                                       |
| Shield attenuation                      | ≥ 80 dB (at 30 ... 100 MHz)                     |
| Nominal voltage, cable                  | ≤ 100 V   |
| Test voltage Core/Core                  | 700 V (50 Hz, 1 min.)                           |
| Test voltage Core/Shield                | 700 V (50 Hz, 1 min.)                           |
| Flame resistance                        | according to IEC 60332-1-2                      |
| Halogen-free                            | according to IEC 60754-1                        |
| Resistance to oil                       | in accordance with DIN EN 60811-2-1             |
| Ambient temperature (operation)         | -40 °C ... 80 °C (cable, fixed installation)    |
|   | -20 °C ... 80 °C (Cable, flexible installation) |
| Ambient temperature (installation)      | -20 °C ... 80 °C                                |
| Ambient temperature (storage/transport) | -20 °C ... 80 °C                                |
| Shielded                                | yes   |

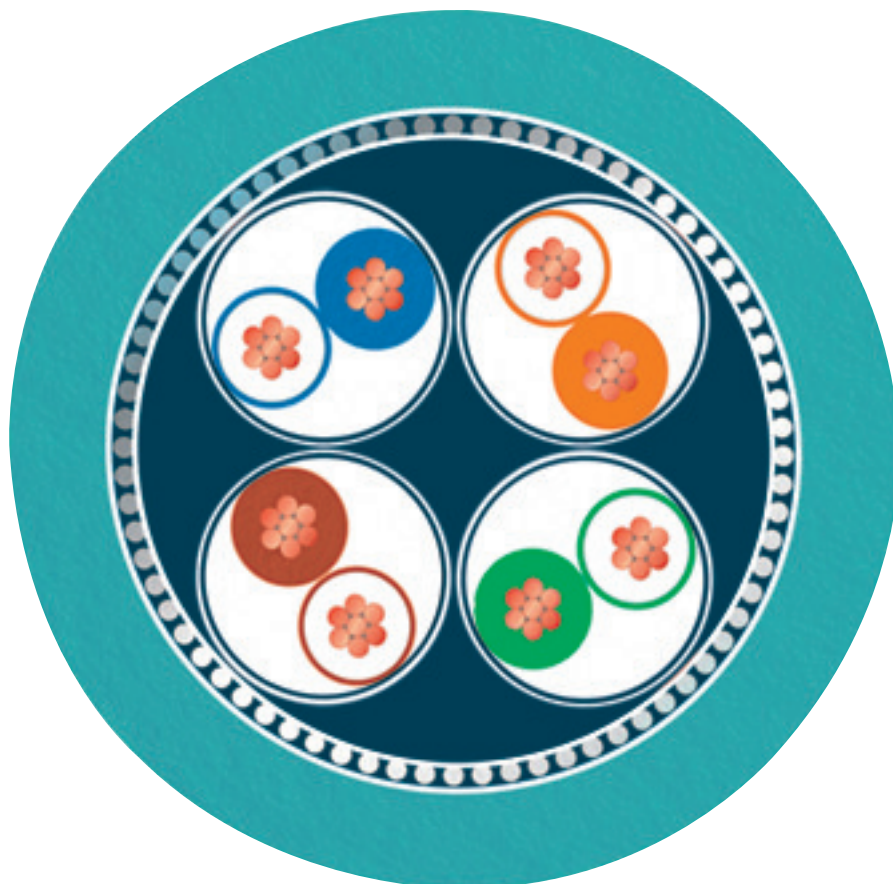
#### Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 years  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

### Drawings

# Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

Cable cross section



Ethernet 10 Gbit [94F]

## Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060308 |
| eCl@ss 11.0   | 27060307 |
| eCl@ss 9.0    | 27060308 |

ETIM

|          |          |
|----------|----------|
| ETIM 6.0 | EC001262 |
| ETIM 7.0 | EC001855 |

# Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

## Classifications

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 18.0 | 26121604 |
| UNSPSC 19.0 | 26121604 |
| UNSPSC 20.0 | 26121604 |
| UNSPSC 21.0 | 26121604 |

## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / cULus Listed

#### Ex Approvals

### Approval details

|                    |       |   |               |
|--------------------|-------|---|---------------|
| UL Listed          |       | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 335024 |
|                    |       |   |               |
| Nominal voltage UN | 30 V  |   |               |
| Nominal current IN | 0.5 A |   |               |

|                    |       |   |               |
|--------------------|-------|---|---------------|
| cUL Listed         |       | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 335024 |
|                    |       |   |               |
| Nominal voltage UN | 30 V  |   |               |
| Nominal current IN | 0.5 A |   |               |

|              |  |  |  |
|--------------|--|--|--|
| cULus Listed |  |  |  |
|--------------|--|--|--|

## Accessories

### Accessories

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Accessories

#### Cable connector

Conductor connectors - SACC-CC-8QO SH ETH - 1414412



Cable connector, Ethernet CAT6<sub>A</sub> (10 Gbps), 8-pos., halogen-free, shielded, insulation displacement connection, housing material: zinc die-cast, nickel-plated, outer cable diameter of 5 mm ... 9.7 mm

---

#### Circular connector (cable-side)

Data connector - SACC-MSX-8QO SH ETH SCO - 1411043



Data connector, Ethernet CAT6<sub>A</sub> (10 Gbps), 8-position, halogen-free, shielded, Plug straight M12 SPEEDCON, Coding: X, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

---

Data connector - SACC-FSX-8QO SH ETH SCO - 1414586



Data connector, Ethernet CAT6<sub>A</sub> (10 Gbps), 8-position, halogen-free, shielded, Socket straight M12 SPEEDCON, Coding: X, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

---

Data connector - VS-08-M12MS-10G-P SCO - 1417430



Data connector, Ethernet CAT6<sub>A</sub> (10 Gbps), 8-position, shielded, Plug straight M12 SPEEDCON, Coding: X, Piercecon<sup>®</sup>, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

---

Data connector - VS-08-M12MR-10G-P SCO - 1417443



Data connector, Ethernet CAT6<sub>A</sub> (10 Gbps), 8-position, shielded, Plug angled M12 SPEEDCON, Coding: X, Piercecon<sup>®</sup>, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm



## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Accessories

---

#### Data connector - SACC-M12MSX-8CT-CL SH - 1422844



Data connector, Ethernet CAT6<sub>A</sub> (10 Gbps), PROFINET CAT6<sub>A</sub> (10 Gbps), 8-position, shielded, Plug straight M12, Coding: X, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 6.5 mm ... 10 mm, without crimp contacts

---

#### Data connector - SACC-M12MRX-8CT-CL SH - 1422845



Data connector, Ethernet CAT6<sub>A</sub> (10 Gbps), PROFINET CAT6<sub>A</sub> (10 Gbps), 8-position, shielded, Plug angled M12, Coding: X, Crimp connection, knurl material: Zinc die-cast, tin-plated, external cable diameter 6.5 mm ... 10 mm, without crimp contacts

---

### Corrugated pipe

#### Protective hose - WP-PA HF 13,0 BK - 3240681



Polyamide protective hose, inflammability class V0, UV resistant

---

#### Protective hose - WP-PA HF-HB 13,0 BK - 3240839



Polyamide protective hose, inflammability class HB, UV resistant

---

### Cutting tools

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Accessories

Cable-cutting tool - CUTFOX 12 - 1212128



Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm<sup>2</sup>)

---

Diagonal cutter - CUTFOX-S VDE - 1212207



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

---

### Data plug

RJ45 connector - VS-08-RJ45-10G/Q - 1419001



RJ45 connector, IP20, CAT6<sub>A</sub>, 8-pos., with QUICKON fast connection technology, for 26 ... 24 AWG 1-wire and 7-wire conductors, color: black

---

RJ45 connector - CUC-IND-C1ZNI-S/R4IE8 - 1421607



RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: straight, color: green, Ethernet

---

RJ45 connector - CUC-IND-C1ZNI-T/R4IE8 - 1421877



RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

---

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Accessories

RJ45 connector - CUC-IND-C1ZNI-B/R4IE8 - 1421876



RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: Zinc die-cast, connection method: IDC fast connection, connection cross section: AWG 26- 24, cable outlet: angled, Ethernet

RJ45 connector - CUC-V06-C1PGY-S/R4CEA:1 - 1414406



RJ45 connector, degree of protection: IP67, 10 Gbps, CAT6<sub>A</sub>, material: PA, connection method: Crimp connection, connection cross section: AWG 24- 27, cable outlet: straight, color: gray, Ethernet/PROFINET

RJ45 connector - CUC-V06-C1PBK-S/R4CEA:1 - 1414410



RJ45 connector, degree of protection: IP67, number of positions: 8, 10 Gbps, CAT6<sub>A</sub>, material: PA, connection method: Crimp connection, connection cross section: AWG 24- 27, cable outlet: straight, color: black, Ethernet/PROFINET

RJ45 connector - VS-PPC-C1-RJ45-POBK-8I10G - 1422205



RJ45 connector, IP67, with push/pull interlocking (Version 14), plastic housing, for 10 Gbps, for 24 ... 27 AWG stranded conductors

### Electronics pliers

Diagonal cutter - MICROFOX-SP-1 - 1212487



Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Accessories

#### Protective cap

Sealing cap - PROT-M12 FS-PA-CHAIN - 1430873

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



---

#### Safety locking

Locking clip - SAC-M12-EXCLIP-M - 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

---

#### Screwdriver tools

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600



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

---

Tool - SAC BIT M12-D15 - 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

---

#### Stripping tool

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Accessories

Stripping tool - WIREFOX 4 - 1212156



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

---

Stripping tool - WIREFOX-E 4 - 1212704



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

---

Stripping tool - WIREFOX 10 - 1212150



Stripping tool, for cables and conductors from 0.02 - 10 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

---

### Torque tool

Torque screwdriver - TSD 04 SAC - 1208429



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

---

Torque screwdriver - TSD-M 1,2NM - 1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

---

## Network cable - NBC-M12MSX/5,0-94F/M12MRX - 1080726

### Accessories

Stripping tool - VS-CABLE-STRIP-VARIO - 1657407



Stripping tool, for the multi-level stripping of shielded cables

---

Protective hose adapter - WP-CTA POM 13,0 BK - 1422884



Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

---

---