

# Network cable - NBC-M8MRD/2,0-93C/R4AC - 1080544

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PUR/FRNC halogen-free, green RAL 6018, shielded (Advanced Shielding Technology), Plug angled M8 / IP67, coding: D, on Plug straight RJ45 / IP20, cable length: 2 m



ETHERCAT

## Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 804873
GTIN	4055626804873

## Technical data

### Dimensions

Length of cable	2 m
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### Ambient conditions

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

### General data

Note	This product corresponds to the PROFINET Cabling and Interconnection Technology Guideline for PROFINET regulations, version 2.00, order no: 2.252, Chapter 8.2 Connectors for Outside Environment (Balanced cabling)
Rated current at 40°C	1 A
Rated voltage	48 V AC 60 V DC
Number of positions	4
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps EtherCAT® CAT5 (IEC 11801), 100 Mbps
Standards/regulations	M8 connector IEC 61076-2-114

# Network cable - NBC-M8MRD/2,0-93C/R4AC - 1080544

## Technical data

### General data

Transmission characteristics (category)	CAT5
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### Characteristics head 1

Head type	Plug angled M8 / IP67
No. of positions (pin connector pattern)	4
Coding	D (Data)
Color	black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PA 6.6 (Contact carriers)
	TPU, hardly inflammable, self-extinguishing (Grip)
	Brass, nickel-plated (Screw connection)
Shielded	yes
Insulation resistance	≥ 100 MΩ
Insertion/withdrawal cycles	≥ 100
Torque	0.2 Nm
Ambient temperature (operation)	-25 °C ... 90 °C
Shielded	yes
Outer sheath, material	PUR
External sheath, color	green RAL 6018
Type type, plug side	Plug angled
Type type, socket side	Plug, straight

### Characteristics head 2

Head type	Plug straight RJ45 / IP20
No. of positions (pin connector pattern)	4 (8)
Color	black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (Contact carriers)
	PA (Housing)
Insertion/withdrawal cycles	≥ 750
Ambient temperature (operation)	-25 °C ... 80 °C

### Standards and Regulations

Standards/specifications	M8 connector IEC 61076-2-114
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### Cable

Product labeling	"sequential length in metres" PN-CABLE-934-C / PUR-4X22AWG/7 Trailing * 22AWG (SHIELDED) (UL) E119100 CMX 75°C VERIFIED (UL) CAT 5E PATCH CABLE FRNC * (Cable printing cable supplier)
Cable type	PROFINET drag chain CAT5
Cable type (abbreviation)	93C
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps

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## Technical data

### Cable

	EtherCAT® CAT5 (IEC 11801), 100 Mbps
Cable structure	1x4xAWG22/7; SF/TQ
Conductor cross section	4x 0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	7x 0.25 mm
Core diameter including insulation	1.5 mm
Wire colors	White, yellow, blue, orange
Overall twist	Star quad
Shielding	Aluminum-coated foil, tinned copper braided shield
Optical shield covering	85 %
External sheath, color	green RAL 6018
Outer sheath thickness	approx. 0.9 mm
External cable diameter D	6.5 mm ±0.2 mm
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	7.5 x D
Number of bending cycles	3000000
Bending radius	100 mm
Traversing path	10 m
Traversing rate	4 m/s
Acceleration	4 m/s <sup>2</sup>
Torsion force	± 30 °/m
Tensile strength GRP	≤ 150 N
Cable weight	61 kg/km
Outer sheath, material	PUR
Material, inner sheath	FRNC
Material conductor insulation	PE
Conductor material	Tin-plated Cu litz wires
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 120.00 Ω/km
Wave impedance	100 Ω ±15 Ω (at 1 ... 100 MHz)
Near end crosstalk attenuation (NEXT)	80 dB (with 1 MHz)
	76 dB (at 4 MHz)
	70 dB (at 10 MHz)
	65 dB (at 16 MHz)
	63 dB (at 20 MHz)
	60 dB (at 31.25 MHz)
	55 dB (at 62.5 MHz)
	50 dB (at 100 MHz)
Attenuation	2.1 dB (with 1 MHz)
	4 dB (at 4 MHz)

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### Technical data

#### Cable

	6.3 dB (at 10 MHz)
	8 dB (at 16 MHz)
	9 dB (at 20 MHz)
	11.4 dB (at 31.25 MHz)
	16.5 dB (at 62.5 MHz)
	21.3 dB (at 100 MHz)
Signal speed	0.66 c
Signal runtime	5.3 ns/m
Coupling resistance	≤ 20.00 mΩ/m (at 10 MHz)
Nominal voltage, cable	600 V (UL rating)
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Special properties	Electrical properties according to EN 50288-2-2
Flame resistance	according to IEC 60332-1-2
Halogen-free	yes
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	UV resistant
Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation)
	-40 °C ... 70 °C (cable, flexible installation)
Ambient temperature (installation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-50 °C ... 70 °C

#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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-M8MRD/2,0-93C/R4AC - 1080544

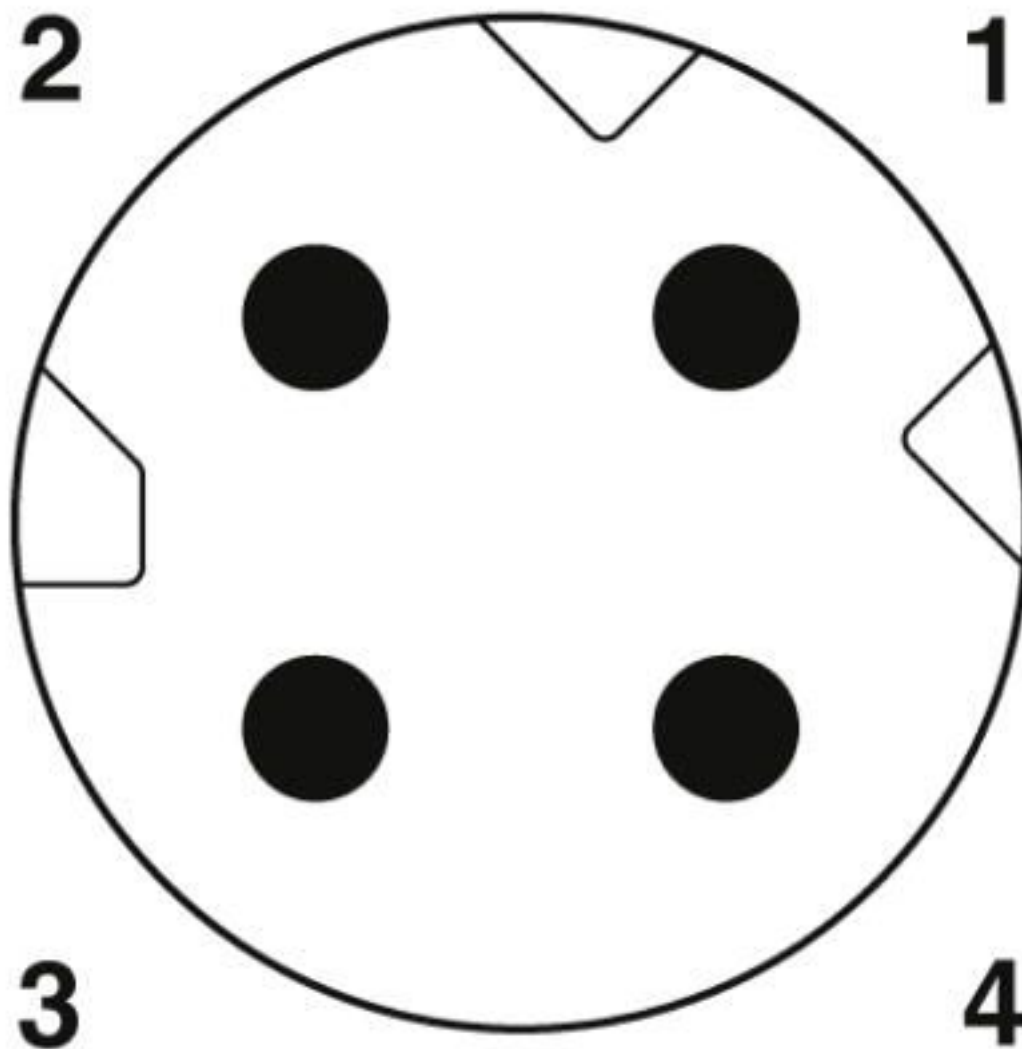
Schematic diagram



Connector pin assignment plug RJ45

# Network cable - NBC-M8MRD/2,0-93C/R4AC - 1080544

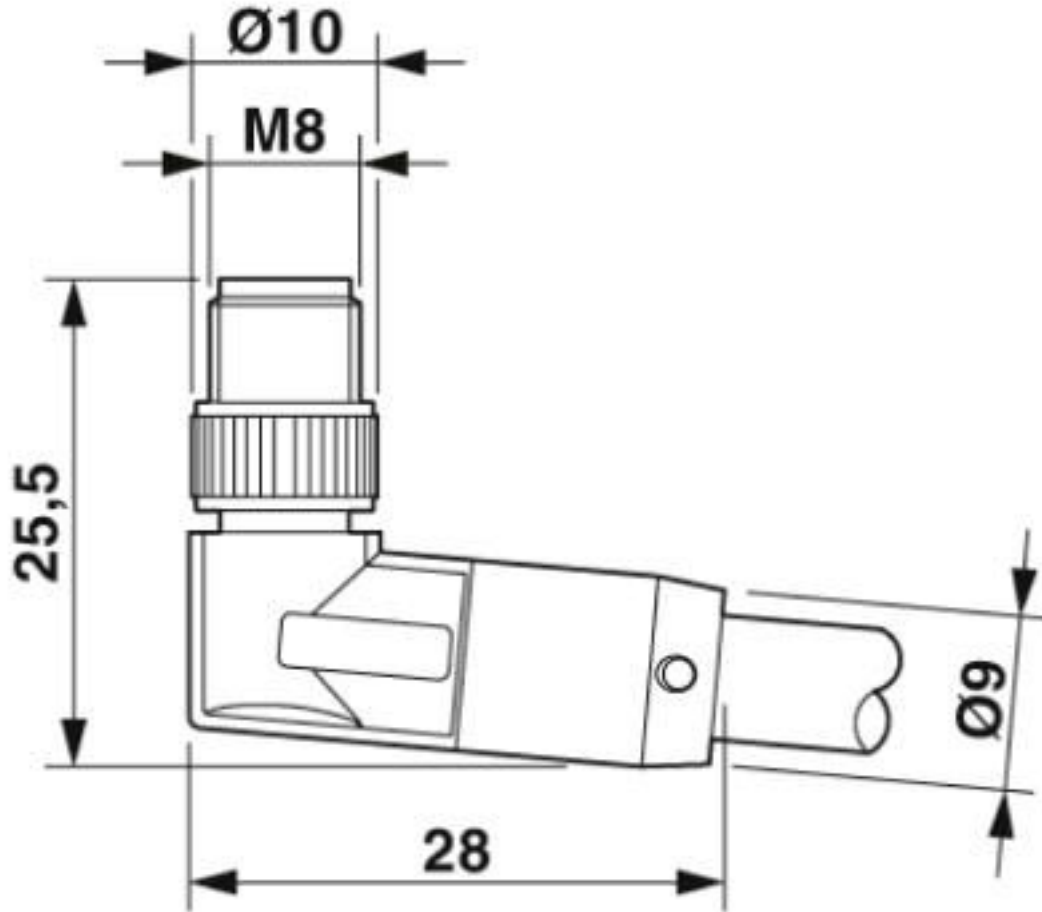
Schematic diagram



Pin assignment M8 male connector, 4-pos., D-coded, view of pin side

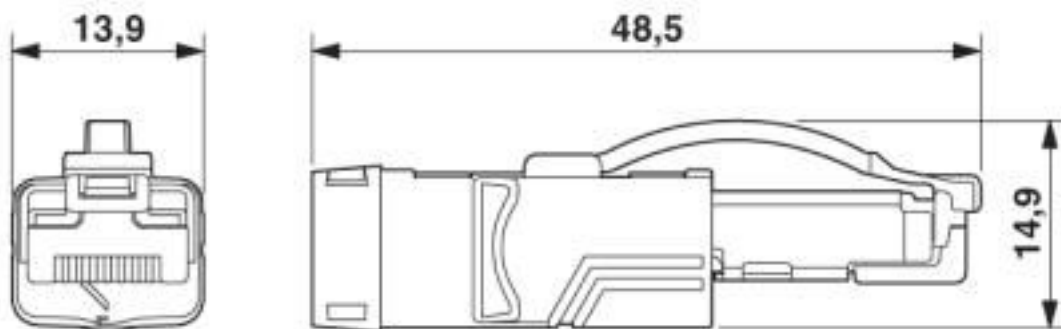
# Network cable - NBC-M8MRD/2,0-93C/R4AC - 1080544

Dimensional drawing



Plug M8 x 1, angled, shielded

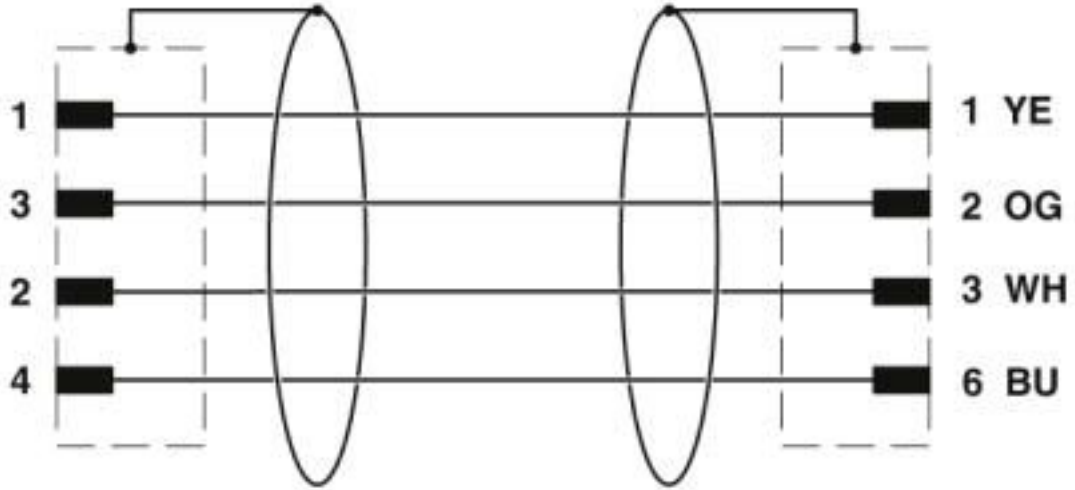
Dimensional drawing



RJ45 connector, IP20

# Network cable - NBC-M8MRD/2,0-93C/R4AC - 1080544

Circuit diagram

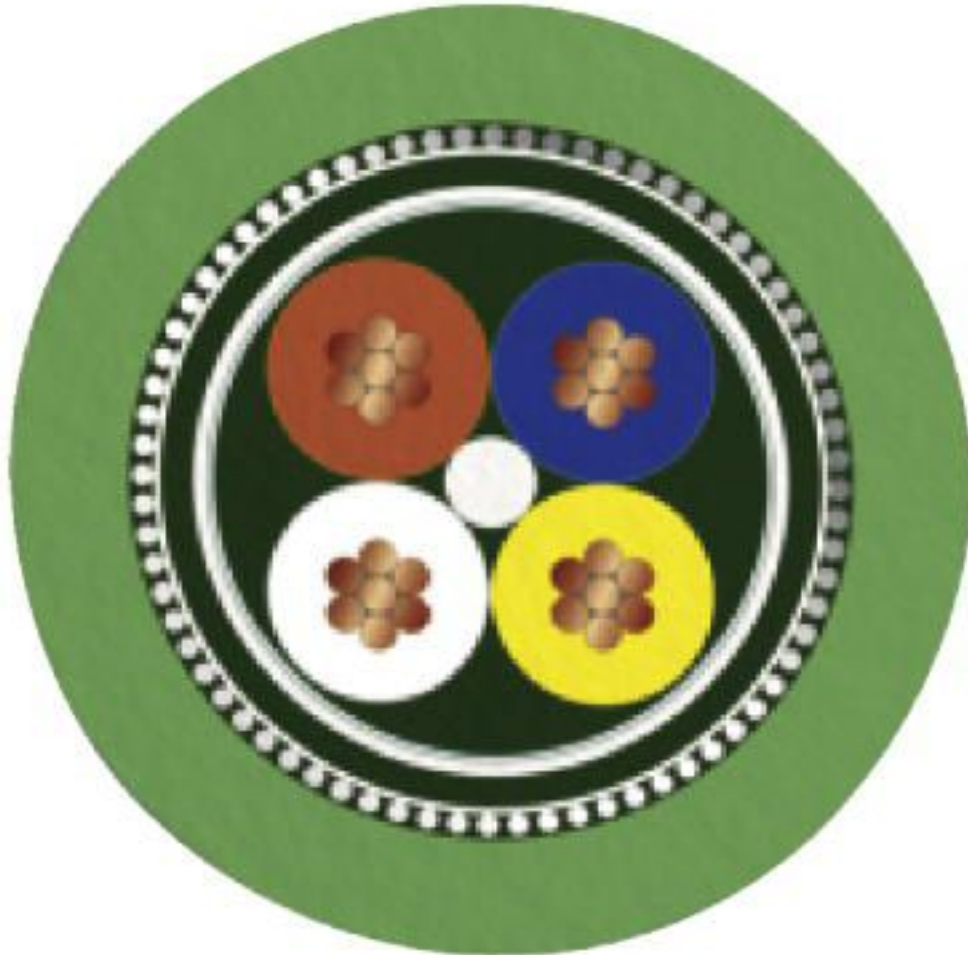


Contact assignment of the M8 and RJ45 plug



# Network cable - NBC-M8MRD/2,0-93C/R4AC - 1080544

Cable cross section



PROFINET drag chain CAT5 [93C]

## Classifications

eCl@ss

eCl@ss 10.0.1	27060308
eCl@ss 8.0	27060308
eCl@ss 9.0	27060308

ETIM

ETIM 5.0	EC002599
ETIM 6.0	EC001262
ETIM 7.0	EC001262

## Network cable - NBC-M8MRD/2,0-93C/R4AC - 1080544

### Approvals

Approvals

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Approvals


EAC-RoHS

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Ex Approvals

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### Approval details

EAC-RoHS		RU D- DE.HB35.B.00385
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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>

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