

# NBC-MSY/ 5,0-94H/MSY SCO - Hybrid cable



1407493

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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: 5 m, Power with Ethernet (PWE)

## Commercial data

Item number	1407493
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	BF04
Product key	AF1CML
GTIN	4046356777926
Weight per piece (including packing)	476 g
Weight per piece (excluding packing)	476 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

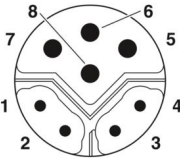
Status display	no
Status display present	no

### 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

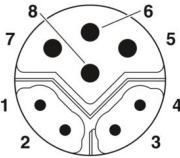
Dimensional drawing	 <p>M12 hybrid plug pin assignment, 8-pos., Y-coded, pin side view</p>
Type	M12 Plug, straight, 8-position, shielded (Advanced Shielding Technology), Keying: Y
Number of positions	8
Shielded	yes
Shielding	Advanced Shielding Technology
Signal type/category	EtherCAT® CAT5 (IEC 11801),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

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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
Material Seal	FKM
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	5 m
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### 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 <sup>2</sup> (Data) 4x 0.6 mm <sup>2</sup> (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 ±15 Ω (4 MHz ... 100 MHz)
Working capacitance	nom. 50 nF (per kilometer)
Differential impedance	100 Ω ±5 % (at 100 MHz)
Nominal voltage, cable	≤ 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 <sup>2</sup>
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) ≥ 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 °C ... 90 °C (cable, fixed installation) -30 °C ... 70 °C (Cable, flexible installation)

## Environmental and real-life conditions

Ambient conditions

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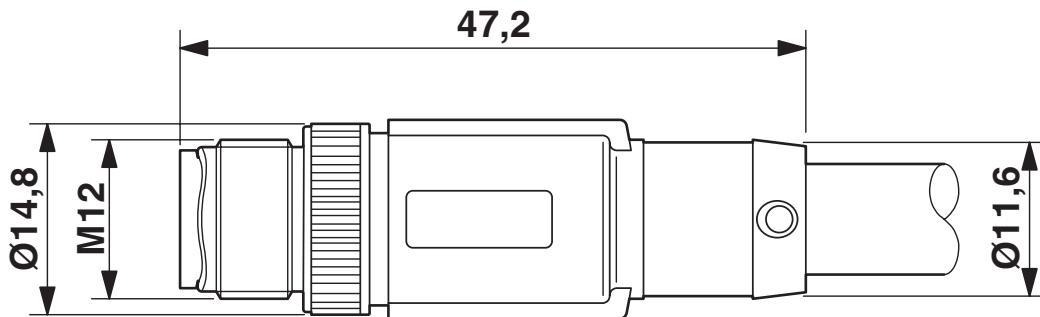
Degree of protection	IP65
	IP67
	IP65/IP67
Ambient temperature (operation) (male connector/female connector)	-25 °C ... 90 °C (M12 connector)

## Standards and regulations

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

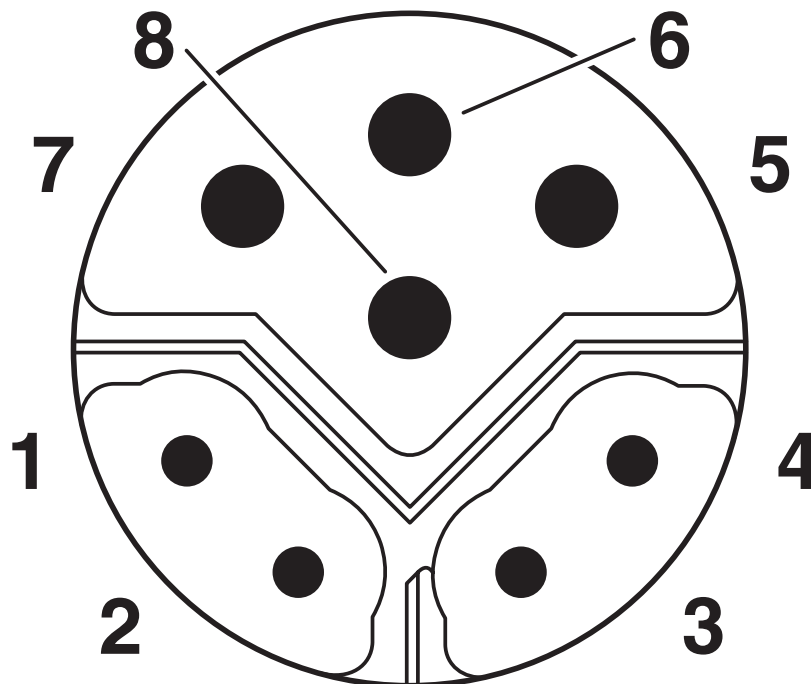
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



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

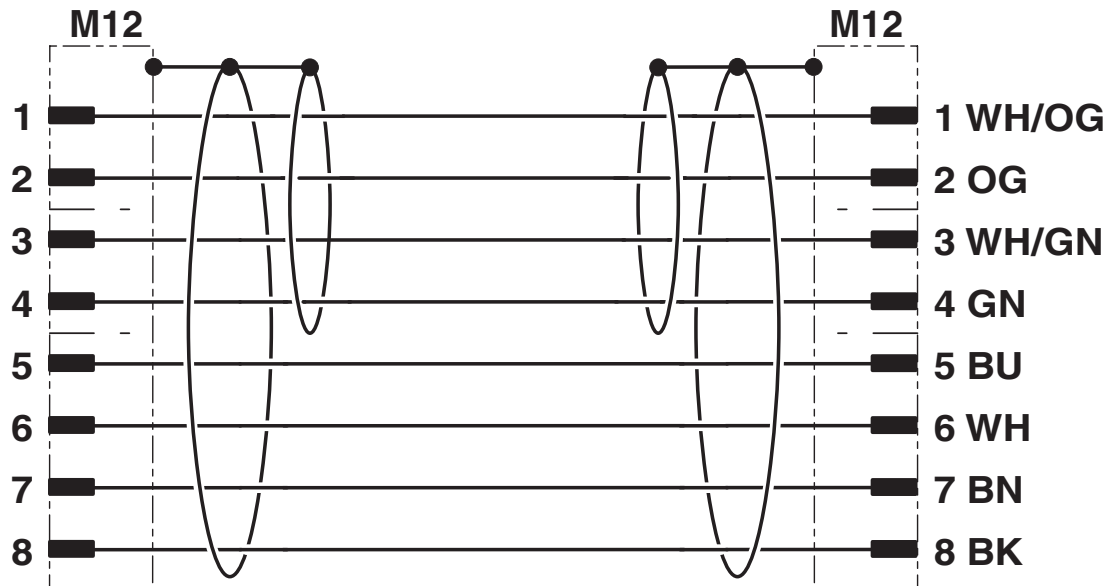
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Circuit diagram



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
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### 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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