PHŒNIX CONTACT

Network cable - NBC-MS/ 2,0-94B SCO - 1407405

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Network cable, Ethernet CAT5 (1 Gbps), 8-position, PUR, water blue RAL 5021, shielded, Plug straight M12 SPEEDCON / IP67, coding: A, on free cable end, cable length: 2 m

RoHS

Ethernet

SPEEDCON LOCKING

Key Commercial Data

Packing unit	1 pc
GTIN	
GTIN	4046356775335
Weight per Piece (excluding packing)	89.980 g
Custom tariff number	85444210
Country of origin	Poland

Technical data

Dimensions

Length of cable	2 m

Ambient conditions

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

General data

Note	Further products with variable cable type and variable cable length can be found in the accessories section
Rated current at 40°C	2 A
Rated voltage	48 V AC
	60 V DC
Number of positions	8
Signal type/category	Ethernet CAT5 (on the basis of IEC 11801), 1 Gbps
Standards/regulations	M12 connector IEC 61076-2-101

Network cable - NBC-MS/ 2,0-94B SCO - 1407405

Technical data

General data

Contact material	CuSn
Contact carrier material	TPU GF
Contact surface material	Ni/Au

Characteristics head 1

Head type	Plug straight M12 SPEEDCON / IP67
No. of positions (pin connector pattern)	8
Coding	A (Standard)
Color	black
Material (component)	CuZn (Contact)
	Ni/Au (Contact surface)
	TPU GF (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	free cable end
Color	black

Standards and Regulations

Standard designation	M12 connector
Standards/regulations	IEC 61076-2-101

Cable

Cable type	Ethernet, flexible, CAT5
Cable type (abbreviation)	94B
UL AWM style	20963 (80°C/30 V)
Signal type/category	Ethernet CAT5 (IEC 11801), 1 Gbps
Cable structure	4x2xAWG26/7; SF/UTP
Conductor cross section	4x 2x 0.14 mm²
AWG signal line	26
Conductor structure signal line	7x 0.16 mm
Core diameter including insulation	0.96 mm
Wire colors	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Twisted pairs	2 cores to the pair
Overall twist	4 pairs for core
Shielding	Aluminum-coated foil, tinned copper braided shield
Optical shield covering	70 %

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Technical data

Cable

External sheath, color	water blue RAL 5021
Outer sheath thickness	1.05 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	47 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	48 nF/km (at 1 kHz)
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
Near end crosstalk attenuation (NEXT)	71.3 dB (with 1 MHz)
	62.3 dB (at 4 MHz)
	56.3 dB (at 10 MHz)
	53.2 dB (at 16 MHz)
	51.8 dB (at 20 MHz)
	48.9 dB (at 31.25 MHz)
	44.4 dB (at 62.5 MHz)
	41.3 dB (at 100 MHz)
Power-summated near end crosstalk attenuation (PSNEXT)	62.3 dB (with 1 MHz)
	53.3 dB (at 4 MHz)
	47.3 dB (at 10 MHz)
	44.2 dB (at 16 MHz)
	42.8 dB (at 20 MHz)
	39.9 dB (at 31.25 MHz)
	35.4 dB (at 62.5 MHz)
	32.3 dB (at 100 MHz)
Attenuation	3.2 dB (with 1 MHz)
	6 dB (at 4 MHz)
	9.5 dB (at 10 MHz)
	12.1 dB (at 16 MHz)
	13.6 dB (at 20 MHz)
	17.1 dB (at 31.25 MHz)
	24.8 dB (at 62.5 MHz)
	32 dB (at 100 MHz)
Return loss (RL)	23 dB (at 4 MHz)
	24.1 dB (at 8 MHz)

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Technical data

Cable

	25 dB (at 10 MHz)
	25 dB (at 16 MHz)
	25 dB (at 20 MHz)
	23.6 dB (at 31.25 MHz)
	21.5 dB (at 62.5 MHz)
	20.1 dB (at 100 MHz)
Signal runtime	5.3 ns/m
Coupling resistance	$\leq$ 100.00 mΩ/m (at 10 MHz)
Nominal voltage, cable	$\leq$ 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	according to 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

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

Schematic diagram

Cable cross section
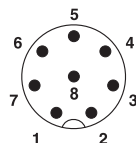
Pin assignment M12 plug, 8-pos., A-coded, view plug side

Ethernet, flexible, CAT5 [94B]

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Circuit diagram

Contact assignment of the M12 plug
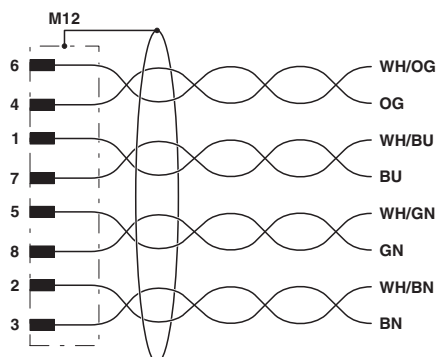
Dimensional drawing
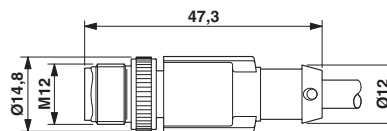
Plug, M12 x 1, straight, shielded

Classifications

eCl@ss

eCl@ss 4.0	27060306
eCl@ss 4.1	27060306
eCl@ss 5.0	27061801
eCl@ss 5.1	27061800
eCl@ss 6.0	27279200
eCl@ss 7.0	27279218
eCl@ss 8.0	27279218
eCl@ss 9.0	27060308

ETIM

ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 5.0	EC002599
ETIM 6.0	EC000830

UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501

Approvals

Approvals

Approvals

UL Recognized / EAC

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Approvals

Approval details

UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 335024

Nominal voltage UN	30 V
Nominal current IN	1.5 A

EAC		RU C-DE.AI30.B.00767

Accessories

Accessories

Circular connector (cable-side)

Connector - SACC-MS-8QO SH ETH SCO - 1421679

Connector, Ethernet CAT5 (1 Gbps), 8-position, halogen-free, shielded, Plug straight M12 SPEEDCON, A-coded, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Bus system connector - SACC-M12MR-8Q SH - 1553653

Bus system connector, Ethernet CAT5 (1 Gbps), 8-position, shielded, Plug angled M12, A-coded, Insulation displacement connection, knurl material: Nickel-plated brass, external cable diameter 4 mm ... 8 mm

Connector - SACC-FS-8QO SH ETH SCO - 1421680

Connector, Ethernet CAT5 (1 Gbps), 8-position, halogen-free, shielded, Socket straight M12 SPEEDCON, A-coded, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Network cable - NBC-MS/ 2,0-94B SCO - 1407405

Accessories

Bus system connector - SACC-M12FR-8Q SH - 1553666

Bus system connector, Ethernet CAT5 (1 Gbps), 8-position, shielded, Socket angled M12, A-coded, Insulation displacement connection, knurl material: Nickel-plated brass, external cable diameter 4 mm ... 8 mm

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

Cable-cutting tool - CUTFOX 12 - 1212128

Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm²)

Diagonal cutter - CUTFOX-S VDE - 1212207

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

Data cable preassembled

Network cable - NBC-MS/ 2,0-94B SCO - 1407405

Accessories

Network cable - NBC-MS SCO-IE/.../... - 1408682

Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Plug straight M12 SPEEDCON / IP67, coding: A, on free cable end, cable length: Free input (0.2 ... 40.0 m)

Network cable - NBC-MR SCO-IE/.../... - 1408675

Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, Plug angled M12 SPEEDCON / IP67, coding: A, on free cable end, cable length: Free input (0.2 ... 40.0 m)

Network cable - NBC-FS SCO-IE/.../... - 1408665

Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, free cable end, on Socket straight M12 SPEEDCON / IP67, coding: A, cable length: Free input (0.2 ... 40.0 m)

Network cable - NBC-FR SCO-IE/.../... - 1408657

Network cable, Ethernet CAT5 (1 Gbps), 8-position, Variable cable type, shielded, free cable end, on Socket angled M12 SPEEDCON / IP67, coding: A, cable length: Free input (0.2 ... 40.0 m)

Data plug

RJ45 connector - VS-08-RJ45-5-Q/IP20 - 1656725

RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: PA, connection method: IDC fast connection, connection cross section: AWG 26- 23, cable outlet: straight, color: traffic grey A RAL 7042

Network cable - NBC-MS/ 2,0-94B SCO - 1407405

Accessories

RJ45 connector - VS-08-RJ45-5-Q/IP20 BK - 1658008

RJ45 connector, degree of protection: IP20, number of positions: 8, 1 Gbps, CAT5 (IEC 11801:2002), material: PA, connection method: IDC fast connection, connection cross section: AWG 26- 23, cable outlet: straight, 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

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

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

RJ45 connector - CUC-V06-C1PGY-S/R4CE8:1 - 1414383

RJ45 connector, degree of protection: IP67, number of positions: 8, 1 Gbps, CAT6, material: PA, connection method: Crimp connection, connection cross section: AWG 27- 24, cable outlet: straight, color: gray

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Accessories

RJ45 connector - CUC-V06-C1PBK-S/R4CE8:1 - 1414408

RJ45 connector, degree of protection: IP67, number of positions: 8, 1 Gbps, CAT6, material: PA, connection method: Crimp connection, connection cross section: AWG 24- 27, cable outlet: straight, color: black

RJ45 connector - CUC-V14-C1ZNI-S/R4E8 - 1422661

Push-pull connector (version 14), die-cast zinc, with RJ45 connector insert, 8-pos., with IDC fast connection technology, for 1 and 7-wire cores, 26 ... 24 AWG, for cable diameter of 5.5 mm ... 10 mm

RJ45 connector - CUC-V14-C1ZNI-T/R4E8 - 1422663

Push-pull connector (version 14), die-cast zinc, with RJ45 connector insert, 8-pos., with IDC fast connection technology, for 1 and 7-wire cores, 26 ... 24 AWG, for cable diameter of 5.5 mm ... 10 mm

RJ45 connector - CUC-V14-C1ZNI-B/R4E8 - 1422662

Push-pull connector (version 14), die-cast zinc, with RJ45 connector insert, 8-pos., with IDC fast connection technology, for 1 and 7-wire cores, 26 ... 24 AWG, for cable diameter of 5.5 mm ... 10 mm

RJ45 connector - VS-PPC-C1-RJ45-POBK-PG9-8Q5 - 1657834

RJ45 connector, IP67, with push/pull interlocking, plastic housing, 1 Gbps, 8-pos., QUICKON fast connection technology, for 26 ... 24 AWG 1-wire and 7-wire conductors

Electronics pliers

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Accessories

Diagonal cutter - MICROFOX-SP-1 - 1212487

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

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

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Accessories

Stripping tool - WIREFOX 4 - 1212156

Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² 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 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

Stripping tool - WIREFOX 10 - 1212150

Stripping tool, for cables and conductors from 0.02 - 10 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² 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

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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