

## Network cable - NBC-MSD/ 1,0-93K SCO - 1411503

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Network cable, Sercos III CAT5 (100 Mbps), 4-position, PVC/PVC, signal red RAL 3020, shielded, Plug straight M12 SPEEDCON / IP67, Coding: D, on free cable end, Cable length: 1 m



### Key Commercial Data

Packing unit	1 STK
Custom tariff number	85444210
Country of origin	Poland

### Technical data

#### Dimensions

Length of cable	1 m
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#### Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)

#### General data

Rated current at 40°C	4 A
Rated voltage	250 V
Number of positions	4
Signal type/category	Sercos III CAT5 (IEC 11801), 100 Mbps
Standards/regulations	M12 connector IEC 61076-2-101

#### Characteristics head 1

Head type	Plug straight M12 SPEEDCON / IP67
No. of positions (pin connector pattern)	4

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### Technical data

#### Characteristics head 1

Coding	D (Data)
Color	black
Material (component)	CuSn (Contact)
	Ni/Au (Contact surface)
	PA (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
Stripping length of the sheath (free conductor end)	50 mm

#### Standards and Regulations

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

#### Cable

Cable type	Sercos III
Cable type (abbreviation)	93K
UL AWM style	21694 (60°C / 600 V)
Signal type/category	Sercos III 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	approx. 1.55 mm
Wire colors	White, yellow, blue, orange
Type of pair shielding	Aluminum-lined polyester foil
Overall twist	Star quad
Shielding	Tinned copper braided shield
External sheath, color	signal red RAL 3020
Outer sheath thickness	approx. 0.9 mm
External cable diameter D	6.5 mm ±0.2 mm
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	7 x D

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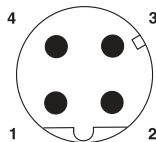
## Technical data

### Cable

Cable weight	68 kg/km
Outer sheath, material	PVC
Material, inner sheath	PVC
Material conductor insulation	PE
Conductor material	Tin-plated Cu litz wires
Insulation resistance	$\geq 0.5 \text{ G}\Omega \cdot \text{km}$
Conductor resistance	$\leq 120 \text{ }\Omega/\text{km}$
Wave impedance	$100 \text{ }\Omega \pm 15 \text{ }\Omega$ (at 100 MHz)
Signal runtime	5.3 ns/m
Coupling resistance	$\leq 20.00 \text{ m}\Omega/\text{m}$ (at 10 Hz)
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Flame resistance	According to UL 1685 (CSA FT 4)
Resistance to oil	Resistant to oil to a limited extent
Other resistance	UV resistant According to UL 1581, Section 1200
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

## Drawings

Schematic diagram



Pin assignment M12 male connector, 4-pos., D-coded, male side

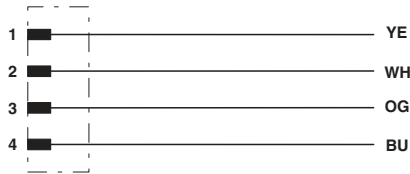
Cable cross section



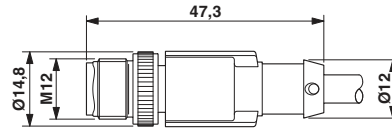
Sercos III [93K]

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Circuit diagram



Dimensional drawing



Contact assignment of the M12 plug

Plug, M12 x 1, straight, shielded

## Classifications

eCl@ss

eCl@ss 4.1	27060306
eCl@ss 5.1	27060307
eCl@ss 6.0	27060390
eCl@ss 8.0	27279218
eCl@ss 9.0	27060311

ETIM

ETIM 4.0	EC002599
ETIM 5.0	EC001855

## Accessories

Accessories

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

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### Accessories

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#### Cutting tools

Diagonal cutter - CUTFOX-S VDE - 1212207



Diagonal cutter for copper and aluminum conductors, VDE 1000 V AC/ 1500 V DC-tested

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#### 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 sockets



#### 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

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#### 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

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### Accessories

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

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### Stripping tool

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

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### 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

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



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

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### Accessories

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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

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