

## Network cable - NBC-FSD/ 5,0-93K/R4AC SCO - 1411541

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Network cable, Sercos III CAT5 (100 Mbps), 4-position, PVC/PVC, signal red RAL 3020, shielded, Plug straight RJ45 / IP20, on Socket straight M12 SPEEDCON / IP67, Coding: D, Cable length: 5 m



### Key Commercial Data

Packing unit	1 STK
Custom tariff number	85444290
Country of origin	Poland

### Technical data

#### Dimensions

Length of cable	5 m
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#### Ambient conditions

Degree of protection	IP65 (M12 connector)
	IP67 (M12 connector)
	IP20 (RJ45 connector)

#### General data

Rated current at 40°C	1 A
Rated voltage	50 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 RJ45 / IP20
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### Technical data

#### Characteristics head 1

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

#### Characteristics head 2

Head type	Socket straight M12 SPEEDCON / IP67
No. of positions (pin connector pattern)	4
Coding	D (Data)
Color	black
Material (component)	CuSn (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

#### 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

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### Technical data

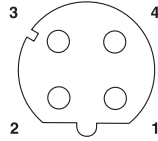
#### Cable

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 $\pm$ 0.2 mm
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	7 x D
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 G $\Omega$ *km
Conductor resistance	$\leq$ 120 $\Omega$ /km
Wave impedance	100 $\Omega$ $\pm$ 15 $\Omega$ (at 100 MHz)
Signal runtime	5.3 ns/m
Coupling resistance	$\leq$ 20.00 m $\Omega$ /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

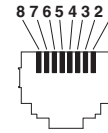
# Network cable - NBC-FSD/ 5,0-93K/R4AC SCO - 1411541

Schematic diagram



Pin assignment M12 socket, 4-pos., D-coded, female side

Schematic diagram



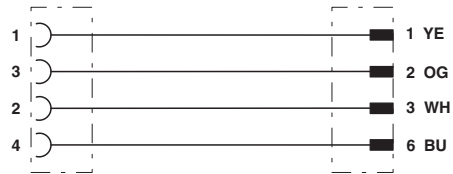
Connector pin assignment plug RJ45

Cable cross section



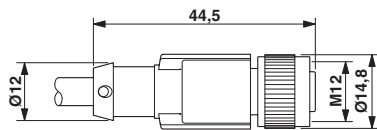
Sercos III [93K]

Circuit diagram



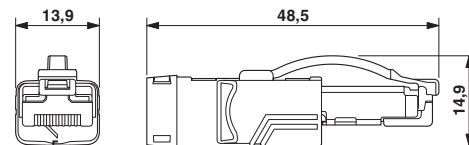
Contact assignment of the M12 socket and the RJ45 plug

Dimensional drawing



M12 x 1 socket, straight, shielded

Dimensional drawing



RJ45 connector, IP20

## 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

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### Classifications

#### ETIM

ETIM 4.0	EC002599
ETIM 5.0	EC001855

### Accessories

#### Accessories

#### Protective cap

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



#### Safety locking

Locking clip - SAC-M12-EXCLIP-F - 1558991



Locking clip for the socket 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

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### Accessories

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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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