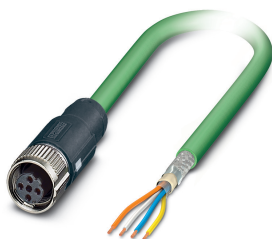


## Network cable - NBC-FSD SCO-PN/.../... - 1408623

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Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, Variable cable type, shielded, free cable end, on Socket straight M12 SPEEDCON / IP67, coding: D, cable length: Free input (0.2 ... 40.0 m)



### Key Commercial Data

Packing unit	1 pc
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### Technical data

#### Dimensions

Length of cable	Free input (0.2 ... 40.0 m)
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#### Ambient conditions

Degree of protection	IP65
	IP67
Ambient temperature (operation)	-25 °C ... 85 °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)
	Further products with fixed cable length can be found in the accessories section
Rated current at 40°C	4 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	M12 connector IEC 61076-2-101
Contact material	CuSn
Contact carrier material	TPU GF

# Network cable - NBC-FSD SCO-PN/.../... - 1408623

## Technical data

### General data

Contact surface material	Ni/Au
Transmission characteristics (category)	CAT5
Transmission speed	100 Mbps

### Characteristics head 1

Head type	free cable end
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### 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

### Line characteristics

Note	This item is a network cable with a freely selectable cable type. The technical data for all possible cable types is listed in the table below.
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### Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-101
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### PROFINET PVC stranded CAT5 [93B]

Cable type	PROFINET PVC stranded CAT5
Cable type (abbreviation)	93B
UL AWM style	21694
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	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	1.55 mm
Wire colors	White, yellow, blue, orange
Overall twist	Star quad
Shielding	Aluminum-coated foil, tinned copper braided shield
Optical shield covering	85 %

# Network cable - NBC-FSD SCO-PN/.../... - 1408623

## Technical data

### PROFINET PVC stranded CAT5 [93B]

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	3 x D
Minimum bending radius, flexible installation	7 x D
Cable weight	67 kg/km
Outer sheath, material	PVC
Material, inner sheath	PVC
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 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)
	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
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)

# Network cable - NBC-FSD SCO-PN/.../... - 1408623

## Technical data

### PROFINET PVC stranded CAT5 [93B]

Ambient temperature (installation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-50 °C ... 70 °C
Shielded	yes

### PROFINET drag chain CAT5 [93C]

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 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)

## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Technical data

#### PROFINET drag chain CAT5 [93C]

	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)
	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
Shielded	yes

#### PROFINET robot CAT5 [93R]

Cable type	PROFINET robot CAT5
Cable type (abbreviation)	93R
UL AWM style	20233 (80°C/300 V)
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	EtherCAT® CAT5 (IEC 11801), 100 Mbps
Cable structure	1x4xAWG22/19; S/TQ
Conductor cross section	4x 0.34 mm²
AWG signal line	22

## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Technical data

#### PROFINET robot CAT5 [93R]

Conductor structure signal line	19x 0.15 mm
Core diameter including insulation	1.5 mm
Wire colors	White, yellow, blue, orange
Overall twist	Star quad
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External sheath, color	green RAL 6018
Outer sheath thickness	approx. 1 mm
External cable diameter D	6.5 mm ±0.2 mm
Minimum bending radius, fixed installation	5 x D
Torsion force	± 180 °/m (1 000 000 torsion cycles)
Cable weight	55 kg/km
Outer sheath, material	PUR
Material conductor insulation	Foamed PE
Conductor material	Tin-plated Cu litz wires
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 120.00 Ω/km
Wave impedance	100 Ω ±5 Ω (at 100 MHz)
Attenuation	2.9 dB (with 1 MHz)
	5 dB (at 4 MHz)
	8.1 dB (at 10 MHz)
	10.4 dB (at 16 MHz)
	11.9 dB (at 20 MHz)
	15.5 dB (at 31.25 MHz)
	26.5 dB (at 62.5 MHz)
	41 dB (at 100 MHz)
Signal runtime	4.8 ns/m
Nominal voltage, cable	300 V
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Flame resistance	according to IEC 60332-1-2
Halogen-free	according to IEC 60754-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	UV resistant According to UL 1581, Section 1200
Ambient temperature (operation)	-40 °C ... 80 °C
	-40 °C ... 80 °C
Ambient temperature (installation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Shielded	yes

#### PROFINET RADOX® railway application CAT5 [937]

# Network cable - NBC-FSD SCO-PN/.../... - 1408623

## Technical data

### PROFINET RADOX® railway application CAT5 [937]

Cable type	PROFINET RADOX® railway application CAT5
Cable type (abbreviation)	937
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	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	approx. 1.5 mm
Wire colors	white-blue, orange-yellow
Overall twist	Star quad
Shielding	Plastic-coated aluminum foil, tinned copper braided shield
External sheath, color	black RAL 9005
Outer sheath thickness	approx. 1 mm
External cable diameter D	6.6 mm ±0.4 mm
Minimum bending radius, fixed installation	6 x D
Cable weight	70 kg/km
Outer sheath, material	PE-X
Material conductor insulation	Foamed PE
Conductor material	silver-plated Cu litz wires
Conductor resistance	≤ 54.4 Ω/km
Working capacitance	≤ 65 pF (core-core)
	≤ 100 pF (core-shield)
Wave impedance	100 Ω ±5 Ω (f = 100 MHz)
Near end crosstalk attenuation (NEXT)	73 dB (with 1 MHz)
	70 dB (at 4 MHz)
	65 dB (at 10 MHz)
	57 dB (at 31.5 MHz)
	52 dB (at 62.5 MHz)
	48 dB (at 100 MHz)
Remote crosstalk attenuation (FEXT)	78 dB (with 1 MHz)
	77 dB (at 4 MHz)
	70 dB (at 10 MHz)
	65 dB (at 31.5 MHz)
	56 dB (at 62.5 MHz)
	48 dB (at 100 MHz)
Attenuation	2 dB (with 1 MHz)
	4.4 dB (at 4 MHz)
	7.4 dB (at 10 MHz)
	14 dB (at 31.5 MHz)

# Network cable - NBC-FSD SCO-PN/.../... - 1408623

## Technical data

PROFINET RADOX® railway application CAT5 [937]

	20 dB (at 62.5 MHz)
	26 dB (at 100 MHz)
Return loss (RL)	25 dB (at 4 MHz)
	30 dB (at 10 MHz)
	30 dB (at 31.5 MHz)
	30 dB (at 62.5 MHz)
	28 dB (at 100 MHz)
Signal speed	75 c
Shield attenuation	40 dB (30 MHz ≤ f ≤ 100 MHz)
Coupling resistance	200.00 mΩ/m (f ≤ 30 MHz)
Nominal voltage, cable	300 V AC
Test voltage, cable	2000 V AC (50 Hz, 5 minutes)
Fire protection in rail vehicles	BS 6853 (Category Ia, Ib, II)
	GM/RT 2130 (Category Ia, Ib, II)
	EN 45545 (Risk level HL1 - HL3)
	DIN 5510 (Fire protection level 1, 2, 3, 4)
	NF F16-101 (Category A1, A2, B)
	NF F16-101 (Class C/F0)
	NFPA 130
	UNI CEI 11170 (Risk level LR1 - LR4)
Flame resistance	EN 60332-1-2
	EN 50266
	EN 60332-3-25
	NF C32-070, 2.1
	NF C32-070, 2.2
	UL 1685, 12 (FT4)
	in accordance with ISO 6722-1 5.22 (UN ECE-R 118.01)
Halogen-free	According to EN 50267-2-1
Resistance to oil	according to IRM 902, 72 h at 100 °C
Other resistance	Resistance to fuels according to IRM 903, 168 h at 70 °C
Concentration of fumes	BS 6853 D.8.7
	EN 61034-2
	UL 1685, 12 (FT4)
Fume corrosiveness	EN 50267-2-2
Fume toxicity	BS 6853 B.1
	EN 50305, 9.2
Ambient temperature (operation)	-50 °C ... 90 °C (cable, fixed installation)
	-40 °C ... 90 °C (cable, flexible installation)
Ambient temperature (installation)	-25 °C ... 90 °C
Shielded	yes



## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Technical data

#### PROFINET stranded CAT5 [93M]

Cable type	PROFINET stranded CAT5
Cable type (abbreviation)	93M
UL AWM style	20236 (80°C/30 V)
Signal type/category	PROFINET CAT5 (IEC 11801), 100 Mbps
	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	approx. 1.5 mm
Wire colors	White, yellow, blue, orange
Overall twist	Star quad
Shielding	Aluminum-coated foil, tinned copper braided shield
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	4 x D
Minimum bending radius, flexible installation	8 x D
Cable weight	65 kg/km
Outer sheath, material	PUR
Material, inner sheath	PVC
Material conductor insulation	PE
Conductor material	Tin-plated Cu litz wires
Insulation resistance	≥ 500 MΩ*km
Loop resistance	≤ 120.00 Ω/km
Working capacitance	52 pF
Wave impedance	100 Ω ±15 Ω (at 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)
	6.3 dB (at 10 MHz)
	8 dB (at 16 MHz)
	9 dB (at 20 MHz)

# Network cable - NBC-FSD SCO-PN/.../... - 1408623

## Technical data

### PROFINET stranded CAT5 [93M]

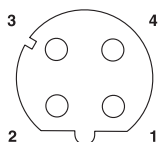
	11.4 dB (at 31.25 MHz)
	16.5 dB (at 62.5 MHz)
	21.3 dB (at 100 MHz)
Signal runtime	5.3 ns/m
Coupling resistance	≤ 20.00 mΩ/m (at 10 MHz)
Nominal voltage, cable	600 V
Test voltage Core/Core	2000 V (50 Hz, 1 min.)
Test voltage Core/Shield	2000 V (50 Hz, 1 min.)
Ambient temperature (operation)	-40 °C ... 80 °C
	-40 °C ... 80 °C (cable, flexible installation)
Ambient temperature (installation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Shielded	yes

### Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

## Drawings

Schematic diagram



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

Cable cross section



PROFINET PVC stranded CAT5 [93B]

Cable cross section



PROFINET drag chain CAT5 [93C]

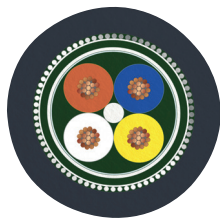
Cable cross section



PROFINET robot CAT5 [93R]

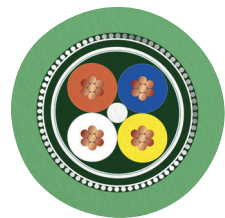
# Network cable - NBC-FSD SCO-PN/.../... - 1408623

Cable cross section



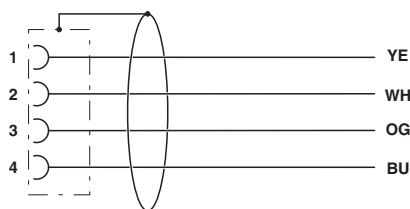
PROFINET RADOX® railway application CAT5 [937]

Cable cross section



PROFINET stranded CAT5 [93M]

Circuit diagram



Dimensional drawing



Contact assignment of the M12 socket

M12 x 1 socket, straight, shielded

## Classifications

### eCl@ss

eCl@ss 10.0.1	27060308
eCl@ss 11.0	27060308
eCl@ss 4.0	27060300
eCl@ss 4.1	27060300
eCl@ss 5.0	27061800
eCl@ss 5.1	27061800
eCl@ss 6.0	27279200
eCl@ss 7.0	27279218
eCl@ss 9.0	27060308

### ETIM

ETIM 3.0	EC000830
ETIM 4.0	EC002599
ETIM 6.0	EC000830
ETIM 7.0	EC003249

### UNSPSC

UNSPSC 6.01	31261501
UNSPSC 7.0901	31261501
UNSPSC 11	31261501
UNSPSC 12.01	31261501

# Network cable - NBC-FSD SCO-PN/.../... - 1408623

## Classifications

### UNSPSC

UNSPSC 13.2	31251501
UNSPSC 18.0	26121604
UNSPSC 19.0	26121604
UNSPSC 20.0	26121604
UNSPSC 21.0	26121604

## Approvals


### Approvals


#### Approvals


UL Recognized / cUL Recognized / EAC-RoHS / cULus Recognized


#### Ex Approvals

### Approval details

UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 335024
Nominal voltage UN		30 V	
Nominal current IN		4 A	

cUL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 335024
Nominal voltage UN		30 V	
Nominal current IN		4 A	

EAC-RoHS		RU D- DE.HB35.B.00387
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cULus Recognized	
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## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

#### Accessories

#### Cable connector

Conductor connectors - SACC-CC-4QO SH PN - 1414416



Cable connector, PROFINET CAT5 (100 Mbps), 4-pos., halogen-free, shielded, insulation displacement connection, housing material: zinc die-cast, nickel-plated, outer cable diameter of 5 mm ... 9.7 mm

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#### Circular connector (cable-side)

Data connector - SACC-MSD-4QO SH PN SCO - 1411068



Data connector, PROFINET CAT5 (100 Mbps), 4-position, halogen-free, shielded, Plug straight M12 SPEEDCON, Coding: D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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Data connector - SACC-M12MRD-4Q SH PN - 1554539



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, Coding: D, Insulation displacement connection, knurl material: Nickel-plated brass, external cable diameter 4 mm ... 8 mm

---

Data connector - SACC-FSD-4QO SH PN SCO - 1411071



Data connector, PROFINET CAT5 (100 Mbps), 4-position, halogen-free, shielded, Socket straight M12 SPEEDCON, Coding: D, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

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Data connector - SACC-M12FRD-4Q SH PN - 1554542



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, Coding: D, Insulation displacement connection, knurl material: Nickel-plated brass, external cable diameter 4 mm ... 8 mm

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## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

Data connector - SACC-M12MSD-4PL SH PN - 1424682



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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Data connector - SACC-M12MRD-4PL SH PN - 1424684



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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Data connector - SACC-M12FSD-4PL SH PN - 1424683



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket straight M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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Data connector - SACC-M12FRD-4PL SH PN - 1424685



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, Coding: D, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

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Data connector - SACC-M12MSD-4CT-CM SH PN - 1422846



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug straight M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

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## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

Data connector - SACC-M12MRD-4CT-CM SH PN - 1422847



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Plug angled M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Data connector - SACC-M12FSD-4CT-CM SH PN - 1422848



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket straight M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Data connector - SACC-M12FRD-4CT-CM SH PN - 1422849



Data connector, PROFINET CAT5 (100 Mbps), 4-position, shielded, Socket angled M12, Coding: D, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

### 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

## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

Cable-cutting tool - CUTFOX 12 - 1212128



Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm<sup>2</sup>)

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Diagonal cutter - CUTFOX-S VDE - 1212207



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

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### Data cable preassembled

Network cable - NBC- 1,0-93B/FSD SCO - 1407528



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT<sup>®</sup> CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded, free cable end, on Socket straight M12 SPEEDCON / IP67, coding: D, cable length: 1 m

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Network cable - NBC- 2,0-93B/FSD SCO - 1407529



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT<sup>®</sup> CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded, free cable end, on Socket straight M12 SPEEDCON / IP67, coding: D, cable length: 2 m

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Network cable - NBC- 5,0-93B/FSD SCO - 1407530



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT<sup>®</sup> CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded, free cable end, on Socket straight M12 SPEEDCON / IP67, coding: D, cable length: 5 m

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## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

Network cable - NBC-10,0-93B/FSD SCO - 1407531



Network cable, PROFINET CAT5 (100 Mbps), EtherCAT® CAT5 (100 Mbps), 4-position, PVC/PVC, green RAL 6018, shielded, free cable end, on Socket straight M12 SPEEDCON / IP67, coding: D, cable length: 10 m

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### Data plug

RJ45 connector - VS-PN-RJ45-5-Q/IP20 - 1658435



RJ45 connector, degree of protection: IP20, number of positions: 4, 100 Mbps, CAT5 (IEC 11801:2002), material: PA, connection method: IDC fast connection, cable outlet: straight, color: traffic grey A RAL 7042, PROFINET

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RJ45 connector - CUC-IND-C1ZNI-S/R4IP8 - 1421126



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 23- 22, cable outlet: straight, color: green, PROFINET

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RJ45 connector - CUC-IND-C1ZNI-T/R4IP8 - 1421128



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 23- 22, cable outlet: angled, Ethernet/PROFINET

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RJ45 connector - CUC-IND-C1ZNI-B/R4IP8 - 1421127



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 23- 22, cable outlet: angled, Ethernet/PROFINET

## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

RJ45 connector - CUC-V14-C1ZNI-S/R4P8 - 1422664



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, 23 ... 22 AWG, for cable diameter of 5.5 mm ... 10 mm

RJ45 connector - CUC-V14-C1ZNI-T/R4P8 - 1422667



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, 23 ... 22 AWG, for cable diameter of 5.5 mm ... 10 mm

RJ45 connector - CUC-V14-C1ZNI-B/R4P8 - 1422665



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, 23 ... 22 AWG, for cable diameter of 5.5 mm ... 10 mm

### Electronics pliers

Diagonal cutter - MICROFOX-SP-1 - 1212487



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

### Plug for cable screw gland

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

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



### Safety locking

## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

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

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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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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 4 - 1212156



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 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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Stripping tool - WIREFOX-E 4 - 1212704



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 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

## Network cable - NBC-FSD SCO-PN/.../... - 1408623

### Accessories

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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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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