

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

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Sensor/actuator cable, 4-position, PE-X halogen-free, black, shielded, Plug straight M12 SPEEDCON, coding: A, on free cable end, cable length: 2 m, For railway applications

### Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Safety thanks to flame retardancy: PA 6.6 grip and radiation-cross-linked cables satisfy the most stringent requirements
- ✓ Securely locked by special vibration brake
- ✓ Resistant to temperature influences – tested for an extended temperature range and for resistance to temperature shocks
- ✓ Reliable signal transmission – 360° shielding in environments with electromagnetic interference



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 774277
GTIN	4046356774277

### Technical data

#### Dimensions

Length of cable	2 m
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#### Ambient conditions

Ambient temperature (operation)	-40 °C ... 85 °C (Plug / socket)
Degree of protection	IP65

#### General

Note	Further products with variable cable type and variable 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

# Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

## Technical data

### General

Color handle area	black
Insulation resistance	≥ 100 MΩ
Coding	A - standard
Standards/regulations	M12 connector IEC 61076-2-101
	Shock, vibration EN 50155
Status display	No
Protective circuit/component	unwired
Overvoltage category	II
Degree of pollution	3
Insertion/withdrawal cycles	≥ 100
Torque	0.4 Nm (M12 connector)

### Material

Flammability rating according to UL 94	V0
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Material of grip body	PA 6.6
Material, knurls	Zinc die-cast, nickel-plated

### Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-101
	Shock, vibration EN 50155
Flammability rating according to UL 94	V0

### Cable

Cable type	Shielded black RADOX®
Cable type (abbreviation)	28R
Conductor cross section	4x 0.5 mm <sup>2</sup>
AWG signal line	20
Conductor structure signal line	19x 0.18 mm
Core diameter including insulation	1.43 mm
Wire colors	White 1, white 2, white 3, white 4
Overall twist	4 wires, twisted
Shielding	Tinned copper braided shield
External sheath, color	black
External cable diameter D	5.4 mm ±0.3 mm
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	4 x D
Cable weight	56 kg/km
Outer sheath, material	PE-X
Material conductor insulation	PE-X

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Technical data

#### Cable

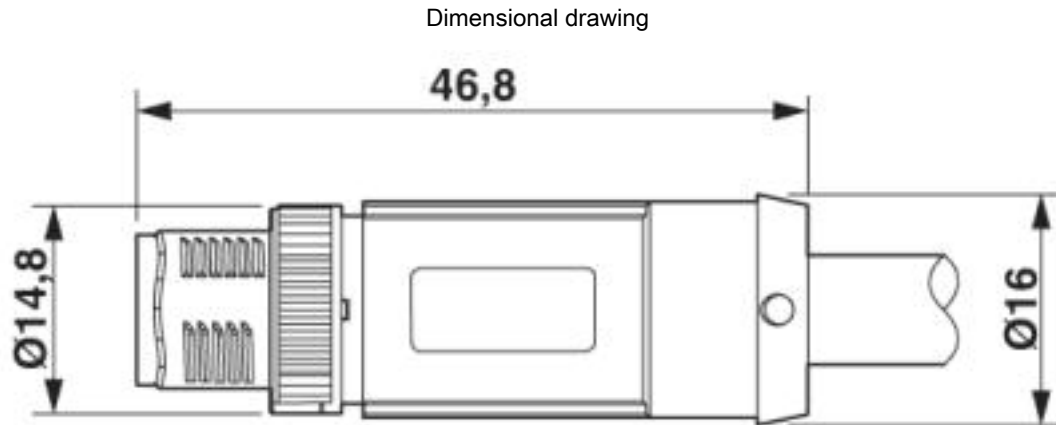
Conductor material	Tin-plated Cu litz wires
Conductor resistance	≤ 40.1 Ω/km
Nominal voltage, cable	600 V AC (Core-ground, U <sub>0</sub> )
	1000 V AC (Core-ground, U)
	≤ 720 V AC (core-ground)
	≤ 1200 V AC (Core-ground, U <sub>m</sub> )
	≤ 900 V DC (Core-ground, V <sub>0</sub> )
	≤ 1500 V DC (core-core)
Test voltage, cable	3500 V AC (50 Hz, 5 min.)
	8400 V DC (50 Hz, 5 min.)
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 50305, 9.1.2
	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 ... 120 °C (cable, fixed installation)
	-25 °C ... 90 °C (cable, flexible installation)

#### Environmental Product Compliance

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

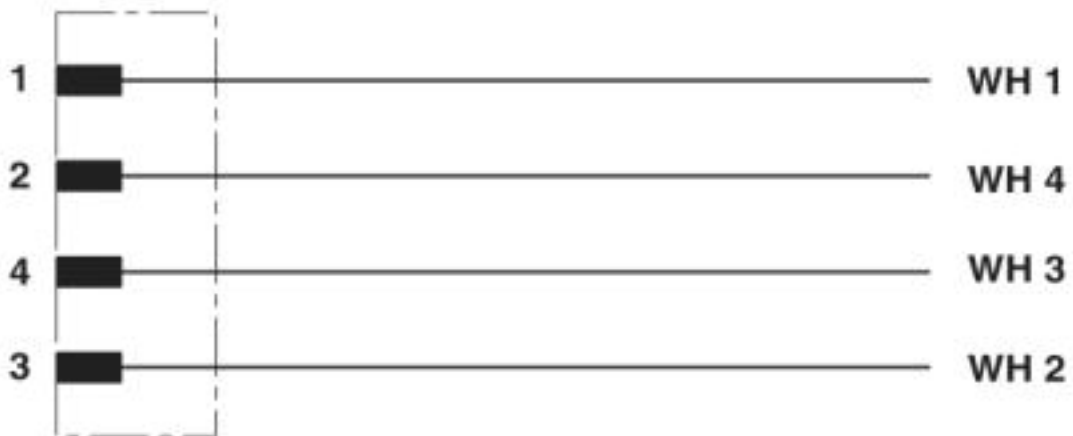
# Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

## Drawings



M12 SPEEDCON plug, straight, shielded

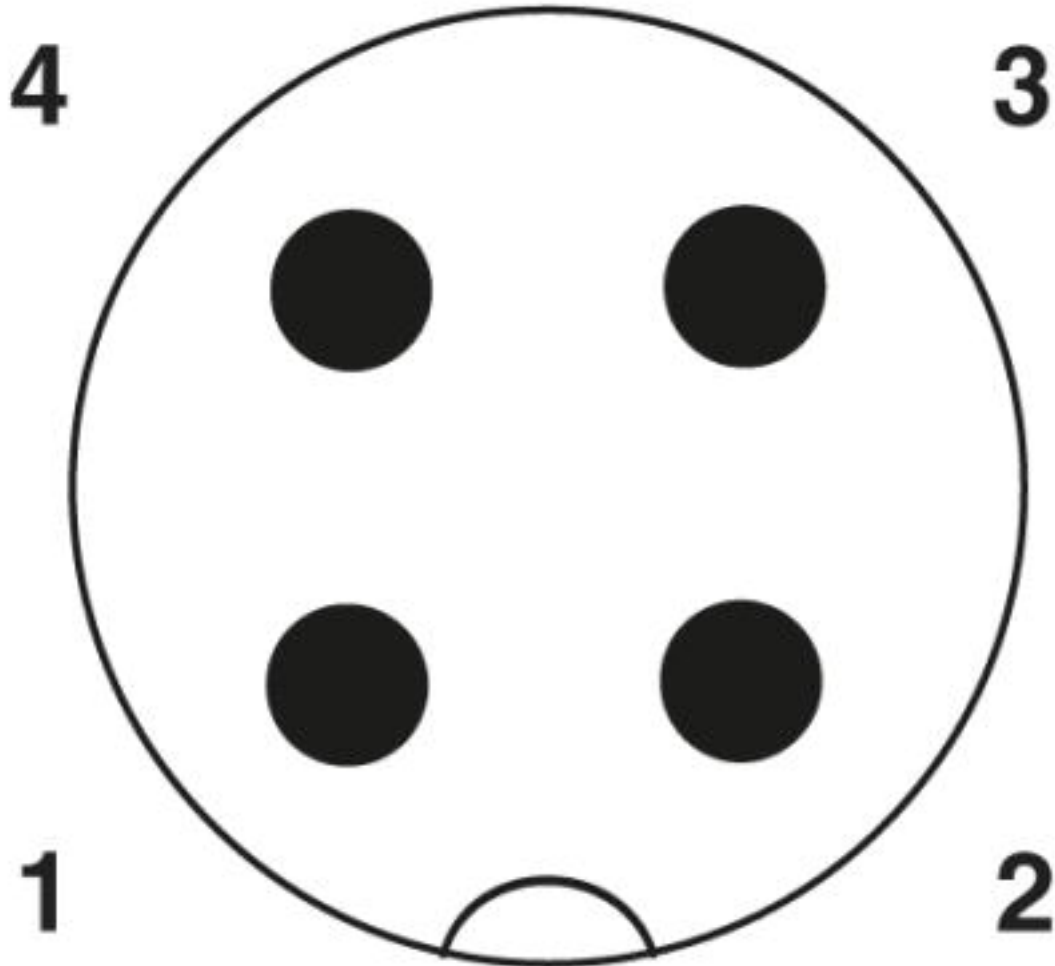
Circuit diagram



Contact assignment of the M12 plug

# Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

Schematic diagram



Pin assignment M12 plug, 4-pos., A-coded, view plug side

# Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

Cable cross section



Shielded black RADOX® [28R]

## Classifications

eCl@ss

eCl@ss 10.0.1	27060311
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 8.0	27279218
eCl@ss 9.0	27060311

# Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

## Classifications

### ETIM

ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 5.0	EC001855
ETIM 6.0	EC001855
ETIM 7.0	EC001855

### UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501
UNSPSC 19.0	31251501
UNSPSC 20.0	31251501
UNSPSC 21.0	31251501

## Accessories

### Accessories

#### Circular connector (cable-side)

Connector - SACC-MS-4QO-0,75 SH SCO - 1413993



Connector, Universal, 4-position, halogen-free, shielded, Plug straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Connector - SACC-FS-4QO-0,75 SH SCO - 1413994



Connector, Universal, 4-position, halogen-free, shielded, Socket straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Connector - SACC-M12MS-4PL SH - 1424666



Connector, Universal, 4-position, shielded, Plug straight M12, Coding: A, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

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Connector - SACC-M12MR-4PL SH - 1424667



Connector, Universal, 4-position, shielded, Plug angled M12, Coding: A, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Connector - SACC-M12FS-4PL SH - 1424668



Connector, Universal, 4-position, shielded, Socket straight M12, Coding: A, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Connector - SACC-M12FR-4PL SH - 1424669



Connector, Universal, 4-position, shielded, Socket angled M12, Coding: A, Push-in connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4 mm ... 8 mm

Connector - SACC-M12MS-5CT-CM SH - 1422850



Connector, Universal, 5-position, shielded, Plug straight M12, Coding: A, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Connector - SACC-M12MR-5CT-CM SH - 1422851



Connector, Universal, 5-position, shielded, Plug angled M12, Coding: A, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts



## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

Connector - SACC-M12FS-5CT-CM SH - 1422852



Connector, Universal, 5-position, shielded, Socket straight M12, Coding: A, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Connector - SACC-M12FR-5CT-CM SH - 1422853



Connector, Universal, 5-position, shielded, Socket angled M12, Coding: A, Crimp connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Connector - SACC-P12MS-5CT-CM SH - 1021815



Connector, Universal, 5-position, shielded, Plug straight M12 Push-Pull, Coding: A, Crimp connection, knurl material: PA 6.6, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

Connector - SACC-P12MR-5CT-CM SH - 1021816



Connector, Universal, 5-position, shielded, Plug angled M12 Push-Pull, Coding: A, Crimp connection, knurl material: PA 6.6, external cable diameter 4.5 mm ... 7.5 mm, without crimp contacts

### Conductor marking

Cable marker - WMTB HF (40X12)R YE - 0830408



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 40 x 12 mm, Number of individual labels: 1000

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

#### Cable marker - WMTB HF (55X15)R YE - 0830410



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 55 x 15 mm, Number of individual labels: 1000

#### Cable marker - WMTB HF (55X25)R YE - 0830412



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 55 x 25 mm, Number of individual labels: 500

#### Conductor marking - UCT-WMCO 5,4 (23X8) - 0832105



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 4.7 ... 5.4 mm, lettering field size: 23 x 8 mm, Number of individual labels: 18

#### Conductor marking - UCT-WMCO 6,1 (23X8) - 0832106



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 5.4 ... 6.1 mm, lettering field size: 23 x 8 mm, Number of individual labels: 18

#### Conductor marking - UCT-WMCO 6,8 (23X8) - 0832107



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 6.1 ... 6.8 mm, lettering field size: 23 x 8 mm, Number of individual labels: 15

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

Conductor marking - UCT-WMCO 7,5 (23X8) - 0832108



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 6.8 ... 7.5 mm, lettering field size: 23 x 8 mm, Number of individual labels: 15

Cable marker - WMTB-AL (40X15) - 0830524



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm

Cable marker - WMTB-AL (60X15) - 0830525



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm

Cable marker - LS-WMTB-AL (40X15) - 0831501



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm, Number of individual labels: 16

Cable marker - LS-WMTB-AL (40X15) BK - 0831509



Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm, Number of individual labels: 16

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

#### Cable marker - LS-WMTB-AL (60X15) - 0831502



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm, Number of individual labels: 16

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#### Cable marker - LS-WMTB-AL (60X15) BK - 0831510



Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm, Number of individual labels: 16

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#### Cable marker - LS-WMTB-AL (100X15) - 0831503



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 100 x 15 mm, Number of individual labels: 8

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#### Cable marker - LS-WMTB-AL (100X15) BK - 0831511



Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 100 x 15 mm, Number of individual labels: 8

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#### Cable marker - WMTB HF (40X12)R YE - 0830408



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: Assembly with cable binders, cable diameter:  $\geq$  6 mm, lettering field size: 40 x 12 mm, Number of individual labels: 1000

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

#### Cable marker - WMTB HF (55X15)R YE - 0830410



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 55 x 15 mm, Number of individual labels: 1000

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#### Cable marker - WMTB HF (55X25)R YE - 0830412



Cable marker, Roll, yellow, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 55 x 25 mm, Number of individual labels: 500

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#### Conductor marking - UCT-WMCO 5,4 (23X8) - 0832105



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 4.7 ... 5.4 mm, lettering field size: 23 x 8 mm, Number of individual labels: 18

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#### Conductor marking - UCT-WMCO 6,1 (23X8) - 0832106



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 5.4 ... 6.1 mm, lettering field size: 23 x 8 mm, Number of individual labels: 18

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#### Conductor marking - UCT-WMCO 6,8 (23X8) - 0832107



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 6.1 ... 6.8 mm, lettering field size: 23 x 8 mm, Number of individual labels: 15

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

#### Conductor marking - UCT-WMCO 7,5 (23X8) - 0832108



Conductor marking, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: clip on, cable diameter range: 6.8 ... 7.5 mm, lettering field size: 23 x 8 mm, Number of individual labels: 15

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#### Cable marker - WMTB-AL (40X15) - 0830524



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm

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#### Cable marker - WMTB-AL (60X15) - 0830525



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm

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#### Cable marker - LS-WMTB-AL (40X15) - 0831501



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm, Number of individual labels: 16

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#### Cable marker - LS-WMTB-AL (40X15) BK - 0831509



Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 40 x 15 mm, Number of individual labels: 16

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

#### Cable marker - LS-WMTB-AL (60X15) - 0831502



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm, Number of individual labels: 16

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#### Cable marker - LS-WMTB-AL (60X15) BK - 0831510



Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 60 x 15 mm, Number of individual labels: 16

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#### Cable marker - LS-WMTB-AL (100X15) - 0831503



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 100 x 15 mm, Number of individual labels: 8

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#### Cable marker - LS-WMTB-AL (100X15) BK - 0831511



Cable marker, Aluminum label, black, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: Assembly with cable binders, cable diameter: > 4.6 mm, lettering field size: 100 x 15 mm, Number of individual labels: 8

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### Cutting tools

#### Cable-cutting tool - CUTFOX 12 - 1212128



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

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

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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### 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

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### Marker carrier cable

Conductor marker carrier - PATG HF 3/18 - 1014059



Conductor marker carrier, transparent/black, unlabeled, mounting type: slide-on, cable diameter range: 4 ... 7 mm, lettering field size: 18 x 4 mm

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Conductor marker carrier - PATG HF 3/23 - 1014060



Conductor marker carrier, transparent/black, unlabeled, mounting type: slide-on, cable diameter range: 4 ... 7 mm, lettering field size: 23 x 4 mm

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Conductor marker carrier - PATG HF 3/30 - 1014061



Conductor marker carrier, transparent/black, unlabeled, mounting type: slide-on, cable diameter range: 4 ... 7 mm, lettering field size: 30 x 4 mm

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## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

Conductor marker carrier - PATG HF 4/18 - 1014065



Conductor marker carrier, transparent/black, unlabeled, mounting type: slide-on, cable diameter range: 5 ... 10 mm, lettering field size: 18 x 4 mm

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Conductor marker carrier - PATG HF 4/23 - 1014066



Conductor marker carrier, transparent/black, unlabeled, mounting type: slide-on, cable diameter range: 5 ... 10 mm, lettering field size: 23 x 4 mm

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Conductor marker carrier - PATG HF 4/30 - 1014067



Conductor marker carrier, transparent/black, unlabeled, mounting type: slide-on, cable diameter range: 5 ... 10 mm, lettering field size: 30 x 4 mm

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Cable marker carrier - KMK HP (25X6) - 0830720



Cable marker carrier, transparent, unlabeled, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 25 mm x 6 mm

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Cable marker carrier - KMK HP (29X8) - 0830721



Cable marker carrier, transparent, unlabeled, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 29 x 8 mm

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## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

Cable marker carrier - KMK HP (25X6) - 0830720



Cable marker carrier, transparent, unlabeled, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 25 mm x 6 mm

Cable marker carrier - KMK HP (29X8) - 0830721



Cable marker carrier, transparent, unlabeled, mounting type: Assembly with cable binders, cable diameter:  $\geq 6$  mm, lettering field size: 29 x 8 mm

### Marker pen

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

### 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

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

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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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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### Sensor/actuator cable

Sensor/actuator cable - SAC-4P-MS SCO RAIL/.../... - 1412169



Sensor/actuator cable, 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON, coding: A, on free cable end, cable length: Free input (0.2 ... 40.0 m), For railway applications

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Sensor/actuator cable - SAC-4P-MR SCO RAIL/.../... - 1412170



Sensor/actuator cable, 4-position, Variable cable type, shielded, Plug angled M12 SPEEDCON, coding: A, on free cable end, cable length: Free input (0.2 ... 40.0 m), For railway applications

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

Sensor/actuator cable - SAC-4P-FS SCO RAIL/.../... - 1412167



Sensor/actuator cable, 4-position, Variable cable type, shielded, free cable end, on Socket straight M12 SPEEDCON, coding: A, cable length: Free input (0.2 ... 40.0 m), For railway applications

Sensor/actuator cable - SAC-4P-FR SCO RAIL/.../... - 1412168



Sensor/actuator cable, 4-position, Variable cable type, shielded, free cable end, on Socket angled M12 SPEEDCON, coding: A, cable length: Free input (0.2 ... 40.0 m), For railway applications

Sensor/actuator cable - SAC-4P-MS-FS SCO RAIL/.../... - 1412171



Sensor/actuator cable, 4-position, Variable cable type, shielded, Plug straight M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: Free input (0.2 ... 40.0 m), For railway applications

### Shrink sleeve

Shrink sleeve - WMS-2 HF 6,4 (60X10)RL YE - 0801025



Shrink sleeve, Roll, yellow, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL: without print, Cut, mounting type: slide-on, cable diameter range: 3.2 ... 6.4 mm, lettering field size: 60 x 10 mm, Number of individual labels: 1000

Shrink sleeve - WMS-2 HF 6,4 (EX10)RL YE - 0833244



Shrink sleeve, Roll, yellow, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK W: without print, Cut, mounting type: slide-on, cable diameter range: 3.2 ... 6.4 mm, lettering field size: 10 x 100000 mm

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

Shrink sleeve - WMS-2 HF 9,5 (60X16)RL YE - 0801029



Shrink sleeve, Roll, yellow, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL: without print, Cut, mounting type: slide-on, cable diameter range: 4.8 ... 9.5 mm, lettering field size: 60 x 16 mm, Number of individual labels: 500

Shrink sleeve - WMS-2 HF 9,5 (EX16)RL YE - 0833245



Shrink sleeve, Roll, yellow, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK W: without print, Cut, mounting type: slide-on, cable diameter range: 4.8 ... 9.5 mm, lettering field size: continuous x 16 mm

### 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

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

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

### Torque tool

## Sensor/actuator cable - SAC-4P-MS/ 2,0-28R SCO RAIL - 1407311

### Accessories

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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