

## Sensor/actuator cable - SAC-3P-MS/ 2,0-28R/FS SCO RAIL - 1407309

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Sensor/actuator cable, 3-position, PE-X halogen-free, black, shielded, Plug straight M12 SPEEDCON, A-coded, on Socket straight M12 SPEEDCON, A-coded, 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 774253
GTIN	4046356774253

### 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	3

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## 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
Sealing material	NBR
Standards/regulations	PA 6.6: Fire protection in rail vehicles - requirement sets R22, R23, and R24 acc. to DIN EN 45545-2 (Risk level HL1 - HL3)

### Standards and Regulations

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

### Cable

Cable type	Shielded black RADOX®
Cable type (abbreviation)	28R
Conductor cross section	3x 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
Overall twist	3 wires, twisted
Shielding	Tinned copper braided shield
External sheath, color	black
External cable diameter D	5.3 mm ±0,3 mm

## Sensor/actuator cable - SAC-3P-MS/ 2,0-28R/FS SCO RAIL - 1407309

### Technical data

#### Cable

Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	4 x D
Cable weight	51 kg/km
Outer sheath, material	PE-X
Material conductor insulation	PE-X
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)

# Sensor/actuator cable - SAC-3P-MS/ 2,0-28R/FS SCO RAIL - 1407309

## Technical data

### Cable

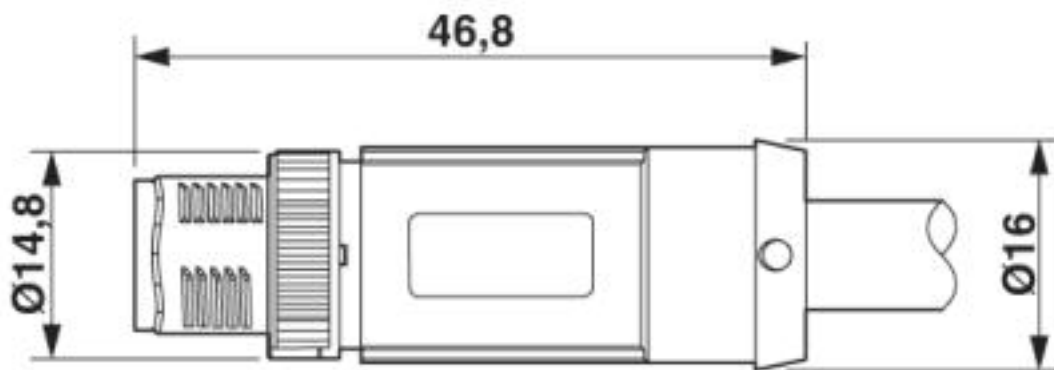
	-25 °C ... 90 °C (cable, flexible installation)
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### Environmental Product Compliance

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

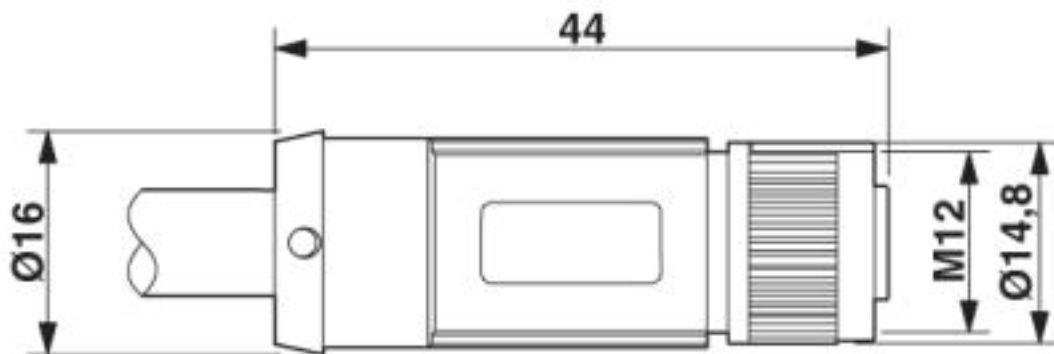
## Drawings

Dimensional drawing



M12 SPEEDCON plug, straight, shielded

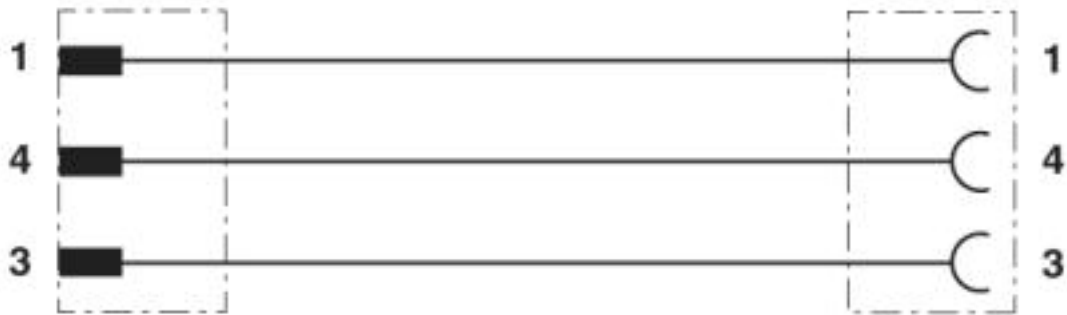
Dimensional drawing



Socket M12-SPEEDCON, straight, shielded

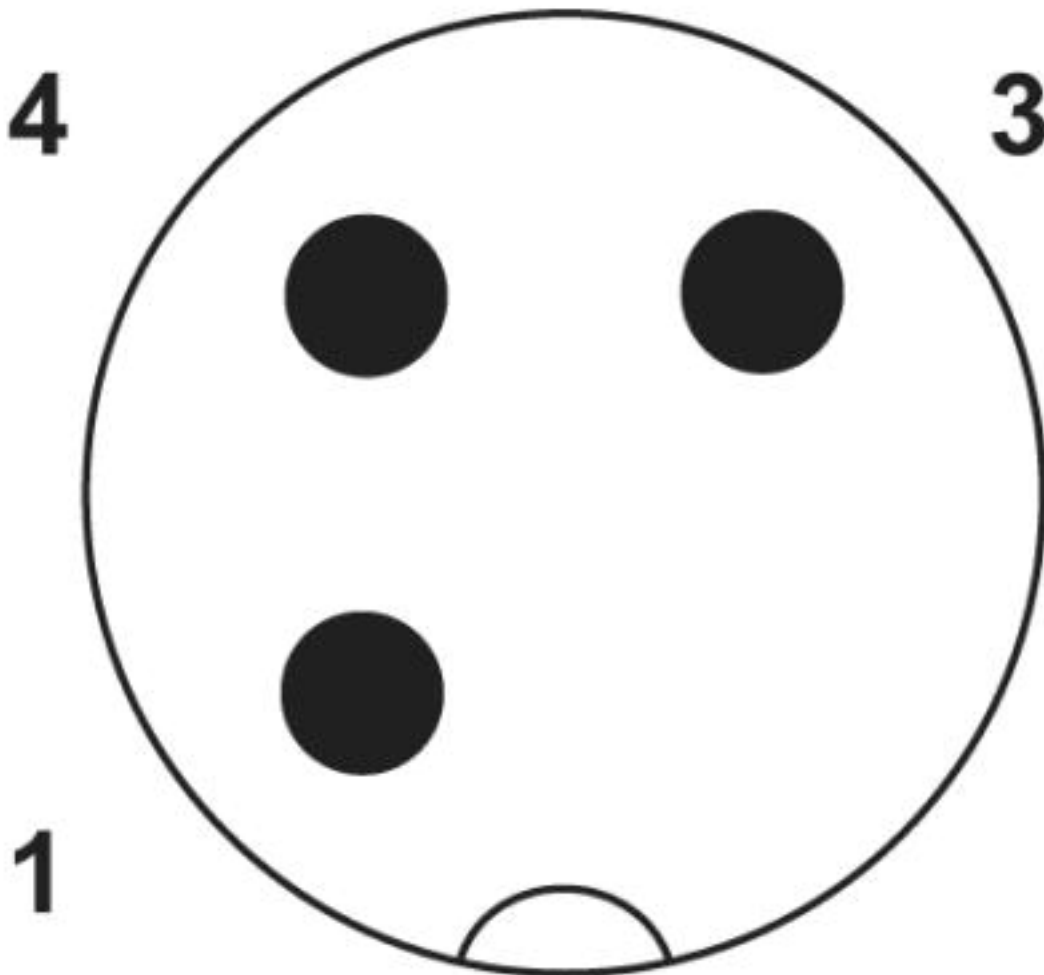
# Sensor/actuator cable - SAC-3P-MS/ 2,0-28R/FS SCO RAIL - 1407309

Circuit diagram



Contact assignment of M8 plugs / M12 sockets

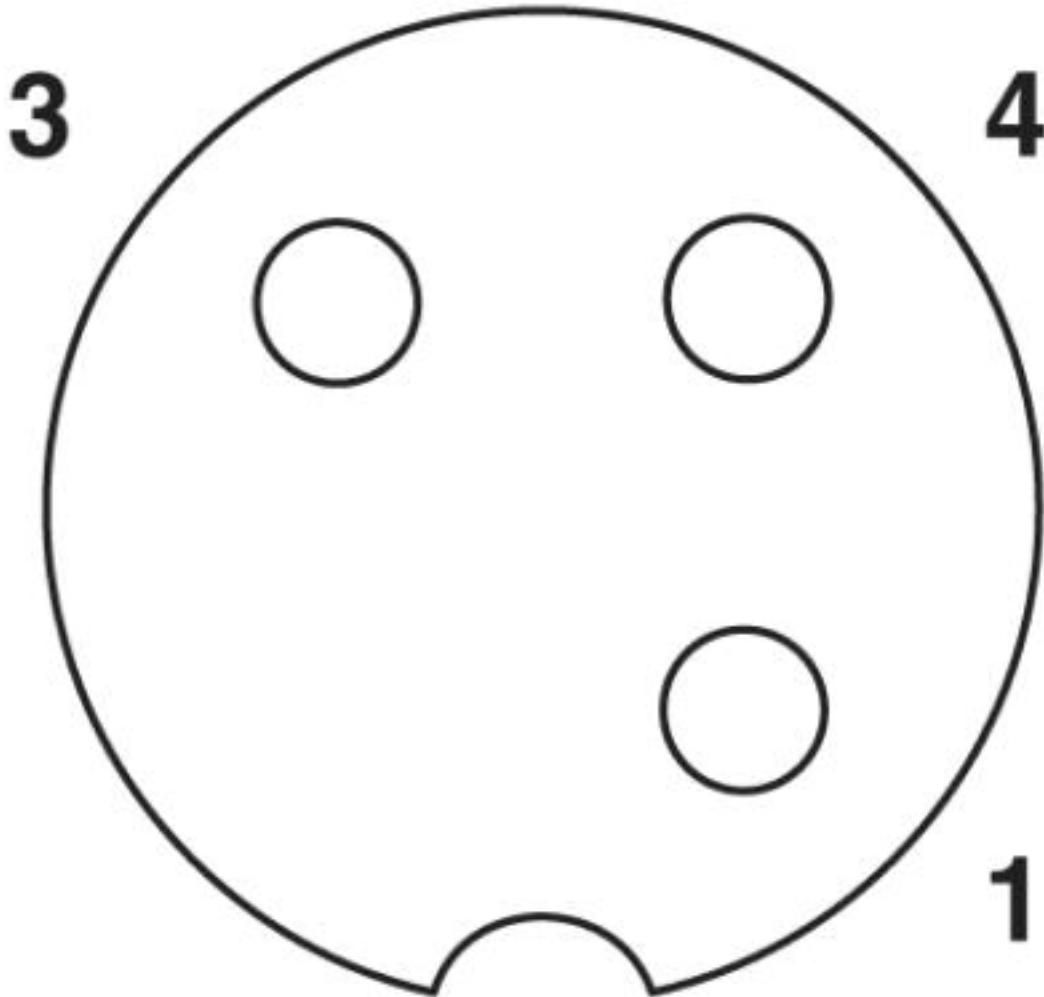
Schematic diagram



Pin assignment M12 plug, 3-pos., A-coded, view male side

# Sensor/actuator cable - SAC-3P-MS/ 2,0-28R/FS SCO RAIL - 1407309

Schematic diagram



Pin assignment M12 socket, 3-pos., A-coded, view female side

# Sensor/actuator cable - SAC-3P-MS/ 2,0-28R/FS SCO RAIL - 1407309

Cable cross section



Shielded black RADOX® [28R]

## Approvals

Approvals

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Approvals

EAC

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Ex Approvals

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Approval details

## Sensor/actuator cable - SAC-3P-MS/ 2,0-28R/FS SCO RAIL - 1407309

### Approvals

EAC



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