

# SAC-5P- 2,0-28R/FS SCO RAIL - Sensor/actuator cable



1407331

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Sensor/actuator cable, 5-position, PE-X halogen-free, black, shielded, free cable end, on Socket straight M12 SPEEDCON, coding: A, cable length: 2 m, For railway applications

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- 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

## Commercial data

Item number	1407331
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF03
Product key	AF1CDA
GTIN	4046356774475
Weight per piece (including packing)	159.1 g
Weight per piece (excluding packing)	158 g
Customs tariff number	85444290
Country of origin	PL

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## Technical data

### Product properties

Product type	Sensor/actuator cable
Application	Railway applications
Number of positions	5
No. of cable outlets	1
Shielded	yes
Coding	A

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Material specifications

Flammability rating according to UL 94	V0
Seal material	NBR
Material of grip body	PA 6.6
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Material for screw connection	Zinc die-cast, nickel-plated
Standards/regulations	PA 6.6

### Electrical properties

Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A

### Mechanical properties

#### Mechanical data

Insertion/withdrawal cycles	$\geq 100$
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### Signaling

Status display	no
Status display present	no

### Connection data

#### Conductor connection

Tightening torque	0.4 Nm (M12 connector)
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### Connector

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## Connection 1

Type	free cable end
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## Connection 2

Type	Socket straight M12 SPEEDCON
Number of positions	5
Locking type	SPEEDCON
Coding type	A

## Cable/line

Cable length	2 m
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## Shielded black RADOX® [28R]

Dimensional drawing	
Cable weight	70 kg/km
Number of positions	5
Shielded	yes
Cable type	Shielded black RADOX® [28R]
Conductor structure signal line	19x 0.18 mm
AWG signal line	20
Conductor cross-section	5x 0.5 mm <sup>2</sup>
Wire diameter incl. insulation	1.43 mm
External cable diameter	6.20 mm ±0.3 mm
Outer sheath, material	PE-X
External sheath, color	black
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PE-X
Single wire, color	white 1, white 2, white 3, white 4, white 5
Overall twist	5 cores, twisted
Max. 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 (Line-line)
Test voltage	3500 V AC (50 Hz, 5 min.)

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	8400 V DC (50 Hz, 5 min.)
Minimum bending radius, fixed installation	3 x D
Minimum bending radius, flexible installation	4 x D
Smallest bending radius, fixed installation	19 mm
Smallest bending radius, movable installation	25 mm
Halogen-free	in accordance with EN 50267-2-1
Flame resistance	IEC 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)
Fume corrosiveness	EN 50267-2-2
Fume toxicity	BS 6853 B.1
	EN 50305, 9.2
Concentration of fumes	BS 6853 D.8.7
	EN 61034-2
	UL 1685, 12 (FT4)
Resistance to oil	according to IRM 902, 72 h at 100 °C
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)	
Other resistance	Resistance to fuels (according to IRM 903, 168 h at 70 °C)
Ambient temperature (operation)	-50 °C ... 120 °C (cable, fixed installation)
	-25 °C ... 90 °C (Cable, flexible installation)

## Environmental and real-life conditions

### Ambient conditions

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

## Standards and regulations

### M12

Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101
Standard designation	Shock, vibration

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Standards/specifications

EN 50155

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## Drawings

Dimensional drawing



Socket M12-SPEEDCON, straight, shielded

Schematic diagram



Pin assignment M12 socket, 5-pos., A-coded, socket side view

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Circuit diagram



Contact assignment of the M12 socket

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## Approvals

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**EAC-RoHS**

Approval ID: RU D-DE.HB35.B.00387

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## Classifications

### ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

### ETIM

ETIM 10.0	EC001855
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### UNSPSC

UNSPSC 21.0	26121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1)
SCIP	d95d18a1-874a-4136-b188-76a3f61f34a9

### EF3.1 Climate Change

CO2e kg	1.206 kg CO2e
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