

## Sensor/actuator cable - SAC-5P-MS/ 2,0-28R/FS SCO RAIL - 1407337

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




Sensor/actuator cable, 5-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

### Why buy this product

- ✓ 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 STK   |
| GTIN         | <br>4 046356 774536 |
| GTIN         | 4046356774536   |

### Technical data

#### Dimensions

|                 |     |
|-----------------|-----|
| Length of cable | 2 m |
|-----------------|-----|

#### 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   | 5   |

# Sensor/actuator cable - SAC-5P-MS/ 2,0-28R/FS SCO RAIL - 1407337

## 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            | 5x 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, white 5 |
| Overall twist                      | 5 cores, twisted                            |
| Shielding                          | Tinned copper braided shield                |
| External sheath, color             | black                                       |
| External cable diameter D          | 6.2 mm ±0,3 mm                              |

## Sensor/actuator cable - SAC-5P-MS/ 2,0-28R/FS SCO RAIL - 1407337

### Technical data

#### Cable

|   |  |
|---|--|
| Minimum bending radius, fixed installation    | 3 x D  |
| Minimum bending radius, flexible installation | 4 x D  |
| Cable weight                                  | 70 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 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 ... 120 °C (cable, fixed installation)            |

# Sensor/actuator cable - SAC-5P-MS/ 2,0-28R/FS SCO RAIL - 1407337

## Technical data

### Cable

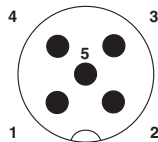
|  |   |
|--|---|
|  | -25 °C ... 90 °C (cable, flexible installation) |
|--|---|

### Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

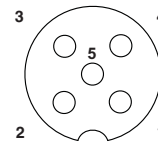
## Drawings

Schematic diagram



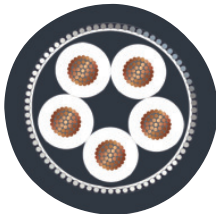
Pin assignment M12 male connector, 5-pos., A-coded, male side

Schematic diagram



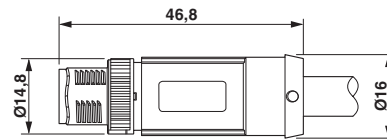
Pin assignment M12 socket, 5-pos., A-coded, socket side view

Cable cross section



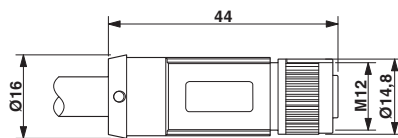
Shielded black RADOX® [28R]

Dimensional drawing



M12 SPEEDCON plug, straight, shielded

Dimensional drawing



Socket M12-SPEEDCON, straight, shielded

Circuit diagram



Contact assignment of the M12 plug and the M12 socket

Phoenix Contact 2018 © - all rights reserved  
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>