

## Sensor/actuator cable - SAC-3P-MS/10,0-28R SCO RAIL - 1407298

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Sensor/actuator cable, 3-position, PE-X halogen-free, black, shielded, Plug straight M12 SPEEDCON, A-coded, on free cable end, cable length: 10 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 774154 |
| GTIN         | 4046356774154   |

### Technical data

#### Dimensions

|                 |      |
|-----------------|------|
| Length of cable | 10 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         | 250 V AC  |
|                       | 250 V DC  |
| Number of positions   | 3   |

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## Technical data

### General

|                              |                               |
|------------------------------|-------------------------------|
| 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/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               |
| Minimum bending radius, fixed installation    | 3 x D                        |
| Minimum bending radius, flexible installation | 4 x D                        |

## Sensor/actuator cable - SAC-3P-MS/10,0-28R SCO RAIL - 1407298

### Technical data

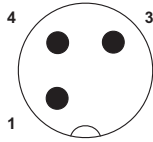
#### Cable

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

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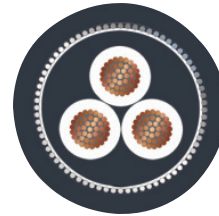
## Drawings

Schematic diagram



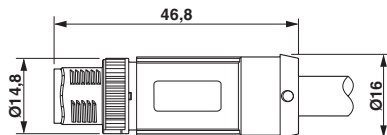
Pin assignment M12 plug, 3-pos., A-coded, view male side

Cable cross section



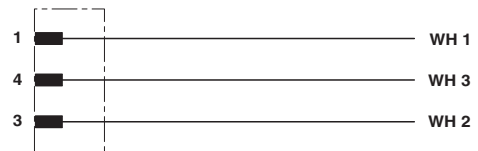
Shielded black RADOX® [28R]

Dimensional drawing



M12 SPEEDCON plug, straight, shielded

Circuit diagram



Contact assignment of the M12 plug

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