

# SAC-4P-MRDC2/ 5,0-936 SCO - Bus system cable



1410296

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Bus system cable, PROFINET, 4-pos., RADOX® GKW S, RAL 9005 (black), angled M12-SPEEDCON plug (D-coded) to free cable end, cable length: 5 m, coding: 270°

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1410296                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF04                           |
| Product key                          | AF1CJN                         |
| GTIN                                 | 4046356895095                  |
| Weight per piece (including packing) | 401.6 g                        |
| Weight per piece (excluding packing) | 401.6 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Number of positions  | 4                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |
| Coding               | D                       |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 3  |

### Interfaces

|                      |          |
|----------------------|----------|
| Bus system           | PROFINET |
| Signal type/category | PROFINET |

### Electrical properties

|                       |         |
|-----------------------|---------|
| Nominal voltage $U_N$ | 48 V AC |
|                       | 60 V DC |
| Nominal current $I_N$ | 4 A     |

### Material specifications

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

### Connector

#### Connection 1

|                     |                          |
|---------------------|--------------------------|
| Type                | Plug angled M12 SPEEDCON |
| Number of positions | 4                        |
| Locking type        | SPEEDCON                 |
| Coding type         | D (Data)                 |

#### Connection 2

|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

### Cable/line

|              |     |
|--------------|-----|
| Cable length | 5 m |
|--------------|-----|


PROFINET RADOX® railway application CAT5 reinforced [936]

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|   |   |
|---|---|
| Dimensional drawing                           |   |
| Cable weight                                  | 81 g/m  |
| Number of positions                           | 4   |
| Shielded                                      | yes   |
| Cable type                                    | PROFINET RADOX® railway application CAT5 reinforced [936]   |
| Conductor structure                           | 1x4xAWG22/7, SF/TQ  |
| Signal speed                                  | 66 c  |
| Conductor structure signal line               | 7x 0.25 mm  |
| AWG signal line                               | 22  |
| Conductor cross-section                       | 4x 0.34 mm <sup>2</sup>   |
| Wire diameter incl. insulation                | 1.95 mm   |
| External cable diameter                       | 7.25 mm ±0.3 mm   |
| Outer sheath, material                        | PE-X  |
| External sheath, color                        | black RAL 9005  |
| Conductor material                            | silver-plated Cu litz wires   |
| Material wire insulation                      | PE-X  |
| Single wire, color                            | white-blue, orange-yellow   |
| Thickness, outer sheath                       | ≥ 0.80 mm   |
| Overall twist                                 | Star quad   |
| Optical shield covering                       | 100 %   |
| Max. conductor resistance                     | ≤ 54.4 Ω/km   |
| Coupling resistance                           | 200.00 mΩ/m (f ≤ 30 MHz)  |
| Wave impedance                                | 100 Ω ±5 Ω (f = 100 MHz)  |
| Working capacitance                           | ≤ 65 pF (Line-line)<br>≤ 100 pF (Line-shield)   |
| Nominal voltage, cable                        | 300 V AC  |
| Test voltage                                  | 2000 V AC (50 Hz, 5 minutes)  |
| Minimum bending radius, fixed installation    | 6 x D   |
| Minimum bending radius, flexible installation | 10 x D  |
| Smallest bending radius, fixed installation   | 44 mm   |
| Smallest bending radius, movable installation | 73 mm   |
| Near end crosstalk attenuation (NEXT)         | 80 dB (with 1 MHz)<br>76 dB (at 4 MHz)<br>67 dB (at 10 MHz)<br>60 dB (at 31.5 MHz)<br>56 dB (at 62.5 MHz)<br>53 dB (at 100 MHz) |

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|  |  |
|--|--|
| Return attenuation (RL)                              | 35 dB (at 4 MHz)   |
|  | 35 dB (at 10 MHz)  |
|  | 35 dB (at 31.5 MHz)  |
|  | 33 dB (at 62.5 MHz)  |
|  | 33 dB (at 100 MHz)   |
| Remote crosstalk attenuation (FEXT)                  | 80 dB (with 1 MHz)   |
|  | 70 dB (at 4 MHz)   |
|  | 65 dB (at 10 MHz)  |
|  | 58 dB (at 31.5 MHz)  |
|  | 59 dB (at 62.5 MHz)  |
| Shield attenuation                                   | 67 dB (at 100 MHz)   |
|  | 2 dB (with 1 MHz)  |
|  | 4 dB (at 4 MHz)  |
|  | 6.5 dB (at 10 MHz)   |
|  | 10.5 dB (at 31.5 MHz)                                      |
|  | 14 dB (at 62.5 MHz)  |
| Halogen-free   | 18 dB (at 100 MHz)   |
|  | 40.00 dB (30 MHz ≤ f ≤ 100 MHz)                            |
| Flame resistance                                     | in accordance with EN 50267-2-1                            |
|  | 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 ... 90 °C (cable, fixed installation)               |
|  | -40 °C ... 90 °C (Cable, flexible installation)            |

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## Environmental and real-life conditions

### Ambient conditions

|                                 |   |
|---------------------------------|---|
| Degree of protection            | IP65  |
|                                 | IP67  |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket)                |
|                                 | -40 °C ... 90 °C (cable, fixed installation)    |
|                                 | -25 °C ... 90 °C (Cable, flexible installation) |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 27060307 |

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

### China RoHS

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

### EU REACH SVHC

|                                     |                            |
|-------------------------------------|----------------------------|
| REACH candidate substance (CAS No.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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