

# SAC-5P-M12MRB-M12FSB/900/... - Bus system cable



1431005

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Bus system cable, INTERBUS (16 Mbps), 5-position, PUR halogen-free, may green RAL 6017, shielded, Plug angled M12, coding: B, on Socket straight M12, coding: B, cable length: Free input (0.2 ... 40.0 m)

## Commercial data

|                        |                                |
|------------------------|--------------------------------|
| Item number            | 1431005                        |
| Packing unit           | 1 pc                           |
| Minimum order quantity | 1 pc                           |
| Note                   | Made to order (non-returnable) |
| Sales key              | BF17                           |
| Product key            | AF1CKB                         |
| Customs tariff number  | 85444290                       |
| Country of origin      | PL                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Number of positions  | 5                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |
| Coding               | B                       |

### Insulation characteristics

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

### Interfaces

|                      |                   |
|----------------------|-------------------|
| Bus system           | INTERBUS          |
| Signal type/category | INTERBUS, 16 Mbps |

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Electrical properties

|                       |          |
|-----------------------|----------|
| Insulation resistance | ≥ 100 MΩ |
| Nominal voltage $U_N$ | 48 V AC  |
|                       | 60 V DC  |
| Nominal current $I_N$ | 4 A      |
| Transmission medium   | Copper   |
| Transmission speed    | 16 Mbps  |

### 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                |

### Connection data

#### Connection assignment

|   |                                 |
|---|---------------------------------|
| Contact   Color (signal designation)   Contact (optional) | 1 (Plug)   YE (DO)   1 (Socket) |
|   | 2 (Plug)   GN (DO)   2 (Socket) |
|   | 3 (Plug)   GY (DI)   3 (Socket) |

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|  |                                  |
|--|----------------------------------|
|  | 4 (Plug)   PK (DI)   4 (Socket)  |
|  | 5 (Plug)   BN (GND)   5 (Socket) |

## Connector

### Connection 1

|                     |                 |
|---------------------|-----------------|
| Type                | Plug angled M12 |
| Number of positions | 5               |
| Coding type         | B (inverse)     |

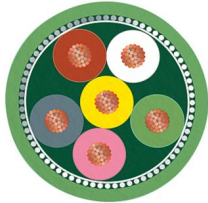
### Connection 2

|                     |                     |
|---------------------|---------------------|
| Type                | Socket straight M12 |
| Number of positions | 5                   |
| Coding type         | B                   |

## Cable/line

|              |                             |
|--------------|-----------------------------|
| Cable length | Free input (0.2 ... 40.0 m) |
|--------------|-----------------------------|

### INTERBUS [900]

|                                 |  |
|---------------------------------|--|
| Dimensional drawing             |  |
| Cable weight                    | 70 kg/km   |
| Number of positions             | 6  |
| Shielded                        | yes  |
| Cable type                      | INTERBUS [900]   |
| Conductor structure             | 3 x 2 x 0.22 mm <sup>2</sup>   |
| Signal speed                    | 0.66 c   |
| Conductor structure signal line | 32x 0.10 mm  |
| AWG signal line                 | 24   |
| Conductor cross-section         | 3x 2x 0.22 mm <sup>2</sup>   |
| External cable diameter         | 8.00 mm  |
| Outer sheath, material          | PUR  |
| External sheath, color          | may green RAL 6017   |
| Conductor material              | Bare Cu litz wires   |
| Material wire insulation        | PE   |
| Single wire, color              | green-yellow, white-brown, gray-pink   |
| Twisted pairs                   | 2 cores to the pair  |
| Overall twist                   | 3 pairs to the core  |
| Insulation resistance           | ≥ 5 GΩ*km  |

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|   |   |
|---|---|
| Coupling resistance                           | < 250.00 mΩ/m (at 30 MHz)   |
| Loop resistance                               | ≤ 159.80 Ω/km   |
| Wave impedance                                | 120 Ω ±20 % (at 64 kHz)   |
|   | 100 Ω ±15 % (with 1 MHz)  |
| Cable capacity                                | ≤ 60 nF/km (At 800 Hz)  |
| Nominal voltage, cable                        | 250 V (Peak value, not for high-power applications)   |
| Test voltage Core/Core                        | 1500 V <sub>rms</sub>   |
| Test voltage Core/Shield                      | 1000.00 V <sub>rms</sub>  |
| Minimum bending radius, fixed installation    | 7.5 x D   |
| Minimum bending radius, flexible installation | 15 x D  |
| Smallest bending radius, fixed installation   | 60 mm   |
| Smallest bending radius, movable installation | 120 mm  |
| Dynamic load capacity (bending)               | Max. bending cycles: 5000000, Bending radius: 120 mm, Traversing path: 10 m, Traversing rate: 1.6 m/s, Acceleration: 3.2 m/s <sup>2</sup> |
| Near end crosstalk attenuation (NEXT)         | ≥ 61 dB (at 772 kHz)  |
|   | ≥ 59 dB (with 1 MHz)  |
|   | ≥ 55 dB (at 2 MHz)  |
|   | ≥ 50 dB (at 4 MHz)  |
|   | ≥ 46 dB (at 8 MHz)  |
|   | ≥ 44 dB (at 10 MHz)   |
|   | ≥ 41 dB (at 16 MHz)   |
|   | ≥ 40 dB (at 20 MHz)   |
| Shield attenuation                            | ≤ 15 dB/km (at 256 kHz)   |
|   | ≤ 24 dB/km (at 772 kHz)   |
|   | ≤ 27 dB/km (with 1 MHz)   |
|   | ≤ 52 dB/km (at 4 MHz)   |
|   | ≤ 84 dB/km (at 10 MHz)  |
|   | ≤ 112 dB/km (at 16 MHz)   |
|   | ≤ 119 dB/km (at 20 MHz)   |
| Flame resistance                              | according to VDE 0472, Part 4, test type B  |
|   | according to IEC 60332-1  |
| Ambient temperature (operation)               | -40 °C ... 80 °C (cable, fixed installation)  |
|   | -30 °C ... 70 °C (Cable, flexible installation)   |

## Environmental and real-life conditions

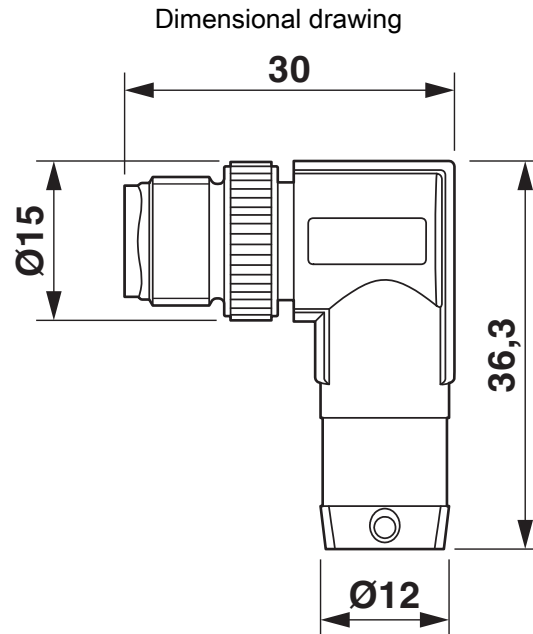
### Ambient conditions

|   |                                  |
|---|----------------------------------|
| Degree of protection  | IP65                             |
|   | IP67                             |
| Ambient temperature (operation) (male connector/female connector) | -25 °C ... 90 °C (Plug / socket) |

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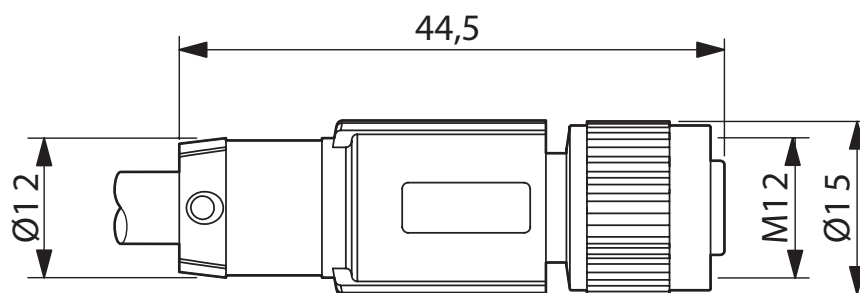
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## Drawings



M12 x 1 male plug, angled, shielded

Dimensional drawing



M12 x 1 socket, straight, shielded

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Schematic diagram



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

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Schematic diagram



Pin assignment M12 socket, 5-pos., B-coded, female side

Circuit diagram



Contact assignment of the M12 connector and 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 | 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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