

1405981  
<https://www.phoenixcontact.com/us/products/1405981>

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Bus system cable, CANopen®, DeviceNet™, 5-position, PVC, gray, shielded, Plug straight M12, coding: A, on free cable end, cable length: 2 m, Connector unshielded

Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1405981                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF15                           |
| Product key                          | BF1IHE                         |
| GTIN                                 | 4046356800471                  |
| Weight per piece (including packing) | 137.3 g                        |
| Weight per piece (excluding packing) | 130.3 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | US                             |

# SAC-5P-M12MS/ 2,0-924 - Bus system cable



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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard, U.S. cables   |
| Sensor type          | CANopen®                |
| Number of positions  | 5                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |
| Coding               | A                       |

### Insulation characteristics

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

### Approvals

#### National Marine Electronics Association

|             |          |
|-------------|----------|
| Certificate | approved |
|-------------|----------|

### Interfaces

|                      |                     |
|----------------------|---------------------|
| Bus system           | CANopen®/DeviceNet™ |
| Signal type/category | CANopen®            |
|                      | DeviceNet™          |

### 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   |

### Material specifications

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

### Connector

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## Connection 1

|                     |                   |
|---------------------|-------------------|
| Type                | Plug straight M12 |
| Number of positions | 5                 |
| Coding type         | A (Standard)      |

## Connection 2

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

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 2 m |
|--------------|-----|

## CANopen®/DeviceNet™, PVC, gray [924]

|                                 |                                                                                     |
|---------------------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing             |  |
| Cable weight                    | 64.51 kg/km                                                                         |
| UL AWM Style                    | 2464 (80°C/300 V)                                                                   |
| Number of positions             | 4                                                                                   |
| Shielded                        | yes                                                                                 |
| Cable type                      | CANopen®/DeviceNet™, PVC, gray [924]                                                |
| Conductor structure             | 2xAWG22 (Signal) + 2xAWG22 (Power)                                                  |
| Signal runtime                  | 4.46 ns/m                                                                           |
| Conductor structure signal line | 19x 0.15 mm                                                                         |
| AWG signal line                 | 22                                                                                  |
| Conductor cross section         | 2x 0.34 mm² (Signal line)<br>2x 0.34 mm² (Power supply)                             |
| Wire diameter incl. insulation  | 1.27 mm ±0.05 mm (Signal line)<br>2.24 mm ±0.13 mm (Power supply)                   |
| External cable diameter         | 6.90 mm ±0.13 mm                                                                    |
| Outer sheath, material          | PVC                                                                                 |
| External sheath, color          | gray                                                                                |
| Conductor material              | Bare Cu litz wires                                                                  |
| Material wire insulation        | Foamed PE (Signal line)<br>PVC (Power supply)                                       |
| Single wire, color              | red-black, blue-white                                                               |
| Twisted pairs                   | 2 cores to the pair                                                                 |
| Type of pair shielding          | Plastic-coated aluminum foil, aluminum side inside                                  |
| Overall twist                   | 2 pairs around a drain wire in the center to the core                               |
| Insulation resistance           | ≥ 59.38 Ω*m (Signal line)                                                           |

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|                                               |                                              |
|-----------------------------------------------|----------------------------------------------|
|                                               | ≥ 57.41 GΩ*km (Power supply)                 |
| Wave impedance                                | 120 Ω ±12 Ω                                  |
| Working capacitance                           | nom. 78.74 pF (per meter)                    |
| Minimum bending radius, flexible installation | 15 x D                                       |
| Smallest bending radius, movable installation | 104 mm                                       |
| Shield attenuation                            | 0.95 dB (f = 125 kHz)                        |
|                                               | 1.64 dB (f = 500 kHz)                        |
|                                               | 2.30 dB (f = 1 MHz)                          |
| Flame resistance                              | FT4                                          |
| Resistance to oil                             | yes                                          |
| Other resistance                              | UV resistant                                 |
| Special properties                            | UL standards PLTC and ITC                    |
| Ambient temperature (operation)               | -30 °C ... 75 °C (cable, fixed installation) |

## Environmental and real-life conditions

### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65                             |
|                                 | IP67                             |
|                                 | IP68                             |
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |

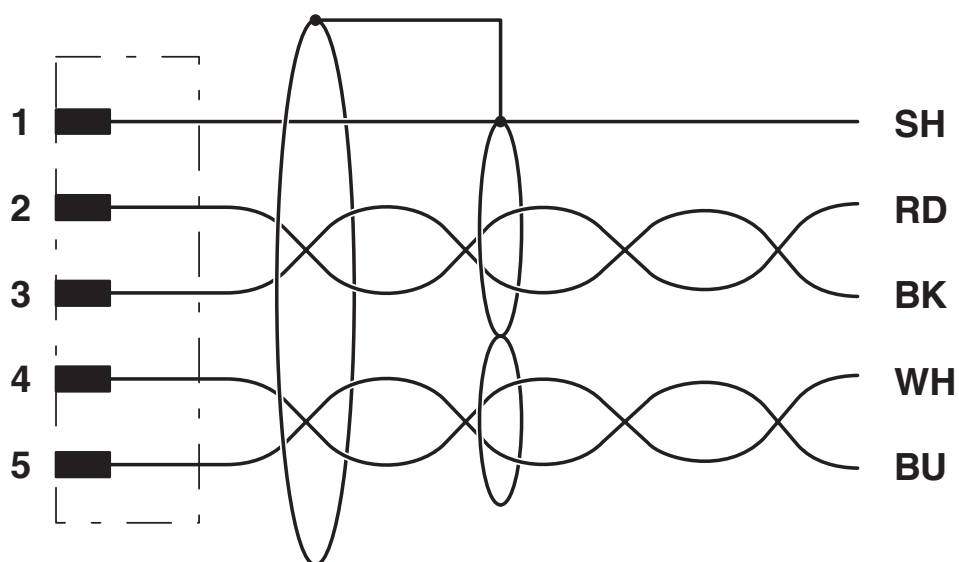
## Approvals

### National Marine Electronics Association

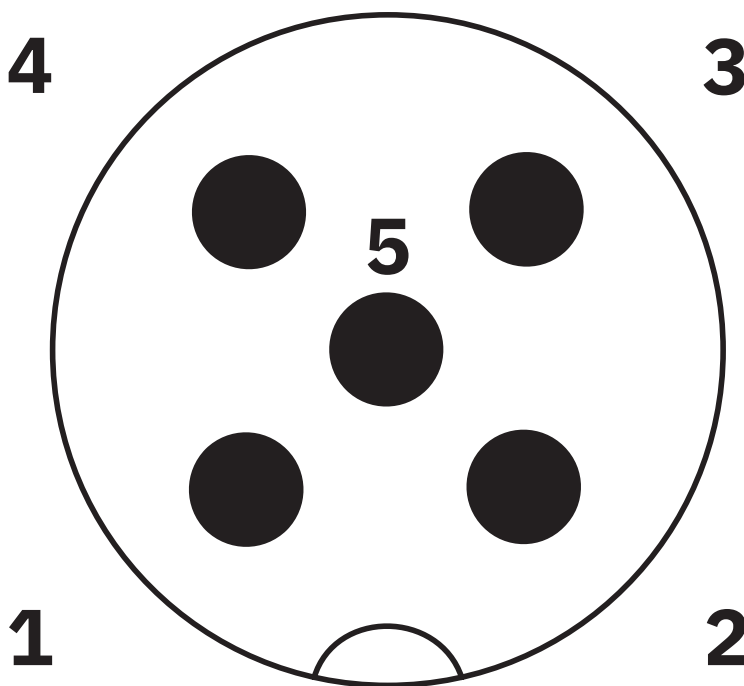
|             |          |
|-------------|----------|
| Certificate | approved |
|-------------|----------|

## Drawings

Circuit diagram



Schematic diagram



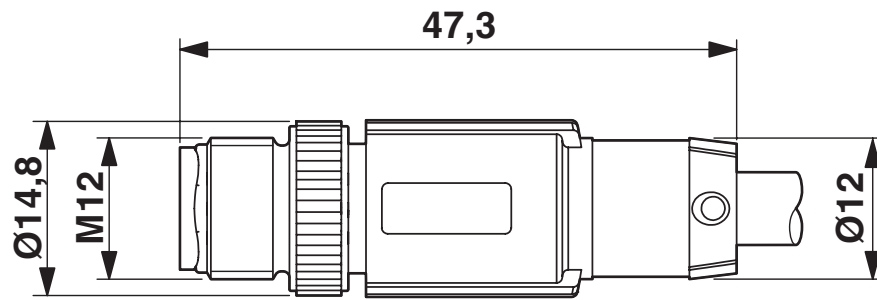
Pin assignment M12 male connector, 5-pos., A-coded, male side

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Dimensional drawing



Plug, M12 x 1, straight

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## Approvals

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|  |                                                |                                |                   |                               |
|--|------------------------------------------------|--------------------------------|-------------------|-------------------------------|
|  | <b>UL Listed</b><br>Approval ID: FILE E 221474 |                                |                   |                               |
|  | Nominal voltage U <sub>N</sub>                 | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
|  | 125 V                                          | 4 A                            | -                 | -                             |

|  |                                                 |                                |                   |                               |
|--|-------------------------------------------------|--------------------------------|-------------------|-------------------------------|
|  | <b>cUL Listed</b><br>Approval ID: FILE E 221474 |                                |                   |                               |
|  | Nominal voltage U <sub>N</sub>                  | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
|  | 125 V                                           | 4 A                            | -                 | -                             |

|                     |
|---------------------|
| <b>cULus Listed</b> |
|---------------------|

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060307 |
| ECLASS-12.0 | 27060307 |
| ECLASS-13.0 | 27060307 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### 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-50                                                                                                                                                                                                                           |
|                                        | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

### EU REACH SVHC

|                                     |                                                                         |
|-------------------------------------|-------------------------------------------------------------------------|
| REACH candidate substance (CAS No.) | Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA)(CAS: 123-77-3) |
| SCIP                                | 90cb57ea-59ff-4f79-b5ae-88f6a20f4a59                                    |

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