

# SAC-6P-MS/ 2,0-970/FS SCO - Bus system cable



1428652

<https://www.phoenixcontact.com/us/products/1428652>

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Bus system cable, VARAN (100 Mbps), 6-position, SANTOPRENE halogen-free/TPE halogen-free, black RAL 9005, shielded, Plug straight M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: 2 m

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1428652                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF04                           |
| Product key                          | AF1CMM                         |
| GTIN                                 | 4046356322935                  |
| Weight per piece (including packing) | 198.9 g                        |
| Weight per piece (excluding packing) | 181.5 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Sensor type          | VARAN                   |
| Number of positions  | 6                       |
| No. of cable outlets | 1                       |
| Coding               | A                       |

### Insulation characteristics

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

### Interfaces

|                      |                 |
|----------------------|-----------------|
| Bus system           | VARAN           |
| Signal type/category | VARAN, 100 Mbps |

### Signaling

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

### Electrical properties

|                       |                            |
|-----------------------|----------------------------|
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 30 V AC                    |
|                       | 30 V DC                    |
| Nominal current $I_N$ | 2 A                        |
| Transmission medium   | Copper                     |
| Transmission speed    | 100 Mbps                   |

### Material specifications

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

### Connection data

#### Connection assignment

|                                                           |                                    |
|-----------------------------------------------------------|------------------------------------|
| Contact   Color (signal designation)   Contact (optional) | 1 (Plug)   N.C.   1 (Socket)       |
|                                                           | 4 (Plug)   N.C.   4 (Socket)       |
|                                                           | 6 (Plug)   BU (Power)   6 (Socket) |

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|  |                                    |
|--|------------------------------------|
|  | 7 (Plug)   BN (Power)   7 (Socket) |
|  | 5 (Plug)   GNWH (RD+)   5 (Socket) |
|  | 8 (Plug)   GN (RD-)   8 (Socket)   |
|  | 2 (Plug)   OGWH (TD+)   2 (Socket) |
|  | 3 (Plug)   OG (TD-)   3 (Socket)   |

## Connector

### Connection 1

|                                 |                            |
|---------------------------------|----------------------------|
| Type                            | Plug straight M12 SPEEDCON |
| Number of positions             | 6                          |
| Locking type                    | SPEEDCON                   |
| Coding type                     | A (Standard)               |
| Ambient temperature (operation) | -25 °C ... 90 °C           |


### Connection 2

|                                 |                              |
|---------------------------------|------------------------------|
| Type                            | Socket straight M12 SPEEDCON |
| Number of positions             | 6                            |
| Locking type                    | SPEEDCON                     |
| Coding type                     | A (Standard)                 |
| Ambient temperature (operation) | -25 °C ... 90 °C             |

## Cable/line

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

### VARAN [970]

|                                     |                                                                                      |
|-------------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing                 |  |
| Cable weight                        | 81 kg/km                                                                             |
| Number of positions                 | 6                                                                                    |
| Shielded                            | yes                                                                                  |
| Cable type                          | VARAN [970]                                                                          |
| Conductor structure                 | 1x2xAWG22/19 + 1x4xAWG24/19                                                          |
| Conductor structure signal line     | 19x 0.13 mm                                                                          |
| AWG signal line                     | 24                                                                                   |
| Conductor structure, voltage supply | 19x 0.16 mm                                                                          |
| AWG power supply                    | 22                                                                                   |
| Conductor cross-section             | 4x 0.25 mm <sup>2</sup> (Signal line)<br>2x 0.38 mm <sup>2</sup> (Power supply)      |

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|                                               |                                                                                                                                     |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Wire diameter incl. insulation                | 1.35 mm (Signal line)                                                                                                               |
|                                               | 1.5 mm (Power supply)                                                                                                               |
| External cable diameter                       | 7.80 mm ±0.2 mm                                                                                                                     |
| Outer sheath, material                        | SANTOPRENE halogen-free                                                                                                             |
| External sheath, color                        | black RAL 9005                                                                                                                      |
| Conductor material                            | Bare Cu litz wires                                                                                                                  |
| Material, filler                              | Yarn                                                                                                                                |
| Material wire insulation                      | PP                                                                                                                                  |
| Single wire, color                            | brown, blue, white/orange, white/green, green, orange                                                                               |
| Type of pair shielding                        | Tinned copper braided shield, 95 % covering                                                                                         |
| Overall twist                                 | 1 star quad and 2 wires with 2 fillers                                                                                              |
| Max. conductor resistance                     | 77 Ω/m (Data cable)                                                                                                                 |
| Insulation resistance                         | 5 GΩ*km (Data cable)                                                                                                                |
| Wave impedance                                | 100 Ω ±15 %                                                                                                                         |
| Working capacitance                           | 50 nF (Data cable)                                                                                                                  |
| Nominal voltage, cable                        | 125 V (Data cable)                                                                                                                  |
|                                               | 48 V (Power supply)                                                                                                                 |
| Test voltage                                  | 2000 V (Power supply)                                                                                                               |
|                                               | max. 700 V AC (Data cable)                                                                                                          |
| Smallest bending radius, fixed installation   | ≥ 93 mm                                                                                                                             |
| Smallest bending radius, movable installation | ≥ 93 mm                                                                                                                             |
| Dynamic load capacity (bending)               | Max. bending cycles: 3000000, Bending radius: 93 mm, Traversing path: 2 m, Traversing rate: 1 m/s, Acceleration: 2 m/s <sup>2</sup> |
| Halogen-free                                  | in accordance with DIN EN 50267-2-1                                                                                                 |
| Ambient temperature (operation)               | -20 °C ... 80 °C (Cable)                                                                                                            |
| Ambient temperature (installation)            | 0 °C ... 50 °C                                                                                                                      |

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## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, straight, shielded

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Schematic diagram



Pin assignment M12 plug, 8-pos., view plug side

Schematic diagram



Pin assignment M12 socket, 8-pos., A-coded, view female side

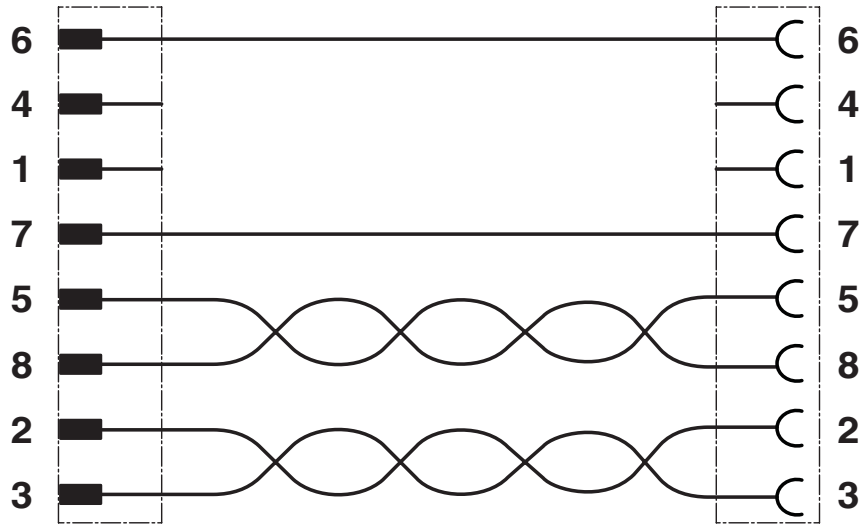
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Circuit diagram



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 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | 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-E                                   |
|                                        | No hazardous substances above the limits |

### EU REACH SVHC

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

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 2.703 kg CO2e |
|---------|---------------|

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)