

## Bus system cable - SAC-3P-M12MS/ 5,0-961/M12FS VA - 1419106

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Bus system cable, PROFIBUS PA (31.25 kbps), 3-position, PVC, blue RAL 5015, shielded, Plug straight M12, coding: A, on Socket straight M12, coding: A, cable length: 5 m, For Ex area with high-grade steel knurl



### Key Commercial Data

|                                      |   |
|--------------------------------------|---|
| Packing unit                         | 1 pc  |
| GTIN                                 | <br>4 046356 541732 |
| GTIN                                 | 4046356541732   |
| Weight per Piece (excluding packing) | 360.000 g   |
| Custom tariff number                 | 85444290  |
| Country of origin                    | Poland  |

### Technical data

#### Dimensions

|  |       |
|--|-------|
| Length of cable                            | 5 m   |
| Stripping length of the free conductor end | 50 mm |

#### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Ambient temperature (operation) | -25 °C ... 90 °C (Plug / socket) |
|                                 | -25 °C ... 90 °C (Plug / socket) |
| Degree of protection            | IP65                             |
|                                 | IP67                             |
|                                 | IP68                             |
|                                 | IP69K                            |

#### General

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## Technical data

### General

|                             |  |
|-----------------------------|--|
| Note                        | For applications in circuits of intrinsic safety protection type "i". Electrical values following EN 60079-14. |
| Rated current at 40°C       | 4 A  |
| Rated voltage               | 48 V AC<br>60 V DC   |
| Number of positions         | 3  |
| Color handle area           | black  |
| Coding                      | B - inverse  |
| Signal type/category        | PROFIBUS PA, 31.25 kbps  |
| Status display              | No   |
| Overvoltage category        | II   |
| Degree of pollution         | 3  |
| Insertion/withdrawal cycles | ≥ 100  |
| Torque                      | 0.4 Nm (M12 connector)   |

### Material

|  |   |
|--|---|
| Flammability rating according to UL 94 | HB  |
| Contact material                       | CuSn  |
| Contact surface material               | Ni/Au                                       |
| Contact carrier material               | TPU GF                                      |
| Material of grip body                  | TPU, hardly inflammable, self-extinguishing |
| Material, knurls                       | Stainless steel                             |
| Sealing material                       | NBR   |

### Pin assignment

|   |                                     |
|---|-------------------------------------|
| Contact   Color (signal designation)   Contact (optional) | 1 (Plug)   OG (DATA+)   1 (Socket)  |
|   | 3 (Plug)   BU (DATA-)   3 (Socket)  |
|   | 4 (Plug)   SR (shield)   4 (Socket) |

### Standards and Regulations

|  |    |
|--|----|
| Flammability rating according to UL 94 | HB |
|--|----|

### Cable

|                                 |  |
|---------------------------------|--|
| Cable type                      | Fieldbus FOUNDATION/PROFIBUS PA, blue  |
| Cable type (abbreviation)       | 961  |
| Cable structure                 | 2xAWG18/7 + 1xAWG20/7  |
| Conductor cross section         | 2x 0.75 mm <sup>2</sup> (Signal line)<br>1x 0.5 mm <sup>2</sup> (Drain wire) |
| AWG signal line                 | 18   |
| Conductor structure signal line | 7x 0.40 mm   |

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### Technical data

#### Cable

|   |   |
|---|---|
| Core diameter including insulation          | 2.24 mm ±0.05 mm                                  |
| Thickness, insulation                       | 0.5 mm  |
| Wire colors                                 | Blue, orange                                      |
| Twisted pairs                               | 2 cores to the pair                               |
| Overall twist                               | One pair with one drain wire and fillers for core |
| Shielding                                   | Plastic-coated aluminum foil with a drain wire    |
| Optical shield covering                     | 100 %   |
| External sheath, color                      | blue RAL 5015                                     |
| Outer sheath thickness                      | 1 mm  |
| External cable diameter D                   | 7.5 mm ±0.25 mm                                   |
| Smallest bending radius, fixed installation | 75 mm   |
| Cable weight                                | 56.552 kg/km                                      |
| Tensile strength GRP                        | 260 N   |
| Outer sheath, material                      | PVC   |
| Material conductor insulation               | PO (Signal line)                                  |
| Conductor material                          | Tin-plated Cu litz wires                          |
| Conductor resistance                        | ≤ 19.35 Ω/km (Signal line)                        |
|   | 26 Ω/km (shield)                                  |
| Working capacitance                         | 78 nF (at 1 kHz)                                  |
| Cable capacity                              | 147 pF/m (at 1 kHz, core/shield)                  |
|   | ≤ 3.94 pF/m (capacitance unbalance)               |
| Signal speed                                | 0.66 c  |
| Shield attenuation                          | 3 dB/km (at 39 kHz)                               |
| Cable impedance                             | 100 Ω ±20 % (At 31.25 kHz)                        |
| Conductor inductance                        | 0.6233 μH/m                                       |
| Nominal voltage, cable                      | 300 V   |
| Special properties                          | UL standards PLTC-ER and ITC                      |
| Flame resistance                            | UL 1685 (CSA FT 4)                                |
|   | UL 1685 (vertical tray)                           |
|   | UL 1666 (riser)                                   |
| Ambient temperature (operation)             | -40 °C ... 105 °C (cable, fixed installation)     |

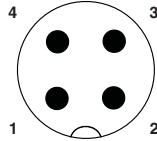
#### Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50 years  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

#### Drawings

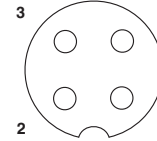
# Bus system cable - SAC-3P-M12MS/ 5,0-961/M12FS VA - 1419106

Schematic diagram



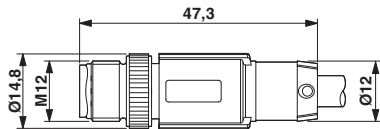
Pin assignment M12 plug, 3-pos., A-coded, view male side

Schematic diagram



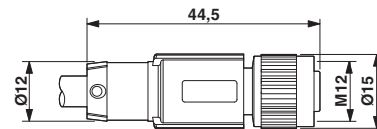
Pin assignment M12 socket, 3-pos., A-coded, view female side

Dimensional drawing



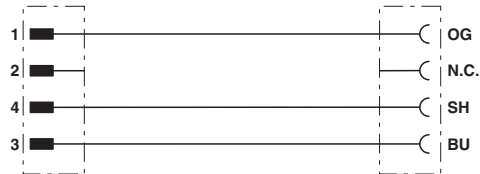
Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, straight

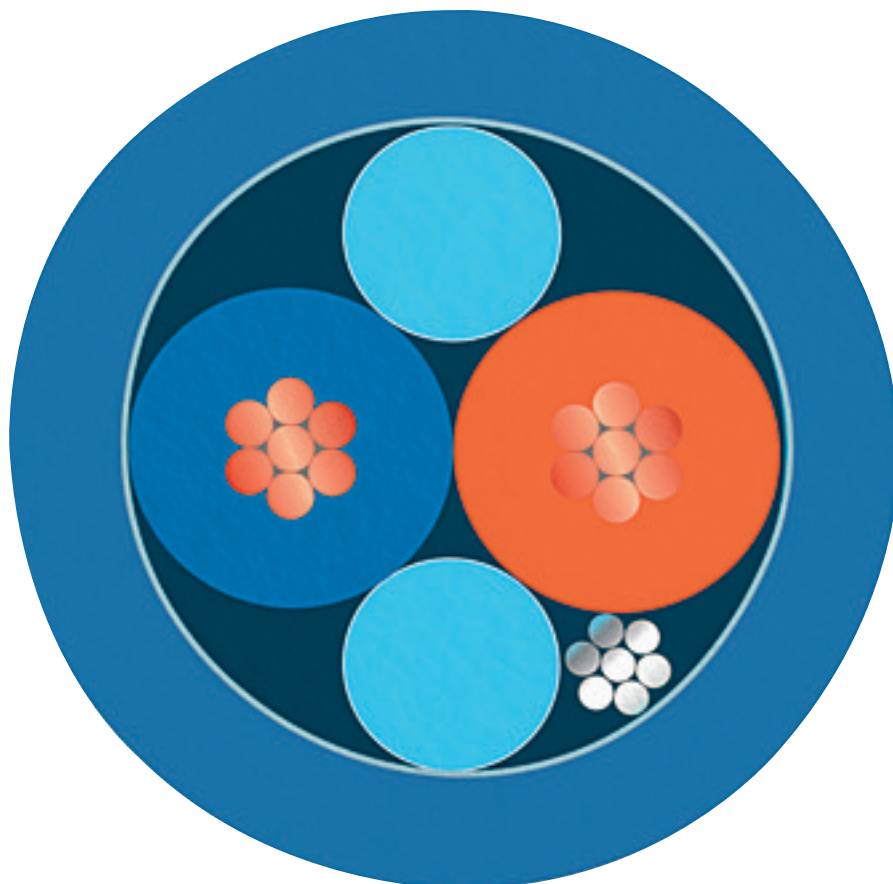
Circuit diagram



Contact assignment of the M12 connector and the M12 socket

# Bus system cable - SAC-3P-M12MS/ 5,0-961/M12FS VA - 1419106

Cable cross section



Fieldbus FOUNDATION/PROFIBUS PA, blue [961]

## Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060308 |
| eCl@ss 11.0   | 27060307 |
| eCl@ss 4.0    | 27060300 |
| eCl@ss 4.1    | 27060300 |
| eCl@ss 5.0    | 27060300 |
| eCl@ss 5.1    | 27060300 |
| eCl@ss 6.0    | 27279200 |
| eCl@ss 7.0    | 27279218 |
| eCl@ss 9.0    | 27060308 |

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## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000830 |
| ETIM 3.0 | EC000830 |
| ETIM 4.0 | EC001855 |
| ETIM 6.0 | EC001262 |
| ETIM 7.0 | EC001262 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 26121616 |
| UNSPSC 7.0901 | 26121616 |
| UNSPSC 11     | 26121604 |
| UNSPSC 12.01  | 26121616 |
| UNSPSC 13.2   | 31251501 |
| UNSPSC 18.0   | 26121604 |
| UNSPSC 19.0   | 26121604 |
| UNSPSC 20.0   | 26121604 |
| UNSPSC 21.0   | 26121604 |

## Approvals

### Approvals

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#### Approvals


EAC-RoHS / EAC

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#### Ex Approvals

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### Approval details

|          |   |                          |
|----------|---|--------------------------|
| EAC-RoHS |  | RU D-<br>DE.HB35.B.00387 |
|----------|---|--------------------------|

|     |   |                          |
|-----|---|--------------------------|
| EAC |  | RU C-<br>DE.BL08.B.00286 |
|-----|---|--------------------------|

## Bus system cable - SAC-3P-M12MS/ 5,0-961/M12FS VA - 1419106

### Accessories

#### Accessories

#### Screwdriver tools

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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Adapter - SAC BIT M12-W14 - 1212513



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive

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#### Torque tool

Torque screwdriver - TSD 04 SAC - 1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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Torque screwdriver - TSD-M 1,2NM - 1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm