

## Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113


Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Bus system cable, PROFIBUS PA (31.25 kbps), 3-position, PVC, blue RAL 5015, shielded, Plug angled M12, coding: A, on Socket straight M12, coding: A, cable length: 2 m, For Ex area with high-grade steel knurl



### Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 1 pc  |
| GTIN         | <br>4 046356 541800 |
| GTIN         | 4046356541800   |

### Technical data

#### Dimensions

|  |       |
|--|-------|
| Length of cable                            | 2 m   |
| Stripping length of the free conductor end | 50 mm |

#### Ambient conditions

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

#### 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  |
|                       | 60 V DC  |
| Number of positions   | 3  |
| Color handle area     | black  |
| Coding                | B - inverse  |

# Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

## Technical data

### General

|                             |                         |
|-----------------------------|-------------------------|
| 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)             |
|   | 1x 0.5 mm <sup>2</sup> (Drain wire)               |
| AWG signal line                             | 18  |
| Conductor structure signal line             | 7x 0.40 mm  |
| 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   |

## Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

### Technical data

#### Cable

|                                 |   |
|---------------------------------|---|
| 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) |

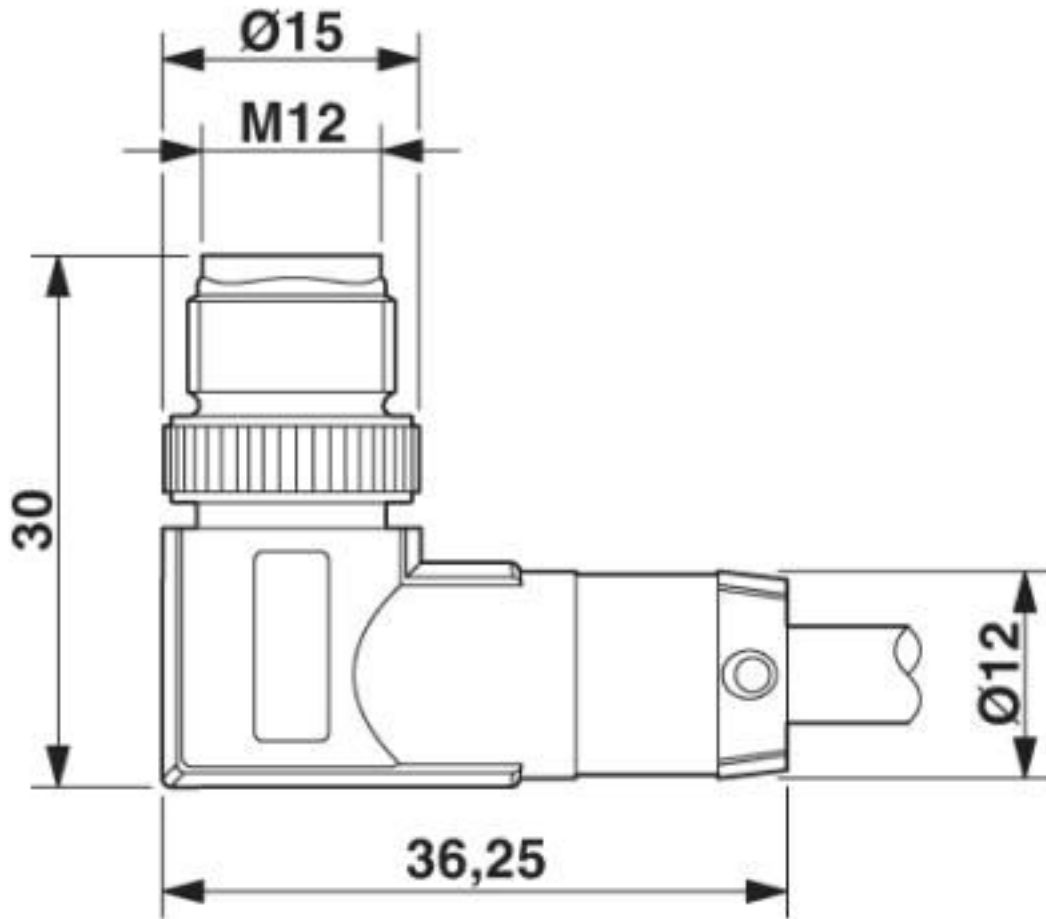
#### Environmental Product Compliance

|            |   |
|------------|---|
| REACH SVHC | Lead 7439-92-1  |
| China RoHS | Environmentally Friendly Use Period = 50 years  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

### Drawings

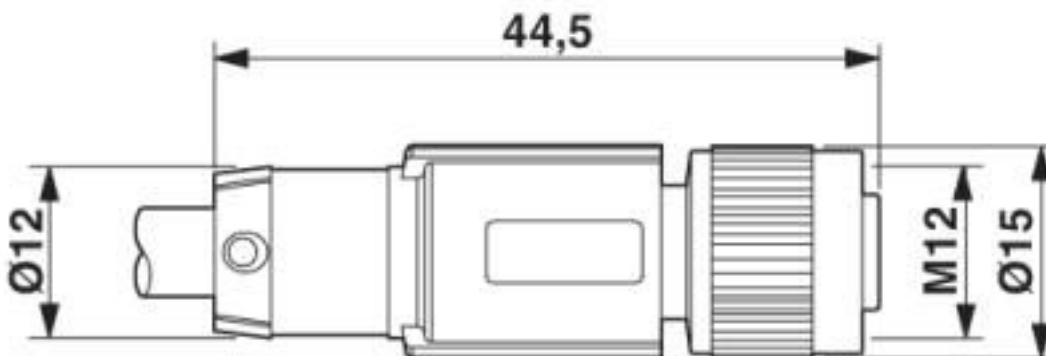
# Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

Dimensional drawing



M12 x 1 male plug, angled

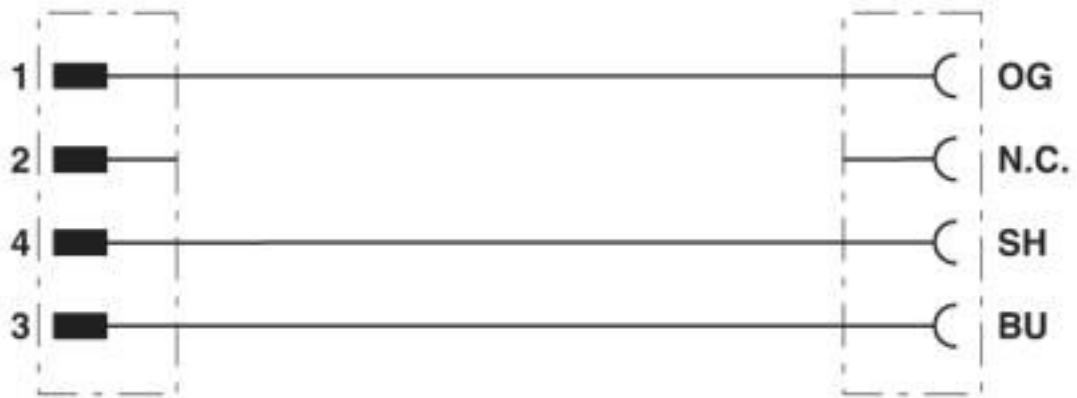
Dimensional drawing



M12 x 1 socket, straight

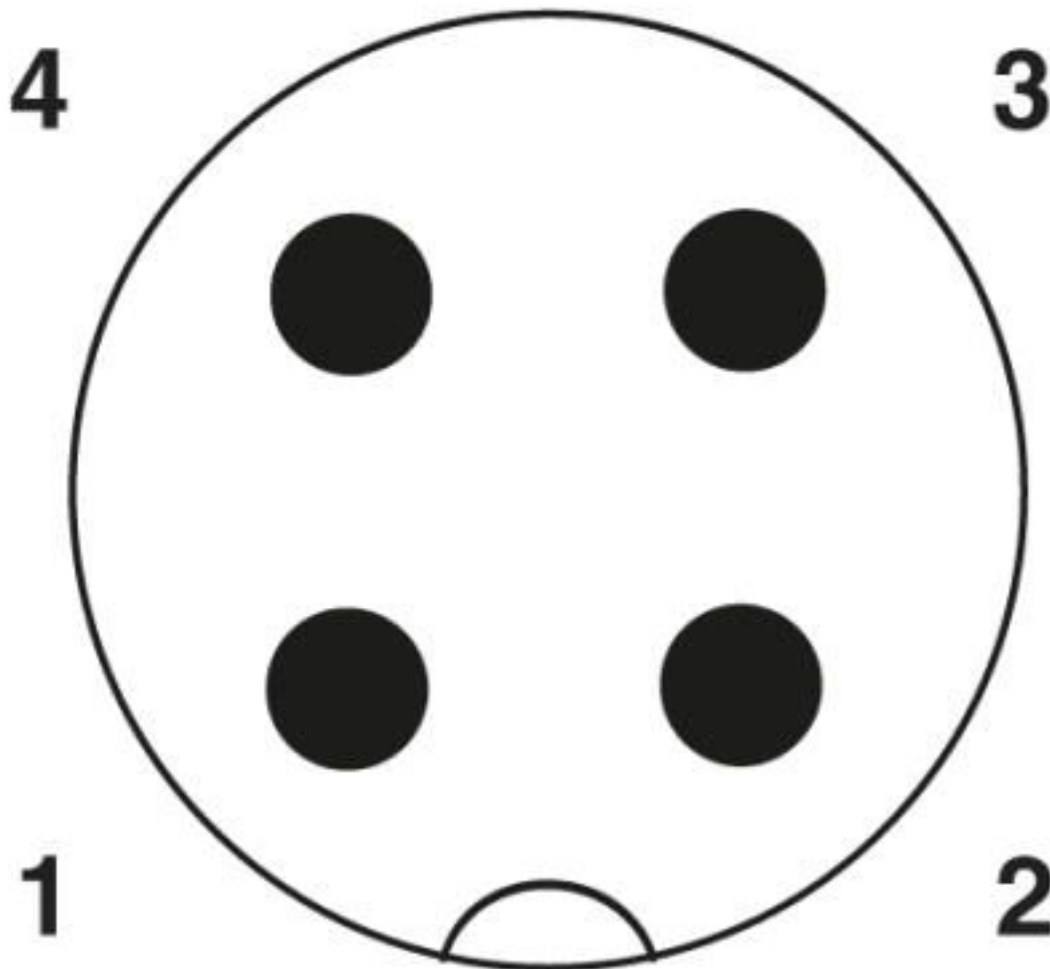
# Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

Circuit diagram



Contact assignment of the M12 connector and the M12 socket

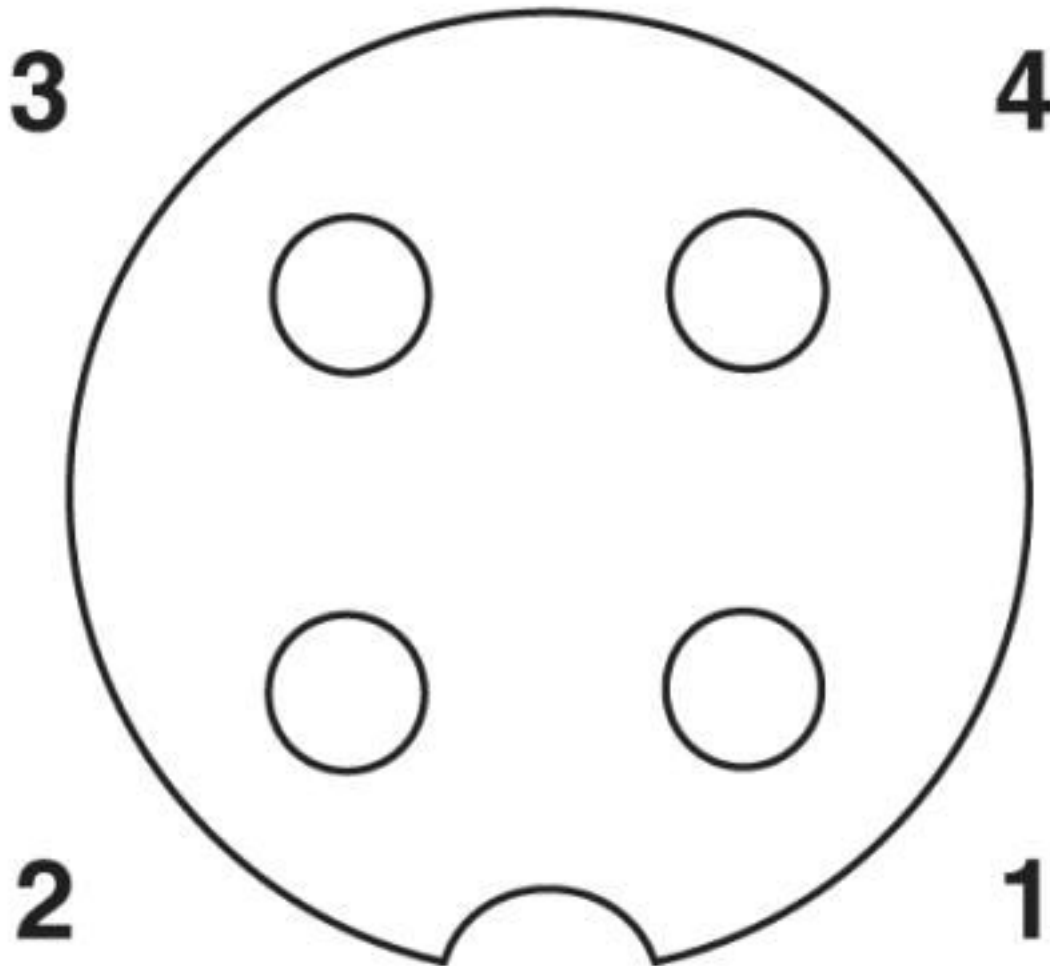
Schematic diagram



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

# Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

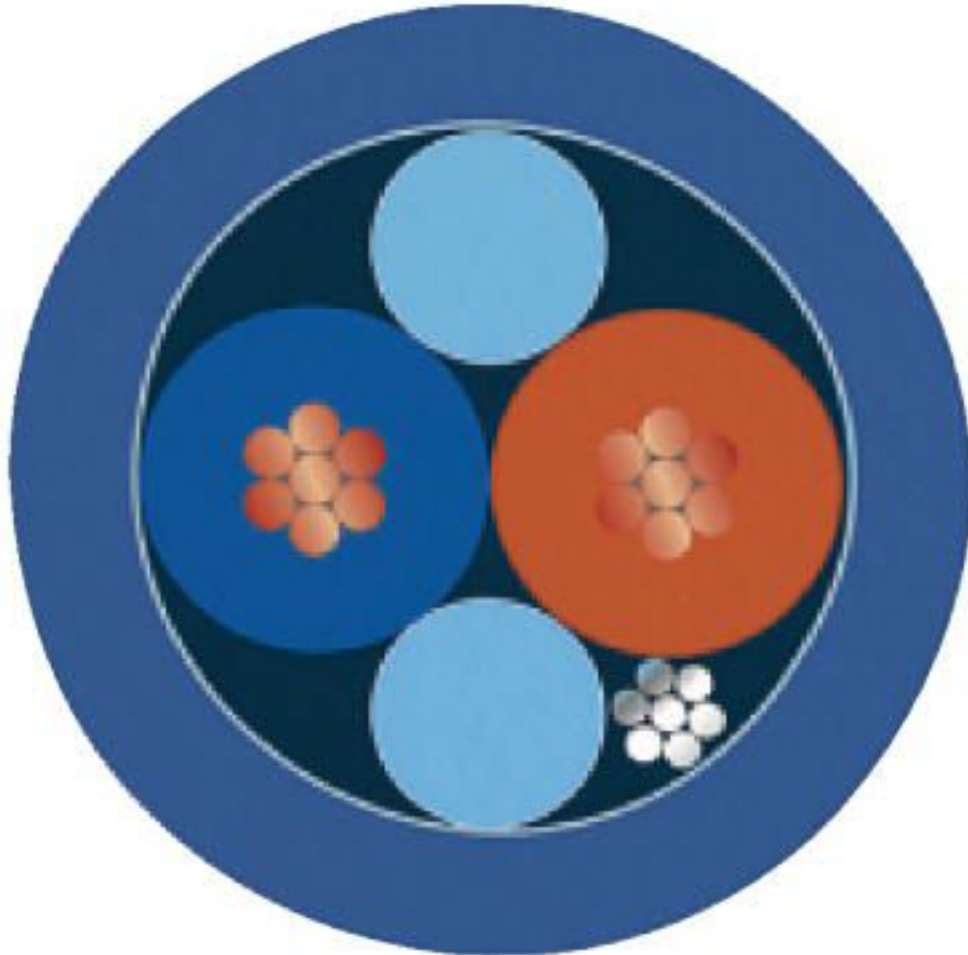
Schematic diagram



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

## Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

Cable cross section



Fieldbus FOUNDATION/PROFIBUS PA, blue [961]

### Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060308 |
| 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 8.0    | 27279218 |
| eCl@ss 9.0    | 27060308 |

# Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC000830 |
| ETIM 3.0 | EC000830 |
| ETIM 4.0 | EC001855 |
| ETIM 5.0 | EC002599 |
| 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

---

Approvals

EAC-RoHS / EAC

---

Ex Approvals

---

### Approval details

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

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

## Accessories

### Accessories

Screwdriver tools



## Bus system cable - SAC-3P-M12MR/ 2,0-961/M12FS VA - 1419113

### Accessories

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

---

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

---

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

---

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



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

---

Phoenix Contact 2020 © - all rights reserved  
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Sensor Cables / Actuator Cables](#) category:*

*Click to view products by [Phoenix Contact](#) manufacturer:*

Other Similar products are found below :

[60963](#) [60964](#) [703000D02F2002](#) [703001D02F0602](#) [703001D02F300](#) [704000D02F120](#) [773032K02F030](#) [802027107404-1](#) [802027213811-1](#)  
[804001A09M150](#) [805001A09M0502](#) [84914-0235](#) [84914-0237](#) [885030A09M020](#) [1200651332](#) [1200651713](#) [1200660844](#) [1200660845](#)  
[1200661173](#) [1200680071](#) [1200720053](#) [1200720081](#) [1200720099](#) [1200720217](#) [1200800231](#) [1200860125](#) [1200870123](#) [1200980102](#)  
[1200650267](#) [1200650298](#) [1200660183](#) [1200660782](#) [1200660849](#) [1200661295](#) [1200661297](#) [1200661342](#) [1200661343](#) [1200670080](#)  
[1200670220](#) [1200680331](#) [1200720252](#) [1200730184](#) [1200860344](#) [1200870359](#) [1200870643](#) [1200980008](#) [1200980031](#) [1210502211](#)  
[1210400542](#) [1211810021](#)