

Bus system cable - SAC-3P-M12MR/20,0-961 VA - 1419101

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Bus system cable, PROFIBUS PA (31.25 kbps), 3-position, PVC, blue RAL 5015, shielded, Plug angled M12, coding: A, on free cable end, cable length: 20 m, For Ex area with high-grade steel knurl

RoHS



Key Commercial Data

| | |
|--------------|---------------|
| Packing unit | 1 pc |
| GTIN | |
| GTIN | 4046356541688 |

Technical data

Dimensions

| | |
|--|-------|
| Length of cable | 20 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 |

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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+) |
| | 3 (Plug) BU (DATA-) |
| | 4 (Plug) SR (shield) |

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 ² (Signal line) |
| | 1x 0.5 mm ² (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 |

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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) |

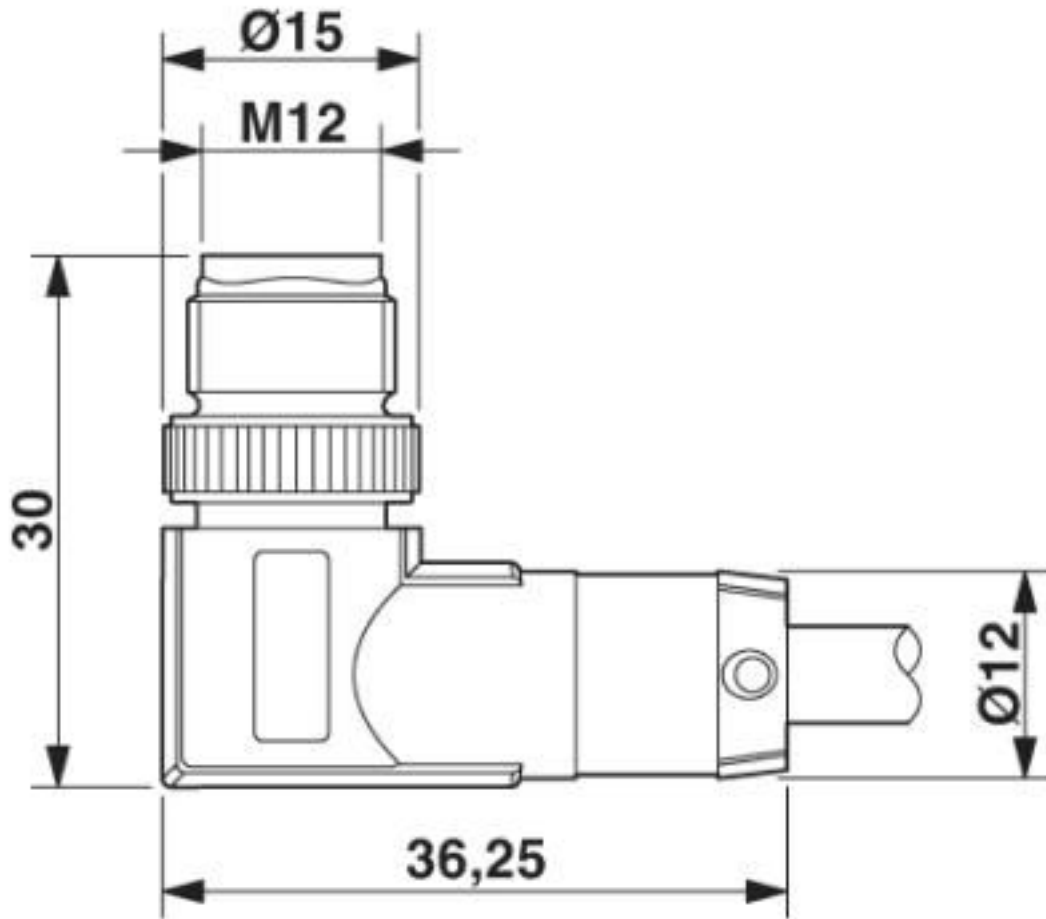
Environmental Product Compliance

| | |
|------------|---|
| 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

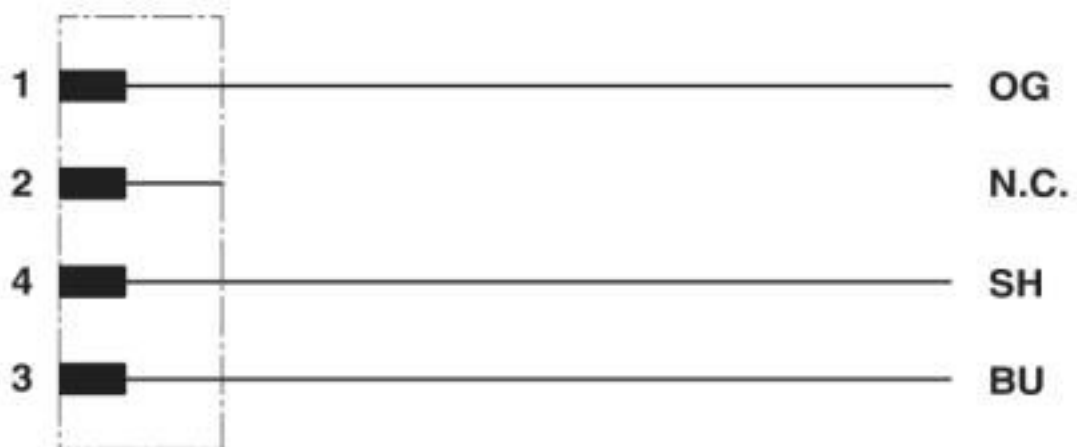
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Dimensional drawing



M12 x 1 male plug, angled

Circuit diagram



Contact assignment of the M12 plug

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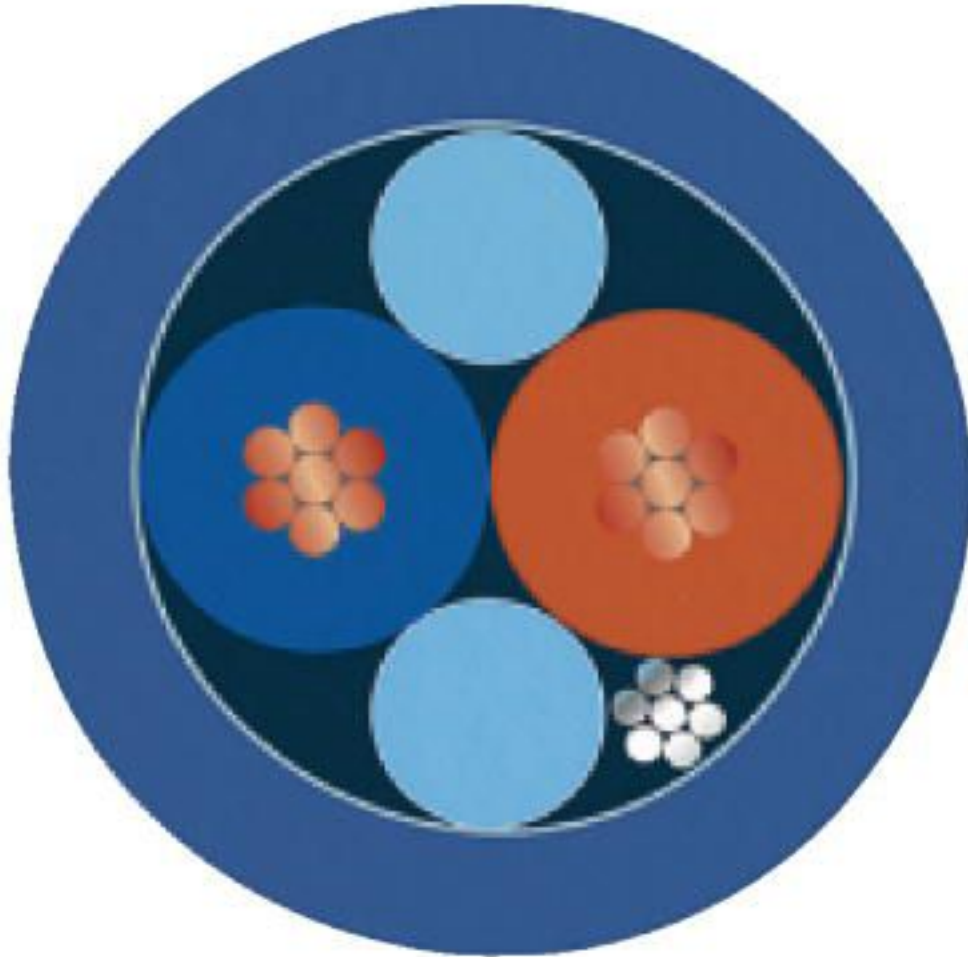
Schematic diagram



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

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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 |

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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- DE.HB35.B.00387 |
|----------|--|--------------------------|

| | | |
|-----|--|--------------------------|
| EAC | | RU C- DE.BL08.B.00286 |
|-----|--|--------------------------|

Accessories

Accessories

Circular connector (cable-side)

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Accessories

Data connector - SACC-FS-4QO SH PBPA SCO - 1413934



Data connector, PROFIBUS PA (31.25 kbps), 2-position, halogen-free, shielded, Socket straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Data connector - SACC-MS-4QO SH PBPA SCO - 1413933



Data connector, PROFIBUS PA (31.25 kbps), 2-position, halogen-free, shielded, Plug straight M12 SPEEDCON, Coding: A, Insulation displacement connection, knurl material: Zinc die-cast, nickel-plated, external cable diameter 5 mm ... 9.7 mm

Corrugated pipe

Protective hose - WP-PA HF 13,0 BK - 3240681



Polyamide protective hose, inflammability class V0, UV resistant

Protective hose - WP-PA HF-HB 13,0 BK - 3240839



Polyamide protective hose, inflammability class HB, UV resistant

Cutting tools

Cable-cutting tool - CUTFOX 12 - 1212128



Cable cutter, for copper and aluminum up to 12 mm diameter (up to 35 mm²)

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Accessories

Diagonal cutter - CUTFOX-S VDE - 1212207



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

Electronics pliers

Diagonal cutter - MICROFOX-SP-1 - 1212487



Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

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

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

Stripping tool

Stripping tool - WIREFOX 4 - 1212156



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

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Accessories

Stripping tool - WIREFOX-E 4 - 1212704



Stripping tool, for cables and conductors (especially for rubber and silicone insulations) from 0.1 - 4 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

Stripping tool - WIREFOX 10 - 1212150



Stripping tool, for cables and conductors from 0.02 - 10 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

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

Stripping tool - VS-CABLE-STRIP-VARIO - 1657407



Stripping tool, for the multi-level stripping of shielded cables

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Accessories

Protective hose adapter - WP-CTA POM 13,0 BK - 1422884



Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

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