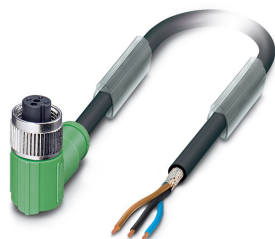


Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

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Sensor/actuator cable, 3-position, Variable cable type, shielded, free cable end, on Socket angled M12, coding: A, cable length: Free input (0.2 ... 40.0 m)

Your advantages

- ✓ Easy and safe: 100% electrically tested plug-in components
- ✓ Flexible solutions - configurable materials with variable cable types and cable lengths
- ✓ Reliable signal transmission – 360° shielding in environments with electromagnetic interference



Key Commercial Data

Packing unit	1 pc
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Technical data

Dimensions

Length of cable	Free input (0.2 ... 40.0 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

General

Rated current at 40°C	4 A
Rated voltage	48 V AC
	60 V DC
Number of positions	3
Insulation resistance	≥ 100 MΩ
Coding	A - standard
Standards/regulations	M12 connector IEC 61076-2-101
Status display	No

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Technical data

General

Protective circuit/component	unwired
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	Zinc die-cast, nickel-plated
Sealing material	NBR

Line characteristics

Note	This item is a sensor/actuator cable with a freely selectable cable type. The technical data for all possible cable types is listed in the table below.
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Standards and Regulations

Standards/specifications	M12 connector IEC 61076-2-101
Flammability rating according to UL 94	HB
Standards/specifications	M12 connector IEC 61076-2-101

PUR/PVC shielded, gray [100]

Cable type	PUR/PVC shielded, gray
Cable type (abbreviation)	100
Cable abbreviation	LiYV1CY11Y
Conductor cross section	0.34 mm ²
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.5 mm ±0.05 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.38 mm (Outer cable sheath)
	approx. 0.3 mm (Inner sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Shielding	Braided copper wires
Optical shield covering	85 %
External cable diameter D	5.2 mm ±0.2 mm
Smallest bending radius, fixed installation	52 mm
Smallest bending radius, movable installation	52 mm
Number of bending cycles	2000000

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Technical data

PUR/PVC shielded, gray [100]

Bending radius	52 mm
Traversing path	5 m
Traversing rate	3 m/s
Cable weight	38 kg/km
External sheath, color	gray RAL 7001
Outer sheath, material	PUR
Material, inner sheath	PVC
Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 100 MΩ*km (at 20 °C)
Conductor resistance	max. 58 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Test voltage Core/Shield	≥ 2000 V
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)
	-5 °C ... 80 °C (Cable, flexible installation)

PVC gray [500]

Cable type	PVC gray
Cable type (abbreviation)	500
Conductor cross section	0.34 mm ²
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.4 mm ±0.02 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.76 mm (Outer cable sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External cable diameter D	5.2 mm ±0.2 mm
Cable weight	40 kg/km
External sheath, color	gray RAL 7001
Outer sheath, material	PVC
Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 1 GΩ*km (at 20 °C)
Conductor resistance	max. 58 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

Technical data

PVC gray [500]

	-5 °C ... 80 °C (Cable, flexible installation)
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PUR halogen-free black [PUR]

Cable type	PUR halogen-free black
Cable type (abbreviation)	PUR
Cable abbreviation	Li9Y-VI-C-VI-11Y
UL AWM style	20549
Conductor cross section	3x 0.34 mm ² (Signal line)
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.27 mm ±0.02 mm (Signal line)
Thickness, insulation	≥ 0.21 mm (Core insulation)
	approx. 0.5 mm (Outer cable sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Shielding	Braided copper wires
Optical shield covering	80 %
External cable diameter D	4.65 mm ±0.15 mm
Smallest bending radius, fixed installation	23 mm
Smallest bending radius, movable installation	47 mm
Number of bending cycles	10000000
Bending radius	47 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²
Cable weight	31 kg/km
External sheath, color	black-gray RAL 7021
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Conductor resistance	max. 58 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Special properties	Flexible cable conduit capable
	Silicone-free
	Free of substances which would hinder coating with paint or varnish
Other resistance	Highly resistant to acids, alkaline solutions and solvents
	hydrolysis and microbe resistant
	partly UV-resistant in accordance with DIN EN ISO 4892-2-A
Flame resistance	in accordance with UL 758/1581 FT2

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

Technical data

PUR halogen-free black [PUR]

	DIN EN 60332-2-2 (20 s)
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (Cable, flexible installation)

PVC shielded black [PVC]

Cable type	PVC shielded black
Cable type (abbreviation)	PVC
Conductor cross section	3x 0.34 mm ²
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.4 mm ±0.02 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.76 mm (Outer cable sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
External cable diameter D	5.2 mm ±0.2 mm
Cable weight	40 kg/km
External sheath, color	black RAL 9005
Outer sheath, material	PVC
Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 100 MΩ*km (at 20 °C)
Conductor resistance	max. 58 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Flame resistance	As per UL-Style 2464
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)
	-5 °C ... 80 °C (Cable, flexible installation)

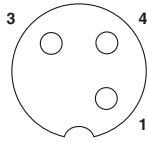
Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

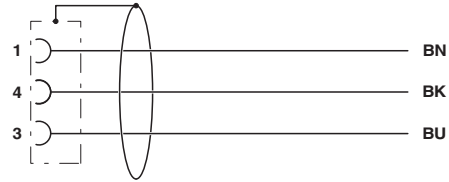
Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

Schematic diagram



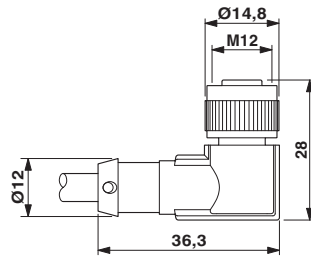
Pin assignment M12 socket, 3-pos., A-coded, view female side

Circuit diagram



Contact assignment of the M12 socket

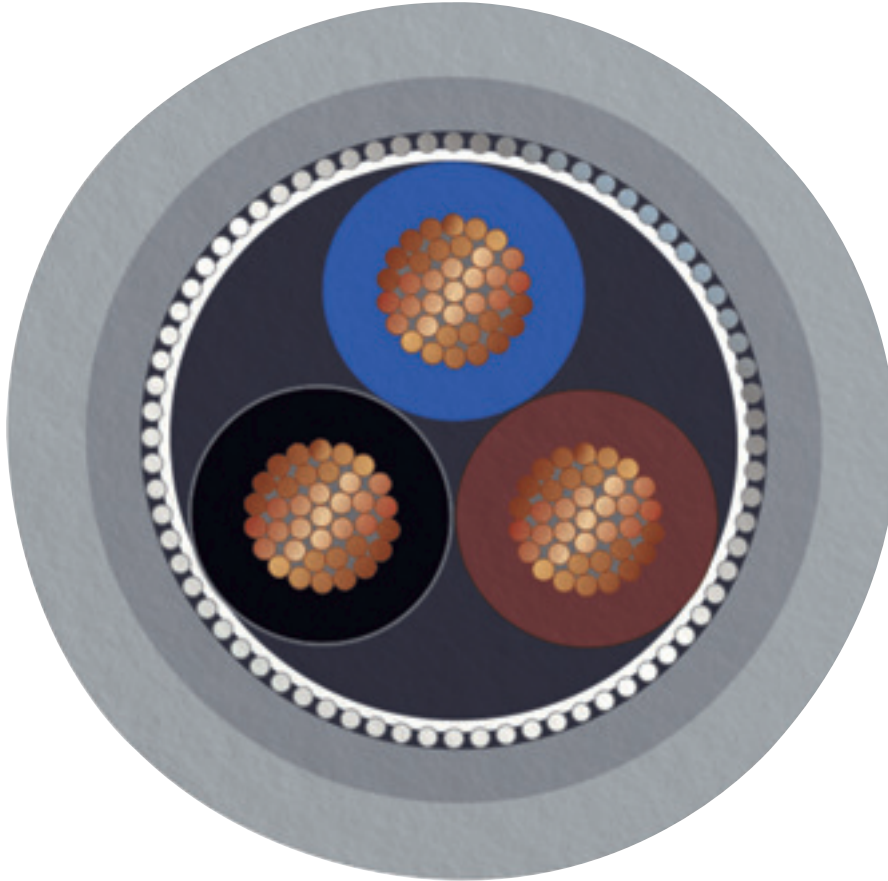
Dimensional drawing



M12 x 1 socket, angled, shielded

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

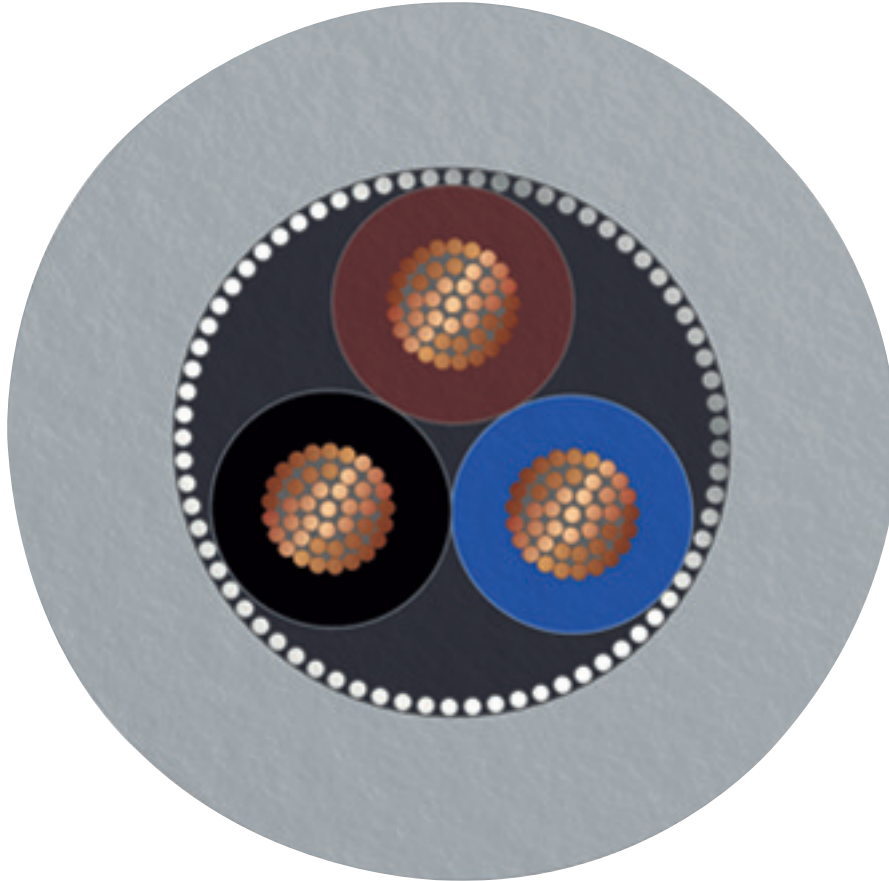
Cable cross section



PUR/PVC shielded, gray [100]

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

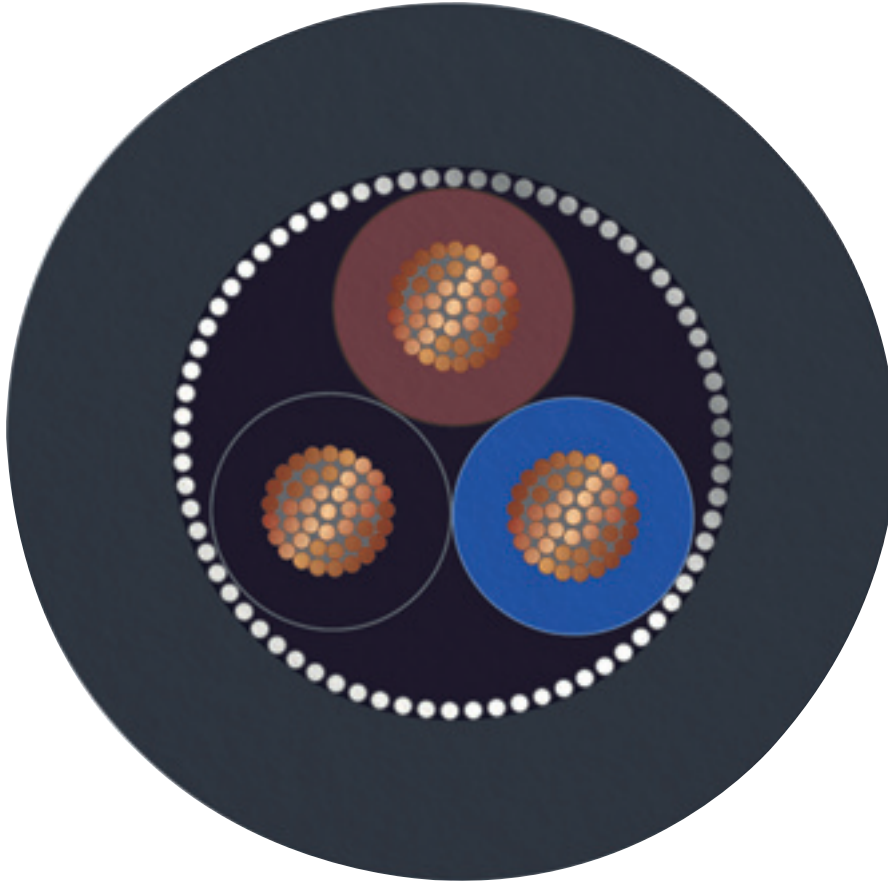
Cable cross section



PVC gray [500]

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

Cable cross section



PVC shielded black [PVC]

Classifications

eCl@ss

eCl@ss 10.0.1	27060311
eCl@ss 11.0	27060311
eCl@ss 4.0	27060300
eCl@ss 4.1	27060300
eCl@ss 5.0	27061800
eCl@ss 5.1	27061800
eCl@ss 6.0	27279200
eCl@ss 7.0	27279218
eCl@ss 9.0	27060311

ETIM

ETIM 2.0	EC000830
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Classifications

ETIM

ETIM 3.0	EC001855
ETIM 4.0	EC001855
ETIM 6.0	EC001855
ETIM 7.0	EC001855

UNSPSC

UNSPSC 6.01	31251501
UNSPSC 7.0901	31251501
UNSPSC 11	31251501
UNSPSC 12.01	31251501
UNSPSC 13.2	31251501
UNSPSC 19.0	31251501
UNSPSC 20.0	31251501
UNSPSC 21.0	31251501

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC-RoHS / EAC / cULus Listed

Ex Approvals

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 221474
Nominal voltage UN		300 V	
Nominal current IN		4 A	

cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 221474
Nominal voltage UN		300 V	
Nominal current IN		4 A	

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

Approvals

EAC-RoHS		RU D- DE.HB35.B.00387
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EAC		RU C- DE.BL08.B.00286
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cULus Listed		
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Accessories

Accessories

Conductor marking

Insert label - PABA WH/23 - 1013779



Insert label, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

Insert label - PABA YE/23 - 1013782



Insert label, Strip, yellow, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

Corrugated pipe

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



Polyamide protective hose, inflammability class V0, UV resistant

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

Accessories

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



Polyamide protective hose, inflammability class HB, UV resistant

Cutting tools

Diagonal cutter - CUTFOX-S VDE - 1212207



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

Marker pen

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

Plug for cable screw gland

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899



M12 sealing cap with fixing band, for sensor cables, for free M12 sockets

Safety locking

Locking clip - SAC-M12-EXCLIP-F - 1558991



Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

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

Tool - SAC BIT M12-D15 - 1208432



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

Stripping tool

Stripping tool - WIREFOX SAC-1 - 1212757



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from Ø of 3.2 to 4.4 mm, any stripping length

Stripping tool - WIREFOX SAC - 1212623



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from Ø of 4.4 to 7 mm, any stripping length

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

Sensor/actuator cable - SAC-3P-M12FR SH/.../... - 1697454

Accessories

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

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