Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

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)

Sensor/actuator cable, 3-position, Variable cable type, Plug angled M12 SPEEDCON, A-coded, on Socket angled M8, with 2 LEDs, cable length: Free input (0.2 ... 40.0 m)

Why buy this product

- Easy and safe: 100% electrically tested plug-in components
- Save time, thanks to installation with SPEEDCON fast locking system
- Flexible solutions - configurable materials with variable cable types and cable lengths
- Convenient: increased machine availability thanks to quick and easy diagnostics

Key Commercial Data

Packing unit	1 STK
Minimum order quantity	25 STK

Technical data

Dimensions

Length of cable	Free input (0.2 ... 40.0 m)

Ambient conditions

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

General

Rated current at 40°C	4 A
Rated voltage	24 V
	24 V DC
Number of positions	3
Insulation resistance	≥ 100 MΩ
Coding	A - standard
Standards/regulations	M12 connector IEC 61076-2-101

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

General

	M8 connector IEC 61076-2-104
Status display	2 LEDs
Protective circuit/component	Unwired
Overvoltage category	II
Degree of pollution	3
Test voltage	2500 V
Insertion/withdrawal cycles	≥ 100
Torque	0.4 Nm (M12 connector)
	0.2 Nm (M8 connectors)

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.

Standards and Regulations

Standard designation	M12 connector
Standards/regulations	IEC 61076-2-101
Standard designation	M8 connector
Standards/regulations	IEC 61076-2-104
Flammability rating according to UL 94	HB

PUR/PVC gray [100]

Cable type	PUR/PVC gray
Cable type (abbreviation)	100
Cable abbreviation	LiYY-11Y
Conductor cross section	0.25 mm²
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.32 mm ±0.02 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.38 mm (Outer cable sheath)
	approx. 3.5 mm ±0.1 mm (Inner sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

PUR/PVC gray [100]

External sheath, color	gray RAL 7001
External cable diameter D	4.4 mm ±0.2 mm
Smallest bending radius, fixed installation	22 mm
Smallest bending radius, movable installation	44 mm
Number of bending cycles	2000000
Bending radius	44 mm
Traversing path	5 m
Traversing rate	3 m/s
Cable weight	27 kg/km
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. 78 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)

PUR/PVC yellow [140]

Cable type	PUR/PVC yellow
Cable type (abbreviation)	140
Cable abbreviation	LiYY-11Y
UL AWM style	20549
Conductor cross section	0.25 mm²
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.32 mm ±0.02 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.38 mm (Outer cable sheath)
	approx. 0.35 mm (Inner sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
External sheath, color	yellow
External cable diameter D	4.4 mm ±0.2 mm
Smallest bending radius, fixed installation	44 mm
Smallest bending radius, movable installation	44 mm
Number of bending cycles	2000000
Bending radius	44 mm

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

PUR/PVC yellow [140]

Traversing path	5 m
Traversing rate	3 m/s
Cable weight	27 kg/km
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. 78 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Flame resistance	in accordance with DIN UL-Style 20549
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)
	-5 °C ... 80 °C (cable, flexible installation)

PUR halogen-free orange [180]

Cable type	PUR halogen-free orange
Cable type (abbreviation)	180
Cable abbreviation	Li9Y-11Y
UL AWM style	20549
Conductor cross section	3x 0.25 mm² (Signal line)
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.17 mm ±0.02 mm (Signal line)
Thickness, insulation	≥ 0.21 mm (Core insulation)
	approx. 0.9 mm (Outer cable sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
External sheath, color	orange RAL 2003
External cable diameter D	4.4 mm ±0.15 mm
Smallest bending radius, fixed installation	22 mm
Smallest bending radius, movable installation	44 mm
Number of bending cycles	4000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s²
Cable weight	24 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

PUR halogen-free orange [180]

Insulation resistance	≥ 10 GΩ*km (at 20 °C)
Conductor resistance	max. 78 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Flame resistance	in accordance with DIN UL-Style 20549
	in accordance with UL 758/1581 FT2
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	hydrolysis and microbe resistant
	Resistant to salt water
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (cable, flexible installation)

PUR halogen-free gray [280]

Cable type	PUR halogen-free gray
Cable type (abbreviation)	280
Cable abbreviation	Li9Y11Y
UL AWM style	20549
Conductor cross section	0.25 mm²
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.17 mm ±0.02 mm
Thickness, insulation	≥ 0.21 mm (Core insulation)
	approx. 0.9 mm (Outer cable sheath)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
External sheath, color	silver-gray RAL 7001
External cable diameter D	4.4 mm ±0.15 mm
Smallest bending radius, fixed installation	44 mm
Smallest bending radius, movable installation	44 mm
Number of bending cycles	4000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Cable weight	24 kg/km
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. 78 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

PUR halogen-free gray [280]

Test voltage, cable	≥ 3000 V
Flame resistance	in accordance with DIN UL-Style 20549
Halogen-free	in accordance with DIN VDE 0472 part 815

PVC gray [500]

Cable type	PVC gray
Cable type (abbreviation)	500
Cable abbreviation	LiYY
Conductor cross section	0.25 mm²
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.25 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
External sheath, color	gray RAL 7001
External cable diameter D	4.4 mm ±0.15 mm
Cable weight	29 kg/km
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. 78 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)

Gray, highly flexible PUR [800]

Note	Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.
Cable type	Gray, highly flexible PUR
Cable type (abbreviation)	800
Cable abbreviation	Li12YYTPE-HF
UL AWM style	20233
Conductor cross section	3x 0.25 mm² (Signal line)
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.2 mm ±0.05 mm (Signal line)
Wire colors	brown, blue, black

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

Gray, highly flexible PUR [800]

Overall twist	3 wires, twisted
External sheath, color	gray RAL 7001
External cable diameter D	4.3 mm ±0.2 mm
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	7.5 x D
Number of bending cycles	10000000
Minimum bending radius, drag chain applications	7,5 x D
Traversing path	5 m
Traversing rate	3.3 m/s
Acceleration	5 m/s²
Number of bending cycles	15000000
Bending radius	50 mm
Traversing path	0.9 m
Traversing rate	5 m/s
Acceleration	30 m/s²
Torsion force	± 360 °/m (1 000 000 torsion cycles)
Cable weight	24 kg/km
Outer sheath, material	PUR
Material conductor insulation	PES
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 20 MΩ*km
Conductor resistance	approx. 76 Ω/km
Nominal voltage, cable	300 V
Test voltage, cable	2000 V
Special properties	Sheath resistant to welding beads, can be recycled, matt, without adhesion, wear-resistant, flame resistant and self-extinguishing
	Free from silicone and cadmium
	Free of substances which would hinder coating with paint or varnish
Flame resistance	according to IEC 60332-1-2
	according to UL 758/1581 VW-1
	according to UL 758/1581 FT1
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	According to HD 22.10
	in accordance with DIN EN 60811-404 (external sheath)
Other resistance	Highly resistant to acids, alkaline solutions and solvents
	Silicone-free
Ambient temperature (operation)	-40 °C ... 90 °C (cable, fixed installation)
	-30 °C ... 90 °C (cable, flexible installation)
	to 120 °C (for 3000 h)

PUR halogen-free black [PUR]

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

PUR halogen-free black [PUR]

Cable type	PUR halogen-free black
Cable type (abbreviation)	PUR
Cable abbreviation	Li9Y11Y-HF
UL AWM style	20549
Conductor cross section	3x 0.25 mm²
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.17 mm ±0.02 mm
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
External sheath, color	black-gray RAL 7021
Outer sheath thickness	approx. 0.5 mm
External cable diameter D	3.6 mm ±0.15 mm
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s²
Cable weight	18 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Conductor resistance	≤ 78 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
Flame resistance	in accordance with UL 758/1581 FT2
	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
Other resistance	hydrolysis and microbe resistant
	Highly resistant to acids, alkaline solutions and solvents
	Resistant to salt water

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Technical data

PUR halogen-free black [PUR]

	partly UV-resistant in accordance with DIN EN ISO 4892-2-A
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (cable, flexible installation)

PVC black [PVC]

Cable type	PVC black
Cable type (abbreviation)	PVC
Cable abbreviation	LiYY
Conductor cross section	3x 0.25 mm² (Signal line)
AWG signal line	24
Conductor structure signal line	32x 0.10 mm
Core diameter including insulation	1.25 mm ±0.02 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
Wire colors	brown, blue, black
Overall twist	3 wires, twisted
External sheath, color	black RAL 9005
Outer sheath thickness	≥ 0.76 mm
External cable diameter D	4.4 mm ±0.15 mm
Cable weight	29 kg/km
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. 78 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)

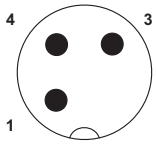
Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration”

Drawings

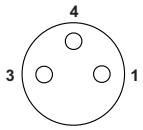
Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Schematic diagram



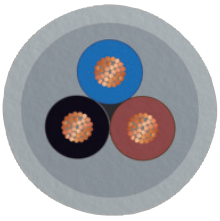
Pin assignment M12 plug, 3-pos., A-coded, view male side

Schematic diagram



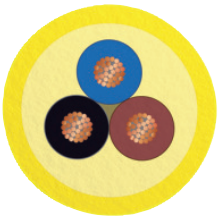
Pin assignment M8 socket, 3-pos., view female side

Cable cross section



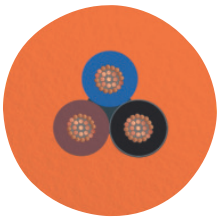
PUR/PVC gray [100]

Cable cross section



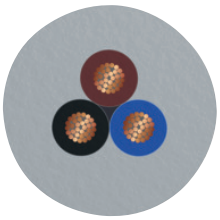
PUR/PVC yellow [140]

Cable cross section



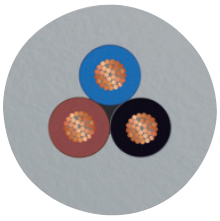
PUR halogen-free orange [180]

Cable cross section



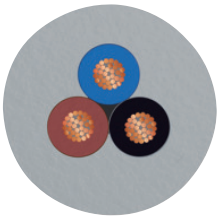
PUR halogen-free gray [280]

Cable cross section



PVC gray [500]

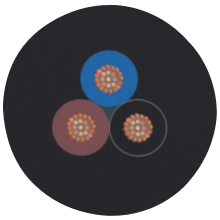
Cable cross section



Gray, highly flexible PUR [800]

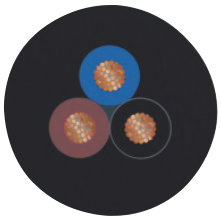
Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Cable cross section



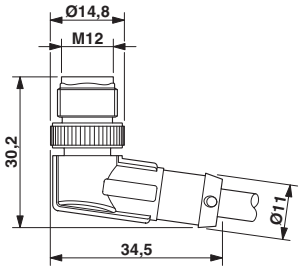
PUR halogen-free black [PUR]

Cable cross section



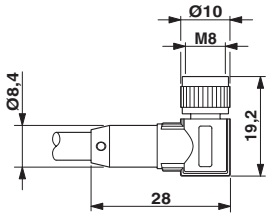
PVC black [PVC]

Dimensional drawing



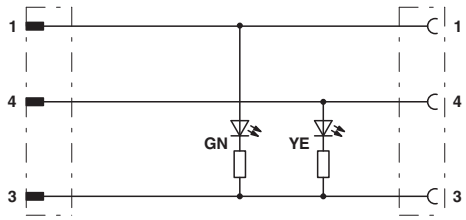
M12 x 1 male plug, angled

Dimensional drawing



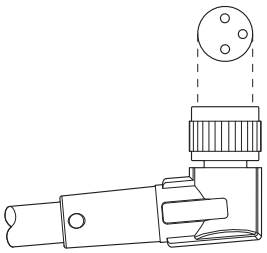
Socket M8 x 1, angled, with LED

Circuit diagram



Contact assignment of M12 plugs / M8 sockets

Schematic diagram



Layout of connector pin assignments

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC / cULus Listed

Ex Approvals

Approval details

Sensor/actuator cable - SAC-3P-MR-M8FR-2L SCO/.../... - 1541872

Approvals

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 221474

Nominal voltage UN	24 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	24 V
Nominal current IN	4 A

EAC		EAC-Zulassung

cULus Listed	

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