

## Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

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, 4-position, Variable cable type, free cable end, on Socket angled M12, A-coded, with 2 LEDs, 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
- Convenient: increased machine availability thanks to quick and easy diagnostics



### Key Commercial Data

Packing unit	1 pc
Minimum order quantity	25 pc

### Configuration

Cable type	PVC gray [500]
Length [m]	1

### 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)
Degree of protection	IP65
	IP67
	IP68

#### General

Rated current at 40°C	4 A
Rated voltage	24 V
	24 V DC

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### General

Number of positions	4
Insulation resistance	$\geq 100 \text{ M}\Omega$
Coding	A - standard
Status display	2 LEDs
Protective circuit/component	Unwired
Overvoltage category	II
Degree of pollution	3
Insertion/withdrawal cycles	$\geq 100$

### 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

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	0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.5 mm $\pm 0.05$ mm
Thickness, insulation	$\geq 0.3$ mm (Core insulation) $\geq 0.38$ mm (Outer cable sheath) approx. 0.35 mm (Inner sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	gray RAL 7001
External cable diameter D	5.2 mm $\pm 0.2$ mm
Smallest bending radius, fixed installation	52 mm
Smallest bending radius, movable installation	52 mm
Number of bending cycles	2000000

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PUR/PVC gray [100]

Bending radius	52 mm
Traversing path	5 m
Traversing rate	3 m/s
Cable weight	39 kg/km
Outer sheath, material	PUR
Material, inner sheath	PVC
Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 100 \text{ M}\Omega \cdot \text{km}$ (at 20 °C)
Conductor resistance	max. 58 $\Omega/\text{km}$ (at 20 °C)
Nominal voltage, cable	$\leq 300 \text{ V}$
Test voltage, cable	$\geq 3000 \text{ V}$
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/PVC yellow [140]

Cable type	PUR/PVC yellow
Cable type (abbreviation)	140
Cable abbreviation	LiYY-11Y
UL AWM style	20549
Conductor cross section	0.34 $\text{mm}^2$
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.5 mm $\pm 0.05 \text{ mm}$
Thickness, insulation	approx. 0.3 mm (Core insulation)
	$\geq 0.38 \text{ mm}$ (Outer cable sheath)
	approx. 0.35 mm (Inner sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	yellow
External cable diameter D	5.2 mm $\pm 0.2 \text{ mm}$
Smallest bending radius, fixed installation	52 mm
Smallest bending radius, movable installation	52 mm
Number of bending cycles	2000000
Bending radius	52 mm
Traversing path	5 m
Traversing rate	3 m/s
Cable weight	39 kg/km
Outer sheath, material	PUR
Material, inner sheath	PVC

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PUR/PVC yellow [140]

Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 1 \text{ G}\Omega \cdot \text{km}$ (at 20 °C)
Conductor resistance	max. 58 Ω/km (at 20 °C)
Nominal voltage, cable	$\leq 300 \text{ V}$
Test voltage, cable	$\geq 3000 \text{ V}$
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 irradiated halogen-free orange [150]

Cable type	PUR irradiated halogen-free orange
Cable type (abbreviation)	150
Cable abbreviation	D12YSL11X-OB
Conductor cross section	4x 0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	19x 0.15 mm
Core diameter including insulation	1.05 mm $\pm 0.05$ mm (Signal line)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
Length of twist, overall twist	27 mm
External sheath, color	orange RAL 2003
External cable diameter D	5.2 mm $\pm 0.2$ mm
Smallest bending radius, fixed installation	min. 15 mm
Smallest bending radius, movable installation	min. 30 mm
Number of bending cycles	5000000
Bending radius	52 mm
Traversing path	10 m
Traversing rate	3 m/s
Torsion force	$\pm 360$ °/m
Outer sheath, material	PUR
Material conductor insulation	PE
Conductor material	Bare Cu litz wires
Conductor resistance	max. 57 Ω/km
Nominal voltage, cable	320 V (AC)
Test voltage, cable	2500 V (50 Hz, 5 minutes)
Special properties	Silicone-free
	Irradiated
Halogen-free	The cable is halogen-free
Other resistance	hydrolysis and microbe resistant
	Resistant to welding splashes

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PUR irradiated halogen-free orange [150]

Ambient temperature (operation)	-50 °C ... 105 °C (cable, fixed installation)
	-40 °C ... 105 °C (cable, flexible installation)

### PUR irradiated halogen-free yellow [160]

Cable type	PUR irradiated halogen-free yellow
Cable type (abbreviation)	160
Conductor cross section	4x 0.34 mm <sup>2</sup> (Signal line)
AWG signal line	22
Conductor structure signal line	19x 0.15 mm
Core diameter including insulation	1.05 mm ±0.05 mm (Signal line)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
Length of twist, overall twist	27 mm
External sheath, color	yellow
External cable diameter D	5.2 mm ±0.2 mm
Smallest bending radius, fixed installation	min. 15 mm
Smallest bending radius, movable installation	min. 30 mm
Number of bending cycles	5000000
Bending radius	52 mm
Traversing path	10 m
Traversing rate	3 m/s
Torsion force	360 °/m
Outer sheath, material	PUR
Material conductor insulation	PE
Conductor material	Bare Cu litz wires
Conductor resistance	≤ 57 Ω/km
Nominal voltage, cable	320 V AC
Test voltage, cable	2500 V AC (50 Hz, 5 minutes)
Special properties	Silicone-free
	Irradiated
Flame resistance	DIN VDE 0472 part 804, test type B
Halogen-free	The cable is halogen-free
Other resistance	hydrolysis and microbe resistant
Ambient temperature (operation)	-50 °C ... 105 °C (cable, fixed installation)
	-40 °C ... 105 °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	4x 0.34 mm <sup>2</sup> (Signal line)

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PUR halogen-free orange [180]

AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.27 mm $\pm$ 0.02 mm (Signal line)
Thickness, insulation	$\geq$ 0.21 mm (Core insulation)
	approx. 0.8 mm (Outer cable sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	orange RAL 2003
External cable diameter D	4.7 mm $\pm$ 0.15 mm
Smallest bending radius, fixed installation	23.5 mm
Smallest bending radius, movable installation	47 mm
Number of bending cycles	4000000
Bending radius	47 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Cable weight	30 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq$ 1 G $\Omega$ *km (at 20 °C)
Conductor resistance	max. 58 $\Omega$ /km (at 20 °C)
Nominal voltage, cable	$\leq$ 300 V
Test voltage, cable	$\geq$ 3000 V
Special properties	Free of substances which would hinder coating with paint or varnish
Flame resistance	in accordance with UL 758/1581 FT2
Halogen-free	in accordance with DIN VDE 0472 part 815
	in accordance with DIN EN 50267-2-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	Resistant to salt water
	hydrolysis and microbe resistant
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (cable, flexible installation)

### PUR halogen-free yellow [240]

Cable type	PUR halogen-free yellow
Cable type (abbreviation)	240
Cable abbreviation	Li9Y11Y
Conductor cross section	4x 0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	42x 0.10 mm

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PUR halogen-free yellow [240]

Core diameter including insulation	1.27 mm $\pm 0.02$ mm
Thickness, insulation	$\geq 0.21$ mm (Core insulation)
	approx. 0.8 mm (Outer cable sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
Length of twist, overall twist	49.5 mm
External sheath, color	yellow
External cable diameter D	4.7 mm $\pm 0.15$ mm
Smallest bending radius, fixed installation	23.5 mm
Smallest bending radius, movable installation	47 mm
Number of bending cycles	4000000
Bending radius	47 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Cable weight	30 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 1$ G $\Omega$ *km (at 20 °C)
Conductor resistance	max. 58 $\Omega$ /km (at 20 °C)
Nominal voltage, cable	$\leq$ 300 V
Test voltage, cable	$\geq$ 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 DIN UL-Style 20549
	in accordance with FT1 as per UL 758
Halogen-free	in accordance with DIN VDE 0472 part 815
	in accordance with DIN EN 50267-2-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	Highly resistant to acids, alkaline solutions and solvents
	hydrolysis and microbe resistant
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
Conductor cross section	0.34 mm <sup>2</sup>

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PUR halogen-free gray [280]

AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.27 mm $\pm 0.02$ mm
Thickness, insulation	$\geq 0.21$ mm (Core insulation)
	approx. 0.8 mm (Outer cable sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
Length of twist, overall twist	49.5 mm
External sheath, color	gray RAL 7001
External cable diameter D	4.7 mm $\pm 0.15$ mm
Smallest bending radius, fixed installation	23.5 mm
Smallest bending radius, movable installation	47 mm
Number of bending cycles	4000000
Bending radius	47 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Cable weight	30 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 100$ M $\Omega$ *km
Conductor resistance	max. 58 $\Omega$ /km (at 20 °C)
Nominal voltage, cable	$\leq 300$ V
Test voltage, cable	$\geq 3000$ 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 DIN UL-Style 20549
	in accordance with FT1 as per UL 758
Halogen-free	in accordance with DIN VDE 0472 part 815
	in accordance with DIN EN 50267-2-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	Highly resistant to acids, alkaline solutions and solvents
	hydrolysis and microbe resistant
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (cable, flexible installation)

### PVC gray [500]

Cable type	PVC gray
Cable type (abbreviation)	500

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PVC gray [500]

Cable abbreviation	LiYY
Conductor cross section	0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.45 mm ±0.02 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.76 mm (Outer cable sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	gray RAL 7001
External cable diameter D	5.2 mm ±0.15 mm
Smallest bending radius, fixed installation	26 mm
Smallest bending radius, movable installation	52 mm
Cable weight	40 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. 58 Ω/km (at 20 °C)
Nominal voltage, cable	≤ 300 V (AC)
Test voltage, cable	≥ 3000 V (AC)
Flame resistance	in accordance with FT1 as per UL 758
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 yellow [540]

Cable type	PVC yellow
Cable type (abbreviation)	540
Cable abbreviation	LiYY
Conductor cross section	0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.45 mm ±0.05 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.76 mm (Outer cable sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	yellow
External cable diameter D	5.2 mm ±0.15 mm
Cable weight	40 kg/km

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PVC yellow [540]

Outer sheath, material	PVC
Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 1 \text{ G}\Omega\text{-km}$ (at 20 °C)
Conductor resistance	max. 58 $\Omega/\text{km}$ (at 20 °C)
Nominal voltage, cable	$\leq 300 \text{ V}$ (AC)
Test voltage, cable	$\geq 3000 \text{ V}$
Flame resistance	As per UL-Style 2464
	according to UL 758/1581 FT1
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 yellow 105 °C [542]

Cable type	PVC yellow 105 °C
Cable type (abbreviation)	542
Cable abbreviation	LiYY
Conductor cross section	0.34 $\text{mm}^2$
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.55 mm $\pm 0.05 \text{ mm}$
Thickness, insulation	$\geq 0.38 \text{ mm}$ (Core insulation)
	$\geq 0.76 \text{ mm}$ (Outer cable sheath)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	yellow
External cable diameter D	5.5 mm $\pm 0.2 \text{ mm}$
Cable weight	43 kg/km
Outer sheath, material	PVC
Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	$\geq 100 \text{ M}\Omega\text{-km}$ (at 20 °C)
Conductor resistance	$\leq 58 \Omega/\text{km}$ (at 20 °C)
Nominal voltage, cable	$\leq 300 \text{ V}$
Test voltage, cable	$\geq 3000 \text{ V}$
Flame resistance	in accordance with UL-Style 2517
	in acc. to UL VW1
Ambient temperature (operation)	-25 °C ... 105 °C (cable, fixed installation)

### Gray, highly flexible PUR [800]

Note	Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.
------	--

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### Gray, highly flexible PUR [800]

Cable type	Gray, highly flexible PUR
Cable type (abbreviation)	800
Cable abbreviation	Li12YYTPE-HF
UL AWM style	20233
Conductor cross section	4x 0.34 mm <sup>2</sup> (Signal line)
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.3 mm ±0.05 mm (Signal line)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	gray RAL 7001
External cable diameter D	4.8 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/s <sup>2</sup>
Number of bending cycles	15000000
Bending radius	50 mm
Traversing path	0.9 m
Traversing rate	5 m/s
Acceleration	30 m/s <sup>2</sup>
Torsion force	± 360 °/m (1 000 000 torsion cycles)
Cable weight	33.5 kg/km
Outer sheath, material	PUR
Material conductor insulation	PES
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 20 MΩ*km
Conductor resistance	approx. 53 Ω/km
Nominal voltage, cable	300 V
Test voltage, cable	2000 V
Special properties	Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, 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

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### Gray, highly flexible PUR [800]

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]

Cable type	PUR halogen-free black
Cable type (abbreviation)	PUR
Cable abbreviation	Li9Y11Y-HF
UL AWM style	20549 / 10493 (80°C/300 V)
Conductor cross section	4x 0.34 mm <sup>2</sup>
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.27 mm ±0.02 mm
Thickness, insulation	≥ 0.21 mm
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	black-gray RAL 7021
Outer sheath thickness	approx. 0.5 mm
External cable diameter D	4.2 mm ±0.15 mm
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Number of bending cycles	10000000
Minimum bending radius, drag chain applications	10 x D
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s <sup>2</sup>
Cable weight	30 kg/km
Outer sheath, material	PUR
Material conductor insulation	PP
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 1 GΩ*km
Conductor resistance	≤ 58 Ω/km
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

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PUR halogen-free black [PUR]

	flexible
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
	in accordance with DIN EN 50267-2-1
Resistance to oil	in accordance with DIN EN 60811-2-1
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
	Low adhesion
	abrasion-resistant
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
UL AWM style	2464 / 1729 (80°C/300 V)
Conductor cross section	4x 0.34 mm <sup>2</sup> (Signal line)
AWG signal line	22
Conductor structure signal line	42x 0.10 mm
Core diameter including insulation	1.45 mm ±0.02 mm
Thickness, insulation	≥ 0.23 mm (Core insulation)
Wire colors	brown, white, blue, black
Overall twist	4 wires, twisted
External sheath, color	black RAL 9005
Outer sheath thickness	≥ 0.76 mm
External cable diameter D	5.2 mm ±0.15 mm
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Cable weight	40 kg/km
Outer sheath, material	PVC
Material conductor insulation	PVC
Conductor material	Bare Cu litz wires
Insulation resistance	≥ 200 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	according to UL 758/1581 FT1
	According to UL 758/1581 (Cable Flame)

# Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

## Technical data

### PVC black [PVC]

	According to DIN EN 60332-1-2
Resistance to oil	according to DIN EN 60811-2-1, 168 h at 60 °C
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (cable, flexible installation)

### 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 mm <sup>2</sup>
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/s <sup>2</sup>
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)

## Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

### Technical data

#### PUR halogen-free black [PUR]

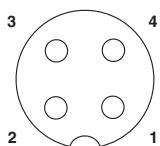
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	hydrolysis and microbe resistant
	Highly resistant to acids, alkaline solutions and solvents
	Resistant to salt water
	partly UV-resistant in accordance with DIN EN ISO 4892-2-A
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (cable, flexible installation)

#### Environmental Product Compliance

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

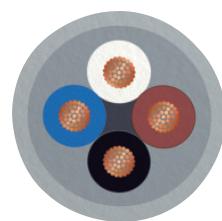
### Drawings

Schematic diagram



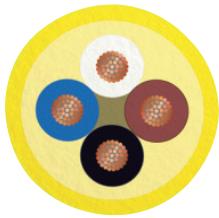
Pin assignment M12 socket, 4-pos., A-coded, view female side

Cable cross section



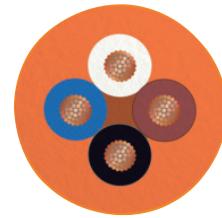
PUR/PVC gray [100]

Cable cross section



PUR/PVC yellow [140]

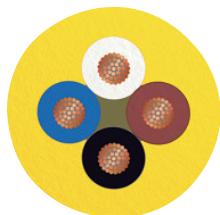
Cable cross section



PUR irradiated halogen-free orange [150]

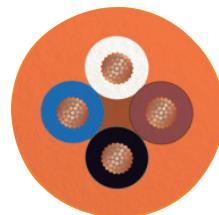
## Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

Cable cross section



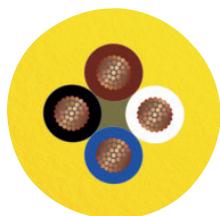
PUR irradiated halogen-free yellow [160]

Cable cross section



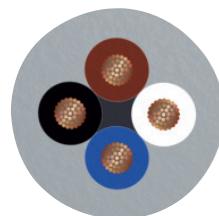
PUR halogen-free orange [180]

Cable cross section



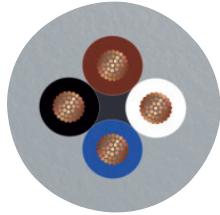
PUR halogen-free yellow [240]

Cable cross section



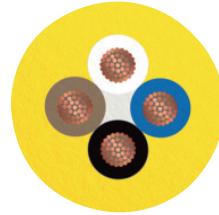
PUR halogen-free gray [280]

Cable cross section



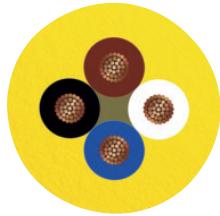
PVC gray [500]

Cable cross section



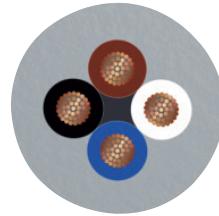
PVC yellow [540]

Cable cross section



PVC yellow 105 °C [542]

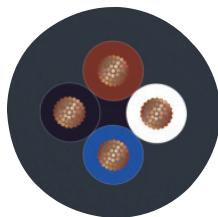
Cable cross section



Gray, highly flexible PUR [800]

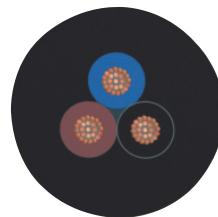
## Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

Cable cross section



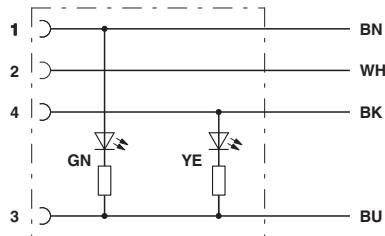
PVC black [PVC]

Cable cross section



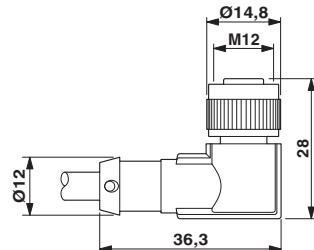
PUR halogen-free black [PUR]

Circuit diagram



Contact assignment of the M12 socket

Dimensional drawing



Socket M12 x 1, angled, with LED

### Approvals

#### Approvals

##### Approvals

UL Listed / cUL Listed / cULus Listed

#### Ex Approvals

#### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 221474
Nominal voltage UN		24 V	
Nominal current IN		4 A	

## Sensor/actuator cable - SAC-4P-M12FR-2L/.../... - 1506561

### Approvals

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 221474
Nominal voltage UN		24 V	
Nominal current IN		4 A	

cULus Listed	
--------------	---

Phoenix Contact 2018 © - 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>

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Phoenix Contact:](#)

[1506561/500/1](#)