

# Sensor/actuator cable - SAC-4P- 1,5-PUR/M 8FR



1681871

<https://www.phoenixcontact.com/de/produkte/1681871>

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Sensor/actuator cable, 4-position, PUR halogen-free, black-gray RAL 7021, free cable end, on Socket angled M8, cable length: 1.5 m

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## Your advantages

- Easy and safe: 100% electrically tested plug-in components

# Sensor/actuator cable - SAC-4P- 1,5-PUR/M 8FR



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## Commercial Data

Item number	1681871
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	C1 - Sensor-Aktor-Kabel
Product Key	BF1BCA
Catalog Page	Page 194 (C-2-2019)
GTIN	4017918158538
Weight per Piece (including packing)	38,1 g
Weight per Piece (excluding packing)	36,01 g
Customs tariff number	85444290
Country of origin	DE

# Sensor/actuator cable - SAC-4P- 1,5-PUR/M 8FR



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## Technical Data

### Product properties

Product type	Sensor/actuator cable
Number of positions	4
Application	Standard
No. of cable outlets	1
Shielded	no
Coding	A - standard

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Material specifications

Flammability rating according to UL 94	HB
Sealing material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Cable gland material	Zinc die-cast, nickel-plated

### Electrical properties

Contact resistance	$\leq 5 \text{ m}\Omega$
Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A
Protective circuit	unwired

### Connection data

#### Conductor connection

Tightening torque	0.2 NmM8 connectors
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### Connector

Insertion/withdrawal cycles	$\geq 100$
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#### Header 1

Head design	free cable end
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#### Header 2

Head design	Socket
Head cable outlet	angled
Head thread type	M8

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## LED signaling

Status display	No
Status display present	No

## Cable / line

Cable length	1.5 m
Cable weight	23 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	4
Shielded	no
Cable type	PUR halogen-free black [PUR]
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	4x 0.25 mm <sup>2</sup> (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
External cable diameter	3.95 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.21 mm (Core insulation) approx. 0.5 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Max. conductor resistance	max. 78 Ω/km (at 20 °C)
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Smallest bending radius, fixed installation	20 mm
Smallest bending radius, movable installation	40 mm
Max. bending cycles	10000000
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
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
Special properties	Flexible cable conduit capable Silicone-free Free of substances which would hinder coating with paint or varnish
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)

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	-25 °C ... 80 °C (Cable, flexible installation)
Cable weight	25 kg/km

## Cable structure

Cable abbreviation	Li9Y11Y-HF
Cable type	PUR halogen-free black
External cable diameter	4.40 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Material wire insulation	PP
Thickness, insulation	approx. 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted

## Electrical properties

Nominal voltage, cable	300 V
Test voltage, cable	3000 V
Conductor resistance	≤ 78 Ω/km
Cable insulation resistance	≥ 100 MΩ*km

## Mechanical properties

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

## Bending cycles

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

## Ambient conditions

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

## Standards and regulations

Standards/specifications	IEC 61076-2-104
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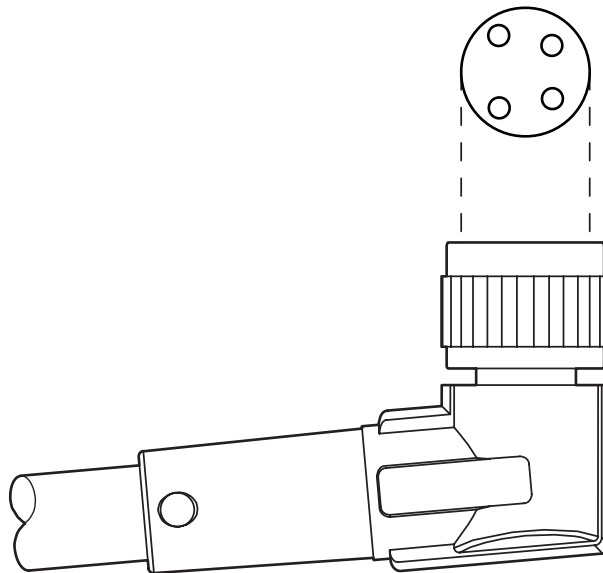
# Sensor/actuator cable - SAC-4P- 1,5-PUR/M 8FR

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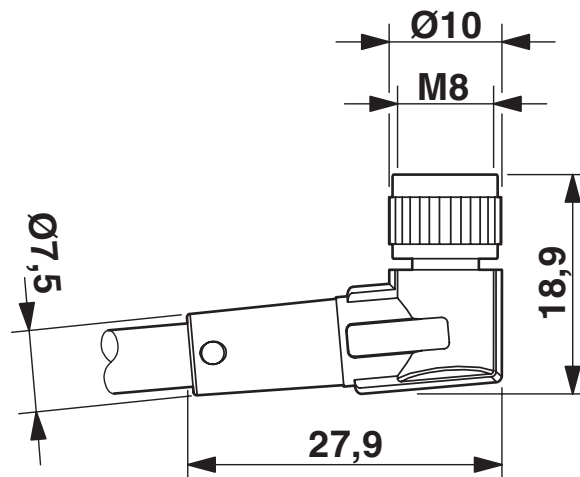
## Drawings

Schematic diagram



Layout of connector pin assignments

Dimensional drawing

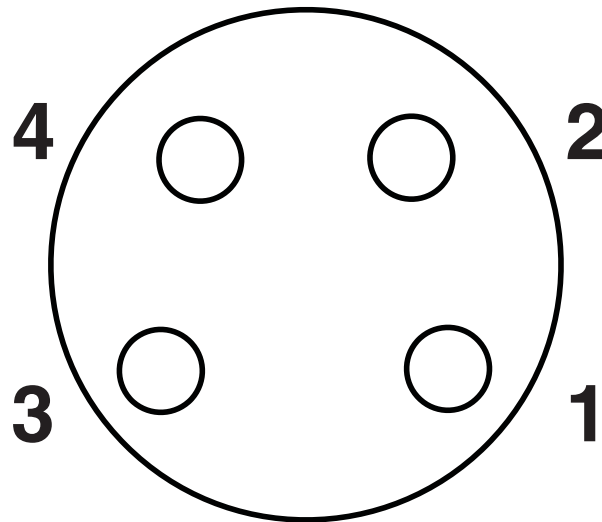


Socket M8 x 1, angled

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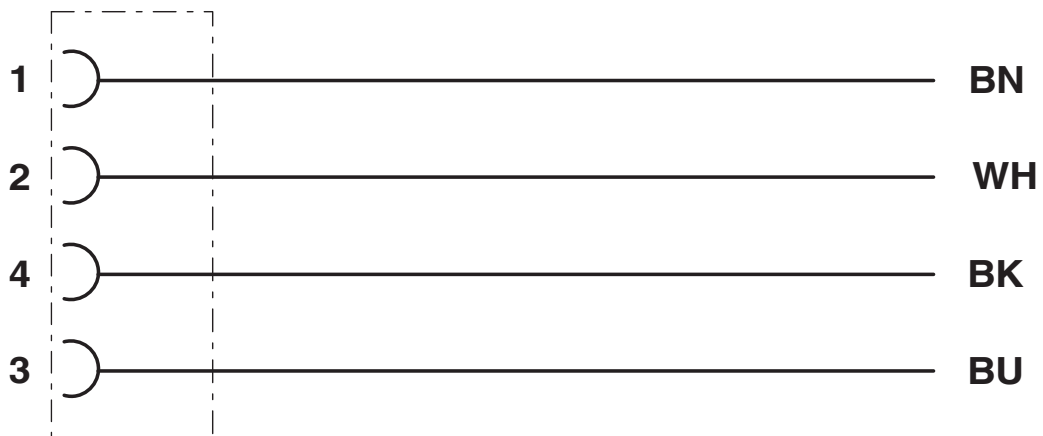
<https://www.phoenixcontact.com/de/produkte/1681871>

Schematic diagram



Pin assignment M8 socket, 4-pos., view female side

Circuit diagram



Contact assignment of M8 socket

# Sensor/actuator cable - SAC-4P- 1,5-PUR/M 8FR




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## Approvals

 <b>UL Listed</b> Approval ID: FILE E 221474				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	30 V	4 A	-	-

 <b>cUL Listed</b> Approval ID: FILE E 221474				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	30 V	4 A	-	-

 <b>EAC</b> Approval ID: RU D-DE.HB35.B.00387	
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<b>cULus Listed</b>
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## Classifications

### ECLASS

ECLASS-9.0	27060311
ECLASS-10.0.1	27060311
ECLASS-11.0	27060311

### ETIM

ETIM 8.0	EC001855
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### UNSPSC

UNSPSC 21.0	26121600
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## Environmental Product Compliance

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

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## Accessories

### Insert label

Insert label - PABA WH/23 - 1013779

<https://www.phoenixcontact.com/de/produkte/1013779>



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

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### Insert label

Insert label - PABA YE/23 - 1013782

<https://www.phoenixcontact.com/de/produkte/1013782>



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

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## Marker pen

Marker pen - B-STIFT - 1051993

<https://www.phoenixcontact.com/de/produkte/1051993>



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

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## Diagonal cutter

Diagonal cutter - CUTFOX-S VDE - 1212207

<https://www.phoenixcontact.com/de/produkte/1212207>



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

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## Stripping tool

Stripping tool - WIREFOX SAC-1 - 1212757

<https://www.phoenixcontact.com/de/produkte/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

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## Stripping tool

Stripping tool - WIREFOX SAC - 1212623

<https://www.phoenixcontact.com/de/produkte/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

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## Stripping tool

Stripping tool - WIREFOX 10 - 1212150

<https://www.phoenixcontact.com/de/produkte/1212150>



Stripping tool, for cables and conductors from 0.02 - 10 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

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## Protective hose adapter

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

<https://www.phoenixcontact.com/de/produkte/1422884>



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

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## Protective hose

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

<https://www.phoenixcontact.com/de/produkte/3240681>



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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## Protective hose

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

<https://www.phoenixcontact.com/de/produkte/3240839>



Protective hose, material: PA 6, filament: without, UV-resistant: yes, flexible, degree of protection: IP68, color: black, inflammability class in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

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## Screw plug

Screw plug - PROT-M 8 MS-PA-CHAIN - 1430860

<https://www.phoenixcontact.com/de/produkte/1430860>

M8 sealing cap made of plastic with fixing band for sensor cables, for M8 sockets



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## Torque screwdriver

Torque screwdriver - TSD 02 SAC - 1208487

<https://www.phoenixcontact.com/de/produkte/1208487>

Torque screwdriver, with preset torque of 0.2 Nm and 4 mm hexagonal drive for M8 connectors





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## Tool

Tool - SAC BIT M8-D10 - 1208461

<https://www.phoenixcontact.com/de/produkte/1208461>



Nut for assembling M8 connectors with longitudinal knurl and a knurl diameter of 10 mm, for 4 mm hexagonal drive

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