

# SAC-4P- 2,0-28X/M12FS SH OD - Sensor/actuator cable



1454150

<https://www.phoenixcontact.com/us/products/1454150>

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Sensor/actuator cable, 4-position, PE-X/PE-X halogen-free, black-gray RAL 7021, shielded, free cable end, on Socket straight M12, coding: A, cable length: 2 m, for outdoor applications, with high-grade steel knurl

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Robust throughout: resistant to oil, UV, and ozone, withstands temperatures from -40°C ... +105°C
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

## Commercial data

Item number	1454150
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF03
Product key	AF1CJA
GTIN	4046356568760
Weight per piece (including packing)	170.8 g
Weight per piece (excluding packing)	168.3 g
Customs tariff number	85444290
Country of origin	PL

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## Technical data

### Product properties

Product type	Sensor/actuator cable
Application	External areas
Number of positions	4
No. of cable outlets	1
Shielded	yes
Coding	A

### Insulation characteristics

Degree of pollution	3
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### Material specifications

Flammability rating according to UL 94	V0
Seal material	FPM
Material of grip body	PP
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PP
Material for screw connection	Stainless steel

### Electrical properties

Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage $U_N$	48 V AC
	60 V DC
Nominal current $I_N$	4 A

### Mechanical properties

#### Mechanical data

Insertion/withdrawal cycles	$\geq 100$
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### Signaling

Status display	no
Status display present	no

### Connection data

#### Conductor connection

Tightening torque	0.4 Nm (M12 connector)
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### Connector

#### Connection 1

Type	free cable end
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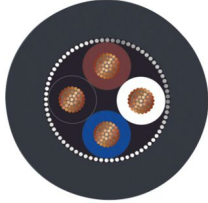
## Connection 2

Type	Socket straight M12
Number of positions	4
Coding type	A

## Cable/line

Cable length	2 m
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## PE-X black [28X]

Dimensional drawing	
Cable weight	74 kg/km
Number of positions	4
Shielded	yes
Cable type	PE-X black [28X]
Conductor structure signal line	28x 0.15 mm
AWG signal line	20
Conductor cross-section	4x 0.5 mm <sup>2</sup> (Signal line)
Wire diameter incl. insulation	1.6 mm ±0.05 mm (Signal line)
External cable diameter	6.80 mm ±0.2 mm
Outer sheath, material	PE-X
External sheath, color	black-gray RAL 7021
Conductor material	Bare Cu litz wires
Material wire insulation	PE-X
Single wire, color	brown, white, blue, black
Thickness, insulation	approx. 0.30 mm (Core insulation) approx. 0.70 mm (Outer cable sheath) approx. 0.45 mm (Inner sheath)
Overall twist	4 wires, twisted
Length of twist, overall twist	108.8 mm
Optical shield covering	85 %
Max. conductor resistance	≤ 39 Ω/km (at 20 °C)
Insulation resistance	≥ 100 MΩ*km (at 20 °C)
Cable capacity	≤ 100 nF/km (Conductor-conductor, asymmetrical/touching) ≤ 85 nF/km (Conductor-conductor, symmetrical/star quad) ≤ 150 nF/km (Wire/shield)
Nominal voltage, cable	≤ 300 V AC
Test voltage	≥ 3000 V AC

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Smallest bending radius, fixed installation	34 mm
Smallest bending radius, movable installation	68 mm
Dynamic load capacity (bending)	Max. bending cycles: 1000000, Bending radius: 68 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s <sup>2</sup>
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	according to DIN 60332-1-2 according to DIN EN 50266-2-5
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	UV resistant (according to DIN VDE 0276-605)
Special properties	Irradiated
Ambient temperature (operation)	-40 °C ... 105 °C (cable, fixed installation) -15 °C ... 105 °C (Cable, flexible installation)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65 IP67 IP68 IP69K
Ambient temperature (operation) (male connector/female connector)	-40 °C ... 105 °C (Plug / socket)
Ambient temperature (operation) (Operation)	-40 °C ... 85 °C (On sudden changes in temperature (according to IEC 60512-11-4))

## Standards and regulations

### M12

Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101

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## Drawings

Dimensional drawing



M12 x 1 socket, straight

Schematic diagram



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

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Circuit diagram



Contact assignment of the M12 socket

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## Approvals

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### **DNV**

Approval ID: TAE00002K4



### **EAC-RoHS**

Approval ID: RU D-DE.HB35.B.00387

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## Classifications

### ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

### ETIM

ETIM 10.0	EC001855
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### UNSPSC

UNSPSC 21.0	26121600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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### EF3.1 Climate Change

CO2e kg	2.163 kg CO2e
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