

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



1454150

<https://www.phoenixcontact.com/de/produkte/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	C1 - Sensor-Aktor-Kabel
Product Key	BF1CJA
Catalog Page	Page 154 (C-4-2013)
GTIN	4046356568760
Weight per Piece (including packing)	169 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
Number of positions	4
Application	External areas
No. of cable outlets	1
Shielded	yes
Coding	A

### Insulation characteristics

Degree of pollution	3
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### Material specifications

Color	black
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

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

### 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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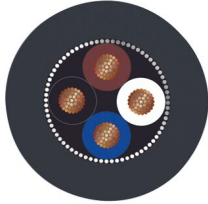
### Connection 2

Type	Socket straight M12
Number of positions	4
Coding type	A
Number of positions	4

## 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	6.8 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. 0.3 mm (Core insulation) approx. 0.7 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)

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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
Smallest bending radius, fixed installation	34 mm
Smallest bending radius, movable installation	68 mm
Max. bending cycles	1000000
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)	-40 °C ... 105 °C (Plug / socket)
	-40 °C ... 85 °C (On sudden changes in temperature (according to IEC 60512-11-4))

## Standards and regulations

### M12

Standards/specifications	IEC 61076-2-101
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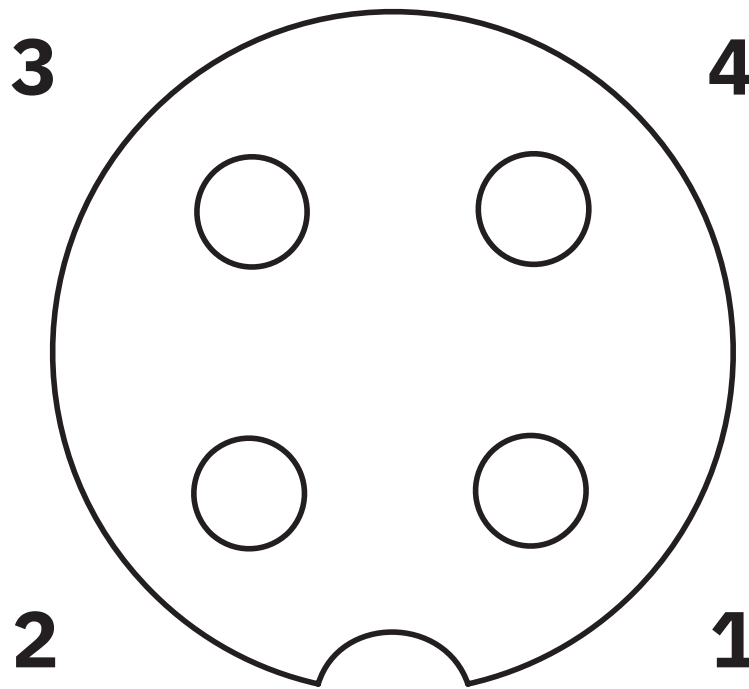


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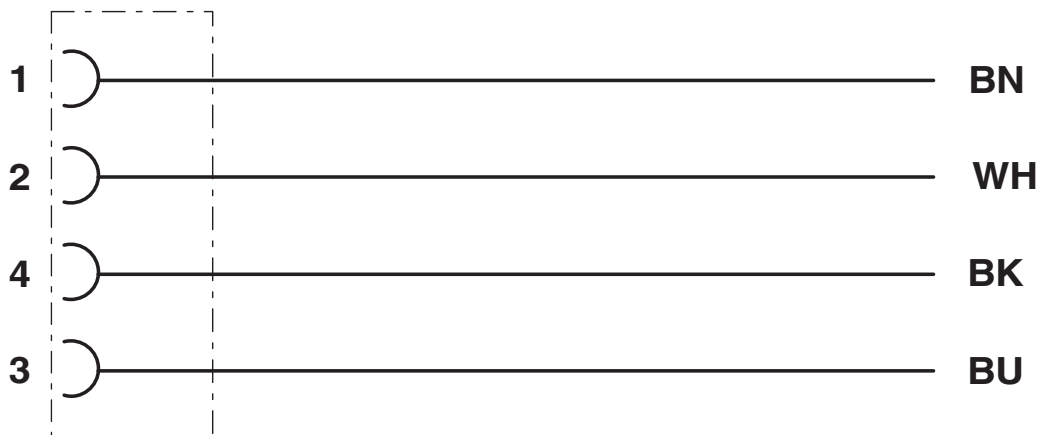
## Drawings

Schematic diagram



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

Circuit diagram

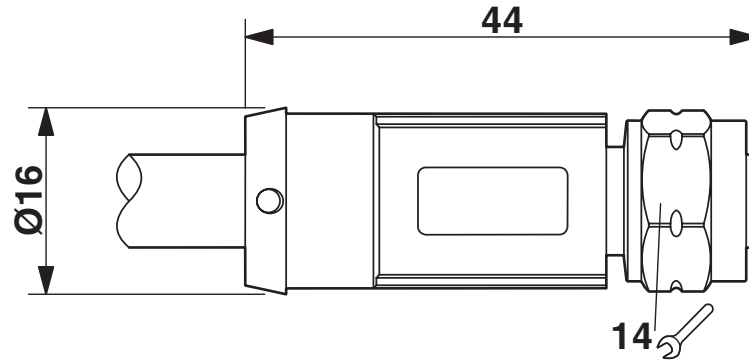


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Dimensional drawing



M12 x 1 socket, straight

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## Approvals

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**EAC**

Approval ID: RU C-DE.BL08.B.00286



**EAC-RoHS**

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

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## Classifications

### ECLASS

ECLASS-11.0	27060311
ECLASS-12.0	27060311
ECLASS-13.0	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

### SACC-M12MS-5CON-DM 5-8 SH VA - Connector

1440025

<https://www.phoenixcontact.com/de/produkte/1440025>



Connector, 5-position, shielded, Plug straight M12, A, Screw connection, knurl material: Stainless steel 1.4404, cable gland M16, external cable diameter 5.5 mm ... 8.6 mm

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### TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/de/produkte/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

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## TSD-M 1,2NM - Torque screwdriver

1212224

<https://www.phoenixcontact.com/de/produkte/1212224>



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

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## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/de/produkte/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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## SAC BIT M12-W14 - Tool

1212513

<https://www.phoenixcontact.com/de/produkte/1212513>

Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive



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