

# SAC-8P-M12MS/10,0-28X SH OD - Sensor/actuator cable



1407281

<https://www.phoenixcontact.com/us/products/1407281>

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Sensor/actuator cable, 8-position, PE-X/PE-X halogen-free, black-gray RAL 7021, shielded, Plug straight M12, coding: A, on free cable end, cable length: 10 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	1407281
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF03
Product key	AF1CKA
GTIN	4046356773997
Weight per piece (including packing)	819.3 g
Weight per piece (excluding packing)	819 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	8
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
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 $U_N$	30 V AC 30 V DC
Nominal current $I_N$	2 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	Plug straight M12
Number of positions	8

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Coding type	A
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## Connection 2

Type	free cable end
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## Cable/line

Cable length	10 m
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### PE-X black [28X]

Dimensional drawing	
Cable weight	81 kg/km
Number of positions	8
Shielded	yes
Cable type	PE-X black [28X]
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	8x 0.25 mm <sup>2</sup>
Wire diameter incl. insulation	1.17 mm ±0.02 mm
External cable diameter	7.25 mm ±0.3 mm
Outer sheath, material	PE-X
External sheath, color	black-gray RAL 7021
Conductor material	Bare Cu litz wires
Material, filler	PP yarn
Material wire insulation	PE-X
Single wire, color	white, brown, green, yellow, gray, pink, blue, red
Thickness, insulation	approx. 0.25 mm (Core insulation)
Inner sheath thickness	approx. 0.50 mm
Thickness, outer sheath	approx. 0.70 mm
Overall twist	8 wires around filler to the core
Length of twist, overall twist	67 mm
Optical shield covering	85 %
Max. conductor resistance	≤ 78 Ω/km (at 20 °C)
Insulation resistance	≥ 100 MΩ*km (at 20 °C)
Working capacitance	approx. 80 pF (Line-line) approx. 125 pF (Line-shield)
Nominal voltage, cable	≤ 300 V AC
Test voltage	≥ 3000 V AC (Spark test)
Test voltage Core/Shield	≥ 1000.00 V AC (for 10 s)

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Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	37 mm
Smallest bending radius, movable installation	73 mm
Dynamic load capacity (bending)	Max. bending cycles: 1000000, Bending radius: 10 x D, 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
	in accordance with DIN EN 50267-2-1
Flame resistance	According to DIN EN 60332-1-2
	according to DIN EN 50266-2-5
Resistance to oil	According to DIN EN 60811-2-1, 168 h at 100°C
	According to DIN EN 50306
Other resistance	Resistance to fuels (according to IEC 60811, 168 h at 70°C)
	UV resistant (according to DIN VDE 0276-605)
Special properties	Inductance approx. 0.48 mH/km
	Irradiated
Ambient temperature (operation)	-40 °C ... 105 °C (cable, fixed installation)
	-15 °C ... 105 °C (Cable, flexible installation)
	20 °C ±5 °C (cable, drag chain applications)

## 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



Plug, M12 x 1, straight, shielded

Schematic diagram



Pin assignment M12 plug, 8-pos., A-coded, view plug side

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Circuit diagram



Contact assignment of the M12 plug

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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	11.021 kg CO2e
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