

# SAC-8P-M12MS-M12FR SH/.../... - Sensor/actuator cable



1523052

<https://www.phoenixcontact.com/us/products/1523052>

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Sensor/actuator cable, 8-position, Variable cable type, shielded, Plug straight M12, coding: A, on Socket angled M12, coding: A, cable length: Free input (0.2 ... 40.0 m)

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

## Commercial data

Item number	1523052
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF17
Product key	AF1CMA
Customs tariff number	85444290
Country of origin	PL

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1523052

<https://www.phoenixcontact.com/us/products/1523052>

## Technical data

### Product properties

Product type	Sensor/actuator cable
Application	Standard
Number of positions	8
No. of cable outlets	1
Shielded	yes
Coding	A

### Insulation characteristics

Overvoltage category	II
Degree of pollution	3

### Material specifications

Flammability rating according to UL 94	HB
Seal material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Material for screw connection	Zinc die-cast, nickel-plated

### 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

# SAC-8P-M12MS-M12FR SH/.../... - Sensor/actuator cable



1523052

<https://www.phoenixcontact.com/us/products/1523052>

Type	Plug straight M12
Number of positions	8
Coding type	A

## Connection 2

Type	Socket angled M12
Number of positions	8
Coding type	A

## Cable/line

Cable length	Free input (0.2 ... 40.0 m)
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### PUR halogen-free black [PUR]

Cable weight	53 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	8
Shielded	yes
Cable type	PUR halogen-free black [PUR] PUR halogen-free black PUR
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	8x 0.25 mm <sup>2</sup> (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
External cable diameter	5.90 mm ±0.2 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, green, yellow, gray, pink, blue, red
Thickness, insulation	approx. 0.20 mm
Thickness, outer sheath	approx. 0.50 mm
Overall twist	8 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Max. conductor resistance	≤ 78 Ω/km (at 20 °C)
Insulation resistance	≥ 1 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V AC
Test voltage	≥ 3000 V AC (Spark test)
Test voltage Core/Shield	≥ 2000.00 V AC (for 60 s)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	30 mm
Smallest bending radius, movable installation	59 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10

# SAC-8P-M12MS-M12FR SH/.../... - Sensor/actuator cable



1523052

<https://www.phoenixcontact.com/us/products/1523052>

	m/s <sup>2</sup>
Dynamic load capacity (torsion)	Torsion: $\pm 180$ °/m, Torsion cycles: $\geq 5000000$ , Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815 according to IEC 60754-1
Flame resistance	in acc. with UL FT-2 according to UL 758/1581 (horizontal) in accordance with UL 758/1581 FT2 According to DIN EN 60332-2-2 (20 s)
Resistance to oil	in accordance with IEC 60811-404
Other resistance	hydrolysis and microbe resistant Resistant to salt water low-abrasion partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)
Special properties	Flexible cable conduit capable
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation) -25 °C ... 80 °C (Cable, flexible installation)

## PUR halogen-free gray [280]

Cable weight	53 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	8
Shielded	yes
Cable type	PUR halogen-free gray [280] PUR halogen-free gray 280
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	8x 0.25 mm <sup>2</sup> (Signal line)
Wire diameter incl. insulation	1.17 mm $\pm$ 0.02 mm
External cable diameter	5.90 mm $\pm$ 0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, green, yellow, gray, pink, blue, red
Thickness, insulation	approx. 0.20 mm
Thickness, outer sheath	approx. 0.50 mm
Overall twist	8 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Max. conductor resistance	$\leq 78$ $\Omega$ /km (at 20 °C)
Insulation resistance	$\geq 1$ G $\Omega$ *km (at 20 °C)
Nominal voltage, cable	$\leq 300$ V AC
Test voltage	$\geq 3000$ V AC (Spark test)

# SAC-8P-M12MS-M12FR SH/.../... - Sensor/actuator cable



1523052

<https://www.phoenixcontact.com/us/products/1523052>

Test voltage Core/Shield	≥ 2000.00 V AC (for 60 s)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	30 mm
Smallest bending radius, movable installation	59 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s <sup>2</sup>
Dynamic load capacity (torsion)	Torsion: ±180 °/m, Torsion cycles: ≥5000000, Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815 according to IEC 60754-1
Flame resistance	in acc. with UL FT-2 according to UL 758/1581 (horizontal) in accordance with UL 758/1581 FT2 According to DIN EN 60332-2-2 (20 s)
Resistance to oil	in accordance with DIN EN 60811-404
Other resistance	hydrolysis and microbe resistant Resistant to salt water low-abrasion
Special properties	Flexible cable conduit capable
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation) -25 °C ... 80 °C (Cable, flexible installation)

## Environmental and real-life conditions

### Ambient conditions

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

## Standards and regulations

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

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1523052

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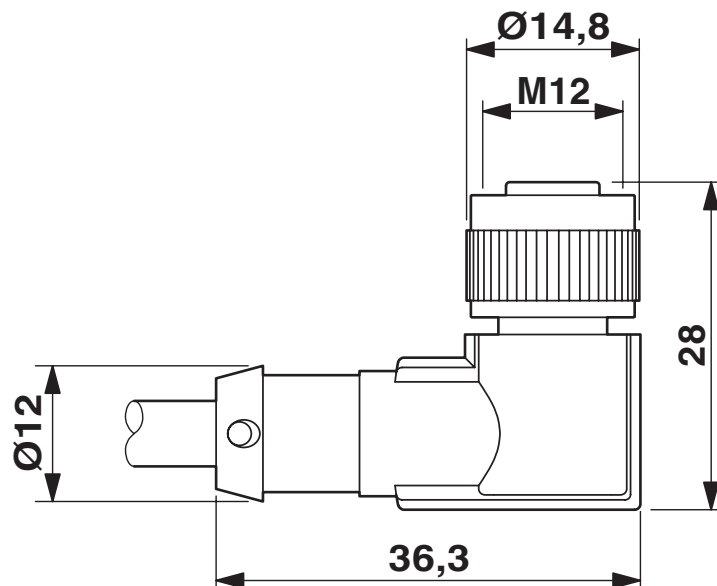
## Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, angled, shielded

# SAC-8P-M12MS-M12FR SH/.../... - Sensor/actuator cable

1523052

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Schematic diagram



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

Schematic diagram



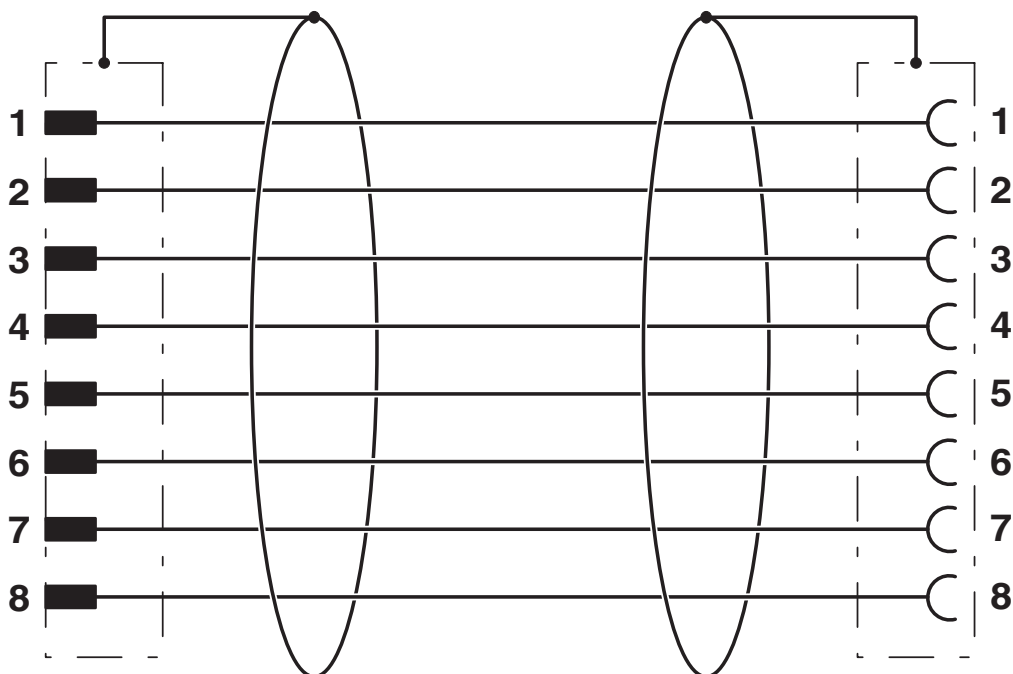
Pin assignment M12 socket, 8-pos., A-coded, view female side

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1523052

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Circuit diagram



Contact assignment of the M12 plug and the M12 socket

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1523052

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## Approvals

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 <b>UL Listed</b> Approval ID: FILE E 221474				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	30 V	2 A	-	-

 <b>cUL Listed</b> Approval ID: FILE E 221474				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	30 V	2 A	-	-

 <b>EAC-RoHS</b> Approval ID: RU D-DE.HB35.B.00387	
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1523052

<https://www.phoenixcontact.com/us/products/1523052>

## 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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1523052

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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	11.361 kg CO2e
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