

# SAC-5P-M12MR-M12FR SH/.../... - Sensor/actuator cable



1536159

<https://www.phoenixcontact.com/us/products/1536159>

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Sensor/actuator cable, 5-position, Variable cable type, shielded, Plug angled M12, coding: A, connected with unwired, 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	1536159
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF17
Product key	BF1CKA
Catalog page	Page 204 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

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## Technical data

### Product properties

Product type	Sensor/actuator cable
Number of positions	5
Application	Standard
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	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Material for screw connection	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

### 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 angled M12
Number of positions	5
Coding type	A
Number of positions	5


### Connection 2

Type	Socket angled M12
Number of positions	5
Coding type	A
Number of positions	5

## Cable/line

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

Dimensional drawing	
Shielded	yes
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	43 kg/km
Cable type	PUR halogen-free black
Short symbol	LiF9YC11Y
Cable type (abbreviation)	PUR
External cable diameter	5.25 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	5x 0.34 mm <sup>2</sup> (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm
Wire diameter incl. insulation	1.27 mm ±0.02 mm (Signal line)
Single wire, color	brown, white, blue, black, gray

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Overall twist	5 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	80 %
Nominal voltage, cable	300 V (at 20 °C)
Test voltage Core/Core	3000 V (at 20 °C)
Cable resistance	max. 57 Ω/km (at 20 °C)
Cable insulation resistance	70 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	26 mm
Smallest bending radius, movable installation	52 mm (up to +60 °C)
Number of bending cycles	10000000
Bending radius	52 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 in accordance with DIN EN 50267-2-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Other resistance	Highly resistant to acids, alkaline solutions and solvents hydrolysis and microbe resistant Resistant to salt water partly UV-resistant in accordance with DIN EN ISO 4892-2-A abrasion-resistant
Special properties	Flexible cable conduit capable Silicone-free Free of substances which would hinder coating with paint or varnish Low adhesion surface
Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

PUR halogen-free gray [280]

Dimensional drawing	
Shielded	yes
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	43 kg/km

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Cable type	PUR halogen-free gray
Short symbol	LiF9YC11Y
Cable type (abbreviation)	280
External cable diameter	5.25 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	5x 0.34 mm <sup>2</sup> (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm
Wire diameter incl. insulation	1.27 mm ±0.02 mm (Signal line)
Single wire, color	brown, white, blue, black, gray
Overall twist	5 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	80 %
Nominal voltage, cable	300 V (at 20 °C)
Test voltage Core/Core	3000 V (at 20 °C)
Cable resistance	max. 57 Ω/km (at 20 °C)
Cable insulation resistance	70 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	26 mm
Smallest bending radius, movable installation	52 mm (up to +60 °C)
Number of bending cycles	10000000
Bending radius	52 mm
Traversing path	10 m
Traversing rate	3 m/s
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Halogen-free	in accordance with DIN VDE 0472 part 815 in accordance with DIN EN 50267-2-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Other resistance	Highly resistant to acids, alkaline solutions and solvents hydrolysis and microbe resistant Resistant to salt water partly UV-resistant in accordance with DIN EN ISO 4892-2-A abrasion-resistant
Special properties	Flexible cable conduit capable Silicone-free Free of substances which would hinder coating with paint or varnish Low adhesion surface


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Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation)
	-40 °C ... 80 °C (cable, fixed installation)

## PVC black [PVC]

Dimensional drawing	
Shielded	yes
Cable weight	55 kg/km
Cable type	PVC black
Cable type (abbreviation)	PVC
External cable diameter	5.9 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	black RAL 9005
Conductor material	Bare Cu litz wires
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	5x 0.34 mm <sup>2</sup> (Signal line)
Material, filler	PVC
Material wire insulation	PVC
Thickness, insulation	≥ 0.23 mm (Core insulation)
Wire diameter incl. insulation	1.35 mm ±0.02 mm
Single wire, color	brown, white, blue, black, gray
Overall twist	5 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	≤ 58 Ω/km (at 20 °C)
Cable insulation resistance	≥ 10 MΩ*km (at 20 °C)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	As per UL-Style 2464
Ambient temperature (operation)	-5 °C ... 80 °C (Cable, flexible installation)
	-25 °C ... 80 °C (cable, fixed installation)

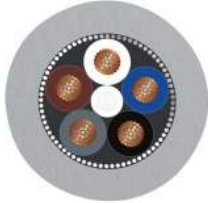
## PVC gray [500]

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Dimensional drawing	
Shielded	yes
Cable weight	55 kg/km
Cable type	PVC gray
Short symbol	LiYCY
Cable type (abbreviation)	500
External cable diameter	5.9 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	5x 0.34 mm <sup>2</sup> (Signal line)
Material, filler	PVC
Material wire insulation	PVC
Thickness, insulation	≥ 0.23 mm (Core insulation)
Wire diameter incl. insulation	1.35 mm ±0.02 mm
Single wire, color	brown, white, blue, black, gray
Overall twist	5 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	max. 58 Ω/km (at 20 °C)
Cable insulation resistance	≥ 1 GΩ*km (at 20 °C)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	As per UL-Style 2464
Ambient temperature (operation)	-5 °C ... 80 °C (Cable, flexible installation) -25 °C ... 80 °C (cable, fixed installation)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65
	IP67

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Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)
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## Standards and regulations

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



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1536159>

 <b>UL Listed</b> Approval ID: FILE E 221474				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
	125 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 $\text{mm}^2$
	125 V	4 A	-	-

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

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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