

SAC-4P-M12MS-M12FS SH/.../... - Sensor/actuator cable



1536081

<https://www.phoenixcontact.com/de/produkte/1536081>

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Sensor/actuator cable, 4-position, shielded, Plug straight M12, coding: A, on Socket straight 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	1536081
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	C1 - Sensor-Aktor-Kabel
Product key	BF1CJA
Catalog page	Page 199 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

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Technical data

Product properties

Product type	Sensor/actuator cable
Application	Standard
Number of positions	4
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

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	≥ 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

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Type	Plug straight M12
Number of positions	4
Coding type	A

Connection 2

Type	Socket straight M12
Number of positions	4
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	36 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	4
Shielded	yes
Cable type	PUR halogen-free black [PUR] PUR halogen-free black PUR
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	4x 0.34 mm ² (Signal line)
Wire diameter incl. insulation	1.27 mm ±0.02 mm (Signal line)
External cable diameter	4.95 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, blue, black
Thickness, insulation	≥ 0.21 mm
Thickness, outer sheath	approx. 0.50 mm
Overall twist	4 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	80 %
Max. conductor resistance	max. 58 Ω/km (at 20 °C)
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Wave impedance	≥ 62 Ω (f = 10 MHz)
Cable capacity	≤ 80 pF/m (Conductor-Conductor) ≤ 135 pF/m (Wire/shield)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	25 mm
Smallest bending radius, movable installation	50 mm

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Max. bending cycles	10000000
Minimum bending radius, drag chain applications	10 x D
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²
Halogen-free	in accordance with DIN VDE 0472 part 815 in accordance with DIN EN 50267-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Resistance to oil	in accordance with DIN EN 60811-2-1
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)	-40 °C ... 80 °C (cable, fixed installation) -25 °C ... 80 °C (Cable, flexible installation)

PUR halogen-free gray [280]

Cable weight	36 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	4
Shielded	yes
Cable type	PUR halogen-free gray [280] PUR halogen-free gray 280
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	4x 0.34 mm ² (Signal line)
Wire diameter incl. insulation	1.27 mm ±0.02 mm (Signal line)
External cable diameter	4.95 mm ±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, blue, black
Thickness, insulation	≥ 0.21 mm
Thickness, outer sheath	approx. 0.50 mm
Overall twist	4 wires, twisted
Shielding	Tinned copper braided shield

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Optical shield covering	80 %
Max. conductor resistance	max. 58 Ω/km (at 20 °C)
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Wave impedance	≥ 62 Ω (f = 10 MHz)
Cable capacity	≤ 80 pF/m (Conductor-Conductor)
	≤ 135 pF/m (Wire/shield)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	25 mm
Smallest bending radius, movable installation	50 mm
Max. bending cycles	10000000
Minimum bending radius, drag chain applications	10 x D
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²
Halogen-free	in accordance with DIN VDE 0472 part 815
	in accordance with DIN EN 50267-2-1
Flame resistance	in accordance with UL 758/1581 FT2
	DIN EN 60332-2-2 (20 s)
Resistance to oil	in accordance with DIN EN 60811-2-1
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)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (Cable, flexible installation)

PVC black [PVC]

Cable weight	52 kg/km
Number of positions	4
Shielded	yes
Cable type	PVC black [PVC]
	PVC black PVC
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	4x 0.34 mm ² (Signal line)

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Wire diameter incl. insulation	1.4 mm ±0.02 mm
External cable diameter	5.90 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	black RAL 9005
Conductor material	Bare Cu litz wires
Material wire insulation	PVC
Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.23 mm (Core insulation) ≥ 0.76 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Max. conductor resistance	max. 58 Ω/km (at 20 °C)
Insulation resistance	≥ 100 MΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
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
Flame resistance	As per UL-Style 2464
Resistance to oil	in accordance with DIN EN 60811-2-1
Special properties	Free of substances which would hinder coating with paint or varnish Silicone-free
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (Cable, flexible installation)

PVC gray [500]

Cable weight	57 kg/km
Number of positions	4
Shielded	yes
Cable type	PVC gray [500] PVC gray 500
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross section	0.34 mm ²
Wire diameter incl. insulation	1.4 mm ±0.02 mm
External cable diameter	5.90 mm 5.90 mm
Outer sheath, material	PVC
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Material wire insulation	PVC

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Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.76 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Max. conductor resistance	max. 58 Ω/km
Insulation resistance	≥ 1 GΩ*km
Nominal voltage, cable	300 V
Test voltage	3000 V
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
Special properties	Free of substances which would hinder coating with paint or varnish
	Silicone-free
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)
	-5 °C ... 80 °C (Cable, flexible installation)

Environmental and real-life conditions

Ambient conditions

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

Standards and regulations

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

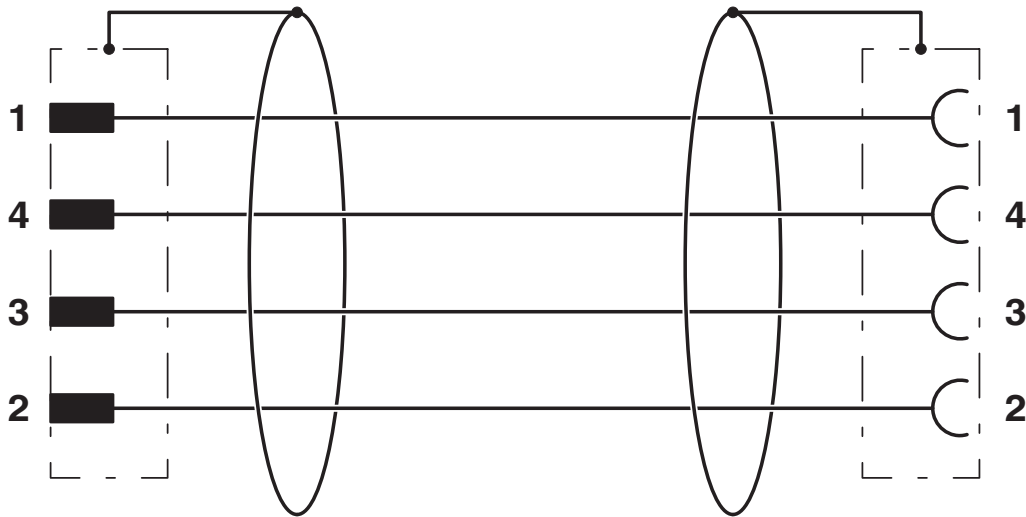
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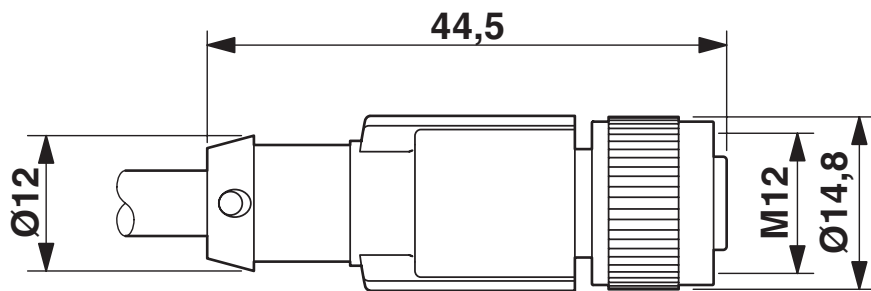
<https://www.phoenixcontact.com/de/produkte/1536081>

Drawings

Circuit diagram



Dimensional drawing



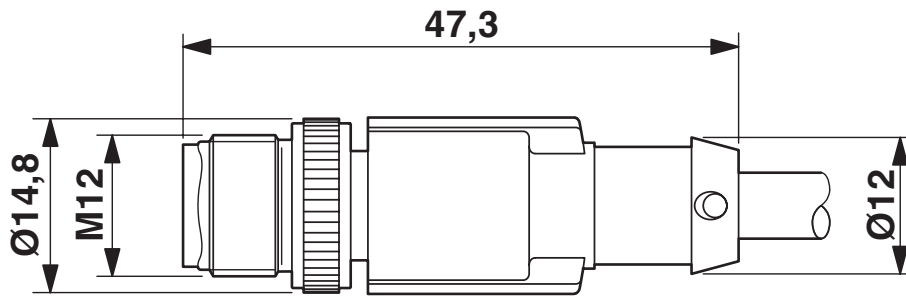
M12 x 1 socket, straight, shielded

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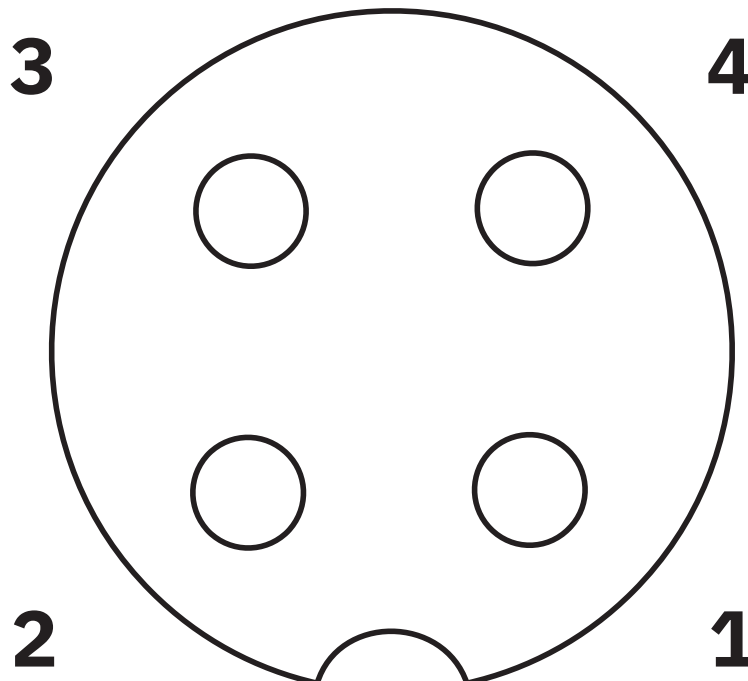
<https://www.phoenixcontact.com/de/produkte/1536081>

Dimensional drawing



Plug, M12 x 1, straight, shielded

Schematic diagram



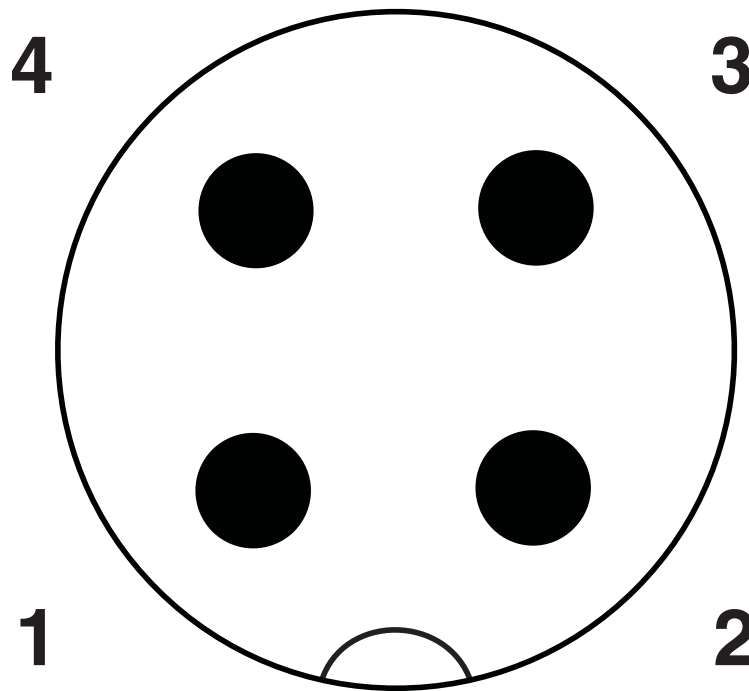
Pin assignment M12 socket, 4-pos., A-coded, view female side

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Schematic diagram



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

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/de/produkte/1536081>

 UL Listed Approval ID: FILE E 221474				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	300 V	4 A	-	-

 cUL Listed Approval ID: FILE E 221474				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	300 V	4 A	-	-

 EAC-RoHS Approval ID: RU D-DE.HB35.B.00387	
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cULus Listed

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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

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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