

SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



Sensor/actuator cable, 3-position, Variable cable type, shielded (Advanced Shielding Technology), free cable end, 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	1697454
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF17
Product key	AF1CIA
Customs tariff number	85444290
Country of origin	PL

Technical data

Product properties

Product type	Sensor/actuator cable
Application	Standard
Number of positions	3
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
-----------------------------	------------

Signaling

Status display	no
Status display present	no

Connection data

Conductor connection

Tightening torque	0.4 Nm (M12 connector)
-------------------	------------------------

Connector

Connection 1

SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

Type	free cable end
------	----------------

Connection 2

Type	Socket angled M12
Number of positions	3
Coding type	A

Cable/line

Cable length	Free input (0.2 ... 40.0 m)
--------------	-----------------------------

PUR halogen-free black [PUR]

Cable weight	31 kg/km
UL AWM Style	20549
Number of positions	3
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	3x 0.34 mm ² (Signal line)
Wire diameter incl. insulation	1.27 mm ±0.02 mm (Signal line)
External cable diameter	4.65 mm ±0.15 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, blue, black
Thickness, insulation	≥ 0.21 mm (Core insulation) approx. 0.50 mm (Outer cable sheath)
Overall twist	3 wires, twisted
Shielding	Braided copper wires
Optical shield covering	80 %
Max. conductor resistance	max. 58 Ω/km (at 20 °C)
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Smallest bending radius, fixed installation	23 mm
Smallest bending radius, movable installation	47 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 47 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s ²
Dynamic load capacity (torsion)	Torsion: ±180 °/m, Torsion cycles: ≥2000000, Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)

SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

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
	partly UV-resistant (in accordance with DIN EN ISO 4892-2-A)
Special properties	Flexible cable conduit capable
	Silicone-free
	Free of substances which would hinder coating with paint or varnish
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °C (Cable, flexible installation)

PUR/PVC shielded, gray [100]

Cable weight	38 kg/km
Number of positions	3
Shielded	yes
Cable type	PUR/PVC shielded, gray [100]
	PUR/PVC shielded, gray 100
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross-section	0.34 mm ²
Wire diameter incl. insulation	1.5 mm ±0.05 mm
External cable diameter	5.20 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Material wire insulation	PVC
Single wire, color	brown, blue, black
Thickness, insulation	≥ 0.23 mm (Core insulation)
	≥ 0.38 mm (Outer cable sheath)
	approx. 0.30 mm (Inner sheath)
Overall twist	3 wires, twisted
Shielding	Braided copper wires
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
Test voltage Core/Shield	≥ 2000.00 V
Smallest bending radius, fixed installation	52 mm
Smallest bending radius, movable installation	52 mm
Dynamic load capacity (bending)	Max. bending cycles: 2000000, Bending radius: 52 mm, Traversing path: 5 m, Traversing rate: 3 m/s
Resistance to oil	in accordance with DIN EN 60811-2-1
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)
	-5 °C ... 80 °C (Cable, flexible installation)

SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

PVC shielded black [PVC]

Cable weight	40 kg/km
Number of positions	3
Shielded	yes
Cable type	PVC shielded black [PVC] PVC shielded black PVC
Conductor structure signal line	42x 0.10 mm
AWG signal line	22
Conductor cross-section	3x 0.34 mm ² (Signal line)
Wire diameter incl. insulation	1.4 mm ±0.02 mm
External cable diameter	5.20 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, blue, black
Thickness, insulation	≥ 0.23 mm (Core insulation) ≥ 0.76 mm (Outer cable sheath)
Overall twist	3 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
Flame resistance	As per UL-Style 2464
Resistance to oil	in accordance with DIN EN 60811-2-1
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (Cable, flexible installation)

PVC gray [500]

Cable weight	40 kg/km
Number of positions	3
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	5.20 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires

SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

Material wire insulation	PVC
Single wire, color	brown, blue, black
Thickness, insulation	≥ 0.23 mm (Core insulation) ≥ 0.76 mm (Outer cable sheath)
Overall twist	3 wires, twisted
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Max. conductor resistance	max. 58 Ω/km (at 20 °C)
Insulation resistance	≥ 1 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Resistance to oil	in accordance with DIN EN 60811-2-1
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (Cable, flexible installation)

Environmental and real-life conditions

Ambient conditions

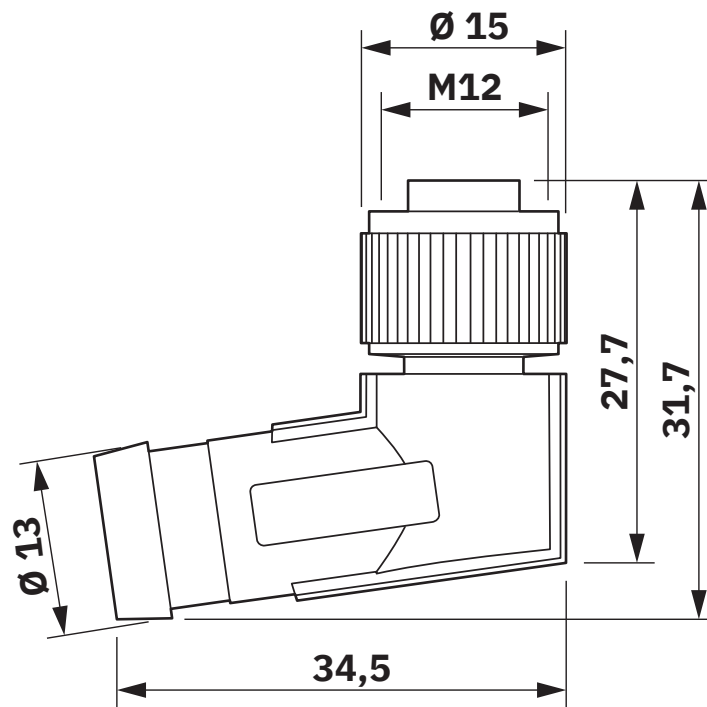
Degree of protection	IP65 IP67
Ambient temperature (operation) (male connector/female connector)	-25 °C ... 90 °C (Plug / socket)

Standards and regulations

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

Drawings

Dimensional drawing

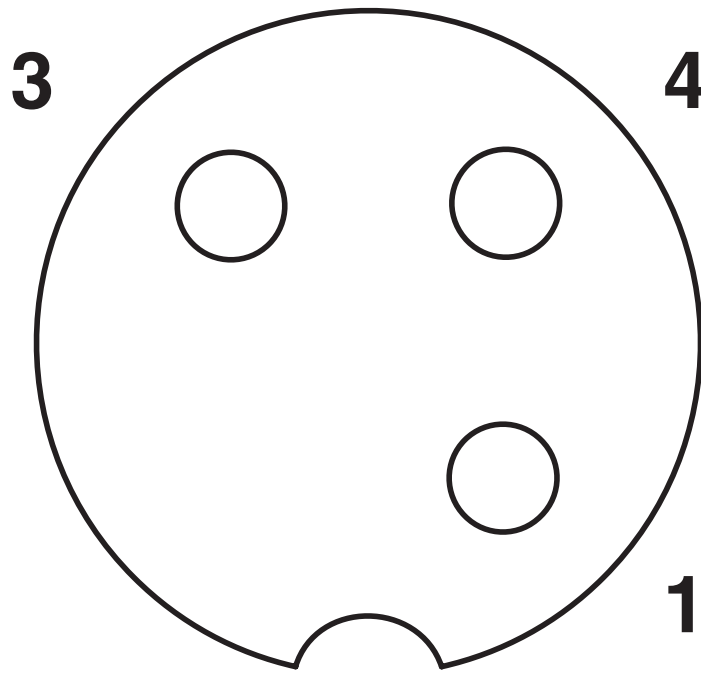


M12 x 1 socket, angled, shielded

1697454

<https://www.phoenixcontact.com/us/products/1697454>

Schematic diagram

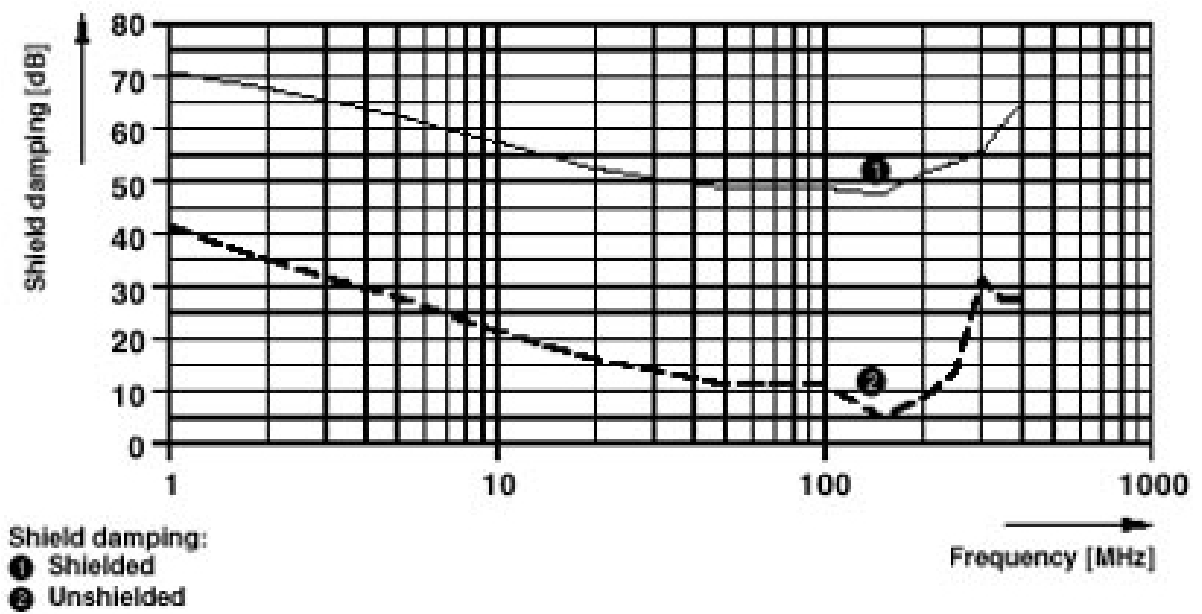


Pin assignment M12 socket, 3-pos., A-coded, view female side

1697454

<https://www.phoenixcontact.com/us/products/1697454>

Diagram



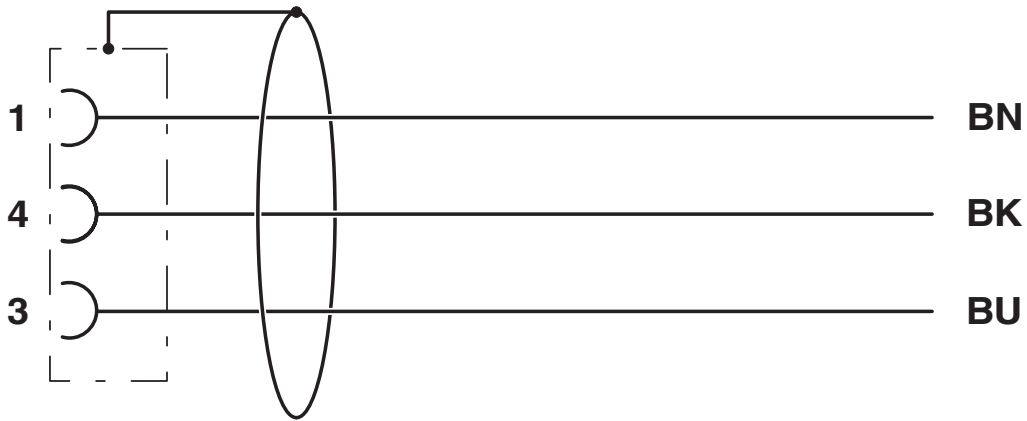
SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

Circuit diagram



Contact assignment of the M12 socket

SAC-3P-M12FR SH/.../... - Sensor/actuator cable





1697454

<https://www.phoenixcontact.com/us/products/1697454>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1697454>

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

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

SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

Classifications

ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

ETIM

ETIM 10.0	EC001855
-----------	----------

UNSPSC

UNSPSC 21.0	26121600
-------------	----------

SAC-3P-M12FR SH/.../... - Sensor/actuator cable



1697454

<https://www.phoenixcontact.com/us/products/1697454>

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
---	--------------------

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%
-------------------------------------	----------------------------

Phoenix Contact 2026 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com