

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable



1668946

<https://www.phoenixcontact.com/us/products/1668946>

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, PUR halogen-free, black-gray RAL 7021, Plug angled M12, coding: A, on Socket angled M8, coding: A, cable length: 3 m

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components

## Commercial data

Item number	1668946
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF03
Product key	AF1CBA
GTIN	4017918135799
Weight per piece (including packing)	67.04 g
Weight per piece (excluding packing)	67.04 g
Customs tariff number	85444290
Country of origin	PL

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable



1668946

<https://www.phoenixcontact.com/us/products/1668946>

## Technical data

### Product properties

Product type	Sensor/actuator cable
Application	Standard
Number of positions	3
No. of cable outlets	1
Shielded	no
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	$\geq 100$
-----------------------------	------------

### Signaling

Status display	no
Status display present	no

### Connection data

#### Conductor connection

Tightening torque	0.4 Nm (M12 connector)
	0.2 Nm (M8 connectors)

### Connector

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable

1668946

<https://www.phoenixcontact.com/us/products/1668946>

## Connection 1

Type	Plug angled M12
Number of positions	3
Coding type	A

## Connection 2

Type	Socket angled M8
Number of positions	3
Coding type	A

## Cable/line

Cable length	3 m
--------------	-----

## PUR halogen-free black [PUR]

Dimensional drawing	
Cable weight	18 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	3
Shielded	no
Cable type	PUR halogen-free black [PUR]
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	3x 0.25 mm <sup>2</sup> (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
External cable diameter	3.60 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)
Thickness, outer sheath	approx. 0.50 mm
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Max. conductor resistance	≤ 78 Ω/km (at 20 °C)
Insulation resistance	≥ 100 GΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable



1668946

<https://www.phoenixcontact.com/us/products/1668946>

Test voltage	≥ 3000 V
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 44 mm, 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
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	hydrolysis and microbe resistant Highly resistant to acids, alkaline solutions and solvents Resistant to salt water 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)

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP65 IP67 IP68
Ambient temperature (operation) (male connector/female connector)	-25 °C ... 90 °C (Plug / socket)
Ambient temperature (operation) (Cable, fixed installation)	-40 °C ... 80 °C (cable, fixed installation)
Ambient temperature (operation) (Cable, flexible installation)	-5 °C ... 80 °C (Cable, flexible installation)

## Standards and regulations

Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101
Standard designation	M8 connector
Standards/specifications	IEC 61076-2-104

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable

1668946

<https://www.phoenixcontact.com/us/products/1668946>

## Drawings

Dimensional drawing



M12 x 1 male plug, angled

Dimensional drawing



Socket M8 x 1, angled

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable

1668946

<https://www.phoenixcontact.com/us/products/1668946>

Schematic diagram



Pin assignment M12 plug, 3-pos., A-coded, view male side

Schematic diagram



Pin assignment M8 socket, 3-pos., view female side

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable

1668946

<https://www.phoenixcontact.com/us/products/1668946>

Schematic diagram



Layout of connector pin assignments

Circuit diagram



Contact assignment of M12 plugs / M8 sockets

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable



1668946

<https://www.phoenixcontact.com/us/products/1668946>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1668946>

 <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				
	60 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 $\text{mm}^2$
keine				
	60 V	4 A	-	-

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

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable



1668946

<https://www.phoenixcontact.com/us/products/1668946>

## Classifications

### ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

### ETIM

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

### UNSPSC

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

# SAC-3P-M12MR/3,0-PUR/M 8FR - Sensor/actuator cable



1668946

<https://www.phoenixcontact.com/us/products/1668946>

## 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%
-------------------------------------	----------------------------

### EF3.1 Climate Change

CO2e kg	0.92 kg CO2e
---------	--------------

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](mailto:info@phoenixcon.com)