

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



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, resistant to welding sparks, highly flexible, gray RAL 7001, free cable end, on Socket angled M12, coding: A, with 2 LEDs, cable length: 3 m, for robots and drag chains

Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Reliable solution for the body shop as cable is resistant to welding sparks
- Convenient: increased machine availability thanks to quick and easy diagnostics

Commercial data

Item number	1456721
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF03
Product key	AF1CBA
GTIN	4046356593083
Weight per piece (including packing)	95.5 g
Weight per piece (excluding packing)	95.5 g
Customs tariff number	85444290
Country of origin	PL

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



Technical data

Product properties

Product type	Sensor/actuator cable
Application	Robots and drag chains
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	24 V DC
Nominal current I_N	4 A

Mechanical properties

Mechanical data

Insertion/withdrawal cycles	≥ 100
-----------------------------	------------

Signaling

Status display	2 LEDs
Status display present	yes

Connection data

Conductor connection	
Tightening torque	0.4 Nm (M12 connector)

Connector

Connection 1	
Type	free cable end

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



Connection 2

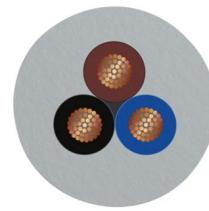
Type	Socket angled M12
Number of positions	3
Coding type	A

Cable/line

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

Gray, highly flexible PUR [800]

Dimensional drawing



Note	Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.
Cable weight	28.3 kg/km
UL AWM Style	20549
Number of positions	3
Shielded	no
Cable type	Gray, highly flexible PUR [800]
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	1.3 mm ±0.05 mm (Signal line)
External cable diameter	4.50 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, blue, black
Overall twist	3 wires, twisted
Max. conductor resistance	approx. 53 Ω/km
Insulation resistance	≥ 20 MΩ*km
Nominal voltage, cable	300 V
Test voltage	2000 V
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	7.5 x D
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	34 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 7,5 x D,

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



	Traversing path: 5 m, Traversing rate: 3.3 m/s, Acceleration: 5 m/s ²
	Max. bending cycles: 15000000, Bending radius: 50 mm, Traversing path: 0.9 m, Traversing rate: 5 m/s, Acceleration: 30 m/s ²
Dynamic load capacity (torsion)	Torsion: ±360 °/m, Torsion cycles: 1000000, Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with UL 758/1581 FT2
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	Highly resistant to acids, alkaline solutions and solvents
Special properties	Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing Silicone-free Free from silicone and cadmium 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 ... 90 °C (cable, fixed installation)
Ambient temperature (operation) (Cable, flexible installation)	-30 °C ... 90 °C (Cable, flexible installation)
Ambient temperature (operation)	to 120 °C (for 3000 h) to 90 °C (in acc. with UL)

Standards and regulations

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

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

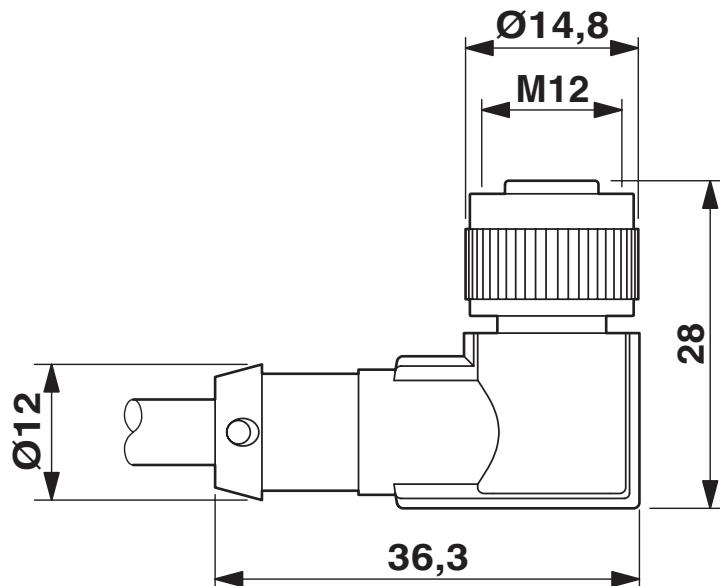


1456721

<https://www.phoenixcontact.com/us/products/1456721>

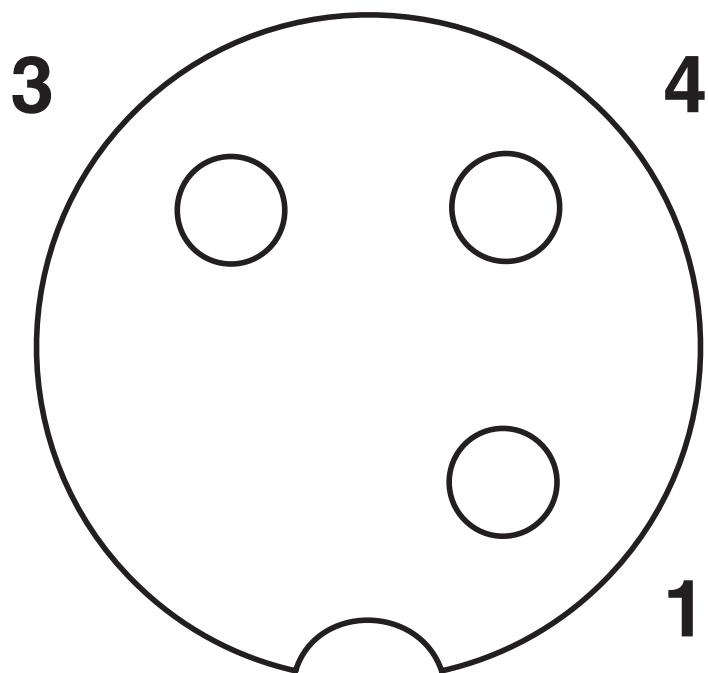
Drawings

Dimensional drawing



Socket M12 x 1, angled, with LED

Schematic diagram



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

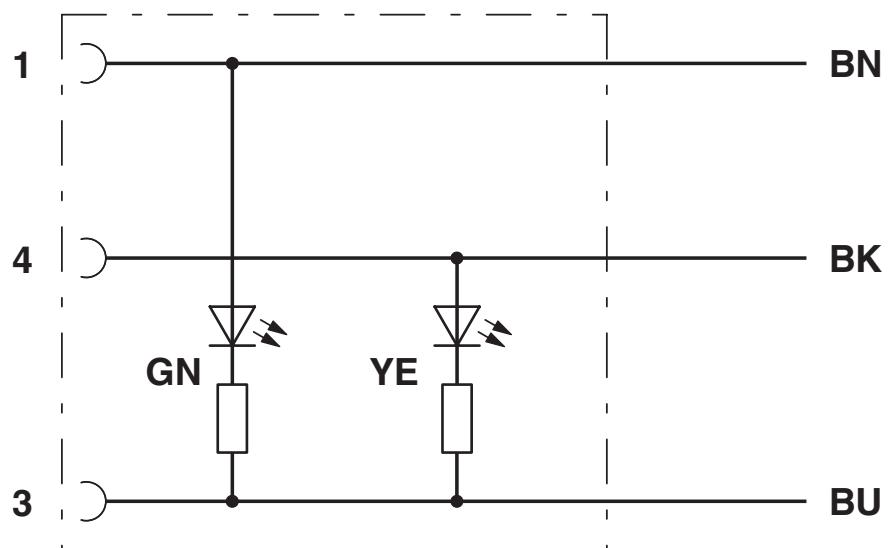
SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



Circuit diagram



Contact assignment of M12 sockets with LED

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



Approvals

ⓘ To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1456721>

UL Listed		Approval ID: FILE E 221474		
		Nominal voltage U_N	Nominal current I_N	Cross section AWG
keine		24 V	4 A	-
				-

cUL Listed		Approval ID: FILE E 221474		
		Nominal voltage U_N	Nominal current I_N	Cross section AWG
keine		24 V	4 A	-
				-

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

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



Classifications

ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

ETIM

ETIM 9.0	EC001855
----------	----------

UNSPSC

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

SAC-3P- 3,0-800/M12FR-2L - Sensor/actuator cable

1456721

<https://www.phoenixcontact.com/us/products/1456721>



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

EF3.0 Climate Change

CO2e kg	0.468 kg CO2e
---------	---------------

Phoenix Contact 2025 © - 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