

SAC-3P-M12Y/2X0,3-PUR/M12FR2LB - Sensor/actuator cable



1669039

<https://www.phoenixcontact.com/us/products/1669039>

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Sensor/actuator cable, 3-position, PUR halogen-free, black-gray RAL 7021, Plug straight M12, coding: A, on Socket angled M12, coding: A, with 2 LEDs, PIN 2+4 bridged and Socket angled M12, coding: A, with 2 LEDs, PIN 2+4 bridged, cable length: 0.3 m

Commercial data

Item number	1669039
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF03
Product key	AF1COA
GTIN	4017918136000
Weight per piece (including packing)	48.6 g
Weight per piece (excluding packing)	49 g
Customs tariff number	85444290
Country of origin	PL

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Technical data

Product properties

Product type	Distributor with cable
Application	Standard
Number of positions	3
No. of cable outlets	2
Shielded	no
Coding	A

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Connection data

Tightening torque	0.4 Nm (M12 connector)
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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
Test voltage	2500 V

Mechanical properties

Mechanical data

Insertion/withdrawal cycles	≥ 100
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Signaling

Status display	2 LEDs
Status display present	yes

Connector

Connection 1

Type	Plug straight M12
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Coding type	A
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Connection 2

Type	Socket angled M12
Coding type	A

Connection 3

Type	Socket angled M12
Coding type	A

Cable/line

Cable length	0.3 m
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PUR halogen-free black [PUR]

Dimensional drawing		
Cable weight	23 kg/km	
UL AWM Style	20549	
Number of positions	3	
Shielded	no	
Cable type	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	3.85 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	
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	19 mm	

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Smallest bending radius, movable installation	38 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 38 mm, Bending radius: 10 x D, 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)
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)

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

M12

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

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Drawings

Dimensional drawing



Plug M12 x 1, Y distributor

Dimensional drawing



Socket M12 x 1, angled, with LED

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Schematic diagram



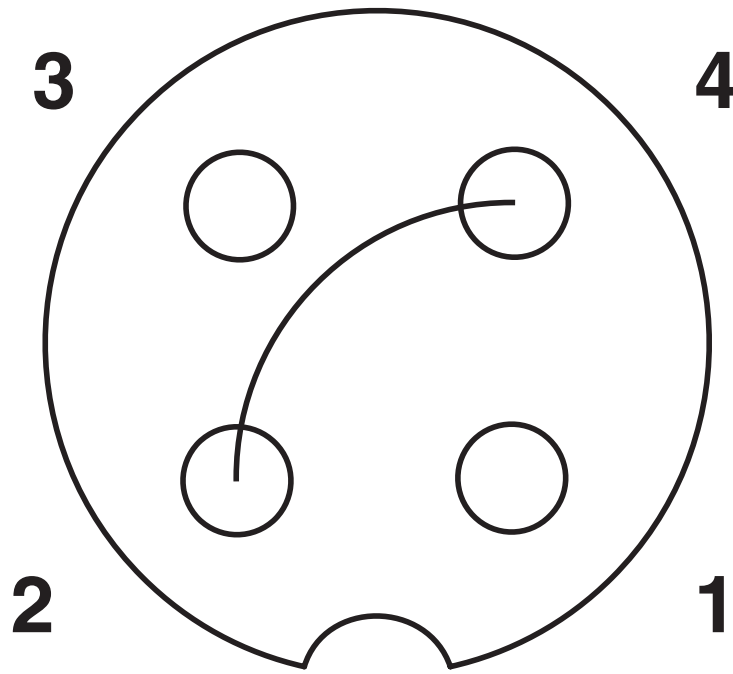
Pin assignment M12 Y plug, 4-pos., A-coded, view plug side

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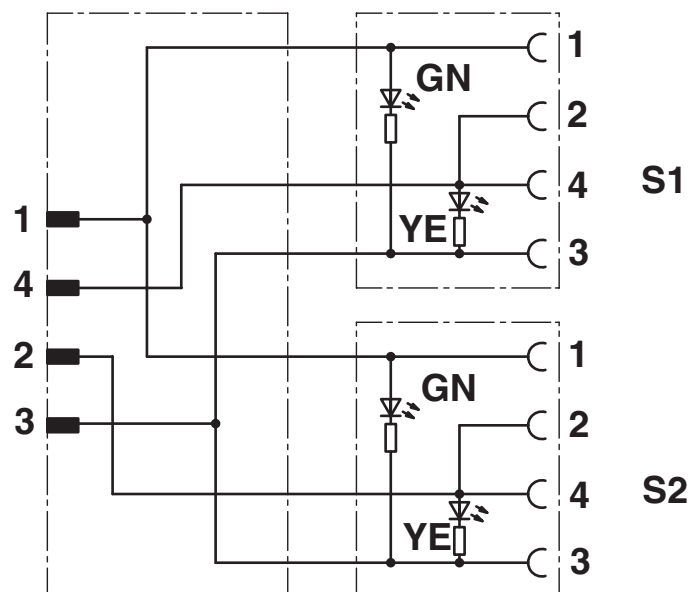
<https://www.phoenixcontact.com/us/products/1669039>

Schematic diagram



Pin assignment M12 socket, 3-pos., PIN 2+4 bridged, A-coded, view female side

Circuit diagram



Contact assignment of the M12 plug and the M12 socket, with LEDs, bridged

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Approvals

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 UL Listed Approval ID: FILE E 221474				
	Nominal voltage U _N	Nominal current I _N	Cross section AWG	Cross section mm ²
keine				
	24 V	4 A	-	-

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	24 V	4 A	-	-

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

ECLASS

ECLASS-13.0	27060313
ECLASS-15.0	27060313

ETIM

ETIM 9.0	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
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	0.441 kg CO2e

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