

1668988

https://www.phoenixcontact.com/in/products/1668988

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

## **Commercial Data**

Item number	1668988
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	BF1
Product Key	BF1COA
Catalog Page	Page 250 (C-2-2019)
GTIN	4017918136093
Weight per Piece (including packing)	157.8 g
Weight per Piece (excluding packing)	157.8 g
Customs tariff number	85444290
Country of origin	PL



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## **Technical Data**

## Product properties

Product type	Distributor with cable
Number of positions	3
Application	Standard
No. of cable outlets	2
Shielded	no
Coding	A
Insulation characteristics	
Overvoltage category	H H
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	НВ
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

Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Nominal voltage U <sub>N</sub>	250 V AC
	250 V DC
Nominal current I <sub>N</sub>	4 A

## Mechanical properties

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Insertion/withdrawal cycles	≥ 100
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## Signaling

Status display	No
Status display present	No

### Connector

#### Connection 1



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Coding type	A
County type	A
Connection 2	
Coding type	A
Cable/line	
Cable length	3 m
DUD I I I I I I I I I I I I I I I I I I	
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 mm² (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. 0.5 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
Smallest bending radius, movable installation	38 mm
Max. bending cycles	10000000
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)



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in accordance with DIN EN 60811-2-1
Highly resistant to acids, alkaline solutions and solvents
hydrolysis and microbe resistant
partly UV-resistant in accordance with DIN EN ISO 4892-2-A
Flexible cable conduit capable
Silicone-free
Free of substances which would hinder coating with paint or varnish
-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)	-25 °C 90 °C (Plug / socket)
	-40 °C 80 °C (cable, fixed installation)
	-5 °C 80 °C (Cable, flexible installation)

## Standards and regulations

Standards/specifications	IEC 61076-2-101

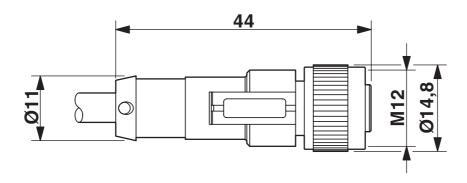


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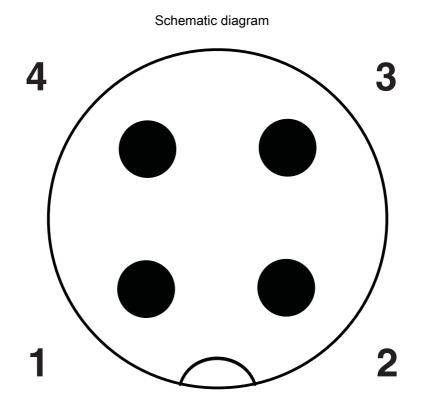
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## Drawings

## Dimensional drawing



M12 x 1 socket, straight



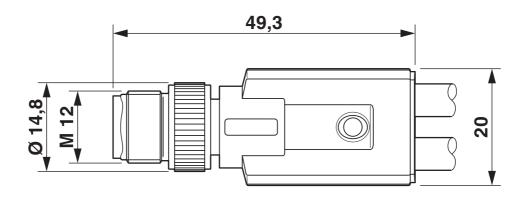
Pin assignment M12 Y plug, 4-pos., A-coded, view plug side



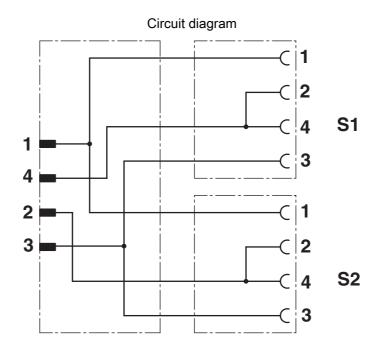
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## Dimensional drawing



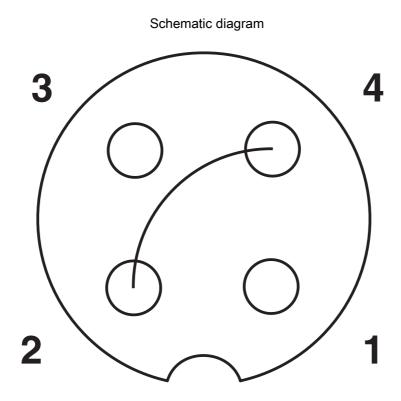
Plug M12 x 1, Y distributor





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



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## Approvals

<u> </u>	UL Listed Approval ID: FILE E 221474				
		Nominal Voltage $U_N$	Nominal Current I <sub>N</sub>	Cross Section AWG	Cross Section mm <sup>2</sup>
		300 V	4 A	-	-

•••••	CUL Listed Approval ID: FILE E 221474				
		Nominal Voltage $U_N$	Nominal Current I <sub>N</sub>	Cross Section AWG	Cross Section mm <sup>2</sup>
		300 V	4 A	-	-

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



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## Classifications

UNSPSC 21.0

## **ECLASS**

ECLASS-11.0	27060313		
ECLASS-12.0	27060313		
ECLASS-13.0	27060313		
ETIM			
ETIM 8.0	EC001855		
UNSPSC			

26121600



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## **Environmental Product Compliance**

China RoHS	Environmentally friendly use period: unlimited = EFUP-e	
	No hazardous substances above threshold values	



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### Accessories

## PROT-M12 FS-PA-CHAIN - Sealing cap

1430873

https://www.phoenixcontact.com/in/products/1430873

M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs



## SAC-M12-EXCLIP-M - Locking clip

1558988

https://www.phoenixcontact.com/in/products/1558988



Locking clip for the pin side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools



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#### PABA WH/23 - Insert label

1013779

https://www.phoenixcontact.com/in/products/1013779



Insert label, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: slide-on, cable diameter range:  $1.5 \dots 35$  mm, lettering field size:  $23 \times 4$  mm, Number of individual labels: 20

#### PABA YE/23 - Insert label

1013782

https://www.phoenixcontact.com/in/products/1013782



Insert label, Strip, yellow, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: slide-on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20



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## B-STIFT - Marker pen

1051993

https://www.phoenixcontact.com/in/products/1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

## PROT-M12 MS-PA-CHAIN - Screw plug

1430899

https://www.phoenixcontact.com/in/products/1430899

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets





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## SAC-M12-EXCLIP-F - Locking clip

1558991

https://www.phoenixcontact.com/in/products/1558991



Locking clip for the socket side of sensor/actuator cables with M12 connector and M12 connectors for assembly, for knurl diameter: 15 mm or for Allen key with a wrench size of 14 mm, prevents the disconnection of plug-in connections without tools

## TSD 04 SAC - Torque screwdriver

1208429

https://www.phoenixcontact.com/in/products/1208429



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors



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## TSD-M 1,2NM - Torque screwdriver

1212224

https://www.phoenixcontact.com/in/products/1212224



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0. 3 - 1.2 Nm

## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

https://www.phoenixcontact.com/in/products/1212600



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits



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### SAC BIT M12-D15 - Tool

1208432

https://www.phoenixcontact.com/in/products/1208432



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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