

1457322

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Sensor/actuator cable, 5-position, PUR halogen-free, resistant to welding sparks, highly flexible, gray RAL 7001, Plug angled M12, coding: A, on free cable end, cable length: 1.5 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

Commercial data

Item number	1457322
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	BF03
Product key	BF1CDA
Catalog page	Page 203 (C-2-2019)
GTIN	4046356593687
Weight per piece (including packing)	63.6 g
Weight per piece (excluding packing)	63.6 g
Customs tariff number	85444290
Country of origin	PL

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Technical data

Product properties

Product type	Sensor/actuator cable
Application	Robots and drag chains
Number of positions	5
No. of cable outlets	1
Shielded	no
Coding	A
Data management status	
Article revision	05
Insulation characteristics	
Overvoltage category	II
Degree of pollution	3

Material specifications

Flammability rating according to UL 94	HB
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	≥ 100 MΩ
Nominal voltage U _N	48 V AC
	60 V DC
Nominal current I _N	4 A

Mechanical properties

I	Mechanical data			
	Insertion/withdrawal cycles	≥ 100		
Się	Signaling			
	Status display	no		
	Status display present	No		
Сс	onnection data			

Conductor connection Tightening torque 0.4 Nm (M12 connector)

Connector





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Connection 1

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Туре	Plug angled M12
Number of positions	5
Coding type	A
Connection 2	
Туре	free cable end
ble/line	
Cable length	1.5 m
PUR halogen-free highly flexible resistant to welding sparks gray	5th conductor green/yellow [802]
Dimensional drawing	
Note	Due to the extremely robust outer sheath, this cable should only
NOLE	be stripped in 5 cm increments.
Cable weight	38 kg/km
UL AWM Style	20549
Number of positions	5
Shielded	no
Cable type	PUR halogen-free highly flexible resistant to welding sparks gray
	5th conductor green/yellow [802]
Conductor structure signal line	
Conductor structure signal line AWG signal line	5th conductor green/yellow [802]
	5th conductor green/yellow [802] 42x 0.10 mm
AWG signal line	5th conductor green/yellow [802] 42x 0.10 mm 22
AWG signal line Conductor cross section	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line)
AWG signal line Conductor cross section Wire diameter incl. insulation	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line)
AWG signal line Conductor cross section Wire diameter incl. insulation External cable diameter	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line) 5.10 mm ±0.2 mm
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, material	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line) 5.10 mm ±0.2 mm PUR
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialExternal sheath, color	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line) 5.10 mm ±0.2 mm PUR gray RAL 7001
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialExternal sheath, colorConductor material	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line) 5.10 mm ±0.2 mm PUR gray RAL 7001 Bare Cu litz wires
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialExternal sheath, colorConductor materialMaterial wire insulation	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line) 5.10 mm ±0.2 mm PUR gray RAL 7001 Bare Cu litz wires PP
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialExternal sheath, colorConductor materialMaterial wire insulationSingle wire, color	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line) 5.10 mm ±0.2 mm PUR gray RAL 7001 Bare Cu litz wires PP brown, white, blue, black, green-yellow
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialExternal sheath, colorConductor materialMaterial wire insulationSingle wire, colorOverall twist	5th conductor green/yellow [802]42x 0.10 mm225x 0.34 mm² (Signal line)1.3 mm ±0.05 mm (Signal line)5.10 mm ±0.2 mmPURgray RAL 7001Bare Cu litz wiresPPbrown, white, blue, black, green-yellow5 wires around filler to the core
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialCuter sheath, colorConductor materialMaterial wire insulationSingle wire, colorOverall twistMax. conductor resistance	5th conductor green/yellow [802] 42x 0.10 mm 22 5x 0.34 mm² (Signal line) 1.3 mm ±0.05 mm (Signal line) 5.10 mm ±0.2 mm PUR gray RAL 7001 Bare Cu litz wires PP brown, white, blue, black, green-yellow 5 wires around filler to the core approx. 53 Ω/km
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialCuter sheath, colorConductor materialMaterial wire insulationSingle wire, colorOverall twistMax. conductor resistanceInsulation resistance	5th conductor green/yellow [802]42x 0.10 mm225x 0.34 mm² (Signal line)1.3 mm ± 0.05 mm (Signal line)5.10 mm ± 0.2 mmPURgray RAL 7001Bare Cu litz wiresPPbrown, white, blue, black, green-yellow5 wires around filler to the coreapprox. 53 Ω/km $\geq 20 M\Omega^*km$
AWG signal lineConductor cross sectionWire diameter incl. insulationExternal cable diameterOuter sheath, materialCuter sheath, colorConductor materialMaterial wire insulationSingle wire, colorOverall twistMax. conductor resistanceInsulation resistanceNominal voltage, cable	5th conductor green/yellow [802]42x 0.10 mm225x 0.34 mm² (Signal line)1.3 mm ± 0.05 mm (Signal line)5.10 mm ± 0.2 mmPURgray RAL 7001Bare Cu litz wiresPPbrown, white, blue, black, green-yellow5 wires around filler to the coreapprox. 53 Ω/km $\geq 20 M\Omega^*km$ 300 V



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Smallest bending radius, fixed installation 26 mm Smallest bending radius, movable installation 26 mm Max. bending cycles 1000000 Minimum bending radius, drag chain applications 7.5 x D Traversing path 5 m Traversing rate 3.3 m/s Acceleration 5 m/s ² Max. bending cycles 500000 Bending radius 50 mm Traversing rate 0.9 m Traversing rate 5 m/s Acceleration 0.9 m Traversing rate 5 m/s Acceleration 100000 Traversing rate 5 m/s Acceleration 0.9 m Torsion force ± 360 '/m Fraversing rate 6 m/s Acceleration 100000 Halogen-free in accordance with UL 758/1581 FT2 Fraversing resistance in accordance with DIN EN 60811-2-1 Other resistance Gable jacket is welding spark-resistant, recyclabe, mat, low achieson, abrasion-resistant, filame-retardant, and self-scringuishing Special properties Cable jacket is welding spark-resistant, filame-retard		
Max. bending cycles1000000Minimum bending radius, drag chain applications7,5 x DTraversing path5 mTraversing rate3.3 m/sAcceleration5 m/s²Max. bending cycles1500000Bending radius0.9 mTraversing rate0.9 mAcceleration30 m/s²Traversing rate5 m/sAcceleration30 m/s²Torsion force± 360 °/mHalogen-free100000Halogen-freein accordance with UL 758/1581 FT2Resistance to oilin accordance with UL 758/1581 FT2Other resistancein accordance with UIN EN 60811-2-1Other resistanceSilcione-freeSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-achesion, abrasion-resistant, fecyclable, matt, low-achesion, abras	Smallest bending radius, fixed installation	26 mm
Minimum braing radius, drag chain applications7,5 x DTraversing path5 mTraversing rate3.3 m/sAcceleration5 m/s²Max. bending cycles1500000Bending radius50 mmTraversing path0.9 mTraversing rate5 m/s²Acceleration30 m/s²Torsion force± 360 °/mTorsion cycles100000Halogen-free100000Flame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with UL 758/1581 FT2Other resistancein accordance with UIN EN 60811-2-1Special propertiesCable jacket is waioin-resistant, recyclable, matt, low-achesion, abraison-resistant, flame-resistant, recyclable, matt, low-achesion, abraison-resistant, flame-resistant, recyclable, matt, low-achesion, abraison-resistant, flame-resistant, flame-resis	Smallest bending radius, movable installation	26 mm
Traversing path5 mTraversing rate3.3 m/sAcceleration5 m/s²Max. bending cycles1500000Bending radius50 mmTraversing path0.9 mTraversing rate5 m/sAcceleration30 m/s²Torsion force± 360 °/mTorsion cycles100000Halogen-free100000Flame resistancein accordance with DLT 758/1581 FT2Resistance to oilin accordance with DLT 758/1581 FT2Other resistanceSilicone-freeSpecial propertiesCable jacket is welding spark-resistant, frame-retardant, and self- axtinguishingFree of substances which would hinder coating with paint or varnishFree of substances which would hinder coating with paint or varnishAmbient temperature (operation)40 °C 80 °C (cable, fixed installation)	Max. bending cycles	1000000
Traversig rate3.3 m/sAcceleration5 m/s²Max. bending cycles1500000Bending radius50 mmTraversing path0.9 mTraversing rate5 m/sAcceleration30 m/s²Torsion force± 360 "/mTorsion cycles100000Halogen-free100000Flame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with UL 758/1581 FT2Other resistanceSilcione-freeSpecial propertiesCable jacket is welding spark-resistant, flame-retardant, and self-situiguishingFree form silicone and cadmiumFree of substances which would hinder coating with paint or varnishAmbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Minimum bending radius, drag chain applications	7,5 x D
Acceleration5 m/s ^a Max. bending cycles1500000Bending radius50 mmTraversing path0.9 mTraversing rate5 m/sAcceleration30 m/s ^a Torsion force± 360 °/mTorsion cycles100000Halogen-freein accordance with UL 758/1581 FT2Flame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingFree form silicone and cadmiumFree of substances which would hinder coating with paint or varnishAmbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Traversing path	5 m
Max. bending cycles1500000Bending radius50 mmTraversing path0.9 mTraversing rate5 m/sAcceleration30 m/s²Torsion force± 380 °/mTorsion cycles100000Halogen-freeThe cable is halogen-freeFlame resistance to oilin accordance with UL 758/1581 FT2Other resistance to oilHighly resistant to acids, alkaline solutions and solventsSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingAmbient temperature (operation)40 °C 80 °C (cable, fixed installation)	Traversing rate	3.3 m/s
Bending radius 50 mm Traversing path 0.9 m Traversing rate 5 m/s Acceleration 30 m/s² Torsion force ± 360 °/m Torsion cycles 100000 Halogen-free The cable is halogen-free 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 Silicone-free Silicone-free Special properties Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing Free form silicone and cadmium Free of substances which would hinder coating with paint or varnish Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation)	Acceleration	5 m/s²
Traversing path0.9 mTraversing rate5 m/sAcceleration30 m/s²Torsion force± 360 °/mTorsion cycles100000Halogen-freeThe cable is halogen-freeFlame resistancein accordance with UL 758/1581 FT2Resistance to oilGarced and cavith DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSpecial propertiesCable jacket is welding spark-resistant, recyclable, math, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingSpecial propertiesCable jacket is welding spark-resistant, recyclable, math, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingAmbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Max. bending cycles	1500000
Traversing rate5 m/sAcceleration30 m/s²Acceleration± 360 °/mTorsion force± 360 °/mTorsion cycles100000Halogen-freeThe cable is halogen-freeFlame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSpecial propertiesSilicone-freeSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingAmbient temperature (operation)-Free from silicone and cadmiumAnbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Bending radius	50 mm
Acceleration30 m/s²Acceleration\$30 m/s²Torsion force\$\$30 °/mTorsion cycles100000Halogen-freeThe cable is halogen-freeFlame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSpecial propertiesSilicone-freeSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingAnbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Traversing path	0.9 m
Torsion force± 360 °/mTorsion cycles100000Halogen-freeThe cable is halogen-freeFlame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSilicone-freeSilicone-freeSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingFree from silicone and cadmiumFree of substances which would hinder coating with paint or varnishAmbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Traversing rate	5 m/s
Torsion cycles100000Halogen-freeThe cable is halogen-freeFlame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSpecial propertiesSilicone-freeSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingFree from silicone and cadmiumFree of substances which would hinder coating with paint or varnishAmbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Acceleration	30 m/s²
Halogen-freeThe cable is halogen-freeFlame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSilicone-freeSilicone-freeSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingFree from silicone and cadmiumFree of substances which would hinder coating with paint or varnishAmbient temperature (operation)-40 °C 80 °C (cable, fixed installation)	Torsion force	± 360 °/m
Flame resistancein accordance with UL 758/1581 FT2Resistance to oilin accordance with DIN EN 60811-2-1Other resistanceHighly resistant to acids, alkaline solutions and solventsSpecial propertiesSilicone-freeSpecial propertiesCable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishingFree from silicone and cadmiumFree from silicone and cadmiumFree of substances which would hinder coating with paint or varnish-40 °C 80 °C (cable, fixed installation)	Torsion cycles	1000000
Resistance to oil in accordance with DIN EN 60811-2-1 Other resistance Highly resistant to acids, alkaline solutions and solvents Special properties Silicone-free Special properties Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing 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)	Halogen-free	The cable is halogen-free
Other resistance Highly resistant to acids, alkaline solutions and solvents Silicone-free Silicone-free Special properties Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing 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)	Flame resistance	in accordance with UL 758/1581 FT2
Special properties Silicone-free Special properties Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing 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)	Resistance to oil	in accordance with DIN EN 60811-2-1
Special properties Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing Free from silicone and cadmium 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)	Other resistance	Highly resistant to acids, alkaline solutions and solvents
Ambient temperature (operation) adhesion, abrasion-resistant, flame-retardant, and self-extinguishing Free from silicone and cadmium Free of substances which would hinder coating with paint or varnish -40 °C 80 °C (cable, fixed installation)		Silicone-free
Free of substances which would hinder coating with paint or varnish Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation)	Special properties	adhesion, abrasion-resistant, flame-retardant, and self-
varnish Ambient temperature (operation) -40 °C 80 °C (cable, fixed installation)		Free from silicone and cadmium
-25 °C 80 °C (Cable, flexible installation)	Ambient temperature (operation)	-40 °C 80 °C (cable, fixed installation)
		-25 °C 80 °C (Cable, flexible installation)

Environmental and real-life conditions

Degree of protection	IP65
	IP67
	IP68
Ambient temperature (operation)	-25 °C 90 °C (Plug / socket)
	-40 °C 90 °C (cable, fixed installation)
	-30 °C 90 °C (Cable, flexible installation)
	to 120 °C (for 3000 h)
	to 80 °C (in acc. with UL)

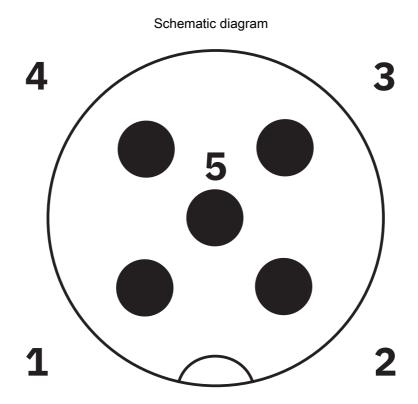
Standard designation M12 connector Standards/specifications IEC 61076-2-101



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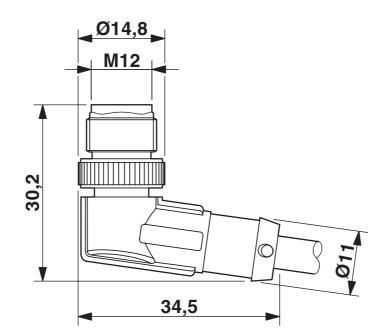
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Drawings



Pin assignment M12 male connector, 5-pos., A-coded, male side

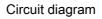
Dimensional drawing





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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
Use g	roup keine				
		125 V	4 A	-	-
<u>.</u>	CUL Listed Approval ID: FILE E 221474				
		Nominal voltage U _N	Nominal current I _N	Cross section AWG	Cross section mm ²
Use g	roup keine	Nominal voltage U _N	Nominal current I _N	Cross section AWG	Cross section mm ²
Use g	group keine	Nominal voltage U _N 125 V	Nominal current I _N 4 A	Cross section AWG	Cross section mm ²
Use g	group keine				
Use g	roup keine EAC-RoHS Approval ID: RU D-DE.HB3	125 V			

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Classifications

ECLASS

ECLASS-11.0	27060311
ECLASS-12.0	27060311
ECLASS-13.0	27060311

ETIM

	ETIM 9.0	EC001855
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%

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