

SAC-4P-M12MS-M 8FR-2L/.../... - Sensor/actuator cable



1515031
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Sensor/actuator cable, 4-position, Variable cable type, Plug straight M12, coding: A, with 2 LEDs, connected with unwired, on Socket angled M8, with 2 LEDs, cable length: Free input (0.2 .. 40.0 m)

Your advantages

- Easy and safe: 100% electrically tested plug-in components
- Convenient: increased machine availability thanks to quick and easy diagnostics

Commercial data

Item number	1515031
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF17
Product key	BF1CCA
Catalog page	Page 194 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

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Technical data

Product properties

Product type	Sensor/actuator cable
Number of positions	4
Application	Standard
	Robots and drag chains
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

Contact resistance	$\leq 5 \text{ m}\Omega$
Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage U_N	24 V DC
Nominal current I_N	4 A
Protective circuit	unwired

Mechanical properties

Mechanical data

Insertion/withdrawal cycles	≥ 100
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Signaling

Status display	2 LEDs
Status display present	Yes

Connection data

Conductor connection

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

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Connector

Connection 1

Type	Plug straight M12
Number of positions	4
Coding type	A
Number of positions	4

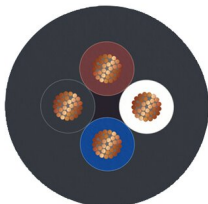
Connection 2

Type	Socket angled M8
Number of positions	4
	4

Cable/line

Cable length	Free input (0.2 ... 40.0 m)
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PUR halogen-free black [PUR]

Dimensional drawing	
Shielded	no
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	23 kg/km
Cable type	PUR halogen-free black
Short symbol	Li9Y11Y-HF
Cable type (abbreviation)	PUR
External cable diameter	3.95 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	4x 0.25 mm² (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Nominal voltage, cable	≤ 300 V

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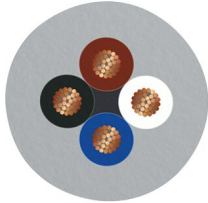


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Test voltage, cable	≥ 3000 V
Cable resistance	max. 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	20 mm
Smallest bending radius, movable installation	40 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	5 m/s²
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
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)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

PUR halogen-free gray [280]

Dimensional drawing	
Shielded	no
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	23 kg/km
Cable type	PUR halogen-free gray
Short symbol	Li9Y11Y-HF
Cable type (abbreviation)	280
External cable diameter	3.95 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm

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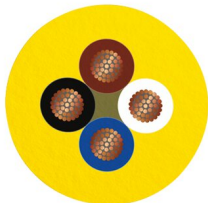


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AWG signal line	24
Conductor cross section	4x 0.25 mm ² (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	max. 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	20 mm
Smallest bending radius, movable installation	40 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	5 m/s ²
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
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)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

PUR halogen-free yellow [240]

Dimensional drawing	
Shielded	no
UL AWM Style	20549
Cable weight	25 kg/km

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Cable type	PUR halogen-free yellow
Short symbol	Li9Y11Y
Cable type (abbreviation)	240
External cable diameter	4.4 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	yellow, similar to RAL 1021
Thickness, outer sheath	approx. 0.75 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	4x 0.25 mm ² (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Length of twist, overall twist	45 mm
Nominal voltage, cable	≤ 300 V AC
Test voltage, cable	≥ 3000 V AC (Spark test)
Cable resistance	78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 1 GΩ*km (at 20 °C)
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Number of bending cycles	4000000
Minimum bending radius, drag chain applications	10 x D
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²
Halogen-free	in accordance with DIN VDE 0472 part 815 in accordance with EN 50267-2-1
Resistance to oil	According to DIN EN 60811-2-1, 168 h at 100°C According to UL 758, 168 h at 60°C
Flame resistance	in accordance with UL 758/1581 FT2
Other resistance	hydrolysis and microbe resistant Resistant to salt water abrasion-resistant Low adhesion
Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

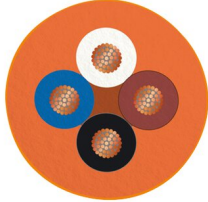
PUR halogen-free orange [180]

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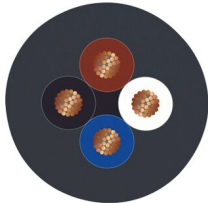


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Dimensional drawing	
Shielded	no
UL AWM Style	20549
Cable weight	25 kg/km
Cable type	PUR halogen-free orange
Short symbol	Li9Y-11Y
Cable type (abbreviation)	180
External cable diameter	4.4 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	orange RAL 2003
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	4x 0.25 mm ² (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	max. 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 10 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	22 mm
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with DIN UL-Style 20549
Ambient temperature (operation)	-25 °C ... 80 °C (Cable)

PVC black [PVC]

Dimensional drawing	
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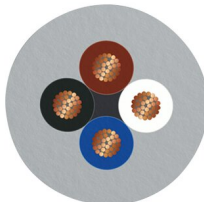


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Shielded	no
UL AWM Style	2464 / 1729 (80°C/300 V)
Cable weight	33 kg/km
Cable type	PVC black
Short symbol	LiYY
Cable type (abbreviation)	PVC
External cable diameter	4.4 mm ±0.15 mm
Outer sheath, material	PVC
External sheath, color	black RAL 9005
Conductor material	Bare Cu litz wires
Conductor structure signal line	14x 0.15 mm
AWG signal line	24
Conductor cross section	4x 0.25 mm² (Signal line)
Material wire insulation	PVC
Thickness, insulation	≥ 0.23 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.05 mm
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	max. 79 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 MΩ*km (at 20 °C)
Minimum bending radius, fixed installation	5 x D
Resistance to oil	EN 60811-2-1
Flame resistance	As per UL-Style 2464
Ambient temperature (operation)	-10 °C ... 80 °C (Cable, flexible installation)
	-25 °C ... 80 °C (cable, fixed installation)

PVC gray [500]

<div> <div>Dimensional drawing</div>  </div>	
Shielded	no
Cable weight	33 kg/km
Cable type	PVC gray
Short symbol	LiYY
Cable type (abbreviation)	500
External cable diameter	4.4 mm ±0.15 mm
Outer sheath, material	PVC

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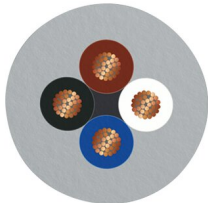


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External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Conductor structure signal line	14x 0.15 mm
AWG signal line	24
Conductor cross section	4x 0.25 mm ² (Signal line)
Material wire insulation	PVC
Thickness, insulation	≥ 0.23 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.05 mm
Single wire, color	brown, white, blue, black, green-yellow
Overall twist	4 wires, twisted
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	max. 79 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 MΩ*km (at 20 °C)
Flame resistance	As per UL-Style 2464
Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation)
	-40 °C ... 80 °C (cable, fixed installation)

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.
Shielded	no
UL AWM Style	20549
Cable weight	27.1 kg/km
Cable type	Gray, highly flexible PUR
Short symbol	LiF9Y11Y
Cable type (abbreviation)	800
External cable diameter	4.5 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	4x 0.25 mm ² (Signal line)
Material wire insulation	PP
Wire diameter incl. insulation	1.15 mm ±0.05 mm (Signal line)

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Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Nominal voltage, cable	300 V
Test voltage, cable	1200 V
Cable resistance	approx. 76 Ω/km
Cable insulation resistance	≥ 20 MΩ*km
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	7.5 x D
Number of bending cycles	10000000
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
Number of bending cycles	15000000
Traversing path	0.9 m
Traversing rate	5 m/s
Acceleration	30 m/s ²
Torsion force	± 360 °/m
Torsion cycles	1000000
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2
Other resistance	Highly resistant to acids, alkaline solutions and solvents
Special properties	Silicone-free
	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)	-25 °C ... 80 °C (Cable, flexible installation)
	-40 °C ... 80 °C (cable, fixed installation)

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP65
	IP67
	IP68
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)

Standards and regulations

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

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Standards/specifications	IEC 61076-2-104
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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1515031>



EAC

Approval ID: RU C-DE.BL08.B.00286



UL Listed

Approval ID: FILE E 221474

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	24 V	4 A	-	-



cUL Listed

Approval ID: FILE E 221474

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	24 V	4 A	-	-



EAC-RoHS

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

cULus Listed

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Classifications

ECLASS

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

ETIM

ETIM 8.0	EC001855
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UNSPSC

UNSPSC 21.0	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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