

SAC-3P-M 8MS-M 8FS/.../... - Sensor/actuator cable



1697632

<https://www.phoenixcontact.com/in/products/1697632>

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Sensor/actuator cable, 3-position, Variable cable type, Plug straight M8, on Socket straight M8, cable length: Free input (0.2 ... 40.0 m)

Your advantages

- Easy and safe: 100% electrically tested plug-in components

Commercial Data

Item number	1697632
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	BF1
Product Key	BF1BBA
Catalog Page	Page 188 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

SAC-3P-M 8MS-M 8FS/.../... - Sensor/actuator cable



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Technical Data

Product properties

Product type	Sensor/actuator cable
Number of positions	3
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	48 V AC 60 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	No
Status display present	No

Connection data

Conductor connection

Tightening torque	0.2 Nm (M8 connectors)
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Connector

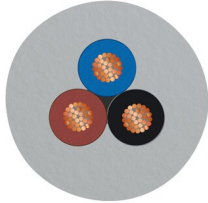
Connection 1

Coding type	A
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Cable/line

Cable length	Free input (0.2 ... 40.0 m)
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PUR halogen-free gray [280]

Dimensional drawing	
Shielded	no
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	18 kg/km
Cable type	PUR halogen-free gray
Short symbol	Li9Y11Y-HF
Cable type (abbreviation)	280
External cable diameter	3.6 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm ²
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	≤ 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Number of bending cycles	10000000

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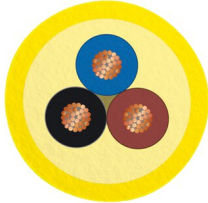


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Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²
Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2 DIN EN 60332-2-2 (20 s)
Other resistance	hydrolysis and microbe resistant Highly resistant to acids, alkaline solutions and solvents Resistant to salt water 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	24 kg/km
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
Thickness, outer sheath	approx. 0.9 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm ² (Signal line)
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm

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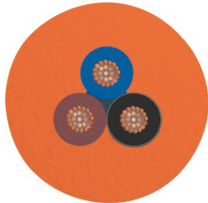


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Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V AC
Test voltage, cable	≥ 3000 V AC (Spark test)
Cable resistance	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]

Dimensional drawing	
Shielded	no
UL AWM Style	20549
Cable weight	24 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

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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	3x 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, blue, black
Overall twist	3 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
Smallest bending radius, movable installation	44 mm
Number of bending cycles	4000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 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 DIN UL-Style 20549 in accordance with UL 758/1581 FT2
Other resistance	hydrolysis and microbe resistant Resistant to salt water
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	18 kg/km
Cable type	PUR halogen-free gray
Short symbol	Li9Y11Y-HF

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Cable type (abbreviation)	280
External cable diameter	3.6 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 0.25 mm ²
Material wire insulation	PP
Thickness, insulation	≥ 0.21 mm (Core insulation)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V
Cable resistance	≤ 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 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	hydrolysis and microbe resistant Highly resistant to acids, alkaline solutions and solvents Resistant to salt water 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)

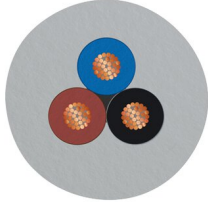
PVC gray [500]

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Dimensional drawing	
Shielded	no
Cable weight	29 kg/km
Cable type	PVC gray
Short symbol	LiYY
Cable type (abbreviation)	500
Cable type	Assembled shielded round cable
External cable diameter	4.2 mm ±0.15 mm
Outer sheath, material	PVC
External sheath, color	gray RAL 7001
Thickness, outer sheath	≥ 0.76 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	14x 0.15 mm
AWG signal line	24
Conductor cross section	3x 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, blue, black
Overall twist	3 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)
Smallest bending radius, fixed installation	13 mm
Halogen-free	no
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	As per UL-Style 2464
Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

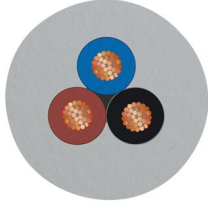
Gray, highly flexible PUR [800]

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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	24 kg/km
Cable type	Gray, highly flexible PUR
Short symbol	LiF9Y11Y
Cable type (abbreviation)	800
External cable diameter	4.3 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	3x 0.25 mm ² (Signal line)
Material wire insulation	PP
Wire diameter incl. insulation	1.2 mm ±0.05 mm (Signal line)
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Nominal voltage, cable	300 V
Test voltage, cable	2000 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

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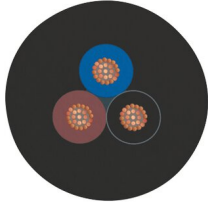


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Halogen-free	in accordance with DIN VDE 0472 part 815
Resistance to oil	in accordance with DIN EN 60811-2-1
Flame resistance	in accordance with UL 758/1581 FT2
Other resistance	Highly resistant to acids, alkaline solutions and solvents
Special properties	Silicone-free
	Cable jacket is welding spark-resistant, recyclable, matt, low-adhesion, abrasion-resistant, flame-retardant, and self-extinguishing
	Free from silicone and cadmium
Ambient temperature (operation)	Free of substances which would hinder coating with paint or varnish
	-25 °C ... 80 °C (Cable, flexible installation)
	-40 °C ... 80 °C (cable, fixed installation)

PUR halogen-free black [PUR]

Dimensional drawing	
Shielded	no
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	18 kg/km
Cable type	PUR halogen-free black
Short symbol	Li9Y11Y-HF
Cable type (abbreviation)	PUR
External cable diameter	3.6 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Thickness, outer sheath	approx. 0.5 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	3x 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
Single wire, color	brown, blue, black
Overall twist	3 wires, twisted
Length of twist, overall twist	40 mm
Nominal voltage, cable	≤ 300 V
Test voltage, cable	≥ 3000 V

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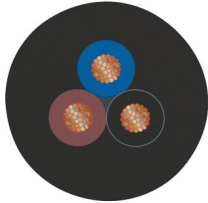


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Cable resistance	≤ 78 Ω/km (at 20 °C)
Cable insulation resistance	≥ 100 GΩ*km (at 20 °C)
Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	36 mm
Number of bending cycles	10000000
Bending radius	44 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 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	hydrolysis and microbe resistant Highly resistant to acids, alkaline solutions and solvents Resistant to salt water 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)

PVC black [PVC]

Dimensional drawing	
Shielded	no
Cable weight	29 kg/km
Cable type	PVC black
Short symbol	LiYY
Cable type (abbreviation)	PVC
External cable diameter	4.2 mm ±0.15 mm
Outer sheath, material	PVC
External sheath, color	black RAL 9005
Thickness, outer sheath	≥ 0.76 mm
Conductor material	Bare Cu litz wires
Conductor structure signal line	14x 0.15 mm

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AWG signal line	24
Conductor cross section	3x 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, blue, black
Overall twist	3 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)
Smallest bending radius, fixed installation	13 mm
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)

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

Standards/specifications	IEC 61076-2-104
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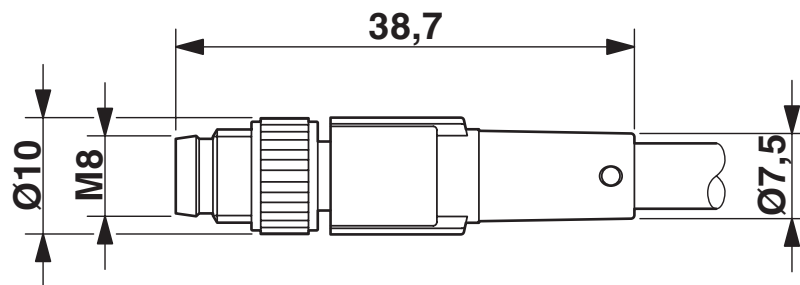
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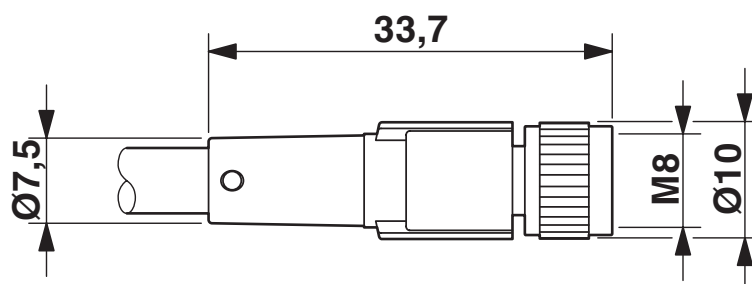
Drawings

Dimensional drawing



M8 x 1 male plug, straight version

Dimensional drawing

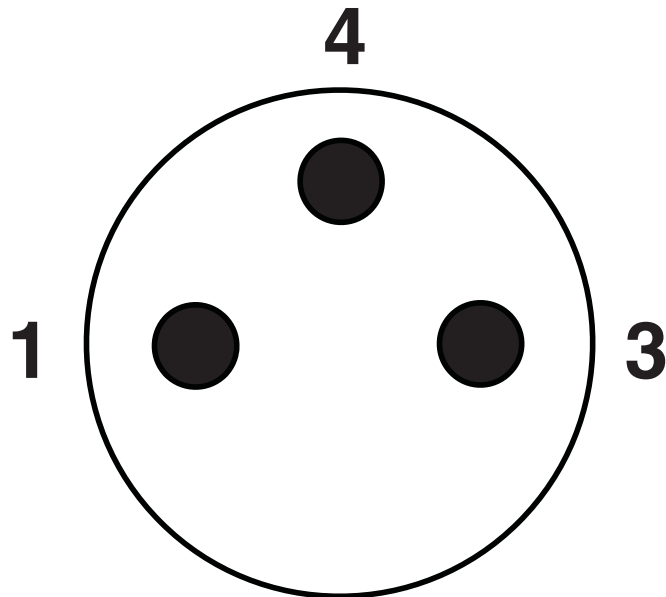


Socket M8 x 1, straight

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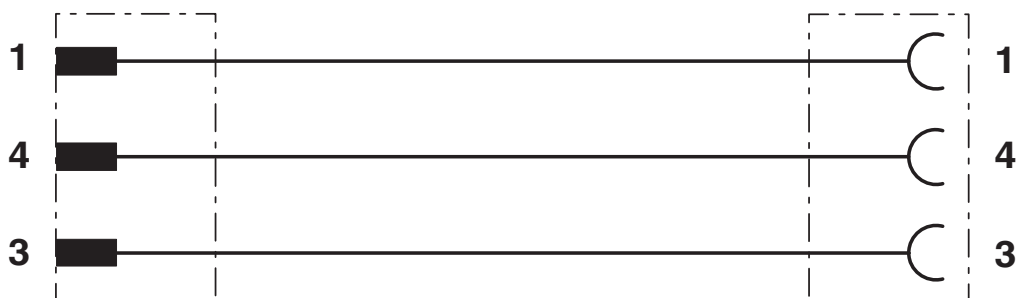
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Schematic diagram



Pin assignment M8 plug, 3-pos., view male side

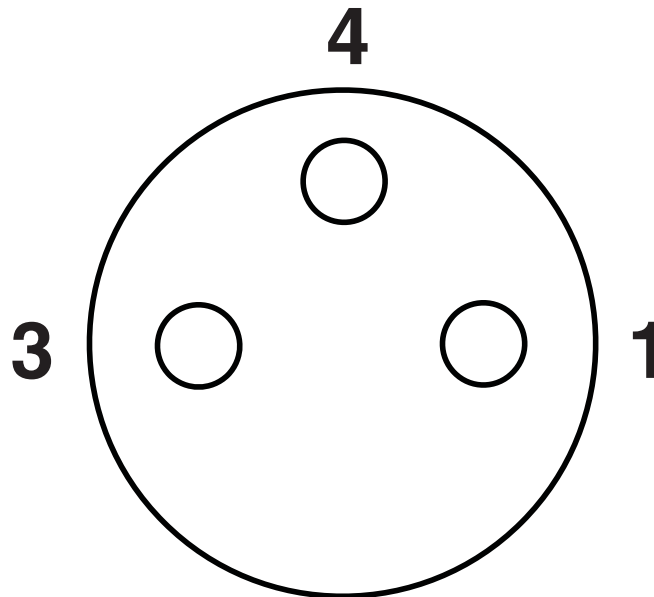
Circuit diagram



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Schematic diagram



Pin assignment M8 socket, 3-pos., view female side

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Approvals

 UL Listed Approval ID: FILE E 221474				
	Nominal Voltage U_N	Nominal Current I_N	Cross Section AWG	Cross Section mm^2
	60 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
	60 V	4 A	-	-

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

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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Accessories

PROT-M 8 FS-PA-CHAIN - Sealing cap

1430857

<https://www.phoenixcontact.com/in/products/1430857>

M8 sealing cap made of plastic with fixing band for sensor cables, for M8 plugs



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 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20



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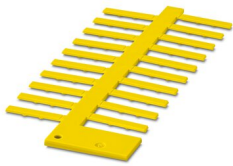
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PABA YE/23 - Insert label

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

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

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PROT-M 8 MS-PA-CHAIN - Screw plug

1430860

<https://www.phoenixcontact.com/in/products/1430860>

M8 sealing cap made of plastic with fixing band for sensor cables, for M8 sockets



TSD 02 SAC - Torque screwdriver

1208487

<https://www.phoenixcontact.com/in/products/1208487>

Torque screwdriver, with preset torque of 0.2 Nm and 4 mm hexagonal drive for M8 connectors



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SAC BIT M8-D10 - Tool

1208461

<https://www.phoenixcontact.com/in/products/1208461>



Nut for assembling M8 connectors with longitudinal knurl and a knurl diameter of 10 mm, for 4 mm hexagonal drive

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