SAC-4P-M8MS-M12FS BK/.../... - Sensor/actuator cable

1405904

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Sensor/actuator cable, 4-position, Plug straight M8, on Socket straight M12, cable length: Free input (0.2 m ... 85.0 m)

Commercial data

Item number	1405904
Packing unit	1 pc
Minimum order quantity	50 pc
Note	Made to order (non-returnable)
Sales key	AF1ICB
Product key	AF1ICB
Customs tariff number	85444290
Country of origin	US

Technical data

Product properties

Application	Standard, U.S. cables
	Robots and drag chains
Number of positions	4
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

Insulation resistance	≥ 100 MΩ
Nominal voltage U_N	48 V AC
	60 V DC
Nominal current I_N	4 A

Mechanical properties

Mechanical data

Insertion/withdrawal cycles	≥ 100

Signaling

Status display	no
Status display present	no

Connection data

Conductor connection

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

Connector

Connection 1

Type	Plug straight M8
Number of positions	4

Connection 2

Type	Socket straight M12
Number of positions	4

Cable/line

Cable length	Free input (0.2 m ... 85.0 m)

PUR halogen-free black [PUR]

Cable weight	23 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	4
Shielded	no
Cable type	PUR halogen-free black [PUR]
	PUR halogen-free black PUR
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.02 mm (Signal line)
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
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Thickness, insulation	≥ 0.21 mm (Core insulation)
	approx. 0.50 mm (Outer cable sheath)
Overall twist	4 wires, twisted
Max. conductor resistance	max. 78 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	20 mm
Smallest bending radius, movable installation	40 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 44 mm, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 5 m/s²
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)

Black PVC 105°C [535]

Cable weight	25 kg/km
UL AWM Style	2517 (105 °C / 300 V)
Number of positions	4
Shielded	no
Cable type	Black PVC 105°C [535]
	Black PVC 105°C 535
Conductor structure signal line	7x 0.20 mm
AWG signal line	24
Wire diameter incl. insulation	1.12 mm ±0.03 mm
External cable diameter	4.40 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	black
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PVC
Single wire, color	brown, blue, black, white
Overall twist	4 wires, twisted
Nominal voltage, cable	300 V
Minimum bending radius, flexible installation	8 x D
Smallest bending radius, movable installation	36 mm
Flame resistance	FT4
Other resistance	UV resistant
Ambient temperature (operation)	-30 °C ... 105 °C (cable, fixed installation)
	-5 °C ... 105 °C (Cable, flexible installation)

PVC yellow 105 °C [542]

Cable weight	25 kg/km
UL AWM Style	2517 (105 °C / 300 V)
Number of positions	4
Shielded	no
Cable type	PVC yellow 105 °C [542]
	PVC yellow 105 °C 542
Conductor structure signal line	7x 0.20 mm
AWG signal line	24

Wire diameter incl. insulation	1.12 mm ±0.03 mm
External cable diameter	4.40 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	yellow
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PVC
Single wire, color	brown, blue, black, white
Overall twist	4 wires, twisted
Max. conductor resistance	max. 79.7 Ω/km (20 °C)
Insulation resistance	≥ (550 M Ohms/m @ 500V)
Nominal voltage, cable	300 V
Minimum bending radius, flexible installation	8 x D
Smallest bending radius, movable installation	36 mm
Flame resistance	FT4
Other resistance	UV resistant
Ambient temperature (operation)	-30 °C ... 105 °C (cable, fixed installation)
	-5 °C ... 105 °C (Cable, flexible installation)

Gray, highly flexible PUR [800]

Note	Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.
Cable weight	27.1 kg/km
UL AWM Style	20549
Number of positions	4
Shielded	no
Cable type	Gray, highly flexible PUR [800]
	Gray, highly flexible PUR 800
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross-section	4x 0.25 mm² (Signal line)
Wire diameter incl. insulation	1.15 mm ±0.05 mm (Signal line)
External cable diameter	4.50 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Material wire insulation	PP
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Max. conductor resistance	approx. 76 Ω/km
Insulation resistance	≥ 20 MΩ*km
Nominal voltage, cable	300 V
Test voltage	1200 V
Minimum bending radius, fixed installation	4 x D
Minimum bending radius, flexible installation	7.5 x D

Smallest bending radius, fixed installation	18 mm
Smallest bending radius, movable installation	34 mm
Dynamic load capacity (bending)	Max. bending cycles: 10000000, Bending radius: 7,5 x D, Traversing path: 5 m, Traversing rate: 3.3 m/s, Acceleration: 5 m/s²
	Max. bending cycles: 15000000, Bending radius: 50 mm, Traversing path: 0.9 m, Traversing rate: 5 m/s, Acceleration: 30 m/s²
Dynamic load capacity (torsion)	Torsion: ±360 °/m, Torsion cycles: 1000000, Torsional frequency: 35 cycles/min.
Halogen-free	in accordance with DIN VDE 0472 part 815
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
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)
	-25 °C ... 80 °C (Cable, flexible installation)

PVC gray 105 °C [544]

Cable weight	21 kg/km
UL AWM Style	2517 (105 °C / 300 V)
Number of positions	4
Shielded	no
Cable type	PVC gray 105 °C [544]
	PVC gray 105 °C 544
Conductor structure signal line	7x 0.20 mm
AWG signal line	24
Wire diameter incl. insulation	1.12 mm ±0.03 mm
External cable diameter	4.40 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	gray
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PVC
Single wire, color	brown, white, blue, black
Overall twist	4 wires, twisted
Max. conductor resistance	max. 79.7 Ω/km (20 °C)
Insulation resistance	≥ (550 M Ohms/m @ 500V)
Nominal voltage, cable	300 V
Minimum bending radius, flexible installation	12 x D
Smallest bending radius, movable installation	53 mm
Flame resistance	FT1, VW-1

Other resistance	UV resistant
Ambient temperature (operation)	-30 °C ... 105 °C (cable, fixed installation)
	-5 °C ... 105 °C (Cable, flexible installation)

Environmental and real-life conditions

Ambient conditions

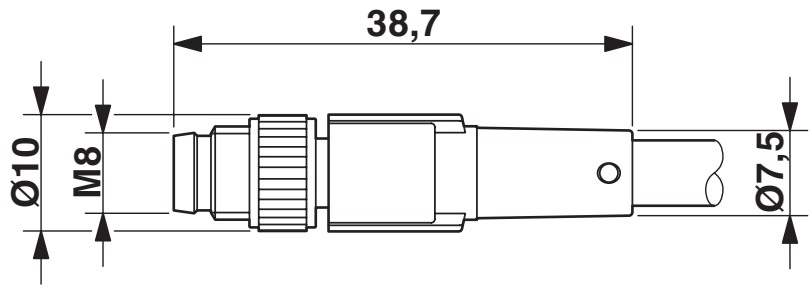
Degree of protection	IP65
	IP67
	IP68
Ambient temperature (operation) (male connector/female connector)	-25 °C ... 90 °C (Plug / socket)

Standards and regulations

Standard designation	M12 connector
Standards/specifications	IEC 61076-2-101
Standard designation	M8 connector
Standards/specifications	IEC 61076-2-104

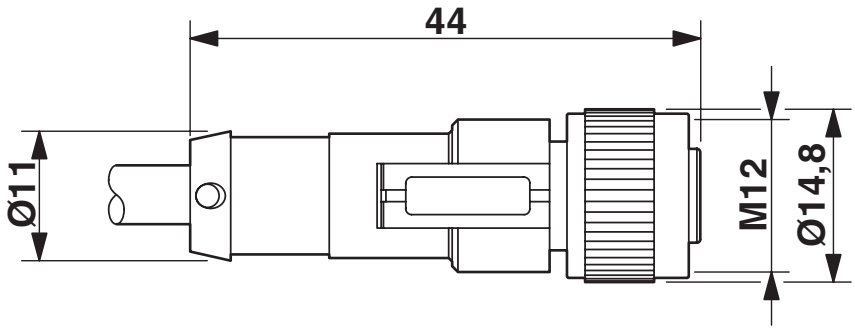
Drawings

Dimensional drawing



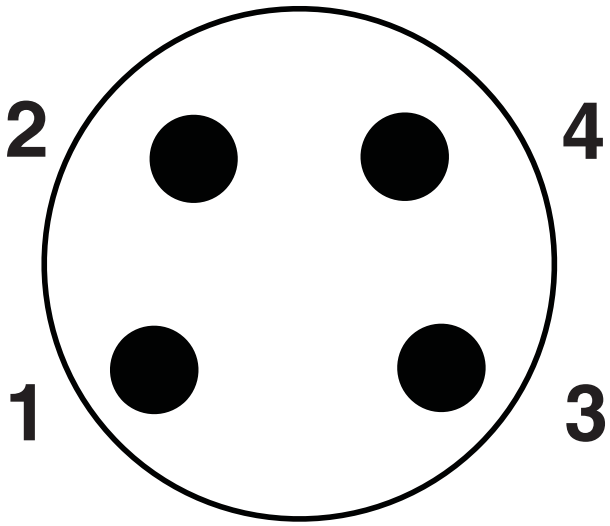
M8 x 1 male plug, straight version

Dimensional drawing



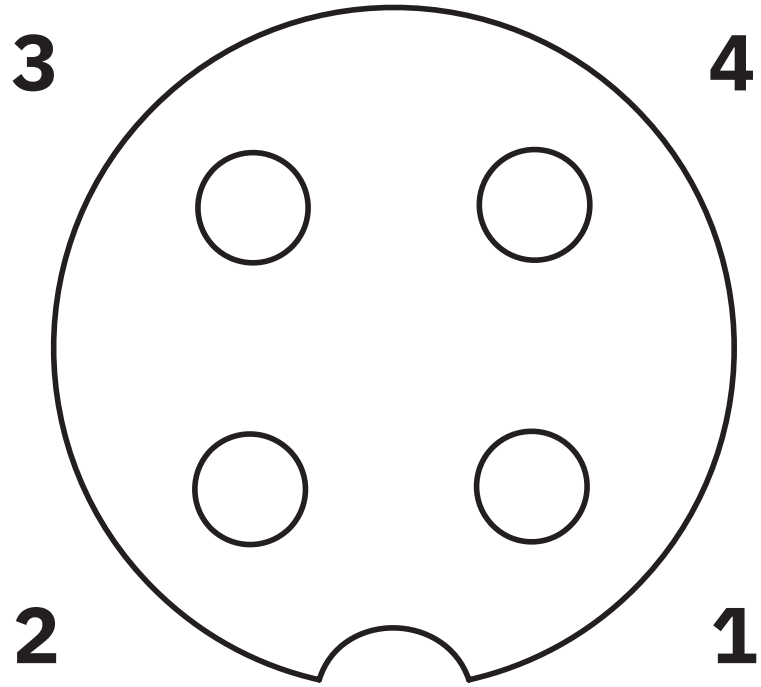
M12 x 1 socket, straight

Schematic diagram



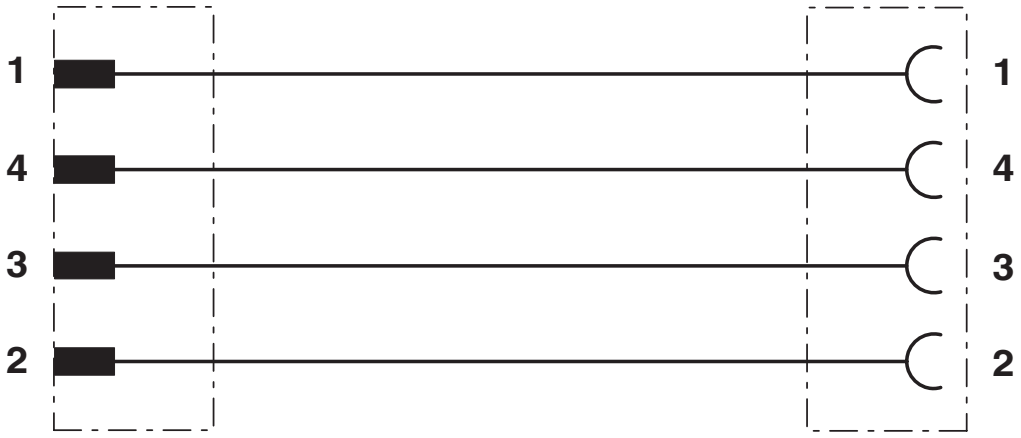
Pin assignment M8 plug, 4-pos., view male side

Schematic diagram



Pin assignment M12 socket, 4-pos., A-coded, view female side

Circuit diagram



Contact assignment of M8 plugs / M12 sockets

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/nl/products/1405904

UL Listed
Approval ID: FILE E 221474

	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
keine				
	30 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
keine				
	30 V	4 A	-	-

Classifications

ECLASS

ECLASS-13.0	27060311
ECLASS-15.0	27060311

ETIM

ETIM 9.0	EC001855

UNSPSC

UNSPSC 21.0	26121600

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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