

SAC-8P-M12MS/.../... - Sensor/actuator cable



1522532

<https://www.phoenixcontact.com/in/products/1522532>

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Sensor/actuator cable, 8-position, Plug straight M12, coding: A, on free cable end, cable length: Free input (0.2 ... 40.0 m)

Your advantages

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

Commercial data

Item number	1522532
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	BF1
Product key	BF1CFA
Catalog page	Page 208 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

SAC-8P-M12MS/.../... - Sensor/actuator cable



1522532

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Technical data

Product properties

Product type	Sensor/actuator cable
Application	Standard
	Robots and drag chains
Number of positions	8
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
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Material for screw connection	Zinc die-cast, nickel-plated

Electrical properties

Insulation resistance	$\geq 100 \text{ M}\Omega$
Nominal voltage U_N	30 V AC
	30 V DC
Nominal current I_N	2 A

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	0.4 Nm (M12 connector)
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Connector

Connection 1

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1522532

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Type	Plug straight M12
Number of positions	8
Coding type	A

Connection 2

Type	free cable end
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Cable/line

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

Cable weight	46 kg/km
UL AWM Style	20549 / 10493 (80°C/300 V)
Number of positions	8
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	8x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.02 mm
External cable diameter	5.90 mm ±0.15 mm
Outer sheath, material	PUR
External sheath, color	black-gray RAL 7021
Conductor material	Bare Cu litz wires
Material, filler	PE
Material wire insulation	PP
Single wire, color	white, brown, green, yellow, gray, pink, blue, red
Thickness, insulation	≥ 0.21 mm
Thickness, outer sheath	approx. 0.80 mm
Overall twist	8 wires around filler to the core
Max. conductor resistance	≤ 78 Ω/km
Insulation resistance	≥ 1 GΩ*km
Wave impedance	100 Ω +15 % (with 1 MHz)
Cable capacity	≤ 70 pF/m
Nominal voltage, cable	≤ 300 V
Test voltage	≥ 3000 V
Minimum bending radius, fixed installation	8 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	48 mm
Smallest bending radius, movable installation	59 mm
Max. bending cycles	4000000
Bending radius	59 mm
Traversing path	10 m
Traversing rate	3 m/s

SAC-8P-M12MS/.../... - Sensor/actuator cable



1522532

<https://www.phoenixcontact.com/in/products/1522532>

Acceleration	10 m/s ²
Halogen-free	in accordance with DIN VDE 0472 part 815
Flame resistance	in accordance with UL 758/1581 FT2 According to 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) Low adhesion abrasion-resistant
Special properties	Flexible cable conduit capable Silicone-free Free of substances which would hinder coating with paint or varnish flexible
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation) -25 °C ... 80 °C (Cable, flexible installation)

PUR/PVC gray [100]

Cable weight	50 kg/km
Number of positions	8
Shielded	no
Cable type	PUR/PVC gray [100] PUR/PVC gray 100
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	0.25 mm ²
Wire diameter incl. insulation	1.2 mm ±0.05 mm
External cable diameter	5.90 mm 5.90 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires
Material, filler	PVC
Material wire insulation	PVC
Single wire, color	brown, white, green, yellow, gray, pink, blue, red
Thickness, insulation	≥ 0.23 mm (Core insulation) ≥ 0.38 mm (Outer cable sheath)
Overall twist	8 wires around filler to the core
Max. conductor resistance	≤ 78 Ω/km
Insulation resistance	≥ 100 MΩ*km
Nominal voltage, cable	300 V
Test voltage	3000 V
Smallest bending radius, fixed installation	59 mm

SAC-8P-M12MS/.../... - Sensor/actuator cable



1522532

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Smallest bending radius, movable installation	59 mm
Max. bending cycles	2000000
Bending radius	59 mm
Traversing path	5 m
Traversing rate	3 m/s
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)
	-5 °C ... 80 °C (Cable, flexible installation)

PVC black [PVC]

Cable weight	54 kg/km
UL AWM Style	2464 / 1729 (80°C/300 V)
Number of positions	8
Shielded	no
Cable type	PVC black [PVC]
	PVC black PVC
Conductor structure signal line	14x 0.15 mm
AWG signal line	24
Conductor cross section	8x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.05 mm
External cable diameter	5.90 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	black RAL 9005
Conductor material	Bare Cu litz wires
Material wire insulation	PVC
Single wire, color	white, brown, green, yellow, gray, pink, blue, red
Thickness, insulation	≥ 0.23 mm
Thickness, outer sheath	≥ 0.76 mm
Overall twist	8 wires around filler to the core
Max. conductor resistance	79 Ω/km (at 20 °C)
Insulation resistance	≥ 200 MΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V AC
Test voltage	≥ 3000 V AC
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	30 mm
Smallest bending radius, movable installation	59 mm
Flame resistance	as per VW-1 in accordance with UL 758
Resistance to oil	in accordance with DIN EN 60811-2-1
Ambient temperature (operation)	-25 °C ... 80 °C (cable, fixed installation)
	-10 °C ... 80 °C (Cable, flexible installation)

PVC gray [500]

Cable weight	54 kg/km
UL AWM Style	2464 / 1729 (80°C/300 V)
Number of positions	8

SAC-8P-M12MS/.../... - Sensor/actuator cable



1522532

<https://www.phoenixcontact.com/in/products/1522532>

Shielded	no
Cable type	PVC gray [500]
	PVC gray 500
Conductor structure signal line	14x 0.15 mm
AWG signal line	24
Conductor cross section	8x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.17 mm ±0.05 mm
External cable diameter	5.90 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	gray
Conductor material	Bare Cu litz wires
Material wire insulation	PVC
Single wire, color	white, brown, green, yellow, gray, pink, blue, red
Thickness, insulation	≥ 0.23 mm
Thickness, outer sheath	≥ 0.76 mm
Overall twist	8 wires around filler to the core
Max. conductor resistance	79 Ω/km (at 20 °C)
Insulation resistance	≥ 200 MΩ*km (at 20 °C)
Nominal voltage, cable	≤ 300 V AC
Test voltage	≥ 3000 V AC
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Smallest bending radius, fixed installation	30 mm
Smallest bending radius, movable installation	59 mm
Ambient temperature (operation)	-40 °C ... 80 °C (cable, fixed installation)
	-25 °C ... 80 °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	49.1 kg/km
UL AWM Style	20549
Number of positions	8
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	8x 0.25 mm ² (Signal line)
Wire diameter incl. insulation	1.2 mm ±0.05 mm (Signal line)
External cable diameter	6.00 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	gray RAL 7001
Conductor material	Bare Cu litz wires

SAC-8P-M12MS/.../... - Sensor/actuator cable



1522532

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Material, filler	PE
Material wire insulation	PP
Single wire, color	white, brown, green, yellow, gray, pink, blue, red
Overall twist	8 wires around filler to the core
Insulation resistance	≥ 20 MΩ*km
Nominal voltage, cable	300 V
Test voltage	2000 V
Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	5 x D
Smallest bending radius, fixed installation	30 mm
Smallest bending radius, movable installation	30 mm
Max. bending cycles	15000000
Bending radius	50 mm
Traversing path	0.9 m
Traversing rate	5 m/s
Acceleration	30 m/s ²
Torsion force	± 360 °/m
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
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)

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

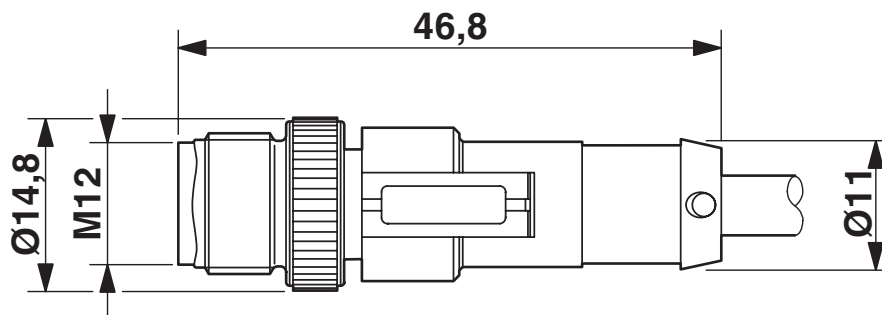
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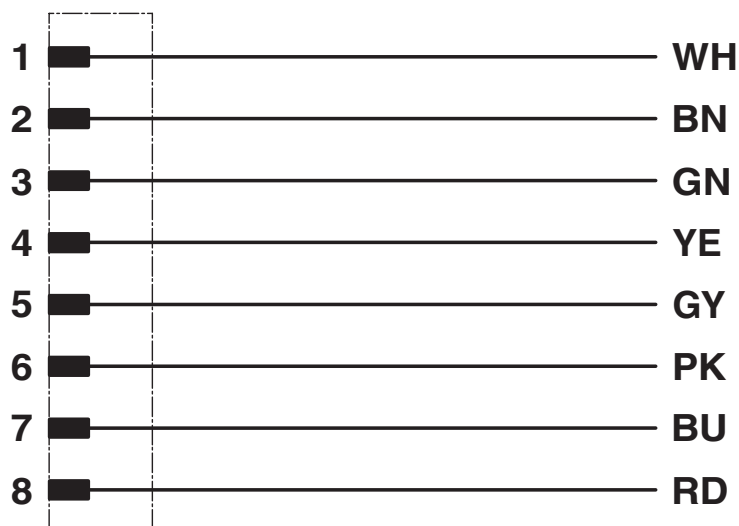
Drawings

Dimensional drawing



Plug, M12 x 1, straight, shielded

Circuit diagram

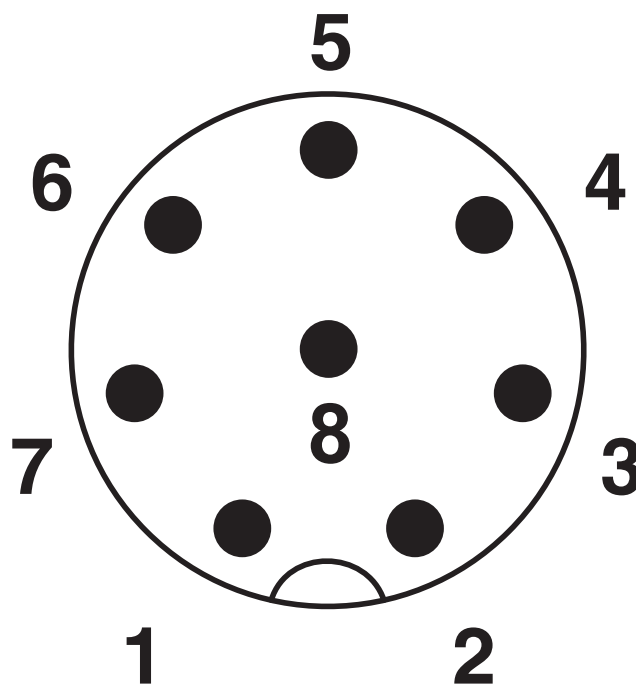


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Schematic diagram



Pin assignment M12 plug, 8-pos., view plug side

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/1522532>

 UL Listed Approval ID: FILE E 221474				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	30 V	2 A	-	-

 cUL Listed Approval ID: FILE E 221474				
	Nominal voltage U_N	Nominal current I_N	Cross section AWG	Cross section mm^2
	30 V	2 A	-	-

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

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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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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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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UCT-WMT (23X4) - Conductor marker

0801453

<https://www.phoenixcontact.com/in/products/0801453>



Conductor marker, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: insert, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 30

UC-WMT (23X4) - Conductor marker

0819411

<https://www.phoenixcontact.com/in/products/0819411>



Conductor marker, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: insert, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 24

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US-WMT (23X4) - Cable marker

0828769

<https://www.phoenixcontact.com/in/products/0828769>



Cable marker, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: slide-on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 56

WMTW (23X4)R - Cable marker

0831004

<https://www.phoenixcontact.com/in/products/0831004>



Cable marker, Roll, white, unlabeled, can be labeled with: THERMOMARK E.300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: insert, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 3000

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WP-CTA POM 13,0 BK - Protective hose adapter

1422884

<https://www.phoenixcontact.com/in/products/1422884>



Protective hose adapter, for corrugated hoses with a nominal size of 13 (10 x 13), corrugated in parallel

WP-PA HF 13,0 BK - Protective hose

3240681

<https://www.phoenixcontact.com/in/products/3240681>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: V0, inner diameter: 10 mm, Total length: 50 m

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WP-PA HF-HB 13,0 BK - Protective hose

3240839

<https://www.phoenixcontact.com/in/products/3240839>



Protective hose, material: PA 6, UV-resistant: yes, flexible, degree of protection: IP68, color: black, flammability rating in acc. with UL 94: HB, inner diameter: 10 mm, Total length: 50 m

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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CUTFOX-S VDE - Diagonal cutter

1212207

<https://www.phoenixcontact.com/in/products/1212207>



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

WIREFOX SAC-1 - Stripping tool

1212757

<https://www.phoenixcontact.com/in/products/1212757>



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from Ø of 3.2 to 4.4 mm, any stripping length

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WIREFOX SAC - Stripping tool

1212623

<https://www.phoenixcontact.com/in/products/1212623>



Stripping pliers, for halogen-free sensor/actuator cables (SAC cables), with PUR and PVC insulation, from \varnothing of 4.4 to 7 mm, any stripping length

WIREFOX 10 - Stripping tool

1212150

<https://www.phoenixcontact.com/in/products/1212150>



Stripping tool, for cables and conductors from 0.02 - 10 mm², self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm² stranded/1.5 mm² solid, replaceable stripping blade

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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

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

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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

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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