

Sensor/actuator cable - SAC-8P-M12FS SH/.../...



1522901/PUR/15.0

<https://www.phoenixcontact.com/us/products/1522901?orderkey=MTUyMjkwMS9QVVIvMTUuMA>

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

Your advantages

- Easy and safe: 100% electrically tested plug-in components
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

Commercial Data

Item number	1522901/PUR/15.0
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	B27
Product Key	BF1CMA
Catalog Page	Page 211 (C-2-2019)
Customs tariff number	85444290
Country of origin	PL

Sensor/actuator cable - SAC-8P-M12FS SH/.../...



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Technical Data

Product properties

Product type	Sensor/actuator cable
Number of positions	8
Application	Standard
No. of cable outlets	1
Shielded	yes
Coding	A - standard

Insulation characteristics

Overvoltage category	II
Degree of pollution	3

Material specifications

Flammability rating according to UL 94	HB
Sealing material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Cable gland material	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	30 V AC
	30 V DC
Nominal current I_N	2 A
Protective circuit	unwired

Mechanical properties

Mechanical data

Insertion/withdrawal cycles	≥ 100
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LED 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

Head design	free cable end
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Connection 2

Head design	Socket
Head cable outlet	straight
Head thread type	M12
Coding	A

Cable / line

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

Dimensional drawing	
Shielded	yes
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	53 kg/km
Cable type	PUR halogen-free black
Short symbol	LiF9YC11Y
Cable type (abbreviation)	PUR
External cable diameter	5.9 mm ±0.2 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	8x 0.25 mm ² (Signal line)
Material wire insulation	PP
Thickness, insulation	approx. 0.2 mm
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, white, green, yellow, gray, pink, blue, red
Overall twist	8 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	85 %

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Nominal voltage, cable	≤ 300 V AC
Test voltage Core/Shield	≥ 2000 V AC (for 60 s)
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	2000000
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 according to IEC 60754-1
Resistance to oil	in accordance with IEC 60811-404
Flame resistance	in acc. with UL FT-2 according to UL 758/1581 (horizontal) in accordance with UL 758/1581 FT2 According to DIN EN 60332-2-2 (20 s)
Other resistance	hydrolysis and microbe resistant Resistant to salt water low-abrasion partly UV-resistant in accordance with DIN EN ISO 4892-2-A
Special properties	Flexible cable conduit capable
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	yes
UL AWM Style	20549 / 10493 (80°C/300 V)
Cable weight	53 kg/km
Cable type	PUR halogen-free gray
Short symbol	LiY-FC11Y
Cable type (abbreviation)	280
External cable diameter	5.9 mm ±0.2 mm
Outer sheath, material	PUR

Sensor/actuator cable - SAC-8P-M12FS SH/.../...



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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	8x 0.25 mm ² (Signal line)
Material wire insulation	PP
Thickness, insulation	approx. 0.2 mm
Wire diameter incl. insulation	1.17 mm ±0.02 mm
Single wire, color	brown, white, green, yellow, gray, pink, blue, red
Overall twist	8 wires around filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Nominal voltage, cable	≤ 300 V AC
Test voltage Core/Shield	≥ 2000 V AC (for 60 s)
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	2000000
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 according to IEC 60754-1
Resistance to oil	in accordance with DIN EN 60811-404
Flame resistance	in acc. with UL FT-2 according to UL 758/1581 (horizontal) in accordance with UL 758/1581 FT2 According to DIN EN 60332-2-2 (20 s)
Other resistance	hydrolysis and microbe resistant Resistant to salt water low-abrasion
Special properties	Flexible cable conduit capable
Ambient temperature (operation)	-25 °C ... 80 °C (Cable, flexible installation) -40 °C ... 80 °C (cable, fixed installation)

PVC black [PVC]

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Dimensional drawing	
Note	The cable is not suitable for use with drag chains.
Shielded	yes
UL AWM Style	2517
Cable weight	85 kg/km
Cable type	PVC black
Short symbol	LiYF-C-Y
Cable type (abbreviation)	PVC
External cable diameter	7.7 mm ±0.2 mm
Outer sheath, material	PVC
External sheath, color	black RAL 9005
Conductor material	Bare Cu litz wires
Conductor structure signal line	32x 0.10 mm
AWG signal line	24
Conductor cross section	8x 0.25 mm ² (Signal line)
Material, filler	PVC
Material wire insulation	PVC
Thickness, insulation	≥ 0.38 mm (Conductor insulation, signal line)
Wire diameter incl. insulation	1.5 mm ±0.05 mm (Signal line)
Single wire, color	white, brown, green, yellow, gray, pink, blue, red
Overall twist	8 wires around filler to the core, twisted in with additional Cu litz in the wire outer godet
Shielding	Tinned copper braided shield
Optical shield covering	85 %
Nominal voltage, cable	300 V
Test voltage, cable	3000 V
Cable resistance	≤ 78 Ω/km
Cable insulation resistance	≥ 10 GΩ*km
Smallest bending radius, fixed installation	38.5 mm
Smallest bending radius, movable installation	77 mm
Resistance to oil	According to DIN EN 60811-2-1, 168 h at 80°C
Flame resistance	According to UL 758/1581 (Cable Flame) According to DIN EN 60332-1-2 (60 s)
Ambient temperature (operation)	-25 °C ... 105 °C (cable, fixed installation)
Note	This item is a sensor/actuator cable with a freely selectable cable type. The technical data for all possible cable types is listed in the table below.

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Cable type	PUR halogen-free black
	PUR halogen-free gray
	PVC black

Ambient conditions

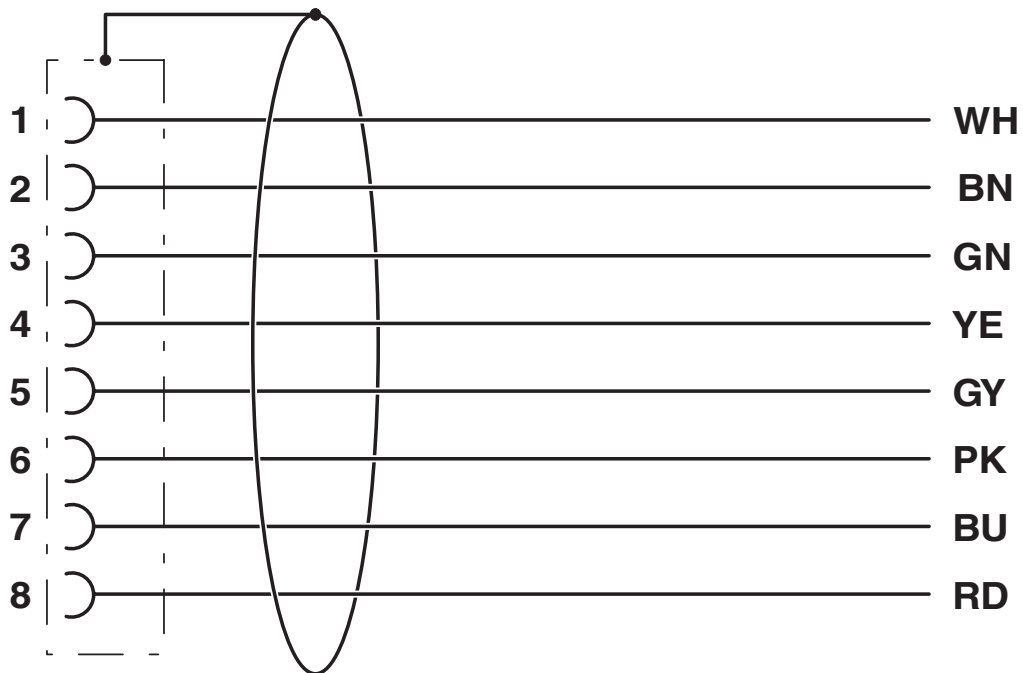
Degree of protection	IP65
	IP67
Ambient temperature (operation)	-25 °C ... 90 °C (Plug / socket)

Standards and regulations

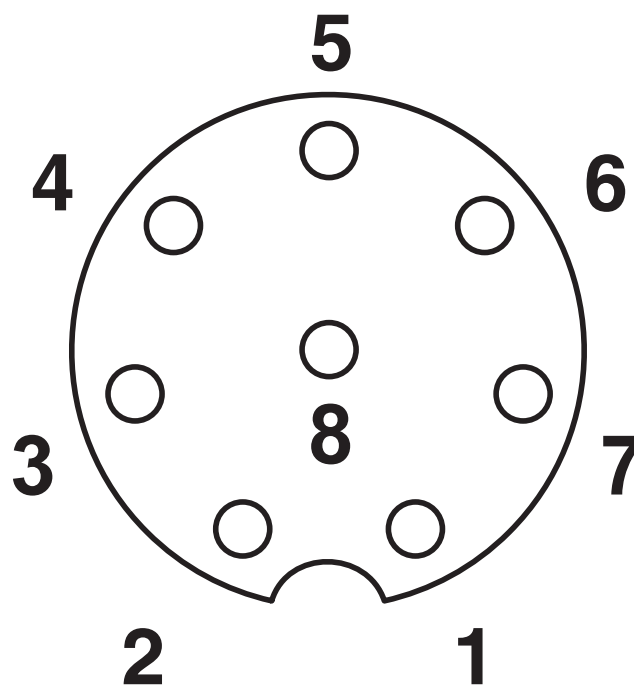
Standards/specifications	IEC 61076-2-101
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Drawings

Circuit diagram



Schematic diagram



Pin assignment M12 socket, 8-pos., A-coded, view female side

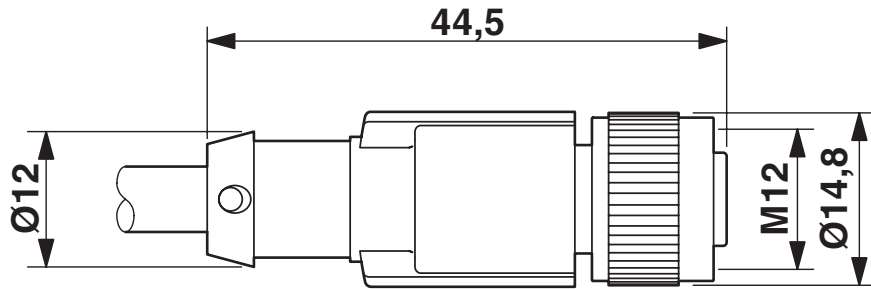
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Dimensional drawing



M12 x 1 socket, straight, shielded

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

Sensor/actuator cable - SAC-8P-M12FS SH/.../...



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Classifications

ECLASS

ECLASS-9.0	27060311
ECLASS-10.0.1	27060311
ECLASS-11.0	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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Accessories

Insert label

Insert label - PABA WH/23 - 1013779

<https://www.phoenixcontact.com/us/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

Insert label

Insert label - PABA YE/23 - 1013782

<https://www.phoenixcontact.com/us/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

Sensor/actuator cable - SAC-8P-M12FS SH/.../...

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Marker pen

Marker pen - B-STIFT - 1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

Diagonal cutter

Diagonal cutter - CUTFOX-S VDE - 1212207

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



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

Sensor/actuator cable - SAC-8P-M12FS SH/.../...

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Stripping tool

Stripping tool - WIREFOX SAC-1 - 1212757

<https://www.phoenixcontact.com/us/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

Stripping tool

Stripping tool - WIREFOX SAC - 1212623

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



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

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Stripping tool

Stripping tool - WIREFOX 10 - 1212150

<https://www.phoenixcontact.com/us/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

Protective hose adapter

Protective hose adapter - WP-CTA POM 13,0 BK - 1422884

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



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

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<https://www.phoenixcontact.com/us/products/1522901?orderkey=MTUyMjkwMS9QVVlvMTUuMA>

Protective hose

Protective hose - WP-PA HF 13,0 BK - 3240681

<https://www.phoenixcontact.com/us/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

Protective hose

Protective hose - WP-PA HF-HB 13,0 BK - 3240839

<https://www.phoenixcontact.com/us/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

Sensor/actuator cable - SAC-8P-M12FS SH/.../...

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Screw plug

Screw plug - PROT-M12 MS-PA-CHAIN - 1430899

<https://www.phoenixcontact.com/us/products/1430899>

M12 sealing cap with fixing band, for sensor cables, for free M12 sockets



Locking clip

Locking clip - SAC-M12-EXCLIP-F - 1558991

<https://www.phoenixcontact.com/us/products/1558991>

Locking clip for the socket 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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Torque screwdriver

Torque screwdriver - TSD 04 SAC - 1208429

<https://www.phoenixcontact.com/us/products/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors

Torque screwdriver

Torque screwdriver - TSD-M 1,2NM - 1212224

<https://www.phoenixcontact.com/us/products/1212224>



Torque screw driver, accuracy as per EN ISO 6789 standard, adjustable from 0.3 - 1.2 Nm

Sensor/actuator cable - SAC-8P-M12FS SH/.../...



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Adapter insert

Adapter insert - TSD-M SAC-BIT ADAPTER - 1212600

<https://www.phoenixcontact.com/us/products/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

Tool

Tool - SAC BIT M12-D15 - 1208432

<https://www.phoenixcontact.com/us/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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