

Sensor/actuator cable - SAC-12P-MS/ 3,0-35T/FS SH SCO



1402551

<https://www.phoenixcontact.com/us/products/1402551>

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Sensor/actuator cable, 12-position, PUR/PVC, black RAL 9005, shielded, Plug straight M12 SPEEDCON, coding: A, on Socket straight M12 SPEEDCON, coding: A, cable length: 3 m

Your advantages

- Easy and safe: 100% electrically tested plug-in components
- Save time, thanks to installation with SPEEDCON fast locking system
- Save space – with high-pos. connectors
- Reliable signal transmission – 360° shielding in environments with electromagnetic interference

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Commercial Data

Item number	1402551
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	B06
Product Key	BF1CNA
Catalog Page	Page 214 (C-2-2019)
GTIN	4046356622615
Weight per Piece (including packing)	311 g
Weight per Piece (excluding packing)	309.4 g
Customs tariff number	85444290
Country of origin	DE

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Technical Data

Product properties

Product type	Sensor/actuator cable
Number of positions	12
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	V0
Sealing material	NBR
Material of grip body	TPU, hardly inflammable, self-extinguishing
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	PA 6.6
Cable gland material	Zinc die-cast, nickel-plated

Electrical properties

Contact resistance	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ
Nominal voltage U_N	30 V AC
	30 V DC
Nominal current I_N	1.5 A
Protective circuit	unwired

Connector

Insertion/withdrawal cycles	≥ 100
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Header 1

Head design	Plug
Head cable outlet	straight
Head thread type	M12
Head locking type	SPEEDCON
Coding	A

Header 2

Head design	Socket
Head cable outlet	straight
Head thread type	M12

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Head locking type	SPEEDCON
Coding	A
Application	Standard
Number of positions	12
Coding	A - standard
Insertion/withdrawal cycles	≥ 100
Contact material	CuZn
Contact surface material	Ni/Au
Application	Standard
Number of positions	12
Coding	A - standard
Insertion/withdrawal cycles	≥ 100
Contact material	CuZn
Contact surface material	Ni/Au

LED signaling

Status display	No
Status display present	No

Cable / line

Cable length	3 m
Cable weight	87 kg/km
UL AWM Style	20233 / 1061 (80°C/300 V)
Number of positions	12
Shielded	yes
Cable type	Black PUR/PVC twisted pair [35T]
Conductor structure signal line	18x 0.10 mm
AWG signal line	26
Conductor cross section	12x 0.14 mm ² (Signal line)
Wire diameter incl. insulation	1 mm ±0.05 mm (Signal line)
External cable diameter	8.5 mm ±0.2 mm
Outer sheath, material	PUR
External sheath, color	black RAL 9005
Conductor material	Tin-plated Cu litz wires
Material wire insulation	PVC
Single wire, color	White-brown, green-yellow, gray-pink, blue-red, black-violet, gray/pink-red/blue
Twisted pairs	2 cores to the pair
Overall twist	Six pairs around the filler to the core
Optical shield covering	85 %
Max. conductor resistance	≤ 142 Ω/km (at 20 °C)
Insulation resistance	≥ 10 MΩ*km (at 20 °C)
Nominal voltage, cable	42 V AC
Test voltage	1500 V AC

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Minimum bending radius, fixed installation	5 x D
Minimum bending radius, flexible installation	10 x D
Max. bending cycles	2000000
Flame resistance	According to DIN EN 60332-1-2 According to VW-1
Resistance to oil	in accordance with DIN EN 60811-2-1
Other resistance	hydrolysis and microbe resistant according to EN 50396
Special properties	Flexible cable conduit capable
Ambient temperature (operation)	-30 °C ... 80 °C (cable, fixed installation) -5 °C ... 80 °C (Cable, flexible installation)

Cable structure

Cable type	Black PUR/PVC twisted pair
Short symbol	35T
External cable diameter	8.50 mm
Outer sheath, material	PUR
External sheath, color	black RAL 9005
Material, inner sheath	PVC
Conductor material	Tin-plated Cu litz wires
Conductor structure signal line	18x 0.10 mm
AWG signal line	26
Material wire insulation	PVC
Wire diameter incl. insulation	1 mm ±0.05 mm
Single wire, color	White-brown, green-yellow, gray-pink, blue-red, black-violet, gray/pink-red/blue
Overall twist	Six pairs around the filler to the core
Shielding	Tinned copper braided shield
Optical shield covering	85 %

Electrical properties

Conductor resistance	142 Ω/km
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Mechanical properties

Number of bending cycles	2000000
Bending radius	85 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²

Bending cycles

Number of bending cycles	2000000
Bending radius	85 mm
Traversing path	10 m
Traversing rate	3 m/s
Acceleration	10 m/s ²

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Ambient conditions

Resistance to oil	DIN VDE 0472 Part 803, test type B
Flame resistance	DIN VDE 0472 part 804, test type B
Other resistance	Hydrolysis and microbe resistant as per VDE 0282 section 10
Ambient temperature (operation)	-5 °C ... 80 °C (Cable, flexible installation)
	-40 °C ... 80 °C (cable, fixed installation)

Ambient conditions

Degree of protection	IP65
	IP67
Ambient temperature (operation)	-25 °C ... 85 °C (Plug / socket)
	-40 °C ... 80 °C (cable, fixed installation)
	-5 °C ... 80 °C (Cable, flexible installation)
Resistance to oil	DIN VDE 0472 Part 803, test type B

Standards and regulations

Flame resistance	DIN VDE 0472 part 804, test type B
Resistance to oil	DIN VDE 0472 Part 803, test type B
Other resistance	Hydrolysis and microbe resistant as per VDE 0282 section 10

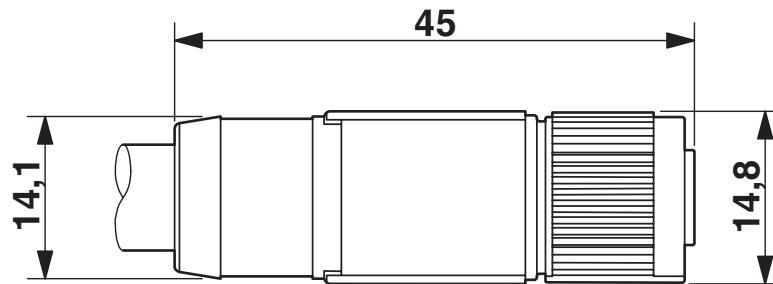
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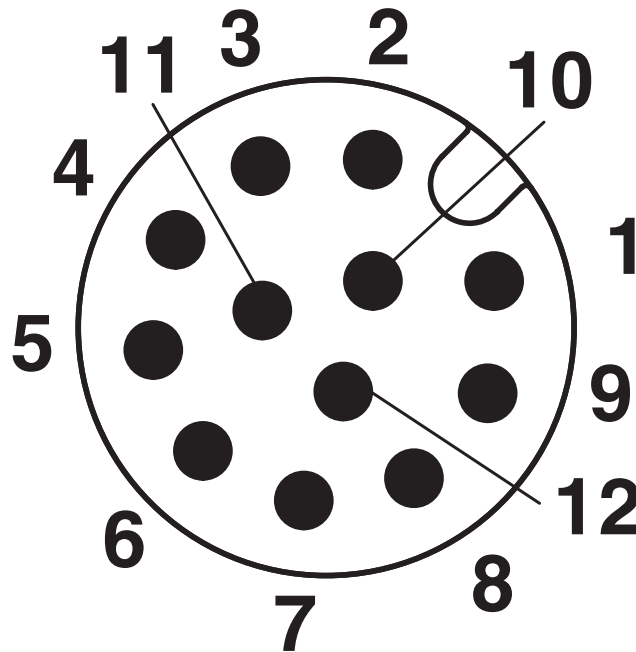
Drawings

Dimensional drawing



Socket M12-SPEEDCON, straight, shielded

Schematic diagram



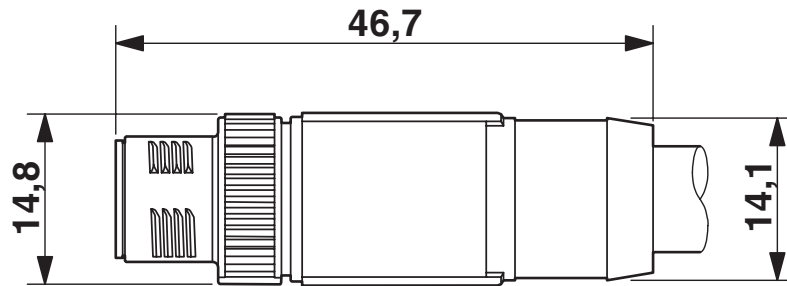
Pin assignment M12 male connector, 12-pos., male side view

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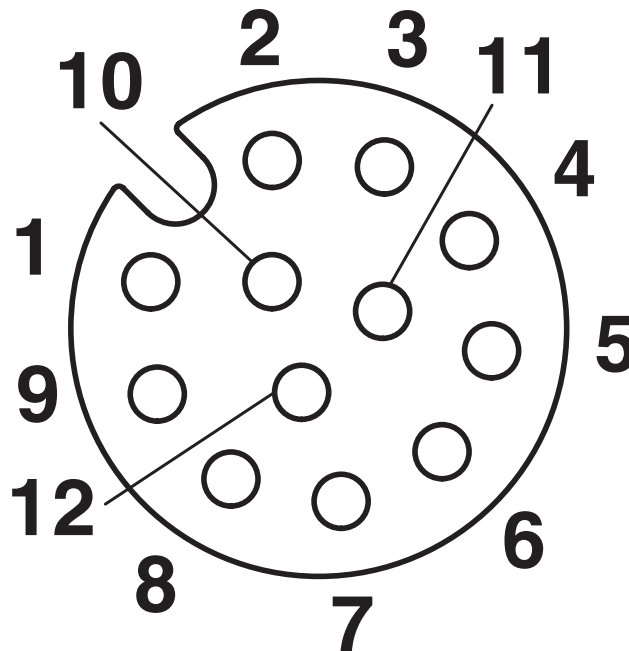
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Dimensional drawing



M12 SPEEDCON plug, straight, shielded

Schematic diagram



Pin assignment M12, 12-pos., female side view

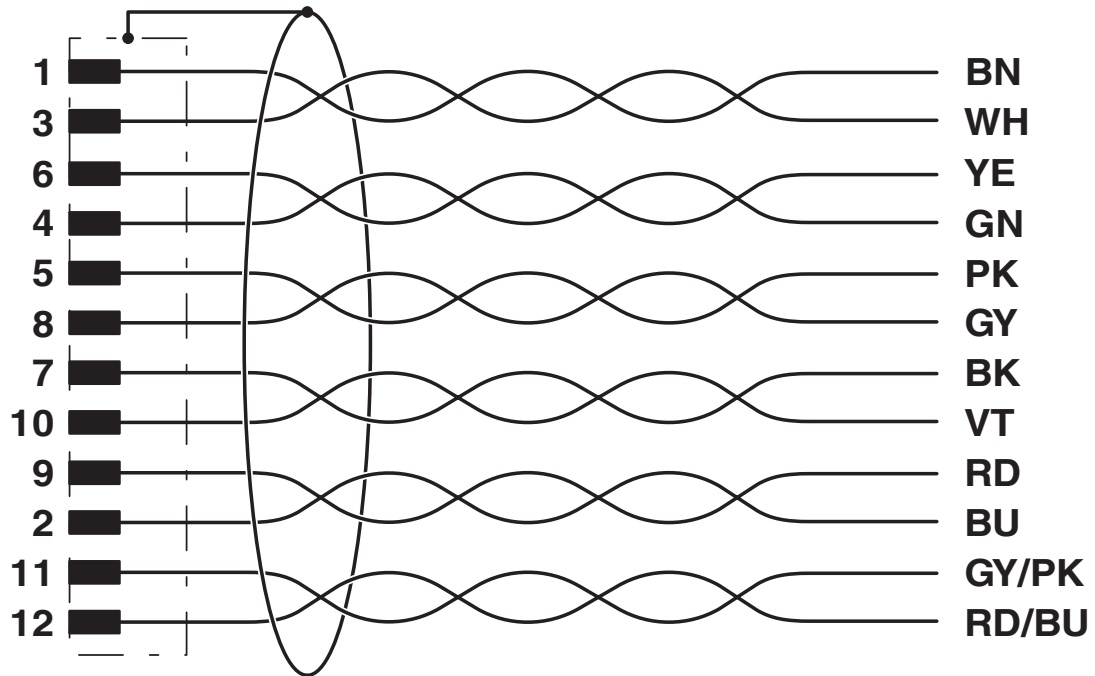
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Circuit diagram



Contact assignment of the M12 plug

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Approvals



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
	30 V	1 A	-	-



EAC

Approval ID: RU D-DE.HB35.B.00385

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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

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

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



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



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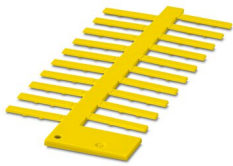
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Insert label

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

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

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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

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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

Locking clip

Locking clip - SAC-M12-EXCLIP-M - 1558988

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

Sealing cap

Sealing cap - PROT-M12 FS-PA-CHAIN - 1430873

<https://www.phoenixcontact.com/us/products/1430873>



M12 sealing cap made of plastic with fixing band, for sensor cables, for free M12 plugs

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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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