

# Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

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Sensor/actuator cable, 12-position, PUR/PVC, black RAL 9005, shielded, free cable end, on Socket angled M12 SPEEDCON, coding: A, cable length: 1.5 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



## Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 1 pc          |
| GTIN         |               |
| GTIN         | 4046356322430 |

## Technical data

### Dimensions

|                                            |                           |
|--------------------------------------------|---------------------------|
| Length of cable                            | 1.5 m                     |
| Stripping length of the free conductor end | 50 mm (Partial stripping) |

### Ambient conditions

|                                 |                                  |
|---------------------------------|----------------------------------|
| Ambient temperature (operation) | -25 °C ... 85 °C (Plug / socket) |
| Degree of protection            | IP65                             |
|                                 | IP67                             |

### General

|                       |         |
|-----------------------|---------|
| Rated current at 40°C | 1.5 A   |
| Rated voltage         | 30 V AC |
|                       | 30 V DC |
| Number of positions   | 12      |

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## Technical data

### General

|                              |                               |
|------------------------------|-------------------------------|
| Insulation resistance        | ≥ 100 MΩ                      |
| Coding                       | A - standard                  |
| Standards/regulations        | M12 connector IEC 61076-2-101 |
| Status display               | No                            |
| Protective circuit/component | unwired                       |
| Overvoltage category         | II                            |
| Degree of pollution          | 3                             |
| Torque                       | 0.4 Nm (M12 connector)        |

### Material

|                                        |                                             |
|----------------------------------------|---------------------------------------------|
| Flammability rating according to UL 94 | V0                                          |
| Contact material                       | CuZn                                        |
| Contact surface material               | Ni/Au                                       |
| Contact carrier material               | PA 6.6                                      |
| Material of grip body                  | TPU, hardly inflammable, self-extinguishing |
| Material, knurls                       | Zinc die-cast, nickel-plated                |
| Sealing material                       | NBR                                         |

### Standards and Regulations

|                                        |                                                             |
|----------------------------------------|-------------------------------------------------------------|
| Standards/specifications               | M12 connector IEC 61076-2-101                               |
| 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 |
| Flammability rating according to UL 94 | V0                                                          |

### Cable

|                                            |                                                                                  |
|--------------------------------------------|----------------------------------------------------------------------------------|
| Cable type                                 | Black PUR/PVC twisted pair                                                       |
| Cable type (abbreviation)                  | 35T                                                                              |
| Cable abbreviation                         | LSPYwC11Y                                                                        |
| UL AWM style                               | 20233 / 1061 (80°C/300 V)                                                        |
| Conductor cross section                    | 12x 0.14 mm <sup>2</sup> (Signal line)                                           |
| AWG signal line                            | 26                                                                               |
| Conductor structure signal line            | 18x 0.10 mm                                                                      |
| Core diameter including insulation         | 1 mm ±0.05 mm (Signal line)                                                      |
| Wire colors                                | 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                                          |
| Shielding                                  | Tinned copper braided shield                                                     |
| Optical shield covering                    | 85 %                                                                             |
| External sheath, color                     | black RAL 9005                                                                   |
| External cable diameter D                  | 8.5 mm ±0.2 mm                                                                   |
| Minimum bending radius, fixed installation | 5 x D                                                                            |

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### Technical data

#### Cable

|                                               |                                                        |
|-----------------------------------------------|--------------------------------------------------------|
| Minimum bending radius, flexible installation | 10 x D                                                 |
| Number of bending cycles                      | 2000000                                                |
| Bending radius                                | 85 mm                                                  |
| Traversing path                               | 10 m                                                   |
| Traversing rate                               | 3 m/s                                                  |
| Acceleration                                  | 10 m/s <sup>2</sup>                                    |
| Cable weight                                  | 87 kg/km                                               |
| Outer sheath, material                        | PUR                                                    |
| Material, inner sheath                        | PVC                                                    |
| Material conductor insulation                 | PVC                                                    |
| Conductor material                            | Tin-plated Cu litz wires                               |
| Insulation resistance                         | ≥ 10 MΩ*km (at 20 °C)                                  |
| Conductor resistance                          | ≤ 142 Ω/km (at 20 °C)                                  |
| Nominal voltage, cable                        | 42 V AC                                                |
| Test voltage, cable                           | 1500 V AC                                              |
| Special properties                            | Flexible cable conduit capable                         |
| 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 |
| Ambient temperature (operation)               | -30 °C ... 80 °C (cable, fixed installation)           |
|                                               | -5 °C ... 80 °C (cable, flexible installation)         |

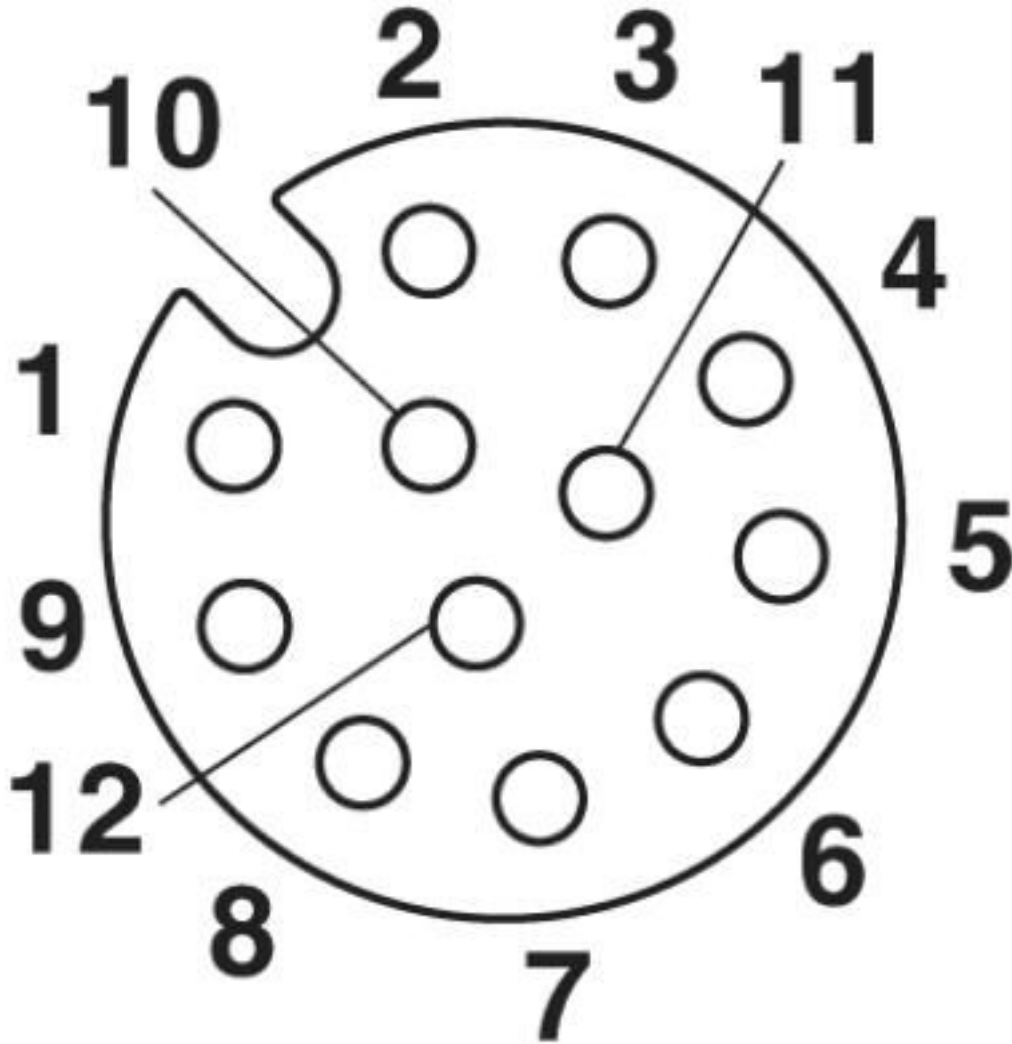
#### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| REACH SVHC | Lead 7439-92-1                                                                                      |
| China RoHS | Environmentally Friendly Use Period = 50 years                                                      |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

### Drawings

# Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

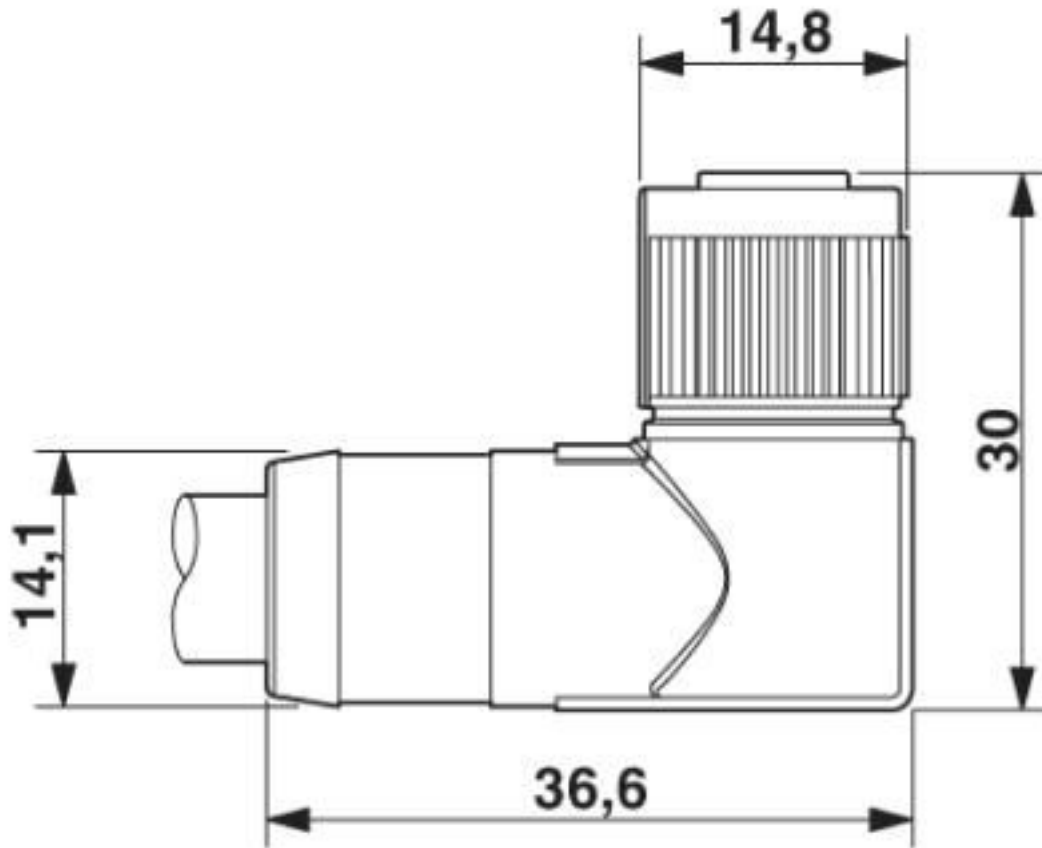
Schematic diagram



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

# Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

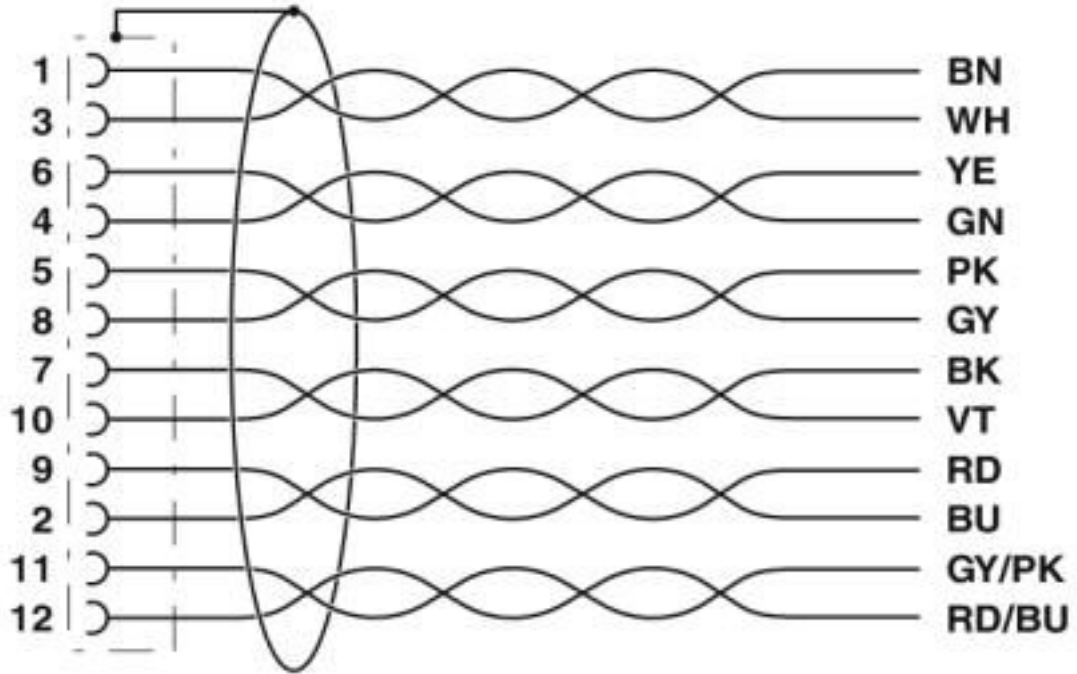
Dimensional drawing



Socket M12-SPEEDCON, angled, shielded

# Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

Circuit diagram



Contact assignment of the M12 socket

# Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

Cable cross section



Black PUR/PVC twisted pair [35T]

## Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27060311 |
| eCl@ss 4.0    | 27060300 |
| eCl@ss 4.1    | 27060300 |
| eCl@ss 5.0    | 27061800 |
| eCl@ss 5.1    | 27061800 |
| eCl@ss 6.0    | 27279200 |
| eCl@ss 7.0    | 27279218 |
| eCl@ss 8.0    | 27279218 |
| eCl@ss 9.0    | 27060311 |

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## Classifications

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC001855 |
| ETIM 4.0 | EC001855 |
| ETIM 5.0 | EC001855 |
| ETIM 6.0 | EC001855 |
| ETIM 7.0 | EC001855 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 31251501 |
| UNSPSC 7.0901 | 31251501 |
| UNSPSC 11     | 31251501 |
| UNSPSC 12.01  | 31251501 |
| UNSPSC 13.2   | 31251501 |
| UNSPSC 19.0   | 31251501 |
| UNSPSC 20.0   | 31251501 |
| UNSPSC 21.0   | 31251501 |

## Approvals


### Approvals

#### Approvals

UL Listed / EAC-RoHS / EAC

#### Ex Approvals

### Approval details

|                    |                                                                                     |                                                                                                                                                       |               |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| UL Listed          |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 221474 |
| Nominal voltage UN | 30 V                                                                                |                                                                                                                                                       |               |
| Nominal current IN | 1 A                                                                                 |                                                                                                                                                       |               |

|          |                                                                                     |                          |
|----------|-------------------------------------------------------------------------------------|--------------------------|
| EAC-RoHS |  | RU D-<br>DE.HB35.B.00387 |
|----------|-------------------------------------------------------------------------------------|--------------------------|



## Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

### Approvals

|     |                                                                                   |                          |
|-----|-----------------------------------------------------------------------------------|--------------------------|
| EAC |  | RU C-<br>DE.BL08.B.00286 |
|-----|-----------------------------------------------------------------------------------|--------------------------|

### Accessories

#### Accessories

#### Conductor marking

Insert label - PABA WH/23 - 1013779



Insert label, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

Insert label - PABA YE/23 - 1013782



Insert label, Strip, yellow, unlabeled, can be labeled with: CMS-P1-PLOTTER, mounting type: thread on, cable diameter range: 1.5 ... 35 mm, lettering field size: 23 x 4 mm, Number of individual labels: 20

#### Corrugated pipe

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



Polyamide protective hose, inflammability class V0, UV resistant

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



Polyamide protective hose, inflammability class HB, UV resistant

#### Cutting tools

## Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

### Accessories

Diagonal cutter - CUTFOX-S VDE - 1212207



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

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### Marker pen

Marker pen - B-STIFT - 1051993



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

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### Plug for cable screw gland

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



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

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### Safety locking

Locking clip - SAC-M12-EXCLIP-F - 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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### Screwdriver tools

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



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

## Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

### Accessories

Tool - SAC BIT M12-D15 - 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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### Stripping tool

Stripping tool - WIREFOX SAC-1 - 1212757



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

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Stripping tool - WIREFOX SAC - 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

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Stripping tool - WIREFOX 10 - 1212150



Stripping tool, for cables and conductors from 0.02 - 10 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

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### Torque tool

Torque screwdriver - TSD 04 SAC - 1208429



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

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## Sensor/actuator cable - SAC-12P- 1,5-35T/FR SH SCO - 1430161

### Accessories

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



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

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



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

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