

# SAC-5P-M12MSL/ 1,5-280 FE SH - Power cable



1414884

<https://www.phoenixcontact.com/us/products/1414884>

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Power cable, 5-position, PUR halogen-free, gray RAL 7001, shielded (Advanced Shielding Technology), Plug straight M12, coding: L, on free cable end, cable length: 1.5 m, for direct current up to 16 A/63 V

## Your advantages

- Easy and safe: 100 % electrically tested plug-in components
- Protection against mismatching, thanks to special L-coding
- Shield power reliably – 360° shielding to reduce electromagnetic loads
- Our standard: robust halogen-free PUR cable

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1414884       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF05          |
| Product key                          | BF1CDP        |
| GTIN                                 | 4055626035147 |
| Weight per piece (including packing) | 354 g         |
| Weight per piece (excluding packing) | 340.6 g       |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

# SAC-5P-M12MSL/ 1,5-280 FE SH - Power cable



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## Technical data

### Product properties

|                      |              |
|----------------------|--------------|
| Product type         | Power cable  |
| Application          | Power supply |
| Number of positions  | 5            |
| No. of cable outlets | 1            |
| Shielded             | yes          |
| Coding               | L            |

### Insulation characteristics

|                      |     |
|----------------------|-----|
| Overvoltage category | III |
| Degree of pollution  | 3   |

### Material specifications

|                                        |                              |
|----------------------------------------|------------------------------|
| Flammability rating according to UL 94 | V0                           |
| Material of grip body                  | PP                           |
| Contact material                       | CuZn                         |
| Contact surface material               | Ni/Au                        |
| Contact carrier material               | PA                           |
| Material for screw connection          | Zinc die-cast, nickel-plated |

### Electrical properties

|                       |                            |
|-----------------------|----------------------------|
| Insulation resistance | $\geq 100 \text{ M}\Omega$ |
| Nominal voltage $U_N$ | 63 V DC                    |
| Nominal current $I_N$ | 16 A                       |

### Mechanical properties

#### Mechanical data

|                             |            |
|-----------------------------|------------|
| Insertion/withdrawal cycles | $\geq 100$ |
|-----------------------------|------------|

### Connector

#### Connection 1

|             |                   |
|-------------|-------------------|
| Type        | Plug straight M12 |
| Coding type | L (Power)         |

#### Connection 2

|      |                |
|------|----------------|
| Type | free cable end |
|------|----------------|

### Cable/line

|              |       |
|--------------|-------|
| Cable length | 1.5 m |
|--------------|-------|

PUR halogen-free gray [280]

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|                                                 |                                                                                                         |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Dimensional drawing                             |                       |
| Cable weight                                    | 202 kg/km                                                                                               |
| UL AWM Style                                    | 20233 / 10493 (80°C/300 V)                                                                              |
| Number of positions                             | 5                                                                                                       |
| Shielded                                        | yes                                                                                                     |
| Cable type                                      | PUR halogen-free gray [280]                                                                             |
| Conductor cross section                         | 5x 2.5 mm²                                                                                              |
| Wire diameter incl. insulation                  | 2.85 mm ±0.1 mm                                                                                         |
| External cable diameter                         | 10.40 mm ±0.3 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, pink                                                                         |
| Thickness, insulation                           | ≥ 0.31 mm                                                                                               |
| Thickness, outer sheath                         | approx. 0.76 mm                                                                                         |
| Max. conductor resistance                       | ≤ 8 Ω/km (at 20 °C)                                                                                     |
| Insulation resistance                           | ≥ 1 GΩ*km (at 20 °C)                                                                                    |
| Nominal voltage, cable                          | ≤ 300 V AC                                                                                              |
| Test voltage                                    | ≥ 3000 V AC (Spark test)                                                                                |
| Minimum bending radius, fixed installation      | 5 x D                                                                                                   |
| Minimum bending radius, flexible installation   | 10 x D                                                                                                  |
| Smallest bending radius, fixed installation     | 52 mm                                                                                                   |
| Smallest bending radius, movable installation   | 104 mm                                                                                                  |
| Max. bending cycles                             | 5000000                                                                                                 |
| Minimum bending radius, drag chain applications | 10 x D                                                                                                  |
| Traversing path                                 | 10 m                                                                                                    |
| Traversing rate                                 | 3 m/s                                                                                                   |
| Acceleration                                    | 10 m/s²                                                                                                 |
| Halogen-free                                    | in accordance with DIN VDE 0472 part 815<br>in accordance with DIN EN 50267-2-1                         |
| Flame resistance                                | According to UL 758/1581 (Cable Flame)<br>according to UL 758/1581 FT1<br>According to DIN EN 60332-1-2 |
| Resistance to oil                               | according to DIN EN 60811-404, 168 h at 100 °C                                                          |
| Other resistance                                | Hydrolysis and microbe resistant as per VDE 0282 section 10<br>Low adhesion                             |

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|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Ambient temperature (operation) | abrasion-resistant                              |
|                                 | Resistant to salt water                         |
|                                 | -50 °C ... 80 °C (cable, fixed installation)    |
|                                 | -30 °C ... 80 °C (Cable, flexible installation) |

## Environmental and real-life conditions

### Ambient conditions

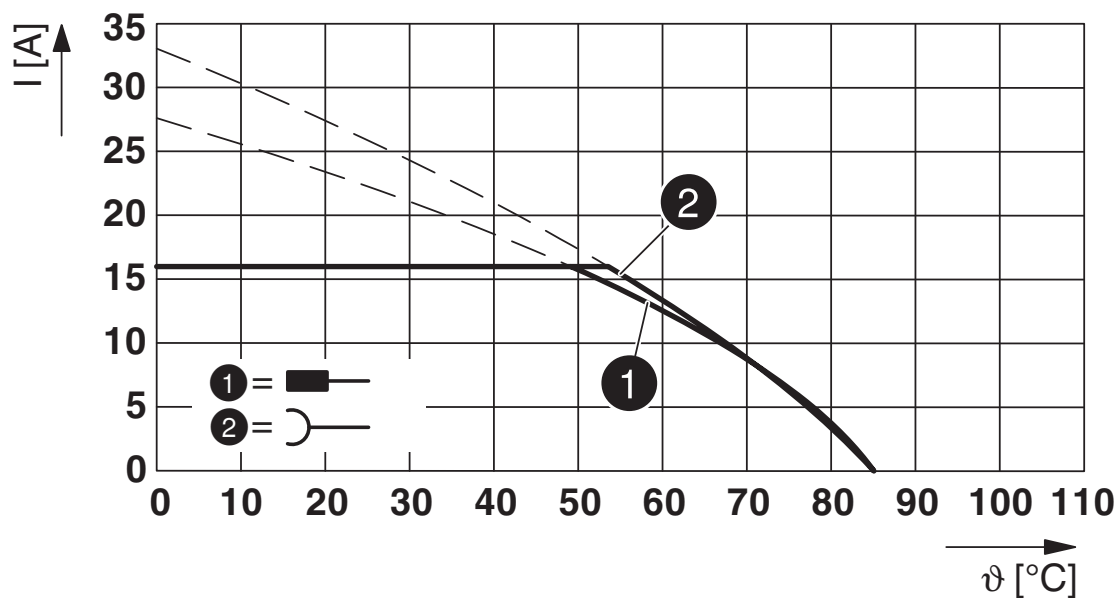
|                                 |                                  |
|---------------------------------|----------------------------------|
| Degree of protection            | IP65                             |
|                                 | IP67                             |
| Ambient temperature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

## Standards and regulations

|                          |                 |
|--------------------------|-----------------|
| Standard designation     | M12 connector   |
| Standards/specifications | IEC 61076-2-111 |

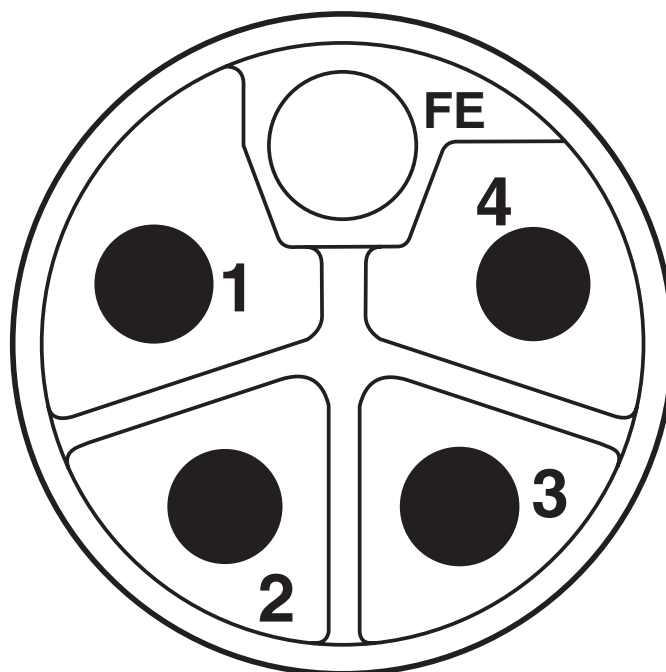
## Drawings

Diagram



Base curve

Schematic diagram



Pin assignment of M12 connector, 5-pos., L-coded, pin side view

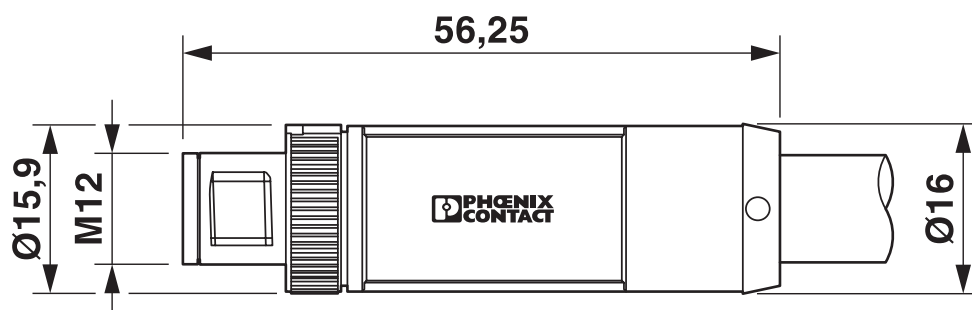
# SAC-5P-M12MSL/ 1,5-280 FE SH - Power cable



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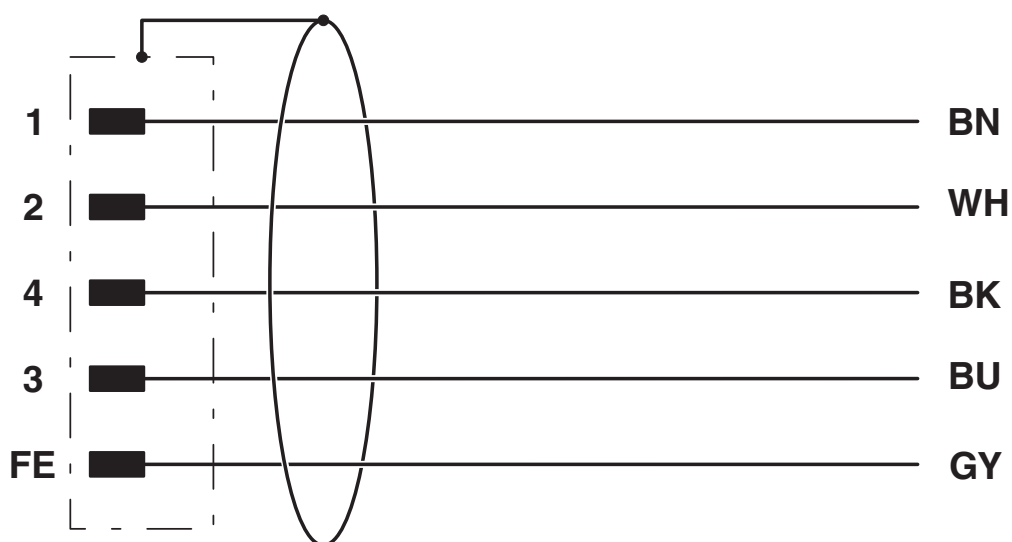
<https://www.phoenixcontact.com/us/products/1414884>

Dimensional drawing



Plug, M12 x 1, straight, shielded

Circuit diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1414884>



**UL Listed**

Approval ID: E468743



**cUL Listed**

Approval ID: E468743



**EAC-RoHS**

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

**cULus Listed**

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27060311 |
| ECLASS-12.0 | 27060311 |
| ECLASS-13.0 | 27060327 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC001855 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 26121600 |
|-------------|----------|

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## 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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## Accessories

### PROT-M12 FS - Sealing cap

1560251

<https://www.phoenixcontact.com/us/products/1560251>



M12 sealing cap for unoccupied M12 plugs of the sensor/actuator cable, flush-type plugs and I/O devices in the field

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### UCT-WMT (23X4) - Conductor marker

0801453

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

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## UC-WMT (23X4) - Conductor marker

0819411

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

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## WMTW (23X4)R - Cable marker

0831004

<https://www.phoenixcontact.com/us/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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## PROT-M12 FS-PA-CHAIN - Sealing cap

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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## WP-EC TPE HF 13,0 BK - Transition sleeve from hose to cable

3240975

<https://www.phoenixcontact.com/us/products/3240975>



Transition sleeve from hose to cable, material: TPE, color: black, flammability rating in acc. with UL 94: HB

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

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

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

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

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## SAC BIT M12-D16 - Tool

1200305

<https://www.phoenixcontact.com/us/products/1200305>



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, knurl diameter: 16 mm, for 4 mm hexagonal drive

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## TSD 04 SAC - Torque screwdriver

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

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

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

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

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## B-STIFT - Marker pen

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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## CUTFOX-S VDE - Diagonal cutter

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

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## WIREFOX-D 16 - Stripping tool

1212173

<https://www.phoenixcontact.com/us/products/1212173>



Stripping tool, for stripping lines (specially for fiber optics lines) of Ø 4 - 16 mm

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## WIREFOX-D 40 - Stripping tool

1212161

<https://www.phoenixcontact.com/us/products/1212161>



Stripping tool, for stripping cables of 4.5 mm - 40 mm-Ø, insulation thickness of up to 4.5 mm, pivoting blade for round, lengthwise, and spiral cuts

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## WIREFOX 10 - Stripping tool

1212150

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