

# SAC-5P- 1,5-280/M12FRL FE - Power cable



1414768

<https://www.phoenixcontact.com/us/products/1414768>

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Power cable, 5-position, PUR halogen-free, gray RAL 7001, free cable end, on Socket angled M12, coding: L, 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
- Our standard: robust halogen-free PUR cable

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1414768       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | BF05          |
| Product key                          | AF1CDP        |
| GTIN                                 | 4055626034041 |
| Weight per piece (including packing) | 278.4 g       |
| Weight per piece (excluding packing) | 280 g         |
| Customs tariff number                | 85444290      |
| Country of origin                    | PL            |

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## Technical data

### Product properties

|                      |               |
|----------------------|---------------|
| Product type         | Power cable   |
| Application          | Energy supply |
| Number of positions  | 5             |
| No. of cable outlets | 1             |
| Shielded             | no            |
| 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                                   | M12 Socket, angled, 5-position, Keying: L |
| Number of positions                    | 5   |
| Shielded                               | no  |
| Insertion/withdrawal cycles            | $\geq 100$                                |
| Material Contact                       | CuZn                                      |
| Material Contact surface               | Ni/Au                                     |
| Material Contact carrier               | PA  |
| Material Screw connection              | Die-cast zinc, nickel-plated              |
| Material Grip body                     | PP  |
| Flammability rating according to UL 94 | V0  |

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|                                 |                  |
|---------------------------------|------------------|
| Degree of protection            | IP65             |
|                                 | IP67             |
| Ambient temperature (operation) | -25 °C ... 85 °C |
| Standard designation            | M12 connector    |
| Standards/regulations           | IEC 61076-2-111  |


## Connection 2

|             |                   |
|-------------|-------------------|
| Type        | Socket angled M12 |
| Coding type | L (Power)         |

## Cable/line

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

## PUR halogen-free gray [280]

|   |   |
|---|---|
| Dimensional drawing                           |  |
| Cable weight                                  | 159 kg/km   |
| UL AWM Style                                  | 80°C/300 V  |
| Number of positions                           | 5   |
| Shielded                                      | no  |
| Cable type                                    | PUR halogen-free gray [280]   |
| Conductor structure, voltage supply           | 80x 0.20 mm   |
| AWG power supply                              | 14  |
| Conductor cross-section                       | 5x 2.5 mm <sup>2</sup>  |
| Wire diameter incl. insulation                | 2.65 mm ±0.1 mm   |
| External cable diameter                       | 8.60 mm ±0.25 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                         | ≥ 0.14 mm   |
| Thickness, outer sheath                       | approx. 0.70 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  |

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|   |  |
|---|--|
| Smallest bending radius, fixed installation   | 4 mm   |
| Smallest bending radius, movable installation | 86 mm  |
| Dynamic load capacity (bending)               | Max. bending cycles: 5000000, Bending radius: 10 x D, Traversing path: 10 m, Traversing rate: 3 m/s, Acceleration: 10 m/s <sup>2</sup> |
| Dynamic load capacity (torsion)               | Torsion: ±180 °/m, Torsion cycles: 500000, Torsional frequency: 35 cycles/min.   |
| Halogen-free                                  | in accordance with DIN VDE 0472 part 815   |
|   | in accordance with DIN EN 50267-2-1  |
| Flame resistance                              | According to UL 758/1581 (Cable Flame)   |
|   | in accordance with UL 758/1581 FT2   |
|   | According to DIN EN 60332-2-2 (20 s)   |
| 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  |
|   | Low adhesion   |
|   | abrasion-resistant   |
|   | Resistant to salt water  |
| Ambient temperature (operation)               | -50 °C ... 85 °C (cable, fixed installation)   |
|   | -30 °C ... 85 °C (Cable, flexible installation)  |

## Environmental and real-life conditions

### Ambient conditions

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

## Standards and regulations

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

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## Drawings

Dimensional drawing



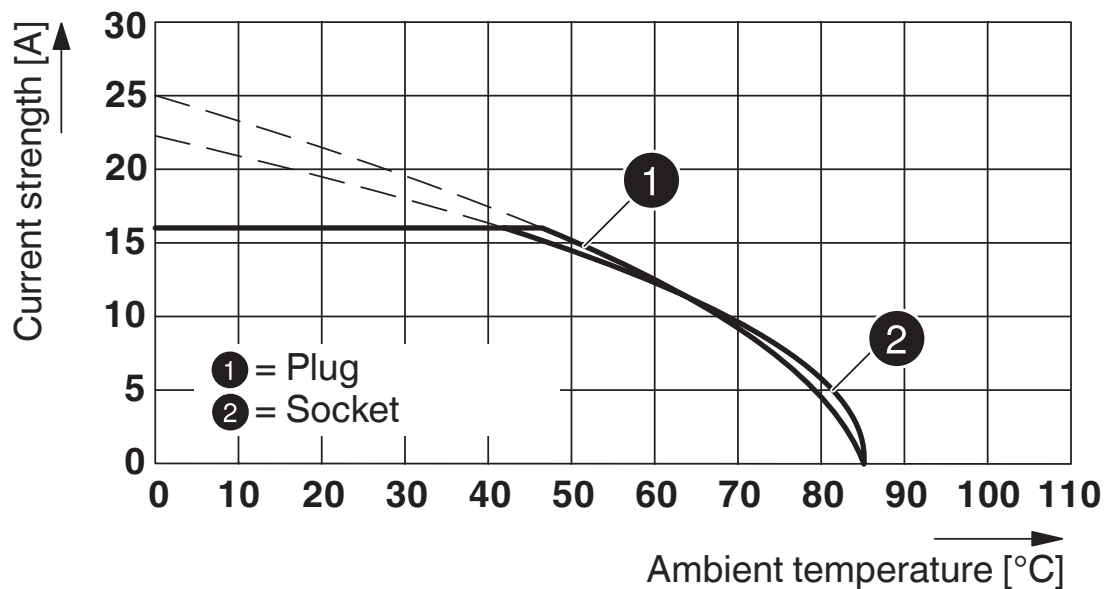
M12 x 1 socket, angled

Schematic diagram



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

Diagram



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Circuit diagram



Contact assignment of the M12 socket

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1414768>



**UL Listed**

Approval ID: E468743



**cUL Listed**

Approval ID: E468743



**EAC-RoHS**

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

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060327 |
| ECLASS-15.0 | 27060327 |

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | 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% |
|-------------------------------------|----------------------------|

### EF3.1 Climate Change

|         |               |
|---------|---------------|
| CO2e kg | 2.549 kg CO2e |
|---------|---------------|

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