

# SPE-T1- 5,0-99B/M12FS - Network cable



1478370

<https://www.phoenixcontact.com/us/products/1478370>

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Network cable, Single Pair Ethernet CAT B (1 Gbps), 2-position, PUR halogen-free, green, shielded (Advanced Shielding Technology), free cable end, on Socket straight M12-SPE / IP67, cable length: 5 m

## Product description

Single Pair Ethernet M12 patch cable

## Your advantages

- Future-proof: standardized connectors in accordance with IEC 63171-5 (IP67)
- Easily integrated: Male and female versions for established inductive sensors and flying leads
- Straightforward servicing: M12 connectors are compatible with IP20 connectors for SPE
- Safely shielded: patch cables with Advanced Shielding Technology

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1478370                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | BF02                           |
| Product key                          | AF1BJI                         |
| GTIN                                 | 4063151894603                  |
| Weight per piece (including packing) | 233.7 g                        |
| Weight per piece (excluding packing) | 22.22 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

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## Technical data

### Product properties

|                      |                         |
|----------------------|-------------------------|
| Product type         | Data cable preassembled |
| Application          | Standard                |
| Number of positions  | 2                       |
| No. of cable outlets | 1                       |
| Shielded             | yes                     |

### Insulation characteristics

|                      |   |
|----------------------|---|
| Overvoltage category | I |
|----------------------|---|

### Interfaces

|                      |                                                    |
|----------------------|----------------------------------------------------|
| Bus system           | Ethernet                                           |
| Signal type/category | Single Pair Ethernet CAT B (ISO/IEC 63171), 1 Gbps |

### Signaling

|                        |    |
|------------------------|----|
| Status display         | no |
| Status display present | no |

### Electrical properties

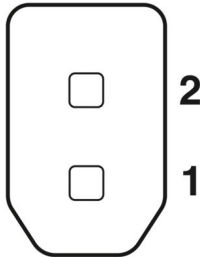
|                       |              |
|-----------------------|--------------|
| Nominal voltage $U_N$ | 72 V DC      |
| Transmission medium   | Copper       |
| Transmission speed    | up to 1 Gbps |

### Material specifications

|                                        |    |
|----------------------------------------|----|
| Flammability rating according to UL 94 | V0 |
|----------------------------------------|----|

### Connector

#### Connection 1

|                     |                                                                                                                                          |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensional drawing |  <p>Pin assignment, Single Pair Ethernet, 2 pos.</p> |
| Type                | M12-SPE Socket, 2-position, shielded (Advanced Shielding Technology)                                                                     |
| Number of positions | 2                                                                                                                                        |
| Shielded            | yes                                                                                                                                      |
| Shielding           | Advanced Shielding Technology                                                                                                            |

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|                                        |                                                    |
|----------------------------------------|----------------------------------------------------|
| Signal type/category                   | Single Pair Ethernet CAT B (ISO/IEC 63171), 1 Gbps |
| Overvoltage category                   | II                                                 |
| Degree of pollution                    | 3                                                  |
| Tightening torque                      | 0.4 Nm                                             |
| Material Contact                       | Cu                                                 |
| Material Contact surface               | Ni/Au                                              |
| Material Contact carrier               | PP                                                 |
| Material Screw connection              | Die-cast zinc, nickel-plated                       |
| Material Grip body                     | TPU, hardly inflammable, self-extinguishing        |
| Material Seal                          | FKM                                                |
| Flammability rating according to UL 94 | V0                                                 |
| Ambient temperature (operation)        | -25 °C ... 85 °C                                   |
| Standard designation                   | M12 connector                                      |
| Standards/regulations                  | IEC 63171-5                                        |

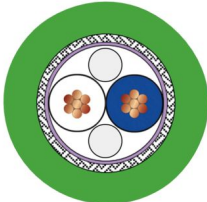
## Connection 2

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

## Cable/line

|              |     |
|--------------|-----|
| Cable length | 5 m |
|--------------|-----|

## Single Pair Ethernet PUR flexible, green [99B]

|                                |                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------|
| Dimensional drawing            |  |
| UL AWM Style                   | 20233 (80°C/300 V)                                                                   |
| Number of positions            | 2                                                                                    |
| Shielded                       | yes                                                                                  |
| Cable type                     | Single Pair Ethernet PUR flexible, green [99B]                                       |
| Conductor structure            | 1 x 2 x AWG 22/7, S/FTP                                                              |
| AWG signal line                | 22                                                                                   |
| Conductor cross-section        | 2x 0.34 mm²                                                                          |
| Wire diameter incl. insulation | 1.6 mm                                                                               |
| External cable diameter        | 5.50 mm ±0.1 mm                                                                      |
| Outer sheath, material         | PUR                                                                                  |
| External sheath, color         | green                                                                                |
| Conductor material             | Bare Cu litz wires                                                                   |
| Material wire insulation       | Foamed PE                                                                            |
| Single wire, color             | white, blue                                                                          |
| Twisted pairs                  | 2 cores to the pair                                                                  |

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|                                               |                                                        |
|-----------------------------------------------|--------------------------------------------------------|
| Overall twist                                 | 1 pair with fillers twisted horizontally               |
| Optical shield covering                       | 90 %                                                   |
| Insulation resistance                         | $\geq 5 \text{ G}\Omega\cdot\text{km}$                 |
| Loop resistance                               | $\leq 120.00 \text{ }\Omega/\text{km}$                 |
| Wave impedance                                | $100 \text{ }\Omega \pm 5 \text{ }\Omega$ (at 100 MHz) |
| Nominal voltage, cable                        | $\leq 100 \text{ V}$                                   |
| Test voltage Core/Core                        | 2000 V (50 Hz, 1 min.)                                 |
| Test voltage Core/Shield                      | 2000.00 V (50 Hz, 1 min.)                              |
| Minimum bending radius, fixed installation    | 4 x D                                                  |
| Minimum bending radius, flexible installation | 8 x D                                                  |
| Smallest bending radius, fixed installation   | 22 mm                                                  |
| Smallest bending radius, movable installation | 44 mm                                                  |
| Halogen-free                                  | according to IEC 60754-1                               |
| Flame resistance                              | according to IEC 60332-1-2                             |
|                                               | UL 1581, Sec. 1061 (Cable Flame)                       |
|                                               | according to CSA FT1                                   |
| Resistance to oil                             | in accordance with DIN EN 60811-404                    |
| Ambient temperature (operation)               | -40 °C ... 80 °C (cable, fixed installation)           |
|                                               | -25 °C ... 80 °C (Cable, flexible installation)        |
|                                               | -25 °C ... 80 °C (for installation)                    |

## Environmental and real-life conditions

### Ambient conditions

|                      |      |
|----------------------|------|
| Degree of protection | IP65 |
|                      | IP67 |

## Standards and regulations

|                          |               |
|--------------------------|---------------|
| Standard designation     | M12 connector |
| Standards/specifications | IEC 63171-5   |
| Note                     | T1-SPE        |

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## Drawings

Dimensional drawing

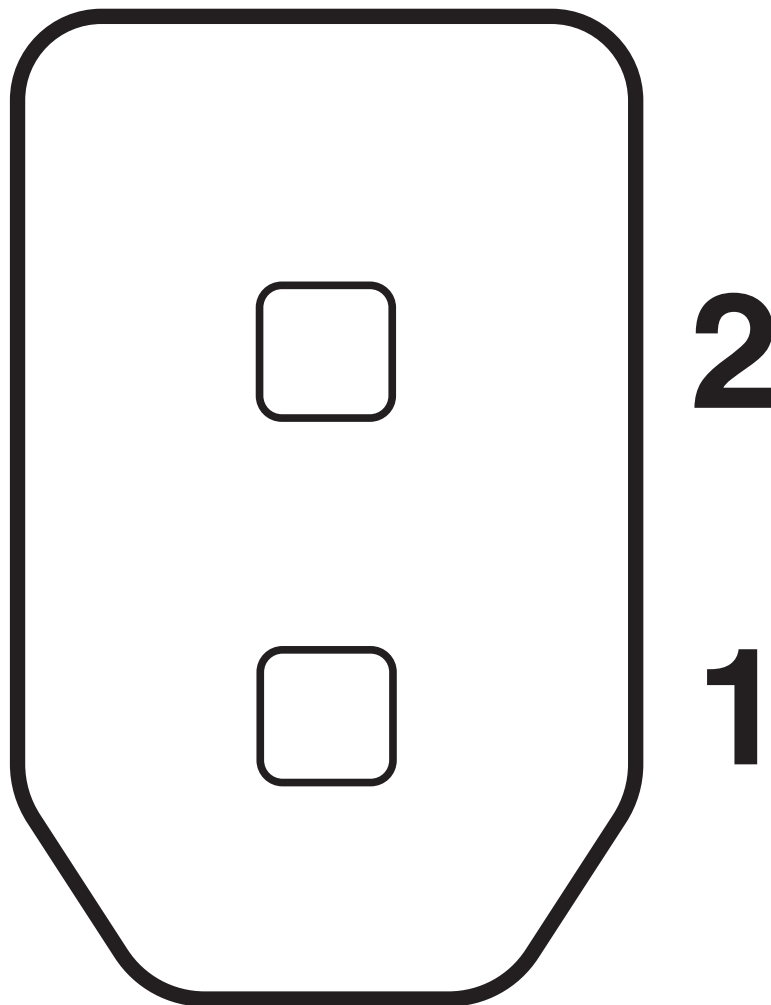


M12 x 1 socket, straight, shielded

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Schematic diagram



Pin assignment, Single Pair Ethernet, 2 pos.

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27060307 |
| ECLASS-15.0 | 27060307 |

### 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 | 20.881 kg CO2e |
|---------|----------------|

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