

# SPE-T1-M12MS/ 5,0-99B/M12FS - Network cable



1478373

<https://www.phoenixcontact.com/nl/products/1478373>

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Network cable, Single Pair Ethernet CAT B (1 Gbps), 2-position, PUR halogen-free, green, shielded (Advanced Shielding Technology), Plug straight M12-SPE / IP67, 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                          | 1478373                        |
| Packing unit                         | 1 pc                           |
| Minimum order quantity               | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AF1BJI                         |
| Product key                          | AF1BJI                         |
| GTIN                                 | 4063151893279                  |
| Weight per piece (including packing) | 270 g                          |
| Weight per piece (excluding packing) | 22,22 g                        |
| Customs tariff number                | 85444290                       |
| Country of origin                    | PL                             |

## Technical data

### Product properties

|                      |                      |
|----------------------|----------------------|
| Application          | Standard             |
| Sensor type          | Single Pair Ethernet |
| 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

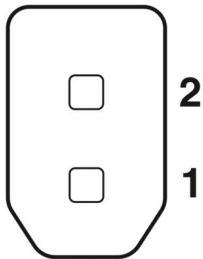
|                       |              |
|-----------------------|--------------|
| Nominal voltage $U_N$ | 72 V DC      |
| Transmission medium   | Copper       |
| Transmission speed    | up to 1 Gbps |

### Material specifications

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

### Connector

#### Connection 1

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

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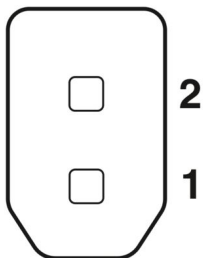


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|                                        |                                                    |
|----------------------------------------|----------------------------------------------------|
| Signal type/category                   | Single Pair Ethernet 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

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

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## 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 mm <sup>2</sup>                                                                |
| 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                                                                    |
| Overall twist                                  | 1 pair with fillers twisted horizontally                                               |
| Optical shield covering                        | 90 %                                                                                   |
| Insulation resistance                          | ≥ 5 GΩ*km                                                                              |
| Loop resistance                                | ≤ 120.00 Ω/km                                                                          |
| Wave impedance                                 | 100 Ω ±5 Ω (at 100 MHz)                                                                |
| Nominal voltage, cable                         | ≤ 100 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<br>UL 1581, Sec. 1061 (Cable Flame)<br>according to CSA FT1 |

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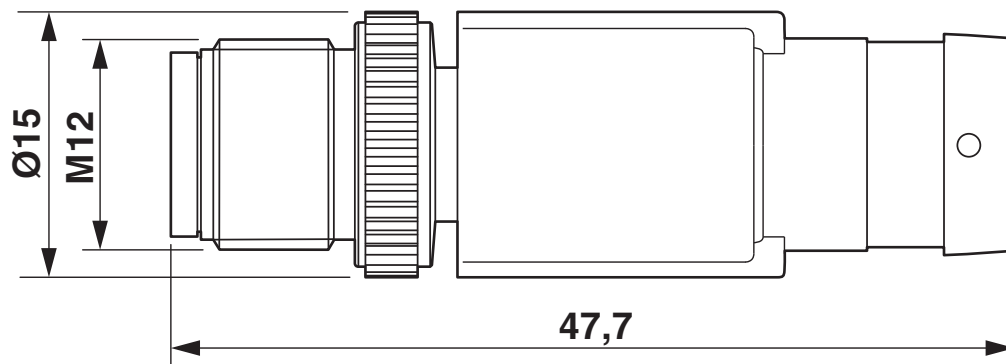
|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Resistance to oil               | in accordance with DIN EN 60811-404             |
| Ambient temperature (operation) | -40 °C ... 80 °C (cable, fixed installation)    |
|                                 | -25 °C ... 80 °C (Cable, flexible installation) |
|                                 | -25 °C ... 80 °C (for installation)             |

## Standards and regulations

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

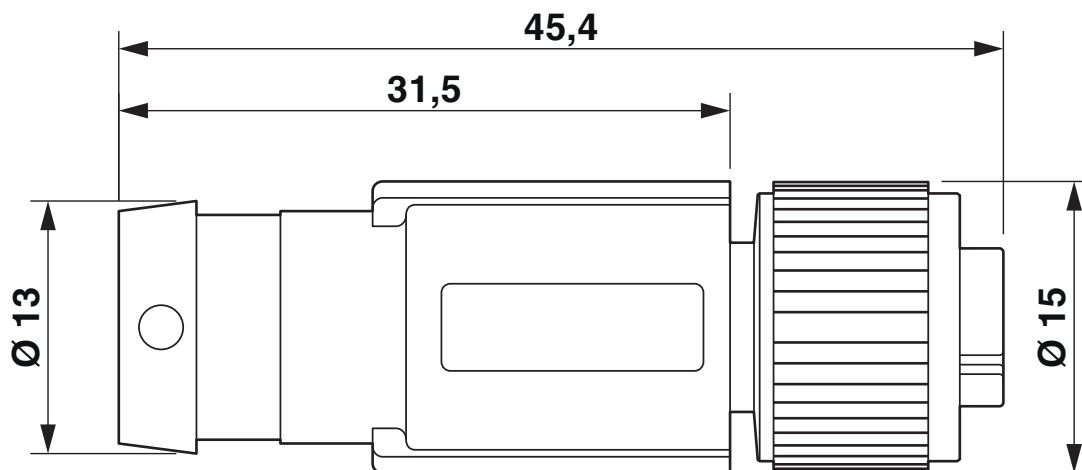
## Drawings

Dimensional drawing



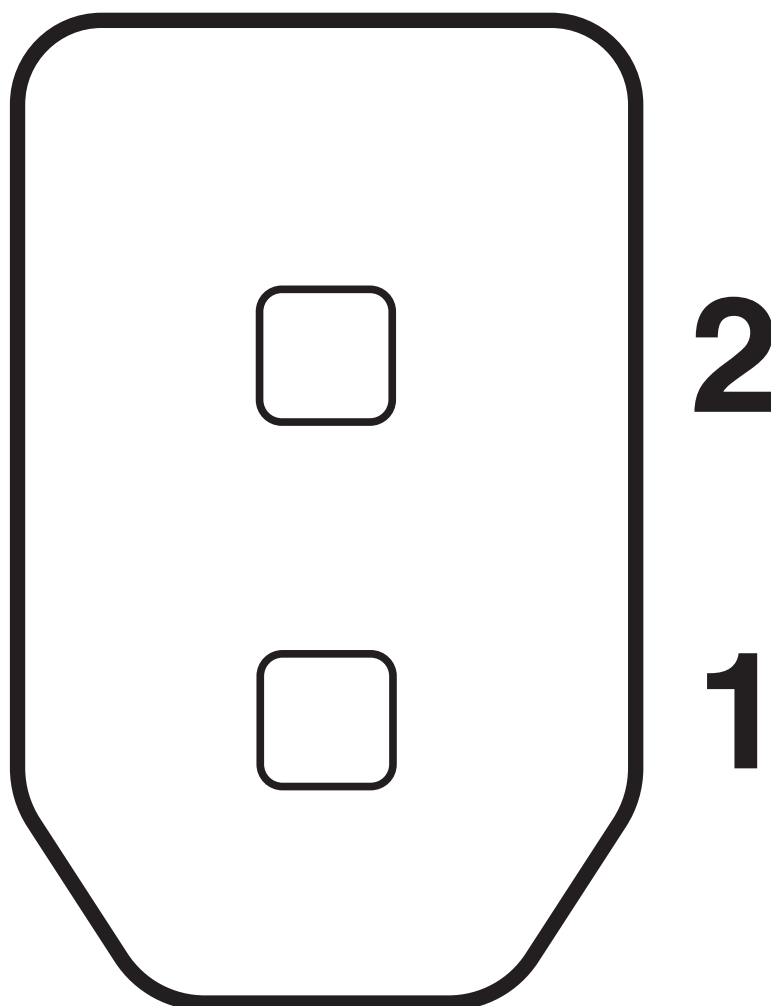
Plug, M12 x 1, straight, shielded

Dimensional drawing



M12 x 1 socket, straight, shielded

Schematic diagram



Pin assignment, Single Pair Ethernet, 2 pos.

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## Classifications

### ECLASS

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

### ETIM

|           |          |
|-----------|----------|
| ETIM 10.0 | EC001855 |
|-----------|----------|

### UNSPSC

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

## 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 | 21,162 kg CO2e |
|---------|----------------|