

# SPE-T1-M12FRF-90 - SPE PCB connector



1363341

<https://www.phoenixcontact.com/us/products/1363341>

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SPE PCB connector, design: SPE, degree of protection: IP65/IP67, number of positions: 2, material: LCP, connection method: THR solder connection, cable outlet: straight, color: black, Single Pair Ethernet

## Your advantages

- Easily integrated: M12 male and female versions for established inductive sensors and flying leads
- Cross-application: range of up to 1000 m, data rates of up to 1 Gbps, and power of up to 50 W
- Totally protected: Advanced Shielding Technology provides a reliable shield connection for network cables, even under extreme environmental conditions
- Future-proof: standardized connectors and cables in accordance with IEC 63171-5

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1363341       |
| Packing unit                         | 80 pc         |
| Minimum order quantity               | 80 pc         |
| Sales key                            | AB13          |
| Product key                          | ABNBEA        |
| GTIN                                 | 4063151706883 |
| Weight per piece (including packing) | 9.5 g         |
| Weight per piece (excluding packing) | 2.823 g       |
| Customs tariff number                | 85366930      |
| Country of origin                    | DE            |

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## Technical data

### Product properties

|                             |                              |
|-----------------------------|------------------------------|
| Product type                | Data connector (device side) |
| Type                        | SPE                          |
| Sensor type                 | Single Pair Ethernet         |
| Number of positions         | 2                            |
| Type of packaging           | Tape and Reel                |
| [W] tape width              | 44.00 mm                     |
| [A] coil diameter           | 330.00 mm                    |
| [W2] coil overall dimension | 50.40 mm                     |
| Number of slots             | 1                            |
| Cable outlet                | straight                     |
| Thread type                 | M12                          |

### Insulation characteristics

|                      |    |
|----------------------|----|
| Overvoltage category | II |
| Degree of pollution  | 2  |

### Electrical properties

|                                         |                                               |
|-----------------------------------------|-----------------------------------------------|
| Maximum load current                    | 4 A                                           |
| Rated voltage (III/2)                   | 72 V DC                                       |
| Rated surge voltage                     | 2250 V DC                                     |
| Rated surge voltage (III/2)             | 1500 V                                        |
| Rated current                           | 4 A                                           |
| Frequency range                         | 600 MHz                                       |
| Insulation resistance                   | min. 1 TΩ                                     |
| Contact resistance                      | 20 mΩ                                         |
| Transmission medium                     | Copper                                        |
| Transmission characteristics (category) | CAT B (IEC 63171)                             |
| Transmission speed                      | 1 Gbps                                        |
| Power transmission                      | PoDL in accordance with IEEE standard 802.3bt |

### Output data

|                        |            |
|------------------------|------------|
| Transmission frequency | 600.00 MHz |
|------------------------|------------|

### Connection data

#### Connection technology

|                   |                       |
|-------------------|-----------------------|
| Connection method | THR solder connection |
|-------------------|-----------------------|

### Interfaces

|                    |              |
|--------------------|--------------|
| Transmission speed | 1 Gbps1 Gbps |
|--------------------|--------------|

### Dimensions

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|                    |          |
|--------------------|----------|
| Width              | 15.3 mm  |
| Height             | 14.4 mm  |
| Length             | 28.7 mm  |
| Installed height   | 12.00 mm |
| Orientation to PCB | 90.00 °  |

## Material specifications

|                                        |          |
|----------------------------------------|----------|
| Color                                  | black    |
| Color of the housing part              | black    |
| Flammability rating according to UL 94 | V0       |
| Housing material                       | LCP      |
| Housing surface material               | Ni/Sn    |
| Contact material                       | Cu alloy |
| Contact surface material               | Au/Ni    |

## Cable/line

|                          |              |
|--------------------------|--------------|
| Test voltage Core/Core   | 1000 V DC    |
| Test voltage Core/Shield | 2250.00 V DC |
| Test voltage, cable      | 300 V        |

## Mechanical properties

### Mechanical data

|                                     |                                          |
|-------------------------------------|------------------------------------------|
| Insertion/withdrawal cycles         | > 100                                    |
| Insertion force per signal contact  | < 30.00 N (in accordance with IEC 63171) |
| Extraction force per signal contact | < 30 N (in accordance with IEC 63171)    |
| Smallest bending radius             | 21,2 mm                                  |

## Environmental and real-life conditions

### Test specification

|               |                        |
|---------------|------------------------|
| Type of test  | Vibration test         |
| Specification | IEC 60068-2-6          |
| Frequency     | 10-500 Hz              |
| Sweep speed   | 1 octave/min           |
| Amplitude     | 0.35 mm                |
| Acceleration  | 50.00 m/s <sup>2</sup> |
| Test duration | 2.00 h                 |

### Test specification

|                                   |                |
|-----------------------------------|----------------|
| Specification                     | IEC 63171      |
| Corrosive stress                  | IEC 60512-11-7 |
| Contact resistance R <sub>1</sub> | 20.00 mΩ       |

### Test specification

|              |                                             |
|--------------|---------------------------------------------|
| Type of test | Mechanical service life with corrosion test |
|--------------|---------------------------------------------|

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|               |                  |
|---------------|------------------|
| Specification | DIN EN 60512-9-1 |
|---------------|------------------|

## Test specification

|                                |                         |
|--------------------------------|-------------------------|
| Type of test                   | Shock testing           |
| Specification                  | IEC 60068-2-27          |
| Acceleration                   | 150.00 m/s <sup>2</sup> |
| Number of shocks per direction | 2000.00                 |

## Ambient conditions

|                                         |                                      |
|-----------------------------------------|--------------------------------------|
| Degree of protection                    | IP65/IP67                            |
| Ambient temperature (operation)         | -40 °C ... 85 °C (Harsh environment) |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C (DIN EN 60512-6-3)  |
| Resistance to UV radiation              | yes                                  |

## Mounting

|               |              |
|---------------|--------------|
| Mounting type | PCB mounting |
|---------------|--------------|

## Processing notes

|                                           |        |
|-------------------------------------------|--------|
| Process                                   | Reflow |
| Moisture Sensitive Level                  | MSL 1  |
| Classification temperature T <sub>c</sub> | 260 °C |
| Solder cycles in the reflow               | 3      |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460201 |
| ECLASS-15.0 | 27460201 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002637 |
|----------|----------|

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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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