

IB IL UTH 4/J-ECO - Temperature module



2702502

<https://www.phoenixcontact.com/us/products/2702502>

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Inline, Temperature measurement terminal, Analog UTH inputs: 4 (Type J), connection technology: 2-conductor, transmission speed in the local bus: 500 kbps, degree of protection: IP20, including Inline connector

Product description

The terminal is designed for use within an Inline station. This terminal can be used to acquire signals from standard thermocouples. The terminal supports type J thermocouples according to DIN EN 60584-1. The measured values are depicted in standardized representation format. Inline ECO terminals are approved for the temperature range from 0°C to +55°C. The electronics base and Inline connector are supplied as standard.

Your advantages

- 4 differential inputs for thermocouples
- Measuring range: -210 °C ... +1200 °C
- Connection of sensors in 2-conductor technology
- Diagnostic information in the process data word
- Diagnostic indicator

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2702502 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR01 |
| Product key | DRI143 |
| GTIN | 4055626206059 |
| Weight per piece (including packing) | 78.8 g |
| Weight per piece (excluding packing) | 69 g |
| Customs tariff number | 85389099 |
| Country of origin | DE |

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Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 12.2 mm |
| Height | 119.8 mm |
| Depth | 71.5 mm |

Notes

Note on application

| | |
|---------------------|-------------------------|
| Note on application | Only for industrial use |
|---------------------|-------------------------|

Material specifications

| | |
|-----------------|------------------|
| Color (Housing) | green (RAL 6021) |
|-----------------|------------------|

Interfaces

Inline local bus

| | |
|----------------------|--------------------|
| Number of interfaces | 2 |
| Connection method | Inline data jumper |
| Transmission speed | 500 kbps |

System properties

Programming data (LocalbusSlave)

| | |
|-------------------------|--------|
| Length code (hex) | 04 |
| ID code (dec.) | 126 |
| Length code (dec) | 04 |
| Process data channel | 64 bit |
| Input address area | 8 Byte |
| Output address area | 0 Byte |
| Parameter channel (PCP) | 0 Byte |
| Register length (bus) | 64 bit |

Fieldbus data telegram (PROFIBUS)

| | |
|-----------------------------|--------|
| Required parameter data | 1 Byte |
| Required configuration data | 4 Byte |

Input data

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Analog:

| | |
|--|---|
| Input name | Analog UTH inputs |
| Description of the input | Differential inputs |
| Number of inputs | 4 (Type J) |
| Connection method | Inline connector |
| Connection technology | 2-conductor |
| Note regarding the connection technology | shielded |
| A/D conversion time | typ. 120 ms |
| A/D converter resolution | 24 bit |
| Sensor types that can be used (TC) | J |
| Tolerance, relative | typ. $\pm 0.21\%$ (of measuring range final value, incl. tolerance of the cold junction) see tables for tolerance values |
| Tolerance, absolute | typ. $\pm 1.9\text{ K}$ (Reference junction) see tables for tolerance values |
| Measuring principle | Sigma/Delta process |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Process data update | < 10 ms |
| Protective circuit | Transient protection of inputs |

Product properties

| | |
|-----------------------|--|
| Product type | I/O component |
| Product family | Inline |
| Type | modular |
| Installation location | Control cabinet |
| Scope of supply | including Inline connector |
| Diagnostics messages | Failure of the internal I/O supply I/O error message sent to the bus coupler Checksum error I/O error message sent to the bus coupler |

Insulation characteristics

| | |
|----------------------|------------------------------|
| Overvoltage category | II (IEC 60664-1, EN 60664-1) |
| Pollution degree | 2 (IEC 60664-1, EN 60664-1) |

Electrical properties

| | |
|---|--------|
| Maximum power dissipation for nominal condition | 1.35 W |
|---|--------|

Potentials: Communications power (U_L)

| | |
|----------------|-------------------------------|
| Supply voltage | 7.5 V DC (via voltage jumper) |
| Current draw | max. 55 mA typ. 38 mA |

Potentials: Supply of analog modules (U_{ANA})

| | |
|----------------------|--|
| Supply voltage | 24 V DC (via voltage jumper) |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current draw | max. 39 mA |

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| | |
|---|------------------------|
| | typ. 32 mA |
| Electrical isolation/isolation of the voltage ranges | |
| Test voltage: Bus logic (local bus, communications power) | 500 V AC, 50 Hz, 1 min |
| Test voltage: Analog I/O | 500 V AC, 50 Hz, 1 min |
| Test voltage: Functional ground | 500 V AC, 50 Hz, 1 min |

Connection data

Connection technology

| | |
|-----------------|------------------|
| Connection name | Inline connector |
|-----------------|------------------|

Inline connector

| | |
|-----------------------------------|--|
| Connection method | Spring-cage connection |
| Conductor cross-section, rigid | 0.08 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.08 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 28 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|--|---|
| Ambient temperature (operation) | 0 °C ... 55 °C |
| Degree of protection | IP20 |
| Air pressure (operation) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Air pressure (storage/transport) | 70 kPa ... 106 kPa (up to 3000 m above sea level) |
| Ambient temperature (storage/transport) | -25 °C ... 85 °C |
| Permissible humidity (operation) | 10 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing) |

Mechanical test

| | |
|--|-----|
| Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6 | 5g |
| Shock in accordance with EN 60068-2-27/IEC 60068-2-27 | 25g |

Standards and regulations

| | |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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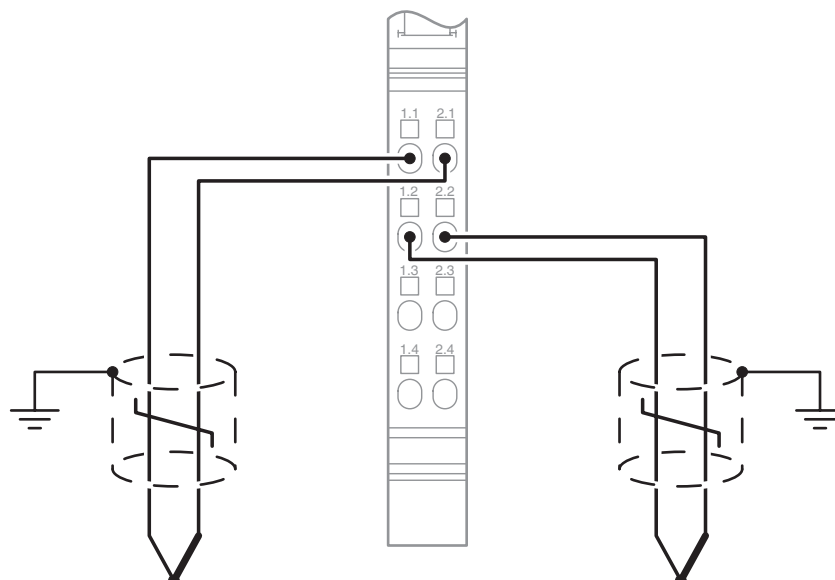
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Drawings

Dimensional drawing



Connection diagram



Connecting the sensors

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2702502>



cULus Listed

Approval ID: E238705

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27242601 |
| ECLASS-15.0 | 27242601 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001596 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|-----------------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I, 7(c)-II |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|---|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| | 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol(CAS: 119-47-1) |
| SCIP | f1f342b6-9d43-4dfb-a780-31b384850f73 |

EF3.1 Climate Change

| | |
|---------|----------------|
| CO2e kg | 13.003 kg CO2e |
|---------|----------------|

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