

IB IL RTD 4/PT100-ECO - Temperature module



2702499

<https://www.phoenixcontact.com/us/products/2702499>

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Inline, Temperature measurement terminal, Analog RTD inputs: 4 (Pt 100), 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. It is used to acquire signals from resistive temperature sensors. 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 analog inputs
- Connection of sensors in 2-conductor technology
- Supported sensors: Pt 100
- Data format: standardized representation
- Diagnostic information in the process data word

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2702499 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR01 |
| Product key | DRI143 |
| GTIN | 4055626203195 |
| Weight per piece (including packing) | 83.6 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 RTD inputs |
| Description of the input | Inputs for resistive temperature sensors |
| Number of inputs | 4 (Pt 100) |
| 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 (RTD) that can be used | Pt 100 (IEC 60751/EN 60751) |
| Tolerance, relative | typ. 0.2 % (of measuring range final value, at $T_A = 25^\circ\text{C}$) |
| Data formats | Standardized representation |
| Input filter | Digital filter |
| Input filter time | 120 ms (per channel) |
| Nominal value of the current sources | 1 mA (pulsed current, the data is valid during the sampling phase) |
| Process data update | < 10 ms |
| Protective circuit | Overload protection; max. ± 40 V DC, 1 min. Transient protection; Suppressor diode |

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 | 0.95 W |
|---|--------|

Potentials: Communications power (U_L)

| | |
|----------------|-------------------------------|
| Supply voltage | 7.5 V DC (via voltage jumper) |
| Current draw | max. 85 mA typ. 56 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. 14 mA |

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| | |
|---|------------------------|
| | typ. 7.3 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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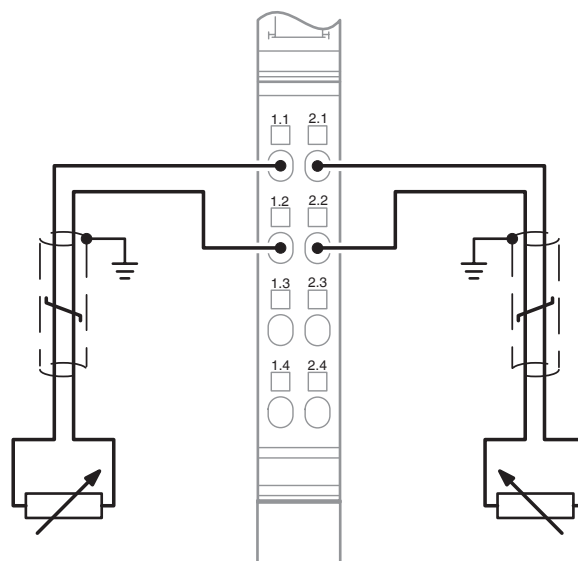
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Drawings

Dimensional drawing



Connection diagram



Connecting the sensors

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Approvals

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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) |
| SCIP | fef5791c-bf83-4f47-964d-423d176f33a0 |

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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com