

Temperature module - IB IL TEMP 4/8 RTD/EF-PAC



2897402

<https://www.phoenixcontact.com/de/produkte/2897402>

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Inline, Temperature measurement terminal, Analog RTD inputs: 8 (for resistance temperature detectors), connection technology: 4-conductor, transmission speed in the local bus: 500 kbps, degree of protection: IP20, including Inline connectors and marking fields

Product Description

The terminal is designed for use within an Inline station. This terminal provides an 8-channel input module with three linear resistance ranges for resistance temperature detectors. The terminal supports all common platinum sensors in accordance with DIN EN 60751 and SAMA, as well as nickel sensors in accordance with DIN 43760. Cu10, Cu50, and Cu53 sensors as well as KTY81 and KTY84 sensors are also supported. Communication either takes place via the parameter channel (PCP, all eight measuring channels) or via four process data words (always four channels in multiplex mode).

Your advantages

- Pt, Ni, Cu, KTY sensor types according to DIN and SAMA
- Connection of 8 RTD temperature sensors and linear resistors in 4-conductor technology
- High precision and noise immunity
- Temperature stability
- High-resolution temperature and resistance measurement
- Resistance values can be preset separately via parameterization bits
- The channels are parameterized independently of one another via the bus system
- Parameterization of wire-break detection sensitivity (firmware 1.10 or later)
- Additional representation in float format according to IEEE754
- Channel scout functionality, for optical channel identification during startup

Commercial Data

Item number	2897402
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	O1 - Automatisierungssys.
Product Key	DRI143
Catalog Page	Page 141 (C-6-2019)
GTIN	4046356288026
Weight per Piece (including packing)	220 g
Weight per Piece (excluding packing)	220 g
Customs tariff number	85389099
Country of origin	DE

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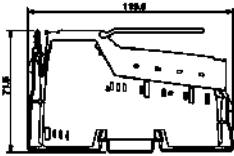


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Technical Data

Dimensions

Dimensional drawing	
Width	48.8 mm
Height	119.8 mm
Depth	71.5 mm
Note on dimensions	Housing dimensions

Notes

Utilization restriction

CCEx note	Use in potentially explosive areas is not permitted in China.
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Material specifications

Color	green
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Interfaces

Inline local bus

Number of interfaces	2
Connection method	Inline data jumper
Transmission speed	500 kbps
Transmission physics	Copper

System properties

Module

ID code (dec.)	223
ID code (hex)	DF
Length code (hex)	05
Length code (dec)	05
Process data channel	80 Bit
Input address area	10 Byte
Output address area	10 Byte
Register length	96 Bit
Required parameter data	31 Byte
Required configuration data	5 Byte

Input data

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Analog

Input name	Analog RTD inputs
Description of the input	Input for resistive temperature sensors
Number of inputs	8 (for resistance temperature detectors)
Connection method	Spring-cage connection
Connection technology	4-conductor
Note regarding the connection technology	shielded
A/D converter resolution	24 bit
Sensor types (RTD) that can be used	Pt, Ni, KTY, Cu sensors, linear resistors
Data formats	IB IL, S7-compatible
Measuring principle	Sigma/Delta process
Measured value representation	16 bits (15 bits + sign bit)
Input filter time	100 ms 120 ms 200 ms 480 ms (adjustable)
Linear resistance measuring range	0 Ω ... 500 Ω 0 Ω ... 5 kΩ 0 Ω ... 30 kΩ
Process data update	1.8 s (Up to 3.3 s possible depending on operating mode)

Product properties

Type	modular
Product type	I/O component
Scope of delivery	including Inline connectors and marking fields
Operating mode	Process data mode with 5 words/1 word PCP
Diagnostics messages	Failure of the internal I/O supply I/O error message sent to the bus coupler Failure of or insufficient communications power U_L I/O error message sent to the bus coupler User error Error message in the process data

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	0.59 W
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Potentials

Power consumption	typ. 0.85 W (entire device)
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Potentials: Communications power (U_L)

Supply voltage	7.5 V DC (via voltage jumper)
Current draw	max. 120 mA typ. 95 mA

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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. 15 mA
	typ. 6 mA

Connection data

Connection technology

Connection name	Inline connector
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Conductor connection

Connection method	Spring-cage connection
Conductor cross section solid	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

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)	-25 °C ... 60 °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)

Standards and regulations

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

Mounting type	DIN rail mounting
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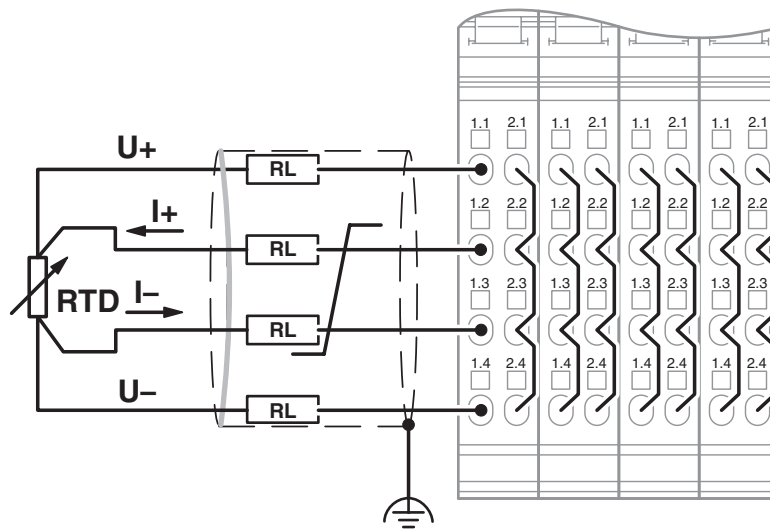
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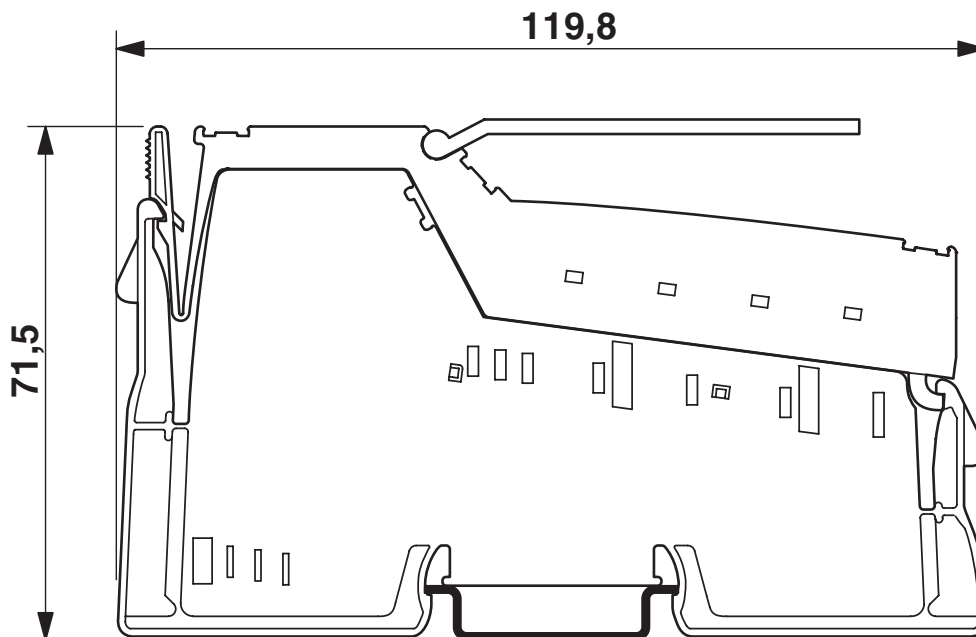
Drawings

Connection diagram



Connection example: 4-conductor connection

Dimensional drawing



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Approvals



EAC

Approval ID: TR TS_D_01921-19



DNV GL

Approval ID: TAA00002CU



LR

Approval ID: LR22191720TA



BV

Approval ID: 20989_C0 BV



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324

ABS

Approval ID: 22-2226444-PDA



ATEX

Approval ID: PxCIF08ATEX2897402X



cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827

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Classifications

ECLASS

ECLASS-9.0	27242601
ECLASS-10.0.1	27242601
ECLASS-11.0	27242601
ECLASS-12.0	27242601

ETIM

ETIM 8.0	EC001596
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UNSPSC

UNSPSC 21.0	32151600
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Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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