IB IL TEMP 2 RTD-XC-PAC - Temperature module

2701217

https://www.phoenixcontact.com/us/products/2701217

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The figure shows the standard item

Inline, Temperature measurement terminal, Analog RTD inputs: 2, connection technology: 2-, 3-, 4-conductor, transmission speed in the local bus: 500 kbps, Extreme conditions version, degree of protection: IP20, including Inline connector and labeling field

Product description

The terminal is designed for use within an Inline station. It is used to acquire signals from resistive temperature sensors. The terminal supports all common platinum and nickel sensors according to DIN EN 60751 and SAMA. Cu10, Cu50, and Cu53 sensors as well as KTY81 and KTY84 sensors are also supported. The measuring temperature is represented by 16-bit values in two process data words (one word per channel). Thanks to special engineering measures and tests, the terminal can be used under extreme ambient conditions.

Your advantages

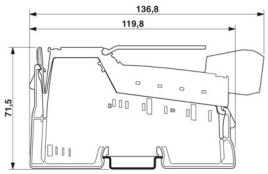
- 2 inputs for resistive temperature sensors
- Pt, Ni, Cu, KTY sensor types according to DIN and SAMA
- Connection of sensors in 2-, 3-, and 4-conductor technology
- The channels are parameterized independently of one another via the bus system
- Measured values can be represented in three different formats
- Measured value acquisition with a resolution of 16 bits
- Channel scout for optical channel identification
- Can be used under extreme ambient conditions
- Extended temperature range of -40 °C ... +70 °C (see “Tested successfully: use under extreme ambient conditions” in the data sheet)
- Coated PCBs

Commercial data

Item number	2701217
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DR01
Product key	DRI143
GTIN	4046356728829
Weight per piece (including packing)	95.1 g
Weight per piece (excluding packing)	67 g
Customs tariff number	85389099
Country of origin	DE

Technical data

Dimensions

Dimensional drawing	
Width	12.2 mm
Height	136.8 mm
Depth	71.5 mm

Notes

Note on application

Note on application	Only for industrial use

Mounting

Mounting type	DIN rail mounting

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

Length code (hex)	02
ID code (dec.)	127
Length code (dec)	02
Process data channel	32 bit
Input address area	4 Byte
Output address area	4 Byte
Parameter channel (PCP)	0 Byte
Register length (bus)	32 bit

Fieldbus data telegram

Required parameter data	6 Byte

Required configuration data	4 Byte

Input data

Analog:

Input name	Analog RTD inputs
Description of the input	Input for resistive temperature sensors
Number of inputs	2
Connection method	Spring-cage connection
Connection technology	2-, 3-, 4-conductor
Note regarding the connection technology	shielded
A/D conversion time	typ. 120 µs (per channel)
A/D converter resolution	16 bit (15 bit + sign bit)
Sensor types (RTD) that can be used	Pt, Ni, KTY, Cu sensors, linear resistors
Tolerance, relative	see tables for tolerance values
Tolerance, absolute	typ. ± 0.26 K (Pt 100 with 3-wire connection)
	see tables for tolerance values
Measuring principle	Successive approximation
Measured value representation	16 bits two's complement and other
Linear resistance measuring range	0 Ω ... 400 Ω
	0 Ω ... 4 kΩ
Process data update	32 ms (both channels use 3-conductor technology)
	20 ms (one channel in 2-conductor technology and one channel in 4-conductor technology)
	20 ms (both channels in 2-conductor technology)

Product properties

Product type	I/O component
Product family	Inline
Type	modular
Scope of supply	including Inline connector and labeling field
Operating mode	Process data operation with 2 words
Special properties	Extreme conditions version

Insulation characteristics

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

Electrical properties

Potentials: Communications power (U_L)

Supply voltage	7.5 V DC (via voltage jumper)
Current draw	max. 60 mA
	typ. 43 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. 18 mA
	typ. 11 mA

Electrical isolation/isolation of the voltage ranges

Test voltage: 7.5 V supply (bus logics)/24 V analog supply (analog I/O)	500 V AC, 50 Hz, 1 min
Test voltage: 7.5 V supply (bus logic)/functional ground	500 V AC, 50 Hz, 1 min
Test voltage: 24 V analog supply (analog I/O)/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 mm² ... 1.5 mm²
Conductor cross-section, flexible	0.08 mm² ... 1.5 mm²
Conductor cross-section AWG	28 ... 16
Stripping length	8 mm

Environmental and real-life conditions

Ambient conditions

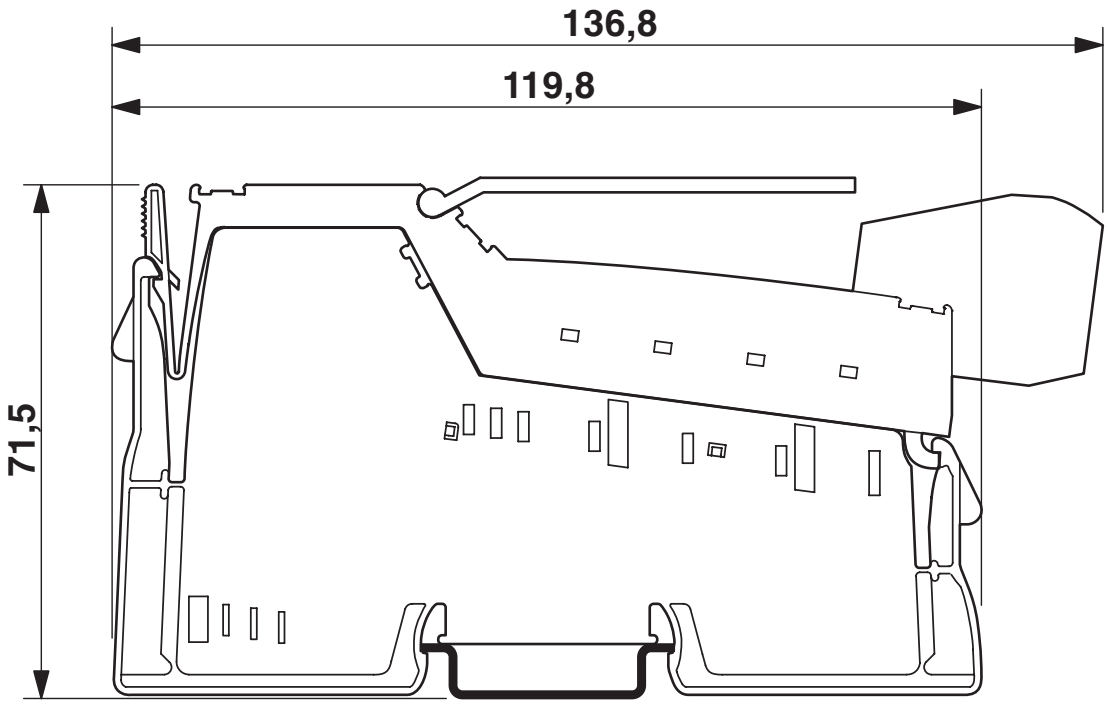
Ambient temperature (operation)	-25 °C ... 55 °C (Standard)
	-40 °C ... 70 °C (Extended, see section “Tested successfully: use under extreme ambient conditions” in the data sheet.)
Degree of protection	IP20
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

Standards and regulations

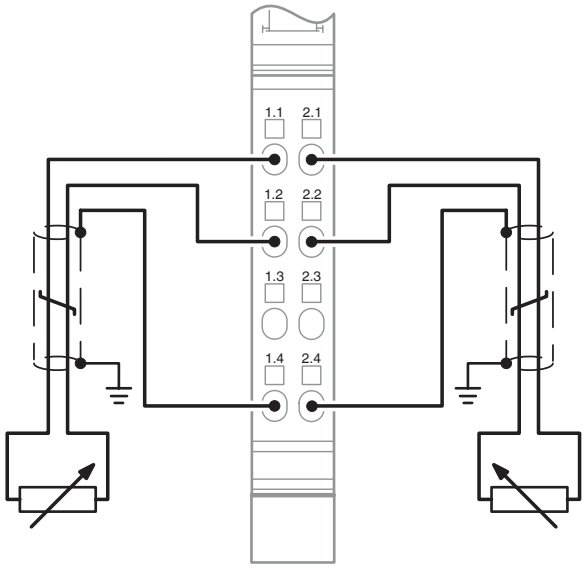
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)

Drawings

Dimensional drawing



Connection diagram



Classifications

ECLASS

ECLASS-13.0	27242601
ECLASS-15.0	27242601

ETIM

ETIM 10.0	EC001596

UNSPSC

UNSPSC 21.0	32151600

Environmental product compliance

EU RoHS

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

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	d0e4686b-801e-4df4-958a-be743575cda2

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