

## CZAKI THERMO-PRODUCT

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# Temperature transmitter TCD-2100-Pt100 Instruction Manual



Version 18.08



## 1. Safety rules

- read the Instruction Manual before using the transmitter
- check the connections before power on
- ensure environmental conditions according to specification

## 2. Description

TCH temperature transmitter with 4-20mA output works with resistive temperature sensors (RTD) Pt100 according to EN 60751.

It converts resistance of RTD temperature sensor to standard current signal 4...20mA.

The output signal is a linear function of a sensor temperature.

The transmitter has a plastic enclosure suitable for mounting in 35mm rail (DIN EN 50022-35).

## 3. Specification

ordering code	measuring range (°C)
TCD-2110-Pt100	-50 ... 50
TCD-2115-Pt100	0 ... 50
TCD-2120-Pt100	0 ... 100
TCD-2125-Pt100	0 ... 150
TCD-2130-Pt100	0 ... 200
TCD-2135-Pt100	0 ... 300
TCD-2140-Pt100	0 ... 400
TCD-2145-Pt100	0 ... 500
TCD-2150-Pt100	0 ... 600
TCD-2155-Pt100	0 ... 700
TCD-2160-Pt100	0 ... 800
TCD-2100-Pt100	other according to customer's requirements

### Input:

- temperature sensor ..... Pt100 acc. to EN 60751
- sensor connection ..... 2- or 3-wire

**Accuracy** (for ambient temperature  $23^{\circ}\text{C}\pm 5^{\circ}\text{C}$ ): .....  $\pm 0,15\%$  of measuring range

- temperature drift .....  $\pm 0,02\%$  of measuring range/ $^{\circ}\text{C}$

**Sensor bias current** ..... ca. 1mA

**Wire resistance** ..... max.  $25\Omega$  (one wire)

<b>Minimum range value (URV-LRV)</b> .....	30°C
<b>Time constant</b> .....	100 ms
<b>Output:</b>	
<b>Range</b> .....	4-20mA, 2-wire
<b>Sensor failure indication:</b>	
- Pt100 shorted .....	~2mA
- Pt100 opened .....	~ 60mA
<b>Power supply (Vs)</b> .....	12...36VDC / 25mA
<b>Maximum load</b> .....	$R_o(\Omega) < (U_z - 12) / 0,022$
<b>Output signal limit</b> .....	~ 60mA
<b>Protection</b> .....	against reverse polarity
<b>General:</b>	
<b>Ambient temperature:</b> .....	0°C...+60°C
<b>Housing</b> .....	90 x 17,5 x 58mm (50g)
- mounting .....	rail 35mm
- case material .....	self-extinguishing Noryl
<b>Case ingress protection</b> .....	IP20 (terminals ... IP00)
<b>Relative humidity:</b> .....	0 - 90% RH without condensation
<b>Electromagnetic compatibility (EMC):</b> .....	industrial environment
- resistance .....	acc. to EN 61000-6-2:2002(U)
- emissivity .....	acc. to EN 61000-6-4:2002(U)

#### **4. Installation and connection**

- the transmitter should be mounted in rail 35mm.
- the terminals of the transmitter should be connected accordingly to in the case of 3-wire RTD sensor. In the case of 2-wire RTD sensor, terminals 1 and 2 should be shorted.
- the power supply voltage should be stabilized and correctly connected in series with the current monitor (see picture on the last page)

## Transmitter adjustment

The transmitter is calibrated for lower and upper range values:  $T_{min}$  and  $T_{max}$ .

You can fine the transmitter via multi-turn potentiometer knobs **ZERO** and **SPAN** (see figure).

