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Temperature transmitter TCH-31xx -Pt100 Instruction Manual



Version 13.12



CE

1. Safety rules

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

2. Description

TCH temperature transmitter with 0-10V output works with resistive temperature sensors (RTD) **Pt100** according to EN 60751.

It converts resistance of RTD temperature sensor to standard voltage signal 0...10V.

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

The transmitter has a plastic enclosure suitable for mounting in type BA connection head or another with mounting holes space of 33mm.

3. Specification

ordering code	measuring range (°C)
TCH-3110-Pt100	-50 ... 50
TCH-3115-Pt100	0 ... 50
TCH-3120-Pt100	0 ... 100
TCH-3125-Pt100	0 ... 150
TCH-3130-Pt100	0 ... 200
TCH-3135-Pt100	0 ... 300
TCH-3140-Pt100	0 ... 400
TCH-3145-Pt100	0 ... 500
TCH-3150-Pt100	0 ... 600
TCH-3155-Pt100	0 ... 700
TCH-3160-Pt100	0 ... 800
TCH-3100-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°C±5°C): □0,15% of measuring range□

- temperature drift □0,02% of measuring range/°C

Sensor bias current ca. 1mA

Wire resistance max. 25□ (one wire)

Minimum range value (URV-LRV)	30°C
Time constant	30 ms
Output:	
Range	0-10V
Sensor failure indication:	
- Pt100 shorted	0V
- Pt100 opened	12□1V
Power supply (Vs)	12...36VDC / 25mA
Maximum load	Ro >10k□
Output signal limit	12□1V
Protection	against reverse polarity

General:

Ambient temperature:	-20°C...+70°C
Housing	Ø43 x 29 (70g)
- mounting	2 screws M4, 33mm space
- case material	self-extinguishing Noryl
- filling	silicone rubber
Case ingress protection	IP40 (terminals ... IP00)
Relative humidity:	0 - 90% RH without condensation
Electromagnetic compatibility (EMC):	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 sensor connections should be inserted through the central hole
- the transmitter should be mounted in a sensor head with two screws M4
- 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 to the terminals "+" and "-"

- output voltage signal is at the terminal "OUT" and the minus terminal of the power supply "-" (GND).

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).

