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Temperature transmitter
TCHF-21xx
User Manual

Wersja 13.07

1. Safety rules

- read these instructions before use
- before turning on the power, make sure that the wires are connected correctly
- ensure operating conditions (power supply, humidity, temperature) according to specifications

2. Device characteristics

TCHF temperature transmitter with 4-20mA output is dedicated to work with thermo-resistive sensors (RTD) Pt100 according to PN-EN 60751. It converts sensor temperature changes from the bottom to the top range value into current changes from 4mA to 20mA in the transmitter's power supply circuit. It is powered directly from the current loop. It can work with 2- and 3-wire sensors. In the case of 2-wire sensors it is necessary to make a jumper between terminals 1-2.It is adapted It is suitable for mounting in a BA or other type sensor head, with a mounting hole spacing of 33mm. It has a central hole for the sensor wires to be passed through. Screws fixing screws with pressure springs ensure perfect fixing of the transmitter.

3. Technical data

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

Input:

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

Accuracy (for ambient temperature of 23°C±5°C)**:** ..... ±0,15% measuring range

- temperature drift ..... ±0,02% measuring range /°C

Measurement current of the sensor 0,8mA

Wire resistance ..... max. 25Ω per wire

Minimum measurement range ..... 30°C

Time constant ..... 0,2 ms

Output:

Range 4-20mA, 2-wire

Sensor failure signaling:

- shorted Pt100 ..... 2,3 ± 0,5mA
- open Pt100 ..... 27 ± 3mA

Power supply (Vs) ..... 10...36VDC / 30mA

Maximum load ..... Ro < (Uz-9)/0,022 Ω

Output signal limit ..... approx. 27mA

Protection ..... against reverse polarity

General:

Operating temperature: ..... -20°C...+70°C

Housing ..... Ø25 x 15mm (12g)

- mounting ..... 2 screws M4 with 33mm spacing
- body material (top and bottom wall) ..... self-extinguishing noryl
- filling and side walls ..... silicone rubber

Protection ..... IP40 (terminals ... IP00)

Relative humidity: ..... 0 - 90% RH non-condensing

EMC Compatibility: ..... industrial environment

- resistance ..... PN-EN 61000-6-2:2002(U)
- emissivity ..... PN-EN 61000-6-4:2002(U)

4. Assembly and installation

- mount the transmitter in the sensor head with two M4 screw
- connect the temperature sensor with two or three wires to the terminals **1-2-3**
- connect the copper wires of the power supply (current loop) to the two **OUT** terminals,
- after proper installation, the transmitter is ready for operation,
- the transmitter does not require periodic maintenance.

Transducer adjustment

The transmitter is calibrated for the temperature extremes of the measuring range. It is possible to correct the transmitter's characteristics by means of multi-turn **ZERO** and **SPAN** knobs (located under the terminals), accessible after removing the screws from the corresponding terminals (see figure).