

TCXT4PR 2-WIRE PROGRAMMABLE TRANSMITTER INSTRUCTIONS



- RTD or Ohm input
- High measurement accuracy
- 3-wire connection
- Programmable sensor error value
- For DIN form B sensor head mounting



Application:

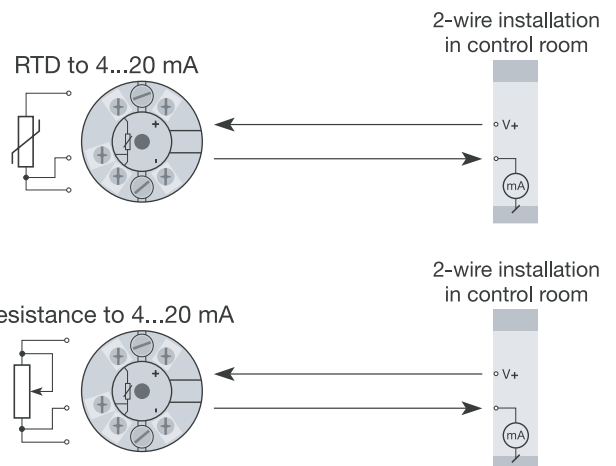
- Linearised temperature measurement with Pt100...Pt1000 or Ni100...Ni1000 sensor.
- Conversion of linear resistance variation to a standard analogue current signal, for instance from valves or Ohmic level sensors.

Technical characteristics:

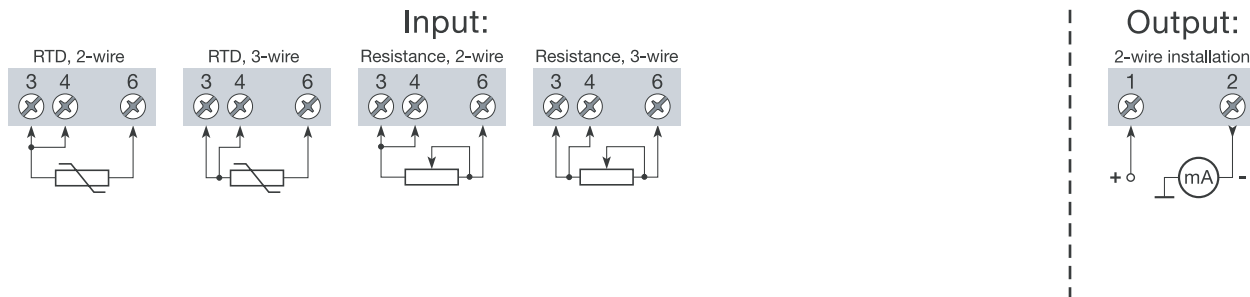
- Using the optional software package, within a few seconds the user can re-program TCXT4PR to measure temperatures within all RTD ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 3-wire connection.

Mounting / installation:

- For DIN form B sensor head or DIN railmounting with a special fitting.



Connections:



Electrical specifications:

Specifications range:

-40°C to +85°C

Common specifications:

Supply voltage..... 8.0...30 VDC
 Internal consumption..... 25 mW...0.8 W
 Voltage drop 8 VDC
 Warm-up time..... 5 min.
 Communications interface Loop Link
 Signal / noise ratio..... Min. 60 dB
 Response time (programmable) 0.33...60 s
 Signal dynamics, input 19 bit
 Signal dynamics, output..... 16 bit
 Calibration temperature..... 20...28°C
 Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.1% of span	≤ ±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
RTD	≤ ±0.3°C	≤ ±0.01°C / °C
Lin. R	≤ ±0.2	≤ ±20 m / °C

EMC immunity influence	±0.5% of span
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Effect of supply voltage variation ≤ 0.005% of span / VDC
 Vibration IEC 60068-2-6 Test FC
 Lloyd's specification no. 1 4 g / 2...100 Hz
 Max. wire size..... 1 x 1.5 mm² stranded wire
 Humidity < 95% RH (non-cond.)
 Dimensions..... Ø 44 x 20.2 mm
 Protection degree (encl. / terminal) ... IP68 / IP00
 Weight 50 g

Electrical specifications, input:

RTD and linear resistance input:

RTD type	Min. value	Max. value	Min. span	Standard
Pt100	-200°C	+850°C	25°C	IEC 60751
Ni100	-60°C	+250°C	25°C	DIN 43760
Lin. R	0 Ω	10000 Ω	30 Ω	----

Max. offset..... 50% of selec. max. value
 Cable resistance per wire (max.) 10 Ω
 Sensor current..... > 0.2 mA, < 0.4 mA
 Effect of sensor cable resistance (3-wire)..... < 0.002 Ω / Ω
 Sensor error detection..... Yes

Output:

Current output:

Signal range 4...20 mA
 Min. signal range 16 mA
 Updating time 135 ms
 Load resistance ≤ (V_{supply} - 8) / 0.023 [Ω]
 Load stability < ±0.01% of span/100 Ω

Sensor error detection:

Programmable 3.5...23 mA
 Namur NE43 Upscale 23 mA
 Namur NE43 Downscale 3.5 mA

EEx / I.S. approval:

KEMA 03ATEX1535 X II 1 GD, T80°C...T105°C
 EEx ia IIC T6 / T4
 Max. amb. temperature for T1...T4 ... 85°C
 Max. amb. temperature for T5 and T6 .. 60°C
 ATEX, applicable in zone 0, 1, 2, 20, 21 or 22

Ex / I.S. data:

Signal output / supply, terminal 1 to 2:

U_i : 30 VDC
 I_i : 120 mADC
 P_i : 0.84 W
 L_i : 10 μH
 C_i : 1.0 nF

Sensor input, terminal 3, 4 and 6:

U_o : 27 VDC
 I_o : 7 mA
 P_o : 45 mW
 L_o : 35 mH
 C_o : 90 nF

FM, applicable in IS, Cl. I, Div. 1, Gr. A, B, C, D
 IS, Cl. I, Zone 0, AEx ia IIC
 FM Installation Drawing No. 5300Q502

CSA, applicable in IS, Cl. I, Div. 1, Gr. A, B, C, D
 IS, Cl. I, Zone 0, Ex ia IIC
 CSA Installation Drawing No. 533XQC03

Marine approval:

Det Norske Veritas, Ships & Offshore .. Stand. for Certific. No. 2.4

GOST R approval:

VNIIFTRI, Cert No.

Observed authority requirements: Standard:

EMC 2004/108/EC EN 61326-1
 ATEX 94/9/EC EN 50014, EN 50020,
 EN 50281-1-1, EN 50284,
 EN 61241-0, EN 61241-11
 FM 3600, 3611, 3610
 CSA, CAN / CSA C22.2 No. 157,
 E60079-11, UL 913

Of span = Of the presently selected range