

### 2-WIRE PROGRAMMABLE TRANSMITTER



- RTD, TC, Ohm, or mV input
- Extremely high measurement accuracy
- 1.5 kVAC galvanic isolation
- Programmable sensor error value
- For DIN form B sensor head mounting



#### Application:

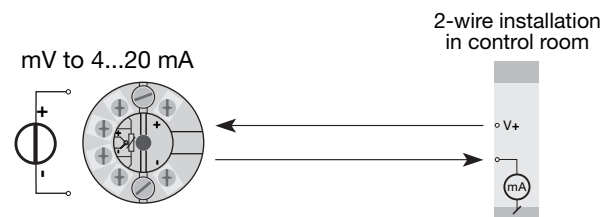
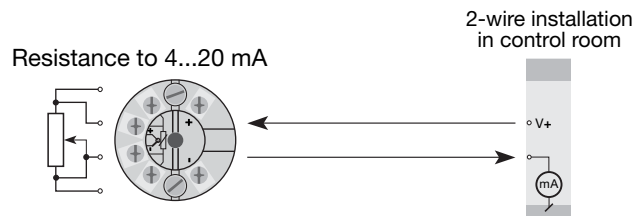
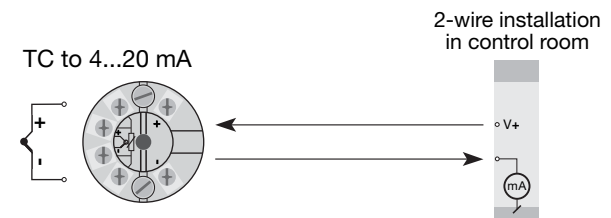
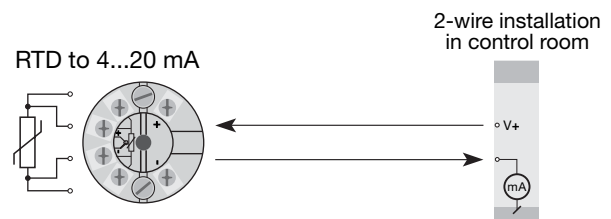
- Linearised temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Conversion of linear resistance variation to a standard analogue current signal, for instance from valves or Ohmic level sensors.
- Amplification of a bipolar mV signal to a standard 4...20 mA current signal.

#### Technical characteristics:

- Within a few seconds the user can program TCX T4-UNIV to measure temperatures within all ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- Continuous check of vital stored data for safety reasons.

#### Mounting / installation:

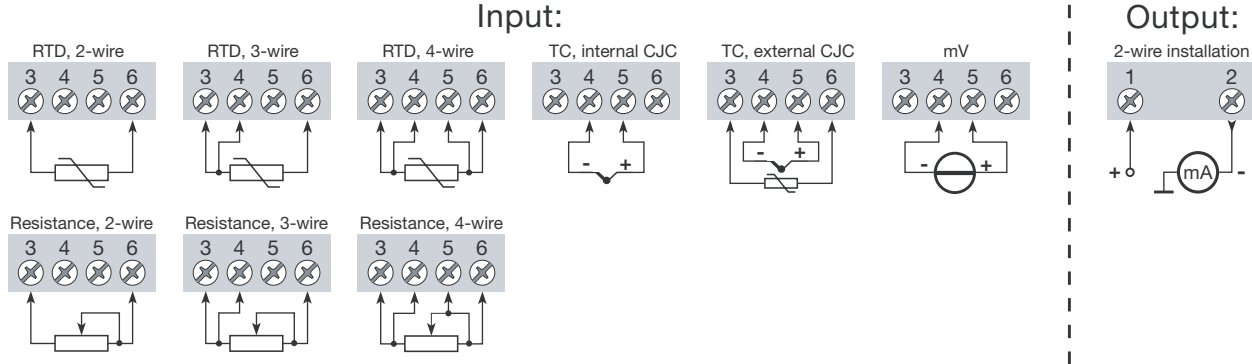
- For DIN form B sensor head or DIN rail mounting with the TCX T4 fitting type 8421.



Order: TCX T4-U NIV

Type	Ambient temperature	Galvanic isolation
TCX T4-U NIV	-40°C...+85°C : 3	1500 VAC : B

## Connections:



### Electrical specifications:

#### Specifications range:

-40°C to +85°C

#### Common specifications:

Supply voltage, DC ..... 7.2...35 V  
 Voltage drop ..... 7.2 VDC  
 Isolation voltage, test / operation ..... 1.5 kVAC / 50 VAC  
 Communications interface ..... Loop Link  
 Signal / noise ratio ..... Min. 60 dB  
 Signal dynamics, input ..... 20 bit  
 Signal dynamics, output ..... 16 bit  
 Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	±0.05% of span	±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
RTD	±0.2°C	±0.01°C/°C
Lin. R	±0.1	±10 m / °C
Volt	±10 µV	±1 µV/°C
TC type:		
E, J, K, L, N, T, U	±1°C	±0.05°C/°C
TC type: B, R, S, W3, W5, LR	±2°C	±0.2°C/°C

EMC immunity influence .....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst .....	< ±1% of span

Vibration ..... IEC 60068-2-6 Test FC  
 Lloyd's specification no. 1 ..... 4 g / 2...100 Hz  
 Humidity ..... < 95% RH (non-cond.)  
 Dimensions ..... Ø 44 x 20.2 mm  
 Tightness (enclosure / terminal) ..... IP68 / IP00

#### Electrical specifications, input:

Max. offset ..... 50% of selec. max. value

#### 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	5000	30	-----

Cable resistance per wire (max.) ..... 5

Sensor current ..... Nom. 0.2 mA

### TC input:

Type	Min. temperature	Max. temperature	Min. span	Standard
B	+400°C	+1820°C	200°C	IEC584
E	-100°C	+1000°C	50°C	IEC584
J	-100°C	+1200°C	50°C	IEC584
K	-180°C	+1372°C	50°C	IEC584
L	-100°C	+900°C	50°C	DIN 43710
N	-180°C	+1300°C	100°C	IEC584
R	-50°C	+1760°C	200°C	IEC584
S	-50°C	+1760°C	200°C	IEC584
T	-200°C	+400°C	50°C	IEC584
U	-200°C	+600°C	75°C	DIN 43710
W3	0°C	+2300°C	200°C	ASTM E988-90
W5	0°C	+2300°C	200°C	ASTM E988-90
LR	-200°C	+800°C	50°C	GOST 3044-84

Cold junction compensation ..... < ±1.0°C

#### Voltage input:

Measurement range ..... -12...800 mV

Min. span ..... 5 mV

#### Current output:

Signal range ..... 4...20 mA

Min. signal range ..... 16 mA

Updating time ..... 440 ms

Load resistance ..... (V<sub>supply</sub> - 7.2) / 0.023 [ ]

#### Sensor error detection:

Programmable ..... 3.5...23 mA

#### Marine approval:

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

#### GOST R approval:

VNIIM, Cert. No. .... Ross DK.ME48.V01899

#### Observed authority requirements: Standard:

EMC 2004/108/EC

Emission and immunity ..... EN 61326

Of span = Of the presently selected range

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