

COMPACT  
DESIGN

# THERMOCOUPLE TEMPERATURE TRANSMITTER THT201

REF.: PA132720210



The Tekon Electronics In Head 2-Wire Temperature Transmitters are specifically designed to meet the most rigorous requirements of operation in the industrial process environments. Due to their reduced dimensions they can be installed in the the DIN Form B sensor connection head in place of traditional terminal blocks.

The operating parameters like the sensor probe type, connection method, measuring range, output signal range or fault value can be configured using the THT201 user friendly free software Tekon Configurator.

Dimensions 45Ø x 23 mm

Weight Approx. 50g

Material Nylon 66

Protection Index IP40

## KEY FEATURES

### THERMOCOUPLE SENSOR INPUT

E, J, K, N, R, S, T

### WIDE MEASUREMENT RANGE

### 4 TO 20 MA ANALOG OUTPUT

### 2 STATUS LEDS

### HIGH MEASUREMENT ACCURACY

### IN LINE LOOP CURRENT MEASURE PADS

### NAMUR NE 43 FAULT DETECTION

### CONFIGURABLE OVER PC

THROUGH THE TEKON CONFIGURATOR SOFTWARE

PA132720210.05.ENG.V01.3.2019

**TECHNICAL SPECIFICATIONS**

**INPUT  
THERMOCOUPLES (TC)**

Measured variable	Temperature
Sensor type	Thermocouples: E, J, K, N, R, S, T
Units	°C or °F
Connection	Thermocouple (TC)
Sensor current diagnostic	<0.05 mA (50 uA)
Response time	<500 ms
Open-circuit monitoring	Always active (cannot be disabled)
Short-circuit monitoring	Not available
Cold junction compensation (CJC)	Integrated resistance thermometer
Measuring range	Configurable (see table "Digital measuring errors")
Minimum measured span	50°C (90°F)
Characteristic curve	Temperature-linear

**OUTPUT**

Output signal	4 to 20 mA
Power supply (Uaux)	9 to 30V DC
Max. load	(Uaux - 9) / 0.022 A
Overrange	3 to 22 mA
Error signal (e.g. following sensor fault ) (conforming to NE43)	Software configurable ≤ 3,6mA or ≥ 21mA
Sample cycle	< 1s
Protection	Against reversed polarity Surge protection

**MEASUREMENT ACCURACY**

Reference conditions	
Auxiliary power	24V DC ± 1%
Ambient temperature	23°C (73,4°F)
Warming-up time	> 5min
Error in the analog output (digital/analog converter)	< 0.08% of span
Digital measuring errors	See table "Digital measuring errors"
Error due to internal cold junction	<0,5°C (0,9°F)
Influence of ambient temperature	
with resistance thermometers	0,06°C (0,11°F) / 10°C (18°F)
with thermocouples	0,6°C (1,1°F) / 10°C (18°F)
Analog measuring error	0.02% of span / 10°C (18°F)

**OPERATING ENVIRONMENT**

Ambient temperature range	-20 to 80°C (-4 a 176°F)
Storage temperature range	-20 to 80°C (-4 a 176°F)
Relative humidity	≤95%, without condensation

HOUSING	
Material	Nylon 66
Weight	Approx. 50g
Dimensions	See “Dimensional drawings”
Cross-selection of cables	2.5 mm <sup>2</sup>
Protection type	IP40

CERTIFICATES AND APPROVALS	
EN 61326	Electrical equipment for measurement, control and laboratory use. EMC requirements.
IEC 61000-4-2	Electrostatic discharge immunity test
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4	Electrical fast transient/burst/immunity test
IEC61000-4-5	Surge immunity test

FACTORY SETTINGS	
Sensor	TEK
Measuring range	-200 A 1000°C (-328 to 1832°F)
Fault current	NAMUR NE 43
Sensor offset	0°C (0°F)
Sampling	0.0s

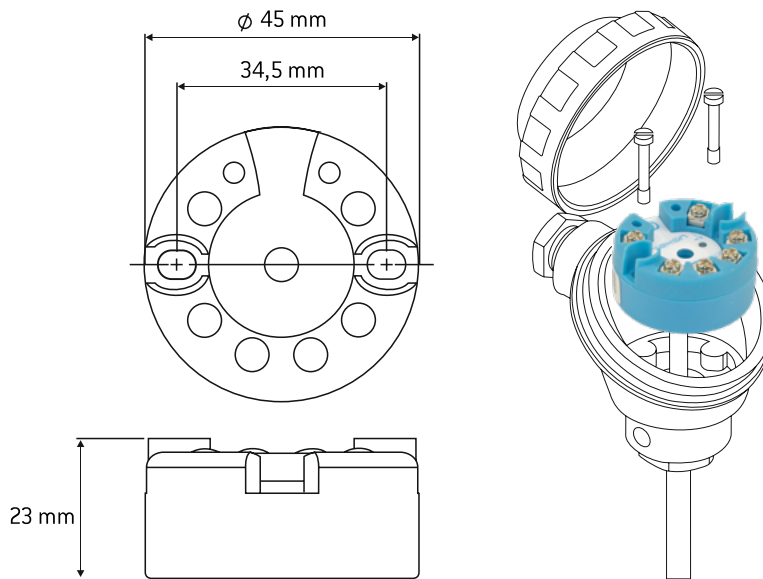
**DIGITAL MEASURING ACCURACY**

THERMOCOUPLES (TC)		
SENSOR	RANGE °C (°F)	DIGITAL ACCURACY °C (°F)
E	-200 to 1000 [-328 to 1832]	1
J	-210 to 1200 [-346 to 2192]	1
K	-230 to 1370 [-382 to 2498]	1
N	-200 to 1300 [-328 to 2372]	1
R	-50 to 1760 [-58 to 3200]	2
S	-50 to 1760 [-58 to 3200]	2
T	-200 to 400 [-328 to 752]	1

The digital accuracy is the accuracy after the analog/digital conversion including linearization and calculation of the measured value.  
 An additional error is generated in the output current 4 to 20mA as a result of the digital/analog conversion of 0.025% of the set span (digital-analog error).  
 The total error under reference conditions at the analog output is the sum from the digital error and the digital-analog error (poss. with the addition of cold junction errors in the case of thermocouple measurements).

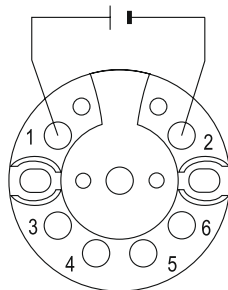
TECHNICAL DRAWINGS AND INFORMATION

DIMENSIONAL DRAWINGS & INSTALLATION DIAGRAM

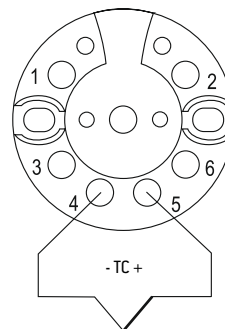


ELECTRICAL CONNECTIONS

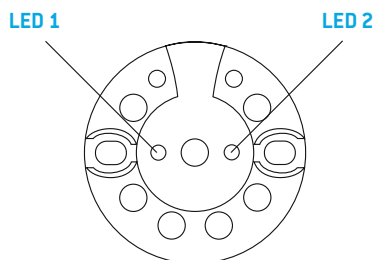
POWER SUPPLY



THERMOCOUPLE



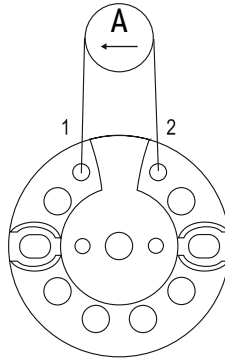
STATUS LEDs



LED1 (RED)	LED1 (BLUE)	
OFF	ON	NORMAL MODE
FLASH	ON	SENSOR ERROR
OFF	BLINK	CONFIGURATION MODE

TEST POINTS

The test points may be used to measure the transmitter current consumption.  
Please connect the test probes of multimeter with the DC current measurement option to the test points according to the following image.



RELATED PRODUCTS



**SARC 2 - USB CONFIGURATOR**

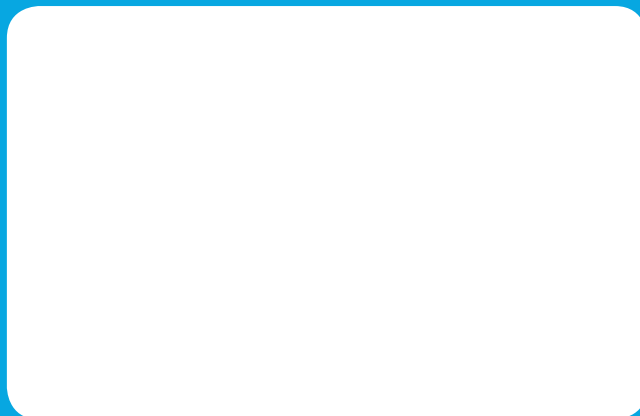
REF.: PA132720310

- Connection between a PC USB port and THP101/THT201 universal temperature head transmitters;
- USB powered for easy off-process configuration.

TEKON ELECTRONICS  
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