FEATURES

- Thermocouple type K, J, T, N, E, R, S plus mV, 4-20mA output

- Simple push button configuration

- Advanced user configuration for access to 56 pre-set temperature ranges

- User push button trim

- Programmable burnout

- The TX203TC is supplied with a default range of 0 to 1000°C, Type K

RS PRO Thermocouple In-head (Push Button) Temperature Transmitter

RS Stock No.: 3817132

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

The TX203TC in-head thermocouple temperature transmitter is a cost effective "smart" in head transmitter that accepts thermocouple temperature sensors and converts sensor output over a configured range to a standard industrial (4 to 20) mA transmission signal. A simple push button operation allows the user to select TC type, burnout direction, select fixed ranges and trim 4 and 20 mA points. The TX203TC incorporates the latest digital technology to ensure accurate drift free performance.

Push Button Configuration

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User Range	Two levels of configuration are available to the user; the first level allows the user to re-range the transmitter. The user can identify the input type set by counting the number of program LED flashes on power up. The input type cannot be changed at this level of configuration.
Advanced user configuration	In this level the single push button and two LED indicators are used to navigate the user through a series of five menus allowing full configuration of the transmitter. The menus are as follow: - Menu 1 — Select Input type K, J, T, N, E, R, S thermocouple or mV Menu 2 — Select either user range set by USER RANGE or select one of seven (per input) fixed ranges Menu 3 — Select burnout direction Menu 4 — Trim output current @ either 4mA or 20mA Menu 5 — Reset to factory default and clear user trim

Specifications @ 20°C

Sensor	Range (°C)	Accuracy
K	-200 to 1370	± 0.1% of F.S. ± 0.5°C (plus any sensor error)
J	-100 to 1200	± 0.1% of F.S. ± 0.5°C (plus any sensor error)
T	-200 to 400	± 0.2% of F.S. ± 0.5°C (plus any sensor error)
N	-180 to 1300	± 0.1% of F.S. ± 0.5°C (plus any sensor error)
E	-200 to 1000	± 0.1% of F.S. ± 0.5°C (plus any sensor error)
R	-10 to 1760	± 0.1% of F.S. ± 0.5°C (plus any sensor error) over range 800 to 1600
S	-10 to 1760	± 0.1% of F.S. ± 0.5°C (plus any sensor error) over range 800 to 1600

Range (mV)

Input	Range (°C)	Accuracy
mV	-10 to 70	± 0.02 % of full scale

General

Isolation	Tested to 250 V dc
Sensor Burnout	Either up or down scale output
Cold Junction	Range (-40 to 85°C); Accuracy ±0.5°C Tracking ± 0.05°C /°C
Stability	Offset 0.1°C /°C, Span 0.05°C /°C
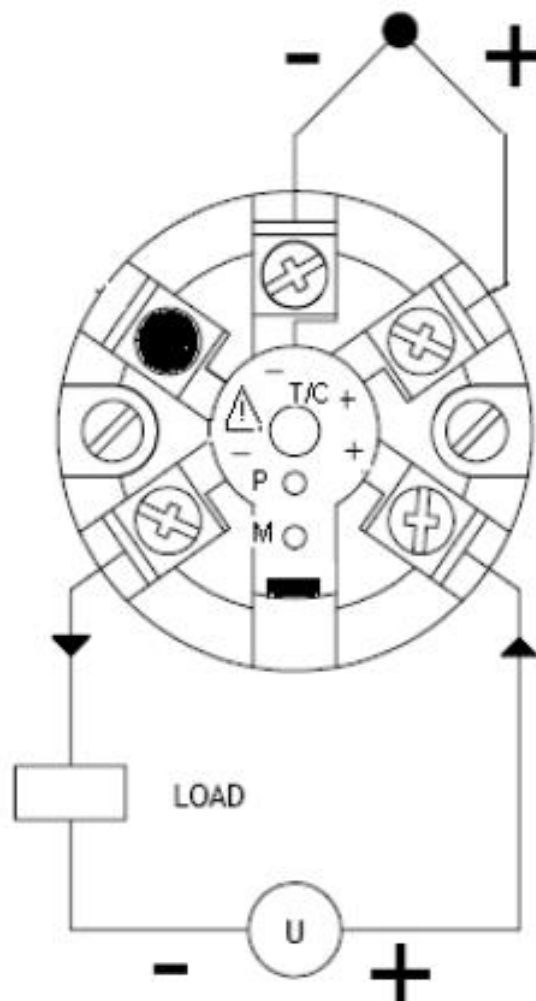
Output

Output type	2 wire (4 to 20) mA current loop
Output range	4.0mA to 20.0mA
Output connection	Screw Terminal
Maximum output	21.5mA (in high burnout condition)
Minimum output	3.8mA (in low burnout condition)
Accuracy	(mA output / 2000) or 5uA (whichever is the greater)
Loop Voltage effect	± 0.2uA / V
Thermal drift	± 1uA / °C Typically ± 1.5uA
Maximum output load	[(Vsupply-10)/20] K Ohms (Example 700 ohms @ 24V)

Fixed Ranges

Range	Inputs K, J, E & N (°C)	Input T (°C)	Inputs R & S (°C)	Input mV
1	User			
2	0 to 1000	0 to 400	800 to 1760	0 to 70
3	0 to 1200	0 to 250	800 to 1600	0 to 5
4	0 to 600	0 to 200	800 to 1400	0 to 10
5	0 to 500	0 to 150	1000 to 1760	0 to 20
6	0 to 250	0 to 100	1000 to 1600	0 to 25
7	0 to 100	0 to 50	1000 to 1400	0 to 50
8	-100 to 100	-100 to 100	0 to 1600	-10 to 10

General Specifications

Update time	500mS
Response time	1 second
Start-up time	4 seconds (Output < 4mA during start up)
Warm-up time	1 minute to full accuracy
Power supply	10 to 30 Volts dc

Environmental

Ambient operating range	(-40 to +85) °C
Ambient storage temperature	(-50 to +90) °C
Ambient humidity range	(10 to 90) % RH non condensing

Physical

Dimensions	43mm diameter; 21mm height
Weight	31g (encapsulated)

SIDE VIEW   BASE VIEW

Ø43.0 mm

21.0 mm

33.0 mm CENTRES

Fixing holes 2 x Ø5.5

Centre hole Ø4.0
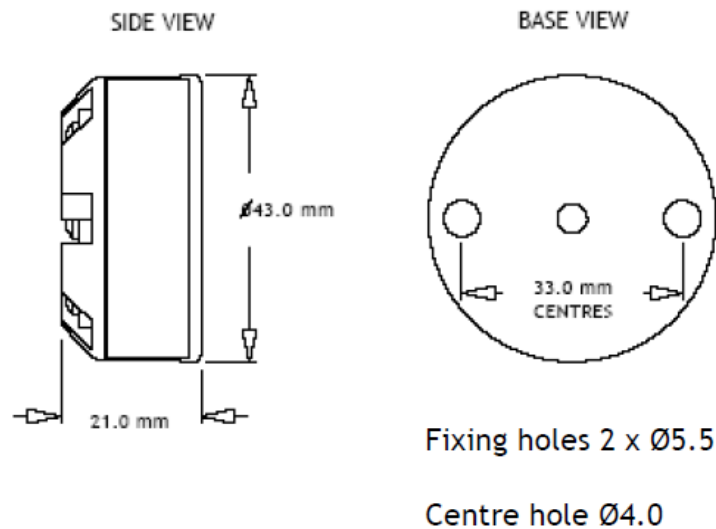
Approvals

EMC - BS EN 61326	Electrical equipment for measurement control and laboratory use
ANNEX A	Immunity test requirements for equipment intended for use in industrial locations
ANNEX F	Test configurations, operational conditions and performance criteria for transducers with integrated or remote signal conditioning
IEC 61000-4-2	Electrostatic discharge
IEC 61000-4-3	EM Field
IEC 61000-4-4	Transient Burst (output)
IEC 61000-4-5	Surge (output)

(Note - Sensor input wires to be less than 3 metres to comply)

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Temperature.
It matters

Calibration

Whether it's existing equipment or a new purchase, you need to have confidence in the accuracy of your measurements.

That's where our calibration service can help.

Purchase new products with confidence.

A certificated calibrated sensor straight out of the box, ready to use.

Best Sellers 👍

ANSI SYSCAL Type K Mineral Insulated Thermocouple
RS 181-7296

IEC SYSCAL Type K Mineral Insulated Thermocouple
RS 181-7288

IEC SYSCAL Type J Mineral Insulated Thermocouple
RS 181-7305

RTD Detectors

Wire-wound type provides greater accuracy and stability but are vulnerable to shock.

Flat film type are resistant to shock and have quicker thermal response times.

Various lengths and diameters available, in class A, B and 1/10th Din.

Best Sellers 👍

PT1000 Thin Film Detector
RS 362-9907
Allied 70643582

PT100 Wire Wound Detector
RS 611-7839
Allied 70646151

PT100 Wire Wound Detector
RS 362-9799
Allied 70643577

Exposed Junction Thermocouples

Including exposed junctions with fitted or moulded miniature plug and insulated leads, ideal for test and development applications.
1, 2, 3, 5 & 10m lengths available in IEC or ANSI colours.

Best Sellers 👍

ANSI Type K Exposed Junction
RS 814-0134
Allied 70656459

ANSI Type K High Temp Exposed Junction
RS 131-4749
Allied 71080908

IEC Type K Exposed Junction
RS 363-0250
Allied 70643600

Fabricated and Specialist Thermocouples

Styles include; Magnet, Washer, Nozzle, Leaf, Bayonet & Bolt thermocouple. Various lengths and calibration types available.

Best Sellers 👍

Magnet Thermocouple
RS 762-1115
Allied 70651739

Heavy Duty Thermocouple
RS 762-1128
Allied 70651743

Rubber Patch Thermocouple
RS 290-5036
Allied 70642886

Thermocouple & PRT Cable

Thermocouple cables are available in IEC or ANSI colour codes. Insulation types include PFA, PTFE, PVC & Fibreglass. Available spool lengths include 10, 25, 50, 100 and 200m.

Best Sellers 👍

IEC PVC Insulated Flat Pair
RS 219-4573
Allied 70641630

ANSI PFA Insulated Twin Twisted
RS 814-0030
Allied 70656106

IEC Glassfibre Insulated Flat Pair
RS 236-3836
Allied 70641730

Thermocouple Connectors

Range of miniature or standard thermocouple connectors. Available in thermocouple types K, J, T, E, N, RS, B, and copper. IEC, ANSI & JIS colour codes available.

Best Sellers 👍

IEC Thermocouple Plug
RS 455-9764
Allied 70644391

ANSI Thermocouple Socket
RS 769-1127
Allied 70652125

IEC Thermocouple PCB Socket
RS 381-7570
Allied 70643749

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