

310 TX series Temperature Transmitters

Unit Shown: PRT 100 Version



Approximate scale only
Detailed dimensions appear inside
Dimensions in mm



Features

- 4 - 20 mA output, 2 wire
- High immunity to RFI (EMC 1992)
- J,K,N,R,S,T, and PT100 ranges
- Reliable construction
- Fits standard inspection heads
- Extra-slim design
- Easy calibration
- Any temperature range requirements considered if not already available
- Wide range of span adjustment
- Reversed supply polarity protected
- Upscale sensor break protection
- Easy-fit crew terminals for input and output connections

General

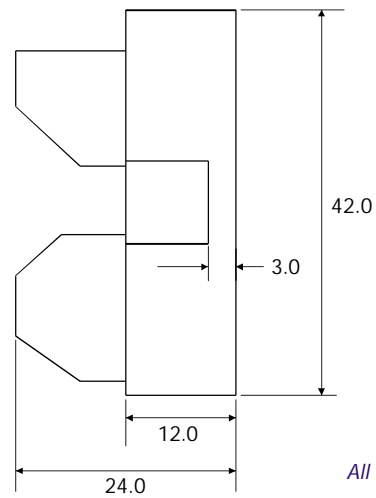
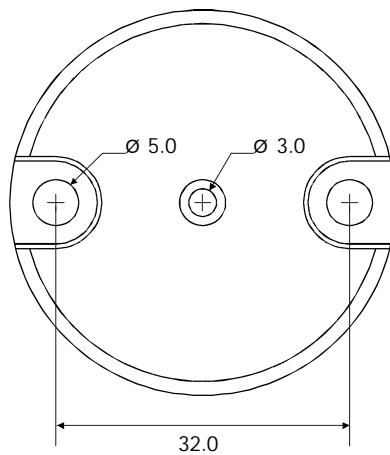
Transmitters in the 310TX range provide 4 to 20mA outputs for either thermocouple or PRT100 resistance thermometer inputs and are designed for standard terminal head mounting.

The units offer a wide range of SPAN adjustment and can be easily calibrated, thus reducing the need for holding larger stocks for different input scale ranges.

310TX units are protected against the inadvertent inversion of the power supply, and thermocouple inputs include accurate automatic cold junction compensation, but are not linearised.

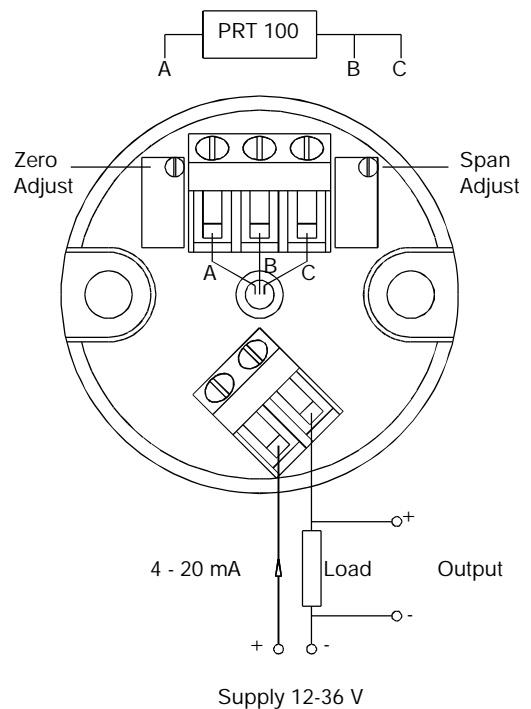
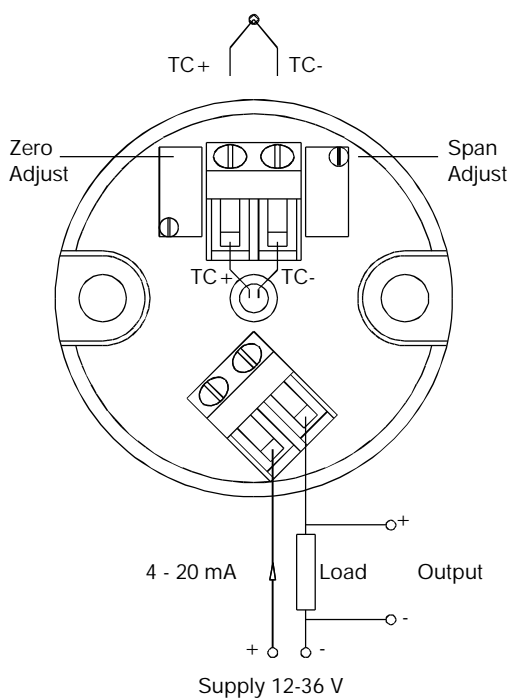
The compact and durable construction of all 310TX units is complemented by a 2-year manufacturers warranty.

Overall Dimensions



All dimensions in mm

Connection for Thermocouple and PRT 100



Technical Specification

Input	
Thermocouple	J Iron/ Copper–Nickel (0-800 °C)
Thermocouple	K Nickel–Chromium/ Nickel–Aluminium (0-1100 °C)
Thermocouple	N Nicrosil/ Nisil (0-1300 °C)
Thermocouple	R Platinum-13% Rhodium/ Platinum (0-1400 °C)
Thermocouple	S Platinum-10% Rhodium/ Platinum (0-1400 °C)
Thermocouple	T Copper/ Copper Nickel (50-250 °C)
Resistance Thermometer	PRT 100 (50-450 °C)
<i>Many more input ranges available - Please call for details.*</i>	
Output	Two wire 4-20mA, non-isolated
Supply	12-24V dc, reverse polarity protected , 36Vmax(intermittent)
Accuracy	T/C +/- 0.2% of span (linear to mV input) PRT +/- 0.1% of span (linear to temperature input)
Drift	
Zero drift	+/- 0.02% of span per °C
Span drift	+/- 0.02% of span per °C
Other	
Supply voltage effect	+/- 0.03% change of span over 12V to 36V change
Cold Junction Compensation	Better than 2°C, over ambient temperature range of 0-50°C; rejection ratio better than 25:1
Sensor open circuit detection	Upscale; output current between 23 and 27 mA
Load capability	$[(V_s - 12) / 0.02]$ ohms; $V_s = 12$ to 36 Vdc
Ambient operating temperature	0 to 50 °C (70 °C max)
Storage temperature	-20 to 100 °C
Zero adjustment potentiometer	+/- 20% of span (25 turns)
Span adjustment potentiometer	Down to 50% of span for thermocouple input and 30% of span for PRT 100 input (25 turns) **
Dimensions	
Overall diameter	42.0 mm
Overall height	24.0 mm
Mounting holes between centres	32.0 mm

Additional notes from table above:

* Tactical Controls manufacture a very large selection of temperature transmitter input ranges in the 310TX version . The table above and overleaf is only a small representation of the ranges currently available, and therefore should only be used as a guide. For detailed information on the latest variations, please call the sales department at Tactical Controls Ltd. (Contact details appear below.) Tactical Controls can manufacture temperature transmitters suitable for any required temperature range at a very competitive price.

** The transmitters can be easily ranged and calibrated by means of the multi-turn zero and span potentiometers in conjunction with either a mV source or standard resistance input. For example, a type K thermocouple which has a working temperature range of 0 to 1100 °C can be easily calibrated to operate between 0 to 600 °C, where 4 mA and 20 mA represent 0°C and 600 °C respectively.

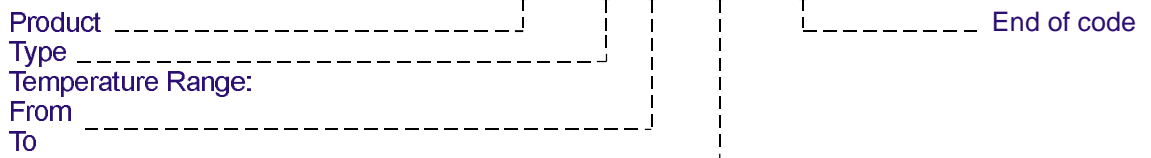
Ranges Available

Type	Temperature Range (°C)	
	From	To
PRT100	-50	200
PRT100	-35	35
PRT100	-25	10
PRT100	-20	100
PRT100	-18	250
PRT100	-10	50
PRT100	-5	15
PRT100	0	15
PRT100	0	500
J	0	200
J	0	800
K	0	100
K	0	1200
K	200	600
N	0	1300
R	0	1200
R	800	1400
S	0	1400
T	-50	50
T	-50	150
T	0	100
T	0	300

Many More Ranges Available: Please ask for details

Ordering Information

310TX / J / 0 / 200 / 00



eg. The product ordering code for a PRT 100 type 310TX series temperature transmitter with a range of -18 to 250 (from the table above) would be: 310TX / PRT100 / -18 / 250 / 00
 Orders can be placed by telephone or fax. Please ask for the Sales Department and have transmitter input details available so that we can provide the best possible solution for your application. The 310TX range is continuously expanding; please ask for the latest information on the current product range.



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