7. Specifications

@Vnom : 24 VDC, Tambient = 25°C
Span nom. : T/C = 250°C (reference to full scale)

Output :	4-20mA two wire
Power Supply :	9-36 VDC, polarity protected
Supply Voltage Effect :	±0.02% / V
Open Circuit Detection :	Down scale, 3mA,
Load Capability :	Rmax.=(Vsupply - 9V) / 20mA
Zero Drift :	±0.05% / °C
Span Drift :	±0.05% / °C
Ambient Operating Temperature :	-40 to +70°C (-40 to +158°F)
Storage Temperature :	-40 to +100°C (-40 to +212°F)
Zero and Span Adjustment :	20 turn potentiometer ± 25% for zero and span
Input :	K, J, T, E
Linearity :	Voltage linear (not temperature linear)
Sensor Lead Resistance:	10 K Ohm max.
T/C Cold Junction Drift :	0,05°C/°C

8. Notes

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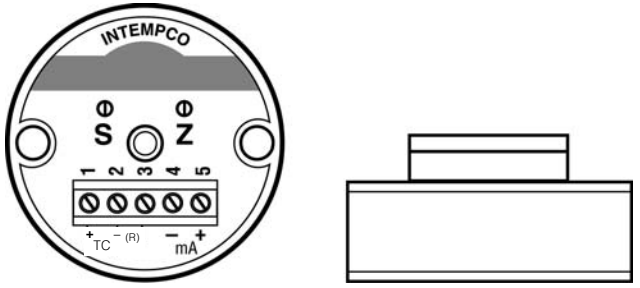
INTEMPCO's TT810
Thermocouple Transmitter



INSTRUCTION MANUAL

1. Description

The TT810 Series loop powered thermocouple temperature transmitters are of analog design and offer an excellent price/performance ratio. Factory calibrated in many temperature ranges and stocked availability make TT810 a perfect choice for temperature signal transmission. Precision 20-turn potentiometers allow fine adjustment of ZERO and SPAN. TT810 units are voltage (not temperature) linear and fit into industry standard small connection heads.

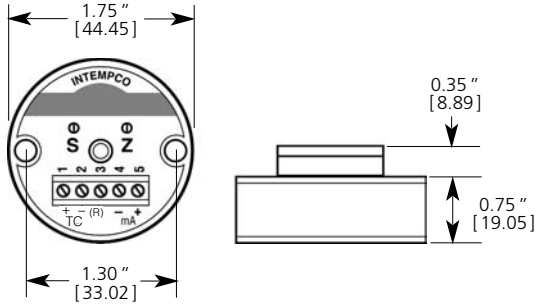
2. Note

Prior to unpacking and installation, please read the operating instructions and follow them carefully. These units are to be used, serviced, and repaired only by individuals who are familiar with the operating instructions and the applicable regulations for operational safety and accident prevention.

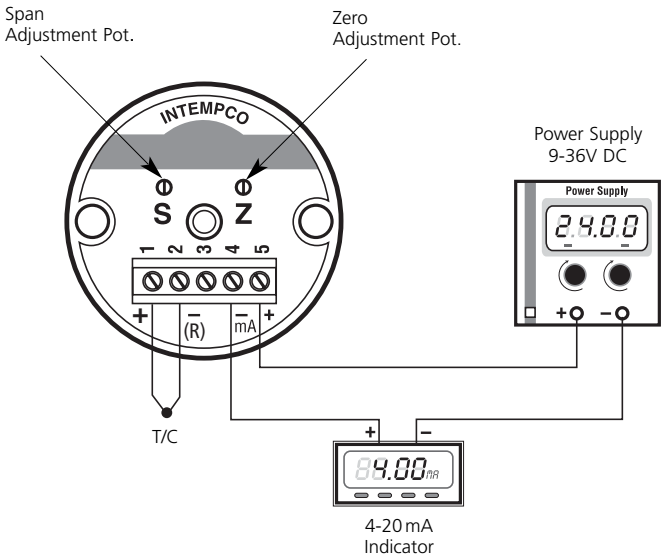
3. Control of Units

The units are calibrated and checked before shipment and shipped in good conditions. If you detect a visible defect on the unit, we recommend that you carefully check the packing material. In the event of a defect, please immediately notify the mail service/freight forwarder, as they are responsible for shipping damage.

4. Dimensions



5. Electrical Connections



The diagram above represents the connection method to provide the 4-20 mA with a current loop output. The input to the TT810 is either a thermocouple or a thermocouple simulator (Pins 1&2). The output loop (Pins 4&5), the indicator and the transmitter are powered by a 9 to 36 VDC power supply. The indicator could be replaced by a calibrator, controller, a data logger, etc.

Note : **Transmitters are protected against reverse connections, incorrect connections of the output wires result in a near zero current flow in the loop.**

6. Calibration Instructions

The TT810 comes factory calibrated. If you need to re-calibrate the unit, you will require the following equipment :

- 9-36 VDC Power Supply with a milliamp indicator or a loop-powered calibrator.
- A temperature bath.
- A standard reference temperature sensor.
- Test leads.

2 Point Calibration, Min. & Max. (Example : 0-100 °C range)

1. Connect the TT810 as per the wiring diagram. (5)
2. Set the temperature bath to the minimum range of the TT810 transmitter, Ex.: 0 °C = 4.00 mA
3. With the temperature standard, verify the bath temperature and, if required, calculate the corresponding current output for the TT810.
4. Immerse the TT810 probe in the temperature bath. Make sure the output stabilizes. With ZERO pot. adjust current output to 4.00mA or the corresponding current output.
5. Set the temperature bath to maximum range of the TT810 transmitter, Ex.: 100 °C = 20.00 mA
6. With the temperature standard, verify the bath temperature and, if required, calculate the corresponding current output for the TT810.
7. Immerse the TT810 probe in the temperature bath. Make sure the output stabilizes. With the SPAN pot. adjust current output to 20.00 mA or the corresponding current output.
8. Repeat steps 2 to 7 until required accuracy is reached. This step is necessary because of the small interaction between Zero and Span.

Single Point Calibration (Example : 0-100 °C range)

In some cases, a single point calibration is sufficient especially when a process is at a fixed set point.

1. With a temperature standard, verify the correct process temperature and compare it to the TT810 reading.
2. If the temperature reading is below the mid-point of the TT810 range, use the ZERO pot. to obtain the correct reading.
3. If the temperature reading is above the mid-point of the TT810 range, use the SPAN pot. to obtain the correct reading.