

# Thermocouple Input 2-Wire Temperature Transmitters

## Field mounted, Precision, Universal

### Model UTI/2, UTN/2

Model UTI/2 is a precision loop-powered 2-wire transmitter with galvanic isolation between its input and the current loop output signal. It includes the necessary circuitry for the amplification and processing of signals from Thermocouple sensors. The input circuit can accept all types of Thermocouples and provides the ice point reference compensation. Specially designed circuitry provides excellent protection from external EMI/RFI sources.

The UTN/2 is a non-isolated, lower cost version of the UTI/2 for those applications which require its precision and RFI immunity but do not require Input/Output isolation.

The UTI/2 and UTN/2 can be easily ranged without requiring special tools or board modifications. The transmitters are members of Mescon's family of advanced Universal-Input transmitters which may be readily re-configured to accept other popular inputs such as Pt-100 RTDs mV/mA/Volt and Potentiometers.

#### FEATURES:

- 2-Wire transmitter system
- Eliminates ground loop errors
- Excellent EMI/RFI protection
- All known Thermocouples
- User selectable T/C type
- User range-able
- 1000 Volts isolation (UTI)
- Wide ranging ZERO and SPAN

#### OPTIONS:

- NEMA 4X or NEMA 7 enclosure
- DIN rail mounting



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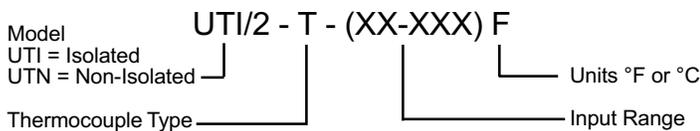
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#### SPECIFICATIONS:

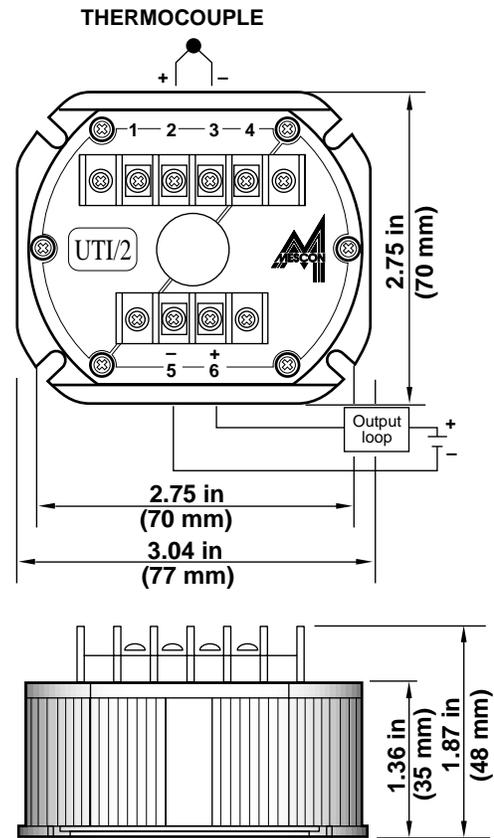
Input .....	All known Thermocouple types
Input Span .....	5mV min (10mV for rated accuracy)
Burnout Detection .....	Upscale, standard Downscale, optional
Input Impedance .....	> 10M $\Omega$ on all ranges
Output Span .....	4-20mA, limiting @ < 28mA
Reference Junction .....	1°C accuracy for 0-50°C ambient
Linearity .....	Better than 0.025% referred to mV input
Temperature Stability .....	Better than $\pm 0.02\%/^{\circ}\text{F}$ (10 mV input)
C.M.R.R. ....	> 120 db, DC to 60 Hz
I/O Isolation .....	> 1000 VDC or peak AC
EMI/RFI Protection .....	Tested per SAMA PMC 33.1 from 20 to 1000 MHz for field strength to 30 V/m, meets $\text{CE}$ specifications
Power Supply .....	10-50 VDC, reverse polarity protected
Supply Voltage Effect .....	Negligible
Output Ripple .....	< 0.01% of Span to 5KHZ
Adjustments .....	> $\pm 25\%$ for both ZERO and SPAN
Operating Temperature .....	- 20°C to 70°C, (0°F to 160°F)
Humidity .....	0-95% RH, non-condensing
Maximum Load .....	Rmax = (Vsupply -10V)/20mA

*All specifications are subject to change without notice.*

#### ORDERING INFORMATION



**Please request our ordering and calibration diskette describing the rest of Mescon's products.**



#### Wiring Instructions:

1. Connect the input signal according to the interconnection diagram.
2. Connect the output signal to a digital indicator.
3. Connect the power supply according to the drawing, observe for proper polarity.

#### Calibration and Adjustments:

It is assumed that the unit undergoing calibration has been properly ranged at the factory or workplace.

1. Connect an thermocouple simulator to the UTI/2 input terminals using specific thermocouple wires. Observe for proper polarity.
2. Complete the output loop using a power supply and a precision digital current indicator. Turn the power on. **For optimum performance, allow 15 minutes for temperature gradients to equalize.**
3. Set the input to the desired minimum signal and adjust the ZERO pot until the current indicator reads 4.00mA.
4. Set the input to the desired maximum signal and adjust the SPAN pot until the current indicator reads 20.00mA.
5. Repeat steps 3 & 4 until no further adjustment is needed.

Note: If the unit can not be calibrated to the desired range, it should be returned to the workshop for proper ranging.

Distributed By:



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