



Pathfinder Model CT-1000 Transmitter

Operating Manual



General Description:

The Model CT-1000 (encapsulated miniature transmitter) is a 2-wire, 4-20 mA / 1-5 VDC conductivity transmitter featuring epoxy encapsulated construction, high performance and small physical size. This transmitter converts the Conductivity cell signal to a usable 4 to 20mA current/ 1-5 volt (using a 250 ohm resistor) signal proportional to the conductivity level. This Transmitter is a Loop Powered, 2 wire type device. Any D.C. power supply from 12 to 36V may be used. There are two adjustments "ZERO" and "SPAN" that are used for calibration. The output can be monitored or used as a process variable with a loop powered meter, recorder or PLC using a load resistor converting the 4-20mA to 1-5 volt DC signal. A Multi-Meter can also be used in series (milliamp range) for calibration and troubleshooting.

Specifications:

Measuring Scale:	10uS to 75mS
Conductivity Probe Constant:	w/ K factors 0.01, 0.1, 1.0, 1.5, 2.3 and 10.0
Output:	4-20mA
Power Supply:	12 to 36VDC
Load Resistor:	0 to 7500 at 24VDC
Accuracy:	+/- 1 to 2% of Span
Linearity:	±.02 PPM units
Operating Temperature Range:	-25 to +70°C
Reverse Polarity Protection:	Internal diode
Dimensions:	1.5" × 2.0" × 1.0"

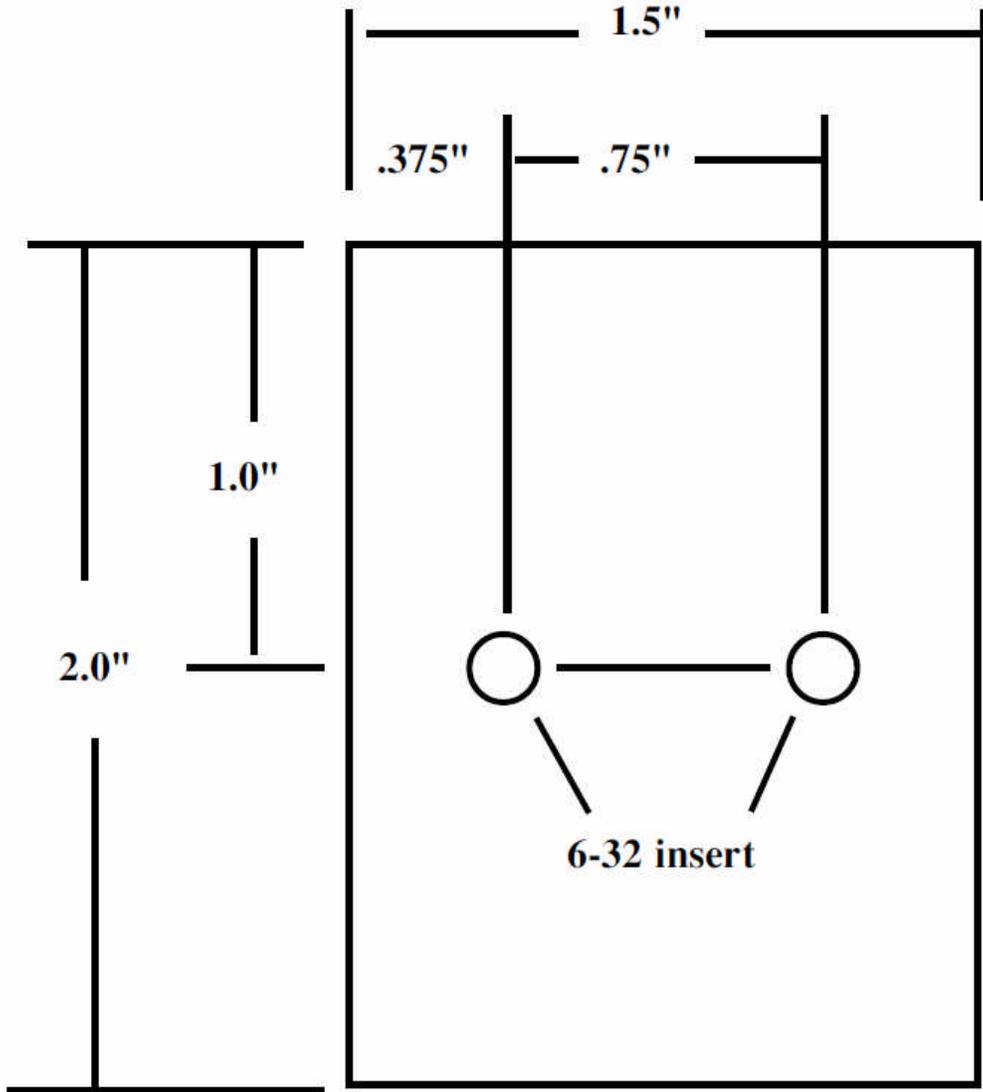
Features:

1. Miniature size (1.5 x 2.0 x 1.0 inches)
2. Encapsulated construction.
3. Requires a 12-30 VDC isolated loop power
4. Minimum compliance voltage 18VDC. For a total load resistance of 750Ω , 24VDC minimum is required.
5. Non-interactive adjustments for Span and Zero
6. Customizable ranges from $10\mu\text{S}$ to 75 mS Full Scale depending on sensor
7. Operational with different sensor K-Factors
8. Linearity of $\pm 2\%$ of span
9. Operating temperature range of -25 to $+70\text{ }^\circ\text{C}$
10. Optional simple linear temperature compensation of $2\%/^\circ\text{C}$ from $0-50\text{ }^\circ\text{C}$ or $0-100\text{ }^\circ\text{C}$ with the correct temperature sensor.
11. Internal reverse polarity protection
12. Two #6-32 threaded receptacles on $3/4$ " centers for mounting In a head, weather or explosion proof box, or DIN rail mount.
13. Light weight: 4oz
14. Pluggable Euro style connectors
15. Excellent performance at low cost
16. Customized sensor matching and full scale ranges for OEM applications

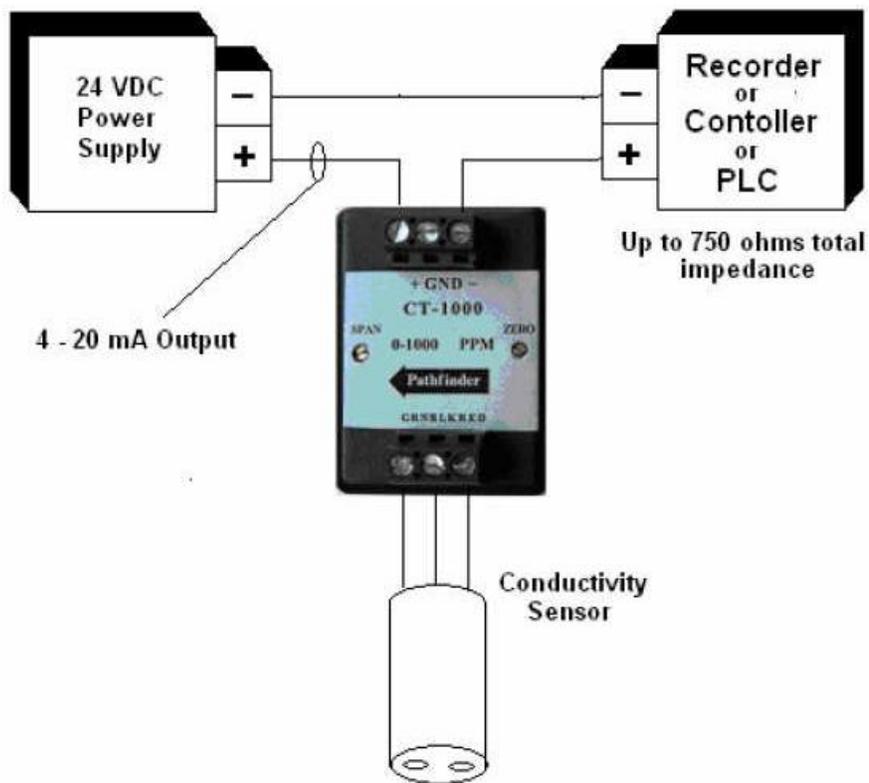
Installation

1. There are two 6-32 mounting holes on $3/4$ " centers are provided on the back of the Transmitter. The transmitter can be mounted in a Electrical head, weather-proof box, or Din rail.
2. The output wires must be isolated from ground; connections are made to the terminal strip observing polarity to the terminals marked +, -out. These wires are to be connected to a D.C. power supply through a load resistor or device as described in the drawing. The wires can be as long as necessary. Connect the ground terminal to earth ground.
3. The loop device or load resistor can be either in the positive or negative power supply lead. The value of the loop resistor depends on the voltage required at the monitoring location. With a 12 VDC supply the loop loading cannot exceed 250 ohms total. At 24 VDC there is a max load of 750 ohms.
4. Once wire as per attached drawing, turn the unit on and with the Conductivity cell wired to the input. With the probe dried and in air, adjust "ZERO" for an output current of 4.00mA.
5. Put the conductivity cell in a Full Scale solution and adjust "SPAN" for an output current of 20.00mA. If you do not have the full scale solution, here is the calculation for proper calibration. Known Solution/Full scale of transmitter x 16 plus 4. This formula will give you the proper output reading in milliamps.
6. Calibration complete.

CT-1000 mounting hole pattern



CONNECTION DIAGRAM



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