

OPERATING MANUAL

PATHFINDER INSTRUMENTS

Model CT-1000-pt

I. General Description

The **Model CT-1000-pt** (encapsulated miniature transmitter) is a 2-wire, 4-20 mA conductivity transmitter featuring encapsulated construction, high performance and small size.

The unit uses 4-wire in-line or submersion conductivity cell 2 wires are for the sensor electrodes and 2 wires are for the temperature sensing element. It transforms the cell signal to a 4 to 20mA current proportional to the conductivity level. This output may be transmitted over two wires to a control location, the same 2 wires provide power to the transmitter. Any D.C. power supply from 12 to 36V may be used. There are two adjustments on the transmitter to standardize probes for "SPAN" and "ZERO". The output can be monitored with a loop powered meter, a loop resistor or a multimeter during the standardization procedure.



Specifications

Input:	0-10 μ S
Output:	4-20mA
Power Supply:	12 to 36VDC
Load Resistor:	0 to 750 Ω at 24VDC
Accuracy:	+/- 2% of Span
Operating Temperature Range:	-25 to +70 $^{\circ}$ C
Reverse Polarity Protection:	Internal diode
Dimensions:	1.5" \times 2.0" \times 1.0"
Temperature compensation:	0 to 100 $^{\circ}$ C (1K Ω pt sensor)
Probe constant:	K = 0.1

II. Installation

1. Two 6-32 mounting holes on .75" centers are provided. The transmitter can be mounted in a head, weather-proof box, or DIN rail.
2. The output wires are 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. The wires can be as long as necessary.
The input electrode wires are isolated from the output, the red and black wires are connected to the conductivity electrodes and the green and white wires are connected to the temperature sensor.
3. The loop 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. Calculate the required power supply voltage from the following equation: Minimum power supply voltage = 12 + (.02 \times RL). A convenient value for the loop resistor might be 250 ohms, VO = 1V to 5V. Minimum supply voltage = 12 + (.02 \times 250) = 17V. The maximum supply voltage is 36V.
4. Turn the unit on and with the conductivity cell in air adjust "ZERO" for an output current of 4.00mA.
5. Put the conductivity cell in a 10 μ S solution and adjust "SLOPE" for an output current of 20.00mA.
6. Calibration complete.
7. To verify the accuracy of the conductivity cell a conductivity calibration solution is available from Pathfinder Instruments, it consists of enough materials to do 30 calibrations. It costs \$15, ask for stock # CAL-10