

OPERATING MANUAL

PATHFINDER INSTRUMENTS

Model CT-1000

I. General Description

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

The unit consists of an in-line/submersion conductivity cell Model CS-1000. 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:	0-1000PPM
Output:	4-20mA
Power Supply:	12 to 36VDC
Load Resistor:	0 to 750Ω at 24VDC
Linearity:	±.02 ppm units
Operating Temperature Range:	-25 to +70°C
Reverse Polarity Protection:	Internal diode
Dimensions:	1.5" × 2.0" × 1.0"

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. Connect the ground terminal to earth ground.
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 CS-1000 cell in air adjust "ZERO" for an output current of 4.00mA.
5. Put the conductivity cell in a 1500μS 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 \$10, ask for stock # CAL-1.5k.

typical CT-1000 connection diagram

