PATHFINDER INSTRUMENTS Model CT-1000PT

OPERATING MANUAL

General Description

The **Model CT-1000PT** (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 multi meter during the standardization procedure

Specifications

Input: Measuring Scale:----------0-10µS to 0-7000uS
Probe constant: ----------K=0..1,K=1.0
Output: ----------4-20mA
Power Supply: ----------12 to 36VDC
Load Resistor: ----------0 to 750Ω at 24VDC
Accuracy----------+/- 2% of Span
Operating Temperature Range: ----------25 to +70ºC
Reverse Polarity Protection: ----------Internal diode
Dimensions: ----------1.5" × 2.0" × 1.0"
Temperature compensation: ----------0 to 100ºC (1KΩ pt sensor

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

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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 × RL). A convenient value for the loop resistor might be 250 ohms, VO = 1V to 5V. Minimum supply voltage = 12 + (.02 × 250) = 17V. The maximum supply voltage is 36V.

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.

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.

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