

OPERATING MANUAL

Pathfinder Model EMIT-pH Transmitter



Description

The **Model EMIT-PH** (encapsulated miniature isolated transmitter) is a 2-wire, 4-20 mA/ 1-5 VDC pH transmitter featuring input to output isolation, high performance and small size.

The transmitter accepts as its input any pH electrode via a BNC coaxial connector. It transforms the probe signal to a 4 to 20mA current proportional to the pH 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 “Slope” and “Cal”. The output can be monitored with a loop powered meter, a load resistor or a multimeter during the standardization procedure.

Temperature compensation is automatic with use of a platinum resistance temperature probe with an alpha of .00375ohms/ohms/°C and 1000ohms at 0°C.

EMIT-PH Specifications

Input	0-14pH
Analog Output	4-20mA / 1-5VDC
Power Supply	12 to 36VDC
Load Resistor	250Ω for 1-5VDC
Linearity	± .02 pH units
Input to Output Isolation	1000V RMS
Operating Temperature Range	-25° to +70°C
Reverse Polarity Protection	Internal diode
Dimensions	2" X 2" X 1.5"

Installation

1. There are two #6-32 mounting holes. The transmitter can be mounted in an electrical box, weather-proof box, or DIN rail.
2. The input probe connector is a BNC jack. Use only a coaxial cable that has insulation around the shield. The shield is isolated from ground, and this isolation should be maintained for proper operation. For best results, the probe cable should not be longer than 25 feet. Long cables result in a slow response because the probe must charge the cable capacitance through the high probe source resistance.
3. 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.
4. The load resistor can be either in the positive or negative power supply lead.
5. To calibrate the transmitter place the pH probe in a # 7 buffer and adjust the “Cal” pot for an output current of 12.00 mA **always adjust “Cal” first**. After the “Cal” pot has been set put the pH probe in a #10 buffer and adjust the “Slope” pot for an output current of 15.43mA.

