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User's Guide

MADE IN USA

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ENVIROMUX-BPT

Barometric Pressure Transmitter

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Section 1 - General Description

The ENVIROMUX-BPT is a low cost, wall mounted barometer/transmitter. A temperature compensated, solid state pressure sensor measures atmospheric pressure. The measurement is then converted to an industry standard, user selectable 4-20 mA or 1-5 Vdc output signal scaled across the measurement range.

Section 2 - Unpacking

The following items are supplied in the box with your transmitter.

- This Manual (1 ea.)
- #6 Wall Anchor (2 ea.)
- #6 Mounting Screw (2 ea.)

Section 3 - Theory of Operation

A 4-20 mA loop is a series loop in which a transmitter will vary the current flow depending on the input to the transmitter. In the ENVIROMUX-BPT, the amount of current allowed to flow in the loop will vary depending on the atmospheric pressure being measured by the sensor. Some advantages of a current output over a voltage output is that the signal measured is less susceptible to electrical noise interference and the loop can support more than one measuring instrument as long as the maximum loop resistance is not exceeded.

A typical application utilizing a current loop will normally consist of a power supply, the transmitter and a meter, recorder or controller to measure the current flow. The loop resistance in the sum of the measuring instruments and wire used. The maximum allowable loop resistance for the ENVIROMUX-BPT to function properly is found by using the following formula:

R_{max} = (power supply voltage – 8 volts) /.02 amps

Section 4 - Specifications

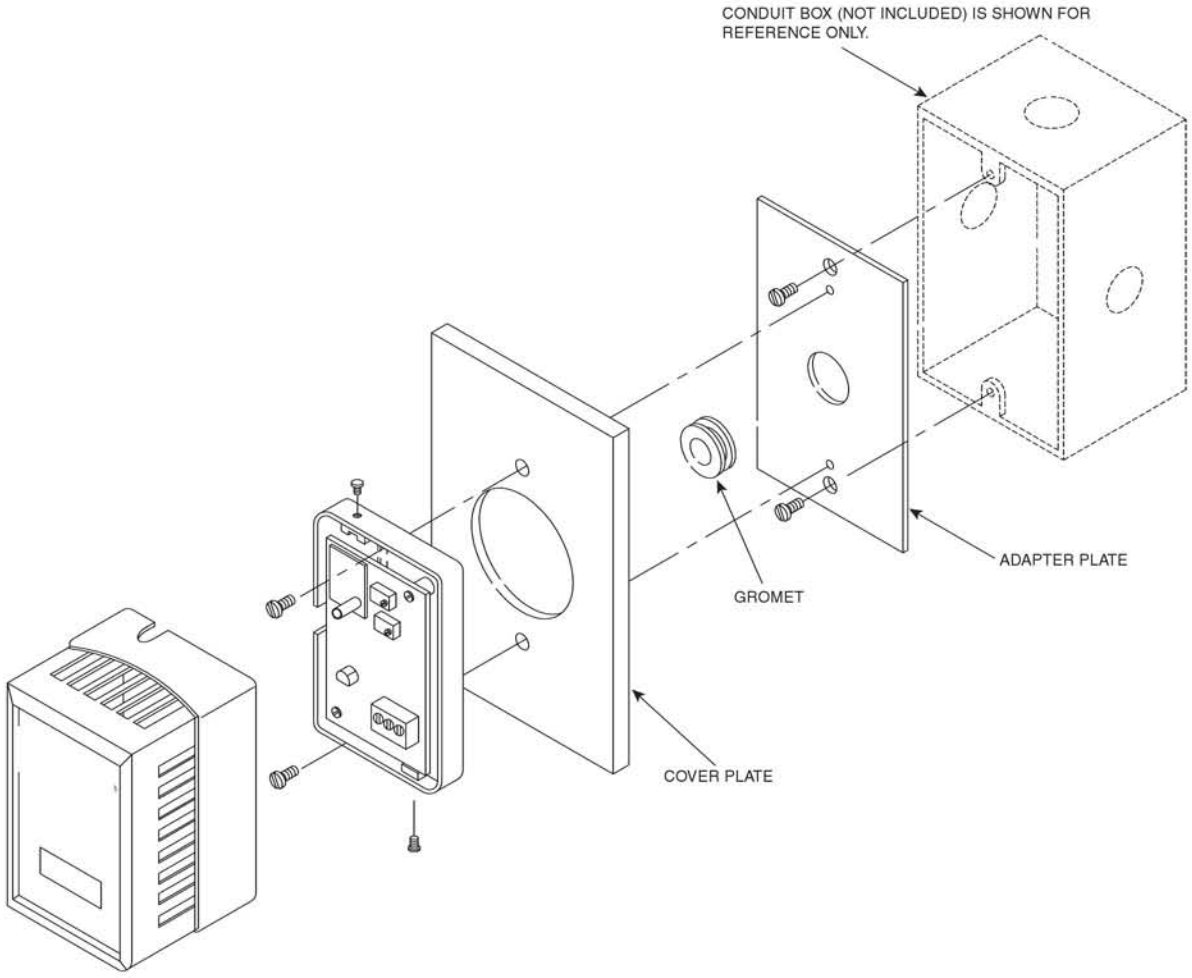
Range:	20.8 to 32 in Hg (10.20 to 15.72 psi)
Accuracy:	±1% FSO
Repeatability:	±.2% FSO
Pressure Hysteresis:	±.15% FSO
Long–Term Stability:	±.1% FSO/Year
Operating Temperature Range:	-20 to 140°F (-29 to 60°C)
Temp. Compensation Range:	32 to 140°F (0 to 60°C)
Output:	4 – 20 mA (scaled to full range)
Power Requirements:	8 –24 Vdc @ 20mA
Max Loop Resistance:	Ohms = (V supply – 8 V) / .02 A
RH Time Constant:	1 ms., from 10-90% FSO
Sensor Type:	Solid State
Media Compatibility:	Clean room air with a relative humidity less than 90% (non-condensing), non-corrosive gases
Enclosure Material:	Acrylonitrile Butadiene
Dimensions:	79 x 54 x 45mm (3.12 L x 2.12 W x 1.78" H)
Weight:	54 g. (.12 lbs)

NOTE:

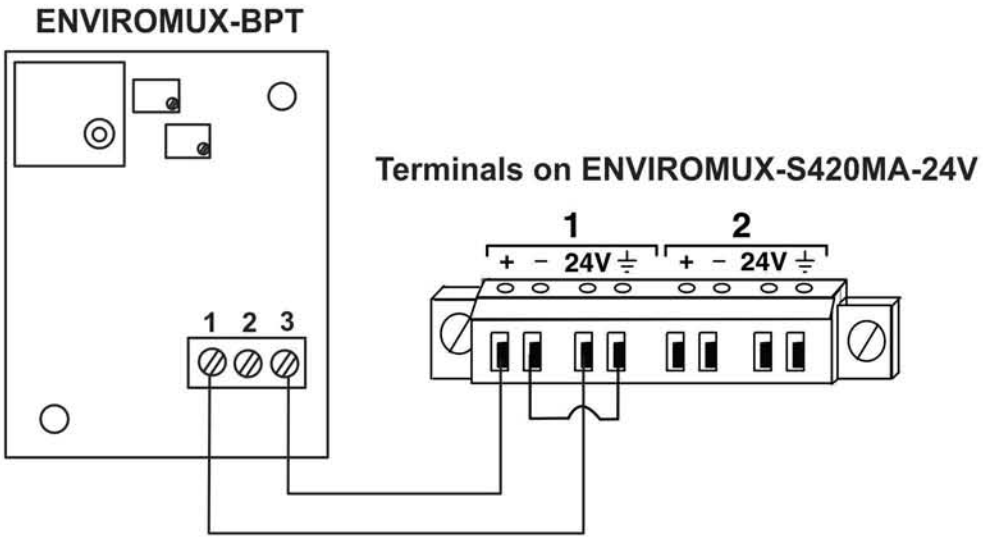
These units are not designed, nor recommended for medical use, explosive environments or outdoor applications.

Section 5 - Mounting

The ENVIROMUX-BPT is designed for wall mounting in locations that are free from dirt, grease, food particles and condensing moisture such as manufacturing clean rooms, computer rooms and laboratory type environments. Wall anchors and mounting screws are included for mounting. A conduit box mounting bracket/wall plate adapter kit is available that will allow the transmitter to be mounted to a standard electrical conduit box.



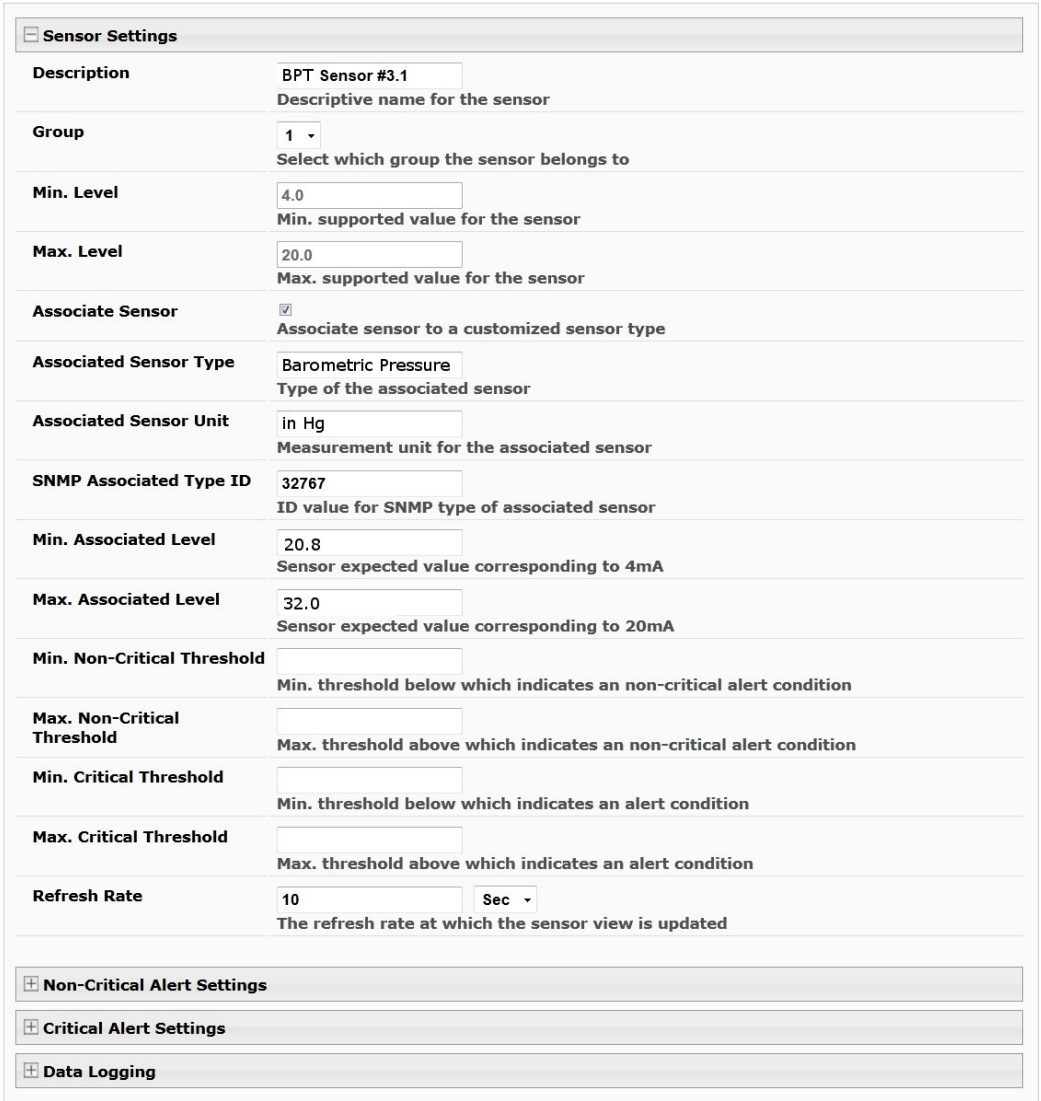
Section 6 - Transmitter Wiring



Section 7 - Barometric Pressure to Analog Output Calculations

Output Reference Table

in Hg	Psi	mm Hg	Current (mA)
32	15.72	813	20
31	15.23	788	18.57
30	14.73	762	17.14
29	14.24	736	15.71
28	13.75	711	14.29
27	13.26	686	12.86
26	12.77	660	11.43
25	12.27	634	10
24	11.79	610	8.57
23	11.3	584	7.14
22	10.8	558	5.71
20.8	10.2	527	4



Example of Sensor Configuration in ENVIROMUX Web Interface