BAPI 51740 Fixed Range Pressure Sensor Installation Guide

BAPI 51740 Fixed Range Pressure Sensor

Contents

Product Identification and Overview

BAPI's Fixed Range Pressure Sensor (FRP) is an economical solution for any cost-conscious application. The FRP features one factory-set pressure range and one factory-set output range. A single button is used to auto-zero the unit.
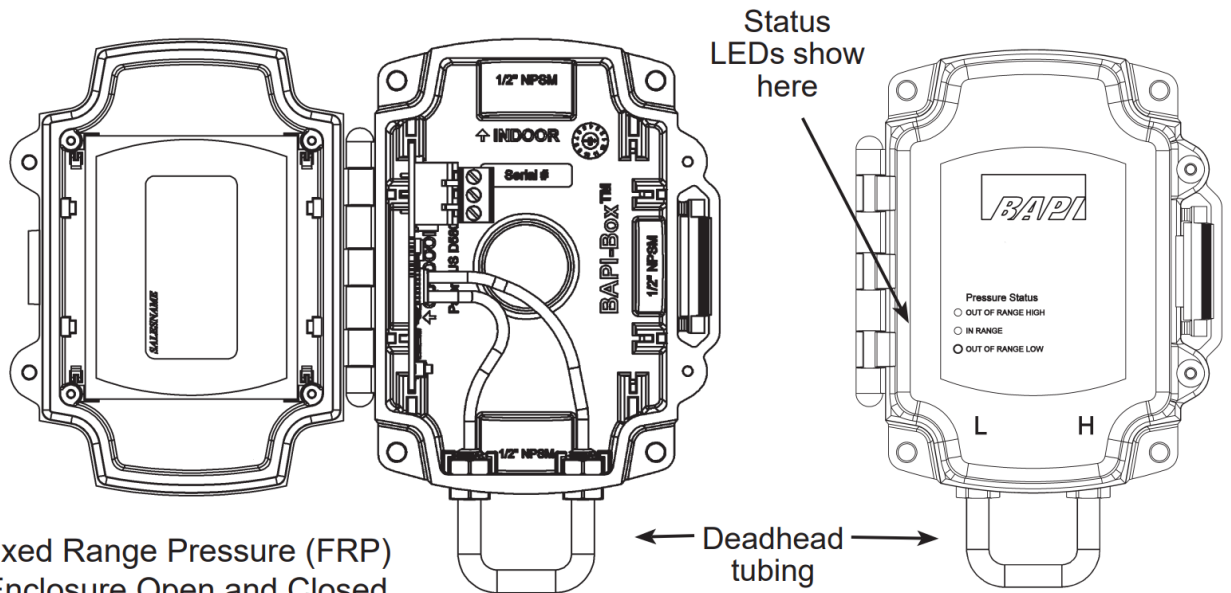

Fig. 1: Fixed Range Pressure (FRP) Sensor, Enclosure Open and Closed.

Mounting

Attach the unit to its mounting surface with the four self-tapping #10×3/4" sheet metal screws through the holes in the mounting feet. The preferred mounting orientation is with the pressure ports facing down to prevent condensation from entering the pressure transducer. Do not mount to a vibrating surface as vibration may cause issues with the accuracy of the sensing element. See page 2 for an actual size mounting template for the unit. The two cover latch screws must be installed to achieve an IP66 rating.

After Auto-Zeroing, remove the deadhead tubing and push the system tubing onto the port nipple without creating any kinks or holes.

If a hole must be cut into the plastic plugs in the ½" NPSM threaded ports of the BAPI-Box enclosure, it's recommended to use BAPI's Clean-Cut Tool. Not using this tool could cause damage to the electronics of the sensor. See the Accessories section of BAPI's website or product catalog for more info on the Clean-Cut Tool.
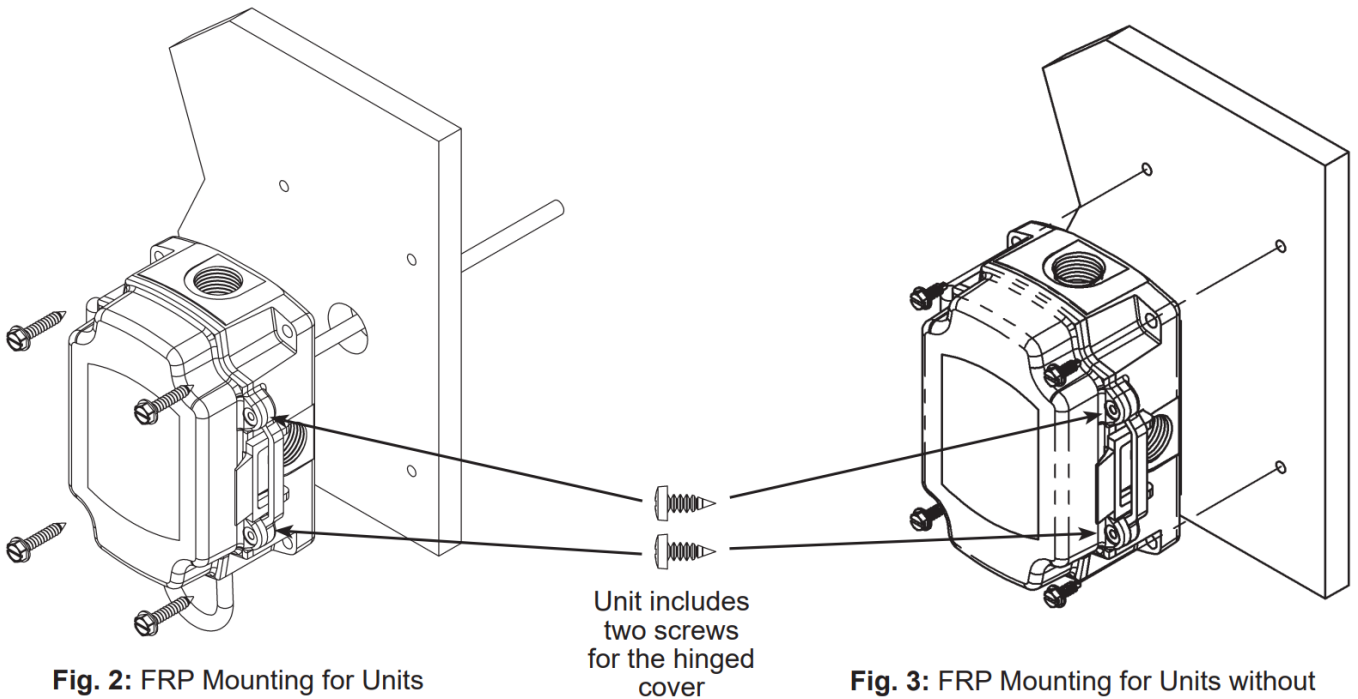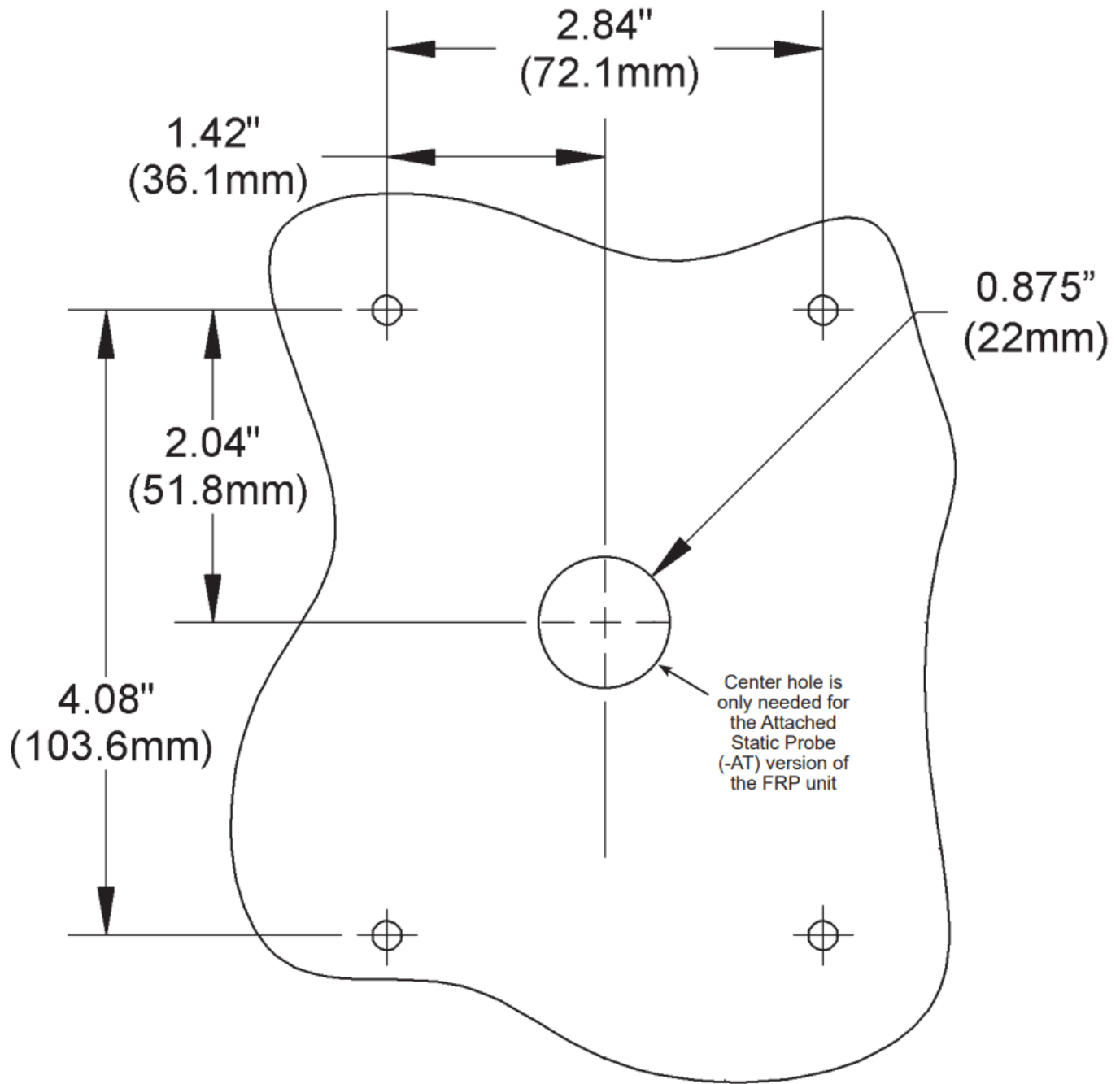

Fig. 2: FRP Mounting for Units with Attached Tube

Unit includes two screws for the hinged cover

Fig. 3: FRP Mounting for Units without Attached Tube

Mounting Template

Fig. 4:
Mounting Hole Template – shown actual size (BAPI recommends creating 5/32" (4mm) pilot holes for the #10×3/4" self-tapping mounting screws.)

2.84" (72.1mm)
1.42" (36.1mm)
2.04" (51.8mm)
4.08" (103.6mm)
0.875" (22mm)

Center hole is only needed for the Attached Static Probe (-AT) version of the FRP unit

Wiring Termination

STOP BAPI recommends wiring the product with power disconnected. Proper supply voltage, polarity and wiring connections are important to a successful installation. Not observing these recommendations may damage the product and void the warranty.

NOTE: The connectors use a rising block screw terminal to hold the wires. It is possible for the block to be in a partially up position allowing the wire to be inserted under the block. Be sure that the connector screws are turned fully counterclockwise before inserting the wire. Lightly tug on each wire after tightening to verify proper termination.

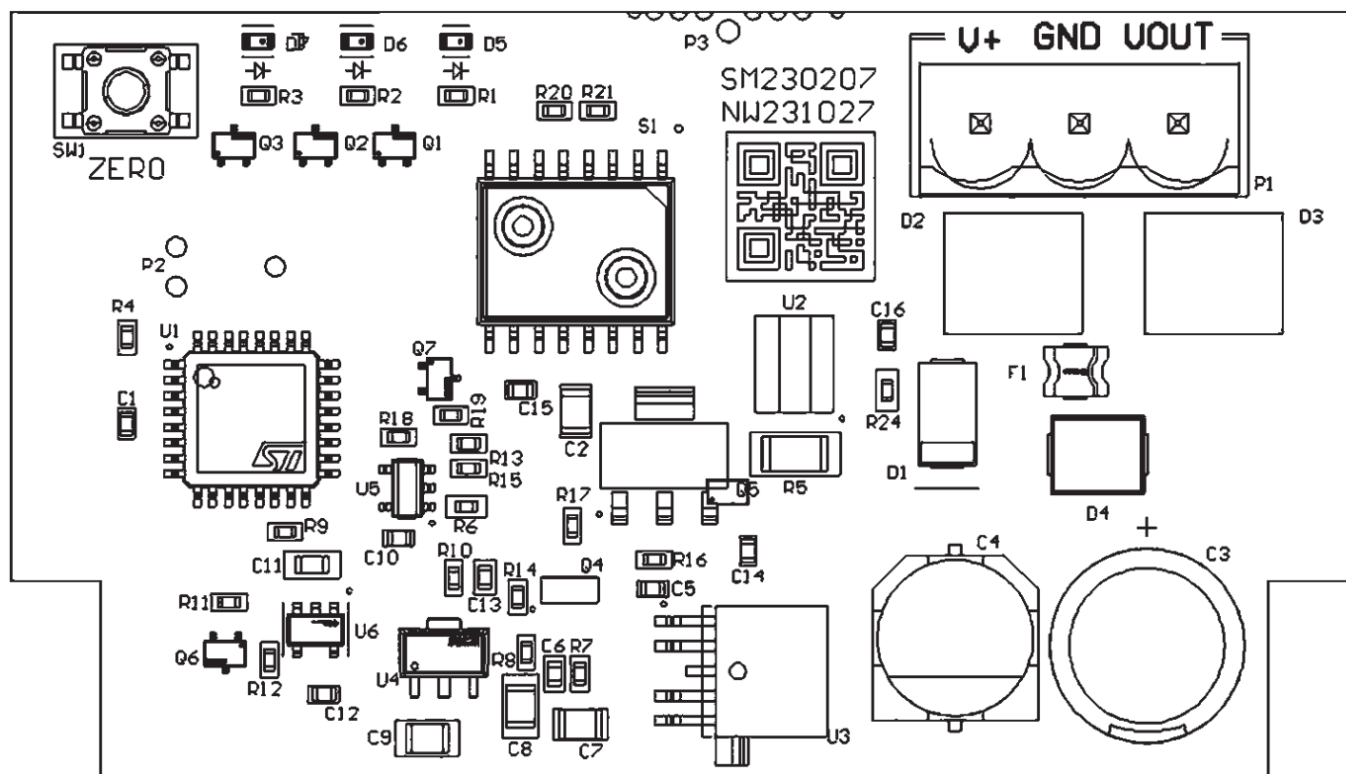| Terminal	Function
V+	Power, referenced to GND
	See the "Specifications" section on the next page for Power specs
GND	To Controller Ground [GND or Common]
VOUT	Voltage Output, Pressure Signal, referenced to GND

Fig. 5: Circuit Board (Wiring plug removed for clarity)

Auto-Zero Procedure

The FRP must be mounted at its location prior to auto-zeroing. Auto-Zeroing must be done after the initial setup, changing mounting orientation or changing any settings. For most applications, perform an auto-zero whenever it appears that the sensor has drifted. For critical applications, the unit should be zeroed 2-3 times a year.

STANDARD UNITS

1. Power must be on.
2. Detach system tubing and deadhead ports using the supplied tubing or other short length of tubing. Do not kink tubing.
3. Press and hold the Auto-Zero button for 1-2 seconds. The Status LED will stop flashing when completed.
4. Remove deadhead tubing and reattach system tubing.

UNITS WITH ATTACHED TUBE (See Fig. 6)

1. Power must be on.
2. Disconnect the system tubing from the Low Pressure brass fitting and attach the supplied 6" deadhead tubing

to the brass fitting.

3. Disconnect the short clear tubing from the 90° black Attached Tube fitting with your fingers. A pliers may cut the tubing.
4. Connect the clear tubing to the supplied straight black fitting on the 6" tubing. Do not kink the tubing.
5. Press and hold the Auto-Zero button for 1-2 seconds. The Status LED will stop flashing when completed.
6. Disconnect the deadhead tubing and reattach the clear tubing and system tubing. Confirm that the clear tubing is pressed all of the way onto the fitting and that it is not kinked.
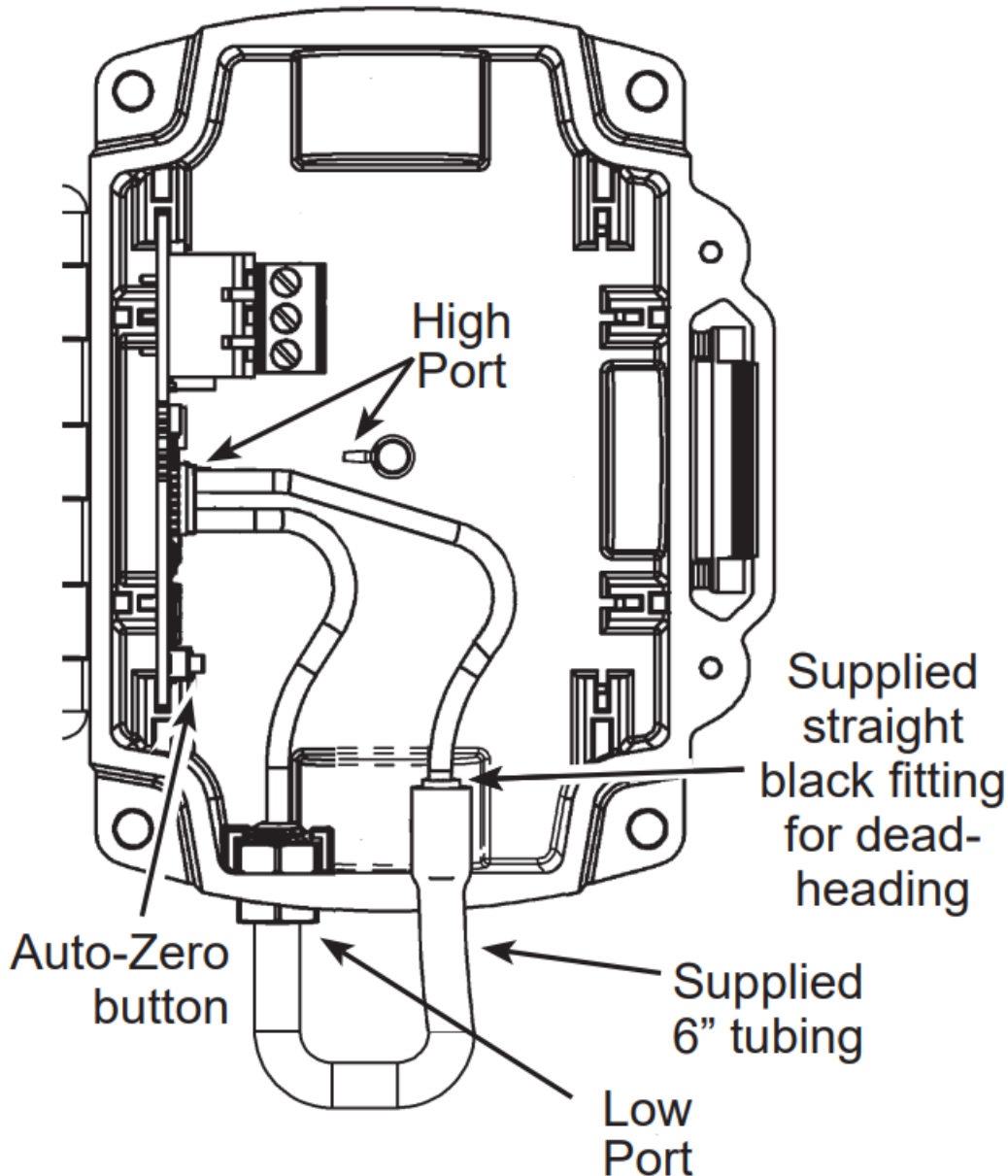
Fig. 6: Deadheading ports on units with attached tube (-AT)

Multicolor LED Status Indicators

The three Pressure Status LEDs vary according to the list below:
Red = Out of Range High
Green = In Range
Blue = Out of Range Low

Status LEDs show here and line up with the text on the logo.
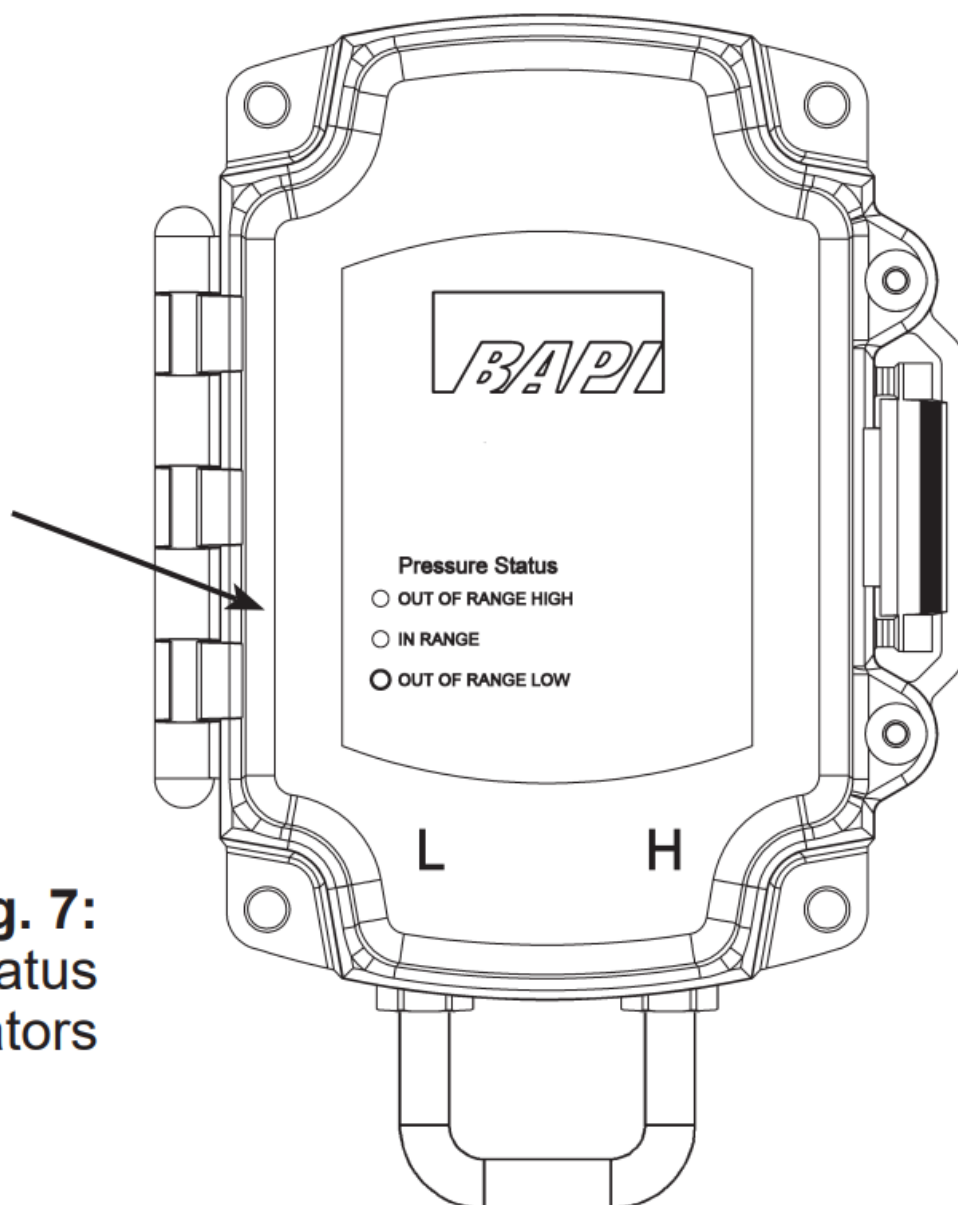
Fig. 7:
LED Status Indicators

Diagnostics

Possible Problem

- LED does not light
- Output not tracking pressure properly

Possible Solutions

- Check power connections for proper power
- Remove pressure from ports and perform auto-zero procedure
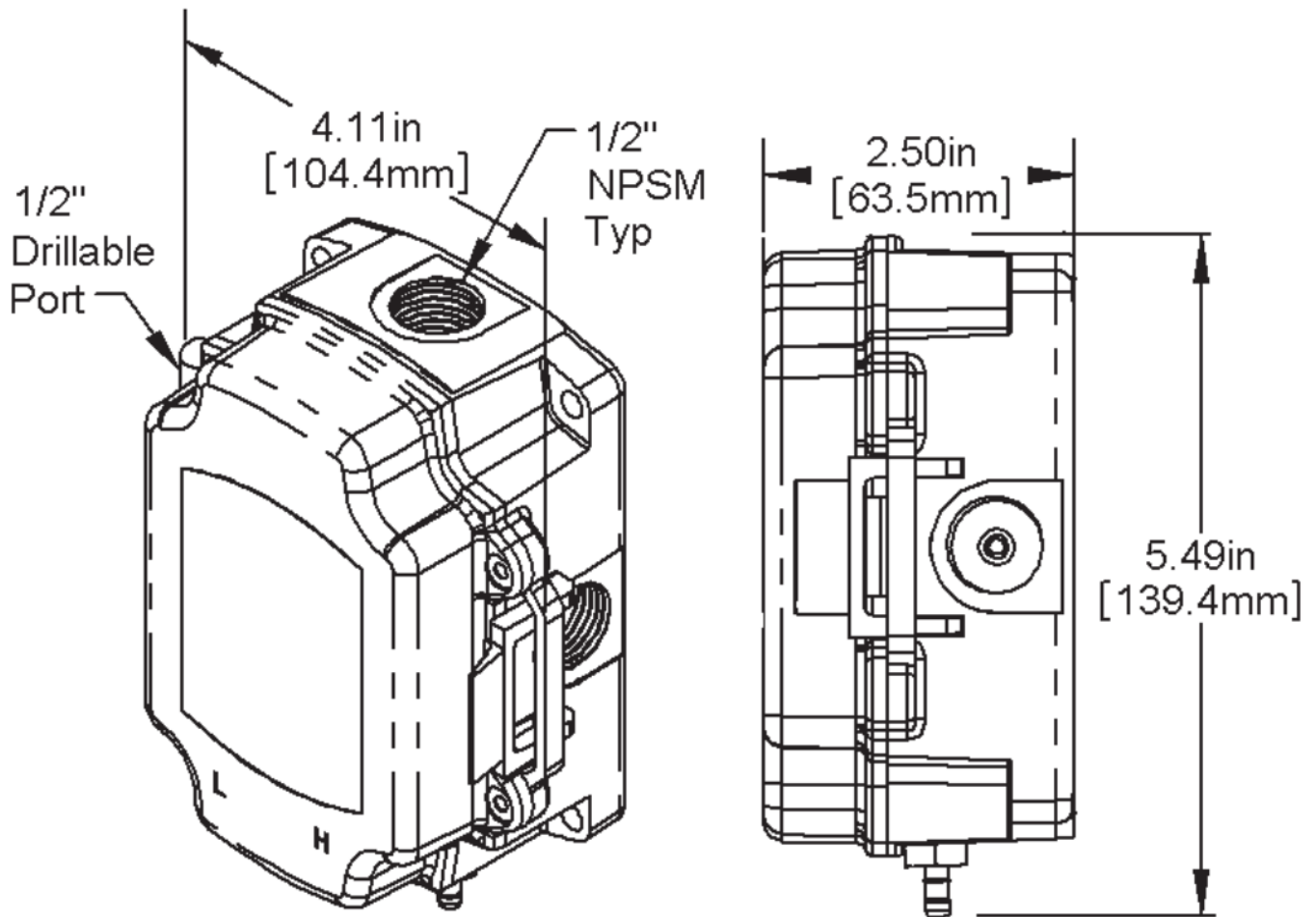
Specifications

Power:
4 to 20mA Output: 7 to 40 VDC
0 to 5V Output: 7 to 40 VDC, 12 to 28 VAC
0 to 10V Output: 13 to 40 VDC, 18 to 28 VAC
System Accuracy: ±1.0% FS, 32 to 104°F (0 to 40°C)

Temp Hysteresis & Stability: ±1% FS per year
Storage Temperature: -40 to 203°F (-40 to 95°C)
Compensated Temperature Range: 32 to 104°F (0 to 40°C)
Environmental Operating Range: -4 to 158°F (-20 to 70°C)
Humidity: 0 to 95% RH, non-condensing
Wiring: 3 wires (2 wires for 4 to 20mA output)
Overpressure: Proof 300" WC (74 kPa)
Port Size: 1/4" barb
Enclosure Material: UV-resistant Polycarb., UL94 V-0
Enclosure Rating: IP66, NEMA 4
Media: Clean, dry, non-corrosive gases
Agency: RoHS

Specifications subject to change without notice.

Customer Support

Building Automation Products, Inc., 750 North Royal Avenue, Gays Mills, WI 54631 USA
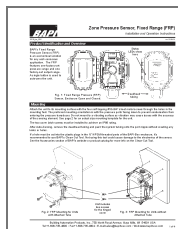**Tel:** +1-608-735-4800
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E-mail: sales@bapihvac.com
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Documents / Resources

BAPI 51740 Fixed Range Pressure Sensor [pdf] Installation Guide
51740 Fixed Range Pressure Sensor, 51740, Fixed Range Pressure Sensor, Range Pressure Sensor, Pressure Sensor

References

- **User Manual**