SENSAPHONE®
REMOTE MONITORING SOLUTIONS

SENSAPHONE DIFFERENTIAL/STATIC PRESSURE SENSOR • FGD-0302
Installation Instructions

The Sensaphone Differential/Static Pressure sensor will allow you to monitor pressures with any Sensaphone that will accept a 4-20mA Input signal. The FGD-0302 will require a 24VDC power supply to operate (Part No: FGD-0070) for any Sensaphone that does not provide 24VDC output power.

Note on wiring: Use 22AWG shielded wiring for all connections (Sensaphone Part No. FGD-0010) and do not locate the device wires in the same conduit with wiring used to supply inductive loads such as motors. Disconnect the power supply before making any connections to prevent electrical shock or equipment damage. Make all connections in accordance with national and local codes.

Described below is the correct way to wire your sensor to your Sensaphone.

1. Follow your Sensaphone User's Manual to configure the input for a 4-20mA sensor.

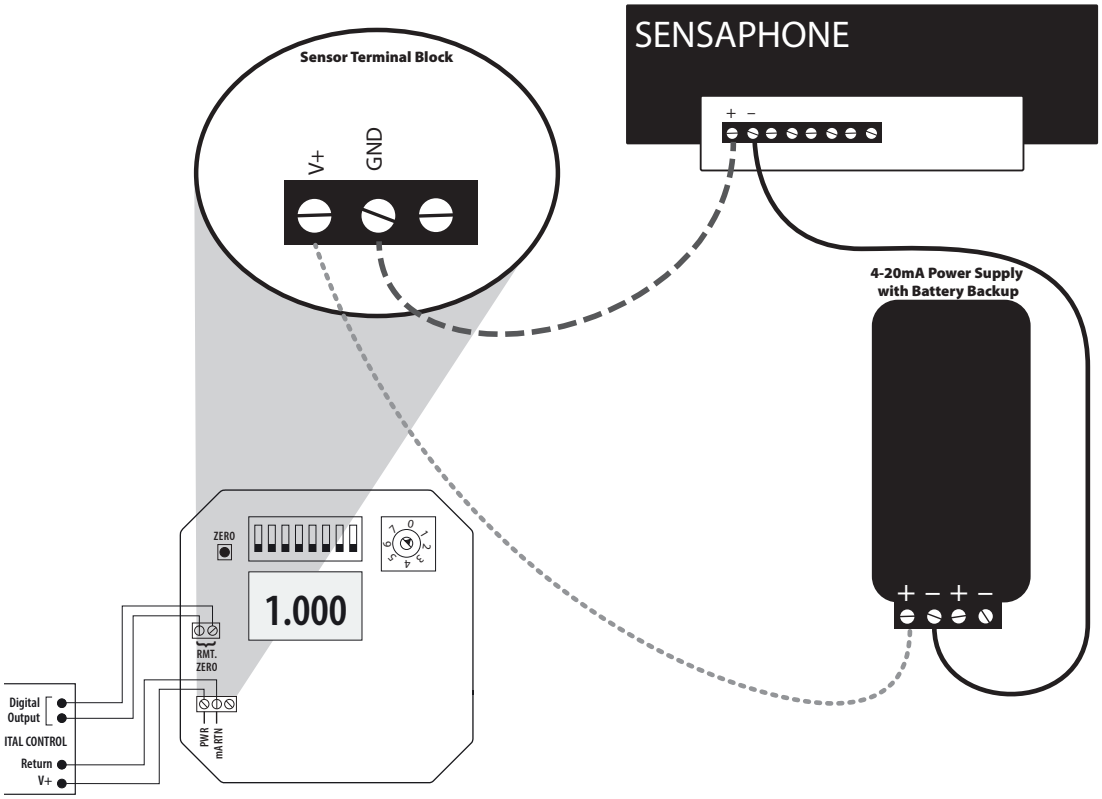
2. Open the sensor front cover.

3. Set dip switch #5 to the ON position to enable 4-20mA mode.

4. Connect the 24VDC Power Supply Positive (+) to the sensor terminal marked +V.

5. Connect the 24VDC Power Supply Negative (-) to the Sensaphone Zone Negative (-).

6. Connect the Sensaphone Zone Positive (+) to the sensor terminal marked GND.



WIRING

The Pressure sensor has multiple settings that are configured via eight DIP switches. Set the DIP switches as follows:

DIP Switch 1: Scale
ON = Pascal (m/s)
OFF = in. WC (ft/min)

DIP Switch 2: Mode
ON = Velocity
OFF = Pressure

DIP Switch 3: Direction**
ON = Unidirectional
OFF = Bidirectional

DIP Switch 4: Response
ON = Slow
OFF = Fast

DIP Switch 5: Output
ON = 4-20 mA
OFF = Voltage (DO NOT USE VOLTAGE MODE WITH SENSAPHONE)

DIP Switch 6: Volt Scale (N/A)
ON = 0-5 Vdc
OFF = 0-10 Vdc

DIP Switch 7: Unused

DIP Switch 8: Unused

OPERATION

This device employs ceramic capacitive sensors and sophisticated temperature compensation circuitry. The sensor achieves its best accuracy after an initial warm-up period. During the first few minutes of operation, readings at zero pressure and the lowest pressure ranges appear erroneous. Following this initial warm-up period, the sensor maintains its specified accuracy and stability.

LCD DISPLAY: display momentarily indicates range "SET" when selection is made. Pressure is normally indicated on the display. Units are in inches water column (in. W.C.), Pascals (Pa) or kilopascals (kPa) as indicated on the display. The display shows OVER when the pressure is over range.

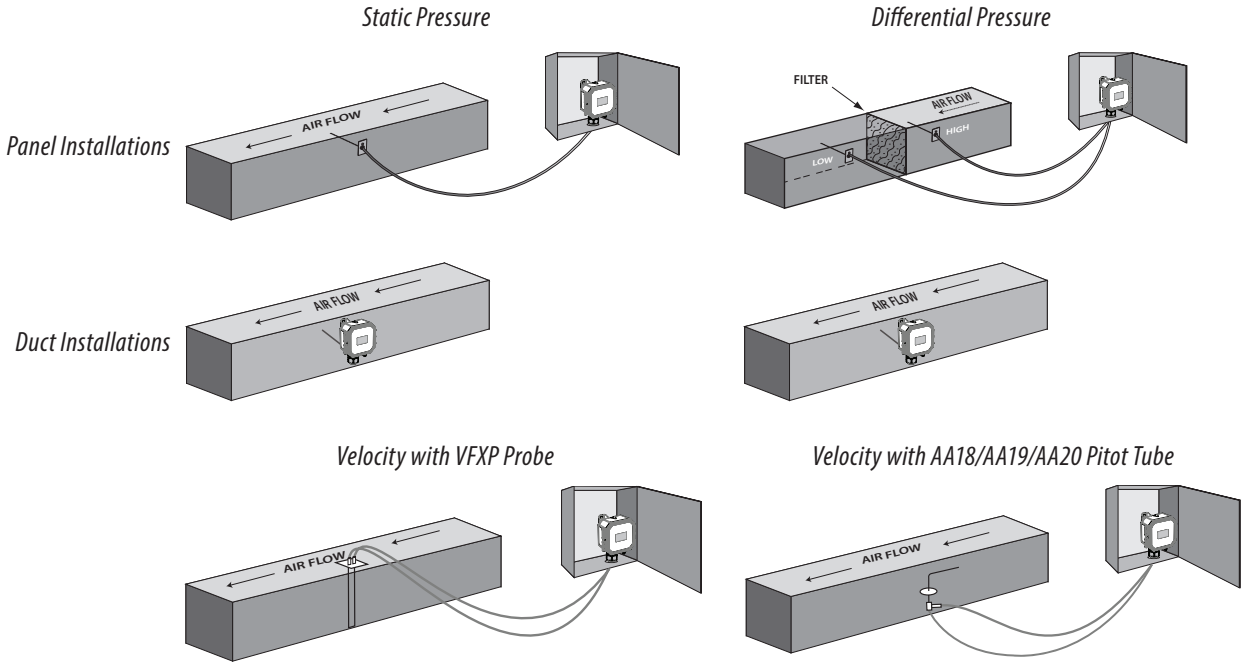
ZERO: Press and hold the ZERO pushbutton for 2 seconds or provide contact closure on 'AUX ZERO' terminal to automatically reset the output and display to zero pressure. To protect the unit from accidental zero, this feature is enabled only when the detected pressure is within about 0.1 in. W.C. (25 Pa) of factory calibration.

Range Selection Guide

Rotary Switch Position	Inches W.C.	Pascal
0	0.1	25
1	0.25	50
2	0.5	100
3	1	250
4	2.5	0.5 kPa
5	5	1 kPa
6	10	2.5 kPa
7	10	2.5 kPa

Installation

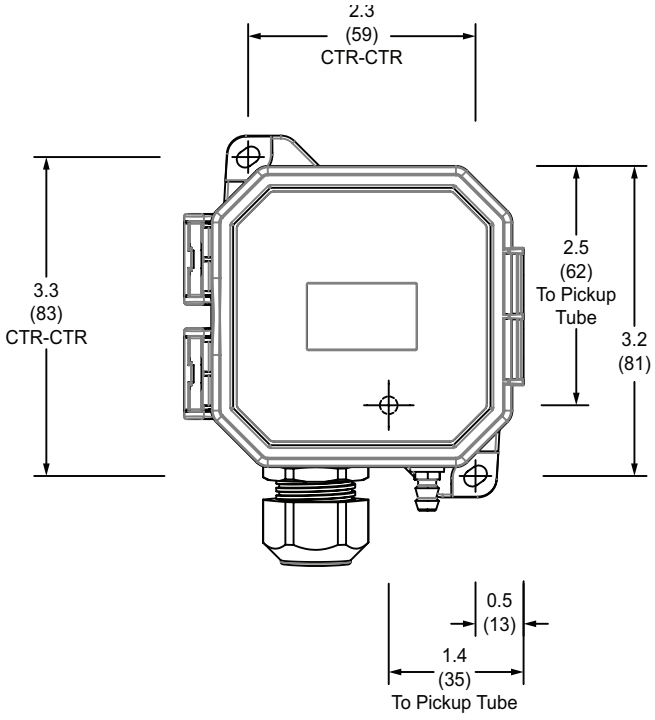
1. Plan the installation. Panel or duct mount?



Note: The PX3P (panel) and the PX3U (universal) models used in velocity mode, require the use of a VFXP Series air velocity/measurement probe or AA18, AA19 or AA20 velocity pitot tubes; sold separately. When using the VFXP Series, additional tubing, adapters or clamps should be made available by the customer and may be necessary depending upon application. The PX3 Series barb fittings support 5mm tubing.

2. For duct mount applications, thread the probe into the back of the device housing, as shown in the dimensional drawing. Configure the internal tubing for the selected installation method as described below (see diagrams next page).

3. Mount the transducer (see the screw hole diagram below).



Installation Summary

1. Plan the installation. Panel or duct mount?

2. For duct mount applications, thread the probe into the back of the device housing, as shown in the dimensional drawing. Configure the internal tubing for the selected installation method as described below (see diagrams).

3. Duct mount tubing configuration:
   a. Connect sensor port A to the rear brass barb marked as "-" on the underside of the device housing.
   b. Connect sensor port B to the probe in the back of the device housing.

Panel mount tubing configuration (default):
   a. Connect sensor port A to the rear brass barb marked as "-" on the underside of the device housing.
   b. Connect sensor port B to the front brass barb marked as "+" on the underside of the device housing.

4. Mount the transducer (see the screw hole diagram).

5. For applications using conduit, remove the cable gland nut on the bottom of the unit. Thread a standard 1/2-inch NPT female threaded coupler onto the body of the cable gland. Connect the opposite end of the coupler to the conduit.

6. Set DIP switches to desired settings.

7. Set rotary switch to the desired setting. Align the arrow (not the slot) on the rotary switch to the desired full-scale range. LCD models momentarily indicate the selected range

8. Connect the transmitter to the control system (Sensaphone) and power supply. Power it on.

9. Wait five seconds, then press and hold the ZERO pushbutton for two seconds. This will reset the output and display to zero pressure. For best accuracy, press the ZERO button while both ports are open to atmospheric pressure. To protect the unit from accidental zero, this feature is enabled only when the detected pressure is within about 0.5 in. WC (125 Pa) of factory calibration.

10. Connect desired external tubing to the PX3.