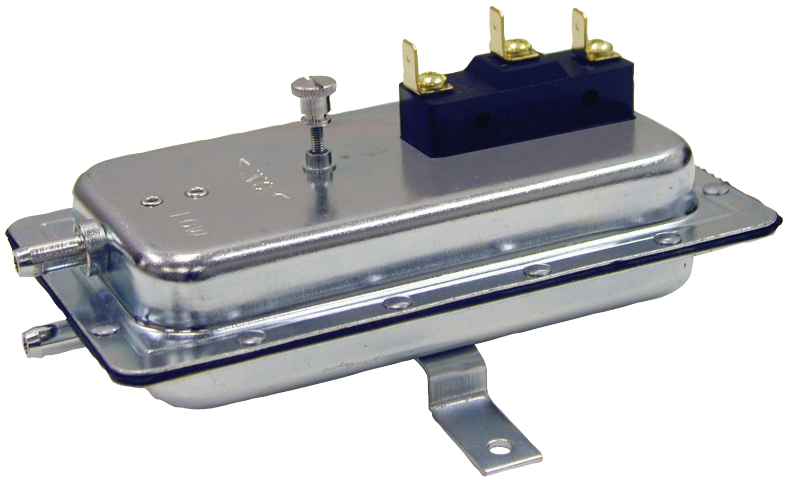
AIR PRESSURE SENSING SWITCH
WITH ADJUSTABLE SET POINT
(SET POINT RANGE: 0.05" WC TO 2.0" WC)

MODEL AFS-275



APPLICATION

Model AFS-275 Air Pressure Sensing Switch is a general purpose proving switch designed for HVAC and Energy Management applications. It can be used to sense positive, negative, or differential air pressure.

DESCRIPTION & OPERATION

The plated housing contains a diaphragm, a calibration spring and a snap-acting SPDT switch.

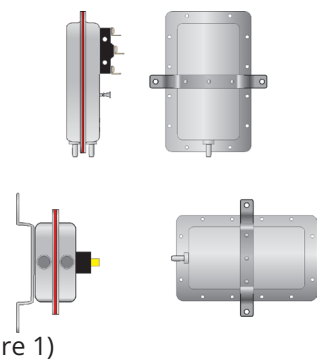
The sample connections located on each side of the diaphragm accept flexible tubing.

MOUNTING (FIGURE 1)

Select a mounting location that is free from vibration. The AFS-275 must be mounted with the diaphragm in any vertical plane in order to obtain the lowest specified operating set point. Do not mount with the sample line connections. in the "up" position. Surface mount via the two 3/16" diameter holes in the integral mounting bracket. The mounting holes are 3-7/8" apart.

ELECTRICAL CONNECTIONS (FIGURES 3 & 4)

The snap switch has three ¼", 90° quick-connect spade terminals. Before pressure is applied to the diaphragm, the switch contacts will be in the normally closed (NC) position. Wire alarm and control applications as shown in Figure 4.



(Figure 1)

AIR SAMPLING CONNECTION (FIGURE 2)

The AFS-275 is designed to accept flexible tubing by means of slip-on connectors located on either side of the diaphragm. For sample lines of up to 10 feet, ¼" OD tubing is acceptable. For lines up to 20 feet, use ¼" ID tubing. Locate the sampling probe a minimum of 1.5 duct diameters downstream from the air source. Install the sampling probe as close to the center of the airstream as possible.

Refer to Figure 2 to identify the high pressure inlet (H) and the low pressure inlet (L). Select one of the five application options listed below, and connect the sample lines as recommended.

POSITIVE PRESSURE ONLY: Connect the sample line to inlet H; inlet L remains open to the atmosphere.

NEGATIVE PRESSURE ONLY: Connect the sample line to inlet L; inlet H remains open to the atmosphere.

TWO NEGATIVE SAMPLES: Connect the higher negative sample to inlet L. Connect the lower negative sample to inlet H.

TWO POSITIVE SAMPLES: Connect the higher positive sample to inlet H. Connect the lower positive sample to inlet L.

ONE POSITIVE & ONE NEGATIVE: Connect the positive sample to inlet H. Connect the negative sample to inlet L.

FIELD ADJUSTMENT

The adjustment range of an AFS-275 Air Switch is 0.05 + 0.035/-0.005" wc to 2.0" wc. To adjust the set point, turn the adjusting screw counterclockwise until motion has stopped. Next, turn the adjusting screw 4 complete turns in a clockwise direction to engage the spring. From this point, the next ten turns will be used for the actual calibration. Each full turn represents approximately 0.2" wc.

Please note: To properly calibrate an air switch, a digital manometer or other measuring device should be used to confirm the actual set point.

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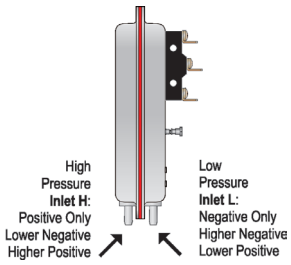
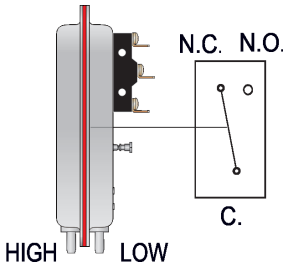
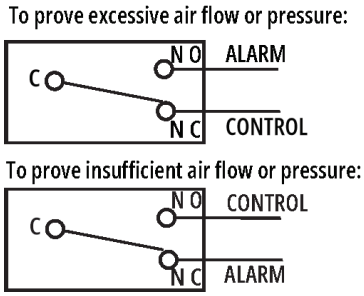


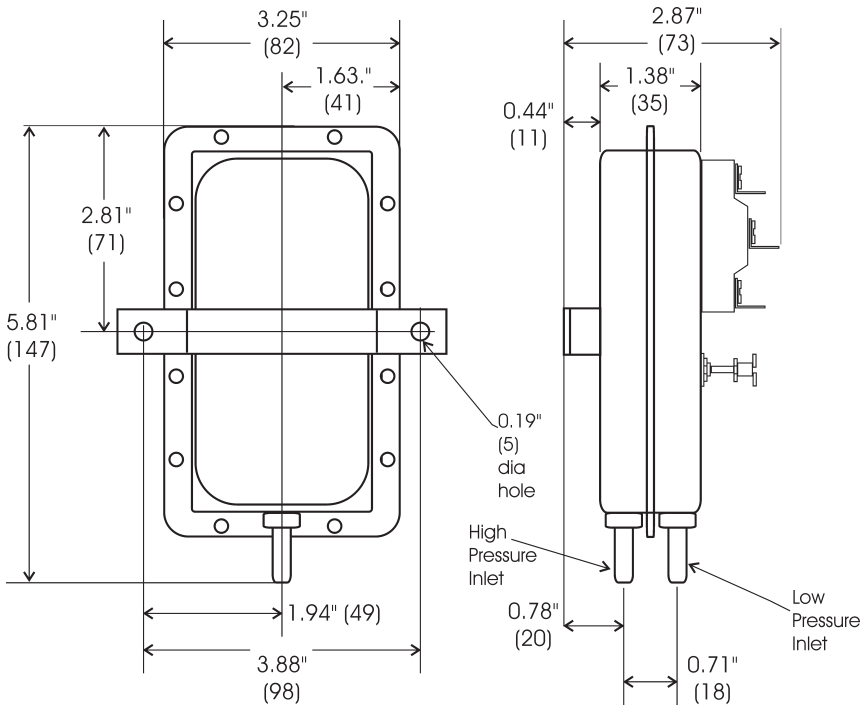
(Figure 2)



(Figure 3)



(Figure 4)



Nominal Dimensions in Inches (Millimeters)

SPECIFICATIONS MODEL AFS-275 AIR PRESSURE SENSING SWITCH WITH ADJUSTABLE SET POINT

Mounting Position:
Mount with the diaphragm in any vertical plane.

Set Point Range: 0.05 + 0.035/-0.005" wc to 2.0" wc

Field Adjustable "Operate Range":
0.07" wc to 2.0" wc

Field Adjustable "Release Range":
0.04" wc to 1.9" wc

Approximate Switching Differential:
Progressive, increasing from 0.02 ± 0.01"wc at minimum set point to approximately 0.1" wc at maximum set point

Measured Media:
Air, or combustion by-products that will not degrade silicone

Maximum Pressure: ½ psi (0.03 bar)

Operating Temperature Range:
-40 °F to 180 °F (-40 °C to 82 °C)

Life:
100,000 cycles minimum at ½ psi maximum pressure each cycle and at maximum rated electrical load

Electrical Rating:
300 VA pilot duty at 115 to 277 V ac,
15 Amps noninductive to 277 V ac, 60 Hz.

Contact Arrangement: SPDT

Electrical Connections:
¼", 90° quick-connect spade terminals

Sample Line Connectors:
¼" slip-on

Sample Line Connections:
Connectors are suitable for flexible tubing.

Approvals: UL, FM, CSA, CE

Shipping Weight: 1.2 lbs.

Available Accessories:

- **PVG-1 Pressure-Vacuum Generator**
  Compact constant air source
- **Model 6650 Digital Manometer**
  Portable low air measurement device
- **Sample Line Probes**
- **Orifice Plugs (Pulsation Dampers)**

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