OEM AIR PRESSURE SENSING SWITCH
WITH FIXED SET POINT (0.05"WC ±0.02"WC)

MODEL DFS-221-112

APPLICATION

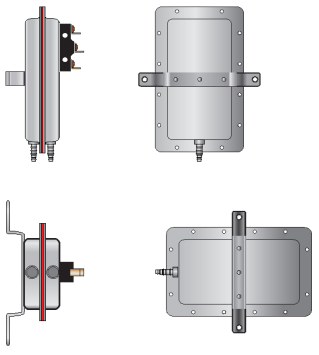
Model DFS-221-112 Air Pressure Sensing Switch is a proving switch designed for duct heater, oven, and other HVAC or Energy Management applications where an open-mounted, nonadjustable switch is desirable. It is especially suitable for surface-mounting in areas where internal access is limited. Model DFS-221-112 can be used to sense positive, negative, or differential air pressure.

DESCRIPTION & OPERATION

The plated housing contains a diaphragm and a snap-acting **SPDT** switch. Convenient barbed sample line connectors, located on each side of the diaphragm, accept ⅛" through ¼" ID flexible tubing.

The electrical connection consists of three (3) ¼" 90º quick connect spade terminals. The SPDT snap action switch operates on pressure rise of 0.05 + 0.02"/-0.0" w.c. This set point is not adjustable. For additional application and technical information, please contact the sales office.

(Figure 1)



MOUNTING (FIGURE 1)

Select a mounting location that is free from vibration. The **DFS-221-112** must be mounted with the diaphragm in any vertical plane in order to maintain the 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 on the zinc-plated strap bracket. The mounting holes are 3-⅞" apart.

AIR SAMPLING CONNECTION (FIGURE 2)

The **DFS-221-512** has two dual-barbed sample line connections suitable for flexible tubing from ⅛" through ¼" ID. They are situated on either side of the diaphragm as shown in **Figure 2**.

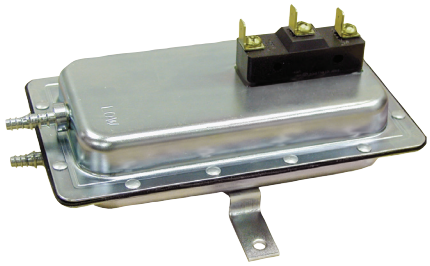
Locate the sampling probe a minimum of 1.5 duct diameters downstream from the air source. Install the sampling probe as close to the center of the air stream as possible. Refer to Figure 2 to identify the high pressure inlet (H) and the low pressure inlet (L). Select one of the five application options 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.

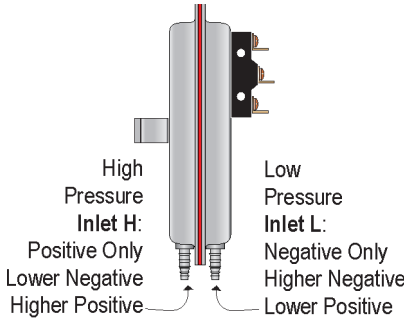


ONE POSITIVE AND ONE NEGATIVE SAMPLE: Connect the positive sample to inlet H. Connect the negative sample to inlet L

ELECTRICAL CONNECTIONS (FIGURES 3 & 4)

The snap switch has 90º quick-connect spade terminals. Before pressure is applied to the diaphragm, the switch contacts will be in the normally closed (NC) position. Control and alarm functions are wired as shown in Figure 4..

(Figure 2)



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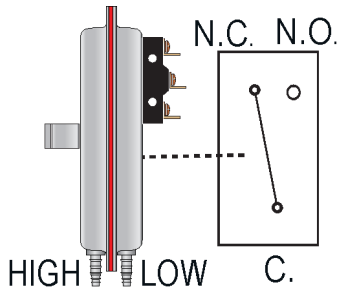
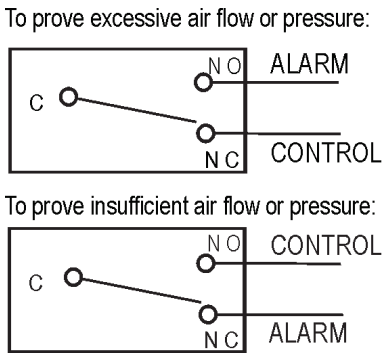
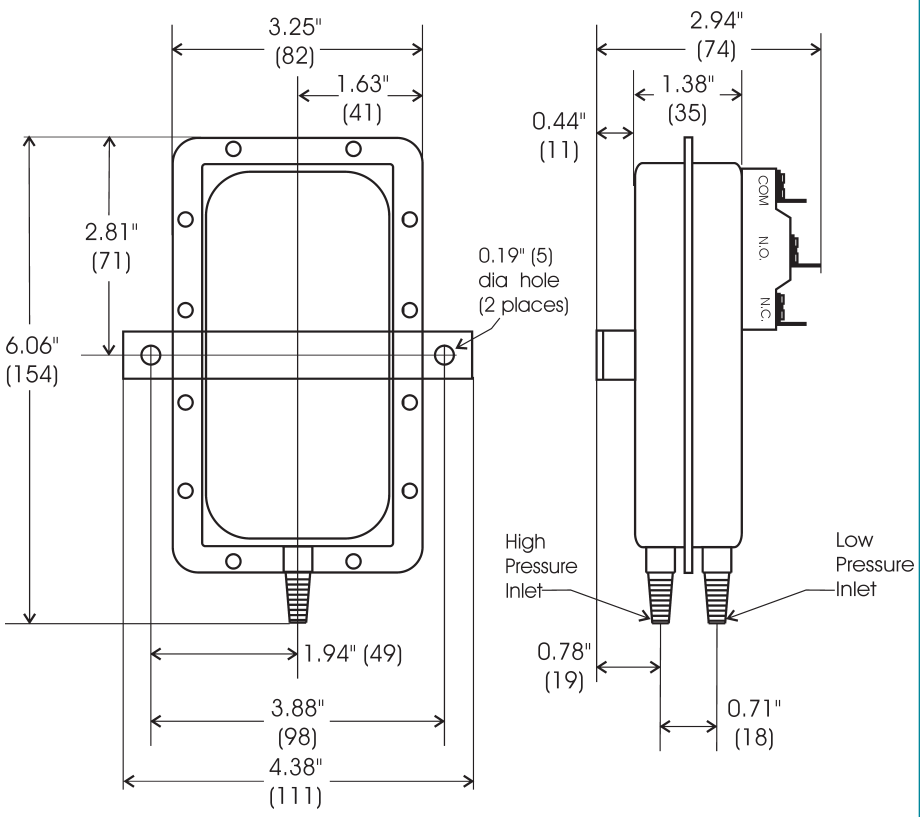
(Figure 3)



(Figure 4)



Nominal Dimensions in Inches (Millimeters)



SPECIFICATIONS

Model DFS-221-112

Mounting Position:
Mount with the diaphragm in any vertical plane to obtain specified operating set point.

Set Point:
Fixed to operate on pressure rise at 0.03+0.02/-0.0" wc (0.762+0.508/-0.0 mm wc)

Approximate Switching Differential:
0.02±0.01"w.c. (0.508±0.254 mm)

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:
Male ¼" 90° quick-connect spade terminals.

Sample Line Connectors:
Two barbed slip-on connectors accept ⅛" through ¼" ID flexible tubing.

Approvals: UL, FM, CE, CSA.

Shipping Weight: 1.2 lbs.

Accessories (purchase separately):

- **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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