AIR PRESSURE SENSING SWITCH WITH
ADJUSTABLE SET POINT AND MANUAL RESET
(SET POINT RANGE: 0.25 ± 0.05" WC TO 12.0" WC)

MODEL AFS-305

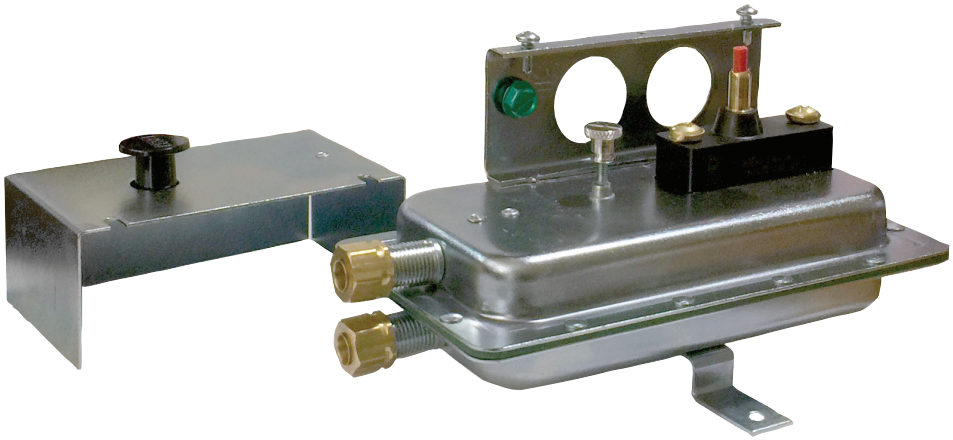
APPLICATION

Model AFS-305 is a general purpose proving switch with a manual reset feature requiring operator intervention whenever it actuates. It can be used to sense positive, negative, or differential air pressure in HVAC and Energy Management applications.

DESCRIPTION & OPERATION

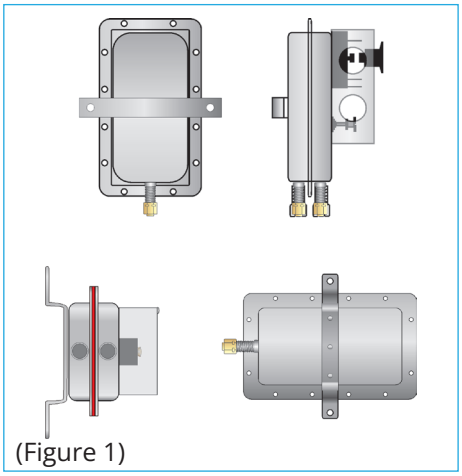
The plated housing contains a diaphragm, a calibration spring and a snap-acting SPDT switch with manual reset button.

An enclosure cover guards against accidental contact with the live switch terminal screws and the set point adjusting screw. The enclosure cover accepts two 0.5" conduit connections. The manual reset button is located on the top surface of the enclosure cover.



MOUNTING (FIGURE 1)

Select a mounting location that is free from vibration. The AFS-305 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.



(Figure 1)

Surface mount via the two 3⁄16" diameter holes in the integral mounting bracket. The mounting holes are 3-⅞" apart.

AIR SAMPLING CONNECTION (FIGURE 2)

The sample connections located on each side of the diaphragm accept .25" OD rigid or semi-rigid tubing by means of the integral ferrule and nut compression connections.

Optional adapters (P/N 28698-001) are available for slipping on 3⁄16" ID or ¼" ID flexible tubing. 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 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 following five application options, 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: Connect the positive sample to inlet H. Connect the negative sample to inlet L.

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ELECTRICAL CONNECTIONS (SEE FIGURE 3)

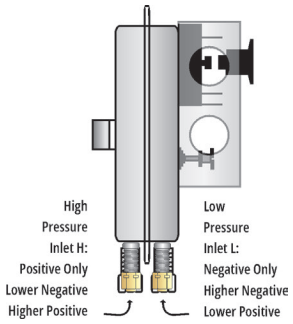
Before pressure is applied to the diaphragm, the switch contacts will be in the normally closed (NC) position.

The snap switch has 90° quick-connect spade terminals. Wire alarm and control applications as shown in Figure 4.

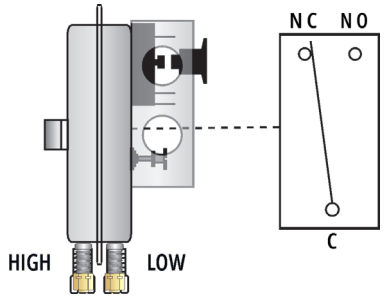
FIELD ADJUSTMENT

The adjustment range of an AFS-305 Air Switch is 0.25" ± 0.05" wc to 12.0" wc. To adjust the set point, turn the adjusting screw counterclockwise until motion has stopped. Next, turn the adjusting screw four 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 1.18" wc.

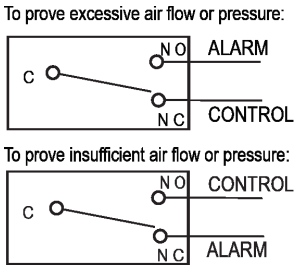
Please note: To properly calibrate an air switch, a digital manometer or other measuring device should be used to confirm the actual set point.



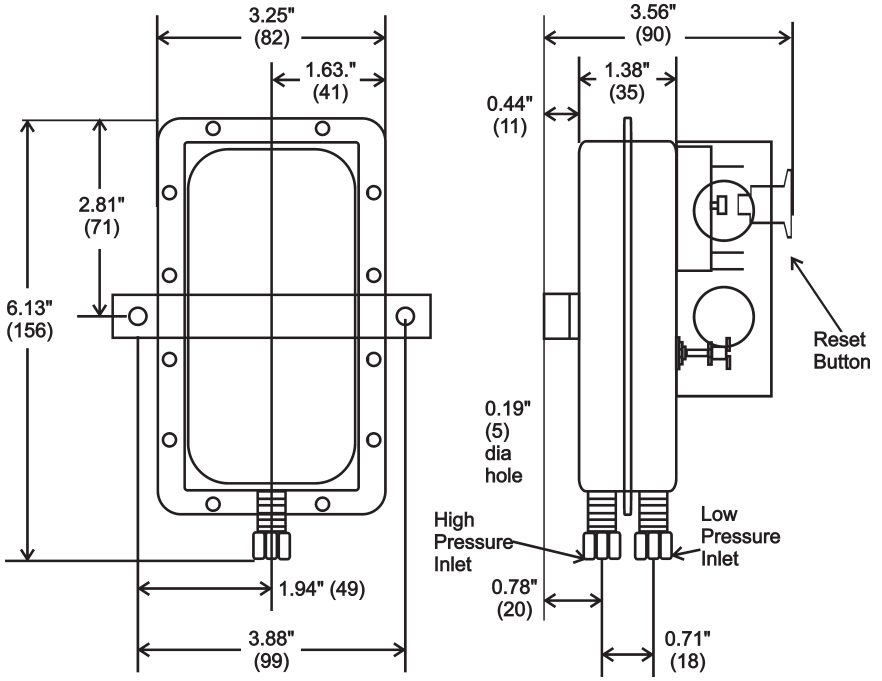
(Figure 2)



(Figure 3)



(Figure 4)



Nominal Dimensions in Inches (Millimeters)

SPECIFICATIONS MODEL AFS-305 AIR PRESSURE SENSING SWITCH WITH MANUAL RESET

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

Set Point Range:
0.25 ± 0.05"wc to 12.0"wc

Field Adjustable "Operate Range":
0.30"wc to 12.0" wc

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

Maximum Pressure: ½ psi (0.03 bar)

Life:
Exceeds mechanical endurance test of 6,000 cycles minimum at 0.5 psi maximum pressure each cycle and at maximum electrical load.

Electrical Rating:
@ 60 Hz. 15 Amp 125, 250, or 277 V ac;
¼ hp 125 V ac, ½ Hp 250 V ac,
½ Amp 125 V dc,
¼ Amp 250 V dc

Contact Arrangement: SPDT (manual reset).

Electrical Connections:
¼" x 0.032, 90° quick-connect spade terminals.

Conduit Openings:
Two ⅞" diameter openings accept ½" conduit.

Sample Line Connectors:
Male, externally threaded 7/16" 24 UNS 2A thread, complete with nut and self-aligning ferrule

Sample Line Connections:
Connectors accept ¼" OD rigid or semi-rigid tubing.

Agency Approvals or Recognition: None.

Shipping Weight: 1.2 lbs

Available Accessories:

- Sample line probes.
- Orifice plugs (pulsation dampers).
- Adapters for slip-on flexible tubing:
  Valox, female threaded / male duo-barb, suitable for 3⁄16" or ¼" ID tubing. Consult factory for additional types.
- PVG-1 Pressure-Vacuum Generator (compact constant air source)
- Model 6650 Digital Manometer (portable low air measurement device)

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