



**OPeN-MOUNTe D AIR PReSSURe SeNSING SWIt CH WIt H ADj USt ABLe Set P OINt R ANGe**

**APPLICAt ION**

Model **AFS-271** 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.

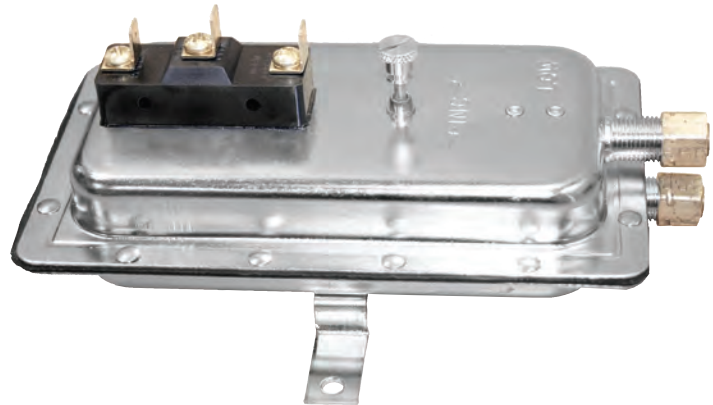
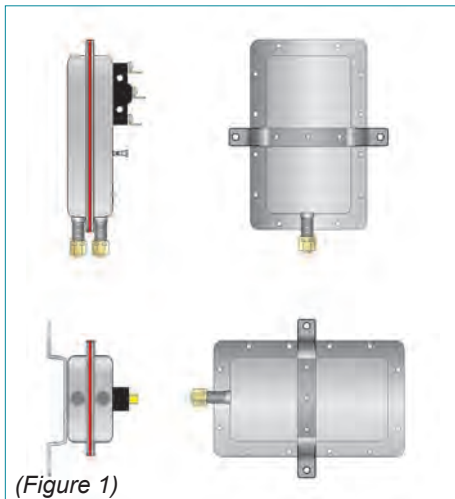
**Ge Ne RAL De SCRIPt ION & OPe RAt ION**

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 1/4" OD metallic tubing via the integral compression ferrule and nut.

**MOUNt ING (See F IGURe 1)**

Select a mounting location which is free from vibration. The **AFS-271** must be mounted with the diaphragm in any vertical plane in order to obtain the lowest specified operating set point. Avoid mounting 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.

The **AFS-271** is designed to accept firm-wall sample lines of 1/4" OD tubing by means of ferrule and nut compression connections.



**AIR SAMPLING CONNECt ION (See F IGURe 2)**

For sample lines of up to 10 feet, 1/4" OD tubing is acceptable. For lines up to 20 feet, use 1/4" ID tubing. For lines up to 60 feet, use 1/2" ID tubing. A 1/4" OD adapter, suitable for slip-on flexible tubing is available: order part number 18311.

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.

**POSit IVe PReSSURe ONLY:** Connect the sample line to inlet H; inlet L remains open to the atmosphere.

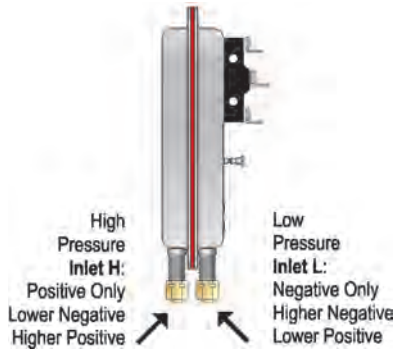
**NeGAt IVe PReSSURe ONLY:** Connect the sample line to inlet L; inlet H remains open to the atmosphere.

**t WO NeGAt IVe SAMPLeS:** Connect the higher negative sample to inlet L. Connect the lower negative sample to inlet H.

**t WO POSit IVe SAMPLeS:** Connect the higher positive sample to inlet H. Connect the lower positive sample to inlet L.

**ONe POSit IVe AND ONe NeGAt IVe SAMPLe:** Connect the positive sample to inlet H. Connect the negative sample to inlet L.

(Figure 2)



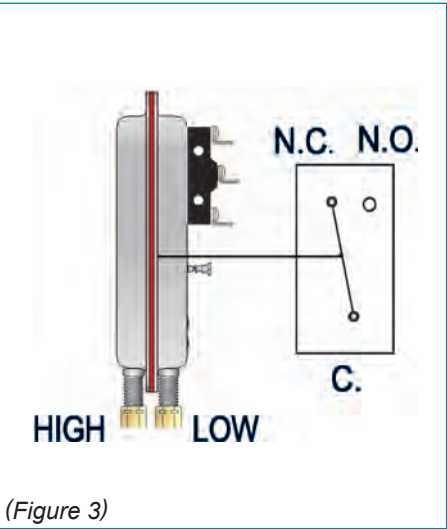
### eLeCt RICAL CONNeCt IONS (See F IGURE 3)

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

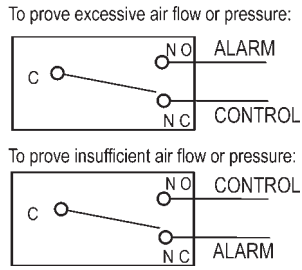
### FLD ADJ USt Me Nt

The adjustment range of an AFS-271 Air Switch is 0.05±0.02" w.c. to 2.0" w.c. 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" w.c.

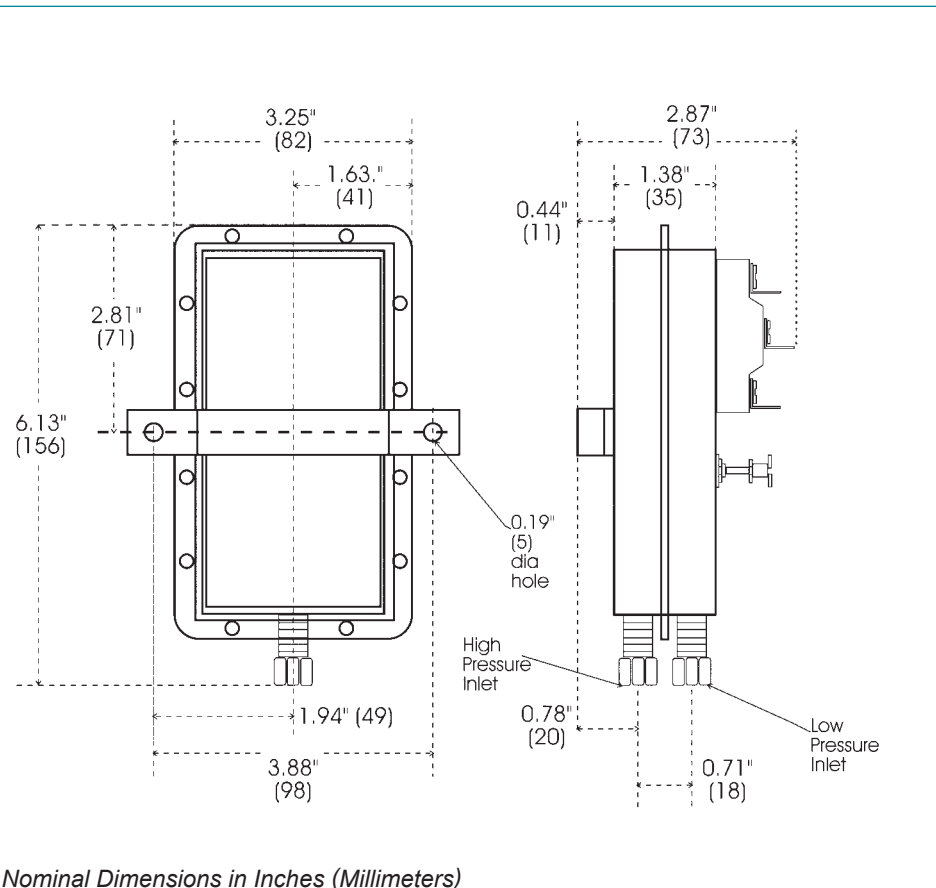
**Please note:** To properly calibrate an air switch, a digital manometer or other measuring device should be used to confirm the actual set point.



(Figure 4)



(Figure 3)



### SPeCIFIcAt IONS

### MODE L AFS-271 AIR PReSSURE SeNSING SWIt CH Wit H ADj USt ABLe Set POINt RANGe

#### Mounting Position:

Mount with the diaphragm in any vertical plane.

#### Set Point Range:

0.05 ± 0.02" w.c. to 2.0" w.c.

#### Field Adjustable "Operate Range":

0.05" w.c. to 2.0" w.c.

#### Field Adjustable "Release Range":

0.02" w.c. to 1.9" w.c.

#### Approximate Switching Differential:

Progressive, increasing from 0.02 ± 0.01" w.c. at minimum set point to approximately 0.1" w.c. 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:

-40F to 180F (-40 to 82C).

#### 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 VAC, 15 amps noninductive to 277 VAC, 60Hz.

#### Contact Arrangement:

SPDT. Electrical Connections: ¼" 90° quick connect spade terminals.

#### Conduit Opening:

⅞" diameter opening accepts ½" conduit.

#### Sample Line Connectors:

Male, externally threaded ⅞" 24 UNS 2A thread, complete with nuts and self-aligning ferrules.

#### Sample Line Connections:

Connectors will accept ¼" OD rigid or semi-rigid tubing.

#### Approvals:

UL, FM, CSA.

#### Shipping Weight:

1.2 lbs.

#### Accessories:

- P/N 18311 Slip-on ¼" OD Tubing Adapter, suitable for slipping on flexible plastic tubing.
- Sample line probes.
- Orifice plugs (pulsation dampers).