



**NONADJUSTABLE SET POINT AIR PRESSURE SENSING SWITCH KIT**

**APPLICATION**

Model RFS-4200-071 is an airflow proving switch designed for duct heater, oven, and other HVAC or Energy Management applications where an open-mounted, non-adjustable switch is desirable. It is especially suitable for surface-mounting in areas where internal access is limited. It is used to sense positive or negative air pressure.

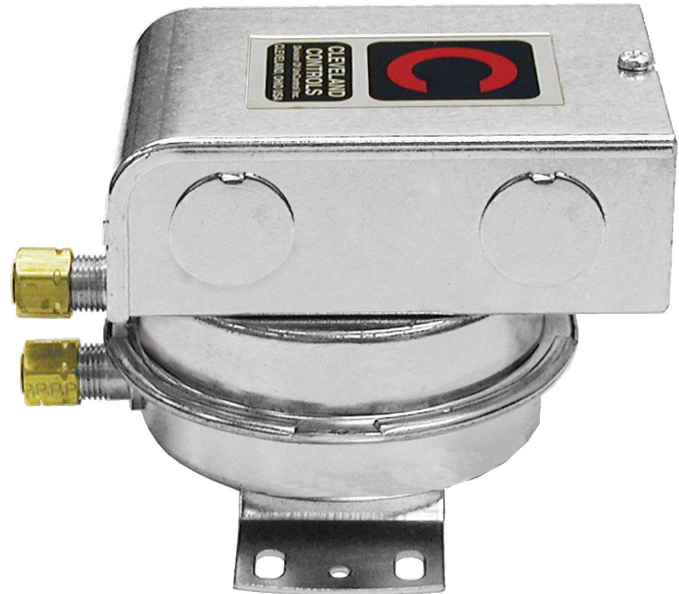
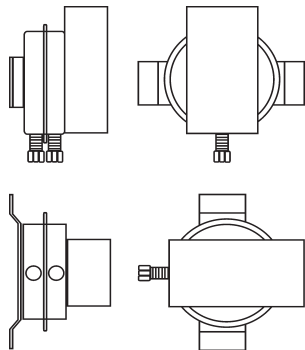
**GENERAL DESCRIPTION & OPERATION**

The plated housing contains a diaphragm, an SPST-NO snap-acting switch and an enclosure cover. The sample line connections located on each side of the diaphragm accept 1/4" rigid tubing via the integral compression ferrule and nut. The SPST snap action switch operates on pressure rise of 0.15"w.c. ± 0.05" w.c. The electrical connection consists of (2) screw terminals with cup washers. An enclosure cover protects the operator from accidental contact with the terminals. The enclosure cover has five knockouts for a 1/2" conduit connection. For additional application and technical information, please contact the sales office.

**MOUNTING (FIG. 1)**

Select a mounting location that is free from vibration. The Model RFS-4200-071 must be mounted with the diaphragm in any vertical plane in order to maintain the specified

Figure 1: Mount with the diaphragm in any vertical plane.



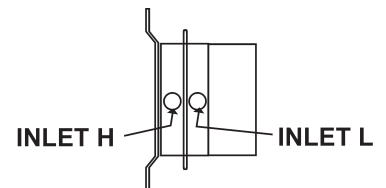
operating set point. Avoid mounting with the sample line connections in the "up" position. Surface-mount via the two round holes (0.14" dia.) or two of the four slots (3/16" wide) on the zinc-plated strap bracket. The mounting holes and slots are 3-7/8" apart.

**AIR SAMPLING CONNECTION (FIG. 2)**

Model RFS-4200-071 switches are equipped with compression ferrule and nut sample line connections situated on either side of the diaphragm as shown in Figure 2. These connections are suitable for 1/4"OD rigid tubing (aluminum, copper, or plastic) sample lines up to 20 feet in length. Install a sampling probe a minimum of 1.5 duct diameters downstream from the air source and 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.

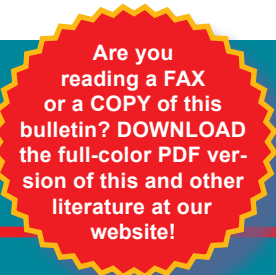
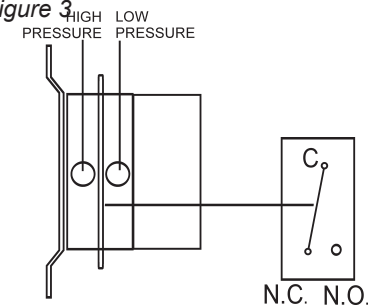
Figure 2



Positive Only  
Lower Negative  
Higher Positive

Negative Only  
Higher Negative  
Lower Positive

Figure 3



**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**.

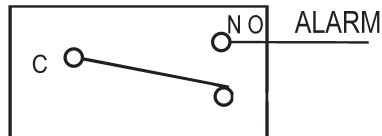
**One Positive and One Negative Sample:** Connect the positive sample to inlet **H**. Connect the negative sample to inlet **L**.

## ELECTRICAL CONNECTIONS (FIGURES 3 & 4)

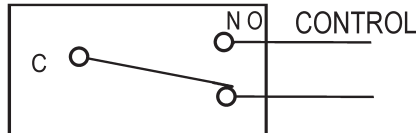
Before pressure is applied to the diaphragm, the switch contacts will be in the deactivated position. Wire control and alarm functions as shown in Figure 4. The RFS-4200-071 is factory set to actuate on pressure rise at 0.15" w.c.  $\pm$  0.05" w.c.

Figure 4

To prove excessive air flow or pressure:



To prove insufficient air flow or pressure:



## SPECIFICATIONS

Model RFS-4200-071

**Air Pressure Sensing Switch  
with Non-Adjustable Set Point**

**Mounting Position:**

- Mount with the diaphragm in any vertical plane.

**Set Point:**

- Fixed, to operate on pressure rise at 0.15" wc  $\pm$  0.05" wc.

**Approximate Switch Differential:**

- 0.05" wc  $\pm$  0.02" wc.

**Measured Media:**

- Air or combustion by-products that will not degrade silicone

**Maximum Pressure:**

- ½ psi (0.03 bar)

**Operating Temperature Range:**

- -40 to 180 °F (-40.0 to 82.2 °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 VAC; 15 amp noninductive to 277 VAC, 60 Hz.

**Contact Arrangement:**

- SPST-NO

**Electrical Connections:**

- (2) screw terminals with cup washers

**Sample Line Connectors:**

- Externally threaded 7/16" UNS 2A thread with nuts and self-aligning ferrules will accept 1/4" OD rigid tubing

**Approvals:**

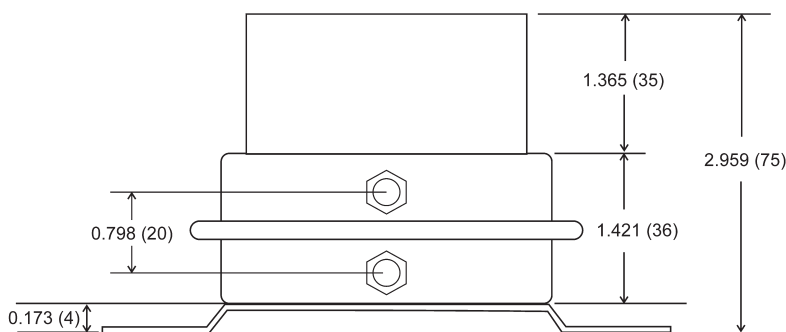
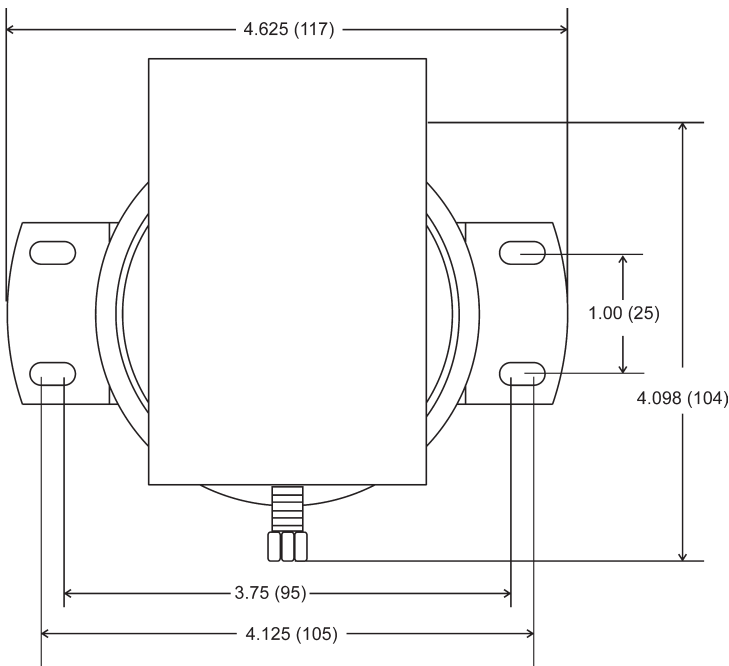
- UL, CUL

**Shipping Weight:**

- Less than 1 lb.

**RFS 4200-071 Kit includes:**

- Individual Carton
- Model RFS-4200-071 Switch
- Accessory Pack 18311-121 consisting of 2 mounting screws and two tubing adaptors
- Literature



Reference Dimensions in Inches (Millimeters)