



ADJUSTABLE SET POINT AIR PRESSURE SENSING SWITCH KIT

APPLICATION

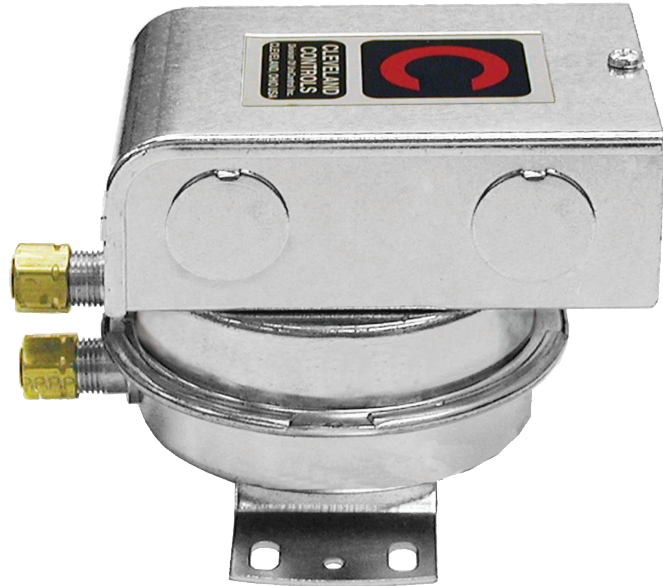
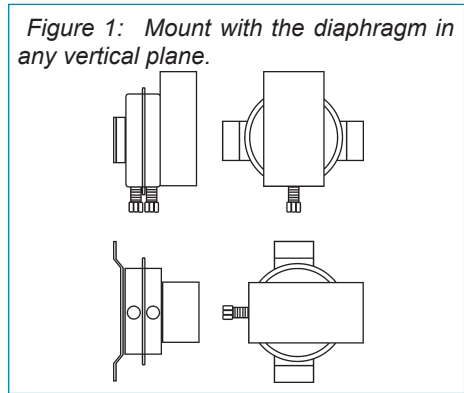
RFS-4001-025 is a convenient kit containing a general purpose proving switch, two mounting screws and two slip on adapters for flexible tubing. The **RFS-4001-025** switch is designed for HVAC and Energy Management applications and can be used to sense positive, negative, or differential air pressure.

GENERAL DESCRIPTION & OPERATION

The plated housing contains a diaphragm, a calibration spring, a snap-acting switch and an enclosure cover. The sample line connections located on each side of the diaphragm accept 1/4" OD rigid tubing (aluminum, copper, or plastic) via the integral compression ferrule and nut. Two slip on adapters are included in the kit to permit the use of flexible 1/4" ID tubing. The electrical connections are screw terminals with cup washers. An enclosure cover protects the operator from accidental contact with the electrical components. The enclosure cover has five knockouts for a 1/2" conduit connection.

MOUNTING (FIG. 1)

Select a mounting location that is free from vibration. The **Model RFS-4001-025** must be mounted with the diaphragm in any vertical plane in order to maintain the specified operating set point. Avoid mounting with the sample line connections in the "up" position.



The **Model RFS-4001-025** switch is surface-mounted 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. The kit includes 2 mounting screws.

AIR SAMPLING CONNECTION (FIG. 2)

Model **RFS-4001** switches are equipped with 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 as close to the center of the air stream as possible. Locate the sampling probe a minimum of 1.5 duct diameters downstream from the air source.

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.

CONT'D OVERLEAF

Figure 2

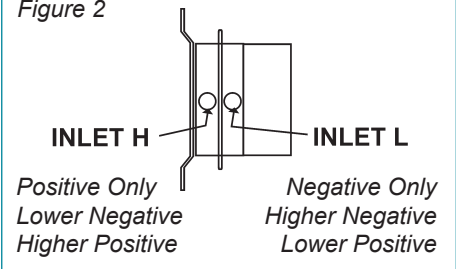
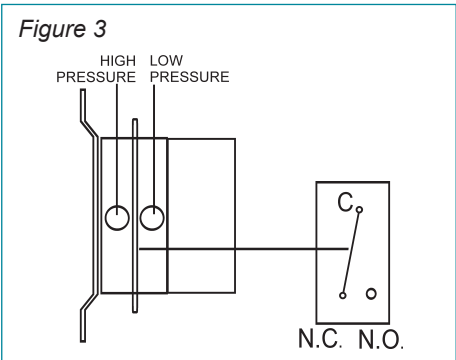


Figure 3



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 normally closed (NC) position. Wire control and alarm functions as shown in **Figure 4**.

FIELD ADJUSTMENT

The adjustment range of an **RFS-4001-025** Air Switch is 0.15±0.02" w.c. to 5.0"w.c..

To adjust the set point, turn the adjusting screw counterclockwise until motion has stopped. Next, turn the adjusting screw 5 complete turns clockwise to engage the spring.

From this point, the next eight turns will be used for the actual calibration. **Each full turn represents approximately 0.61" 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.

SPECIFICATIONS

MODEL RFS-4001-025

AIR PRESSURE SENSING SWITCH WITH ADJUSTABLE SET POINT RANGE

Mounting Position:

Mount with the diaphragm in any vertical plane.

Standard Set Point Range:

0.15 ±0.02" w.c. to 5.0" w.c..

Field Adjustable "Operate Range":

0.17" w.c. to 5.0" w.c..

Field Adjustable "Release Range":

0.10" w.c. to 4.7" w.c..

Approximate Switch Differential

Progressive, increasing from 0.05±0.02" w.c. at minimum set point to approximately 0.3"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:

-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:

SPDT

Electrical Connections:

Screw terminals with cup washers

Sample Line Connectors:

Externally threaded ¼" UNS 2A thread with nuts and self-aligning ferrules will accept ¼"OD rigid tubing.

Approvals:

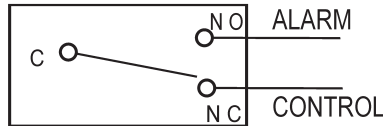
UL, CUL

Shipping Weight:

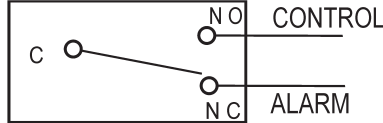
Less than 1 lb.

Figure 4

To prove excessive air flow or pressure:



To prove insufficient air flow or pressure:



RFS 4001-025 KIT INCLUDES:

- Individual Carton
- Model RFS-4001-025 Switch
- Accessory Pack (P/N 18311-121) consisting of:
 - (2) P/N 27577-037 zinc-plated slotted hex mounting screws, #6-3/8",
 - (2) P/N 19988 tubing adaptors, ¼" OD, for slipping on ¼" ID flexible tubing.

