

Air Flow Switch Installation Instructions



Application

The AFS is a general purpose airflow proving switch designed for HVAC and energy management applications. It may be used to sense positive, negative or differential air pressure.

General

The plated housing contains a diaphragm, a calibration spring and a snap-acting SPST (NC) switch.

The sample connections located on each side of the diaphragm accept a .25" OD tubing via the integral compression and nut or barbed fitting.

An enclosure cover guards against accidental contact with the live switch terminal screws and the set point adjusting screw. The enclosure cover will accept a .5" conduit connection. The AFS-460 has a reset button located on the top surface of the enclosure cover.

Mounting

Select a mounting location which is free from vibration. The AFS pressure switch **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.

Field Adjustment-AFS-222 (-112)

The adjustment range of an AFS-222 Air Switch is 0.05 ± 0.02 " w.c. to 12.0" 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 1.2" w.c.

Please note: To properly calibrate an air switch, a digital manometer or other measuring device should be used to

Air Sampling Connection

The AFS is designed to accept firm-wall sample lines of .25" OD tubing by means of ferrule and nut compression connections. For sample lines of up to 10 feet, .25" OD tubing is acceptable. For lines up to 20 feet, use .25" ID tubing. For lines up to 60 feet, use .5" ID tubing. A .25" 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. 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.

Field Adjustment-AFS-262 (-112)

The adjustment range of an AFS-262 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.

Field Adjustment-AFS-460

The adjustment range of an AFS-460 Air Switch is $0.4" \pm 0.02$ " w.c. to 12.0" w.c. 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.

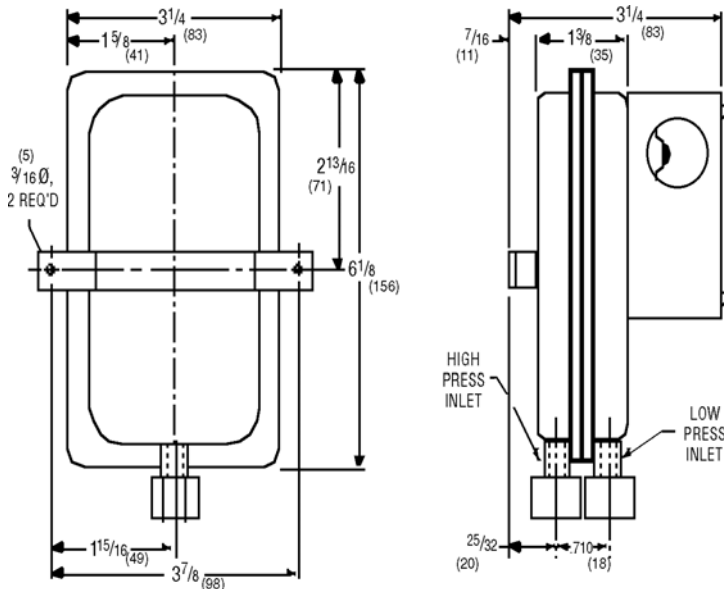
Each full turn represents approximately 1.16" w.c.

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	AFS-222/AFS-222-112	AFS-262/AFS-262-112	AFS-460
SAMPLE MEDIA	Air	Air	Air
MOUNTING POSITION	Diaphragm in any vertical plane	Diaphragm in any vertical plane	Diaphragm in any vertical plane
FIELD ADJUSTABLE RANGE	.05, ±.02" w.c. to 12" w.c.	.05, ±.02" w.c. to 2" w.c.	.40, ±.06" w.c. to 12" w.c.
SWITCH DIFFERENTIAL	Progressive, increasing from approximately .02±.01" w.c. at minimum set point to approximately 0.8" w.c. at maximum set point.	Progressive, increasing from approximately 0.02±0.01" w.c. at minimum set point to approximately 0.1" w.c. at maximum set point.	Progressive, increasing from approximately .06±.01" w.c. at minimum set point, to approximately .8" w.c. at maximum set point.
MAXIMUM PRESSURE	.5 PSI (0.03 bar)	.5 PSI (0.03 bar)	.5 PSI (0.03 bar)
OPERATING TEMPERATURE RANGE	-40°C – 82.2°C (-40°F–180°F)	-40°C – 82.2°C (-40°F–180°F)	-40°C – 82.2°C (-40°F–180°F)
LIFE	100,000 cycles/min. at 5psi max pressure each cycle and at max electrical load.	100,000 cycles/min. at 5psi max pressure each cycle and at max electrical load.	600 cycles/min. at 5psi max pressure each cycle and at max electrical load.
ELECTRICAL RATING	300 va pilot duty at 115-277vac, 10 amp, non-inductive, 277 vac, 60Hz.	300 va pilot duty at 115-277vac, 10 amp, non-inductive, 277 vac, 60Hz.	300 va pilot duty at 115-277vac, 10 amp, non-inductive, 277 vac, 60Hz.
CONTACT ARRANGEMENT	SPDT	SPDT	SPDT
ELECTRICAL CONNECTIONS	Screw top terminals with cup washers	Screw top terminals with cup washers	Screw top terminals with cup washers
SAMPLE LINE CONNECTIONS	Ferrule and nut compression type connectors that accept 6.35 mm (.25") OD rigid tubing or 1/4" barbed fittings (-112) that accept flexible tubing.	Ferrule and nut compression type connectors that accept 6.35 mm (.25") OD rigid tubing or 1/4" barbed fittings (-112) that accept flexible tubing.	Ferrule and nut compression type connectors that accept 6.35 mm (.25") OD rigid tubing.
AUTOMATIC/MANUAL RESET	Automatic	Automatic	Manual
APPROVALS	UL and CSA	UL and CSA	UL and CSA

Dimensions



Alarm or Control

