

Air Pressure Sensing Switch with Adjustable Set Point Range

Application

The **Model AFS-222** is a general purpose proving switch designed for HVAC and Energy Management applications. It may be used to sense positive, negative, or differential air pressure.

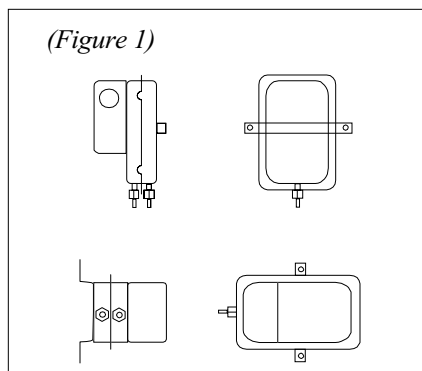
General Description & Operation

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.

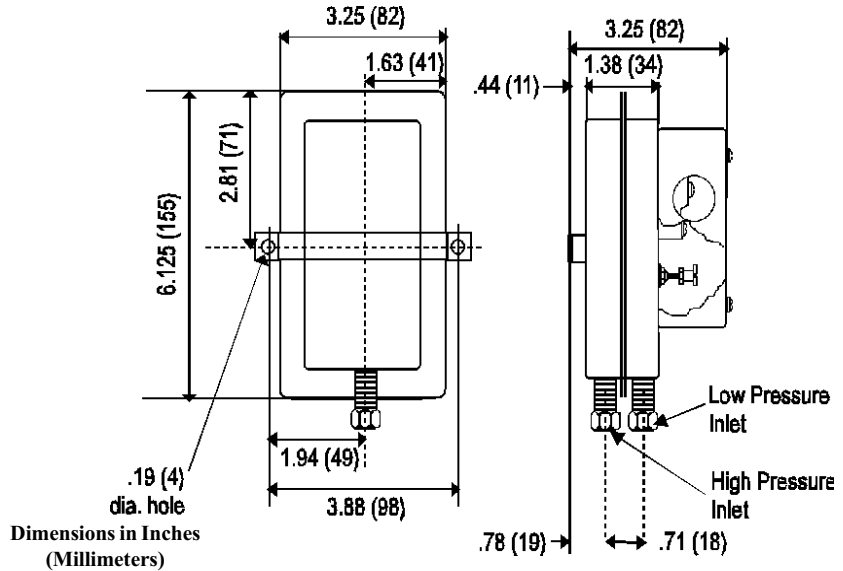
An enclosure cover guards against accidental contact with the live switch terminal screws and the set point adjusting screw. The enclosure cover will accept a 1/2" conduit connection.

Mounting (see Figure 1)

Select a mounting location which is free from vibration. The AFS-222



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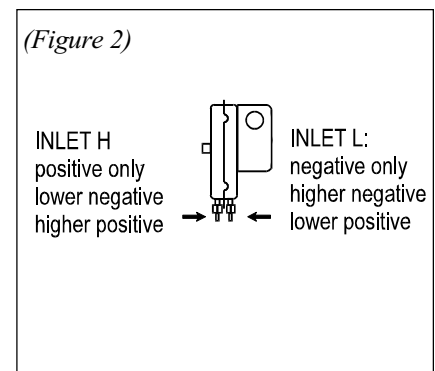


must be mounted with the diaphragm in any vertical plane in order to obtain the lowest specified operating set point. Avoid mounting with the sample line connections in the "up" position. Surface mount via the two 3/16" diameter holes in the integral mounting bracket. The mounting holes are 3-7/8" apart.

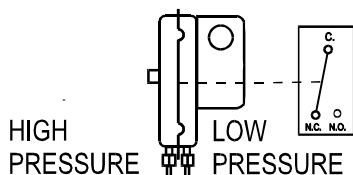
Air Sampling Connection (see Figure 2)

The AFS-222 is designed to accept firm-wall sample lines of 1/4" OD tubing by means of ferrule and nut compression connections. 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 (on page 2), and connect the sample lines as recommended.

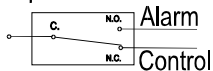


(Figure 3)

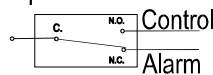


(Figure 4)

To prove excessive air flow or pressure:



To prove insufficient air flow or pressure:



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 (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 screw top terminals with cup washers. Wire alarm and control applications as shown in Figure 4.

Field Adjustment

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 confirm the actual set point.

Specifications

Model AFS-222 Air Flow Switch

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

Set Point Range: 0.05 ± 0.02" w.c. to 12.0" w.c.

Field Adjustable "Operate Range": 0.07" w.c. to 12.0" w.c.

Field Adjustable "Release Range": 0.04" w.c. to 11.2" w.c.

Approximate Switching Differential: Progressive, increasing from 0.02 ± 0.01 "w.c. at minimum set point to approximately 0.8" w.c. at maximum set point.

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

Maximum Pressure: ½ psi (0.03 bar)

Operating Temperature Range: -40F to 180F (-40 to 82C)

Life: 100,000 cycles minimum at 1/2 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, 60 Hz.

Contact Arrangement: SPDT
Electrical Connections: Screw-type terminals with cup washers.

Conduit Opening: 7/8" diameter opening accepts ½" conduit.

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

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

Approval: 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).

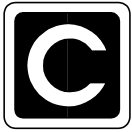
Pressure Conversion Table

1" H₂O = 0.0361 lbs./sq. in. or 0.0735 in. mercury
1" Hg. = 0.491 lbs./sq. in. or 13.6 in. water
1 psi = 27.7 in. water or 2.036 in. mercury

AFS-222 Sensing Switches are manufactured by Cleveland Controls Div. of UniControl Inc.

Location of Sample Lines for Typical Applications

<p>FAN OPERATION OR TRUE AIR FLOW WITH LITTLE OR NO STATIC PRESSURE.</p> <p>PROBE MUST BE PERPENDICULAR TO FLOW.</p>	<p>FAN OPERATION OR AIR FLOW WITH NO STATIC PRESSURE.</p>	<p>PROVE POSITIVE STATIC PRESSURE</p>
<p>FAN OPERATION AND TRUE AIR FLOW WITH VARYING AMOUNTS OF STATIC PRESSURE.</p> <p>PROBE MUST BE PERPENDICULAR TO FLOW.</p>	<p>SUCTION OR FAN OPERATION</p>	<p>NEGATIVE PRESSURE INCREASES AS FILTER GETS DIRTY.</p> <p>FILTER</p>



Air Pressure Sensing Switch with Adjustable Set Point Range

Application

The **Model AFS-262** is a general purpose proving switch designed for HVAC and Energy Management applications. It may be used to sense positive, negative, or differential air pressure.

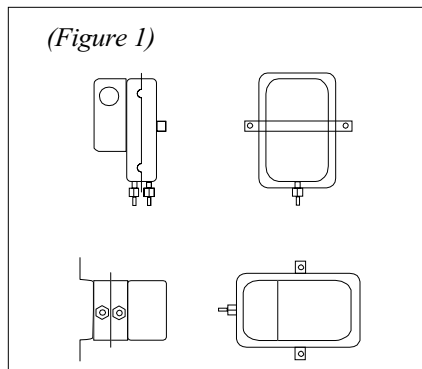
General Description & Operation

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.

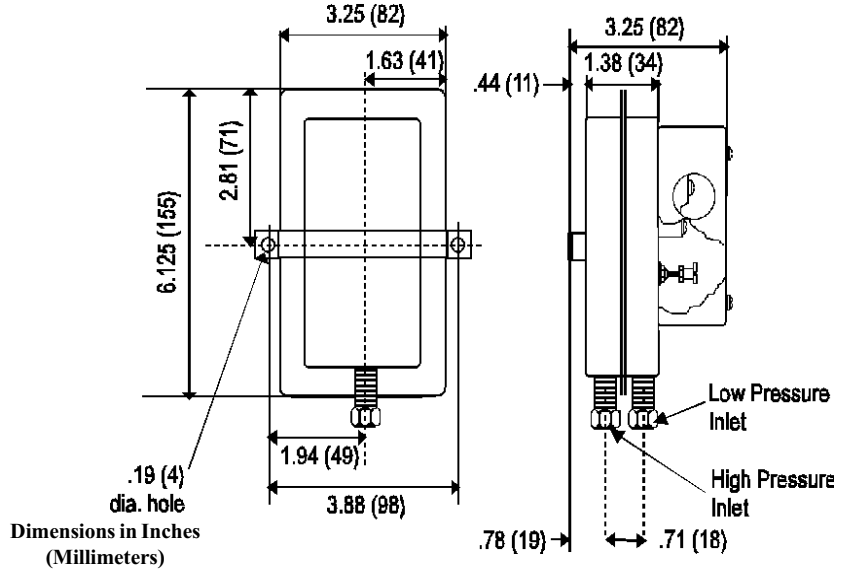
An enclosure cover guards against accidental contact with the live switch terminal screws and the set point adjusting screw. The enclosure cover will accept a 1/2" conduit connection.

Mounting (see Figure 1)

Select a mounting location which is free from vibration. The AFS-262



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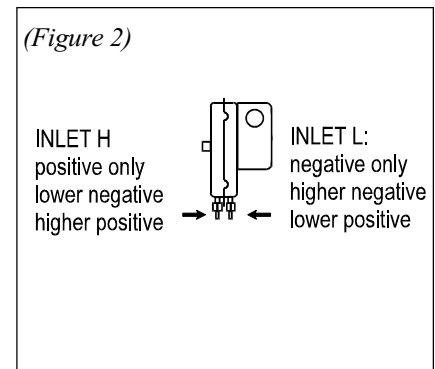


must be mounted with the diaphragm in any vertical plane in order to obtain the lowest specified operating set point. Avoid mounting with the sample line connections in the "up" position. Surface mount via the two 3/16" diameter holes in the integral mounting bracket. The mounting holes are 3-7/8" apart.

Air Sampling Connection (see Figure 2)

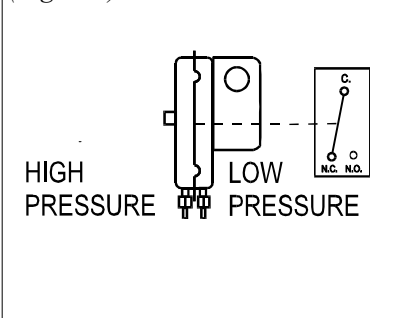
The AFS-262 is designed to accept firm-wall sample lines of 1/4" OD tubing by means of ferrule and nut compression connections. For sample lines of up to 10 feet, 1/4" OD tubing is acceptable. For lines up to 20 feet, use 1/4" ID tubing. For lines up to 60 feet, use 1/2" ID tubing. A 1/4" OD adapter, 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 (on page 2), and connect the sample lines as recommended.

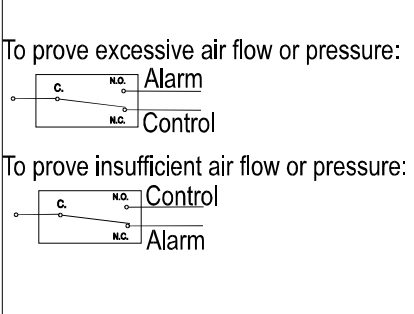


Building Controls Connection Inc
755 Center Street Unit 7 * Lewiston, NY 14092
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(Figure 3)



(Figure 4)



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 (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 screw top terminals with cup washers. Wire alarm and control applications as shown in Figure 4.

Field Adjustment

The adjustment range of an AFS-262 Air Switch is 0.05 ±.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.

Specifications

Model AFS-262 Air Flow Switch

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": 0.07" w.c. to 2.0" w.c.

Field Adjustable "Release Range": 0.04" 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 1/2 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, 60 Hz.

Contact Arrangement: SPDT

Electrical Connections: Screw-type terminals with cup washers.

Conduit Opening: 7/8" diameter opening accepts ½" conduit.

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

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

Approval: UL, FM, CSA, CE

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).

Pressure Conversion Table

- 1" H₂O = 0.0361 lbs./sq. in. or 0.0735 in. mercury
- 1" Hg. = 0.491 lbs./sq. in. or 13.6 in. water
- 1 psi = 27.7 in. water or 2.036 in. mercury

AFS-262 Sensing Switches are manufactured by Cleveland Controls Div. of UniControl Inc.

Location of Sample Lines for Typical Applications

<p>FAN OPERATION OR TRUE AIR FLOW WITH LITTLE OR NO STATIC PRESSURE.</p> <p>PROBE MUST BE PERPENDICULAR TO FLOW.</p>	<p>FAN OPERATION OR AIR FLOW WITH NO STATIC PRESSURE.</p>	<p>PROVE POSITIVE STATIC PRESSURE</p>
<p>FAN OPERATION AND TRUE AIR FLOW WITH VARYING AMOUNTS OF STATIC PRESSURE.</p> <p>PROBE MUST BE PERPENDICULAR TO FLOW.</p>	<p>SUCTION OR FAN OPERATION</p>	<p>NEGATIVE PRESSURE INCREASES AS FILTER GETS DIRTY.</p> <p>FILTER</p>



Cleveland Controls
Division of UniControl Inc.

Model
AFS-460

ADJUSTABLE SET POINT AIR PRESSURE SENSING SWITCH WITH MANUAL RESET

APPLICATION

The **Model AFS-460** is a general purpose proving switch designed to require manual operator reset following actuation. It can be used to sense positive, negative, or differential air pressure in HVAC and Energy Management applications which require operator interface.

General Description & Operation

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

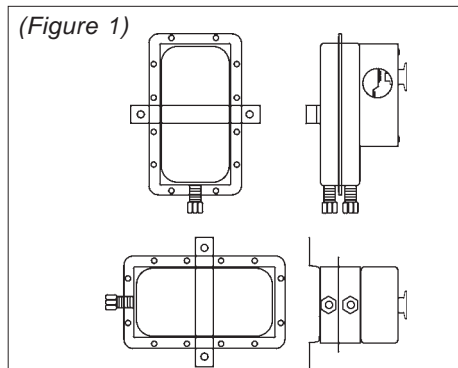
The sample connections located on each side of the diaphragm accept 0.25" OD metallic tubing via the integral compression ferrule and nut.

An enclosure cover protects the operator from accidental contact with the live switch terminal screws and the set point adjusting screw. The enclosure cover accepts a 0.5" conduit connection.



MOUNTING (SEE FIGURE 1)

Select a mounting location which is free from vibration. The **AFS-460** 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.



AIR SAMPLING CONNECTION (SEE FIGURE 2)

The **AFS-460** is designed to accept firm-wall sample lines of 1/4" OD tubing by means of ferrule and nut compression connections. An optional 1/4" adapter, suitable for slip-on flexible tubing is available: order part number 18311. 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. 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 on page 2, 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.



Cleveland Controls
DIVISION OF UNICONTROL INC.
1111 Brookpark Rd
Cleveland OH 44109

Tel: 216-398-0330

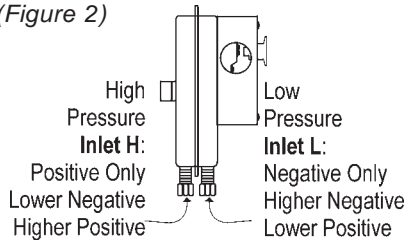
Fax: 216-398-8558

Email: saleshvac@unicontrolinc.com

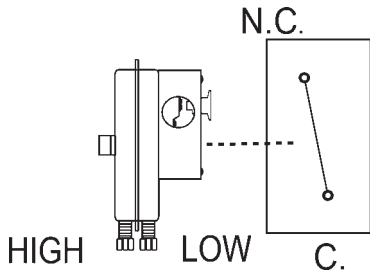
Web page: <http://www.clevelandcontrols.com>



(Figure 2)

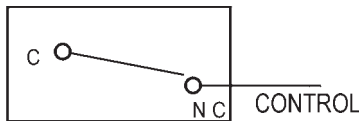


(Figure 3)



(Figure 4)

To prove excessive or insufficient air flow or pressure:



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 screw top terminals with cup washers. Wire alarm and control applications as shown in **Figure 4**.

FIELD ADJUSTMENT

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-460 AIR PRESSURE SENSING SWITCH WITH MANUAL RESET FEATURE

Mounting Position (in order to meet lowest operating specifications): Mount with the diaphragm in any vertical plane.

Set Point Range:

$0.40 \pm 0.06"$ w.c. to $12.0"$ w.c.

Field Adjustable "Operate Range":

$0.46"$ w.c. to $12.0"$ w.c.

Field Adjustable "Release Range":

$0.46"$ w.c. to $11.2"$ w.c.

Approximate Switch Differential:

Progressive, increasing from approximately

$0.06 \pm 0.01"$ w.c. at minimum set point, to approximately $0.8"$ w.c. at maximum set point.

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

Maximum Pressure: $\frac{1}{2}$ psi (0.03 bar)

Life: Exceeds UL-recognized 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 VAC

$\frac{1}{4}$ hp 125 V AC, $\frac{1}{2}$ Hp 250 VAC,

$\frac{1}{2}$ amp 125 V DC,

$\frac{1}{4}$ amp 250 V DC.

Contact Arrangement:

SPST-NC (manual reset).

Electrical Connections:

Screw top terminals with cup washers.

Conduit Opening: $\frac{7}{8}"$ diameter opening accepts $\frac{1}{2}"$ conduit.

Sample Line Connectors: Male, externally threaded $\frac{7}{16}"$ 24 UNS 2A thread, complete with nuts and self-aligning ferrules.

Sample Line Connections: Connectors will accept $\frac{1}{4}"$ OD rigid or semi-rigid tubing.

Approval and Recognition:

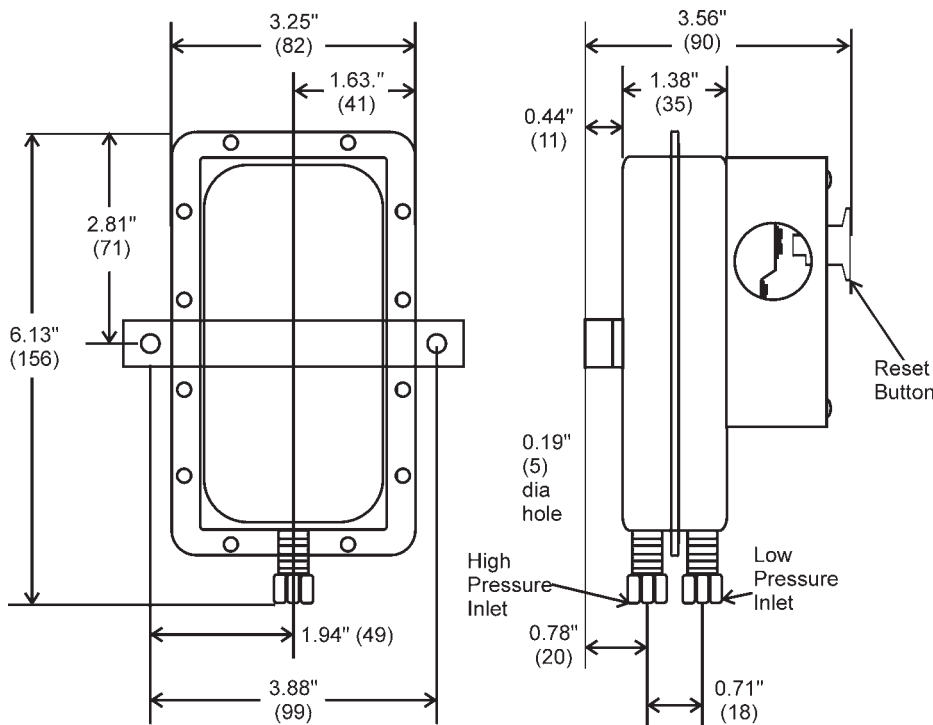
UL, CSA, CE.

Shipping Weight:

1.2 lbs.

Accessories:

- P/N 18311 Slip-on $\frac{1}{4}"$ OD Tubing Adapter, suitable for slipping on flexible plastic tubing.
- Sample line probes.
- Orifice plugs (pulsation dampers).



Nominal Dimensions in Inches (Millimeters)



Cleveland Controls

Division of UniControl Inc.

Model

AFS-460-DSS

ADJUSTABLE SET POINT AIR PRESSURE SENSING SWITCH WITH DUAL MANUAL RESET

APPLICATION

The **Model AFS-460-DSS** is a general purpose airflow proving switch designed for 120 VAC HVAC and Energy Management applications where dual manual reset switches with SPST contacts are needed. It may be used to sense positive, negative, or differential air pressure.

GENERAL DESCRIPTION & OPERATION

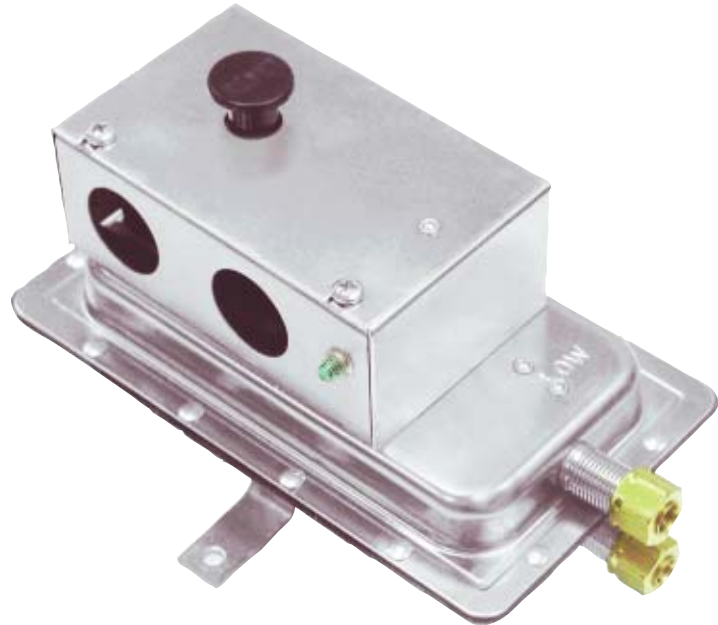
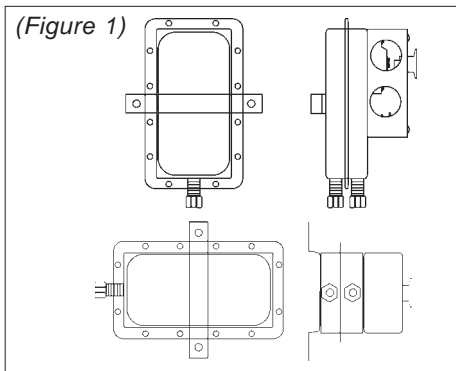
The plated housing contains a diaphragm, a calibration spring, and 2 snap-acting switches with a single manual reset button.

The sample connections located on each side of the diaphragm accept .25" (6.35 mm) OD tubing via the integral compression ferrule and nut.

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" (12.7 mm) conduit connections. The manual reset button is located on the top surface of the enclosure cover.

MOUNTING (SEE FIGURE 1)

Select a mounting location which is free from vibration. The **AFS-460-DSS** 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" (4.75 mm) diameter holes in the integral mounting bracket. The mounting holes are 3-7/8" (98.4 mm) apart.

AIR SAMPLING CONNECTION (SEE FIGURE 2)

The **AFS-460-DSS** is designed to accept firm-wall sample lines of 1/4" (6.35 mm) OD tubing by means of ferrule and nut compression connections. An optional 1/4" (6.35 mm) adapter, suitable for slip-on flexible tubing is available. For sample lines of up to 10 feet (3.05 metres), 1/4" (6.35 mm) OD tubing is acceptable. For lines up to 20 feet (6.1 metres), use 1/4" (6.35 mm) ID tubing. For lines up to 60 feet (18.3 metres), use 1/2" (12.7 mm) 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 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. **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.



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ELECTRICAL CONNECTIONS

(SEE FIG. 3)

Before pressure is applied to the diaphragm, the snap switch contacts will be in the normally closed (NC) position as shown in Fig. 3.

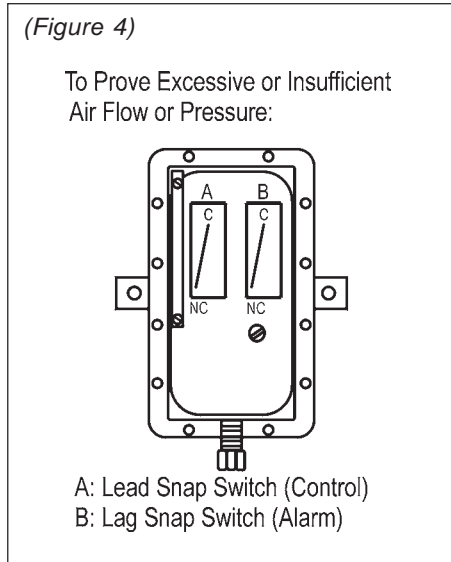
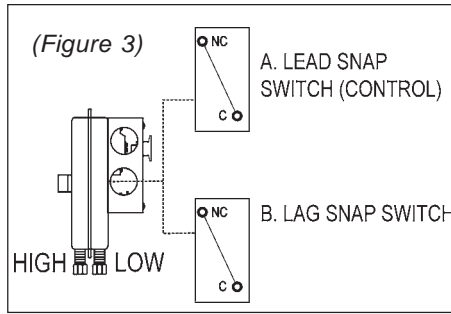
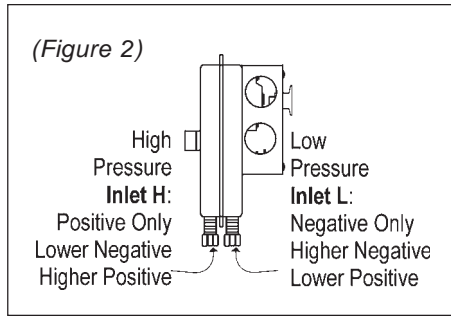
The snap switches have screw top terminals with cup washers. Wire alarm and control applications as shown in Fig. 4.

FIELD ADJUSTMENT:

LEAD & LAG SNAP SWITCHES (SEE FIG. 4)

The AFS-460-DSS Manual Reset Air Switch has a lead snap switch adjustment of **1.25" w.c. to 12.0" w.c.** (31.8 mm w.c. to 305 mm w.c.) The set point adjusting screw is used to adjust the set point of the lead snap switch (**Switch A, in Fig. 4**). The lag snap switch (**Switch B, in Fig. 4**) operates after the lead snap switch at progressively increasing set point increments as indicated in **Table 1, below**. **Note:** if **simultaneous** operation of Switch A and Switch B is required, use **Model AFS-460-136** or **AFS-460-137**.

To adjust the set point of Switch A: 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 1.0" w.c. (25.4 mm 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-460-DSS AIR PRESSURE SENSING SWITCH WITH MANUAL RESET & DUAL SPST-NC CONTACT ARRANGEMENT

Mounting Position (in order to meet lowest operating specifications): Mount with the diaphragm in any vertical plane.

Set Point Range:

1.25 ± 0.06" w.c. to 12.0" w.c. (31.8mm ± 1.52mm w.c. to 305 mm w.c.)

Field Adjustable "Operate Range":

1.31" w.c. to 12.0" w.c.

Field Adjustable "Release Range":

1.31" w.c. to 11.2" w.c.

Approximate Switch Differential: Progressive, increasing from approximately 0.06 ± 0.01" w.c. at minimum set point, to approximately 0.8" 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; 3.45 kPa)

Life: Exceeds UL-recognized mechanical endurance test of 6,000 cycles minimum at 0.5 psi (0.03 bar, 3.45 kPa) 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 VAC,

½ amp 125 v DC, ¼ amp 250 v DC.

0.5 VA @ 24 v AC, 50/60 Hz.

Contact Arrangement:

2 SPST-NC (manual reset).

Electrical Connections:

Screw top terminals with cup washers.

Conduit Opening: 7/8" diameter opening accepts ½" conduit.

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

Sample Line Connections: Connectors will accept ¼" (6.35mm) OD rigid or semi-rigid tubing.

Approval and Recognition:

UL & CSA approved; CE pending.

Shipping Weight: 1.2 lbs.

Nominal Dimensions in Inches (Millimeters)

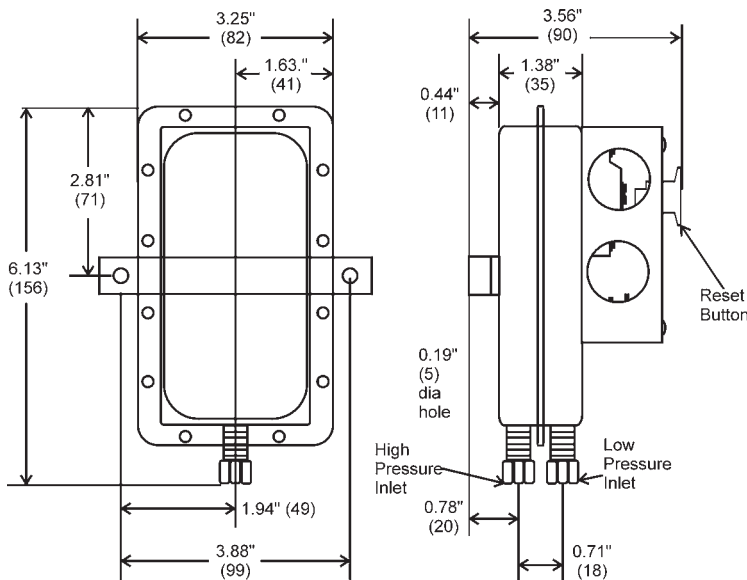
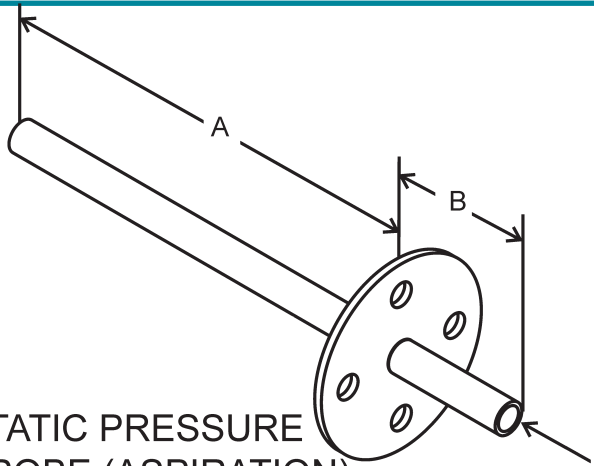


TABLE 1

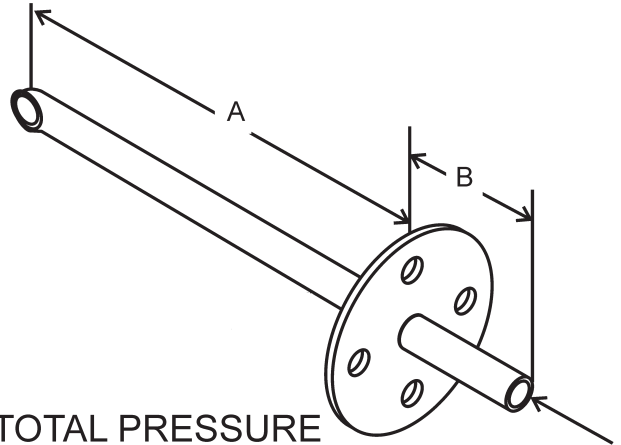
Lead Switch A Set Point	Lag Switch B Set Point
1.25" - 3.00" w.c. (31.8 - 76.2 mm w.c.)	up to 5% after Switch A
3.00" - 6.00" w.c. (76.2 - 152.4 mm w.c.)	up to 10% after Switch A
6.00" - 9.00" w.c. (152.4 - 229 mm w.c.)	up to 15% after Switch A
9.00" - 12.00" w.c. (229 - 305 mm w.c.)	up to 35% after Switch A



FOR AIR PRESSURE SENSING SWITCHES



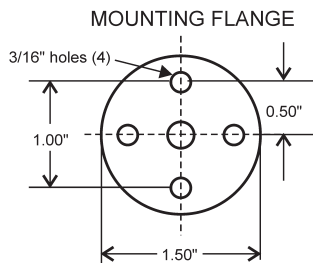
STATIC PRESSURE PROBE (ASPIRATION) 0.25" max. OD



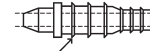
TOTAL PRESSURE PROBE (IMPACT) 0.25" max. OD

Static Pressure (Aspiration) Probes				
Dimension A	Smooth OD Dimension B	Part Number	Barbed End Dimension B	Part Number
1.5	1.0	21397	1.75	21397-112
2.0	.5	21116	1.25	21116-112
3.5	1.0	21398	1.75	21398-112
4.0	.5	21117	1.25	21117-112
5.5	1.0	21399	1.75	21399-112
6.0	.5	21118	1.25	21118-112
7.5	1.0	21400	1.75	21400-112
8.0	.5	21119	1.25	21119-112

Total Pressure (Impact) Probes				
Dimension A	Smooth OD Dimension B	Part Number	Barbed End Dimension B	Part Number
1.5	1.0	21401	1.75	21401-112
2.0	.5	21120	1.25	21120-112
3.5	1.0	21402	1.75	21402-112
4.0	.5	21121	1.25	21121-112
5.5	1.0	21403	1.75	21403-112
6.0	.5	21122	1.25	21122-112
7.5	1.0	21404	1.75	21404-112
8.0	.5	21123	1.25	21123-112
10.0	.5	28527	1.25	28527-112
12.0	.5	28528	1.25	28528-112



FACTORY-INSTALLED
BARBED ADAPTER
FOR HOSE CONNECTION



45° BARB TYP. 6 PLACES
BARBED END WILL ACCEPT
1/8" THRU 1/4" ID
FLEXIBLE PLASTIC TUBING.



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RECOMMENDED PROBE LOCATIONS:

1. Position 5 to 8 diameters downstream from elbows, obstructions, or significant change in duct area.
2. Insert probe into duct perpendicular to airstream so that:
 - **Aspiration** (static) probe tip opens parallel with airstream.
 - **Impact** (total pressure) probe tip opens directly into the airstream.

TYPICAL APPLICATIONS (SEE FIGS. 1-6):

1. Positive static pressure increases as the filter gets dirty.
2. Differential across filter changes as filter gets dirty.
3. Flow is reduced as filter gets dirty.
4. Fan operation **or** true air flow with little or no static pressure.
5. Negative pressure increases as the filter gets dirty.
6. Fan operation **and** true air flow: varying amounts of static pressure. Probes must be perpendicular to air flow.

