



# SERIES NS2

## APPLICATION

Series NS2™ Air Flow Pressure Sensing Switches are designed with sturdy, contaminant-free construction, to provide low cost, high accuracy and reliability. They offer a narrow switching differential and low set point tolerance over a wide operating temperature and set point range. They can be used to sense positive, negative or differential air pressure. Non-adjustable factory-calibrated set points are available from 0.05" to 10.0" wc.

## DESCRIPTION & OPERATION

The glass-filled polycarbonate body of the switch provides a high degree of stability and accommodates many sample line connector options. The housing contains a sensing diaphragm and an integral snap-acting switch.

Air sample line connectors are located on either or both sides of the diaphragm. The high and low pressure ports are color-coded for ease of identification. An optional bleedhole is available.

The electrical connection consists of male 90° quick-connect terminals. The integral snap action switch (patent pending) is actuated by a pressure or vacuum air flow, or by a pressure or vacuum differential. SPNO, SPNC, and SPDT terminal configurations are available.

Port, mounting bracket, and terminal orientations can be specified. Numerous standard options are available, and we readily accommodate custom feature requirements.

## MOUNTING

Select a mounting location free from vibration. Mount with the diaphragm vertical, or at a custom angle. Specify the mounting position when ordering. Avoid mounting with the sample line connections directed upward.

## ELECTRICAL CONNECTIONS

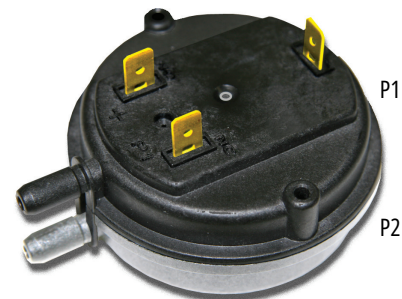
The snap switch has 90° male quick connect terminals in 1/4" (standard) or 3/16" (optional) sizes. Before pressure is applied to the diaphragm, the switch contacts will be in the deactivated position as shown in Figure 2.

## AIR SAMPLING CONNECTION

Series NS2 switches are available with many different types of sample line connections that accept a wide range of flexible and rigid sample line tubing. See Figure 3.

## AIR SAMPLING METHOD

The High or Positive inlet (P1) is black and the Low or Negative inlet (P2) is gray, as shown in photograph. Choose one of the five following configurations to connect the sample lines:



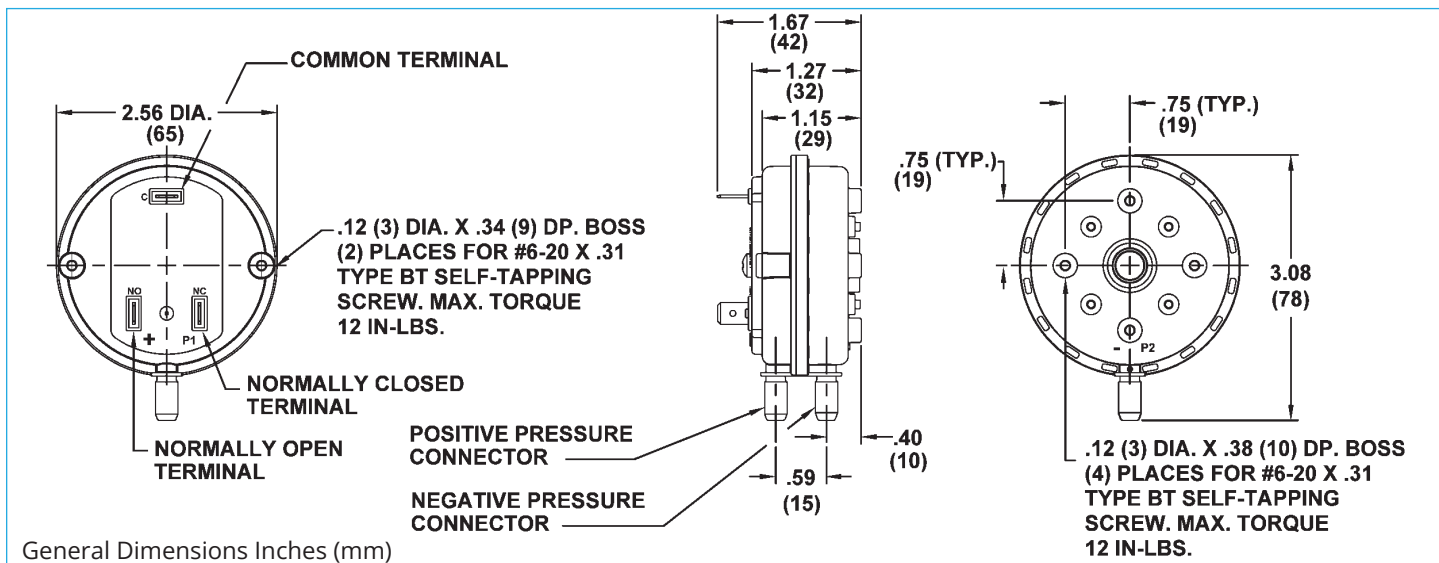
**Positive Pressure Only:** Connect the sample line to P1; P2 remains open to the atmosphere.

**Negative Pressure Only:** Connect the sample line to P2; P1 remains open to the atmosphere.

**Two Negative Samples:** Connect higher negative sample to P2; lower sample to P1.

**Two Positive Samples:** Connect higher positive sample to P1; lower sample to P2.

**One Positive and One Negative:** Connect positive sample to P1; connect negative sample to P2.





**SPECIFICATIONS  
FOR SERIES NS2  
OEM SENSING SWITCH  
WITH  
FIXED SET POINT**

**Material:** Glass-filled polycarbonate body with silicone diaphragm  
**Mounting Position:** Standard diaphragm position: vertical or custom angle: provide requirement with request for quotation.

**Set Point Range:** 0.05" wc to 10.0" wc

**Measured Media:** Air and byproducts of combustion that will not degrade silicone or polycarbonate

**Maximum Pressure:** 14" wc  
**Operating Temperature Range:** -40 °F to 190 °F (-40 °C to 88 °C)

**Life:** 100,000 cycles minimum

**Electrical Rating:**

- **Standard Silver Contacts:**  
**SPDT, SPST** Electrical load: 1/10 HP @120 to 277 V ac; 28 VA pilot duty @ 24 Vac, 125 VA pilot duty @ 120 V ac  
**SPST** Electrical load: 5 Amps resistive @ 24, 120 to 277 V ac.

- **Optional Gold Contacts:**  
 0.15 Amp resistive @ 24V ac or V dc.

**Contact Arrangement:** SPNO, SPNC, SPDT

**Electrical Connections:**

- **Standard** quick-connect copper-alloy terminals; 1/4" x 0.032
- **Optional** quick-connect copper-alloy terminals; 3/16" x 0.032

**Sample Line Connectors:**

Many types available; consult factory.

**Sample Line Connections:**

Black is positive, Gray is negative. Many configurations are available.

**Approvals:** UL, CUL, CSA, CE, AGA

**Shipping Weight:** < 1 lb; varies with configuration

**Accessories (Purchase separately):**

- **Adapters for slip-on flexible tubing:** Valox, female threaded / male duo-barb, suitable for 3/16" or 1/4" ID tubing. Consult factory for additional types.
- **PVG-1 Pressure-Vacuum Generator** Compact constant air source
- **Model 6650 Digital Manometer** Portable low air measurement device
- **Sample Line Probes**
- **Orifice Plugs (Pulsation Dampers)**

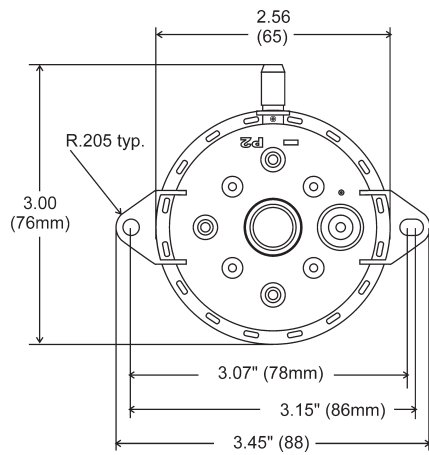


Figure 1A: NS2 Switch with standard integral bracket

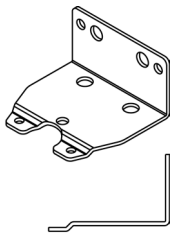


Figure 1B: "L" Bracket

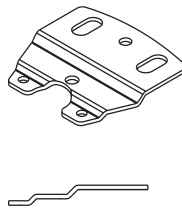
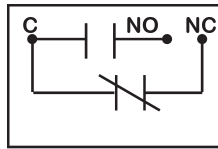
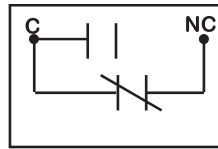
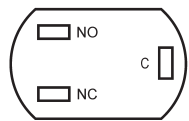


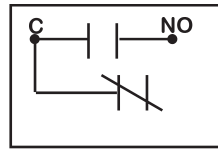
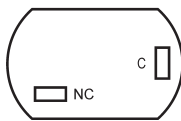
Figure 1C: Half Strap Bracket



SPDT



SPST / NC



SPST / NO

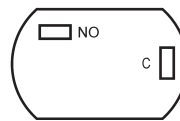
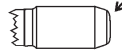


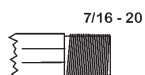
Fig. 2: Switch contact positions without pressure applied to the diaphragm.

**INTEGRAL**

1/4" OD accepts 3/16" ID flexible tubing.

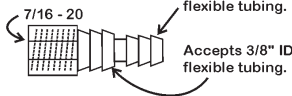


STANDARD CONNECTOR

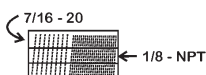


STANDARD THREADED CONNECTOR

**ADAPTER**

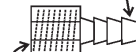


BARBED ADAPTER

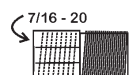


INTERNAL THREADED ADAPTER

Accepts 1/4" ID flexible tubing.



1/8" BARBED ADAPTER



EXTERNAL THREADED ADAPTER

Figure 3: Sample Line Connector Options: (A) Integral connectors; (B) Adapters

