

SmartZone™



SPC (Static Pressure Controller)

- Air Pressure Sensing Switch
- For use with POC and RPOC Dampers
- Adjustable Air Switch Set Point Range

GENERAL DESCRIPTION

The **SPC** is a static pressure switch designed to sense positive pressure in the plenum for the purpose of controlling modulating bypass position.

The plated housing contains a diaphragm, a calibration spring and a snap-acting SPDT switch. The barbed sample line connections located on each side of the diaphragm accept flexible tubing. The 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.

Pitot tube (air-probe) for mounting in plenum and 12 inches of flexible 1/4" I.D. poly tubing included with each SPC.



Mounting

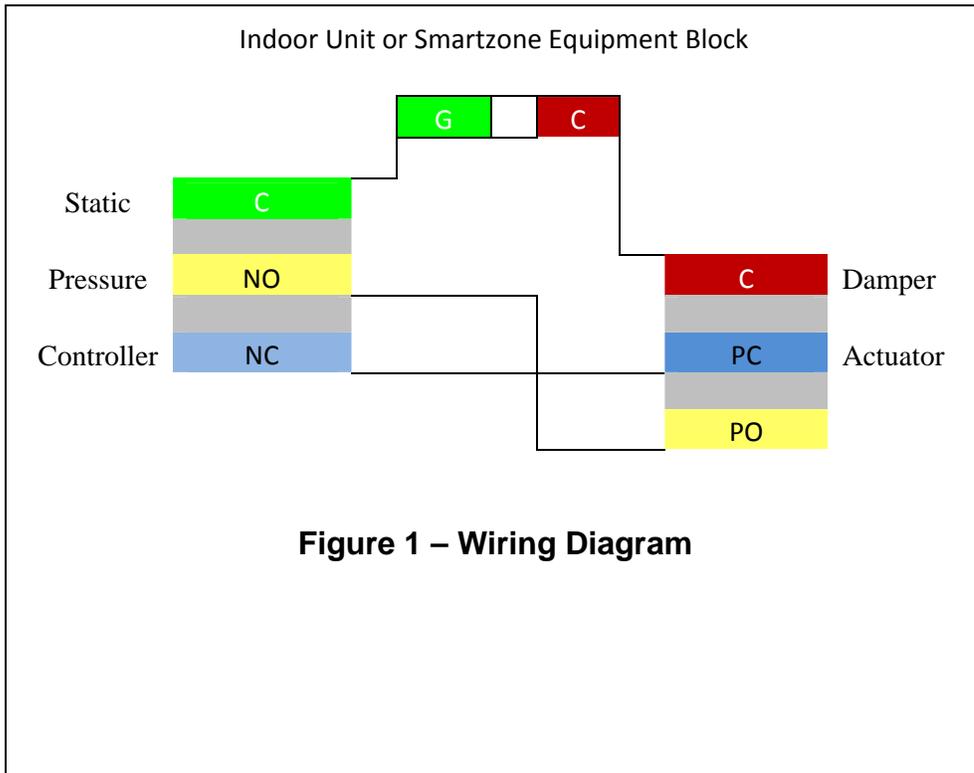
Select a mounting location which is free from vibration. The **SPC** must be mounted with the diaphragm in any vertical plane in order to obtain the lowest specified operating set point. Avoid mounting with the sample line connections in the "up" position. Surface mount via the two 3/16" diameter holes in the integral mounting bracket. The mounting holes are 3-7/8" apart. (See **Figure 3**)

Air Sample Connection

The **SPC** is designed to accept flexible tubing by means of barbed 1/4" slip-on connections. A 12" piece of 1/4" ID Flexible tubing is included with the SPC as well as a Pitot Tube for mounting in the plenum. Locate the sampling probe a minimum of 2 feet downstream from the air source. Install the sampling probe as close to the center of the airstream as possible. Do not allow supply pressure to blow directly into the Pitot Tube. Connect the provided flexible tubing to the **High-Pressure Inlet** as shown in **Figure 2**.

Specifications

Mounting	Mount with the diaphragm in any vertical plane. (See Figure 3)
Set Point Range	0.05 ± 0.02" w.c. to 2.0"w.c.
Field Adj. Operate Range	0.07"w.c. to 2.0"w.c.
Field Adj. Release Range	0.04"w.c. to 1.9"w.c.
Field Adj. Operate Range	0.07"w.c. to 2.0"w.c.
Approx. Switching Differential	Progressive, increasing from 0.02 ± 0.01"w.c. at minimum set set point to 0.1w.c. at maximum set point.
Measured Media	Air or combustion by-products that will not degrade silicone
Maximum Pressure	1/2 psi (0.03 bar)
Operating Temperature	-40°F to 180°F (-40°C to 82°C)
Electrical Rating	300VA pilot duty at 115 to 277 VAC, 15 Amps non-inductive 277 VAC @ 60Hz
Contact Arrangement	SPDT
Sample Line Connections	1/4" Barbed connectors for flexible tubing
Approval	UL, FM, CSA, CE



Modulating Bypass Setup

With all zones calling (all dampers open), make certain the fan is in the highest speed that will be used when the system is running.

Turn the set screw clockwise $\frac{1}{4}$ turn each time until the bypass damper motor is obviously running closed. If the bypass damper should reverse and start opening turn the set screw another $\frac{1}{4}$ turn and repeat until the bypass damper is closed. Next, slowly turn the set screw counter-clockwise until the bypass damper motor starts to run open. Immediately, turn the set screw clockwise once again until the damper motor starts to close again.

Electrical Connections

Before pressure is applied to the diaphragm, the switch contacts on the SPC will be in the normally closed (NC) position. This snap switch has screw top terminals with cup washers. Wire according to **Figure 1**.

The goal is to set the bypass damper so that it is barely staying closed when all zones are open. This will cause the bypass damper to open if supply dampers close and the plenum pressure goes up. As dampers open and/or close during operation, the static pressure sensor will sense a pressure change and make the power open/power close bypass damper move to maintain the same pressure in the plenum that was established when all zones were open.

