

Model Series

SPC

Description

The Neptronic Static Pressure Controller is used to modulate a damper or variable frequency drive to maintain a constant static or differential pressure at a given setpoint.

Applications

- Control bypass damper actuators, a VFD, or Vortex for VAV systems
- Laboratory pressurization control
- Stairwell pressurization control
- Energy saving

Features

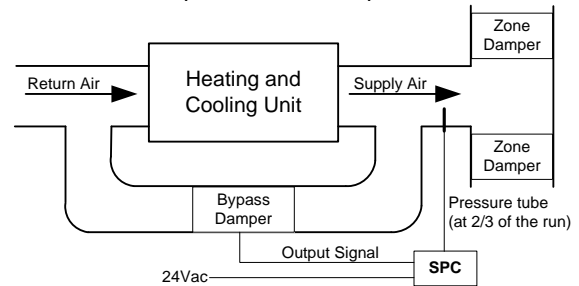
- LCD Display
- Simple installation and configuration
- Displays actual pressure reading
- Adjustable setpoint and dead band
- Adjustable response speed
- Selectable output signal
- Direct or reverse action outputs
- Fully calibrated
- Real-time pressure output for remote monitoring



SPC Series

Typical Installation

In order to maintain a constant volume of air through the HVAC unit, a modulating bypass damper, VFD, or Vortex is used to control the air bypassed between the supply and return air ducts. The SPC is used to sense the supply air pressure and relieve excess air as the static pressure builds up.



Models

Model #	Pressure Range	Setpoint Range	Deadband
SPC 0.1	0 to 0.1"wc	0 to 0.099"wc	0 to 0.0121"wc
SPC 1.0	0 to 1.0"wc	0 to 0.99"wc	0 to 0.121"wc
SPC 2.0	0 to 2.0"wc	0 to 1.99"wc	0 to 0.243"wc
SPC 5.0	0 to 5.0"wc	0 to 4.99"wc	0 to 0.613"wc

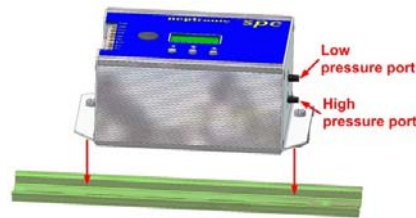
Technical Specifications

Specifications	SPC 0.1 SPC 1.0 SPC 2.0	SPC 5.0
Power supply	24 Vac ±10%	
Power consumption	3.6VA	
Electrical connection	18 AWG minimum on screw terminals	
Input connection	1/8" barbed fitting	
Output signals	Actual pressure output: 0.5 to 4.8 Vdc	0.5 to 4.1 Vdc
	Direct/Reverse acting output: 0 to 10 Vdc, 2 to 10 Vdc, 0 to 20 mA or 4 to 20 mA	
Differential pressure resolution	0.1% of full scale	0.2% of full scale
Pressure non-linearity	Less than ±1.5% of full scale	0-20% full scale = ± 2% 20-100% full scale = ± 5%
Total error (not including long term stability)	Max. ±3.0% of full scale (from 5 to 55°C) Max. ±5.0% of full scale (from 0 to 70°C)	0-20% full scale = ± 3% (5 to 55°C) 20-100% full scale = ± 5% (to 23°C)
Long term stability	Max. ±1.5% of full scale	Max. ±5% of full scale
Sensitivity shift over temperature	Typ. ±1%, Max. ±1.5% (from 5 to 55°C) Typ. ±1.5%, Max. ±2.25% (from 0 to 70°C)	± 15% full scale output (5 to 55°C)
Burst pressure	Greater than 5 atmospheres	
Response speed	Adjustable from 1 (100 mV/sec) to 25 (1.78 V/sec) (factory set: 2)	
Contacts	NC/NO, fixed: "ON" at 15% of the demand, "OFF" return in the dead band (1A, 24 Vac)	
Operating temperature	0°C to 40°C [32°F to 104°F] Compensated: 5°C to 55°C [41°F to 131°F]	
Storage temperature	-40°C to 80°C [-40°F to 176°F]	

Specifications	SPC 0.1 SPC 1.0 SPC 2.0	SPC 5.0
Dimensions A = 4.33" (110mm) B = 0.51" (13mm) C = 2.20" (56mm) D = 3.18" (81mm) E = 0.75" (19mm) F = 4.81" (122mm)		

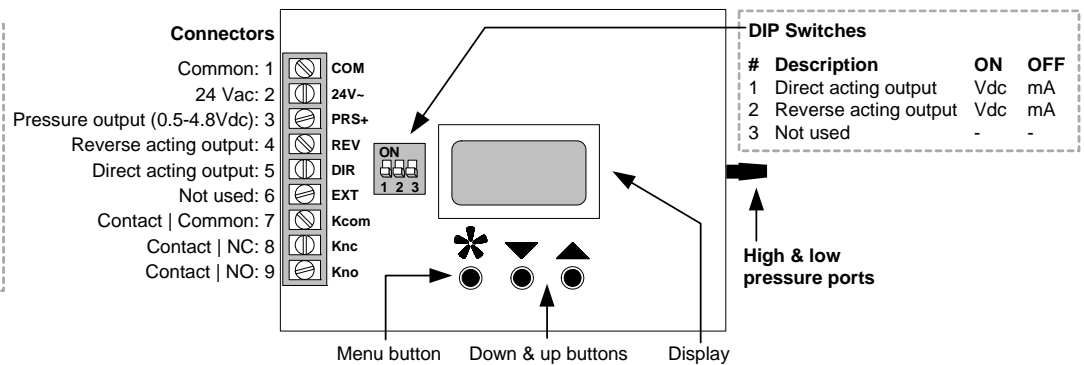
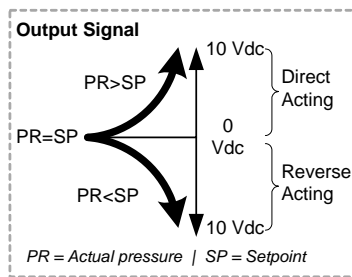
Mechanical Installation

- Affix the SPC on a DIN rail (by using the fittings and the screws provided) or directly on a wall or ventilation duct.
- Insert the control pressure tube in the "HIGH" pressure port.
- For differential pressure, insert the reference pressure tube in the "LOW" pressure port. Otherwise leave this entry with the free air.



Wiring

We strongly recommend that all Neptronic products be wired to a separate grounded transformer and that transformer shall service only Neptronic products. This precaution will prevent interference with, and/or possible damage to incompatible equipment.



Programming

Press the menu button * to enter programming mode. Once in programming mode, the menu button always goes to the next step. Use the arrow keys to change the value of the current menu item. Press and hold an arrow key to scroll rapidly scroll the values. Changes are automatically saved. The SPC automatically exits the menu after 20 seconds of inactivity.

Step	Display	Description	Values
1	PR:0.000 SP:0.10	Operation Mode & Setpoint Adjustment When 24 Vac is supplied to the unit, the SPC displays the actual pressure (Pr) and the setpoint of the static pressure (Sp). Use the arrow keys to change the setpoint.	Increments of 0.01.
2	DEADBAND 0.014	Deadband Adjustment Prevents instability of the system caused by minor variations in static pressure.	Default: 0.04 (SPC 5.0), 0.029 (SPC 2.0), 0.014 (SPC 1.0), 0.0014 (SPC 0.1) Increment: 0.01 (SPC 5.0, SPC 2.0), 0.005 (SPC 1.0), 0.0005 (SPC 0.1)
3	RESPONSE SPEED:12	Response Speed Adjustment Prevents unjustified changes due to a temporary surge of static pressure, which could affect the system. To increase system stability, we recommended setting the Response Speed to 1 (the lowest setting).	1 to 25 (factory setting: #2) 1 lowest: (100 mV/sec, 100 seconds for a 0-10 Vdc output). 25 fastest: (1.78 V/sec, 5.6 seconds for 0-10 Vdc output).
4	CNTL OUT 2-10VDC	Output Signal Adjustment The configuration of the output signal applies to both direct acting and reverse acting.	▲ = 2-10 Vdc / 4-20 mA ▼ = 0-10 Vdc / 0-20 mA. (factory setting: 0-10 Vdc) The value (Vdc/mA) is determined by the DIP switch.



Recycling at end of life: please return this product to your Neptronic local distributor for recycling. If you need to find the nearest Neptronic authorized distributor, please consult www.neptronic.com.