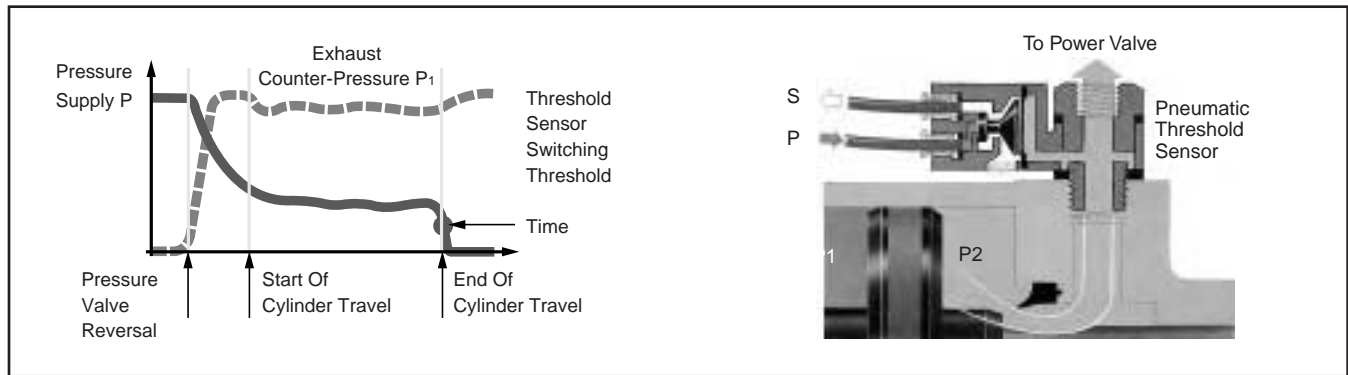
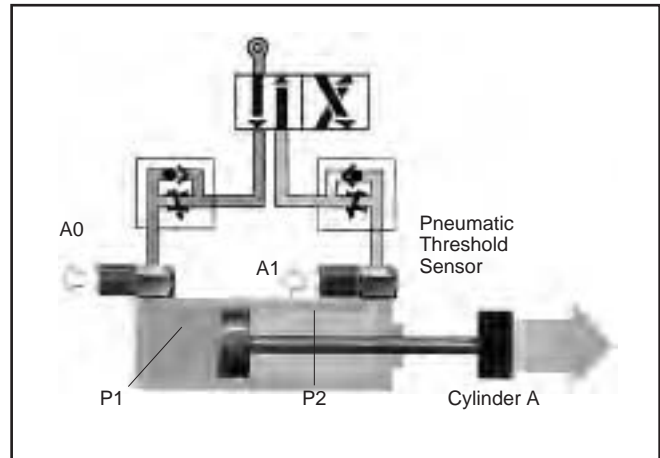


General Description

Threshold Sensors – PWS

The plug-in threshold sensors provide feedback information on pneumatic cylinder status in one of three possible outputs . . . pneumatic, electric, or electronic. Mounted into the cylinder port, these devices monitor the back pressure of the cylinder's exhaust. When the cylinder's piston stops, the back pressure rapidly drops and the threshold sensor provides the desired output. Ideal for variable stroke applications such as robotics where other sensor type devices such as limit switches are impractical, these devices provide a signal whenever the cylinder stops motion.

The threshold sensor consists of two complementary sub assemblies (1) the banjo fitting and (2) the plug-in sensor element. In all cases, the sensor is easily plugged into the banjo fitting and locked in place with a spring clip. The banjo fitting is designed to accept (piggy backed) other functional fittings such as flow controls or blocking valves. Simply select the sensor based on the type feedback signal that best fits the application.



PWS General Characteristics

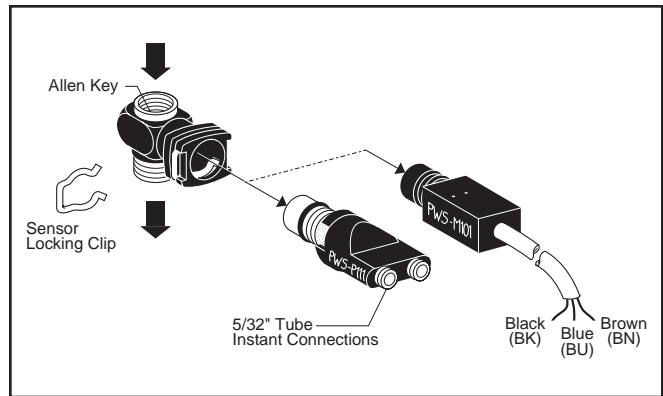
Operating Pressure	0 to 150 PSI
Permissible Fluids	Air or neutral gas, 50 µm filtration, lubricated or not
Operating Temperature	5° to 140°F (-15° to 60°C)
Storage Temperature	-40° to 160°F (-40° to 70°C)
Flow	N/A
Mechanical Life	10 Million
Maximum Operating Frequency	10Hz
Material: Body	Thermoplastic
Mounting Screw	Brass
Maximum Mounting Torque: 10-32 UNF and M5	88 inch pounds
1/8"	70 inch pounds
1/4"	105 inch pounds
3/8"	265 inch pounds
1/2"	310 inch pounds
Adjustment	N/A
Adjustment Locking	N/A

Piloting and De-Piloting Pressure

Threshold Sensors	Pilot with Operating Pressure of 90 PSI	Depilot with Operating Pressure of 90 PSI
PWSP111	64 PSI	6 PSI
PWSM1012	15 PSI	9 PSI
PWSE101 and PWSE111	10 PSI	7 PSI

F

Threshold Sensors



Model Selection

Banjo Sockets (with Sensor Clip)		
Port Size	Model Number	Wrench
10-32	PWSB1557	5/16" Hex
1/8"	PWSB1887	3/16" Allen
1/4"	PWSB1997	5/16" Allen
3/8"	PWSB1337	3/8" Allen
1/2"	PWSB1227	1/2" Allen

Plug-in Sensors		
Output	Model Number	Connection
Pneumatic	PWSP111	5/32" push-in
Electrical	PWSM1012	3-wire cable (6 ft)

Application

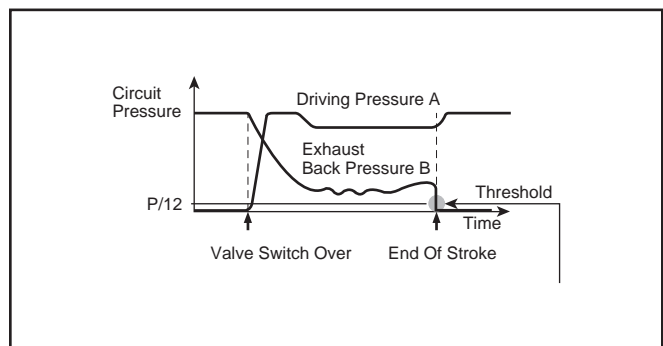
The threshold sensor provides electrical or pneumatic feedback information on pneumatic (air) cylinder status. These devices monitor the back pressure of the cylinder's exhausting chamber. When the cylinder stops, the back pressure drops and the threshold sensor provides the desired output. Ideal for variable stroke applications. The banjo fitting and the feedback element are two separate subassemblies, giving the user flexibility between electrical and pneumatic outputs as feedback.

Mounting

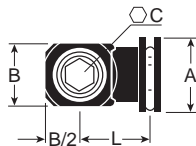
Banjo fittings in 10-32 to 1/2" pipe sizes are designed to be installed directly into actuator ports (up to 5" bore cylinders). The banjo fitting can accommodate other functional fittings and components such as right angle flow control valves or blocking valves. Banjo fittings screw into actuators using an Allen wrench or 5/16" hex head wrench for 10-32 size. Electrical or pneumatic feedback element snaps into place using a locking clip.

Operation

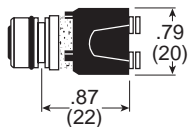
Pneumatic sensors have a continuous pressure signal applied to the sensor device. Electrical sensors have a continuous electrical signal applied to the sensor device. The threshold sensor assembly mounted directly into the cylinder Port provides an output signal S, which can be pneumatic or electrical, when the falling back pressure in the exhausting chamber of the cylinder reaches the operating threshold (approximately 6-9 PSIG). (The device is a normally passing device. The output is only on when there is nearly zero pressure at the cylinder.)



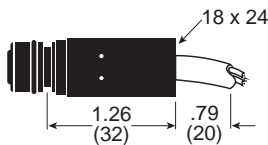
Dimensions



Banjo Socket



PWSB111



PWSM1012

Model	A	B	C	H	K	L
PWSB1557	.98 (25)	.43 (11)	5/16" Hex	.79 (20)	.40 (10)	.67 (17)
PWSB1887	.98" (25)	.63 (16)	3/16" Allen	.71 (18)	.40 (10)	.79 (20)
PWSB1997	.98 (25)	.83 (21)	5/16" Allen	.71 (18)	.40 (10)	.87 (22)
PWSB1337	.98 (25)	1.10 (28)	3/8" Allen	.79 (20)	.47 (12)	.98 (25)
PWSB1227	.98 (25)	1.30 (33)	1/2" Allen	.93 (24)	.55 (14)	1.02 (26)

inches
(mm)

Specifications

Operating Pressure 0 to 150 PSIG (0 to 10 bar)

Temperature Range5°F to 140°F (-15°C to 60°C)

CAUTION: If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior.

Maximum Operating Frequency 10 Hz

Pilot Pressure (PWSP111) >64 PSIG (4.4 bar)

Threshold Pressure 6 to 9 PSIG (.4 to .6 bar)

Output Flow Rate (PWSP111)3 SCFM at 90 PSIG

Current Rating (PWSM1012) –

5 VA, 250 VAC

5W, 48 VAC

Materials –

Body Thermoplastic

Mounting Screw & Threads Brass

Life Expectancy –

10 million cycles with dry air at 90 PSIG, 68°F, and 1 Hz operating frequency

Voltage Range (PWSM1012) –

12 - 240 VAC

12 - 48 VDC

F

Universal Description	Electrical		Fluid Power	
	Function	Symbol	Function	Symbol
Normally Non-Passing (NNP)	Normally Open (N.O.)		Normally Closed (N.C.)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>2-Way</p> </div> <div style="text-align: center;"> <p>3-Way</p> </div> </div>
Normally Passing (NP)	Normally Closed (N.C.)		Normally Open (N.O.)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> </div>