



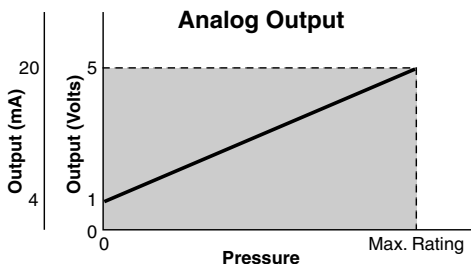
A

Accuracy

The PERCENTAGE difference between the true value and that indicated by an instrument is the measure of the instrument's accuracy. It is expressed as a percentage of the full-scale value of the reading according to the type of instrument.

Analog Output

An analog output provides an output voltage that is proportional and linear to the pressure measured by the sensor. This output signal provides continuous feedback to the analog card of the PLC.



Automatic Surveillance Mode

Sensor automatically surveys vacuum cycle to determine if the Peak Vacuum Level was attained after H-1. Output 2 changes state if the Peak Vacuum Level of the system is not reached over a consecutive number of surveillance's programmed. Up to 100 consecutive cycles can be programmed.

Peak Vacuum Level and number of surveillance's are programmed at the end of the Automatic Teach Mode.

Automatic Teach Mode

Programming feature that automatically sets switch points during the vacuum cycle.

Sets Output 1 to Hysteresis Mode and Output 2 to Window Comparator Mode. 60% of maximum vacuum level displayed during setup operation of the system.

Output 1: Hysteresis Mode

$$H-1 = (\text{Peak Vacuum Level minus Bottom Vacuum Level}) \times 0.6 + \text{Bottom Vacuum Level}$$

$$h-1 = (H-1) \times 0.05$$

Output 2: Window Comparator Mode

$$A-2 = (H-1) \times 0.8$$

$$B-2 = \text{Peak Vacuum Level} \times 0.8$$

C

Cable Connector Type

4-Pin, M8 cable connector referred to as PICO or Micro connector. 4-Pin, 5-Pin, M12 cable connector referred to as Mini connector.

Channel Selection

The MPS-74 display allows the user to select up to 4 separate channels to monitor remote sensors.

Class 2 Power Supply

Power source not exceeding 30VDC and 8 amps.

Connection Port Size

Pressure port connections on the back or bottom of the sensor.

Current Consumption

Maximum current consumed during operation. Does not include the load current.

D

Display Resolution

Resolution is 1/1024. The least possible measurable unit to display on the display. This will vary with the units of measure and is adjustable on some sensors.

Shown below are the different unit increments displayed for different pressures.

Compound	Low Pressure	Vacuum	Pressure
bar: 0.01	bar: 0.001	bar: 0.001	bar: 0.01
kPa: 1	kPa: 0.1	kPa: 0.1	mPa: 0.001
kgf/cm ² : 0.01	kgf/cm ² : 0.001	mmHg: 1	kgf/cm ² : 0.01
PSI: 0.1	PSI: 0.1	inHg: 0.1	PSI: 1

Dielectric Strength

Sensors ability to withstand excess voltages.

Digital Display Unit

Minimum unit displayed on the sensor.

DIN Rail

A rail mounting bracket equivalent to DIN Standard, adaptable to the MPS-2 sensors.

E

Error Message

Error message is displayed if the pressures, inputs, or outputs exceed the parameters of the sensor.

F

Full Scale

Abbreviated as F.S. this is the operating pressure scale of the sensor.

G

Grommet Type

Electrical lead from the sensor.

H

Hysteresis

The difference in pressure below the switch point pressure which controls the ON-OFF status of the output signal. (See Output Modes)

I

Input Impedance

The source of the electrical response of the sensing element expressed in ohms.

IP Ratings

- IP40 - Protected against solid foreign objects of 0.04" (1mm) and greater.
Non-protected against the penetration of liquids.
- IP65 - Dust tight.
Protected against water jets.
- IP67 - Dust tight.
Protected against the effects of temporary immersion water.

Insulation Resistance

Resistance between electrical circuit and the body, expressed in ohms at a voltage rating.

Internal Voltage Drop

Caused by the resistance of an electrical part in an electronic circuit. Example is a 2-wire pneumatic pressure switch.

L

LED

Electronic Display Technology

Load Current

Amount of current flowing through the sensor once the output is activated.

Lock-Out Mode

Prevents accidental changes to the sensor settings.

M

Maximum Operating Pressure

Maximum operating pressure the sensor is rated for. Exceeding this pressure could damage the unit and will display FFF.

N

Noise Resistance

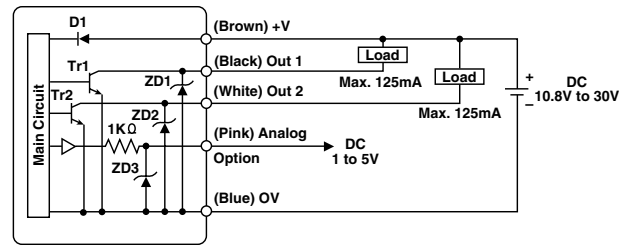
Amount of electrical noise in the surrounding environment that could affect the sensor performance.

NPN Pressure Sensor Output

NPN type open collector transistor outputs are solid state circuits that provide sinking output capabilities. When

the transistor is on, the current for the load flows into the transistor. This output "sinks" toward 0VDC, 0mA.

NPN Output (With Analog Output)



O

ON / OFF Output

The electrical state of the output signal.

Open Collector Transistor

Output circuit that sinks (NPN) or sources (PNP) at the pressure switch-point setting.

Operating Humidity Range

Humidity range for proper operation of equipment.

Operating Indicator Light

LED indicator is on when ON-OFF output is ON.

Operating Pressure Range

The pressure range the unit was designed to operate in.

Operating Temperature Range

Acceptable temperature range for the specifications listed in the catalog.

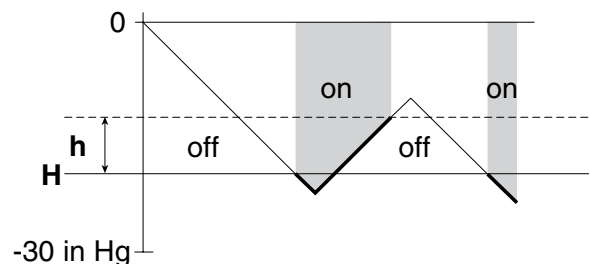
Operating Voltage

Voltage range for normal operation.

Output Modes

Switch Point with Hysteresis Settings

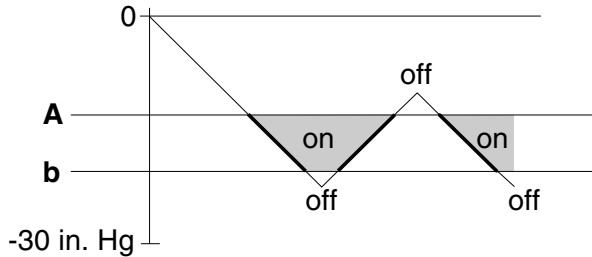
This output mode provides one switch point (H) and a hysteresis pressure adjustment. When the switch point pressure is achieved, the output (NPN / PNP) is activated if normally open or deactivated if normally closed. Typically, this mode is used for pressure confirmation. For positive pressure applications, this operating mode does not provide any output or alarms beyond the switch point in the case of excessive pressures.



The hysteresis setting (**h**) is the difference in pressure below the switch point pressure which controls the on / off status of the output.

Window Comparator Setting

This output mode provides two switch points (**A**) and (**b**) that control the output signals (NPN / PNP) between the two pressures. This creates a “window” that the sensor can provide an output and is sometimes referred to as “high / low” setting. The window comparator Mode provides an output or alarm when pressures exceed the upper limit.



Output Response Time

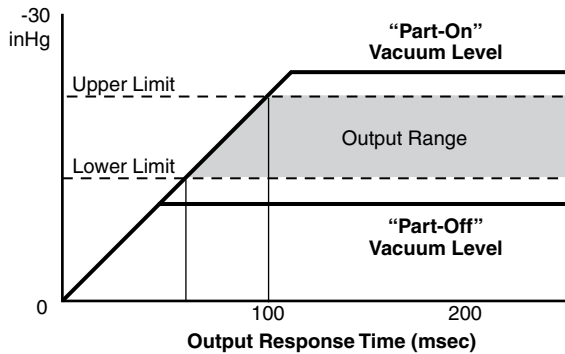
Response time of the output signal after the pressure switch point is achieved. Measured in milliseconds.

Output Settings

Maximize the difference between the “Part -Off” and “Part-On” vacuum levels by selecting the appropriate tubing I.D. and length from the generator to the cup. The part present output must be set between the “Part -Off” and “Part-On” vacuum levels. If the difference between the “Part -Off” and “Part-On” vacuum levels is minimal, remote sensing at the suction cup is recommended with MPS-6 or MPS-8 sensors.

For most material handling applications, the part present output can be set near the upper limit of the output range.

For high speed pick and place applications, the part present output can be set near the lower limit of the output range. This reduces the output response time of the sensor. Output response and accuracy are critical to the overall performance of the system. Remote sensors are recommended here.



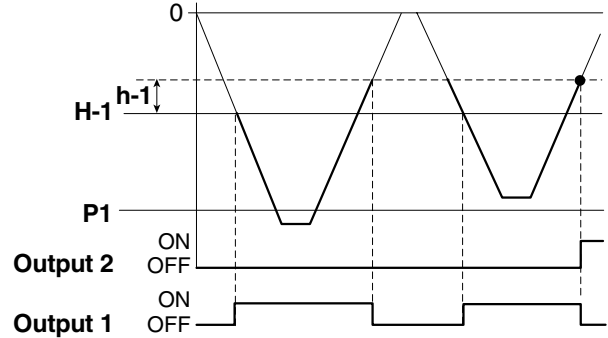
P

Panel Mounting Brackets

Brackets used to panel mount the sensor.

Peak Surveillance

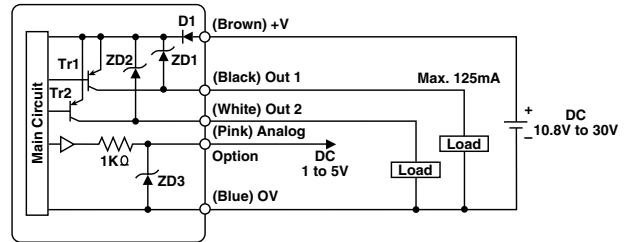
Maintenance function that can monitor peak values of the system. During the pressure cycle, if peak pressure (P-1) is not attained after set point (H-1) is attained, an error code *PErr* is displayed on the sensor.



PNP Pressure Sensor Output

PNP type open collector transistor outputs are solid state circuits that provide sourcing output capabilities. When the transistor is on, the current for the load flows out of the transistor. This output “sources” toward 24VDC, 125mA.

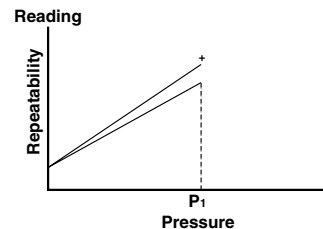
PNP Output (With Analog Output)



R

Repeatability

The repeatability refers to the sensor’s ability to provide the same output with consecutive applications of the same pressure input.



Repeatability is represented as a percentage of the full scale value of the sensor. All Parker / Convum sensors are rated $\pm 0.2\%$ F.S. P1 would be represented as 145 PSI x 0.002 = ± 0.29 PSI.

Reverse Voltage Protection

Diode circuitry to prevent “cross-wire” damage during installation of the sensor.

Glossary

S

Setpoints

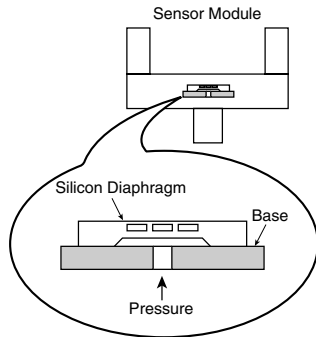
The number of the ON-OFF output signals in one product. Product with 2 setting points means 2 output type.

Shock Resistance

The amount of vibration the sensor can withstand without affecting performance.

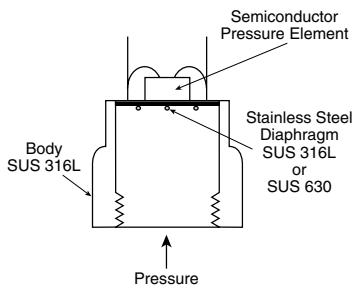
Silicon Diaphragm

This type of sensor is used for air and non-corrosive gas applications.



Stainless Steel Diaphragm

This type of sensor is used for liquids, non-corrosive to 316L or 630 stainless steel.



Switch Output

This is a reference to a digital or NPN / PNP open collector transistor output from the sensor. The technology is binary logic.

T

Thermal Error

Temperature characteristics vary with applications. The performance of the sensor can be affected by changes in ambient temperatures. The sensor rating is represented by a percentage of the F.S.

W

Wetted Parts

Sensor body parts that are in contact with process-type fluids are referred to as wetted parts.

Z

Zero Reset

The sensor technology is PSIA. Periodically, the sensor's atmospheric reference may need to be adjusted manually or automatically as a result of small changes in the atmospheric reference point.