

## PERFORMANCE UNDER PRESSURE

A Full Line of Electromechanical and Pneumatic Valve Actuated Pressure Switches & Temperature Controlled Density Switches





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# WE ARE SOLON MANUFACTURING

Founded in 1949 by four engineering graduates who shared a passion for innovation in a post-war industrialism era, Solon Manufacturing remains dedicated to developing and manufacturing industrial controls across markets where quality and flexibility are non-negotiable. Our pressure switch and SF6 gas density monitoring devices have earned us a reputation for high performance in every operating environment. Coupled with technical support that takes your concept from design through aftermarket, Solon's commitment to your success is paramount to our own. Guaranteed\*.

## OUR VALUES

Our core values influence every facet of our business. Integrity, pride and teamwork connect employees, departments and customers. These principles drive the decisions that contribute to our growth and our customers' success.

## OUR FUTURE

With the skills and expertise of our team members, we are always exploring new ways to improve the customer experience. Our agile manufacturing approach means that we can respond to our customers' needs effectively—giving us a key competitive advantage. Continuous and lean improvement efforts generate forward-thinking, results-oriented solutions.



## Performance Under Pressure:

Solon Manufacturing Co. delivers confidence with every pressure switch product you receive. We are so committed to your satisfaction that we offer a *10-year guarantee* on all pressure switch products\*

*\*Please read our terms and conditions for full details of our warranty, which is valid 12 months from invoice for workmanship and materials. The Solon Guarantee assures product will function as stated for the life of the product provided product is not misapplied. Products returned under Guarantee claim will be replaced or reworked at the Seller's discretion. Guarantee registration form must be returned to the manufacturer once completed. Form does not need to be completed by purchaser in order to be valid.*



# CAPABILITIES

## **Engineered solutions for industries worldwide.**

Solon Manufacturing Co. offers a wide breadth of industrial pressure instrumentation products across every industry that requires gas, pressure, or liquid density measurement.

- Flexibility—vertical integration allows us to develop creative solutions to unique requirements.
- Engineering—our suite of engineers satisfy your application requirements from concept and design, through aftermarket support. Creativity and experience lead to solutions ranging from industry-standard to unique.
- Manufacturing excellence—our tight processes mean consistent performance.
- Convenience—our modular approach to unique requirements means products are available with quick turnaround.
- Quality—ISO certified, some of our products are UL and MET label approved.
- Innovation/technology—investments in our people, processes, and equipment demonstrate our commitment to providing the best solutions to our customers.

# TECHNICAL GLOSSARY

A pressure switch for sensing fluid pressure contains a bellows, an element that deforms or displaces proportionally to the applied pressure. The resulting motion is applied to a set of switch contacts. Since pressure may be changing slowly and contacts should operate quickly, some kind of over-center mechanism such as a miniature snap-action switch (2PS, 4PS) is used to ensure quick operation of the contacts. One sensitive type of pressure switch uses mercury switches mounted on a Bourdon tube—Solon switches are effective replacements for Mercoid, mercury switches—especially given the environmental concerns over Mercury.

The pressure switch may be adjustable, by moving the contacts or adjusting tension in a counterbalance spring. A pressure switch will have a differential range around its set point in which small changes of pressure do not change the state of the contacts. Some types allow adjustment of the differential.

## **BELLOWS**

Solon builds bellows pressure sensing assemblies using 316 SS bodies and hydro formed bellows. The hydro formed bellow is welded into the body resulting in a compact, rugged, sensitive assembly. Life expectancy can vary depending on the installation from a minimum of 100,000 cycles to 10 million cycles or beyond. The adjustable pressure ranges reach up to 5,000 psi.

## **DEADBAND**

Deadband, or Hysteresis, is the re-actuation point. As pressure drops to 95 psi, the switch opens (that is the re-actuation point). The deadband of the switch is 5 psi, the difference between the set point of 100 psi and the re-actuation point of 95 psi.

## **DENSITY MONITOR**

A density monitor measures the process pressure and the temperature of SF6 gas and adjusts the set point so that the electrical contacts only open or close with changes in density, not just pressure. All density monitors are temperature compensated.

## **DIAPHRAGM**

Solon's diaphragm actuated switches employ elastomer diaphragms for their sensing elements. They are extremely rugged and can be used on a wide range of media. A very sensitive unit can be built to withstand high overpressures and shock by fully supporting the diaphragm. These are capable of millions of cycles. Various diaphragm materials are available including Buna-N, Viton, and Kalrez. PTFE protection for diaphragms is also available.

## **DIFFERENTIAL OVERPRESSURE**

Measures low differential static pressures between high pressure sources.

## **DIFFERENTIAL PRESSURE**

The static pressure difference between two pressure sources.

## **ELECTRICAL CONTACTS**

The elements in the switch that electrically respond to the media applied to the actuator.

**EXPLOSION-PROOF**

The product flowing through pipelines is often flammable or explosive. Many of the locations are classified as hazardous requiring explosion-proof equipment. This includes all control equipment in these locations.

**HERMETICALLY SEALED CONTACTS**

Optional feature that insulates the contacts from atmospheric and environmental influences.

**INTEGRAL GAUGE**

This feature, available on 2TC models only, provides a clear, visual indication of the gas density relative to the breaker fill pressure and set points.

**INTRINSIC**

These intrinsically compensated controls are compact, temperature-compensated pressure switches which use calibrated bi-metal components to adjust for changes in temperature. All intrinsic temperature-compensated switches must be mounted so they change temperature at approximately the same rate as the SF6 gas.

**LOW DEADBANDS**

Deadband is the difference between the set point and the reset point for a pressure switch. This is also called switch hysteresis or differential. All pressure switches have some deadband. Many of the pressure switches used in pipeline applications are for high or low limit alarms. These alarms may interrupt or reduce the flow of product. It is often desirable for the deadbands to be as small as possible so alarms can be cleared quickly in order to allow production to restart.

**LOW DRIFT**

Drift is the amount that the switch setting will change over time and operation. It is desirable for the drift to be as small as possible. The reasons for this are the same as those mentioned under sensitivity. Accurate settings lead to optimized production.

**MAXIMUM ALLOWABLE PRESSURE**

The maximum pressure the switch can withstand without appreciable change to the set pressure. For differential pressure (DP) switches, this is the maximum static or working pressure. Differential pressure switches are built to withstand the Maximum Allowable Pressure on both the High and Low pressure ports.

**MINIATURE SNAP ACTION SWITCH**

Also called a micro-switch, is the mechanism that triggers a response to very small physical force through a tipping point. Switches are used to control the behavior of the pressure switch.

**NEMA 1**

Enclosures for indoor use only. Protects the internal components against solid foreign objects and human tampering. These are normally supplied for custom OEM applications.

**NEMA 7**

Enclosures for indoor Class I, Division I hazardous locations with gas or vapor atmospheres.

**NEMA 9**

Enclosures for Class II, Division I hazardous locations with combustible dust atmospheres.

**NEMA 12**

Enclosures constructed for indoor use to provide protection against dirt, dust, splashing by non-corrosive liquids, and salt spray.

**NEMA 13**

Oil-tight and dust-tight enclosures intended for indoor use.

**OVERPRESSURES AND VACUUM**

Many switches are used at relatively low settings but will often be exposed to high operating system pressures. Conversely, some of the switches may be exposed to vacuum during operation of maintenance. It is not acceptable for the setting to shift when exposed to these over/under pressures.

**NOMINAL SETTING**

Targeted set points; the range +/- tolerance.

## PISTON

Solon's piston actuated pressure switches are designed for hydraulic or gas service and are constructed to withstand extreme severe shock and vibration. The piston element employs a reinforced PTFE seal that is spring-energized. This results in consistent performance over millions of cycles.

## PNEUMATIC VALVE ACTUATOR

A pneumatic valve actuator simplifies circuits by eliminating the need for wire shielding, transformers, and solenoids by converting pressure from a process to a Mead MV 3-way 1/8" ported air pilot valve.

## PRESSURE SWITCH

A pressure switch compares the process pressure to atmospheric pressure and opens and closes an electrical circuit when the set point is reached.

## REMOTE BULB

Bulb-style density switches use a liquid filled temperature sensor (bulb) that is attached to the switch with a capillary tube. This enables the switch body to be in one location, while the bulb is mounted up to sixteen feet away. Bulb designs are useful when the temperature surrounding the switch body will be different from the gas temperature.

## RESET POINT

The point at which a switch will return to its original or normal operating position.

## RUGGEDNESS

Pipelines often pass through severe environments. Controls must be able to withstand cycling, shock, vibration, earthquakes, and all types of weather.

## SENSITIVITY

Sensitivity relates to how accurately the device can be calibrated to the aim setting. If a device is not sensitive, it is very difficult to "fine tune" the device. For pipelines, small changes in pressure can lead to large changes in product throughput. Many switches are used to directly control the operation of pumps and valves in the system. If the switches are not adjusted accurately, then the result can be lost production of the line.

## SET POINT

The predetermined point at which a switch will operate and can be specified on increasing or decreasing pressure or temperature.

## SPDT

"Single Pole Double Throw". A SPDT switch contains one common, normally open and normally closed terminal. This is the most common contact arrangement.

## TEMPERATURE COMPENSATED (TC)

Solon's temperature compensated (TC) pressure switches monitor SF6 gas density and leakage over a wide temperature range by automatically adjusting their settings to follow temperature changes for all SF6 density levels included mixed gases.

## VACUUM

The value of pressure below atmospheric pressure, typically measured in "Hg" (inches of Mercury).

## WATERTIGHT/WEATHERTIGHT

Enclosures are sealed so they are resistant to water and dust. It is intended for both indoor/outdoor use to protect the internal components from any type of moisture.

## WETTED

Components that come into direct contact with the process/gas/substances/materials.



# CLASSES, DIVISIONS, AND GROUPS

**CLASS:** According to the National Electric Code (NEC) there are three types of hazardous locations:

Class I: The first type of hazard is one which is created by the presence of flammable gases or vapors in the air, such as natural gas or gasoline vapor. When these materials are found in the atmosphere, a potential for explosion exists, which could be ignited if an electrical or other source of ignition is present. Some typical Class I locations are:

- Petroleum refineries, gasoline storage, and dispensing areas
- Dry cleaning plants where vapors from cleaning fluids can be present
- Spray finishing areas
- Aircraft hangars and fuel servicing areas
- Utility gas plants and operations involving storage and handling of liquefied petroleum gas or natural gas

Class II: Class II hazard areas are made hazardous by the presence of combustible dust. Finely pulverized material, suspended in the atmosphere, can cause as powerful an explosion as one occurring at a petroleum refinery. Some typical Class II locations are:

- Grain elevators
- Flour and feed mills
- Plants that manufacture, use or store magnesium or aluminum powders
- Producers of plastics, medicines, and fireworks
- Producers of starch or candies Spice grinding plants, sugar plants, cocoa plants Coal preparation plants and other carbon handling or processing areas

Class III: Class III hazardous locations are areas where there are easily-ignitable fibers or flyings present, due to types of materials being handled, stored, or processed. The fibers and flyings are not likely to be suspended in the air, but can collect around machinery or on lighting fixtures and where heat, a spark, or hot metal can ignite them. Some typical Class III locations are:

- Textile mills, cotton gins
- Cotton seed mills, flax processing plants
- Plants that shape, pulverize, or cut wood and create sawdust of flyings

**DIVISION: The condition in which the hazardous material exists.**

Division 1: Normal conditions

Division 1 locations occur where hazardous concentrations of flammable gases or vapors exist continuously, intermittently, or periodically under normal conditions. Under normal conditions, the hazard would be expected to be present in everyday production operations or during frequent repair and maintenance activity.

Division 2: Abnormal conditions

Division 2 hazardous locations occur where flammable volatile liquid or flammable gases are handled, processed, or used, but in which they will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture, breakage, unusual faulty operation; causing an abnormal situation.

**GROUPS: The hazardous substance/material.**

Materials are grouped according to the ignition temperature of the substance, its explosion pressure, and other flammable characteristics.

Group A: There is only one substance in Group A, which is acetylene. Acetylene is a gas with extremely high explosion pressures.

Group B: This group is a relatively small segment of classified areas. This group includes hydrogen and other materials with similar characteristics like fuel and combustible process gases containing more than 30% hydrogen by volume or gases of equivalent hazard such as butadiene, ethylene, oxide, propylene oxide and acrolein.

Groups C and D comprise the greatest percentage of all Class I hazardous locations.

Group C: Some of the many substances in Group C include: carbon monoxide, ether, hydrogen sulfide, morpholine, cyclopropane, ethyl and ethylene, or gases of equivalent hazard.

Group D: Some of the many substances in Group D include: gasoline, acetone, ammonia, benzene, butane, cyclopropane, ethanol, hexane, methanol, methane, vinyl chloride, natural gas, naphtha, propane or gases of equivalent hazard.

*\*It is ultimately user's responsibility to determine product suitability. Solon Manufacturing Co. is not responsible for product that is ordered incorrectly, misused, or misapplied. Contact a Solon engineer for recommended guidelines to product use.*

# HOW TO ORDER A PRESSURE SWITCH

Solon Manufacturing Co. offers a modular approach to designing the best pressure switch assembly for your application. Our selection process prompts you to choose features best-suited for your requirements. Please note that some options and features are not available with all models.

Once you have configured your part number, a member of the Solon sales team can promptly provide you with a quote. To receive help selecting a model or determining product suitability, please contact [technicalsupport@solonmfg.com](mailto:technicalsupport@solonmfg.com) or call 800.323.9717.

## How to Configure a Pressure Switch

Model Series (Housing Guide and Type)			Housing Option	# of Electric Switches	Special Features						Type & Rating of Electric Switches	

## Housing Size Guide

2	Compact, lightweight--single or dual switching. Available for all types: vacuum, differential, sanitary, explosion-proof, weather-tight, general-purpose, pneumatic-valve actuated, heavy-duty, & temperature-compensated (TC).
42	Compact housing for high-pressure applications. Available for types: differential, explosion-proof, heavy-duty.
47	Compact housing with wide base, ideal for low-pressure sensing. Available for types: explosion-proof.
5	Rugged cast housing for single or dual switching. Available for types: differential, explosion-proof, weather-tight, general-purpose, temperature-compensated (TC).
6	Larger housing accommodates up to four electric switches. Available for types: vacuum, differential, explosion-proof, weather-tight, general-purpose, temperature-compensated (TC).
7	Designed for low pressure applications. The larger housing accommodates up to four electric switches. Available for types: vacuum, differential, explosion-proof, weather-tight, general-purpose, temperature-compensated (TC).

# SPECIAL FEATURES

SPECIAL FEATURES...are easily notated with a suffix unique to each characteristic we offer. Most of the standards are identified, below:

## “\_“ NO SPECIAL FEATURES

### A

**ADJUSTABLE DEAD BAND** – Specified with one electric switch (or II) the tandem electrical switches, the snap-over pressure minus the snap-back pressure is adjustable. The range of this adjustment is between 10% and 50% of the specified pressure range. The Adjustable Dead Band is above the decreasing pressure set point; ie., if the pressure is set at 50 psi decreasing pressure, and the Dead Band adjusted to 20 psi, the electric switch will snap-over at 70 psi increasing pressure and snap-back at 50 psi.

NOTE: The “A” special feature cannot be combined with special features 2, 3, 4, BDD, DD, Q, R, and is not recommended for 7PS ranges 1.5, 3, and 6 WC.

### B

**BELLOWS ACTUATED** – Bellows actuation is required for all pressure ranges above 300 psi, or where all metal pressure sensing element is required. Standard Bellows Assemblies are constructed using stainless steel bellows brazed into stainless steel housings. All welded bellows assemblies are available – consult factory. The movement of the mechanism requires less than 15% of the maximum bellows stroke – this means exceptionally good life. The small fluid displacement required to operate these bellows assemblies make them easy to apply to all types of protective diaphragm seals.

### BD

**BELLOWS ACTUATED DIFFERENTIAL PRESSURE (DP)** – Opposed bellows assemblies sense the difference between pressure sources (DP). These are the same stainless steel bellows assemblies as described above. Both the High and Low pressure bellows assemblies can withstand the Maximum Allowable Pressure with the opposite bellows assembly at atmospheric pressure.

### D

**DIAPHRAGM ACTUATED DIFFERENTIAL PRESSURE (DP)** – Opposed diaphragm areas sense the difference between pressure sources (DP). Both the High and Low pressure areas can withstand the Maximum Allowable Pressure with the opposite side at atmospheric pressure.

### E

**EXTERNAL PRESSURE ADJUSTMENT** – This nut allows adjustment of the set point in the field without removing the cover. Pressure and Differential Pressure Models use adjustment nuts with micrometer markings which allow reasonably good pressure settings without the use of a gauge. Vacuum and Special Switches may have nuts supplied without micrometer markings. External adjustment nuts are typically used on models with one electric switch or tandem (II) electric switches. They can be used on models with 2, 3, 4 electric switches, but cannot be supplied with micrometer markings when used this way.

**EE****TWO EXTERNAL PRESSURE ADJUSTMENTS** –

This special feature is used in combination with “A” adjustable Dead Band where it is necessary to adjust both the set point and the Dead Band externally.

NOTE: The EE feature cannot be combined with special features 2, 3, 4, BDD, DD, Q, R.

**F**

**FLANGE BASE MOUNTING** – Models constructed with a flange base will bolt directly to a standard flange. 6PS Models mate with a 1-1/2”-150# ASA flange. 7PS Models mate with a 5”-150# ASA flange. These are diaphragm actuated switches available in the ranges with specifications given in the model series tables.

NOTE: The F special feature cannot be combined with B, BD, BDD, D, M, P.

**G**

**DOUBLE DIAPHRAGM** – This special feature is designed to double the sensitivity of low range 7PS Models 1.5, 3, 6, 15 WC. Two main diaphragms are operated in parallel which doubles the area and force available to operate the mechanism. The fixed Dead Bands become half of what appear in the 7PS table. Combining G with “A” adjustable Dead Band helps to make “A” more practical for use in the lower pressure ranges.

NOTE: Special feature G cannot be combined with special features DS, F, S.

**DG**

**DOUBLE DIAPHRAGM DIFFERENTIAL PRESSURE (DP)** – This is the same special feature as described above for differential pressure applications.

**J**

**SAFETY SEAL** – This special feature installs a seal between the switch housing and the atmospheric side of the main diaphragm. A ¼ NPT connection vents this cavity.

NOTE: The J special feature cannot be combined with D, DD, DS.

**LL**

**INDICATOR LIGHTS** – One of two indicator lights can be specified to give visual indication of pressure setting. 5PS Models use neon lights mounted on the cover. 6PS and 7PS Models use ¾” jewels (clear, red, green, amber) mounted on the cover and separate 6 watt instrument lamps mounted in the switch housing. This special feature is useful when combined with (2) independently adjustable electric switches where the lights can show the pressure within a normal range or the lights can show the pressure too high or too low. Specify color of the light jewels when ordering this special feature.

NOTE: Indicator lights cannot be furnished on “X” explosion-proof housings.

**M**

**MALE PIPE MOUNTING** – This ½ NPT male pipe fitting is rigidly attached to the pressure switch. It can be used to mount the switch directly on a pipe or where a ½” pressure connection is required.

**O**

**HIGH OVER PRESSURE DIAPHRAGM** – This special feature incorporates a diaphragm which is fully supported during an overpressure. The support allows the diaphragm to withstand extremely high pressures and return to normal operation. Model 2PS and some Model 5PS switches are available with this special feature.

**Q****DOUBLE SNAP-ACTING BELLEVILLE SPRING**

– This special feature incorporates a Solon Belleville Spring to provide positive set point accuracy in high vibration applications.

**R>**

**MANUAL RESET, SWITCH ON INCREASE PRESSURE** – Indicates a manual reset when there is an increase in pressure.

**R<**

**MANUAL RESET, SWITCH ON DECREASE PRESSURE** – Indicates a manual reset when there is a decrease in pressure.

Note: The R special feature cannot be combined with A, EE, Q.



# SPECIAL FEATURES

## S[ ]

**SPECIAL TRIM BASE** – Applied to diaphragm actuated pressure switches, special trim base allow the wetted area to be constructed with material other than the standard aluminum alloy. Code symbols for materials available are as follows:

## SS

316 stainless steel

## SN

Brass

## SI

Teflon. Max. Pr. 50 psi – 2PS & 6PS models  
15 psi – 7PS models

## SY

PVC. Max Pr. 100 psi – 2PS & 6PS models  
25 psi – 7PS models

Note: Special feature SI and SY cannot be furnished on explosion-proof housing – Consult factory.

## T

**TEFLON PROTECTED DIAPHRAGM** – This is a Teflon face which protects the diaphragm on the wetted side.

## U

**SPECIAL EPOXY PAINT** – The entire assembled pressure switch is given a coat of standard one part epoxy paint. For more severe applications, a special two part epoxy paint is available – consult factory.

## V

**HIGH TEMPERATURE SERVICE** – The pressure switch is constructed with high temperature electric switches, diaphragms, and gaskets for service where the fluid operating the switch does not exceed 300°F and the temperature surrounding the switch does not exceed 250°F. Not a UL-listed feature.

## Z

**VITON DIAPHRAGM** – Viton diaphragm material replaced the standard Buna N diaphragm material.

## UNIQUE DIFFERENTIAL PRESSURE SWITCH FEATURES

### BDD

**BELLOWS ACTUATED TWO-WAY DIFFERENTIAL PRESSURE (DP)** – These Differential Pressure Switches are constructed to sense a differential pressure in two directions. Both pressure sources can become higher relative to the other, and bellows actuated electric switch operation will occur. This special feature must be specified with at least two (2) electric switches – one for either direction. When specified with four (4) electric switches, two electric switches are available for operation in either direction.

Note: The BDD special feature cannot be combined with special feature A, E, EE, Q.

**DD**

**DIAPHRAGM ACTUATED TWO-WAY DIFFERENTIAL PRESSURE (DP)** – These Differential Pressure Switches are constructed to sense a differential pressure in two directions. Both pressure sources can become higher relative to the other, and diaphragm actuated electric switch operation will occur.

**DDG**

**DOUBLE DIAPHRAGM TWO-WAY DIFFERENTIAL PRESSURE (DP)** – Sensitive two-way differential pressure is achieved by using double diaphragms as described by Special Features G and DG.

**DO**

**HIGH-PRESSURE – LOW DIFFERENTIAL PRESSURE (DP)** – DO type differential pressure switches are designed to sense low differential pressure (DP) between high pressure sources. The 6PS and 7PS models use opposed stainless steel bellows assemblies for the high pressure seals, while the differential pressure is sensed by a diaphragm clamped between the bellows assemblies. The diaphragm has a large area to accurately sense low differential pressure, and during an over-pressure the diaphragm is fully supported. The differential pressure assembly is symmetrically designed such that both the High and Low pressure areas can withstand the Maximum Allowable Pressure with the opposite side at atmospheric pressure. The standard trim base used for DO switches is a strong aluminum alloy. Other materials are available which are described by the following code symbols:

**DOSS**

316 stainless steel trim base.

**DOSN**

Brass trim base.

**DDO**

**HIGH PRESSURE TWO-WAY DIFFERENTIAL PRESSURE (DP)** – DO type switch which will sense differential pressure in either direction. Also available are DDOSS and DDOSN models.

**DS[ ]**

**SPECIAL TRIM DIAPHRAGM DIFFERENTIAL PRESSURE (DP)** – These diaphragm actuated differential pressure switches are designed with special trim which allows the wetted area to be constructed with material other than the standard aluminum alloy. The code symbols for these materials are as follows:

**DSS**

316 stainless steel.

**DSN**

Brass.

**DSI**

Teflon. Max. Pr. 50 psi – 2PS & 6PS models.  
25 psi – 7PS models.

**DSY**

PVC. Max. Primary 100 psi – 2PS & 6PS models.  
50 psi – 7PS models.

Note: Some DS [ ] models have higher maximum allowable pressures. If this feature is of primary interest in the selection of a switch, use the following code symbol “DSK”.

**DSK**

Aluminum trim base with higher than normal maximum allowable pressure. See range table on the differential spec sheets for particulars.



# VACUUM PRODUCTS

Industries such as industrial HVAC or other highly sensitive applications where a setting at atmospheric pressure is desired, may consider the Solon Manufacturing Co. Vacuum Pressure Switch series. For processes that cross back and forth between pressure and vacuum, our Vacuum Pressure switches provide the ability to have separate vacuum and pressure set points combined in one unit.

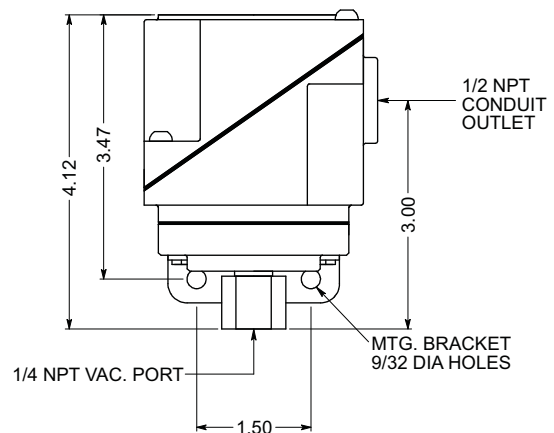
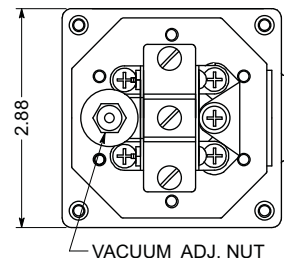


# 2PSVAC

## VACUUM SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 5 to 30 IN/HG and -30/0/30 IN/HG
- Rugged NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Various wetted materials available



## GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removeable enclosure cover for easy wiring and adjustment of the vacuum setting. Features s/s screws that retain the cover gasket when the enclosure is removed
- Standard vacuum sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)
- Modular design or pressure-sensing elements accommodates high/low and differential pressure using diaphragm, bellows, or piston for actuation

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Diecast Aluminum - Painted per ASTM B117

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 1.5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Fitting Material:** Brass

**Trim Material:** Anodized Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable from 10 to 100% of range

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PS    W    1    SSU    2**

MODEL SERIES

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC

2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC

4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
5A - 125, 250 VAC; 0.5A - 125 VDC

6 - GOLD CONTACT -  
1 A - 125 VAC

**HOUSING**

"-" - NO HOUSING

W - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.

2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES**

M - 1/2 NPT MALE PIPE MOUNTING

SS - STAINLESS STEEL WETTED TRIM MATERIAL

SN - BRASS WETTED TRIM MATERIAL

U - ADDITIONAL PAINTING AFTER ASSEMBLY

V - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

Z - VITON DIAPHRAGM MATERIAL

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; TEFLON, PVC, KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-5 IN/HG	.53 HG	N/A	20 PSI
0-15 IN/HG	.67 HG	N/A	20 PSI
0-30 IN/HG	.90 HG	2.0 HG	20 PSI
-30/0/30 IN/HG	1.4 HG	N/A	20 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

- Type "1"** - *Low Deadband* - Use 1/2 TYPE 2 table values.
- Type "2"** - *Std. Deadband* - Use TYPE 2 table values.
- Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.
- Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.
- Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Use TYPE 5 table values.
- Type "6"** - *Gold Contact* - Use TYPE 2 table values.

## INSTALLATION NOTES

**Orientation** - The 2PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

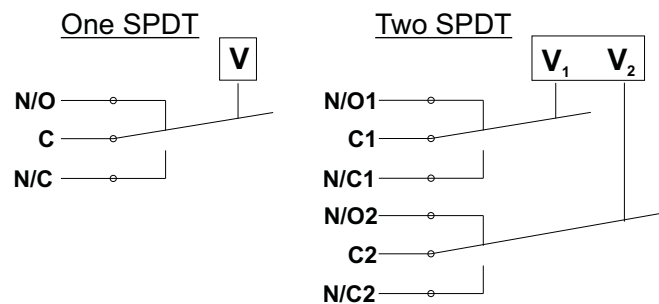
**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block.

**Vacuum Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) counterclockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment.

Factory setting is available at no charge.

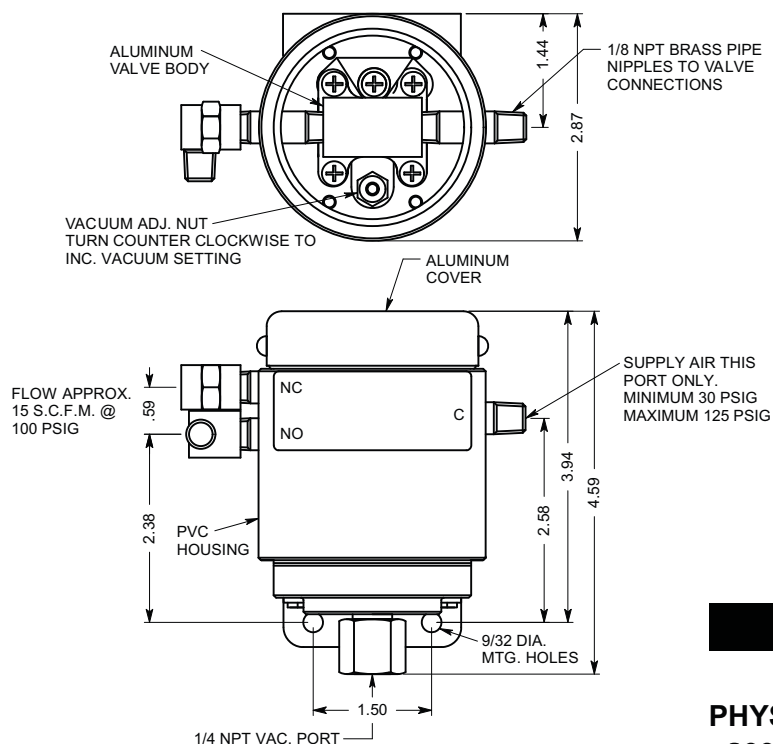
## Wiring Schematic



# 2PV-MVAC

## VACUUM PNEUMATIC VALVE ACTUATOR DIAPHRAGM SENSING ELEMENT

- Range 2-300 psi
- Pneumatic control
- Snap-acting 3-way valve
- High max. pressure available
- Various wetted materials available



SHOWN WITHOUT HOUSING

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** 0°F

**Vacuum Connection:** 1/4 NPT

**Housing:** PVC housing

**Deadband:** Fixed

**Weight:** Approx. 1.5 lbs.

**Port Material:** Brass and Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**Valve:** Model LTV-5 Three Way Block-and-Bleed

**Valve Connections:** 1/8 NPT

**Valve Flow Capacity:** 15 SCFM at 100 PSI

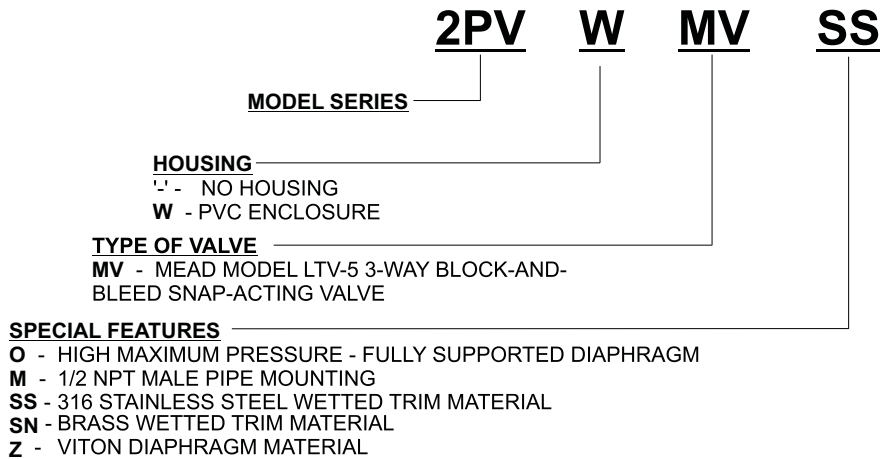
**Valve Pilot Pressure:** 30 to 125 PSIG

### GENERAL DESCRIPTION

- 3-way block-and-bleed valve
- Elastomer diaphragm sensing element
- Aluminum Buna-N standard wetted parts
- Pneumatic valve pilot pressures ranging from 30-125 psi

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM VALVE DEADBAND	MAXIMUM WORKING PRESSURE
0-5 IN/HG	.53 HG	20 PSI
0-15 IN/HG	.67 HG	20 PSI
0-30 IN/HG	.90 HG	20 PSI
-30/0/30 IN/HG	1.40 HG	20 PSI

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; TEFLON, PVC, KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the nominal valve differentials when the valve is operated at 100 PSIG. Deadbands are decreased as pilot pressure is reduced. Contact factory for more detailed information on deadbands.

## INSTALLATION NOTES

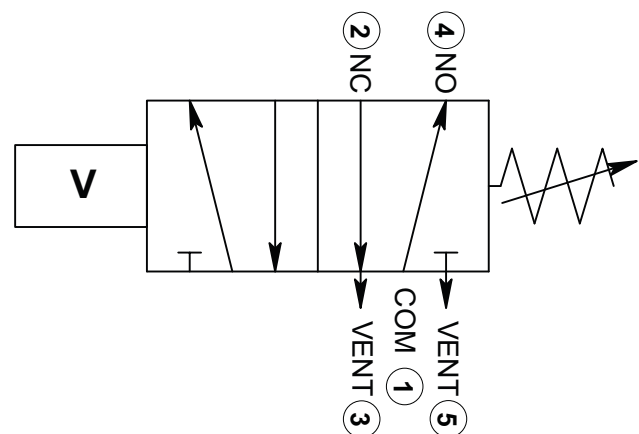
**Orientation** - The 2PV-MV will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

**Valve Connections** - Valve port connections are 1/8 NPT and are marked C, NO, NC. Pilot pressure should be supplied at the common (C) port. Minimum 30 PSI is required to operate valve.

Pressure Connection - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut counter clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Valve Schematic

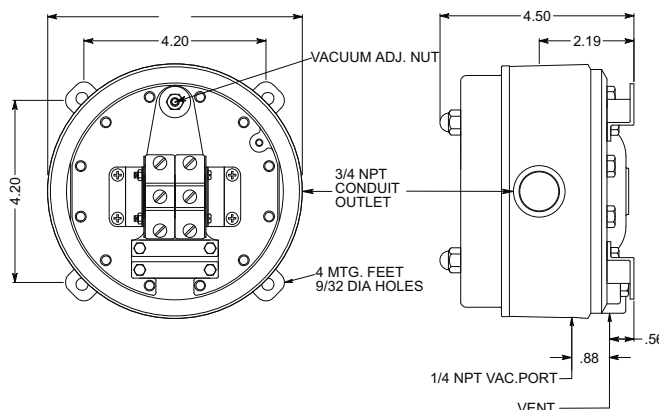


# 6PSVAC

## VACUUM SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 0-30 IN/HG and -30/0/30 IN/HG
- Rugged NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



## GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-proof
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum sensing element uses strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    SSZ    2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"-** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL VACUUM ADJUSTMENT  
**F** - FLANGE BASE MOUNTING (1 1/2" - 150# ASA FLANGE)  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING 1/2 NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. VAC.  
**R<** - MANUAL RESET, SWITCH ON DECR. VAC.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - NOT A UL-LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used. Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use TYPE 1 table values.

**Type "2"** - Std. Deadband - Use TYPE 2 table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-30 IN/HG	.3 HG	.6 HG	50 PSI
-30/0/30 IN/HG	.5 HG	1.0 HG	50 PSI

## INSTALLATION NOTES

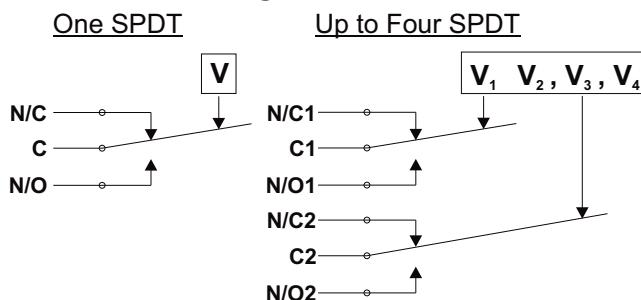
**Orientation** - The 6PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Vacuum Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic



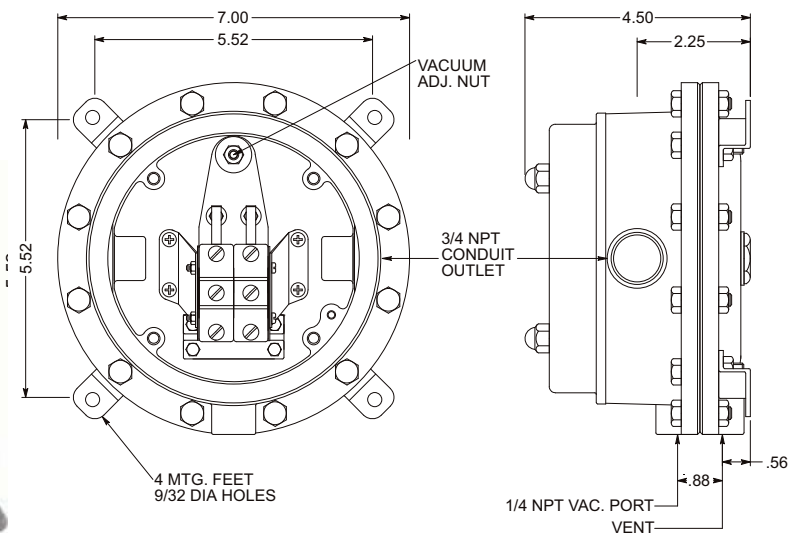


# 7PSVAC

## VACUUM SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 1.5 W.C. To 0-150 W.C. & 15-30 IN/HG
- Rugged NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



## GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS**   **W**   **1**   **SSZ**   **2**

**MODEL SERIES**

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC

2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC

4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

6 - GOLD CONTACT -  
1 A - 125 VAC

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

"-" - NO SPECIAL FEATURES  
A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
E - EXTERNAL VACUUM ADJUSTMENT  
EE - TWO EXTERNAL VACUUM ADJUSTMENTS  
G - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW VAC.  
J - SAFETY SEAL  
L - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
M - MALE PIPE MOUNTING ½ NPT  
P - PANEL MOUNTING  
R> - MANUAL RESET, SWITCH ON INCR. VAC.  
R< - MANUAL RESET, SWITCH ON DECR. VAC.  
SS - SPECIAL TRIM BASE 316 STAINLESS STEEL  
SI - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
SY - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
T - PTFE DIAPHRAGM  
U - ADDITIONAL PAINTING AFTER ASSEMBLY  
V - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
Z - VITON DIAPHRAGM

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use TYPE 1 table values.

**Type "2"** - Std. Deadband - Use TYPE 2 table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-1.5 WC/VAC	.17 WC	-	15 PSI
0-3 WC/VAC	.18 WC	-	15 PSI
0-6 WC/VAC	.23 WC	.45 WC	15 PSI
0-15 WC/VAC	.33 WC	.65 WC	15 PSI
0-30 WC/VAC	.6 WC	1.2 WC	15 PSI
0-60 WC/VAC	.7 WC	1.4 WC	15 PSI
0-100 WC/VAC	.8 WC	1.6 WC	15 PSI
0-150 WC/VAC	1.2 WC	2.5 WC	15 PSI
15-30 IN/HG	.06 HG	.12 HG	15 PSI

## INSTALLATION NOTES

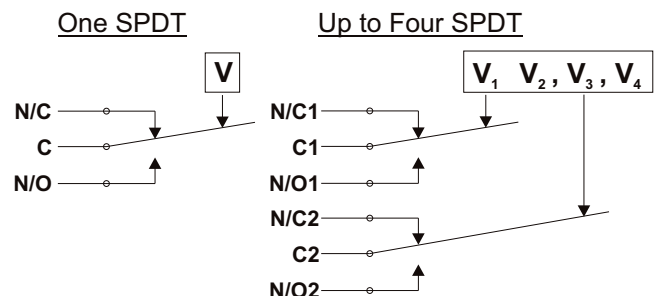
**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Vacuum Connection** 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic





# DIFFERENTIAL PRODUCTS

Differential Pressure Switches are configurable per customer requirement. In addition to the wide range of available features, the Differential Pressure Switch can be used in applications where pressure difference from a reference pressure must be indicated. The Differential Pressure Switch models will sense a low differential on a very high static pressure. Applications that require level sensing, pressure drop across a filter and two-way pressure differential are well-suited to the Differential Pressure Switch.

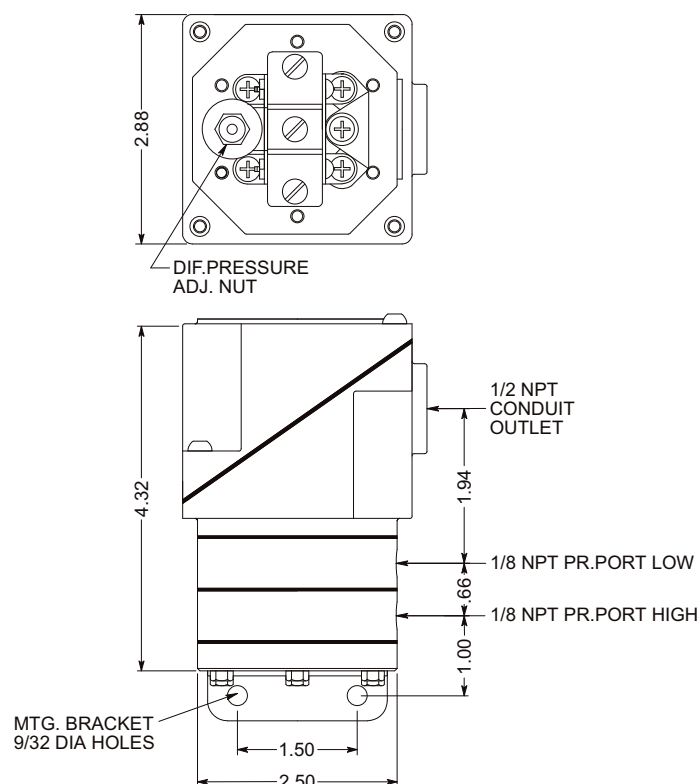


# 2PSD

## DIFFERENTIAL PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 10 to 100 PSID
- Rugged NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Various wetted materials available



## GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the differential pressure setting. Features s/s screws that retain the cover gasket when the enclosure cover is removed.
- Other useful options can easily be specified with this model including the "O" special feature for applications requiring higher working pressures

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connections:** 1/8 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Diecast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 2 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PS    W    1    D    SST    2**

**MODEL SERIES**

**HOUSING**  
 ' ' - NO HOUSING  
**W** - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**  
 1 - ONE S.P.D.T.  
 2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES**  
**O** - HIGH OVERPRESSURE - INCREASES MAX. WORKING PRESSURE TO 300 PSI  
**SS** - STAINLESS STEEL WETTED TRIM MATERIAL  
**SN** - BRASS WETTED TRIM MATERIAL  
**SI** - PTFE WETTED TRIM MATERIAL - DECREASES MAX. WORKING PRESSURE TO 50 PSI  
**SY** - PVC WETTED TRIM MATERIAL  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT  
**Z** - VITON DIAPHRAGM MATERIAL

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A-125,250,480VAC;0.5A-125VDC  
**3** - HIGH DC RATED (MAGNETIC BLOW-OUT) 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**5** - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC  
**6** - GOLD CONTACT  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-10 PSID	.67 PSID	1.6 PSID	100 PSI
0-20 PSID	.88 PSID	3.8 PSID	100 PSI
0-50 PSID	1.50 PSID	6.4 PSID	100 PSI
0-100 PSID	2.2 PSID	N/A	100 PSI

## INSTALLATION NOTES

**Orientation** - The 2PSD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connections** - 1/8 NPT female is standard.

**Adjustment** - Turn differential pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use ½ TYPE 2 table values.

**Type "2"** - Std. Deadband - Use TYPE 2 table values.

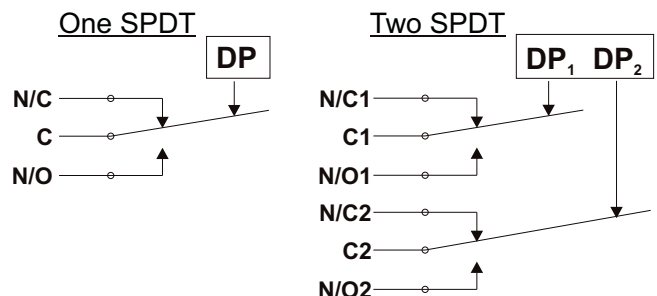
**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "5"** - Sub Miniature - 2 S.P.D.T. - Use TYPE 5 table values.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

## Wiring Schematic



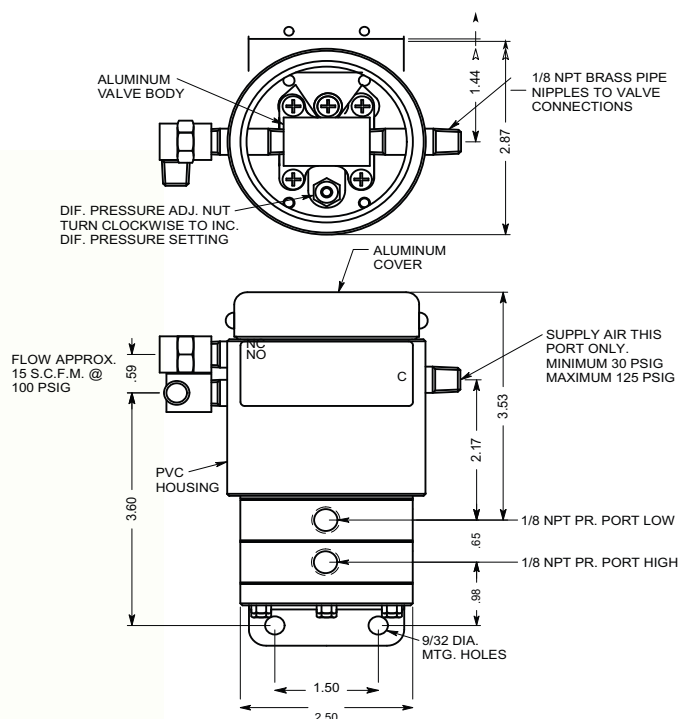
# 2PV-MVD

## DIFFERENTIAL PRESSURE SWITCH ACTUATED VALVE DIAPHRAGM SENSING ELEMENT

- Ranges 10-100 psid
- Pneumatic control applications
- Snap-acting 3-way valve
- Various wetted materials available



SHOWN WITHOUT HOUSING



### GENERAL DESCRIPTION

- 3-way block and bleed valve
- Elastomer diaphragm-sensing element
- Pneumatic valve pilot pressure ranging from 30-125 psi
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** 0°F

**Pressure Connections:** 1/8 NPT

**Housing:** PVC

**Deadband:** Fixed

**Weight:** Approx. 2 lbs.

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**Valve:** Model LTV-5 Three Way Block-and-Bleed

**Valve Connections:** 1/8 NPT

**Valve Flow Capacity:** 15 SCFM at 100 PSI

**Valve Pilot Pressure:** 30 to 125 PSIG

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PV    W    MV    D    SST**

**MODEL SERIES** \_\_\_\_\_

**HOUSING** \_\_\_\_\_  
 ' ' - NO HOUSING  
 W - PVC ENCLOSURE

**TYPE OF VALVE** \_\_\_\_\_  
 MV - MEAD MODEL LTV-5 3-WAY BLOCK-AND-  
 BLEED SNAP-ACTING VALVE

**SPECIAL FEATURES** \_\_\_\_\_  
 O - HIGH OVERPRESSURE- INCREASES MAX. WORKING PRESSURE TO 300 PSI  
 SS - STAINLESS STEEL WETTED TRIM MATERIAL  
 SN - BRASS WETTED TRIM MATERIAL  
 SI - PTFE WETTED TRIM MATERIAL- DECREASES MAX. WORKING PRESSURE TO 50 PSI  
 SY - PVC WETTED TRIM MATERIAL  
 T - PTFE PROTECTED DIAPHRAGM  
 U - ADDITIONAL PAINTING AFTER ASSEMBLY  
 Z - VITON DIAPHRAGM MATERIAL

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM VALVE DEADBAND	MAX. WORKING PRESSURE
0-10 PSID	.40 PSID	100 PSI
0-20 PSID	.53 PSID	100 PSI
0-50 PSID	.90 PSID	100 PSI
0-100 PSID	1.3 PSID	100 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the nominal valve differentials when the valve is operated at 100 PSIG. Deadbands are decreased as pilot pressure is reduced. Contact factory for more detailed information on deadbands.

## INSTALLATION NOTES

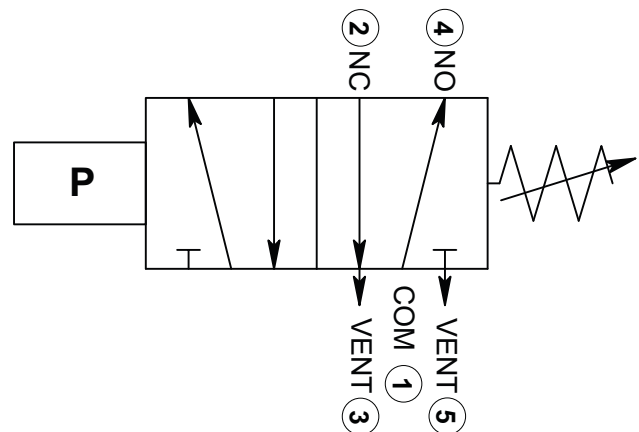
**Orientation** - The 2PV-MVD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Valve Connections** - Valve port connections are 1/8 NPT and are marked C, NO, NC. Pilot pressure should be supplied at the common (C) port. Minimum 30 PSI is required to operate the valve.

**Pressure Connections** - 1/8 NPT female is standard.

**Adjustment** - Turn differential pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Valve Schematic

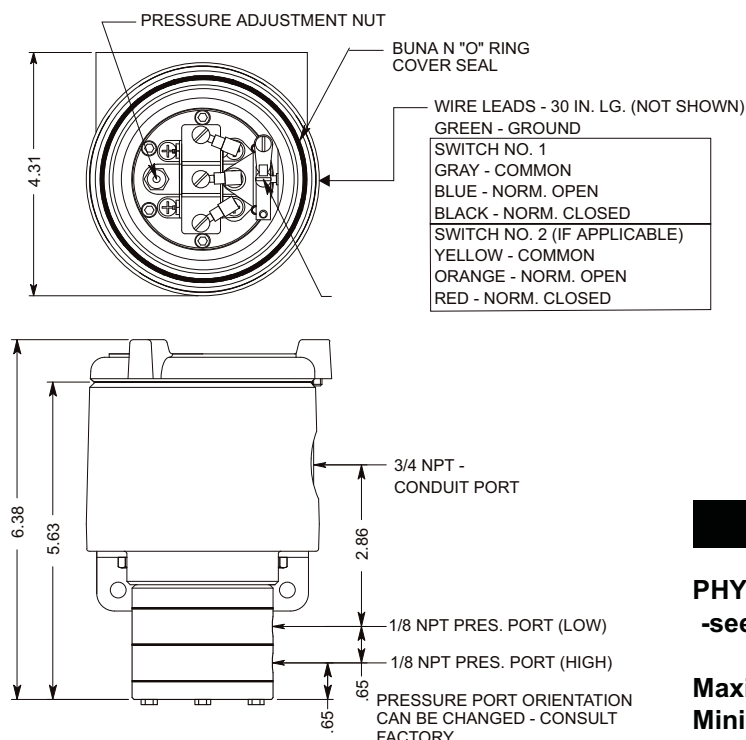


# 42PSXD

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 10-100 psid
- NEMA 4, 7 & 9 housing
- UL Listed Class I, Div. I, Gr. A, B, C, D
- One or two SPDT contacts
- Various Wetted Materials Available
- Piston and bellows sensing elements also available



## GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Simple and proven switching mechanism
- Pressure-sensing elements outside the flame path are designed to accommodate a wide variety of wetted materials, that are well-suited for almost any corrosive process
- The versatile design of the 4PSX series is highly-configurable to accommodate different pressure-sensing element arrangements and materials and Piston sensing elements are available. These sensing elements can also be configured for Pressure and Vacuum applications. Models with these features and with ranges from low pressure to high pressure are



## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see back for special features

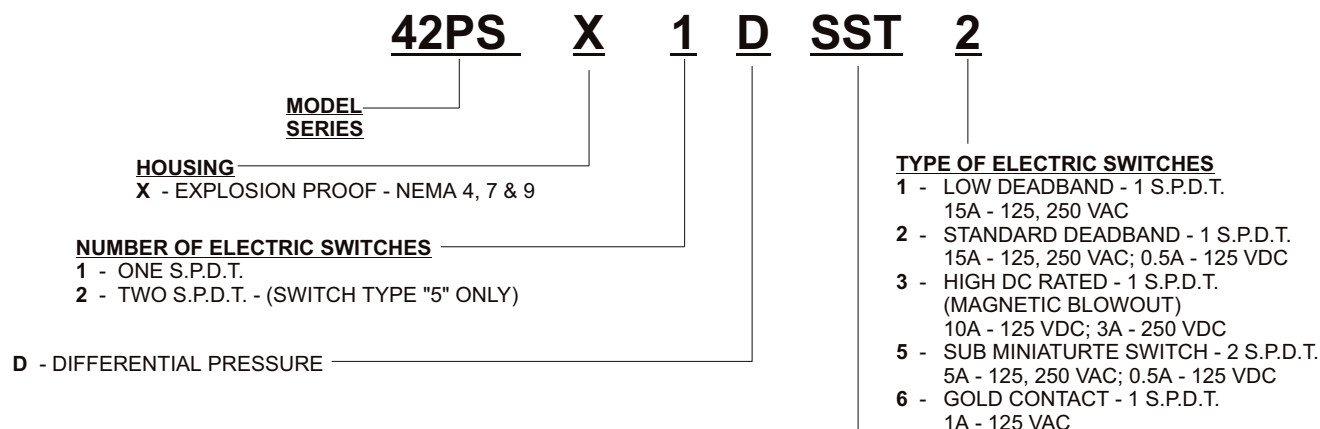
- Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connections:** 1/8 NPT  
**Electrical Connection:** 3/4 NPT  
**Housing:** 355/356 Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1% of range (for 1 SPDT)  
**Drift:** <2% of range (100,000 operations)  
**Weight:** Approx. 4 lbs.  
**Contact Ratings:** 15A - 125, 250 VAC (1 S.P.D.T.)  
**OR:** 5A - 125, 250 VAC (2 S.P.D.T.)  
**Port Material:** Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** One or Two S.P.D.T.



Underwriters Laboratories, Inc. Listed:  
 Industrial Controls Equipment Type 4 & 12, File E130423,  
 Pressure-Operated Switch for Hazardous Locations

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



### SPECIAL FEATURES\*

**O** - HIGH OVER PRESSURE- INCREASES MAX. WORKING PRESSURE TO 300 PSI  
**SS** - STAINLESS STEEL WETTED TRIM MATERIAL  
**SN** - BRASS WETTED TRIM MATERIAL  
**SI** - PTFE WETTED TRIM MATERIAL (15 PSI MAX. PR.)  
**SY** - PVC WETTED TRIM MATERIAL  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - SPECIAL EPOXY PAINT  
**Z** - VITON DIAPHRAGM MATERIAL

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-10 PSID	0.96 PSID	2.4 PSID	100 PSI
0-20 PSID	1.3 PSID	4.5 PSID	100 PSI
0-50 PSID	2.1 PSID	7.6 PSID	100 PSI
0-100 PSID	3.0 PSID	N/A	100 PSI

## INSTALLATION NOTES

**Orientation** - The 42PSXD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches are provided pre-wired with 30" leads. To reduce the risk of explosion, conduit runs must have a sealing fitting connected within 18 inches of the enclosure.

**Pressure Connections** - 1/8 NPT female is standard.

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") microswitch is used.

Deadband is affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use 1/2 the TYPE 2 table values.

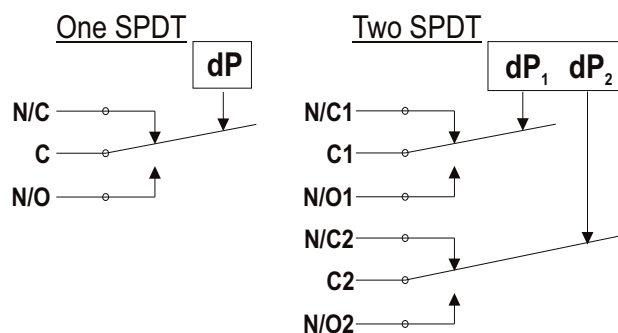
**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "5"** - *Sub Miniature* - 2 S.P.D.T. - See TYPE 5 table values .

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

## Wiring Schematic



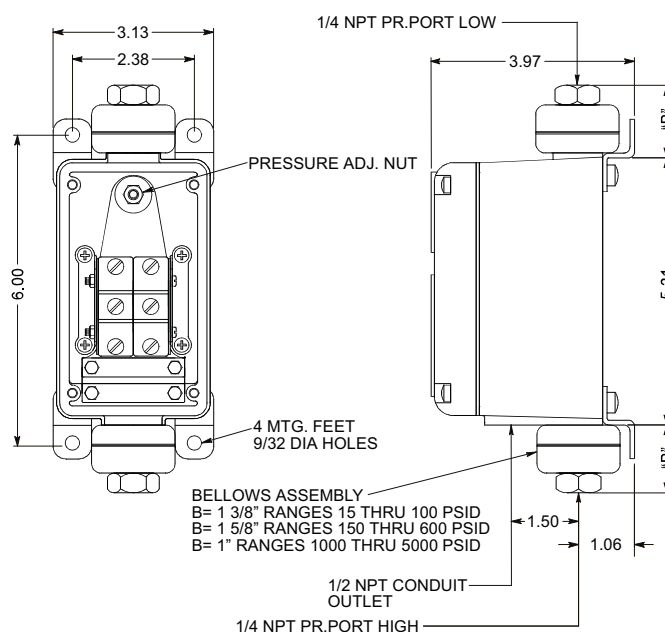


# 5PSBD

## DIFFERENTIAL PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Ranges from 0-15 PSID to 0-5000 PSID
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Adjustable deadband available



### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -40°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 1/2 NPT  
**Housing:** Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1/2% of range (for one SPDT switch)  
**Drift:** <1% of range (100,000 operations)  
**Weight:** Approx. 3 lbs.  
**Contact Ratings:** 15A - 125, 250, 480 VAC  
**Port Material:** Stainless Steel  
**Bellows Material:** Stainless Steel  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** 1 or 2 S.P.D.T or 1 D.P.D.T.  
**Contact Listings:** UL Recognized, CSA Certified



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**5PS    W    1    BD    U    2**

**MODEL SERIES** ————

**HOUSING'** ————  
**W** - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES** ————  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT** ————  
**BD** -BELLOWS ACTUATED DIFFERENTIAL PRESSURE

**SPECIAL FEATURES** ————  
 -- NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT  
**LL** - TWO INDICATOR LIGHTS  
**M** - MALE PIPE MOUNTING 1/2 NPT  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.7	1.3	300 PSI
0-30 PSID	.7	1.4	300 PSI
0-60 PSID	.8	1.6	300 PSI
0-100 PSID	1.0	1.9	300 PSI
0-150 PSID	4.0	7.3	1500 PSI
0-200 PSID	4.0	7.6	1500 PSI
0-300 PSID	4.0	8.2	1500 PSI
0-600 PSID	5.0	10.0	1500 PSI
0-1000 PSID	12.0	25.0	3000 PSI
0-2000 PSID	15.0	30.0	3000 PSI
0-3000 PSID	37.0	75.0	7000 PSI
0-5000 PSID	45.0	90.0	7000 PSI

## INSTALLATION NOTES

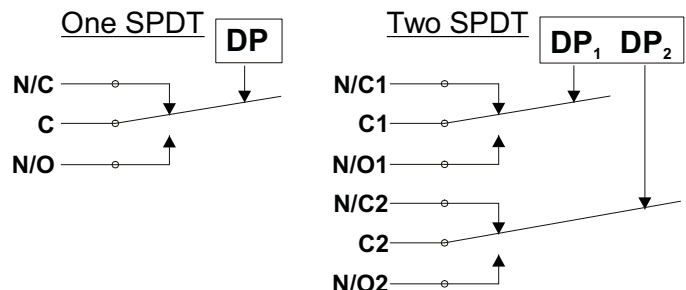
**Orientation** - The 5PSBD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es)

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option)

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

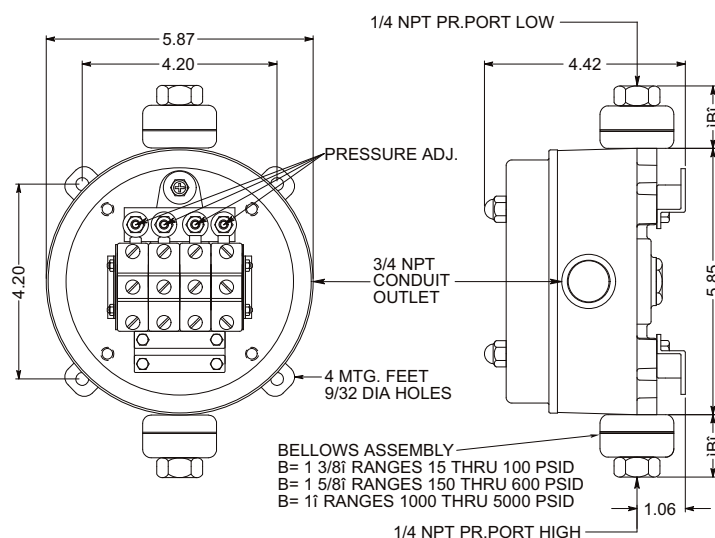


# 6PSBD

## DIFFERENTIAL PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Ranges from 0-15 psid to 0-5000 psid
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Stainless steel wetted materials available



### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

- Maximum Ambient Temperature:** 180 F
- Minimum Ambient Temperature:** -40 F
- Pressure Connection:** 1/4 NPT
- Electrical Connection:** 3/4 NPT
- Housing:** Cast Aluminum
- Deadband:** Fixed
- Sensitivity:** 1/2% of range (for one SPDT switch)
- Drift:** <1% of range (100,000 operations)
- Weight:** Approx. 5 lbs.
- Contact Ratings:** 15A - 125, 250, 480 VAC
- Port Material:** Stainless Steel
- Bellows Material:** Stainless Steel
- Set Point Adjustment:** Screw type, field adjustable
- No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.
- Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D ; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

		<b>6PS</b>	<b>W</b>	<b>1</b>	<b>BD</b>	<b>U</b>	<b>2</b>
		MODEL SERIES					
<b>HOUSING'</b>							
W - WATERTIGHT - NEMA 4X & 12							
X - EXPLOSION PROOF - NEMA 7 & 9							
<b>NUMBER OF ELECTRIC SWITCHES</b>							
1 - ONE S.P.D.T.							
11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.							
2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT							
3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT							
4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT							
<b>SENSING ELEMENT</b>							
BD - BELLOWS ACTUATED DIFFERENTIAL PRESSURE							
<b>SPECIAL FEATURES</b>							

- NO SPECIAL FEATURES
- A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)
- E - EXTERNAL PRESSURE ADJUSTMENT
- EE - TWO EXTERNAL PRESSURE ADJUSTMENTS
- L - ONE INDICATOR LIGHT (NOT ON X HOUSING)
- LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)
- M - MALE PIPE MOUNTING NPT
- P - PANEL MOUNTING
- Q - DOUBLE SNAP ACTION (BELLEVILLE SPRING)
- R> - MANUAL RESET, SWITCH ON INCR. PR.
- R< - MANUAL RESET, SWITCH ON DECR. PR.
- U - ADDITIONAL PAINTING AFTER ASSEMBLY
- V - HIGH TEMPERATURE SERVICE - NOT A UL-LISTED FEATURE

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.7	1.3	300 PSI
0-30 PSID	.7	1.4	300 PSI
0-60 PSID	.8	1.6	300 PSI
0-100 PSID	1.0	1.9	300 PSI
0-150 PSID	4.0	7.3	1500 PSI
0-200 PSID	4.0	7.6	1500 PSI
0-300 PSID	4.0	8.2	1500 PSI
0-600 PSID	5.0	10.0	1500 PSI
0-1000 PSID	12.0	25.0	3000 PSI
0-2000 PSID	15.0	30.0	3000 PSI
0-3000 PSID	37.0	75.0	7000 PSI
0-5000 PSID	45.0	90.0	7000 PSI

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type i1i or Type i2i electric switch are used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## INSTALLATION NOTES

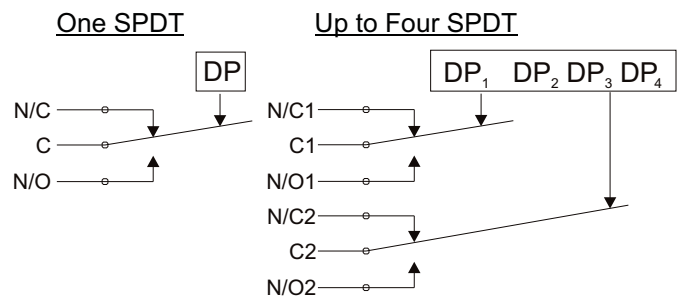
**Orientation** - The 6PSBD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

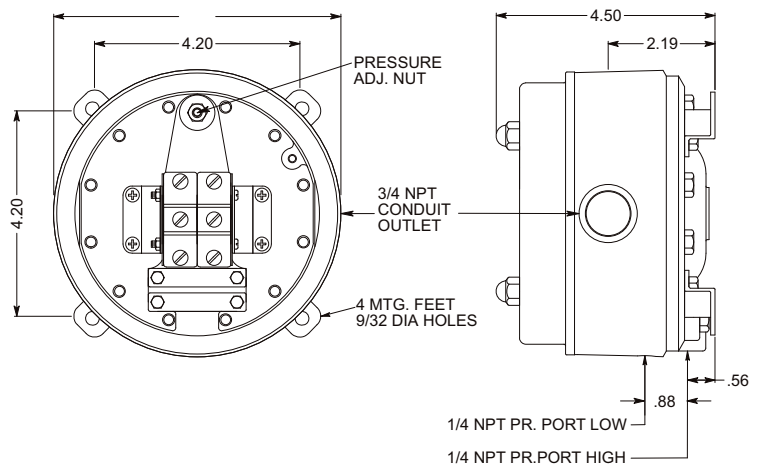


# 6PSD

## DIFFERENTIAL PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-15 psid & 0-30 psid
- NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Cast-aluminum housing in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configuration can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    D    R>    2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

**D** - DIFFERENTIAL PRESSURE

**SPECIAL FEATURES**

-- NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SN** - SPECIAL TRIM BASE BRASS - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SK** - SPECIAL TRIM BASE ALUMINUM - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES) - DECREASES MAX WORKING PRESSURE TO 50 PSI  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL-LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.16 PSID	.32 PSID	100 PSI
0-30 PSID	.23 PSID	.47 PSID	100 PSI

## INSTALLATION NOTES

**Orientation** - The 6PSD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use TYPE 1 table values.

**Type "2"** - *Std. Deadband* - Use TYPE 2 table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

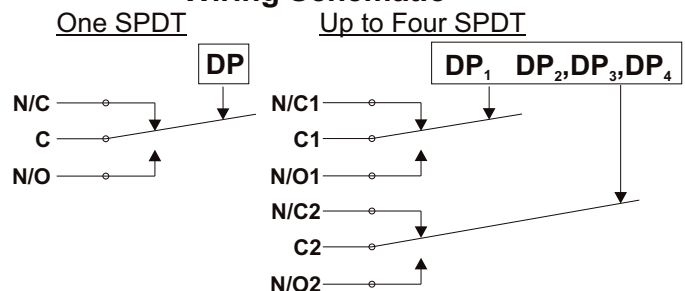
**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## Wiring Schematic



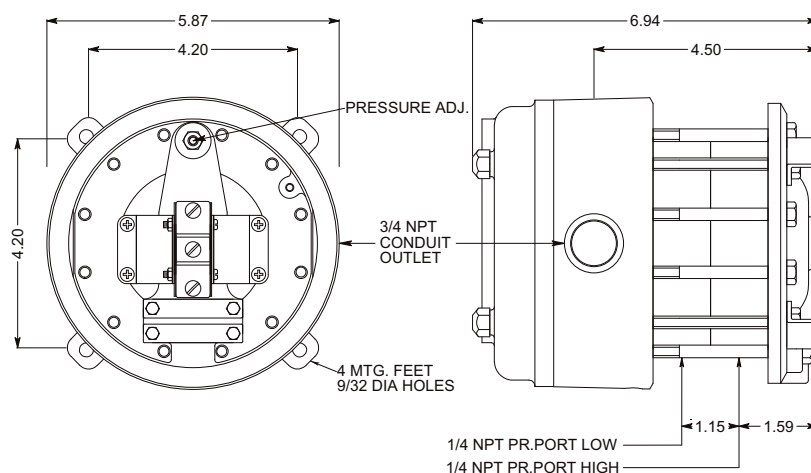


# 6PSD0

## DIFFERENTIAL PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-15, 0-30, & 0-60 psid
- NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed to sense low differential pressures between high pressure sources
- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    DO    E    2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

**DO** - LOW D.P. - HIGH WORKING PRESSURE

**SPECIAL FEATURES**

**"-** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switched differentials when Type "1" or Type "2" electric switch is used. Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.3	.6	2500 PSI
0-30 PSI	.35	.7	2500 PSI
0-60 PSI	.7	1.3	2500 PSI

## INSTALLATION NOTES

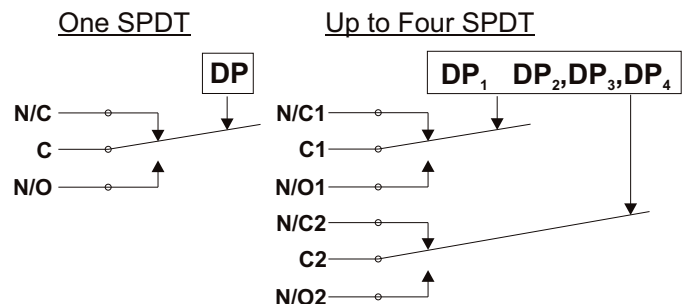
**Orientation** - The 6PSDO will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

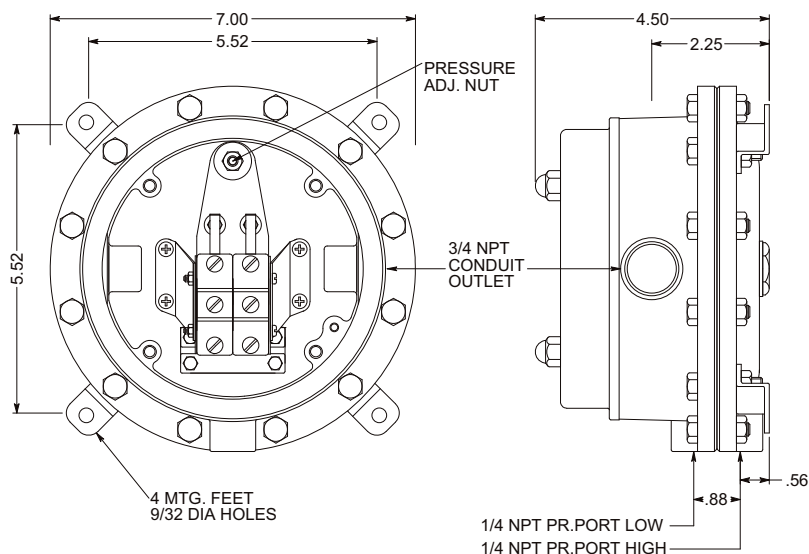


# 7PSD

## DIFFERENTIAL PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-1.5 WC/DP to 0-200 WC/DP
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed for low differential pressure applications
- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS   W   1   D   L   2**

**MODEL SERIES**

**HOUSING'**

W - WATERTIGHT - NEMA 4X & 12  
X - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

D - DIFFERENTIAL PRESSURE

**SPECIAL FEATURES**

-- NO SPECIAL FEATURES  
A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
E - EXTERNAL PRESSURE ADJUSTMENT  
EE - TWO EXTERNAL PRESSURE ADJUSTMENTS  
G - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PR  
L - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
M - MALE PIPE MOUNTING ½ NPT  
P - PANEL MOUNTING  
R> - MANUAL RESET, SWITCH ON INCR. PR.  
R< - MANUAL RESET, SWITCH ON DECR. PR.  
SS - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX. WORKING PRESSURE TO 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SN - SPECIAL TRIM BASE BRASS - INCREASES MAX. WORKING PRESSURE TO 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SK - SPECIAL TRIM BASE ALUMINUM - INCREASES MAX. WORKING PRESSURE TO 50 PSI (RANGES UP TO 0-6 WC/DP), 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SI - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
SY - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
T - PTFE PROTECTED DIAPHRAGM  
U - ADDITIONAL PAINTING AFTER ASSEMBLY  
V - HIGH TEMP SERVICE - NOT A UL- LISTED FEATURE  
Z - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC  
2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC  
4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
6 - GOLD CONTACT -  
1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC TYPE "1"	MAX. WORKING PRESSURE TYPE "2"	MAX. WORKING PRESSURE
0-1.5 WC/DP	.17"WC	-	25 PSI
0-3 WC/DP	.18"WC	-	25 PSI
0-6 WC/DP	.23"WC	.45"WC	25 PSI
0-15 WC/DP	.33"WC	.65"WC	25 PSI
0-30 WC/DP	.6"WC	1.2"WC	25 PSI
0-60 WC/DP	.7"WC	1.4"WC	25 PSI
0-100 WC/DP	.8"WC	1.6"WC	25 PSI
0-150 WC/DP	1.2"WC	2.5"WC	25 PSI
0-200 WC/DP	1.8"WC	3.1"WC	25 PSI

## INSTALLATION NOTES

**Orientation** - The 7PSD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or "Type 2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use TYPE 1 table values.

**Type "2"** - Std. Deadband - Use TYPE 2 table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

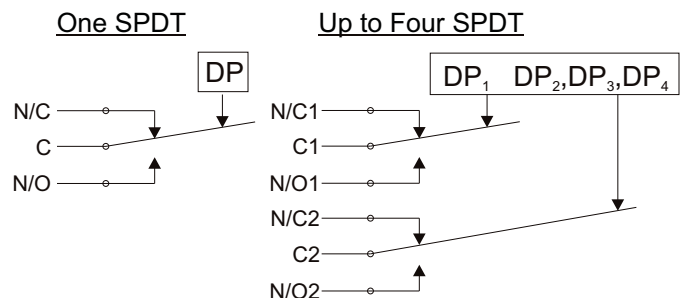
**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## Wiring Schematic



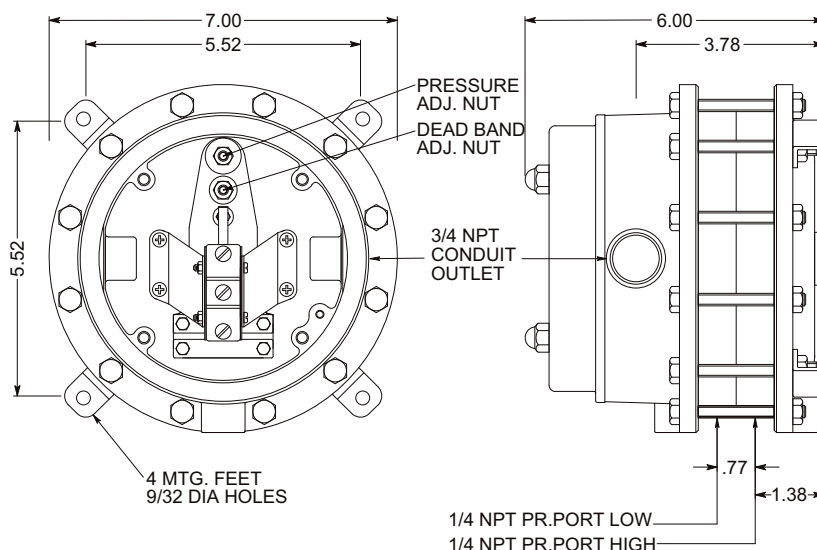


# 7PSD0

## DIFFERENTIAL PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-6 WC/DP to 0-200 WC/DP
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed to sense low differential pressures between high pressure sources
- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see page 2 for special features

- Maximum Ambient Temperature:** 180°F
- Minimum Ambient Temperature:** -20°F
- Pressure Connection:** 1/4 NPT
- Electrical Connection:** 3/4 NPT
- Housing:** Cast Aluminum
- Deadband:** Fixed
- Sensitivity:** 1/2% of range (for one SPDT Switch)
- Drift:** <1% of range (100,000 operations)
- Weight:** Approx. 6 lbs.
- Contact Ratings:** 15A - 125, 250, 480 VAC
- Port Material:** Aluminum
- Diaphragm Material:** Buna N
- Set Point Adjustment:** Screw type, field adjustable
- No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.
- Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS    W    1    DO    E    2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

**DO** - LOW D.P. - HIGH WORKING PRESSURE

**SPECIAL FEATURES**

-- NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOW-OUT ) 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.  
 Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value  
 UL-recognized component, guide WSQ2, File E85076.  
 All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-6 WC/DP	1.1	2.2	1500 PSI
0-15 WC/DP	1.2	2.3	1500 PSI
0-30 WC/DP	1.2	2.3	1500 PSI
0-60 WC/DP	1.3	2.5	1500 PSI
0-100 WC/DP	1.5	2.9	1500 PSI
0-150 WC/DP	1.7	3.4	1500 PSI
0-200 WC/DP	1.9	3.8	1500 PSI

## INSTALLATION NOTES

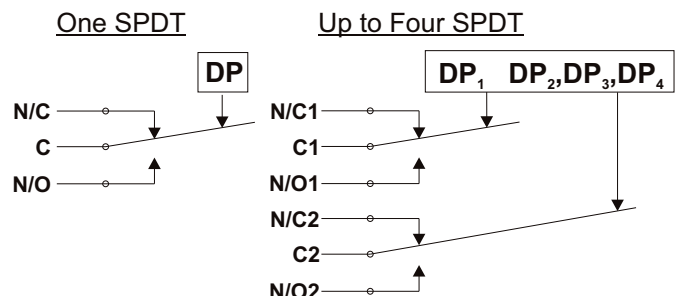
**Orientation** - The 7PSDO will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic





# SANITARY PRODUCTS

Where clean room and other sanitary demands prevail, Solon's Sanitary Connection Pressure Switch model with diaphragm sensing element is ideal. With the same rugged capabilities as every other Solon Manufacturing pressure switch, the 2SAN has no need for fill fluid that could contaminate sanitary systems found in the food, beverage, dairy, packaging and medical industries since the diaphragm is mechanically connected to the switch mechanism.

# 2SAN

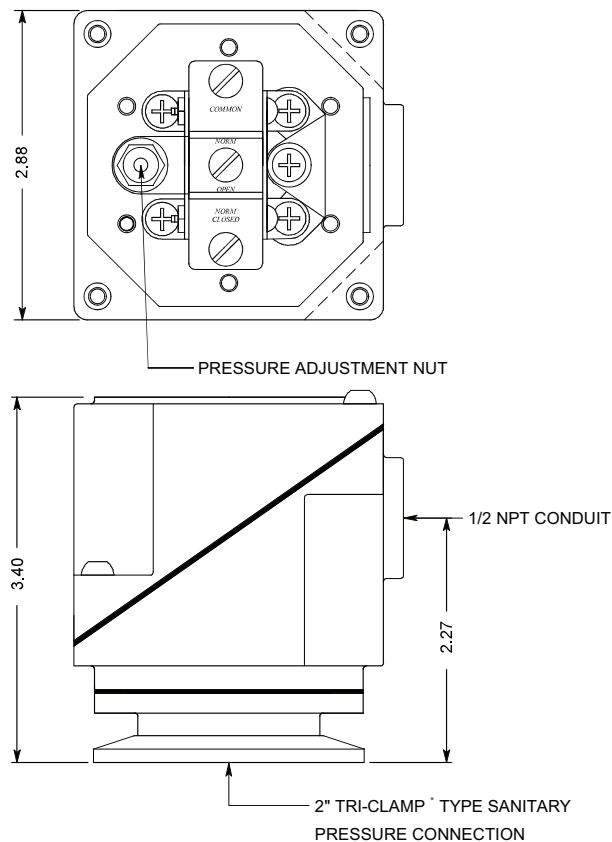
## SANITARY PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 2-300 psi
- NEMA 4 & 12 housing
- Elastomer diaphragm
- 2" tri-clamp connection
- No fill-fluid



SHOWN WITH COVER REMOVED



#### GENERAL DESCRIPTION

- Designed for food, dairy, and other sanitary applications
- Features an elastomer (EPDM or PTFE) diaphragm sensing element that is manufactured in accordance with 3-A Sanitary Standard No. 37-01
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Eliminates the need for fill-fluid, which could contaminate sanitary systems and also reduces the effect temperature has on set points
- Other fitting sizes and/or ranges (including vacuum) are available\*

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 2" Tri-Clamp

**Electrical Connection:** 1/2 NPT

**Housing:** Diecast aluminum - Painted per ASTM B117

**Deadband:** Fixed

**Sensitivity:** 1% of range (for one SPDT switch)

**Drift:** <2% of range (100,000 operations)

**Weight:** Approx. 1.5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Wetted Material:** EPDM standard, PTFE available

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or two S.P.D.T.

**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PS    W    1    SAN    T    2**

**MODEL SERIES**

**HOUSING**  
 ' ' - NO HOUSING  
 W - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**  
 1 - ONE S.P.D.T.  
 2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES**  
 V - HIGH AMBIENT TEMPERATURE (250F)  
 T - PTFE PROTECTED DIAPHRAGM  
 U - ADDITIONAL PAINTING AFTER ASSEMBLY

**TYPE OF ELECTRIC SWITCHES**  
 1 - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
 2 - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
 3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
 4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
 5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC  
 6 - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-2 PSI	.25 PSI	.50 PSI	20 PSI
0-5 PSI	.27 PSI	.50 PSI	20 PSI
0-10 PSI	.34 PSI	.90 PSI	50 PSI
0-20 PSI	.50 PSI	1.9 PSI	50 PSI
0-50 PSI	1.6 PSI	6 PSI	250 PSI
0-100 PSI	1.9 PSI	8.3 PSI	250 PSI
0-200 PSI	4.4 PSI	16 PSI	500 PSI
0-300 PSI	5.3 PSI	22 PSI	500 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

- Type "1"** - Low Deadband - Use ½ TYPE 2 table values.
- Type "2"** - Std. Deadband - Use table values.
- Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.
- Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.
- Type "5"** - Sub Miniature - 2 S.P.D.T. - Use TYPE 5 table values.
- Type "6"** - Gold Contact - Use TYPE 2 table values.

## INSTALLATION NOTES

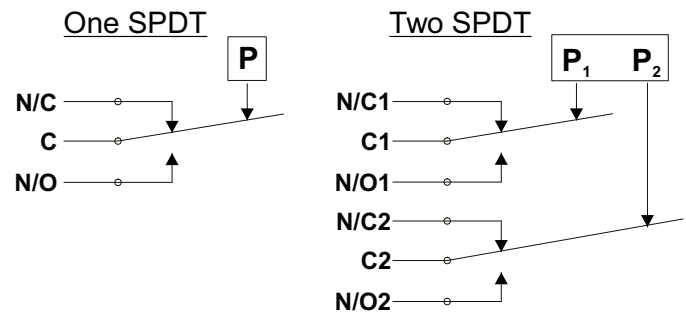
**Orientation** - The 2SAN will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions employ a screw terminal block.

**Pressure Connection** - 2" Tri-clamp style connection (clamp not provided).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic







# EXPLOSION PROOF PRODUCTS

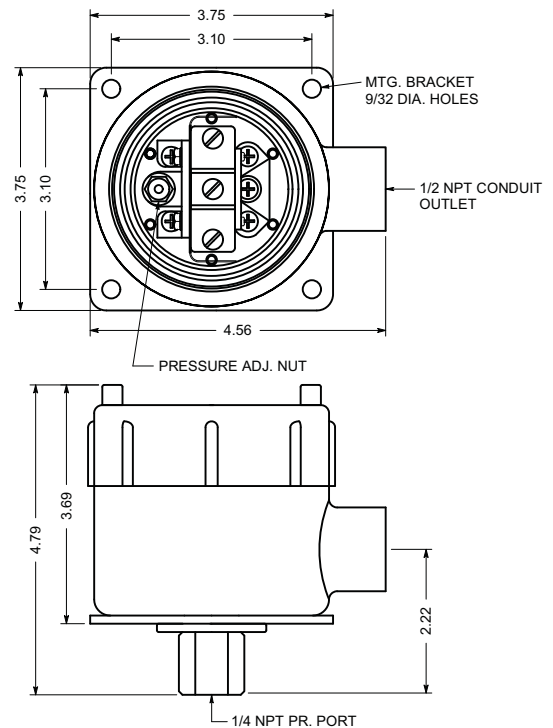
With extra-assurance where fire and explosion safety is critical, the Solon Explosion-Proof series offers a cast aluminum housing that is both explosion-proof and weather-tight. Pressure sensing elements outside the flame path allow a wider variety of wetted materials than would otherwise be possible. The Explosion-proof series is UL approved and may be used in almost any corrosive process. Ask your Solon Manufacturing engineer if the Explosion-Proof series is right for your requirement.

# 2PSX

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 2 - 300 psi
- NEMA 7 Class I, Gr. C & D
- NEMA 9 Class II, Gr. E, F & G
- One or two SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies, the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the vacuum setting. Features S/S screws that retain the cover gasket when the enclosure cover is removed.
- Modular design or pressure-sensing elements accommodates a variety of applications

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 2.0 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Fitting Material:** Stainless Steel

**Trim Material:** Anodized Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PSX**    **1**    **SST**    **2**

**MODEL SERIES**

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES**

**M** - 1/2 NPT MALE PIPE MOUNTING  
**O** - HIGH OVERPRESSURE - INCREASES MAX. PRESSURE TO 1000 PSI FOR RANGES 0-2 PSI TO 0-20 PSI; MAX. PRESSURE IS 1500 PSI FOR RANGES 0-50 PSI AND UP  
**SS** - STAINLESS STEEL WETTED TRIM MATERIAL  
**SN** - BRASS WETTED TRIM MATERIAL  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT  
**Z** - VITON DIAPHRAGM MATERIAL

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC  
2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC  
4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
5A - 125, 250 VAC; 0.5A - 125 VDC  
6 - GOLD CONTACT -  
1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-2 PSI	.25 PSI	.23 PSI	20 PSI
0-5 PSI	.27 PSI	.50 PSI	20 PSI
0-10 PSI	.34 PSI	.90 PSI	50 PSI
0-20 PSI	.50 PSI	1.9 PSI	50 PSI
0-50 PSI	1.6 PSI	6 PSI	250 PSI
0-100 PSI	1.9 PSI	8.3 PSI	250 PSI
0-200 PSI	4.4 PSI	16 PSI	500 PSI
0-300 PSI	5.3 PSI	22 PSI	500 PSI

## INSTALLATION NOTES

**Orientation** - The 2PSX will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block..

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use ½ TYPE 2 table values.

**Type "2"** - *Std. Deadband* - Use TYPE 2 table values.

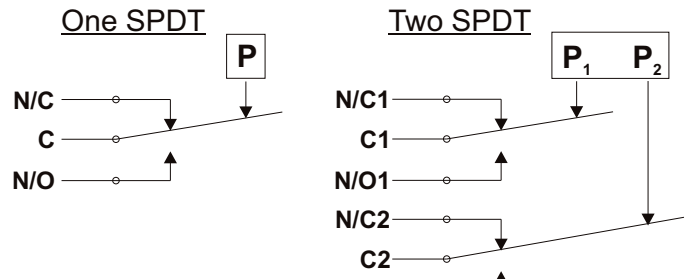
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Use TYPE 5 table values.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

## Wiring Schematic



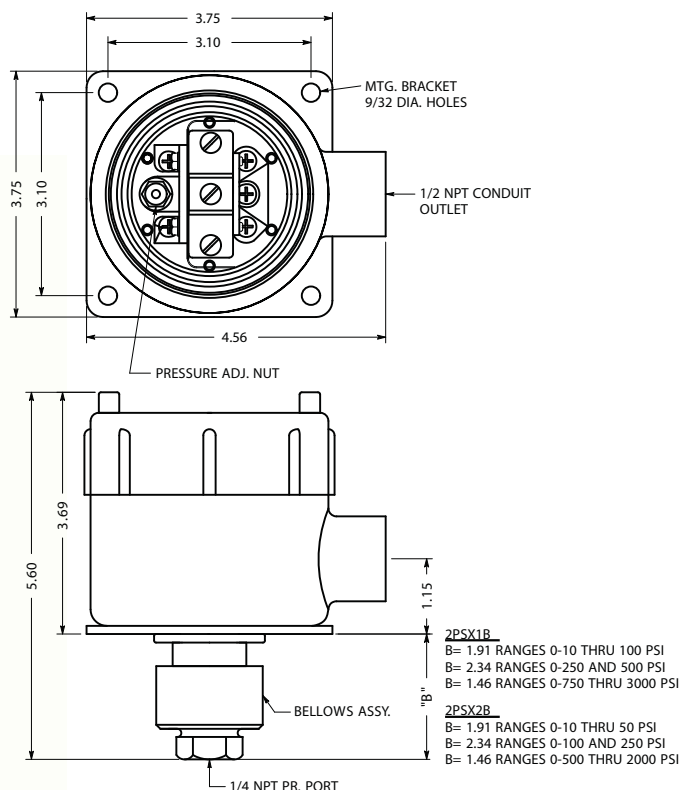


# 2PSXB

## PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Ranges from 10 - 3000 psi
- NEMA 7 CLASS I, Gr. C & D
- NEMA 9 CLASS II, Gr. E, F, & G
- One or two SPDT contacts
- Stainless steel sensing element



## GENERAL DESCRIPTION

- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the vacuum setting. Features S/S screws that retain the cover gasket when the enclosure cover is removed.
- Modular design or pressure-sensing elements accommodates a variety of applications
- S/S bellows

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see page 2 for special features

Maximum Ambient Temperature:	180°F
Minimum Ambient Temperature:	-40°F
Pressure Connection:	1/4 NPT
Electrical Connection:	1/2 NPT
Housing:	Diecast Aluminum
Deadband:	Fixed
Sensitivity:	1/2% of range (for SPDT)
Drift:	<1% of range (100,000 operations)
Weight:	Approx. 2 lbs.
Contact Ratings:	15A - 125, 250, 480 VAC
Port Material:	Stainless Steel
Bellows Material:	Stainless Steel
Set Point Adjustment:	Screw type, field adjustable
No. Contacts:	One or Two S.P.D.T.
Contact Listings:	UL Recognized, CSA Certified



## ORDERING A SWITCH

### 1. SPECIFY A MODEL NUMBER

**2PSX 1 B M 2**

**MODEL SERIES** ————

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SENSING ELEMENT**

B - BELLOWS SENSING ELEMENT (STANDARD)

**SPECIAL FEATURES**

M - 1/2 NPT MALE PIPE MOUNTING  
U - ADDITIONAL PAINTING AFTER ASSEMBLY  
V - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC

2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC

4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
5A - 125, 250 VAC; 0.5A - 125 VDC

6 - GOLD CONTACT -  
1 A - 125 VAC

### 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAXIMUM PRESSURE	
	TYPE "2"	TYPE "5"	TYPE "2"	TYPE "5"
0-10 PSI	.80 PSI	1.5 PSI	300 PSI	300 PSI
0-20 PSI	.90 PSI	2.3 PSI	300 PSI	300 PSI
0-50 PSI	1.0 PSI	5.2 PSI	300 PSI	300 PSI
0-100 PSI	1.5 PSI	13 PSI	300 PSI	1500 PSI
0-250 PSI	6 PSI	27 PSI	1500 PSI	1500 PSI
0-500 PSI	8 PSI	58 PSI	1500 PSI	2500 PSI
0-750 PSI	16 PSI	77 PSI	2500 PSI	2500 PSI
0-1000 PSI	19 PSI	183 PSI	2500 PSI	5000 PSI
0-2000 PSI	60 PSI	240 PSI	5000 PSI	5000 PSI
0-3000 PSI	66 PSI	N/A	5000 PSI	N/A

## INSTALLATION NOTES

**Orientation** - The 2PSXB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

Type "1" - Low Deadband - Use ½ TYPE 2 table values.

Type "2" - Std. Deadband - Use TYPE 2 table values.

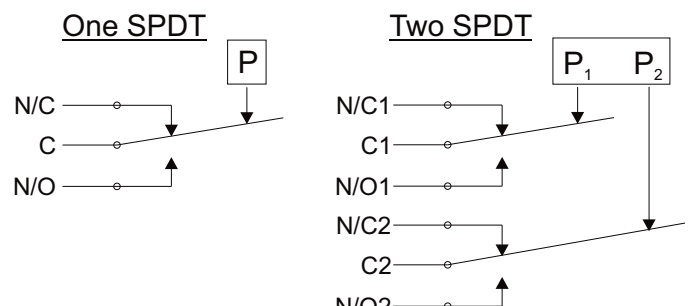
Type "3" - High DC Rated - Multiply TYPE 2 table values by two.

Type "4" - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

Type "5" - Sub Miniature - 2 S.P.D.T. - Use TYPE 5 table values.

Type "6" - Gold Contact - Use TYPE 2 table values.

### Wiring Schematic

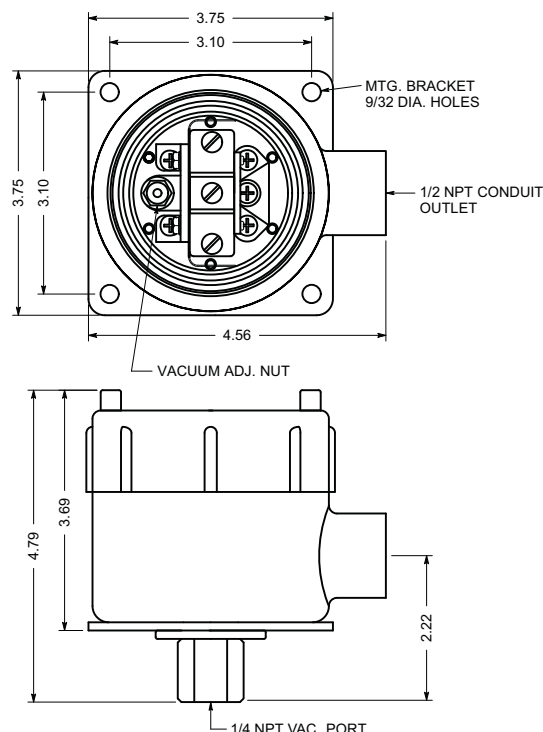


# 2PSXVAC

## VACUUM SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 5 -30 IN/HG and -30/0/30 IN/HG
- NEMA 7 CLASS I, Gr. C & D
- NEMA 9 CLASS II, Gr. E, F, & G
- One or two SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the vacuum setting. Features S/S screws that retain the cover gasket when the enclosure cover is removed
- Modular design of pressure-sensing elements accommodates a variety of applications

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 2 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Fitting Material:** Stainless Steel

**Trim Material:** Anodized Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PSX 1 SSU 2**

**MODEL SERIES**

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES**

M - 1/2 NPT MALE PIPE MOUNTING  
SS - STAINLESS STEEL WETTED TRIM MATERIAL  
SN - BRASS WETTED TRIM MATERIAL  
U - ADDITIONAL PAINTING AFTER ASSEMBLY  
V - HIGH TEMP SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT  
Z - VITON DIAPHRAGM MATERIAL

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC  
2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC  
4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
5A - 125, 250 VAC; 0.5A - 125 VDC  
6 - GOLD CONTACT -  
1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-5 IN/HG	.53 HG	N/A	20 PSI
0-15 IN/HG	.67 HG	N/A	20 PSI
0-30 IN/HG	.90 HG	2.0 HG	20 PSI
-30/0/30 IN/HG	1.4 HG	N/A	20 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

Type "1" - Low Deadband - Use ½ TYPE 2 table values.

Type "2" - Std. Deadband - Use TYPE 2 table values.

Type "3" - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4" - Hermetically Sealed Switch** - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

Type "5" - Sub Miniature - 2 S.P.D.T. - Use TYPE 5 table values.

Type "6" - Gold Contact - Use TYPE 2 table values.

## INSTALLATION NOTES

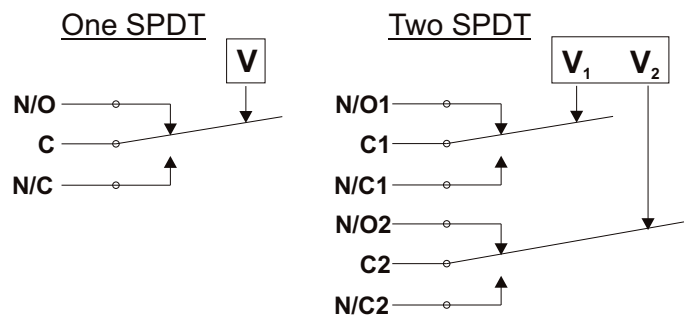
**Orientation** - The 2PSX will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block.

**Vacuum Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) counterclockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

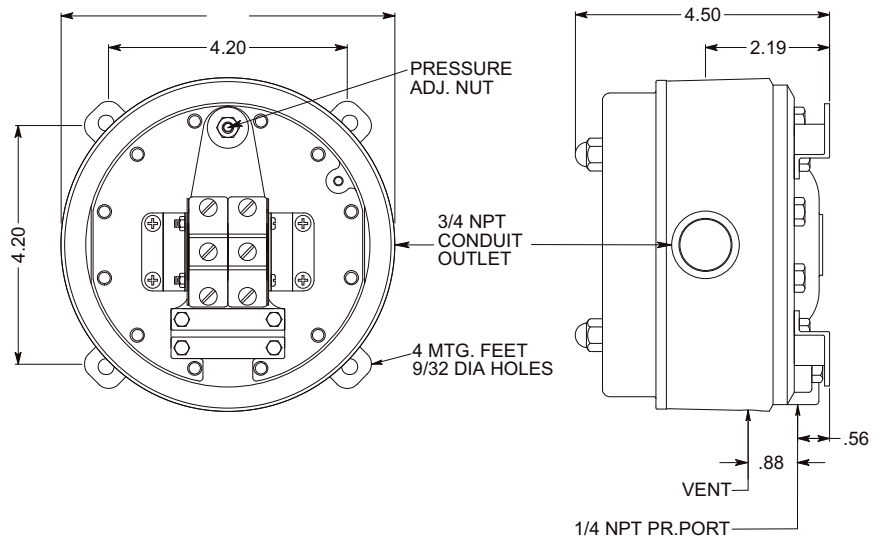


# 6PSX

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 0-15 psi to 0-300 psi
- NEMA 7 , 9 housing
- Class I, Div. I, Gr. C & D Available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    SST    2**

MODEL SERIES

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"-** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**F** - FLANGE BASE MOUNTING  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**O** - HIGH OVERPRESSURE - INCREASES MAX. PR. TO 1000 PSI  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.2	.3	50 PSI
0-30 PSI	.2	.5	100 PSI
0-60 PSI	.5	1.0	200 PSI
0-100 PSI	1.0	2.0	300 PSI
0-150 PSI	1.0	2.5	300 PSI
0-200 PSI	2.0	3.5	500 PSI
0-300 PSI	3.0	5.0	500 PSI

## INSTALLATION NOTES

**Orientation** - The 6PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

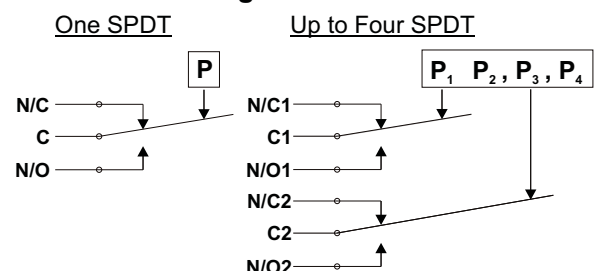
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## Wiring Schematic



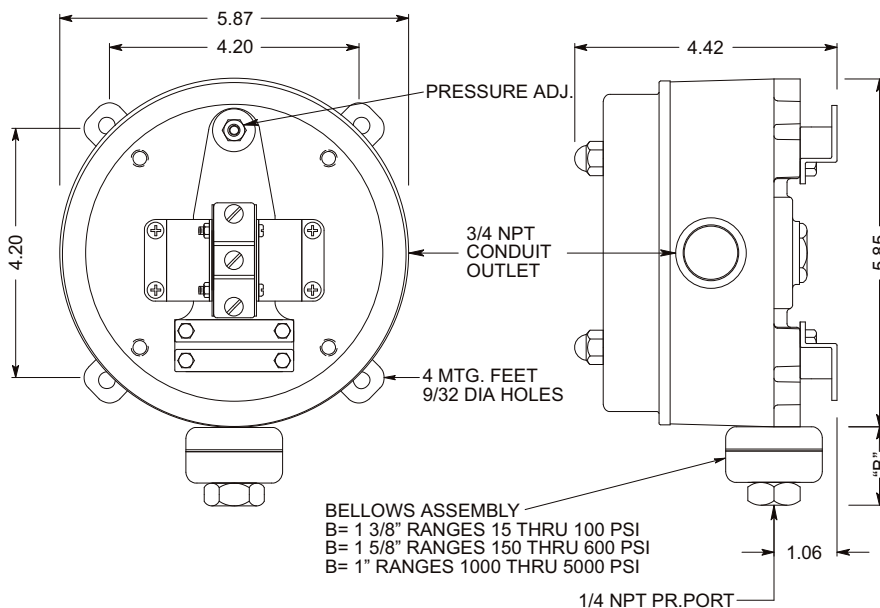


# 6PSXB

## PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Ranges 0-15 psi to 0-5000 psi
- NEMA 7, 9 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Stainless steel wetted



### GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)
- A wide variety of adjustable pressure ranges are available

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

- Maximum Ambient Temperature:** 180°F
- Minimum Ambient Temperature:** -40°F
- Pressure Connection:** 1/4 NPT
- Electrical Connection:** 3/4 NPT
- Housing:** Cast Aluminum
- Deadband:** Fixed
- Sensitivity:** 1/2% of range (for one SPDT switch)
- Drift:** <1% of range (100,000 operations)
- Weight:** Approx. 5 lbs.
- Contact Ratings:** 15A - 125, 250, 480 VAC
- Port Material:** Stainless Steel
- Bellows Material:** Stainless Steel
- Set Point Adjustment:** Screw type, field adjustable
- No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.
- Contact Listings:** UL Recognized, CSA Certified



LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

<b>MODEL SERIES</b>		<b>6PS</b>	<b>W</b>	<b>1</b>	<b>B</b>	<b>U</b>	<b>2</b>
<b>HOUSING</b> <b>W</b> - WATERTIGHT - NEMA 4X & 12 <b>X</b> - EXPLOSION PROOF - NEMA 7 & 9  <b>NUMBER OF ELECTRIC SWITCHES</b> <b>1</b> - ONE S.P.D.T. <b>11</b> - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T. <b>2</b> - TWO S.P.D.T. INDEPENDENT ADJUSTMENT <b>3</b> - THREE S.P.D.T. INDEPENDENT ADJUSTMENT <b>4</b> - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT  <b>SENSING ELEMENT</b> <b>B</b> - BELLOWS ACTUATED <b>SPECIAL FEATURES</b> <b>"."</b> - NO SPECIAL FEATURES <b>A</b> - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE) <b>E</b> - EXTERNAL PRESSURE ADJUSTMENT <b>EE</b> - TWO EXTERNAL PRESSURE ADJUSTMENTS <b>L</b> - ONE INDICATOR LIGHT (NOT ON X HOUSING) <b>LL</b> - TWO INDICATOR LIGHTS (NOT ON X HOUSING) <b>M</b> - MALE PIPE MOUNTING ½ NPT <b>P</b> - PANEL MOUNTING <b>Q</b> - DOUBLE SNAP ACTION (BELLEVILLE SPRING) <b>R&gt;</b> - MANUAL RESET, SWITCH ON INCR. PR. <b>R&lt;</b> - MANUAL RESET, SWITCH ON DECR. PR. <b>U</b> - ADDITIONAL PAINTING AFTER ASSEMBLY <b>V</b> - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE		<b>TYPE OF ELECTRIC SWITCHES</b> <b>1</b> - LOW DEADBAND 15A - 125, 250, 480 VAC <b>2</b> - STANDARD DEADBAND 15A - 125, 250, 480 VAC; 0.5A - 125 VDC <b>3</b> - HIGH DC RATED (MAGNETIC BLOWOUT) 10A - 125 VDC; 3A - 250 VDC <b>4</b> - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC <b>6</b> - GOLD CONTACT - 1 A - 125 VAC					

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.7	1.3	300 PSI
0-30 PSI	.7	1.4	300 PSI
0-60 PSI	.8	1.6	300 PSI
0-100 PSI	1.0	1.9	300 PSI
0-150 PSI	4.0	7.3	1500 PSI
0-200 PSI	4.0	7.6	1500 PSI
0-300 PSI	4.0	8.2	1500 PSI
0-600 PSI	5.0	10.0	1500 PSI
0-1000 PSI	12.0	25.0	3000 PSI
0-2000 PSI	15.0	30.0	3000 PSI
0-3000 PSI	37.0	75.0	7000 PSI
0-5000 PSI	45.0	90.0	7000 PSI

## INSTALLATION NOTES

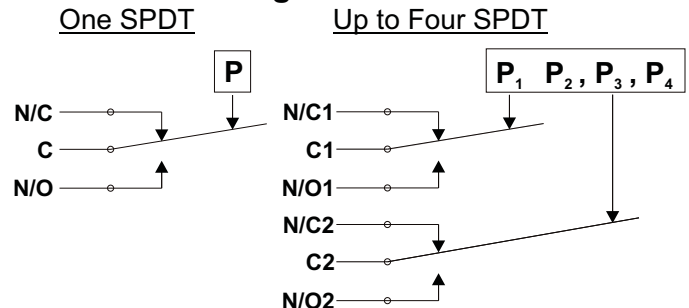
**Orientation** - The 6PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

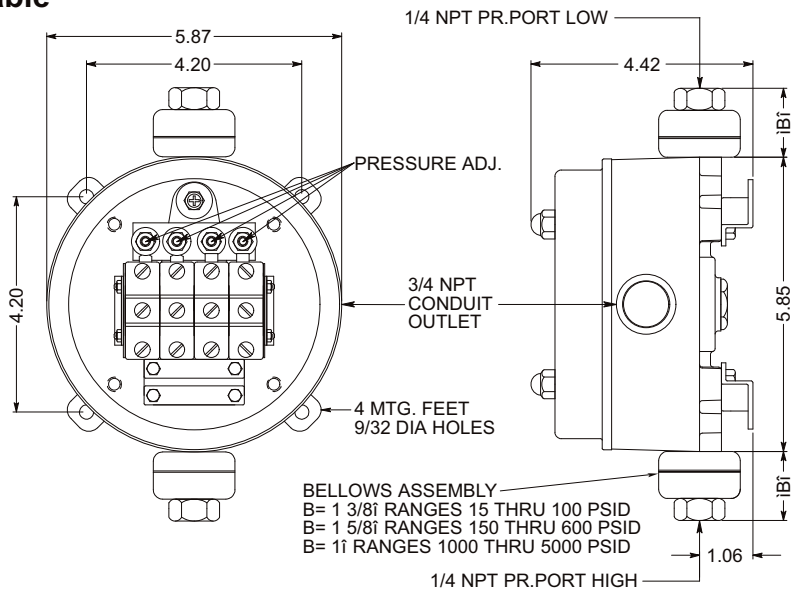


# 6PSXBD

## DIFFERENTIAL PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Ranges from 0-15 psid to 0-5000 psid
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Stainless steel wetted materials available




### GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- A wide variety of adjustable pressure ranges are available
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see page 2 for special features

- Maximum Ambient Temperature:** 180 F
- Minimum Ambient Temperature:** -40 F
- Pressure Connection:** 1/4 NPT
- Electrical Connection:** 3/4 NPT
- Housing:** Cast Aluminum
- Deadband:** Fixed
- Sensitivity:** 1/2% of range (for one SPDT switch)
- Drift:** <1% of range (100,000 operations)
- Weight:** Approx. 5 lbs.
- Contact Ratings:** 15A - 125, 250, 480 VAC
- Port Material:** Stainless Steel
- Bellows Material:** Stainless Steel
- Set Point Adjustment:** Screw type, field adjustable
- No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.
- Contact Listings:** UL Recognized, CSA Certified

 Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

		<b>6PS</b>	<b>W</b>	<b>1</b>	<b>BD</b>	<b>U</b>	<b>2</b>
		MODEL SERIES					
<b>HOUSING</b>							
W - WATERTIGHT - NEMA 4X & 12							
X - EXPLOSION PROOF - NEMA 7 & 9							
<b>NUMBER OF ELECTRIC SWITCHES</b>							
1 - ONE S.P.D.T.							
11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.							
2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT							
3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT							
4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT							
<b>SENSING ELEMENT</b>							
BD - BELLOWS ACTUATED DIFFERENTIAL PRESSURE							
<b>SPECIAL FEATURES</b>							
-- NO SPECIAL FEATURES							
A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)							
E - EXTERNAL PRESSURE ADJUSTMENT							
EE - TWO EXTERNAL PRESSURE ADJUSTMENTS							
L - ONE INDICATOR LIGHT (NOT ON X HOUSING)							
LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)							
M - MALE PIPE MOUNTING NPT							
P - PANEL MOUNTING							
Q - DOUBLE SNAP ACTION (BELLEVILLE SPRING)							
R> - MANUAL RESET, SWITCH ON INCR. PR.							
R< - MANUAL RESET, SWITCH ON DECR. PR.							
U - ADDITIONAL PAINTING AFTER ASSEMBLY							
V - HIGH TEMPERATURE SERVICE - NOT A UL-LISTED FEATURE							

### TYPE OF ELECTRIC SWITCHES

- 1 - LOW DEADBAND  
15A - 125, 250, 480 VAC
- 2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC
- 3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC
- 4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC
- 6 - GOLD CONTACT -  
1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.7	1.3	300 PSI
0-30 PSID	.7	1.4	300 PSI
0-60 PSID	.8	1.6	300 PSI
0-100 PSID	1.0	1.9	300 PSI
0-150 PSID	4.0	7.3	1500 PSI
0-200 PSID	4.0	7.6	1500 PSI
0-300 PSID	4.0	8.2	1500 PSI
0-600 PSID	5.0	10.0	1500 PSI
0-1000 PSID	12.0	25.0	3000 PSI
0-2000 PSID	15.0	30.0	3000 PSI
0-3000 PSID	37.0	75.0	7000 PSI
0-5000 PSID	45.0	90.0	7000 PSI

## INSTALLATION NOTES

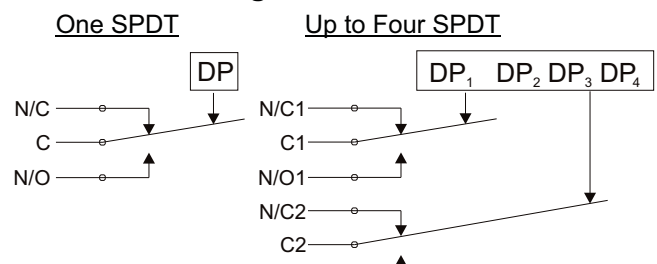
**Orientation** - The 6PSBD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

### Wiring Schematic

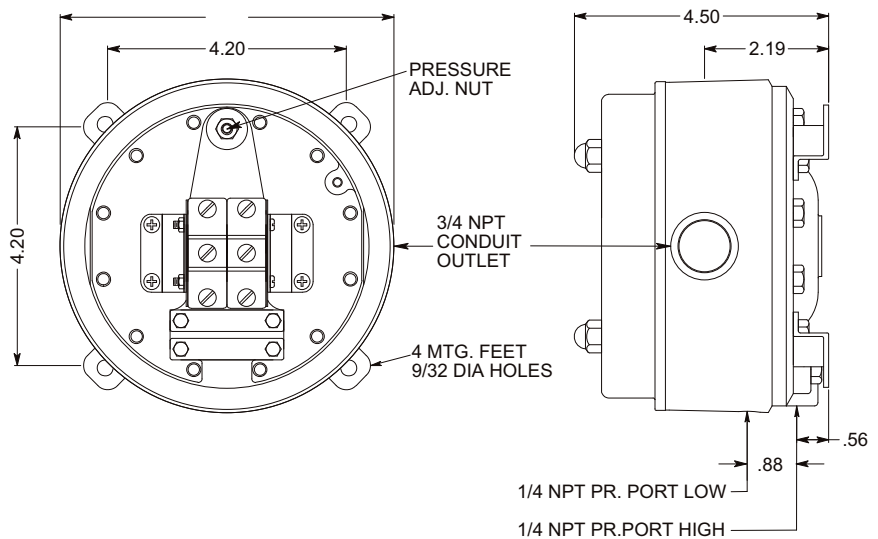


# 6PSXD

## DIFFERENTIAL PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-15 psid & 0-30 psid
- NEMA 7, 9 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Designed for low differential pressure applications
- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, high/low, & manual reset
- Switch configuration can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS   W   1   D   R>   2**

**MODEL SERIES**

**HOUSING**  
**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**  
**D** - DIFFERENTIAL PRESSURE

**SPECIAL FEATURES**  
**--** NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SN** - SPECIAL TRIM BASE BRASS - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SK** - SPECIAL TRIM BASE ALUMINUM - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES) - DECREASES MAX WORKING PRESSURE TO 50 PSI  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.  
 Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.16 PSID	.32 PSID	100 PSI
0-30 PSID	.23 PSID	.47 PSID	100 PSI

## INSTALLATION NOTES

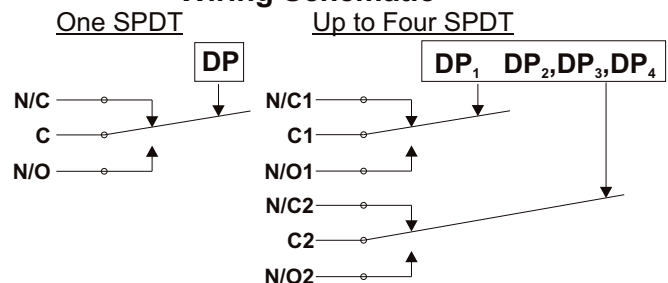
**Orientation** - The 6PSXD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

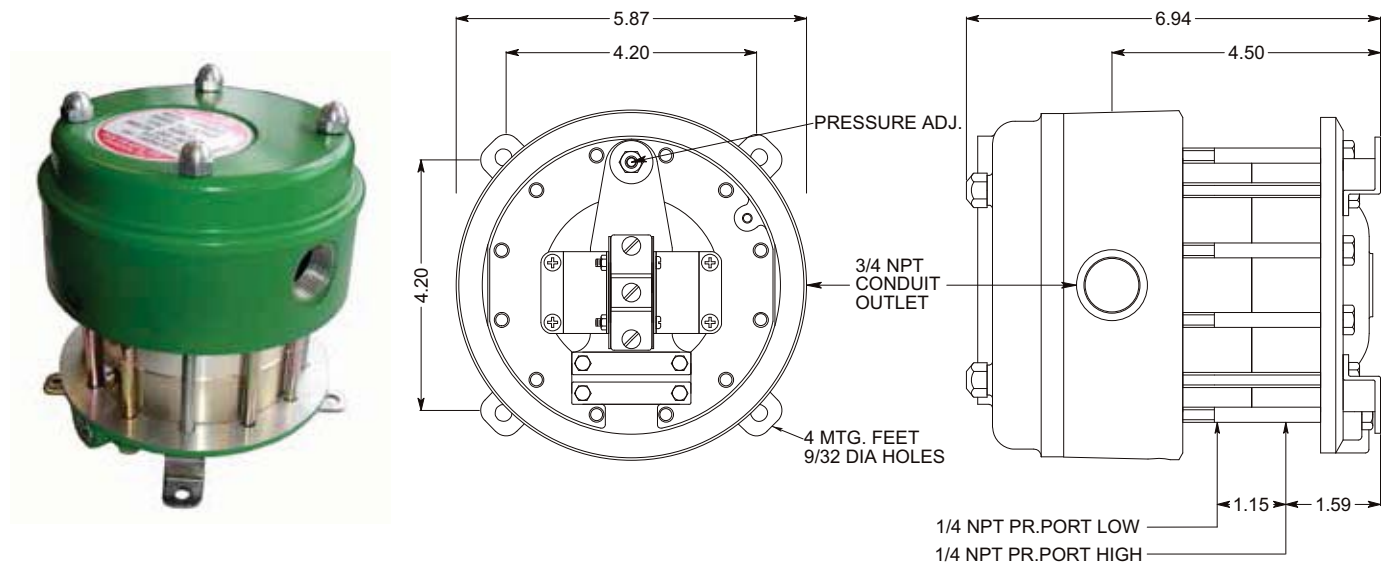


# 6PSXD0

## DIFFERENTIAL PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-15, 0-30, & 0-60 psid
- NEMA 7, 9 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available




#### GENERAL DESCRIPTION

- Designed to sense low differential pressures between high pressure sources
- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

- PHYSICAL DATA (Standard)**  
-see page 2 for special features
- Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 3/4 NPT  
**Housing:** Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1/2% of range (for one SPDT Switch)  
**Drift:** <1% of range (100,000 operations)  
**Weight:** Approx. 5 lbs.  
**Contact Ratings:** 15A - 125, 250, 480 VAC  
**Port Material:** Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.  
**Contact Listings:** UL Recognized, CSA Certified

 Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS W 1 DO E 2**

MODEL SERIES

TYPE OF ELECTRIC SWITCHES

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

**DO** - LOW D.P. - HIGH WORKING PRESSURE

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT -  
 1 A - 125 VAC

### SPECIAL FEATURES

- "." - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.3	.6	2500 PSI
0-30 PSI	.35	.7	2500 PSI
0-60 PSI	.7	1.3	2500 PSI

## INSTALLATION NOTES

**Orientation** - The 6PSDO will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

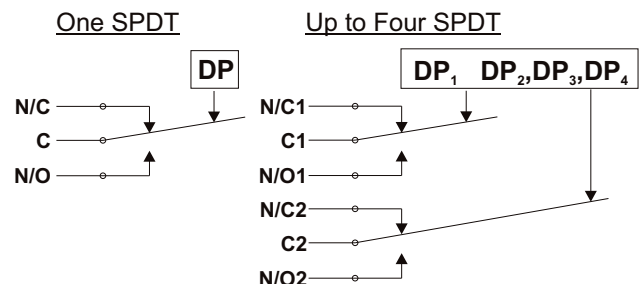
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

### Wiring Schematic

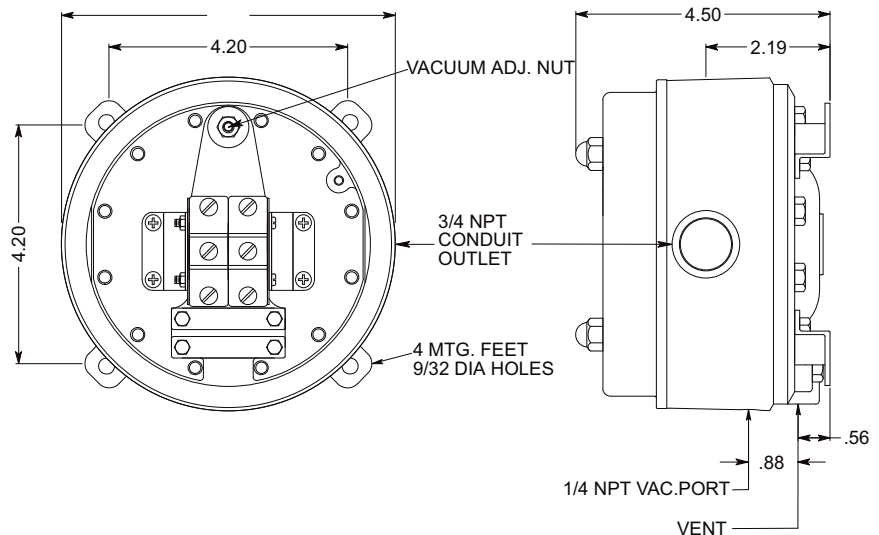


# 6PSXVAC

## VACUUM SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 0-30 IN/HG and -30/0/30 IN/HG
- Rugged NEMA 7, 9 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum sensing element uses strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    SSZ    2**

MODEL SERIES

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL VACUUM ADJUSTMENT  
**F** - FLANGE BASE MOUNTING (1 1/2" - 150# ASA FLANGE)  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING 1/2 NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. VAC.  
**R<** - MANUAL RESET, SWITCH ON DECR. VAC.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - NOT A UL-LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-30 IN/HG	.3 HG	.6 HG	50 PSI
-30/0/30 IN/HG	.5 HG	1.0 HG	50 PSI

## INSTALLATION NOTES

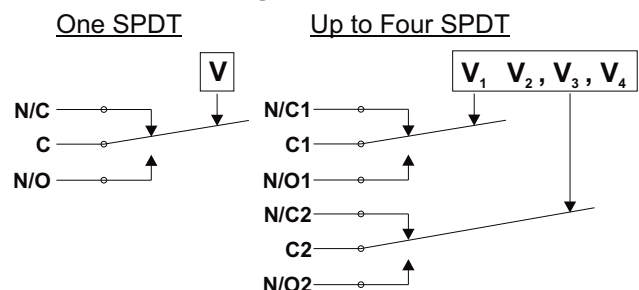
**Orientation** - The 6PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic



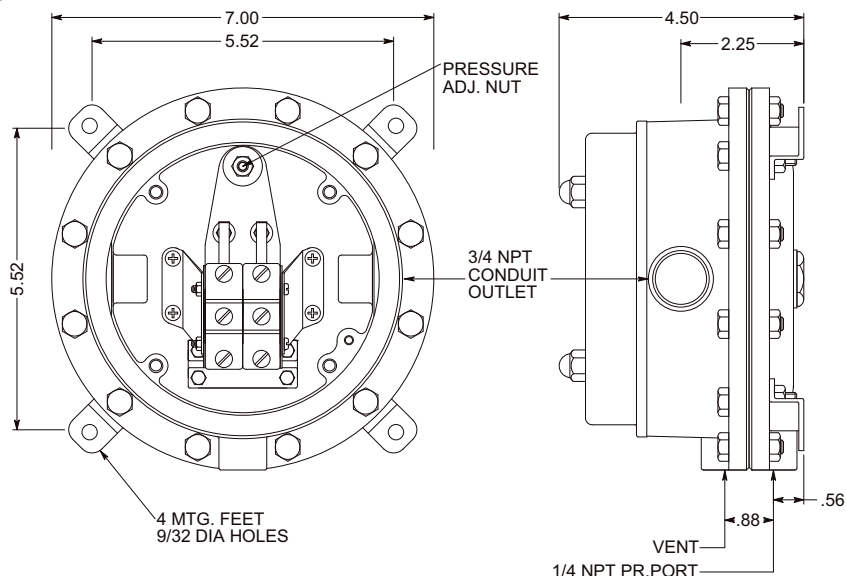


# 7PSX

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 1.5 WC to 0-150 WC
- NEMA 7, 9 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Designed for low pressure applications
- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS**   **W**   **1**   **SST**   **2**

MODEL SERIES

TYPE OF ELECTRIC SWITCHES

**HOUSING**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"-** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**F** - FLANGE BASE MOUNTING  
**G** - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PR  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL-LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**1** - LOW DEADBAND  
15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-1.5 WC	.15	-	25 PSI
0-3 WC	.16	-	25 PSI
0-6 WC	.2	.4	25 PSI
0-15 WC	.3	.6	25 PSI
0-30 WC	.6	1.1	25 PSI
0-60 WC	.7	1.4	25 PSI
0-100 WC	.8	1.6	25 PSI
0-150 WC	1.2	2.4	25 PSI

## INSTALLATION NOTES

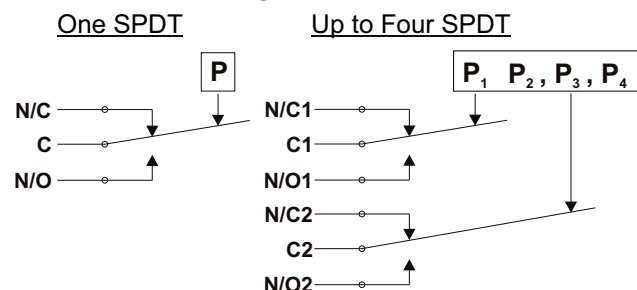
**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

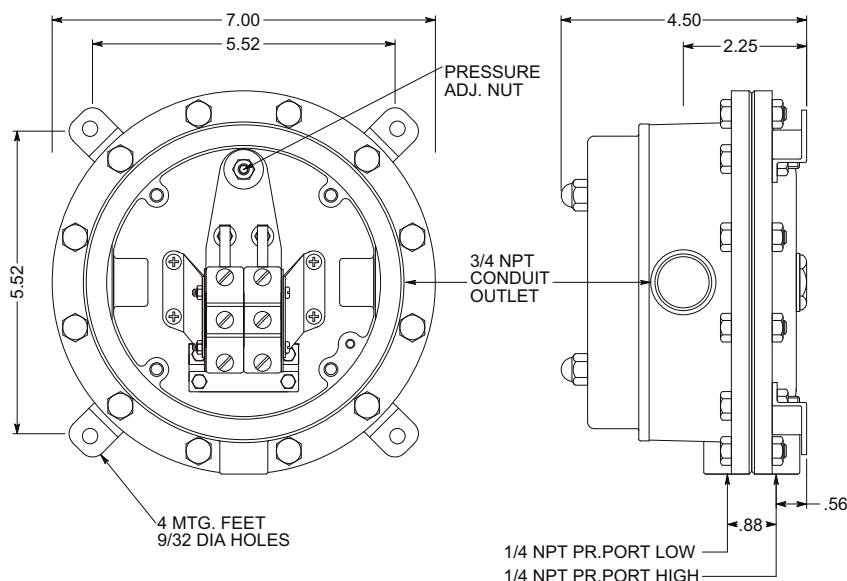


# 7PSXD

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-1.5 WC/DP to 0-200 WC/DP
- NEMA 7, 9 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Designed for low differential pressure applications
- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2 % of range (for one SPDT Switch)

**Drift:** <1 % of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS   W   1   D   L   2**

**MODEL SERIES**

**HOUSING'**

W - WATERTIGHT - NEMA 4X & 12  
X - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

D - DIFFERENTIAL PRESSURE

**SPECIAL FEATURES**

-- NO SPECIAL FEATURES  
A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
E - EXTERNAL PRESSURE ADJUSTMENT  
EE - TWO EXTERNAL PRESSURE ADJUSTMENTS  
G - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PR  
L - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
M - MALE PIPE MOUNTING 1/2 NPT  
P - PANEL MOUNTING  
R> - MANUAL RESET, SWITCH ON INCR. PR.  
R< - MANUAL RESET, SWITCH ON DECR. PR.  
SS - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX. WORKING PRESSURE TO 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SN - SPECIAL TRIM BASE BRASS - INCREASES MAX. WORKING PRESSURE TO 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SK - SPECIAL TRIM BASE ALUMINUM - INCREASES MAX. WORKING PRESSURE TO 50 PSI (RANGES UP TO 0-6 WC/DP), 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SI - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
SY - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
T - PTFE PROTECTED DIAPHRAGM  
U - ADDITIONAL PAINTING AFTER ASSEMBLY  
V - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
Z - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC  
2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC  
4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
6 - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC TYPE "1"	TYPE "2"	MAX. WORKING PRESSURE
0-1.5 WC/DP	.17"WC	-	25 PSI
0-3 WC/DP	.18"WC	-	25 PSI
0-6 WC/DP	.23"WC	.45"WC	25 PSI
0-15 WC/DP	.33"WC	.65"WC	25 PSI
0-30 WC/DP	.6"WC	1.2"WC	25 PSI
0-60 WC/DP	.7"WC	1.4"WC	25 PSI
0-100 WC/DP	.8"WC	1.6"WC	25 PSI
0-150 WC/DP	1.2"WC	2.5"WC	25 PSI
0-200 WC/DP	1.8"WC	3.1"WC	25 PSI

## INSTALLATION NOTES

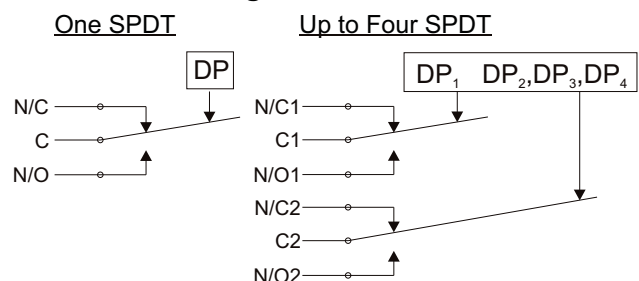
**Orientation** - The 7PSD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

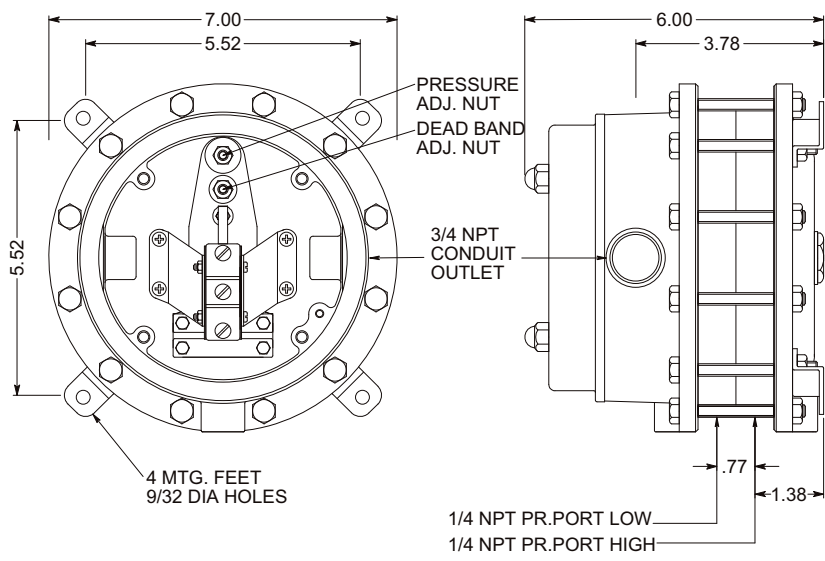


# 7PSXD0

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 0-6 WC/DP to 0-200 WC/DP
- NEMA 7, 9 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION


- Designed to sense low differential pressures between high pressure sources
- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

- Maximum Ambient Temperature:** 180°F
- Minimum Ambient Temperature:** -20°F
- Pressure Connection:** 1/4 NPT
- Electrical Connection:** 3/4 NPT
- Housing:** Cast Aluminum
- Deadband:** Fixed
- Sensitivity:** 1/2% of range (for one SPDT Switch)
- Drift:** <1% of range (100,000 operations)
- Weight:** Approx. 6 lbs.
- Contact Ratings:** 15A - 125, 250, 480 VAC
- Port Material:** Aluminum
- Diaphragm Material:** Buna N
- Set Point Adjustment:** Screw type, field adjustable
- No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.
- Contact Listings:** UL Recognized, CSA Certified

 Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

7PS
W
1
DO
E
2

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12

**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.

**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.

**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT

**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT

**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

**DO** - LOW D.P. - HIGH WORKING PRESSURE

**SPECIAL FEATURES**

-- NO SPECIAL FEATURES

**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)

**E** - EXTERNAL PRESSURE ADJUSTMENT

**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS

**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)

**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)

**M** - MALE PIPE MOUNTING ½ NPT

**P** - PANEL MOUNTING

**R>** - MANUAL RESET, SWITCH ON INCR. PR.

**R<** - MANUAL RESET, SWITCH ON DECR. PR.

**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL

**U** - ADDITIONAL PAINTING AFTER ASSEMBLY

**V** - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND

15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND

15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)

10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT -

1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-6 WC/DP	1.1	2.2	1500 PSI
0-15 WC/DP	1.2	2.3	1500 PSI
0-30 WC/DP	1.2	2.3	1500 PSI
0-60 WC/DP	1.3	2.5	1500 PSI
0-100 WC/DP	1.5	2.9	1500 PSI
0-150 WC/DP	1.7	3.4	1500 PSI
0-200 WC/DP	1.9	3.8	1500 PSI

## INSTALLATION NOTES

**Orientation** - The 7PSDO will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value

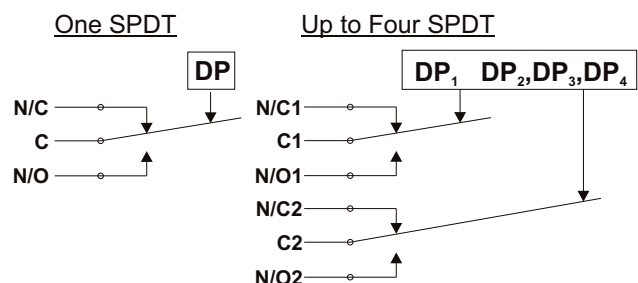
UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

### Wiring Schematic

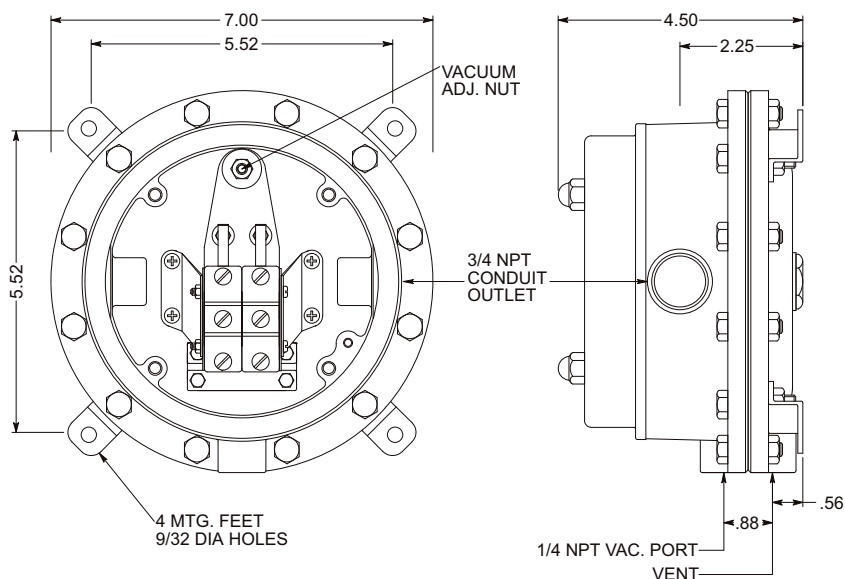


# 7PSXVAC

## VACUUM SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges from 1.5 W.C. To 0-150 W.C. & 15-30 IN/HG
- NEMA 7, 9 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Designed for most low-pressure applications
- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS    W    1    SSZ    2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL VACUUM ADJUSTMENT  
**EE** - TWO EXTERNAL VACUUM ADJUSTMENTS  
**G** - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW VAC.  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. VAC.  
**R<** - MANUAL RESET, SWITCH ON DECR. VAC.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE DIAPHRAGM (5 PSI MAX. WORKING PRESSURE)  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-1.5 WC/VAC	.17 WC	-	15 PSI
0-3 WC/VAC	.18 WC	-	15 PSI
0-6 WC/VAC	.23 WC	.45 WC	15 PSI
0-15 WC/VAC	.33 WC	.65 WC	15 PSI
0-30 WC/VAC	.6 WC	1.2 WC	15 PSI
0-60 WC/VAC	.7 WC	1.4 WC	15 PSI
0-100 WC/VAC	.8 WC	1.6 WC	15 PSI
0-150 WC/VAC	1.2 WC	2.5 WC	15 PSI
15-30 IN/HG	.06 HG	.12 HG	15 PSI

## INSTALLATION NOTES

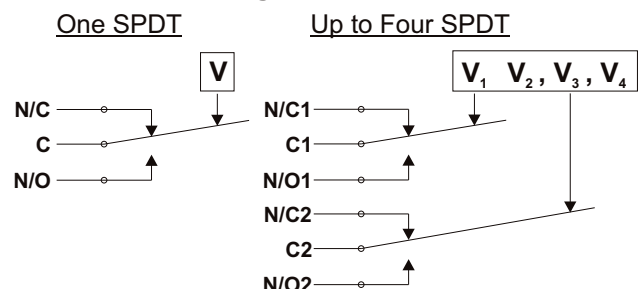
**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

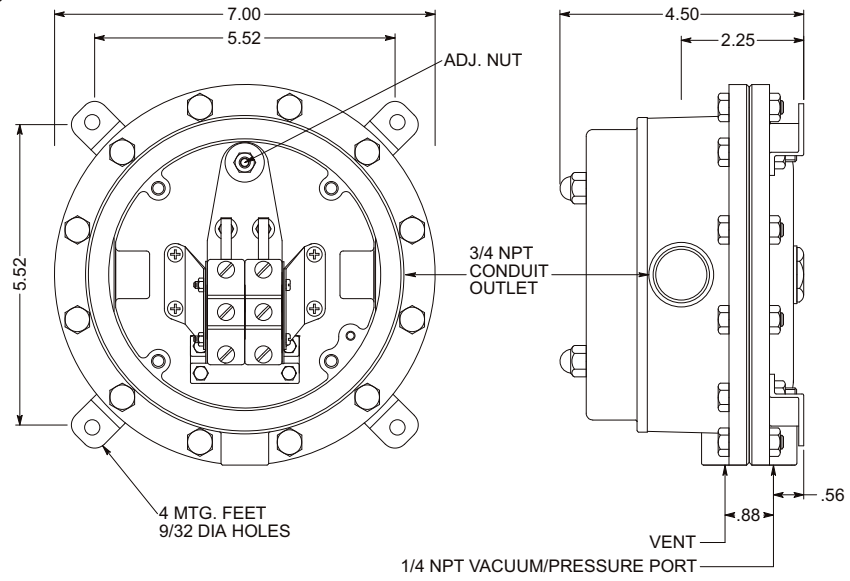


# 7PSXVACPR

## VACUUM SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 3 W C to 0-100 WC
- NEMA 7, 9 housing
- Class I, Div. I, Gr.C & D Available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION


- Designed for low vacuum and pressure applications where it may be useful to have both pressure and vacuum settings in one device. These switches are very versatile and can be built with up to four set points either above and/or below atmospheric with just one process connection.
- Explosion-proof cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard)

-see page 2 for special features

- Maximum Ambient Temperature:** 180°F
- Minimum Ambient Temperature:** -20°F
- Vacuum/Pressure Connection:** 1/4 NPT
- Electrical Connection:** 3/4 NPT
- Housing:** Cast Aluminum
- Deadband:** Fixed
- Sensitivity:** 1/2% of range (for one SPDT Switch)
- Drift:** <1% of range (100,000 operations)
- Weight:** Approx. 6 lbs.
- Contact Ratings:** 15A - 125, 250, 480 VAC
- Port Material:** Aluminum
- Diaphragm Material:** Buna N
- Set Point Adjustment:** Screw type, field adjustable
- No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.
- Contact Listings:** UL Recognized, CSA Certified

 Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS    W    1    SSZ    2**

MODEL SERIES

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL ADJUSTMENT  
**EE** - TWO EXTERNAL ADJUSTMENTS  
**G** - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW VAC.  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. VAC.  
**R<** - MANUAL RESET, SWITCH ON DECR. VAC.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
-3/0/3 WC	.45 WC	.87 WC	25 PSI
-6/0/6 WC	.8 WC	1.6 WC	25 PSI
-15/0/15 WC	1.7 WC	3.4 WC	25 PSI
-30/0/30 WC	2.5 WC	5.0 WC	25 PSI
-60/0/60 WC	4.8 WC	9.6 WC	25 PSI
-100/0/100 WC	8.0 WC	16.0 WC	25 PSI

## INSTALLATION NOTES

**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum/pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value

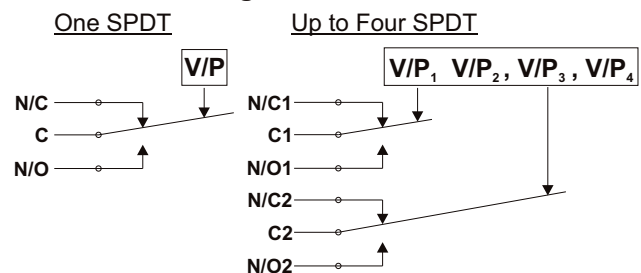
UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

### Wiring Schematic



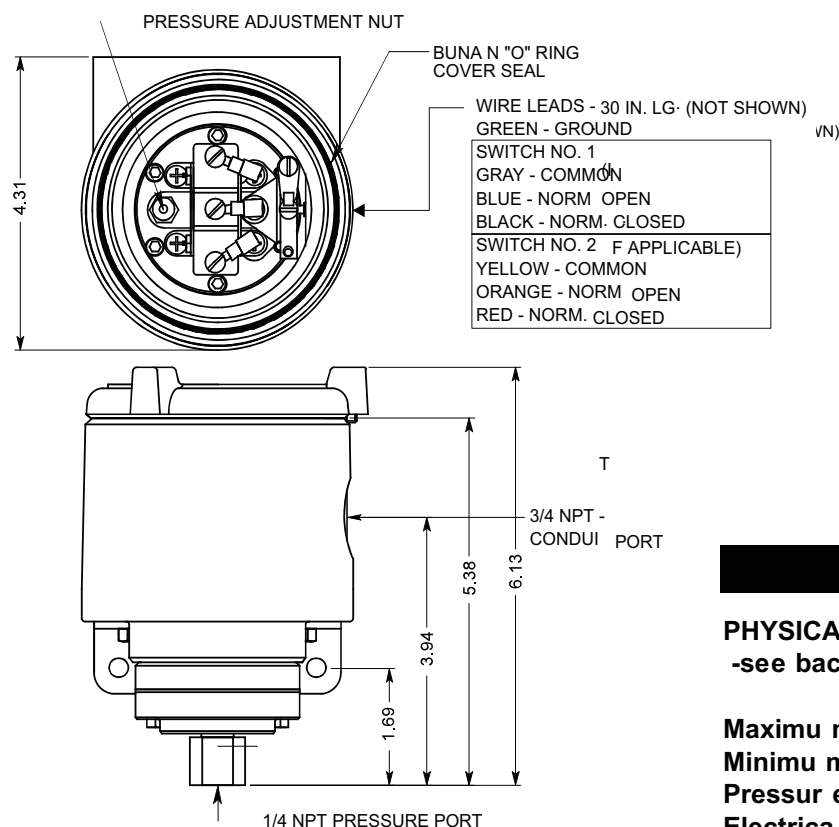


# 42PSX

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Ranges 5-300 psi
- NEMA 4, 7, & 9; Class I Div. 1, Gr. A, B, C, D
- One or two SPDT contacts
- Various wetted materials available
- Piston or bellows sensing elements also available



## SPECIFICATIONS

### PHYSICAL DATA (Standard) -see back for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 3/4 NPT  
**Housing:** 355/356 Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1% of range (for 1 SPDT)  
**Drift:** <2% of range (100,000 operations)  
**Weight:** Approx. 4 lbs.  
**Contact Ratings:** 15A - 125, 250 VAC (1 S.P.D.T.)  
**OR:** 5A - 125, 250 VAC (2 S.P.D.T.)  
**Port Material:** Aluminum & Brass  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** One or Two S.P.D.T.  
**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
 Industrial Controls Equipment Type 4 & 12, File E130423,  
 Pressure Operated Switch for Hazardous Locations,  
 Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

## GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Simple & proven switching mechanism
- Pressure-sensing elements outside the flame path are designed to accommodate a wide variety of wetted materials, that are well-suited for almost any corrosive process
- The versatile design of the 42PSX series is highly configurable to accommodate different pressure-sensing element arrangements and materials

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**42PS      X      1      SST      2**

**MODEL SERIES**  
**HOUSING**  
**NUMBER OF ELECTRIC SWITCHES**

**SPECIAL FEATURES\***

**TYPE OF ELECTRIC SWITCHES**

X - EXPLOSION PROOF - NEMA 4, 7 & 9

1 - ONE S.P.D.T.  
 2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

1 - LOW DEADBAND - 1 S.P.D.T.  
 15A - 125, 250 VAC

2 - STANDARD DEADBAND - 1 S.P.D.T.  
 15A - 125, 250 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED - 1 S.P.D.T. (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

5 - SUB MINIATURTE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC

6 - GOLD CONTACT - 1 S.P.D.T.  
 1A - 125 VAC

"-" - NO SPECIAL FEATURES - STANDARD CONSTRUCTION  
 J - SAFETY SEAL - BETWEEN MAIN DIAPHRAGM AND SWITCH HOUSING  
 M - 1/2 NPT MALE PIPE MOUNTING  
 SS - STAINLESS STEEL WETTED TRIM MATERIAL  
 SN - BRASS WETTED TRIM MATERIAL  
 SI - PTFE WETTED TRIM MATERIAL  
 SY - PVC WETTED TRIM MATERIAL  
 T - PTFE PROTECTED DIAPHRAGM  
 U - SPECIAL EPOXY PAINT  
 Z - VITON DIAPHRAGM MATERIAL

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-5 PSI	0.5 PSI	0.7 PSI	300 PSI
0-10 PSI	0.6 PSI	1.3 PSI	300 PSI
0-20 PSI	0.7 PSI	2.3 PSI	300 PSI
0-50 PSI	2.1 PSI	7.5 PSI	600 PSI
0-100 PSI	3.0 PSI	9.8 PSI	600 PSI
0-200 PSI	3.9 PSI	17.5 PSI	600 PSI
0-300 PSI	5.0 PSI	17.5 PSI	600 PSI

## INSTALLATION NOTES

**Orientation** - The 42PSX will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches are provided pre-wired with 30" leads. To reduce the risk of explosion, conduit runs must have a sealing fitting connected within 18 inches of the enclosure.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") microswitch is used.

Deadband is affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use 1/2 the TYPE 2 table values.

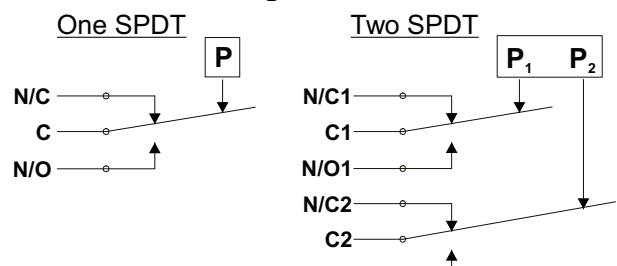
**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "5"** - Sub Miniature - 2 S.P.D.T. - See TYPE 5 table values .

**Type "6"** - Gold Contact - Use TYPE 2 table values.

## Wiring Schematic

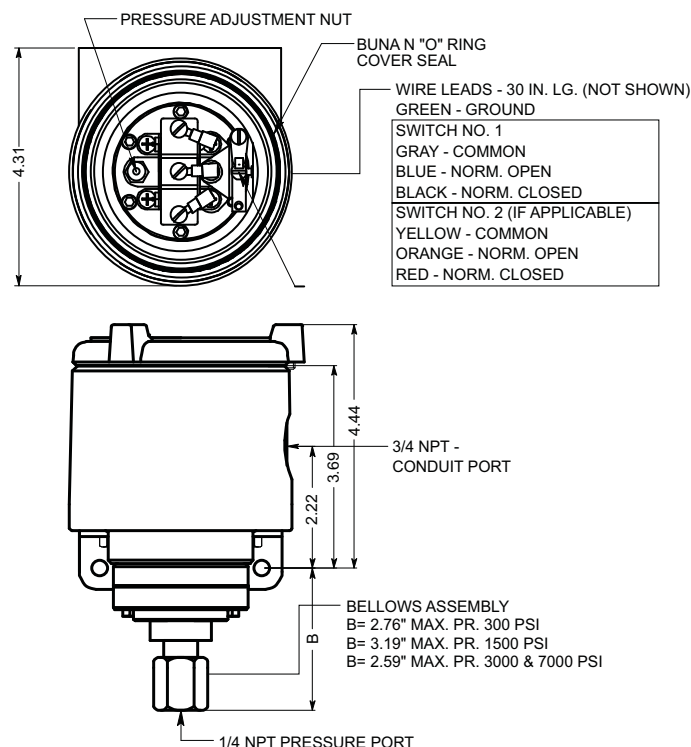


# 42PSXB

## PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Ranges from 10 to 3000 PSI
- NEMA 4, 7, & 9 housing
- UL Listed Class I, Div. I, Gr. A, B, C, D
- One or Two SPDT Contacts
- All Welded 316 Stainless Bellows
- Piston and diaphragm sensing elements also available



## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see back for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** 355/356 Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1% of range (for 1 SPDT)

**Drift:** <2% of range (100,000 operations)

**Weight:** Approx. 4 lbs.

**Contact Ratings:** 15A - 125, 250 VAC (1 S.P.D.T.)

**OR:** 5A - 125, 250 VAC (2 S.P.D.T.)

**Port Material:** 316 Stainless Steel

**Bellows Material:** 316 Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified

## GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Simple and proven switching mechanism
- Pressure-sensing elements outside the flame path are designed to accommodate a wide variety of wetted materials, that are well-suited for almost any corrosive process
- The versatile design of the 4PSX series is highly-configurable to accommodate different pressure-sensing element arrangements and materials
- S/S bellows



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Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**42PS    X    1    B    U    2**

**MODEL SERIES** \_\_\_\_\_

**HOUSING** \_\_\_\_\_  
 X - EXPLOSION PROOF - NEMA 4, 7 & 9

**NUMBER OF ELECTRIC SWITCHES** \_\_\_\_\_  
 1 - ONE S.P.D.T.  
 2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SENSING ELEMENT** \_\_\_\_\_  
 B - BELLOWS SENSING ELEMENT (STANDARD)

**SPECIAL FEATURES** \_\_\_\_\_  
 M - 1/2 NPT MALE PIPE MOUNTING  
 U - SPECIAL EPOXY PAINT  
 V - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**5** - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC  
**6** - GOLD CONTACT -  
 1 A - 125 VAC

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAXIMUM PRESSURE	
	TYPE "2"	TYPE "5"	TYPE "2"	TYPE "5"
0-10 PSI	1.2 PSI	2.9 PSI	300 PSI	300 PSI
0-20 PSI	1.5 PSI	3.8 PSI	300 PSI	300 PSI
0-50 PSI	1.7 PSI	7.2 PSI	300 PSI	300 PSI
0-100 PSI	2.3 PSI	20.2 PSI	300 PSI	1500 PSI
0-250 PSI	8.8 PSI	36.8 PSI	1500 PSI	1500 PSI
0-500 PSI	12.0 PSI	84 PSI	1500 PSI	3000 PSI
0-750 PSI	24.5 PSI	107 PSI	3000 PSI	3000 PSI
0-1000 PSI	31.2 PSI	257 PSI	3000 PSI	7000 PSI
0-1500 PSI	83 PSI	317 PSI	7000 PSI	7000 PSI
0-3000 PSI	100 PSI	385 PSI	7000 PSI	7000 PSI

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") microswitch is used.  
 Deadband is affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use 1/2 the TYPE 2 table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "5"** - Sub Miniature - 2 S.P.D.T. - See TYPE 5 table values.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

## INSTALLATION NOTES

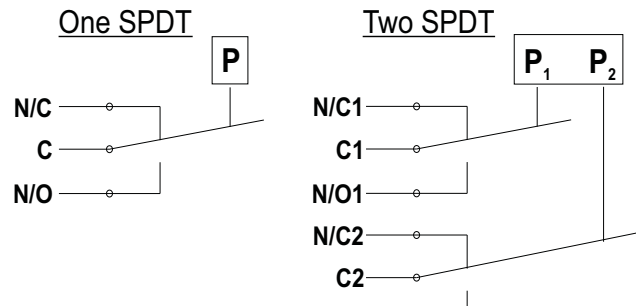
**Orientation** - The 42PSXB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches are provided pre-wired with 30" leads. To reduce the risk of explosion, conduit runs must have a sealing fitting connected within 18 inches of the enclosure.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

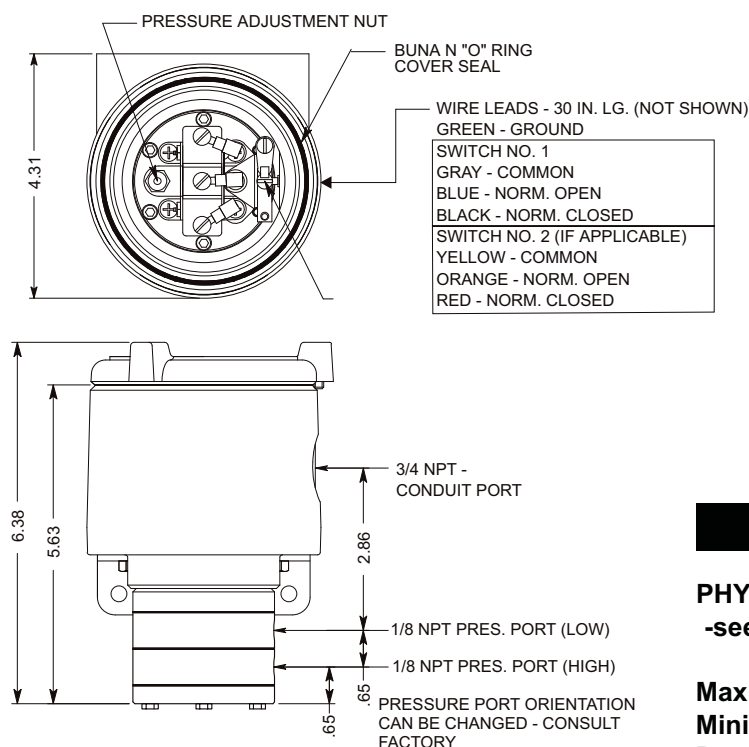


# 42PSXD

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 10-100 psid
- NEMA 4, 7 & 9 housing
- UL Listed Class I, Div. I, Gr. A, B, C, D
- One or two SPDT contacts
- Various Wetted Materials Available
- Piston and bellows sensing elements also available



## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see back for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connections:** 1/8 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** 355/356 Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1% of range (for 1 SPDT)

**Drift:** <2% of range (100,000 operations)

**Weight:** Approx. 4 lbs.

**Contact Ratings:** 15A - 125, 250 VAC (1 S.P.D.T.)

**OR:** 5A - 125, 250 VAC (2 S.P.D.T.)

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

## GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Simple and proven switching mechanism
- Pressure-sensing elements outside the flame path are designed to accommodate a wide variety of wetted materials, that are well-suited for almost any corrosive process
- The versatile design of the 4PSX series is highly-configurable to accommodate different pressure-sensing element arrangements and materials and Piston sensing elements are available. These sensing elements can also be configured for Pressure and Vacuum applications. Models with these features and with ranges from low pressure to high pressure are described in separate catalog sheets.



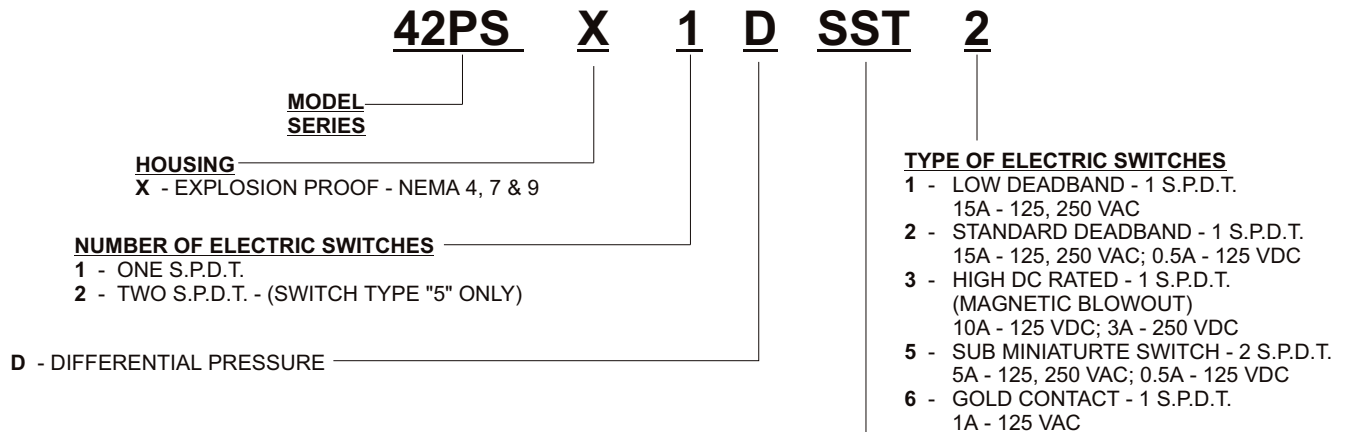
LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



### SPECIAL FEATURES\*

O - HIGH OVER PRESSURE- INCREASES MAX. WORKING PRESSURE TO 300 PSI  
SS - STAINLESS STEEL WETTED TRIM MATERIAL  
SN - BRASS WETTED TRIM MATERIAL  
SI - PTFE WETTED TRIM MATERIAL (15 PSI MAX. PR.)  
SY - PVC WETTED TRIM MATERIAL  
T - PTFE PROTECTED DIAPHRAGM  
U - SPECIAL EPOXY PAINT  
Z - VITON DIAPHRAGM MATERIAL

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-10 PSID	0.96 PSID	2.4 PSID	100 PSI
0-20 PSID	1.3 PSID	4.5 PSID	100 PSI
0-50 PSID	2.1 PSID	7.6 PSID	100 PSI
0-100 PSID	3.0 PSID	N/A	100 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") microswitch is used.

Deadband is affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use 1/2 the TYPE 2 table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "5"** - Sub Miniature - 2 S.P.D.T. - See TYPE 5 table values .

**Type "6"** - Gold Contact - Use TYPE 2 table values.

## INSTALLATION NOTES

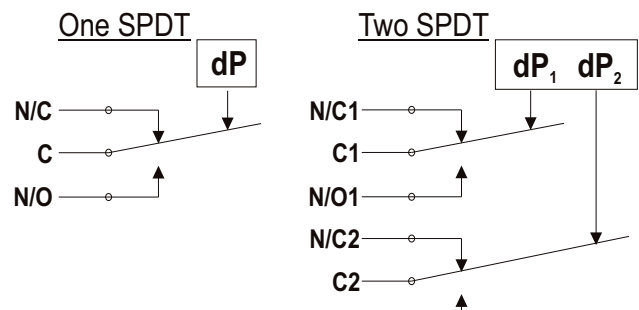
**Orientation** - The 42PSXD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches are provided pre-wired with 30" leads. To reduce the risk of explosion, conduit runs must have a sealing fitting connected within 18 inches of the enclosure.

**Pressure Connections** - 1/8 NPT female is standard.

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

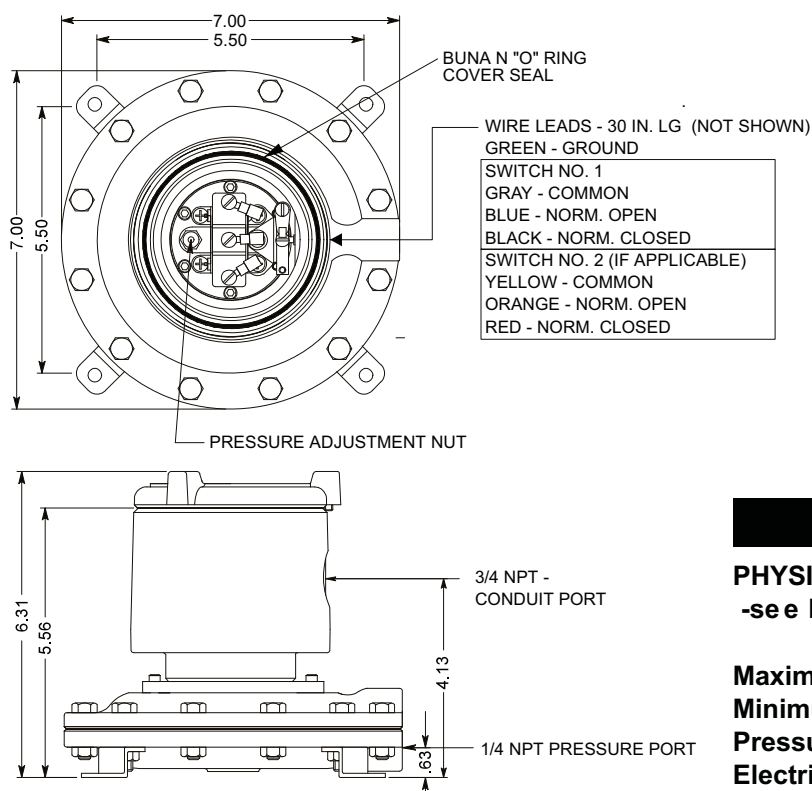


# 47PSX

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 5-200 IN/WC
- NEMA 4, 7, & 9 housing; Class I, Div. I, Gr. A, B, C, D
- One or two SPDT contacts
- Various wetted materials available
- Piston and bellows sensing elements also available



## SPECIFICATIONS

### PHYSICAL DATA (Standard) -see back for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 3/4 NPT  
**Housing:** 355/356 Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1% of range (for 1 SPDT)  
**Drift:** <2% of range (100,000 operations)  
**Weight:** Approx. 8 lbs.  
**Contact Ratings:** 15A - 125, 250 VAC (1 S.P.D.T.)  
**OR:** 5A - 125, 250 VAC (2 S.P.D.T.)  
**Port Material:** Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** One or Two S.P.D.T.  
**Contact Listings:** UL Recognized, CSA Certified

## GENERAL DESCRIPTION

- Explosion-proof cast-aluminum housing
- Simple and proven switching mechanism
- Pressure-sensing elements outside the flame-path are designed to accommodate a wide variety of wetted materials, that are well-suited for almost any corrosive process
- The versatile design of the 4PSX series is highly-configurable to accommodate different pressure-sensing elements arrangements and materials



Underwriters Laboratories, Inc. Listed:  
 Industrial Controls Equipment Type 4 & 12, File E130423,  
 Pressure Operated Switch for Hazardous Locations,  
 Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**47PS    X    1    SST    2**

**MODEL SERIES**  
47PS - EXPLOSION PROOF - NEMA 4, 7 & 9

**HOUSING**  
X - EXPLOSION PROOF - NEMA 4, 7 & 9

**NUMBER OF ELECTRIC SWITCHES**  
1 - ONE S.P.D.T.  
2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES\***  
 " " - NO SPECIAL FEATURES - STANDARD CONSTRUCTION  
 G - EXTRA SENSITIVE (DOUBLE DIAPHRAGM)  
 J - SAFETY SEAL - BETWEEN MAIN DIAPHRAGM AND SWITCH HOUSING  
 M - 1/2 NPT MALE PIPE MOUNTING  
 SS - STAINLESS STEEL WETTED TRIM MATERIAL  
 SN - BRASS WETTED TRIM MATERIAL  
 SI - PTFE WETTED TRIM MATERIAL (15 PSI MAX. PR.)  
 SY - PVC WETTED TRIM MATERIAL  
 T - PTFE PROTECTED DIAPHRAGM  
 U - SPECIAL EPOXY PAINT  
 Z - VITON DIAPHRAGM MATERIAL

**TYPE OF ELECTRIC SWITCHES**  
 1 - LOW DEADBAND - 1 S.P.D.T.  
 15A - 125, 250 VAC  
 2 - STANDARD DEADBAND - 1 S.P.D.T.  
 15A - 125, 250 VAC; 0.5A - 125 VDC  
 3 - HIGH DC RATED - 1 S.P.D.T. (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
 5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC  
 6 - GOLD CONTACT - 1 S.P.D.T.  
 1A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-5 WC	1.42 WC	1.8 WC	25 PSI
0-10 WC	1.49 WC	2.2 WC	25 PSI
0-20 WC	1.55 WC	3.8 WC	25 PSI
0-50 WC	1.68 WC	5.3 WC	25 PSI
0-100 WC	2.3 WC	8.5 WC	25 PSI
0-150 WC	3.4 WC	12.5 WC	25 PSI
0-200 WC	3.8 WC	N/A	25 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") microswitch is used.

Deadband is affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use 1/2 the TYPE 2 table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "5"** - Sub Miniature - 2 S.P.D.T. - See TYPE 5 table values.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

## INSTALLATION NOTES

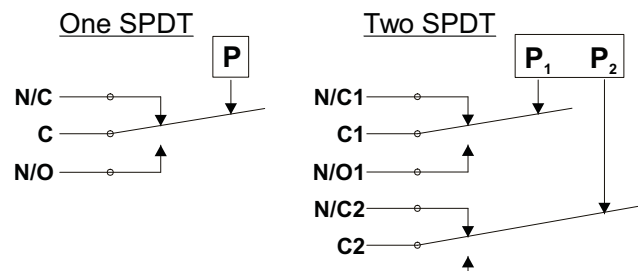
**Orientation** - The 47PSX will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches are provided pre-wired with 30" leads. To reduce the risk of explosion, conduit runs must have a sealing fitting connected within 18 inches of the enclosure.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## WIRING SCHEMATIC







# WEATHER TIGHT PRODUCTS

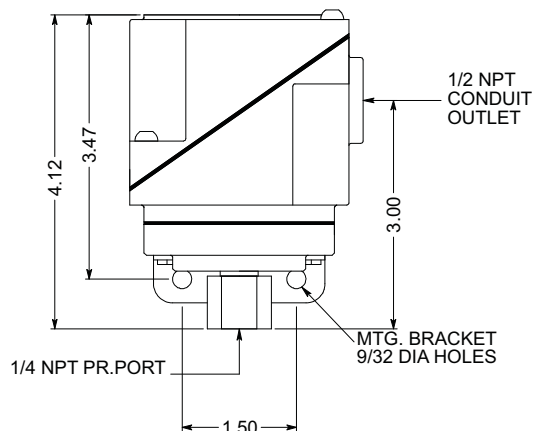
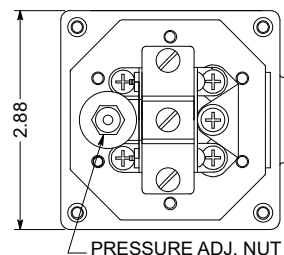
NEMA 4 and NEMA 4X-rated, Solon Manufacturing Co. offers weather-tight options with water and corrosion resistant features. Ideal for harsh and unpredictable environments, weather-tight industrial pressure switches insulate your valuable assets in outdoor and wash-down conditions.



# 2PSW

## WEATHER TIGHT PRESSURE SWITCH DIAPHRAGM SENSING ELEMENT

- Ranges from 2-300 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the vacuum setting. Features s/s screws that retain the cover gasket when the enclosure cover is removed
- Standard vacuum sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)
- Modular design of pressure-sensing elements accommodates high/low and differential pressure using diaphragm, bellows or piston for actuation

### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see back for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Diecast Aluminum - Painted per ASTM B117

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 1.5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Fitting Material:** Brass

**Trim Material:** Anodized Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable from 10 to 100% of range

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PS    W    1    SST    2**

**MODEL SERIES**

**HOUSING**  
 ' ' - NO HOUSING  
 W - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**  
 1 - ONE S.P.D.T.  
 2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES**  
 M - 1/2 NPT MALE PIPE MOUNTING  
 O - HIGH OVERPRESSURE - INCREASES MAX. PRESSURE TO 1000 PSI FOR RANGES 0-2 PSI TO 0-20 PSI; MAX. PRESSURE IS 1500 PSI FOR RANGES 0-50 PSI AND UP  
 SS - STAINLESS STEEL WETTED TRIM MATERIAL  
 SN - BRASS WETTED TRIM MATERIAL  
 SI - PTFE WETTED TRIM MATERIAL  
 SY - PVC WETTED TRIM MATERIAL  
 T - PTFE PROTECTED DIAPHRAGM  
 U - ADDITIONAL PAINTING AFTER ASSEMBLY  
 V - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT  
 Z - VITON DIAPHRAGM MATERIAL

**TYPE OF ELECTRIC SWITCHES**  
 1 - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
 2 - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
 3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
 4 - HERMETICALLY SEALED 11 AMP, 125, 250VAC; 5A-30 VDC  
 5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC  
 6 - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-2 PSI	.25 PSI	.23 PSI	20 PSI
0-5 PSI	.27 PSI	.50 PSI	20 PSI
0-10 PSI	.34 PSI	.90 PSI	50 PSI
0-20 PSI	.50 PSI	1.9 PSI	50 PSI
0-50 PSI	1.6 PSI	6 PSI	250 PSI
0-100 PSI	1.9 PSI	8.3 PSI	250 PSI
0-200 PSI	4.4 PSI	16 PSI	500 PSI
0-300 PSI	5.3 PSI	22 PSI	500 PSI

## INSTALLATION NOTES

**Orientation** - The 2PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use 1/2 TYPE 2 table values.

**Type "2"** - Std. Deadband - Use table values.

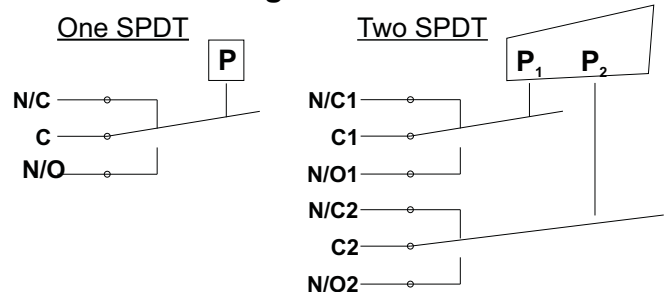
**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch- Use table value  
 UL-recognized component, guide WSQ2, File E85076. All stainless steel construction

**Type "5"** - Sub Miniature - 2 S.P.D.T. - Use TYPE 5 table values.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

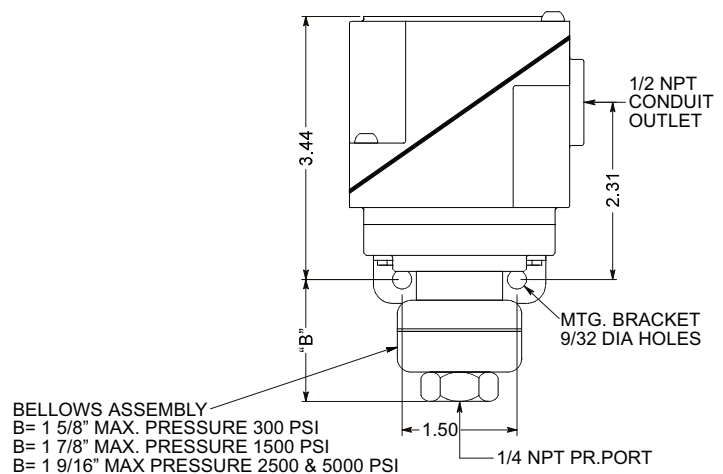
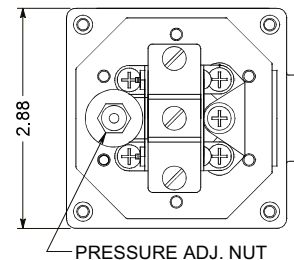
## Wiring Schematic



# 2PSWB

## WEATHER TIGHT PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges from 10-3000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Stainless steel sensing element



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the vacuum setting. Features s/s screws that retain the cover gasket when the enclosure is removed
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Diecast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 1.8 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

2PS
W
1
B
V
2

**MODEL SERIES**

**HOUSING**  
 ' ' - NO HOUSING  
**W** - WATERTIGHT - NEMA 4, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**  
**1** - ONE S.P.D.T.  
**2** - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SENSING ELEMENT**  
**B** - BELLOWS SENSING ELEMENT (STANDARD)

**SPECIAL FEATURES**  
**M** - 1/2 NPT MALE PIPE MOUNTING  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**5** - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC

**6** - GOLD CONTACT -  
 1 A - 125 VAC

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAXIMUM PRESSURE	
	TYPE "2"	TYPE "5"	TYPE "2"	TYPE "5"
0-10 PSI	.80 PSI	1.5 PSI	300 PSI	300 PSI
0-20 PSI	.90 PSI	2.3 PSI	300 PSI	300 PSI
0-50 PSI	1.0 PSI	5.2 PSI	300 PSI	300 PSI
0-100 PSI	1.5 PSI	13 PSI	300 PSI	1500 PSI
0-250 PSI	6 PSI	27 PSI	1500 PSI	1500 PSI
0-500 PSI	8 PSI	58 PSI	1500 PSI	2500 PSI
0-750 PSI	16 PSI	77 PSI	2500 PSI	2500 PSI
0-1000 PSI	19 PSI	183 PSI	2500 PSI	5000 PSI
0-1500 PSI	60 PSI	240 PSI	5000 PSI	5000 PSI
0-3000 PSI	66 PSI	N/A	5000 PSI	N/A

## INSTALLATION NOTES

**Orientation** - The 2PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use 1/2 TYPE 2 table values.

**Type "2"** - *Std. Deadband* - Use table values.

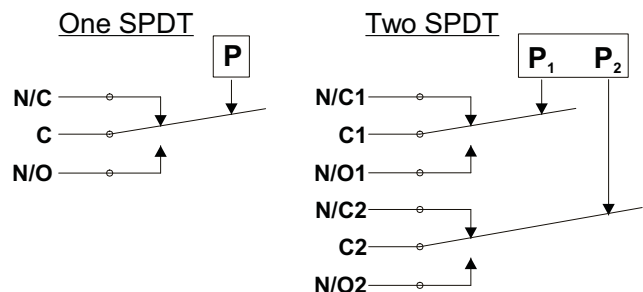
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Use TYPE 5 table values.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

## Wiring Schematic



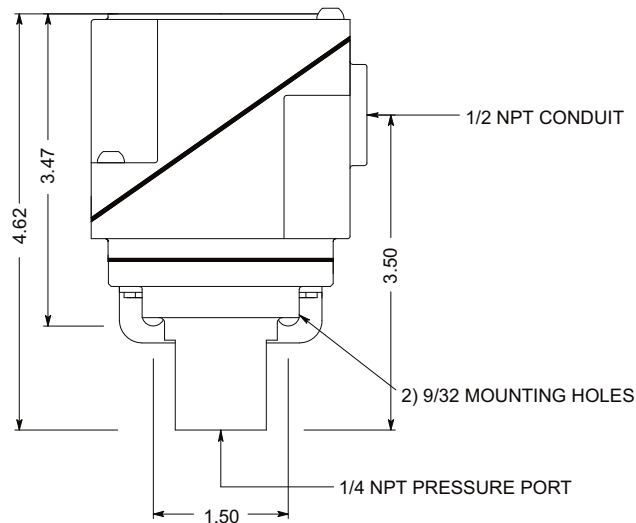
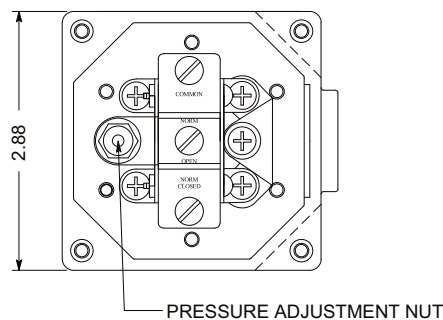
# 2PSWH

## WEATHER TIGHT PRESSURE SWITCH PISTON SENSING ELEMENT

- Range 200 - 10,000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts



SHOWN WITH COVER REMOVED



### GENERAL DESCRIPTION

- Designed to withstand high-shock/high duty-cycle applications
- Weather-tight die-cast aluminum housing
- Low-friction piston-sensing element
- Available with one or two SPDT electric switches that are independently adjustable
- Fixed deadband
- Optimized for salt spray testing (paint per ASTM B117 standards)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

- Maximum Ambient Temperature:** 180°F
- Minimum Ambient Temperature:** -40°F
- Pressure Connection:** 1/4 NPT
- Electrical Connection:** 1/2 NPT
- Housing:** Diecast Aluminum - Painted per ASTM B117
- Deadband:** Fixed
- Weight:** Approx. 1.5 lbs.
- Contact Ratings:** 15A - 125, 250, 480 VAC
- Port Material:** Brass
- Piston Material:** Carbide - 90 Rc
- Seal Material:** PTFE based material
- Set Point Adjustment:** Screw type, field adjustable
- No. Contacts:** One or Two S.P.D.T.
- Contact Listings:** UL Recognized



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

2PS
W
1
H
U
2

**MODEL SERIES**

**HOUSING**  
 ' ' - NO HOUSING  
 W - WATERTIGHT - NEMA 4 & 12

**NUMBER OF ELECTRIC SWITCHES**  
 1 - ONE S.P.D.T.  
 2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SENSING ELEMENT**  
 H - PISTON SENSING ELEMENT

**SPECIAL FEATURES**  
 M - 1/2 NPT MALE PIPE MOUNTING  
 U - ADDITIONAL PAINTING AFTER ASSEMBLY  
 V - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
 15A - 125, 250, 480 VAC

2 - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC

## 2. SPECIFY A RANGE

### 3/16" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
20-200 PSI	20-90 PSI	5000 PSI
50-500 PSI	40-135 PSI	5000 PSI
100-1000 PSI	80-225 PSI	5000 PSI
200-2000 PSI	150-300 PSI	5000 PSI
300-3000 PSI	170-315 PSI	5000 PSI
400-4000 PSI	180-330 PSI	5000 PSI

### 1/8" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
250-2500 PSI	200-570 PSI	10000 PSI
450-4500 PSI	400-1000 PSI	10000 PSI
700-7000 PSI	700-1250 PSI	10000 PSI

## INSTALLATION NOTES

**Orientation** - The 2PSH will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on microswitch(es). Single switch units have #6 screw terminals while dual switch versions employ a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the nominal switch differentials when the standard (type "2") micro-switch is used. For piston type switches the deadband is raised as the switch setpoint increases. This is why a range is given for the deadband.

Deadband is also affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Subtract 10 PSI from table values.

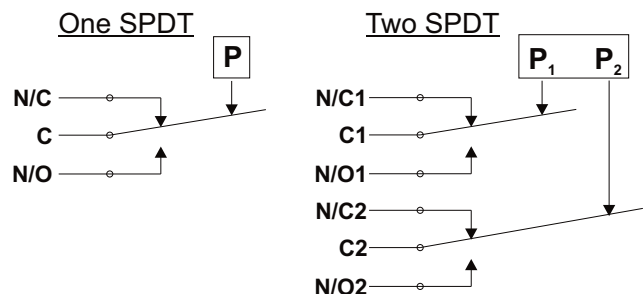
**Type "2"** - *Std. Deadband* - Use table values

**Type "3"** - *High DC Rated* - Add 20 PSI to table values.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Add 30 PSI to table values.

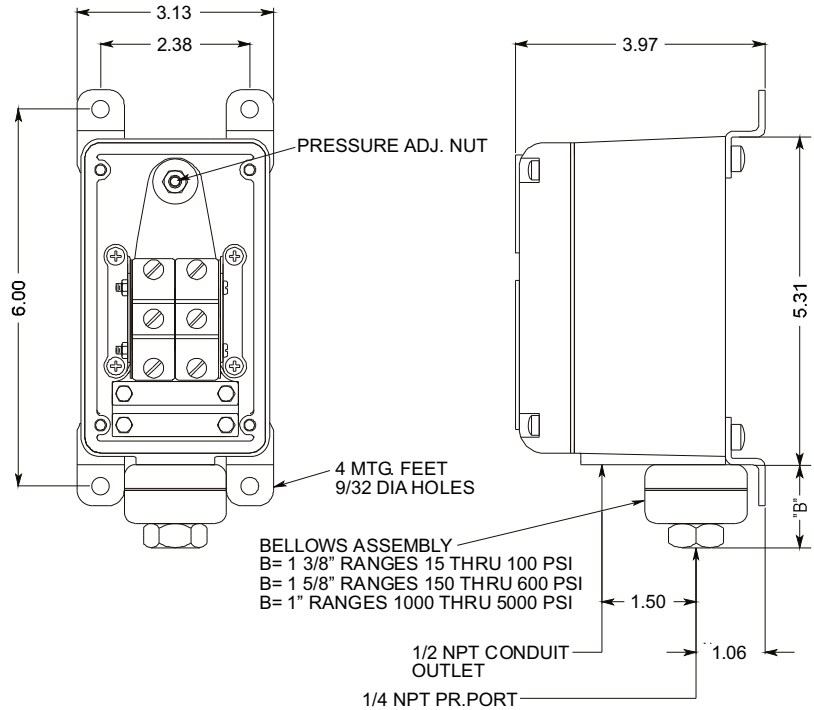
## Wiring Schematic



# 5PSW

## WEATHER TIGHT PRESSURE SWITCH DIAPHRAGM SENSING ELEMENT

- Ranges from 0-15 psi to 0-5000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Adjustable deadband available



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable dead-band, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 3 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1 or 2 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Listed

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

5PS
W
1
B
U
2

**MODEL SERIES**

**HOUSING**  
W - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**  
1 - ONE S.P.D.T.  
11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**  
B - BELLOWS ACTUATED

**SPECIAL FEATURES**  
 "-" - NO SPECIAL FEATURES  
 A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
 E - EXTERNAL PRESSURE ADJUSTMENT  
 EE - TWO EXTERNAL PRESSURE ADJUSTMENTS  
 L - ONE INDICATOR LIGHT  
 LL - TWO INDICATOR LIGHTS  
 M - MALE PIPE MOUNTING 1/2 NPT  
 R> - MANUAL RESET, SWITCH ON INCR. PR.  
 R< - MANUAL RESET, SWITCH ON DECR. PR.  
 U - ADDITIONAL PAINTING AFTER ASSEMBLY  
 V - HIGH TEMPERATURE SERVICE

**TYPE OF ELECTRIC SWITCHES**  
 1 - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
 2 - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
 3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
 4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
 6 - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, APPLICATION OF DIAPHRAGM SEALS, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.7	1.5	300 PSI
0-30 PSI	.8	1.7	300 PSI
0-60 PSI	.9	1.9	300 PSI
0-100 PSI	1.1	2.2	300 PSI
0-150 PSI	4.0	8.5	1500 PSI
0-200 PSI	4.0	8.8	1500 PSI
0-300 PSI	5.0	9.5	1500 PSI
0-600 PSI	6.0	12.0	1500 PSI
0-1000 PSI	15.0	30.0	3000 PSI
0-2000 PSI	17.0	35.0	3000 PSI
0-3000 PSI	40.0	82.0	7000 PSI
0-5000 PSI	48.0	96.0	7000 PSI

## INSTALLATION NOTES

**Orientation** - The 5PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals one electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch are used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use table values.

**Type "2"** - Std. Deadband - Use table values.

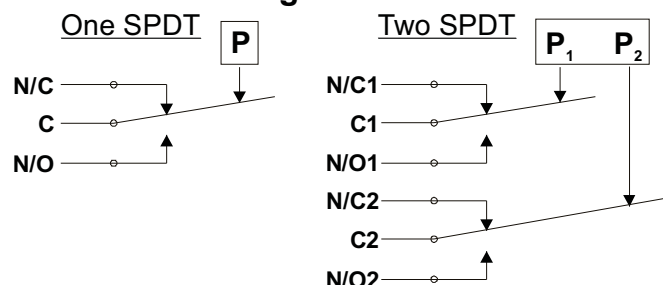
**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For one D.P.D.T or two S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

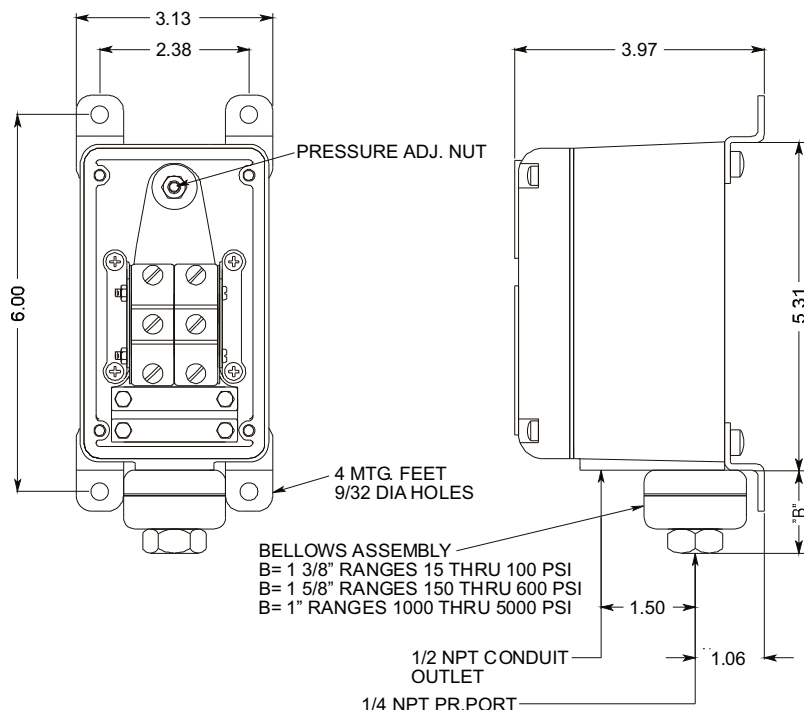
## Wiring Schematic



# 5PSWB

## WEATHER TIGHT PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges from 0-15 psi to 0-5000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Adjustable deadband available



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 3 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1 or 2 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Listed

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

5PS
W
1
B
U
2

**MODEL SERIES** \_\_\_\_\_

**HOUSING** \_\_\_\_\_  
**W** - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES** \_\_\_\_\_  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT** \_\_\_\_\_  
**B** - BELLOWS ACTUATED

**SPECIAL FEATURES** \_\_\_\_\_  
**"** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT  
**LL** - TWO INDICATOR LIGHTS  
**M** - MALE PIPE MOUNTING ½ NPT  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT -  
 1A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, APPLICATION OF DIAPHRAGM SEALS, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.7	1.5	300 PSI
0-30 PSI	.8	1.7	300 PSI
0-60 PSI	.9	1.9	300 PSI
0-100 PSI	1.1	2.2	300 PSI
0-150 PSI	4.0	8.5	1500 PSI
0-200 PSI	4.0	8.8	1500 PSI
0-300 PSI	5.0	9.5	1500 PSI
0-600 PSI	6.0	12.0	1500 PSI
0-1000 PSI	15.0	30.0	3000 PSI
0-2000 PSI	17.0	35.0	3000 PSI
0-3000 PSI	40.0	82.0	7000 PSI
0-5000 PSI	48.0	96.0	7000 PSI

## INSTALLATION NOTES

**Orientation** - The 5PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals one electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch are used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

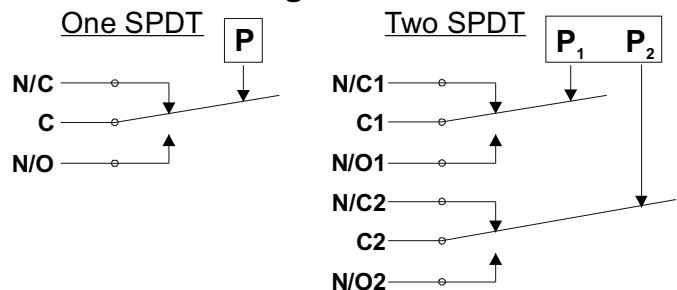
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For one D.P.D.T or two S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## Wiring Schematic

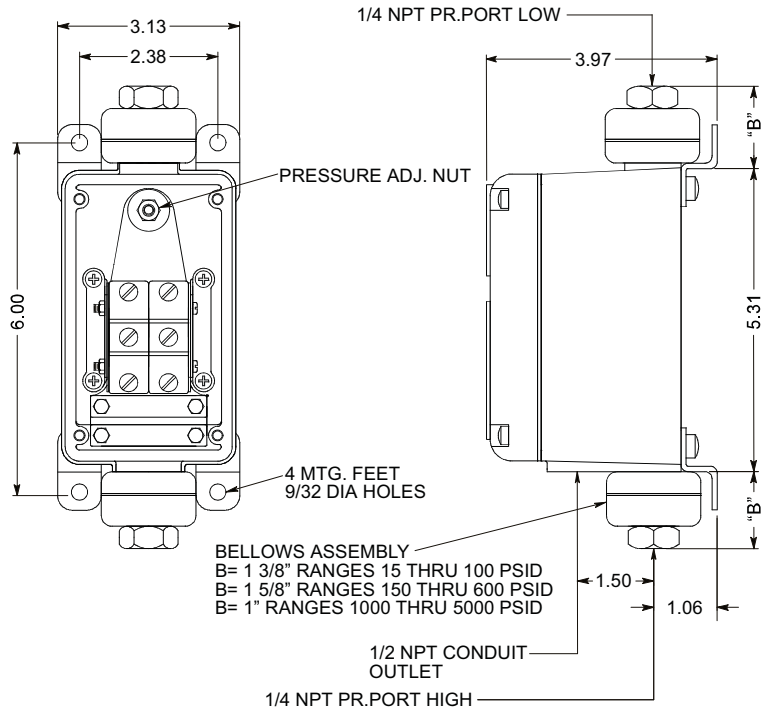




# 5PSWBD

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges from 0-15 psid to 0-5000 psid
- NEMA 4X, 12, & 13 housing
- One or two SPDT contacts
- Adjustable deadband available



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 3 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1 or 2 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

<b>5PS</b> <b>W</b> <b>1</b> <b>BD</b> <b>U</b> <b>2</b>	<p><b>MODEL SERIES</b></p> <p><b>HOUSING'</b> W - WATERTIGHT - NEMA 4X, 12 &amp; 13</p> <p><b>NUMBER OF ELECTRIC SWITCHES</b> 1 - ONE S.P.D.T. 11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T. 2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT</p> <p><b>SENSING ELEMENT</b> BD -BELLOWS ACTUATED DIFFERENTIAL PRESSURE</p> <p><b>SPECIAL FEATURES</b>            -- NO SPECIAL FEATURES            A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)            E - EXTERNAL PRESSURE ADJUSTMENT            EE - TWO EXTERNAL PRESSURE ADJUSTMENTS            L - ONE INDICATOR LIGHT            LL - TWO INDICATOR LIGHTS            M - MALE PIPE MOUNTING 1/2 NPT            R&gt; - MANUAL RESET, SWITCH ON INCR. PR.            R&lt; - MANUAL RESET, SWITCH ON DECR. PR.            U - ADDITIONAL PAINTING AFTER ASSEMBLY            V - HIGH TEMPERATURE SERVICE         </p>	<p><b>TYPE OF ELECTRIC SWITCHES</b></p> <p>1 - LOW DEADBAND 15A - 125, 250, 480 VAC</p> <p>2 - STANDARD DEADBAND 15A - 125, 250, 480 VAC; 0.5A - 125 VDC</p> <p>3 - HIGH DC RATED (MAGNETIC BLOWOUT) 10A - 125 VDC; 3A - 250 VDC</p> <p>4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC</p> <p>6 - GOLD CONTACT - 1 A - 125 VAC</p>
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\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, APPLICATION OF DIAPHRAGM SEALS, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.7	1.3	300 PSI
0-30 PSID	.7	1.4	300 PSI
0-60 PSID	.8	1.6	300 PSI
0-100 PSID	1.0	1.9	300 PSI
0-150 PSID	4.0	7.3	1500 PSI
0-200 PSID	4.0	7.6	1500 PSI
0-300 PSID	4.0	8.2	1500 PSI
0-600 PSID	5.0	10.0	1500 PSI
0-1000 PSID	12.0	25.0	3000 PSI
0-2000 PSID	15.0	30.0	3000 PSI
0-3000 PSID	37.0	75.0	7000 PSI
0-5000 PSID	45.0	90.0	7000 PSI

## INSTALLATION NOTES

**Orientation** - The 5PSBD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch are used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

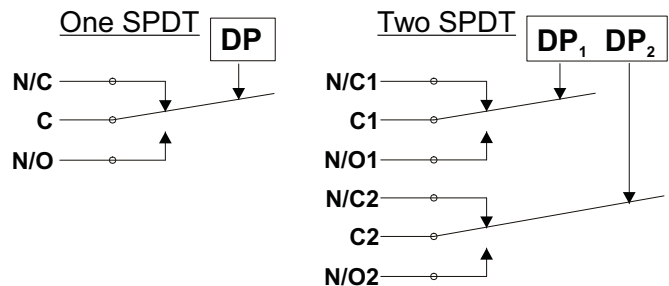
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value  
UL-recognized component, guide WSQ2, File E85076.  
All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For one D.P.D.T or two S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

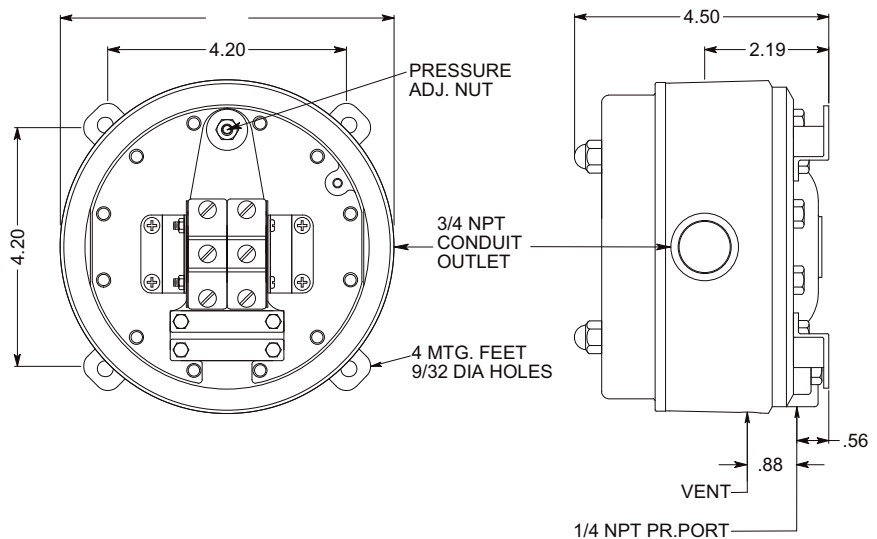
## Wiring Schematic



# 6PSW

## WEATHER TIGHT PRESSURE SWITCH DIAPHRAGM SENSING ELEMENT

- Ranges 0-15 psi to 0-300 psi
- NEMA 4X & 12 housing std.
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing elements constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS W 1 SST 2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"-"** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**F** - FLANGE BASE MOUNTING  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**O** - HIGH OVERPRESSURE - INCREASES MAX. PR. TO 1000 PSI  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

- Type "1"** - *Low Deadband* - Use ½ TYPE 2 table values.
  - Type "2"** - *Std. Deadband* - Use table values.
  - Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.
  - Type "4"** - *Hermetically Sealed Switch*- Use table value  
 UL-recognized component, guide WSQ2, File E85076. All stainless steel construction
  - Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Use TYPE 5 table values.
  - Type "6"** - *Gold Contact* - Use TYPE 2 table values.
- For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.2	.3	50 PSI
0-30 PSI	.2	.5	100 PSI
0-60 PSI	.5	1.0	200 PSI
0-100 PSI	1.0	2.0	300 PSI
0-150 PSI	1.0	2.5	300 PSI
0-200 PSI	2.0	3.5	500 PSI
0-300 PSI	3.0	5.0	500 PSI

## INSTALLATION NOTES

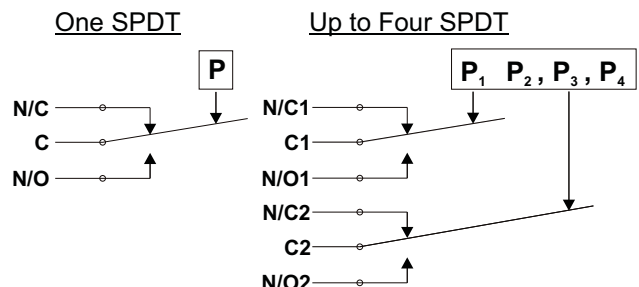
**Orientation** - The 6PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

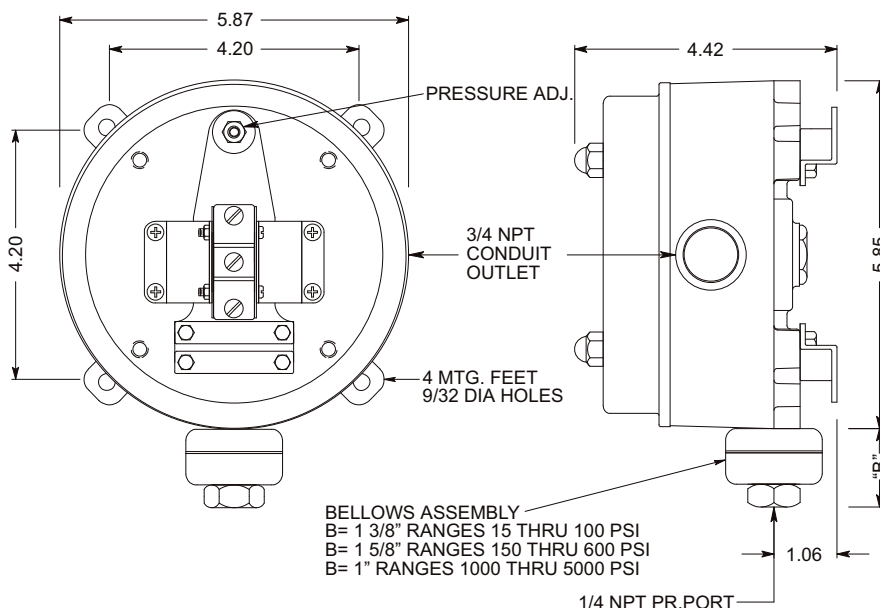
## Wiring Schematic



# 6PSWB

## WEATHER TIGHT PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges 0-15 psi to 0-5000 psi
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Stainless steel wetted



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)
- A wide variety of adjustable pressure ranges are available

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

<b>6PS    W    1    B    U    2</b>	
<p><b>MODEL SERIES</b></p> <p><b>HOUSING</b>  <b>W</b> - WATERTIGHT - NEMA 4X &amp; 12  <b>X</b> - EXPLOSION PROOF - NEMA 7 &amp; 9</p> <p><b>NUMBER OF ELECTRIC SWITCHES</b>  <b>1</b> - ONE S.P.D.T.  <b>11</b> - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  <b>2</b> - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  <b>3</b> - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  <b>4</b> - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT</p> <p><b>SENSING ELEMENT</b>  <b>B</b> - BELLOWS ACTUATED</p> <p><b>SPECIAL FEATURES</b>  <b>"."</b> - NO SPECIAL FEATURES  <b>A</b> - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  <b>E</b> - EXTERNAL PRESSURE ADJUSTMENT  <b>EE</b> - TWO EXTERNAL PRESSURE ADJUSTMENTS  <b>L</b> - ONE INDICATOR LIGHT (NOT ON X HOUSING)  <b>LL</b> - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  <b>M</b> - MALE PIPE MOUNTING ½ NPT  <b>P</b> - PANEL MOUNTING  <b>Q</b> - DOUBLE SNAP ACTION (BELLEVILLE SPRING)  <b>R&gt;</b> - MANUAL RESET, SWITCH ON INCR. PR.  <b>R&lt;</b> - MANUAL RESET, SWITCH ON DECR. PR.  <b>U</b> - ADDITIONAL PAINTING AFTER ASSEMBLY  <b>V</b> - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE</p>	<p><b>TYPE OF ELECTRIC SWITCHES</b>  <b>1</b> - LOW DEADBAND  15A - 125, 250, 480 VAC  <b>2</b> - STANDARD DEADBAND  15A - 125, 250, 480 VAC; 0.5A - 125 VDC  <b>3</b> - HIGH DC RATED (MAGNETIC BLOWOUT)  10A - 125 VDC; 3A - 250 VDC  <b>4</b> - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  <b>6</b> - GOLD CONTACT -  1 A - 125 VAC</p>

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.7	1.3	300 PSI
0-30 PSI	.7	1.4	300 PSI
0-60 PSI	.8	1.6	300 PSI
0-100 PSI	1.0	1.9	300 PSI
0-150 PSI	4.0	7.3	1500 PSI
0-200 PSI	4.0	7.6	1500 PSI
0-300 PSI	4.0	8.2	1500 PSI
0-600 PSI	5.0	10.0	1500 PSI
0-1000 PSI	12.0	25.0	3000 PSI
0-2000 PSI	15.0	30.0	3000 PSI
0-3000 PSI	37.0	75.0	7000 PSI
0-5000 PSI	45.0	90.0	7000 PSI

## INSTALLATION NOTES

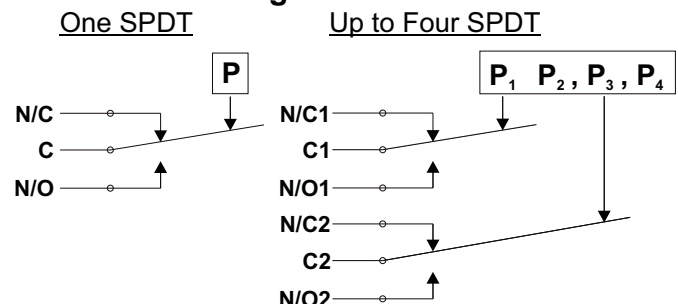
**Orientation** - The 6PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

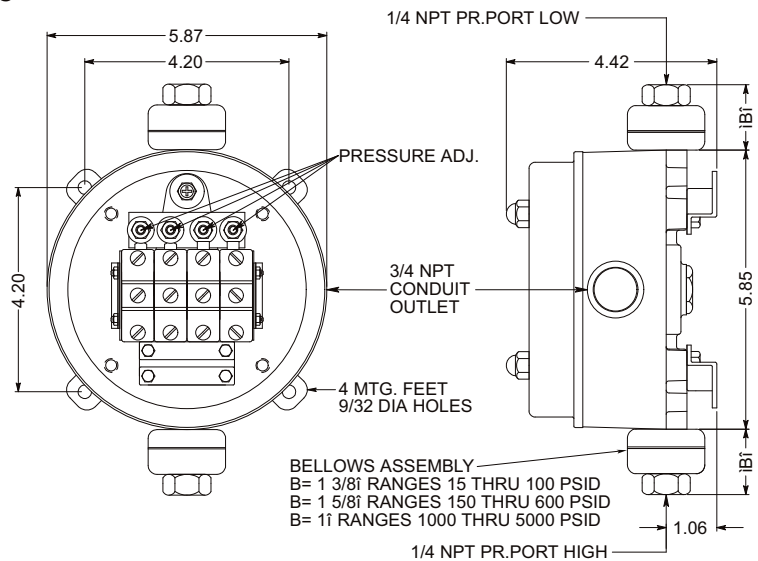
## Wiring Schematic



# 6PSWBD

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges from 0-15 psid to 0-5000 psid
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Stainless steel wetted materials available



### GENERAL DESCRIPTION

- Designed for low pressure applications
- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

<b>6PS    W    1    BD    U    2</b>	
<u>MODEL SERIES</u>	
<b>HOUSING'</b> W - WATERTIGHT - NEMA 4X & 12 X - EXPLOSION PROOF - NEMA 7 & 9  <b>NUMBER OF ELECTRIC SWITCHES</b> 1 - ONE S.P.D.T. 11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T. 2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT 3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT 4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT  <b>SENSING ELEMENT</b> BD - BELLOWS ACTUATED DIFFERENTIAL PRESSURE  <b>SPECIAL FEATURES</b> -- NO SPECIAL FEATURES A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE) E - EXTERNAL PRESSURE ADJUSTMENT EE - TWO EXTERNAL PRESSURE ADJUSTMENTS L - ONE INDICATOR LIGHT (NOT ON X HOUSING) LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING) M - MALE PIPE MOUNTING    NPT P - PANEL MOUNTING Q - DOUBLE SNAP ACTION (BELLEVILLE SPRING) R> - MANUAL RESET, SWITCH ON INCR. PR. R< - MANUAL RESET, SWITCH ON DECR. PR. U - ADDITIONAL PAINTING AFTER ASSEMBLY V - HIGH TEMP SERVICE - NOT A UL-LISTED FEATURE	<b>TYPE OF ELECTRIC SWITCHES</b> 1 - LOW DEADBAND 15A - 125, 250, 480 VAC 2 - STANDARD DEADBAND 15A - 125, 250, 480 VAC; 0.5A - 125 VDC 3 - HIGH DC RATED (MAGNETIC BLOWOUT) 10A - 125 VDC; 3A - 250 VDC 4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC 6 - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.7	1.3	300 PSI
0-30 PSID	.7	1.4	300 PSI
0-60 PSID	.8	1.6	300 PSI
0-100 PSID	1.0	1.9	300 PSI
0-150 PSID	4.0	7.3	1500 PSI
0-200 PSID	4.0	7.6	1500 PSI
0-300 PSID	4.0	8.2	1500 PSI
0-600 PSID	5.0	10.0	1500 PSI
0-1000 PSID	12.0	25.0	3000 PSI
0-2000 PSID	15.0	30.0	3000 PSI
0-3000 PSID	37.0	75.0	7000 PSI
0-5000 PSID	45.0	90.0	7000 PSI

## INSTALLATION NOTES

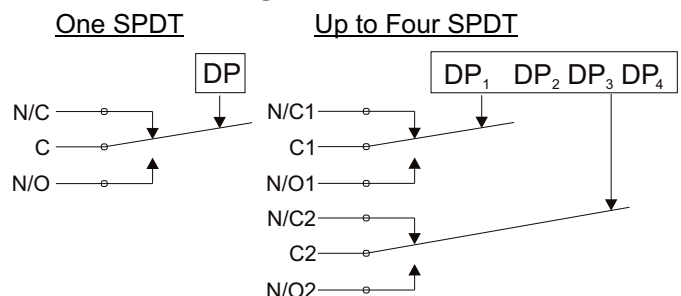
**Orientation** - The 6PSBD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

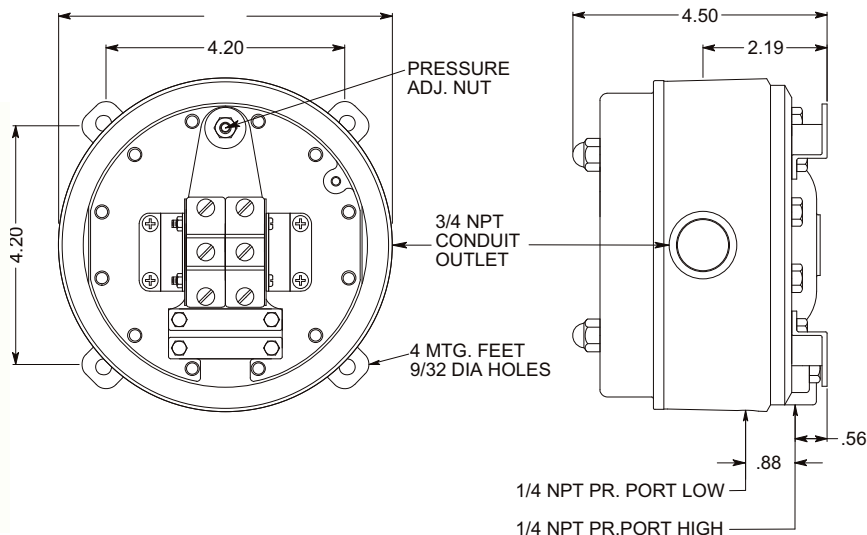
## Wiring Schematic



# 6PSWD

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH DIAPHRAGM SENSING ELEMENT

- Ranges 0-15 psid & 0-30 psid
- NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation & manual reset
- Switch configuration can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

UL Recognized, CSA Certified

#### Contact Listings:

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



LISTED

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    D    R>    2**

**MODEL SERIES**

**HOUSING**  
**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**  
**D** - DIFFERENTIAL PRESSURE

**SPECIAL FEATURES**  
**--** NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SN** - SPECIAL TRIM BASE BRASS - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SK** - SPECIAL TRIM BASE ALUMINUM - INCREASES MAX WORKING PRESSURE TO 300 PSI  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES) - DECREASES MAX WORKING PRESSURE TO 50 PSI  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT -  
1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use TYPE 1 table values.

**Type "2"** - *Std. Deadband* - Use TYPE 2 table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSID	.16 PSID	.32 PSID	100 PSI
0-30 PSID	.23 PSID	.47 PSID	100 PSI

## INSTALLATION NOTES

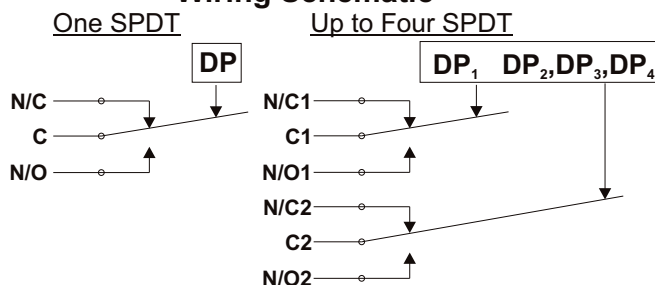
**Orientation** - The 6PSD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

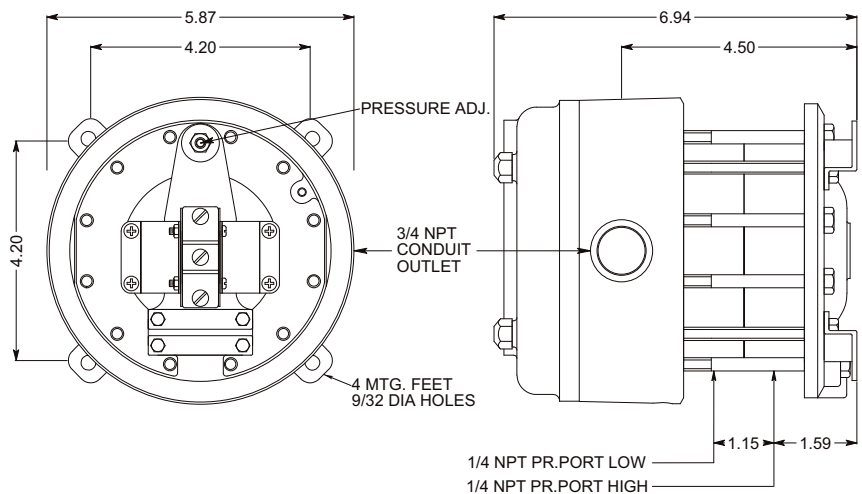




# 6PSWDO

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges 0-15, 0-30, & 0-60 psid
- NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed to sense low differential pressures between high pressure sources
- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

UL Recognized, CSA Certified

#### Contact Listings:



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS   W   1   DO   E   2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

**DO** - LOW D.P. - HIGH WORKING PRESSURE

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.3	.6	2500 PSI
0-30 PSI	.35	.7	2500 PSI
0-60 PSI	.7	1.3	2500 PSI

## INSTALLATION NOTES

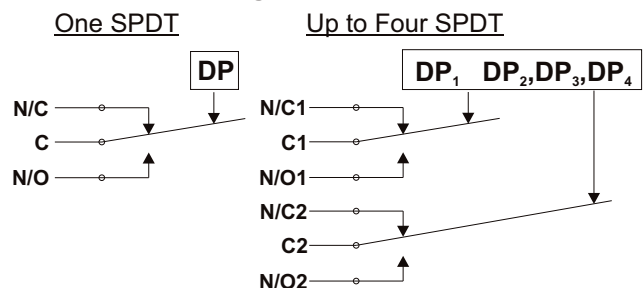
**Orientation** - The 6PSDO will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

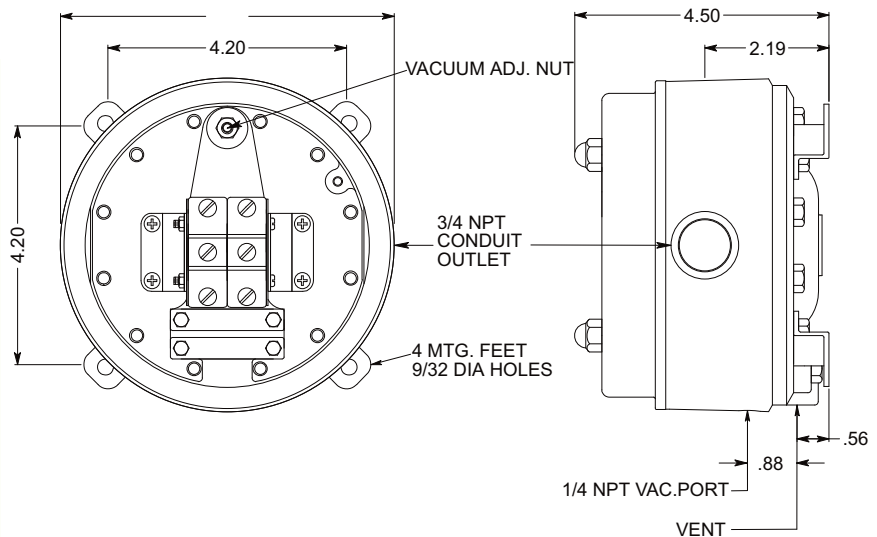
## Wiring Schematic



# 6PSWVAC

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Range 1.5 WC to 0-150 WC & 15-30 IN/HG
- Rugged NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed for most low-vacuum applications
- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum sensing element uses strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    SSZ    2**

**MODEL SERIES** ————

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL VACUUM ADJUSTMENT  
**F** - FLANGE BASE MOUNTING (1 1/2" - 150# ASA FLANGE)  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING 1/2 NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. VAC.  
**R<** - MANUAL RESET, SWITCH ON DECR. VAC.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE-NOT A UL-LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC

**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-30 IN/HG	.3 HG	.6 HG	50 PSI
-30/0/30 IN/HG	.5 HG	1.0 HG	50 PSI

## INSTALLATION NOTES

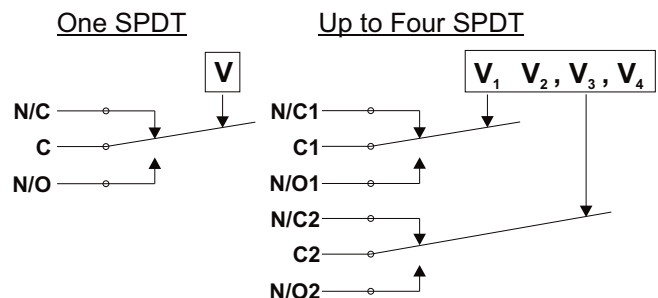
**Orientation** - The 6PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Vacuum Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

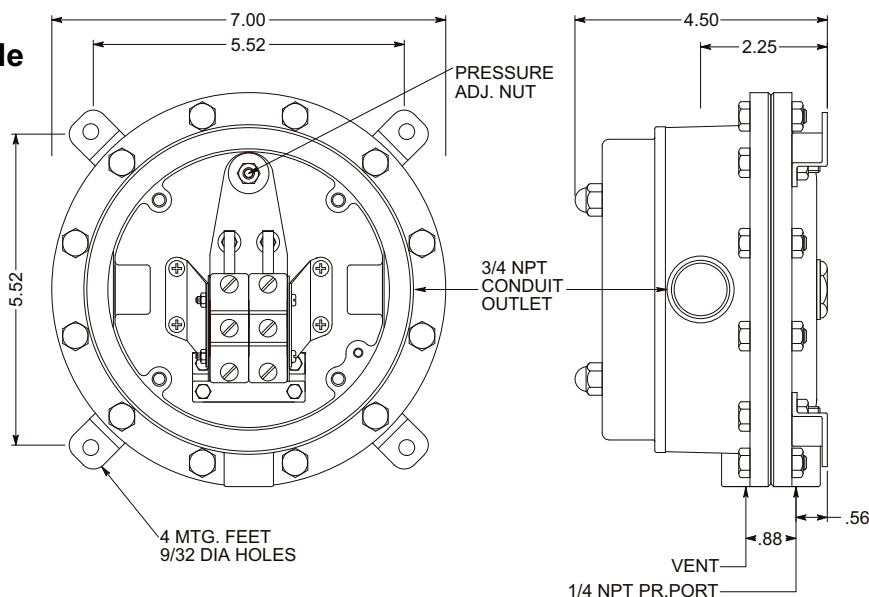
## Wiring Schematic



# 7PSW

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Range 1.5 WC to 0-150 WC
- NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see page 2 for special features

- Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 3/4 NPT  
**Housing:** Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1/2% of range (for one SPDT Switch)  
**Drift:** <1% of range (100,000 operations)  
**Weight:** Approx. 6 lbs.  
**Contact Ratings:** 15A - 125, 250, 480 VAC  
**Port Material:** Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.  
**Contact Listings:** UL Recognized, CSA Certified



LISTED

Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS**   **W**   **1**   **SST**   **2**

**MODEL SERIES**

**HOUSING\***

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**F** - FLANGE BASE MOUNTING  
**G** - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PR  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125,  
 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use TYPE 1 table values.

**Type "2"** - *Std. Deadband* - Use TYPE 2 table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076.

All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-1.5 WC	.15	-	25 PSI
0-3 WC	.16	-	25 PSI
0-6 WC	.2	.4	25 PSI
0-15 WC	.3	.6	25 PSI
0-30 WC	.6	1.1	25 PSI
0-60 WC	.7	1.4	25 PSI
0-100 WC	.8	1.6	25 PSI
0-150 WC	1.2	2.4	25 PSI

## INSTALLATION NOTES

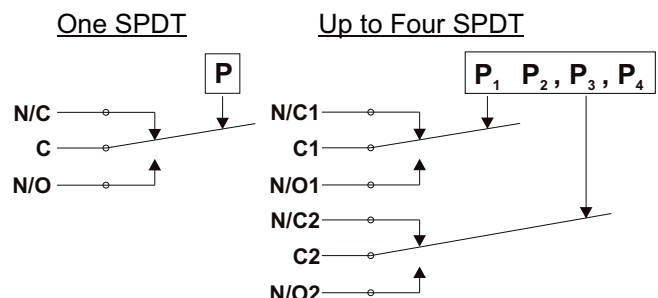
**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

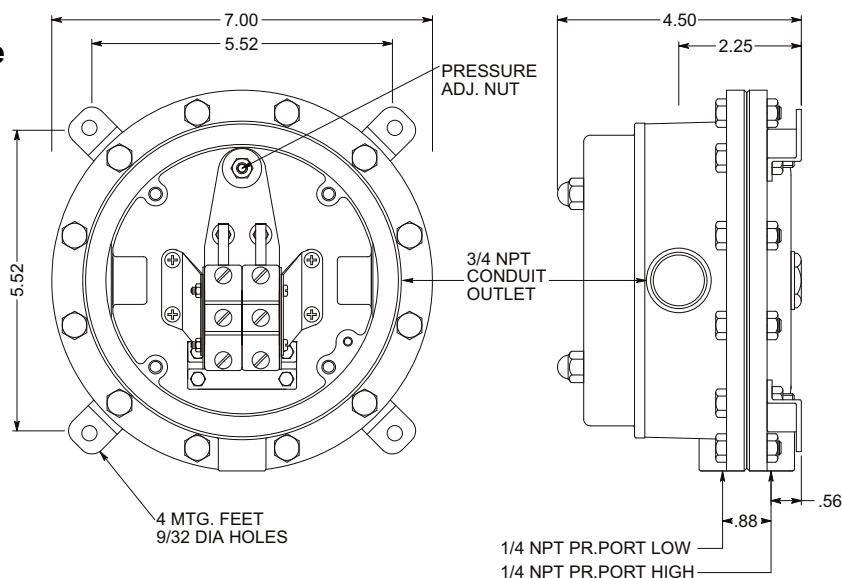
## Wiring Schematic



# 7PSWD

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges 0-1.5 WC/DP to 0-150 WC/DP
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed for low differential pressure applications
- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS    W    1    D    L    2**

**MODEL SERIES**

**HOUSING'**

W - WATERTIGHT - NEMA 4X & 12  
X - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

D - DIFFERENTIAL PRESSURE

**SPECIAL FEATURES**

-- NO SPECIAL FEATURES  
A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
E - EXTERNAL PRESSURE ADJUSTMENT  
EE - TWO EXTERNAL PRESSURE ADJUSTMENTS  
G - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PR  
L - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
M - MALE PIPE MOUNTING ½ NPT  
P - PANEL MOUNTING  
R> - MANUAL RESET, SWITCH ON INCR. PR.  
R< - MANUAL RESET, SWITCH ON DECR. PR.  
SS - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX. WORKING PRESSURE TO 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SN - SPECIAL TRIM BASE BRASS - INCREASES MAX. WORKING PRESSURE TO 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SK - SPECIAL TRIM BASE ALUMINUM - INCREASES MAX. WORKING PRESSURE TO 50 PSI ( RANGES UP TO 0-6 WC/DP), 250 PSI (RANGES 0-15 WC/DP AND ABOVE)  
SI - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
SY - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
T - PTFE PROTECTED DIAPHRAGM  
U - ADDITIONAL PAINTING AFTER ASSEMBLY  
V - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
Z - VITON DIAPHRAGM

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## INSTALLATION NOTES

**Orientation** - The 7PSD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## TYPE OF ELECTRIC SWITCHES

- 1 - LOW DEADBAND  
15A - 125, 250, 480 VAC
- 2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC
- 3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC
- 4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC
- 6 - GOLD CONTACT -  
1 A - 125 VAC

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-1.5 WC/DP	.17"WC	-	25 PSI
0-3 WC/DP	.18"WC	-	25 PSI
0-6 WC/DP	.23"WC	.45"WC	25 PSI
0-15 WC/DP	.33"WC	.65"WC	25 PSI
0-30 WC/DP	.6"WC	1.2"WC	25 PSI
0-60 WC/DP	.7"WC	1.4"WC	25 PSI
0-100 WC/DP	.8"WC	1.6"WC	25 PSI
0-150 WC/DP	1.2"WC	2.5"WC	25 PSI
0-200 WC/DP	1.8"WC	3.1"WC	25 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use TYPE 1 table values.

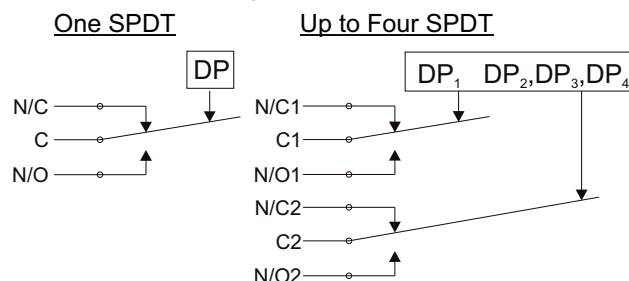
**Type "2"** - *Std. Deadband* - Use TYPE 2 table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values. For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

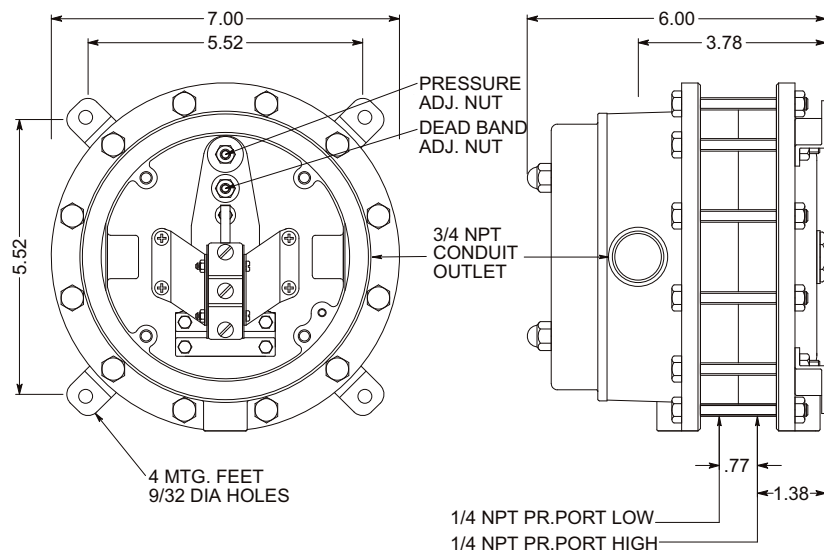
## Wiring Schematic



# 7PSWDO

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges 0-6 WC/DP to 0-200 WC/DP
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed to sense low differential pressures between high pressure sources
- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard differential pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS    W    1    DO    E    2**

**MODEL SERIES**

**HOUSING:**  
**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**  
**DO** - LOW D.P. - HIGH WORKING PRESSURE

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

### SPECIAL FEATURES

- NO SPECIAL FEATURES
- A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)
- E** - EXTERNAL PRESSURE ADJUSTMENT
- EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS
- L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)
- LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)
- M** - MALE PIPE MOUNTING ½ NPT
- P** - PANEL MOUNTING
- R>** - MANUAL RESET, SWITCH ON INCR. PR.
- R<** - MANUAL RESET, SWITCH ON DECR. PR.
- SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL
- U** - ADDITIONAL PAINTING AFTER ASSEMBLY
- V** - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-6 WC/DP	1.1	2.2	1500 PSI
0-15 WC/DP	1.2	2.3	1500 PSI
0-30 WC/DP	1.2	2.3	1500 PSI
0-60 WC/DP	1.3	2.5	1500 PSI
0-100 WC/DP	1.5	2.9	1500 PSI
0-150 WC/DP	1.7	3.4	1500 PSI
0-200 WC/DP	1.9	3.8	1500 PSI

## INSTALLATION NOTES

**Orientation** - The 7PSDO will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

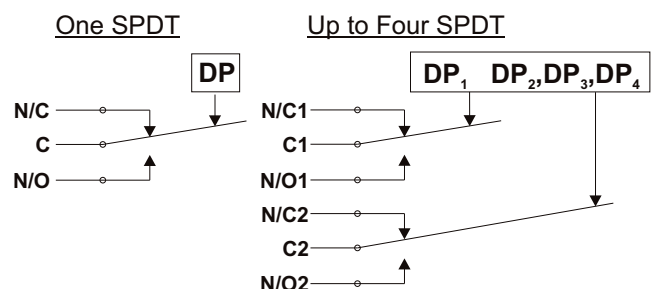
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value  
 UL-recognized component, guide WSQ2, File E85076.  
 All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

### Wiring Schematic

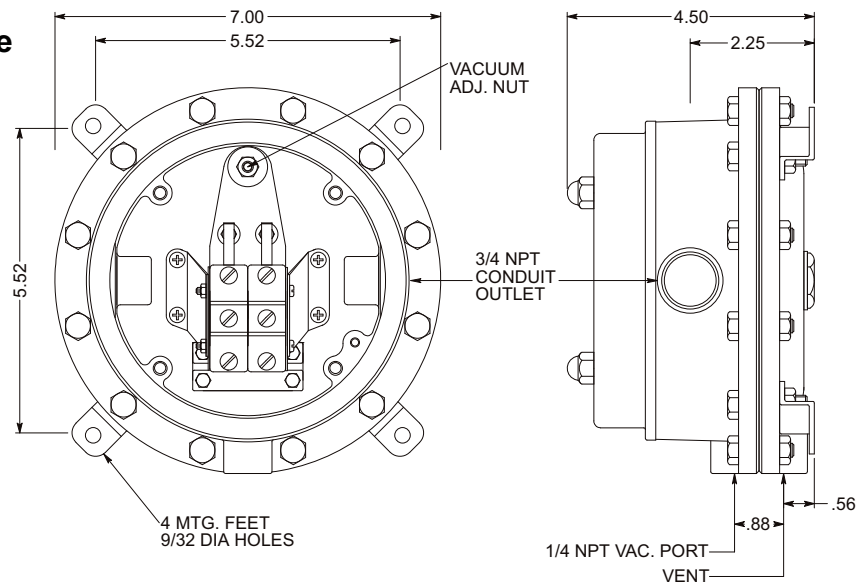




# 7PSWWAC

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Ranges from 1.5 W.C. To 0-150 W.C. & 15-30 IN/HG
- NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed for most low-pressure applications
- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS**

**W**

**1**

**SSZ**

**2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
 11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
 2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
 3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
 4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

"-" - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL VACUUM ADJUSTMENT  
**EE** - TWO EXTERNAL VACUUM ADJUSTMENTS  
**G** - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW VAC.  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. VAC.  
**R<** - MANUAL RESET, SWITCH ON DECR. VAC.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE DIAPHRAGM (5 PSI MAX. WORKING PRESSURE)  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
 2 - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
 3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
 4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
 6 - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use TYPE 1 values.

**Type "2"** - Std. Deadband - Use TYPE 2 values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values. For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-1.5 WC/VAC	.17 WC	-	15 PSI
0-3 WC/VAC	.18 WC	-	15 PSI
0-6 WC/VAC	.23 WC	.45 WC	15 PSI
0-15 WC/VAC	.33 WC	.65 WC	15 PSI
0-30 WC/VAC	.6 WC	1.2 WC	15 PSI
0-60 WC/VAC	.7 WC	1.4 WC	15 PSI
0-100 WC/VAC	.8 WC	1.6 WC	15 PSI
0-150 WC/VAC	1.2 WC	2.5 WC	15 PSI
15-30 IN/HG	.06 HG	.12 HG	15 PSI

## INSTALLATION NOTES

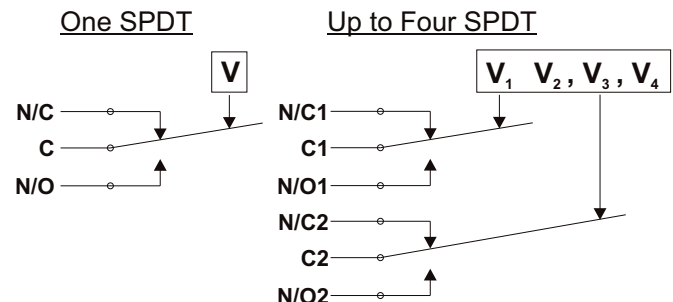
**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Vacuum Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

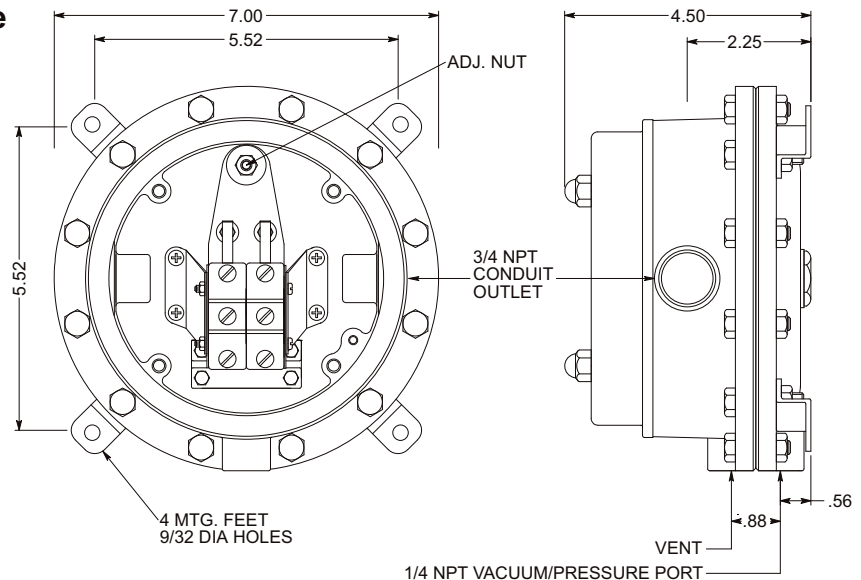
## Wiring Schematic



# 7PSWWACPR

## WEATHER TIGHT DIFFERENTIAL PRESSURE SWITCH BELLOWS SENSING ELEMENT

- Range 3 W C to 0-100 WC
- NEMA 4X & 12 housing
- Class I, Div. I, Gr.C & D Available
- Up to four SPDT contacts
- Various wetted materials available



### GENERAL DESCRIPTION

- Designed for low vacuum and pressure applications where it may be useful to have both pressure and vacuum settings in one device. These switches are very versatile and can be built with up to four set points either above and/or below atmospheric with just one process connection.
- Weather-tight cast-aluminum housing
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard vacuum-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Vacuum/Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT Switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 6 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS    W    1    SSZ    2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL ADJUSTMENT  
**EE** - TWO EXTERNAL ADJUSTMENTS  
**G** - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW VAC.  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. VAC.  
**R<** - MANUAL RESET, SWITCH ON DECR. VAC.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
-3/0/3 WC	.45 WC	.87 WC	25 PSI
-6/0/6 WC	.8 WC	1.6 WC	25 PSI
-15/0/15 WC	1.7 WC	3.4 WC	25 PSI
-30/0/30 WC	2.5 WC	5.0 WC	25 PSI
-60/0/60 WC	4.8 WC	9.6 WC	25 PSI
-100/0/100 WC	8.0 WC	16.0 WC	25 PSI

## INSTALLATION NOTES

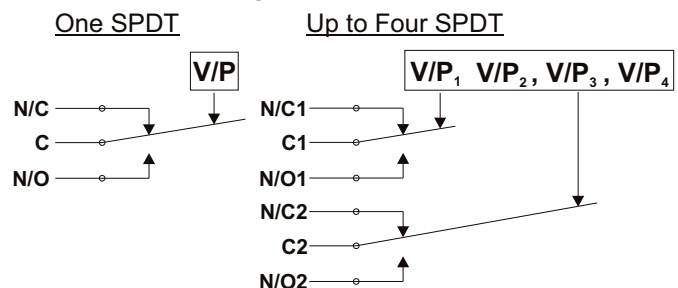
**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the vacuum/pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Process Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic









# GENERAL PURPOSE PRODUCTS

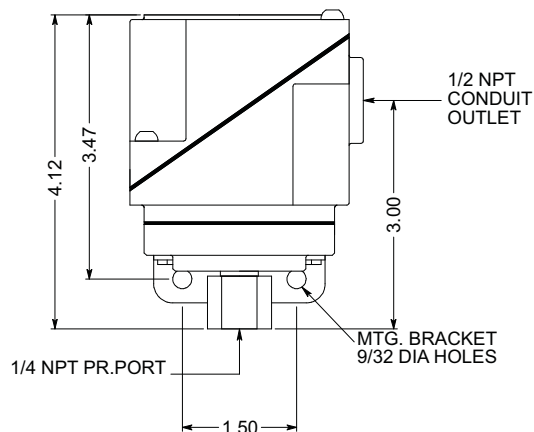
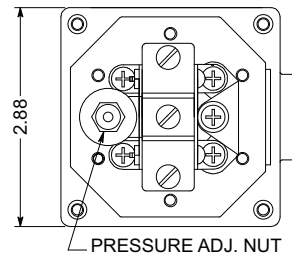
All-purpose pressure-actuated devices used across industries to indicate on/off signal through a contact or set of contacts are available from Solon Manufacturing Co. Solon's modular approach to building a switch based on available features, functions and accessories allows you to customize an assembly suitable for your application without adding excessive cost or lead time.

# 2PS

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 2-300 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the differential pressure setting. Features s/s screws that retain the cover gasket when the enclosure cover is removed
- Modular design of pressure-sensing elements accommodates high/low and differential pressures using diaphragm, bellows or piston for actuation

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard) -see back for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 1/2 NPT  
**Housing:** Diecast Aluminum - Painted per ASTM B117  
**Deadband:** Fixed  
**Sensitivity:** 1/2% of range (for SPDT)  
**Drift:** <1% of range (100,000 operations)  
**Weight:** Approx. 1.5 lbs.  
**Contact Ratings:** 15A - 125, 250, 480 VAC  
**Port Fitting Material:** Brass  
**Trim Material:** Anodized Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable from 10 to 100% of range  
**No. Contacts:** One or Two S.P.D.T.  
**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PS**   **W**   **1**   **SST**   **2**

MODEL SERIES

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC

2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC

4 - HERMETICALLY SEALED 11 AMP, 125, 250VAC; 5A-30 VDC

5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
5A - 125, 250 VAC; 0.5A - 125 VDC

6 - GOLD CONTACT -  
1 A - 125 VAC

**HOUSING**

'-' - NO HOUSING

**W** - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.

2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SPECIAL FEATURES**

**M** - 1/2 NPT MALE PIPE MOUNTING

**O** - HIGH OVERPRESSURE - INCREASES MAX. PRESSURE TO 1000 PSI FOR RANGES 0-2 PSI TO 0-20 PSI; MAX. PRESSURE IS 1500 PSI FOR RANGES 0-50 PSI AND UP

**SS** - STAINLESS STEEL WETTED TRIM MATERIAL

**SN** - BRASS WETTED TRIM MATERIAL

**SI** - PTFE WETTED TRIM MATERIAL

**SY** - PVC WETTED TRIM MATERIAL

**T** - PTFE PROTECTED DIAPHRAGM

**U** - ADDITIONAL PAINTING AFTER ASSEMBLY

**V** - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

**Z** - VITON DIAPHRAGM MATERIAL

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAX. WORKING PRESSURE
	TYPE "2"	TYPE "5"	
0-2 PSI	.25 PSI	.23 PSI	20 PSI
0-5 PSI	.27 PSI	.50 PSI	20 PSI
0-10 PSI	.34 PSI	.90 PSI	50 PSI
0-20 PSI	.50 PSI	1.9 PSI	50 PSI
0-50 PSI	1.6 PSI	6 PSI	250 PSI
0-100 PSI	1.9 PSI	8.3 PSI	250 PSI
0-200 PSI	4.4 PSI	16 PSI	500 PSI
0-300 PSI	5.3 PSI	22 PSI	500 PSI

## INSTALLATION NOTES

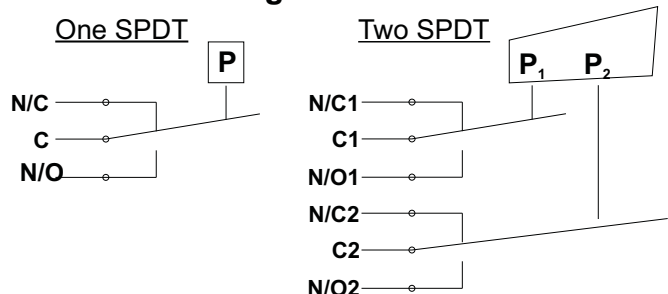
**Orientation** - The 2PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on microswitch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

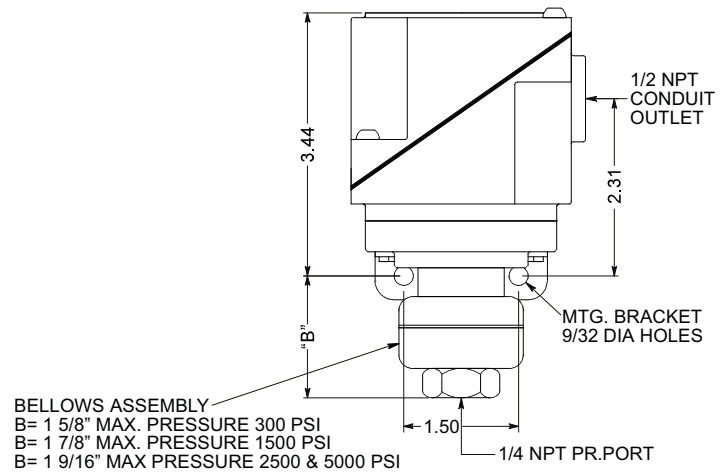
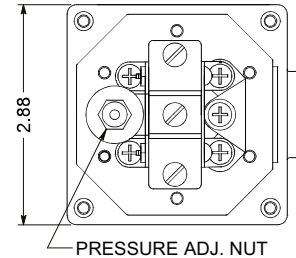


# 2PSB

## PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Range from 10-3000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Stainless steel sensing element



#### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable
- Removable enclosure cover for easy wiring and adjustment of the differential pressure setting. Features s/s screws that retian the cover gasket when the enclosure is removed
- S/S bellows

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Diecast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 1.8 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PS    W    1    B    V    2**

**MODEL SERIES** \_\_\_\_\_

**HOUSING** \_\_\_\_\_  
 ' ' - NO HOUSING  
**W** - WATERTIGHT - NEMA 4, 12 & 13

**NUMBER OF ELECTRIC SWITCHES** \_\_\_\_\_  
**1** - ONE S.P.D.T.  
**2** - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SENSING ELEMENT** \_\_\_\_\_  
**B** - BELLOWS SENSING ELEMENT (STANDARD)

**SPECIAL FEATURES** \_\_\_\_\_  
**M** - 1/2 NPT MALE PIPE MOUNTING  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**5** - SUB MINIATURE SWITCH - 2 S.P.D.T.  
 5A - 125, 250 VAC; 0.5A - 125 VDC  
**6** - GOLD CONTACT -  
 1 A - 125 VAC

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND		MAXIMUM PRESSURE	
	TYPE "2"	TYPE "5"	TYPE "2"	TYPE "5"
0-10 PSI	.80 PSI	1.5 PSI	300 PSI	300 PSI
0-20 PSI	.90 PSI	2.3 PSI	300 PSI	300 PSI
0-50 PSI	1.0 PSI	5.2 PSI	300 PSI	300 PSI
0-100 PSI	1.5 PSI	13 PSI	300 PSI	1500 PSI
0-250 PSI	6 PSI	27 PSI	1500 PSI	1500 PSI
0-500 PSI	8 PSI	58 PSI	1500 PSI	2500 PSI
0-750 PSI	16 PSI	77 PSI	2500 PSI	2500 PSI
0-1000 PSI	19 PSI	183 PSI	2500 PSI	5000 PSI
0-1500 PSI	60 PSI	240 PSI	5000 PSI	5000 PSI
0-3000 PSI	66 PSI	N/A	5000 PSI	N/A

## INSTALLATION NOTES

**Orientation** - The 2PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es). Single switch units have screw terminals while dual switch versions use a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the standard (Type "2" or Type "5") electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use ½ TYPE 2 table values.

**Type "2"** - *Std. Deadband* - Use table values.

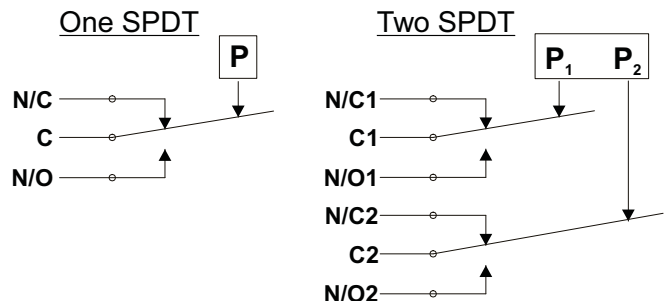
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Use TYPE 5 table values.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

## Wiring Schematic



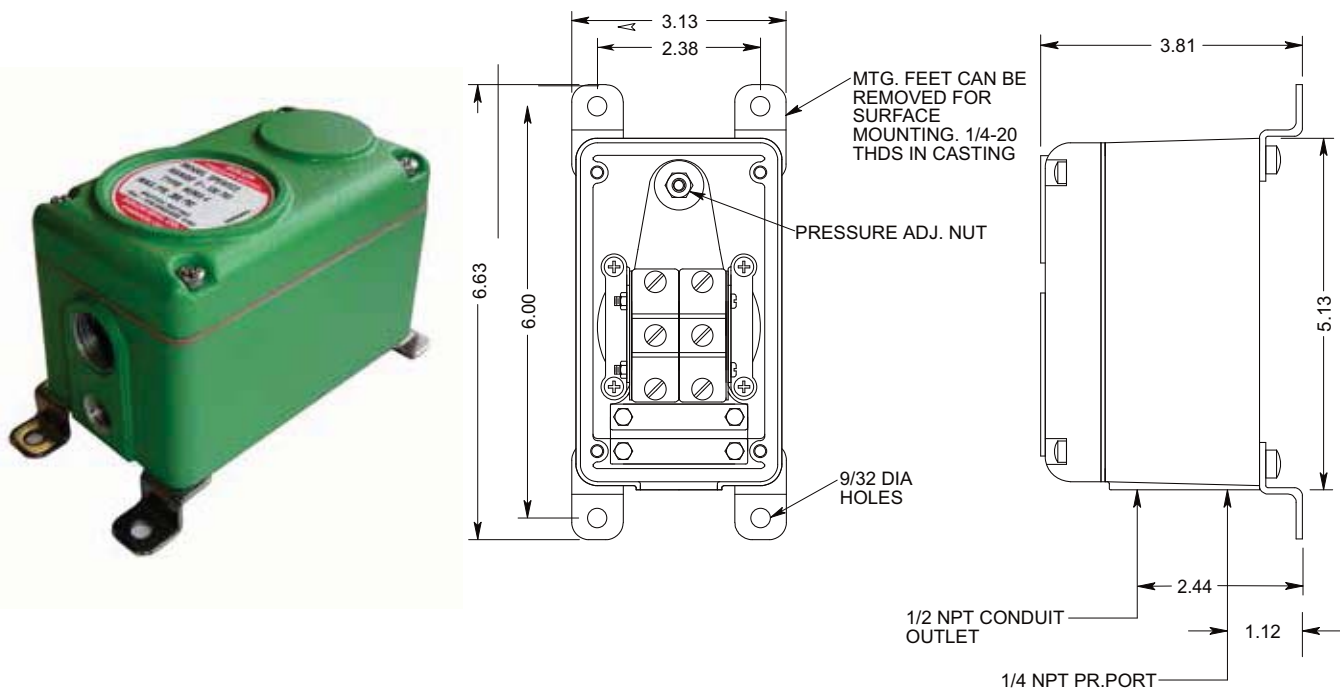


# 5PS

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 0-15 psi to 0-300 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Versatile mechanism design
- Adjustable deadband available



#### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently available, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element uses a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 3 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1 or 2 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Listed

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**5PS    W    1    A    2**

**MODEL SERIES** —————

**HOUSING'** —————  
**W** - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES** —————  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125,  
 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT -  
 1 A - 125 VAC

### SPECIAL FEATURES

- "-" - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT  
**LL** - TWO INDICATOR LIGHTS  
**M** - MALE PIPE MOUNTING ½ NPT  
**O** - HIGH OVERPRESSURE DIAPHRAGM - INCREASES MAX.  
 PRESSURE TO 1000 PSI  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMPERATURE SERVICE  
**Z** - VITON DIAPHRAGM

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, KALREZ DIAPHRAGM, HIGH/LOW SWITCHING, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.3	.6	50 PSI
0-30 PSI	.4	.8	100 PSI
0-60 PSI	.5	1.0	200 PSI
0-100 PSI	1.0	2.0	300 PSI
0-150 PSI	1.0	2.5	300 PSI
0-200 PSI	2.0	3.5	500 PSI
0-300 PSI	3.0	5.0	500 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when one S.P.D.T. Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch and the number of electric switches used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For one D.P.D.T. or two S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## INSTALLATION NOTES

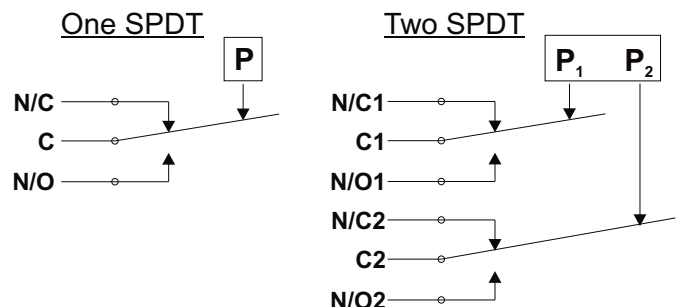
**Orientation** - The 5PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

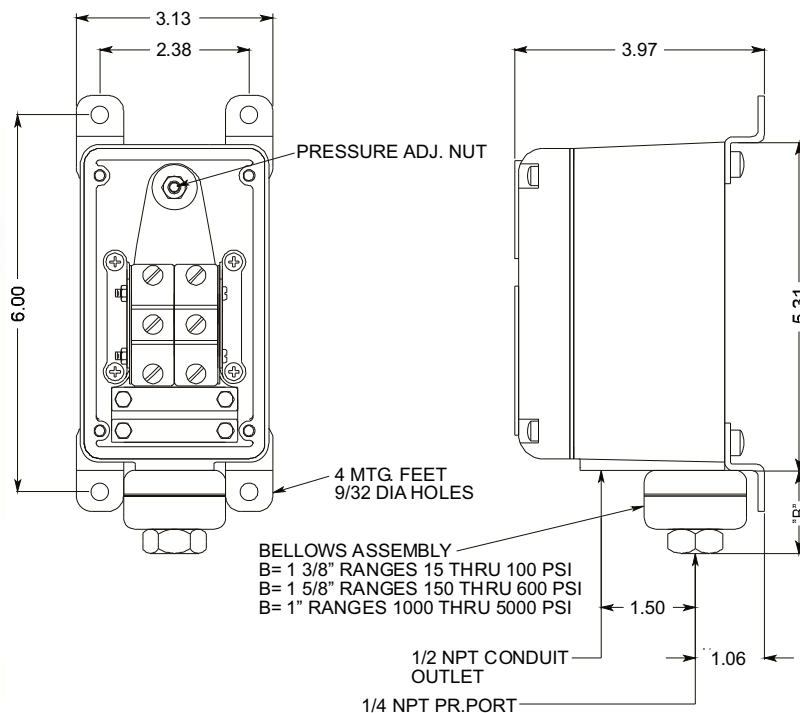


# 5PSB

## PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Range from 0-15 psi to 0-5000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts
- Versatile mechanism design
- Adjustable deadband available



#### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable dead-band, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low dead-band, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 1/2 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 3 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1 or 2 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Listed

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

5PS
W
1
B
U
2

**MODEL SERIES**

**HOUSING'**

W - WATERTIGHT - NEMA 4X, 12 & 13

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.  
 11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
 2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**

B - BELLOWS ACTUATED

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
 15A - 125, 250, 480 VAC

2 - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC

4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC

6 - GOLD CONTACT -  
 1A - 125 VAC

### SPECIAL FEATURES

- "-" - NO SPECIAL FEATURES
- A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)
- E - EXTERNAL PRESSURE ADJUSTMENT
- EE - TWO EXTERNAL PRESSURE ADJUSTMENTS
- L - ONE INDICATOR LIGHT
- LL - TWO INDICATOR LIGHTS
- M - MALE PIPE MOUNTING 1/2 NPT
- R> - MANUAL RESET, SWITCH ON INCR. PR.
- R< - MANUAL RESET, SWITCH ON DECR. PR.
- U - ADDITIONAL PAINTING AFTER ASSEMBLY
- V - HIGH TEMPERATURE SERVICE

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, KALREZ DIAPHRAGM, HIGH/LOW SWITCHING, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.7	1.5	300 PSI
0-30 PSI	.8	1.7	300 PSI
0-60 PSI	.9	1.9	300 PSI
0-100 PSI	1.1	2.2	300 PSI
0-150 PSI	4.0	8.5	1500 PSI
0-200 PSI	4.0	8.8	1500 PSI
0-300 PSI	5.0	9.5	1500 PSI
0-600 PSI	6.0	12.0	1500 PSI
0-1000 PSI	15.0	30.0	3000 PSI
0-2000 PSI	17.0	35.0	3000 PSI
0-3000 PSI	40.0	82.0	7000 PSI
0-5000 PSI	48.0	96.0	7000 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch are used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value  
 UL-recognized component, guide WSQ2, File E85076.  
 All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For one D.P.D.T or two S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## INSTALLATION NOTES

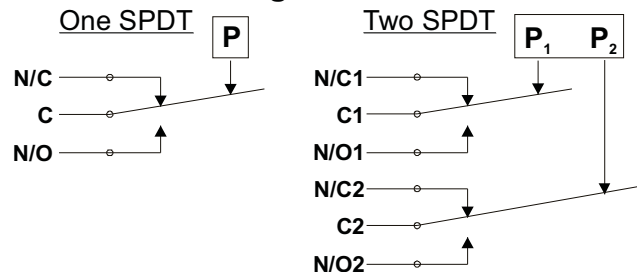
**Orientation** - The 5PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

### Wiring Schematic

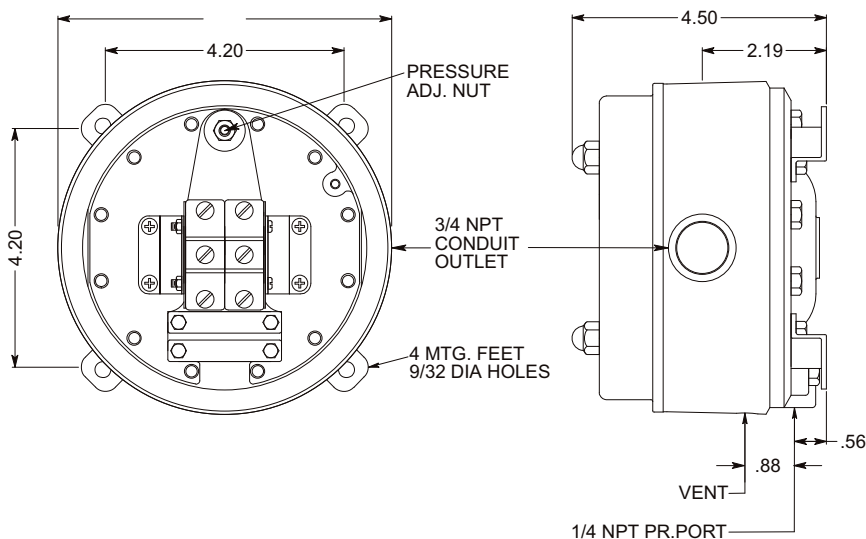


# 6PS

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range from 0-15 psi to 0-300 psi
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

**PHYSICAL DATA (Standard)**  
-see page 2 for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 3/4 NPT  
**Housing:** Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1/2% of range (for one SPDT switch)  
**Drift:** <1% of range (100,000 operations)  
**Weight:** Approx. 5 lbs.  
**Contact Ratings:** 15A - 125, 250, 480 VAC  
**Port Material:** Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.  
**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
 Industrial Controls Equipment Type 4 & 12, File E130423,  
 Pressure Operated Switch for Hazardous Locations,  
 Class I, Groups C & D; Class II, Groups E, F, & G File E65371.



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS    W    1    SST    2**

**MODEL SERIES**

**HOUSING'**

**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SPECIAL FEATURES**

**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**F** - FLANGE BASE MOUNTING  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**O** - HIGH OVERPRESSURE - INCREASES MAX. PR. TO 1000 PSI  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL - LISTED FEATURE  
**Z** - VITON DIAPHRAGM

**TYPE OF ELECTRIC SWITCHES**

**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, KALREZ DIAPHRAGM, HIGH/LOW SWITCHING, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.  
 Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - Low Deadband - Use table values.

**Type "2"** - Std. Deadband - Use table values.

**Type "3"** - High DC Rated - Multiply TYPE 2 table values by two.

**Type "4"** - Hermetically Sealed Switch - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - Gold Contact - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.2	.3	50 PSI
0-30 PSI	.2	.5	100 PSI
0-60 PSI	.5	1.0	200 PSI
0-100 PSI	1.0	2.0	300 PSI
0-150 PSI	1.0	2.5	300 PSI
0-200 PSI	2.0	3.5	500 PSI
0-300 PSI	3.0	5.0	500 PSI

## INSTALLATION NOTES

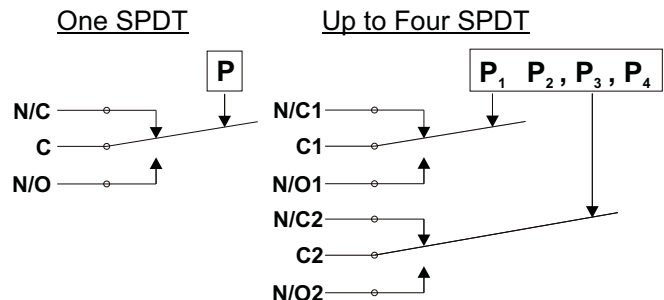
**Orientation** - The 6PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

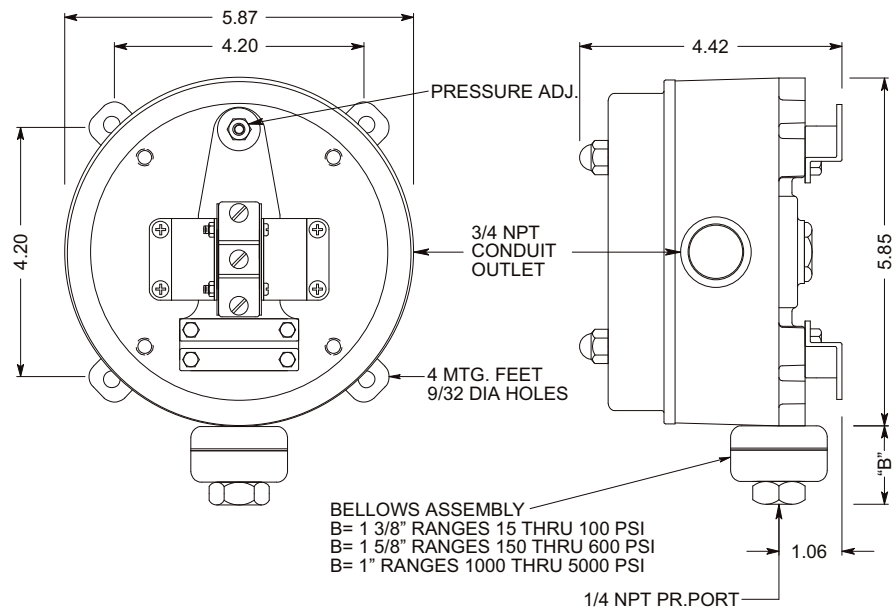


# 6PSB

## PRESSURE SWITCH

### BELLOWS SENSING ELEMENT

- Range 0-15 psi to 0-5000 psi
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Stainless steel wetted



### GENERAL DESCRIPTION

- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Available with one or two SPDT electric switches that are independently adjustable, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

### SPECIFICATIONS

#### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -40°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1/2% of range (for one SPDT switch)

**Drift:** <1% of range (100,000 operations)

**Weight:** Approx. 5 lbs.

**Contact Ratings:** 15A - 125, 250, 480 VAC

**Port Material:** Stainless Steel

**Bellows Material:** Stainless Steel

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
Industrial Controls Equipment Type 4 & 12, File E130423,  
Pressure Operated Switch for Hazardous Locations,  
Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**6PS W 1 B U 2**

**MODEL SERIES**

**HOUSING**  
**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**SENSING ELEMENT**  
**B** - BELLOWS ACTUATED

**SPECIAL FEATURES**  
**"."** - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING 1/2 NPT  
**P** - PANEL MOUNTING  
**Q** - DOUBLE SNAP ACTION (BELLEVILLE SPRING)  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL -LISTED FEATURE

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT -  
 1 A - 125 VAC

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, KALREZ DIAPHRAGM, HIGH/LOW SWITCHING, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND PSI		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-15 PSI	.7	1.3	300 PSI
0-30 PSI	.7	1.4	300 PSI
0-60 PSI	.8	1.6	300 PSI
0-100 PSI	1.0	1.9	300 PSI
0-150 PSI	4.0	7.3	1500 PSI
0-200 PSI	4.0	7.6	1500 PSI
0-300 PSI	4.0	8.2	1500 PSI
0-600 PSI	5.0	10.0	1500 PSI
0-1000 PSI	12.0	25.0	3000 PSI
0-2000 PSI	15.0	30.0	3000 PSI
0-3000 PSI	37.0	75.0	7000 PSI
0-5000 PSI	45.0	90.0	7000 PSI

## INSTALLATION NOTES

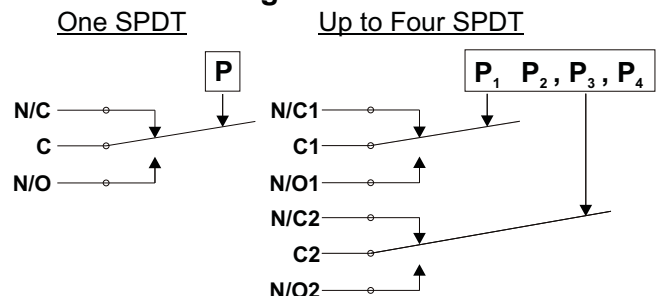
**Orientation** - The 6PSB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic

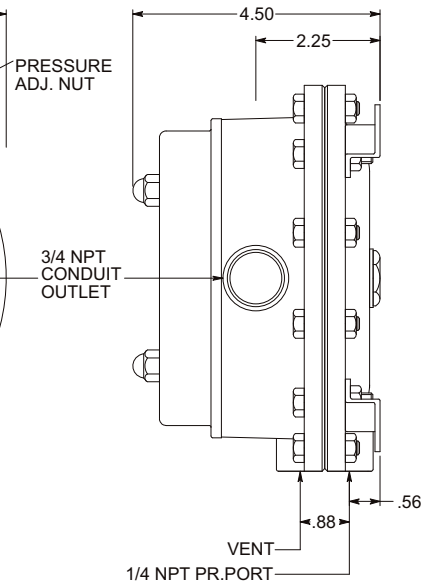
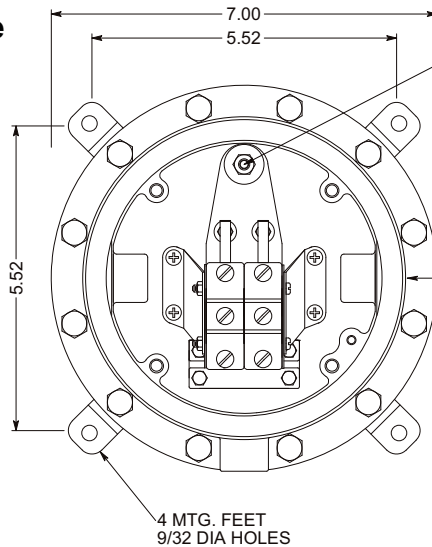


# 7PS

## PRESSURE SWITCH

### DIAPHRAGM SENSING ELEMENT

- Range 1.5 WC to 0-150 WC
- NEMA 4X & 12 housing
- Class I, Div. I, Gr. C & D available
- Up to four SPDT contacts
- Various wetted materials available



#### GENERAL DESCRIPTION

- Designed for low pressure applications
- Cast-aluminum housing available in explosion-proof or weather-tight options
- Frictionless switching mechanism, which amplifies the movement of the switching element, resulting in improved life, repeatability, and lower deadbands
- Accommodates up to four full-size SPDT electric switches, which are available in a variety of configurations, including: adjustable deadband, DPDT, high/low operation, & manual reset
- Switch configurations can be supplied with low deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- Standard pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -20°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 3/4 NPT  
**Housing:** Cast Aluminum  
**Deadband:** Fixed  
**Sensitivity:** 1/2% of range (for one SPDT Switch)  
**Drift:** <1% of range (100,000 operations)  
**Weight:** Approx. 6 lbs.  
**Contact Ratings:** 15A - 125, 250, 480 VAC  
**Port Material:** Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** 1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.  
**Contact Listings:** UL Recognized, CSA Certified



Underwriters Laboratories, Inc. Listed:  
 Industrial Controls Equipment Type 4 & 12, File E130423,  
 Pressure Operated Switch for Hazardous Locations,  
 Class I, Groups C & D; Class II, Groups E, F, & G File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**7PS    W    1    SST    2**

**MODEL SERIES**

**HOUSING:**  
**W** - WATERTIGHT - NEMA 4X & 12  
**X** - EXPLOSION PROOF - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**  
**1** - ONE S.P.D.T.  
**11** - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.  
**2** - TWO S.P.D.T. INDEPENDENT ADJUSTMENT  
**3** - THREE S.P.D.T. INDEPENDENT ADJUSTMENT  
**4** - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT

**TYPE OF ELECTRIC SWITCHES**  
**1** - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
**2** - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
**3** - HIGH DC RATED (MAGNETIC BLOWOUT)  
 10A - 125 VDC; 3A - 250 VDC  
**4** - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
**6** - GOLD CONTACT - 1 A - 125 VAC

### SPECIAL FEATURES

- "-" - NO SPECIAL FEATURES  
**A** - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)  
**E** - EXTERNAL PRESSURE ADJUSTMENT  
**EE** - TWO EXTERNAL PRESSURE ADJUSTMENTS  
**F** - FLANGE BASE MOUNTING  
**G** - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PR  
**J** - SAFETY SEAL  
**L** - ONE INDICATOR LIGHT (NOT ON X HOUSING)  
**LL** - TWO INDICATOR LIGHTS (NOT ON X HOUSING)  
**M** - MALE PIPE MOUNTING ½ NPT  
**P** - PANEL MOUNTING  
**R>** - MANUAL RESET, SWITCH ON INCR. PR.  
**R<** - MANUAL RESET, SWITCH ON DECR. PR.  
**SS** - SPECIAL TRIM BASE 316 STAINLESS STEEL  
**SI** - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)  
**SY** - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)  
**T** - PTFE PROTECTED DIAPHRAGM  
**U** - ADDITIONAL PAINTING AFTER ASSEMBLY  
**V** - HIGH TEMP SERVICE - NOT A UL-LISTED FEATURE  
**Z** - VITON DIAPHRAGM

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, KALREZ DIAPHRAGM, HIGH/LOW SWITCHING, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the maximum switch differentials when the Type "1" or Type "2" electric switch is used.

Deadband is affected by the type of electric switch used. Each type of electric switch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Use table values.

**Type "2"** - *Std. Deadband* - Use table values.

**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "6"** - *Gold Contact* - Use TYPE 2 table values.

For D.P.D.T., 2, 3 or 4 S.P.D.T. switches multiply calculated value from above by 1.5 to 2.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM DEADBAND WC		MAX. WORKING PRESSURE
	TYPE "1"	TYPE "2"	
0-1.5 WC	.15	-	25 PSI
0-3 WC	.16	-	25 PSI
0-6 WC	.2	.4	25 PSI
0-15 WC	.3	.6	25 PSI
0-30 WC	.6	1.1	25 PSI
0-60 WC	.7	1.4	25 PSI
0-100 WC	.8	1.6	25 PSI
0-150 WC	1.2	2.4	25 PSI

## INSTALLATION NOTES

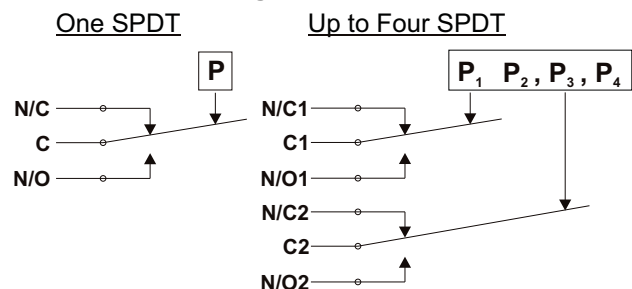
**Orientation** - The 7PS will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).

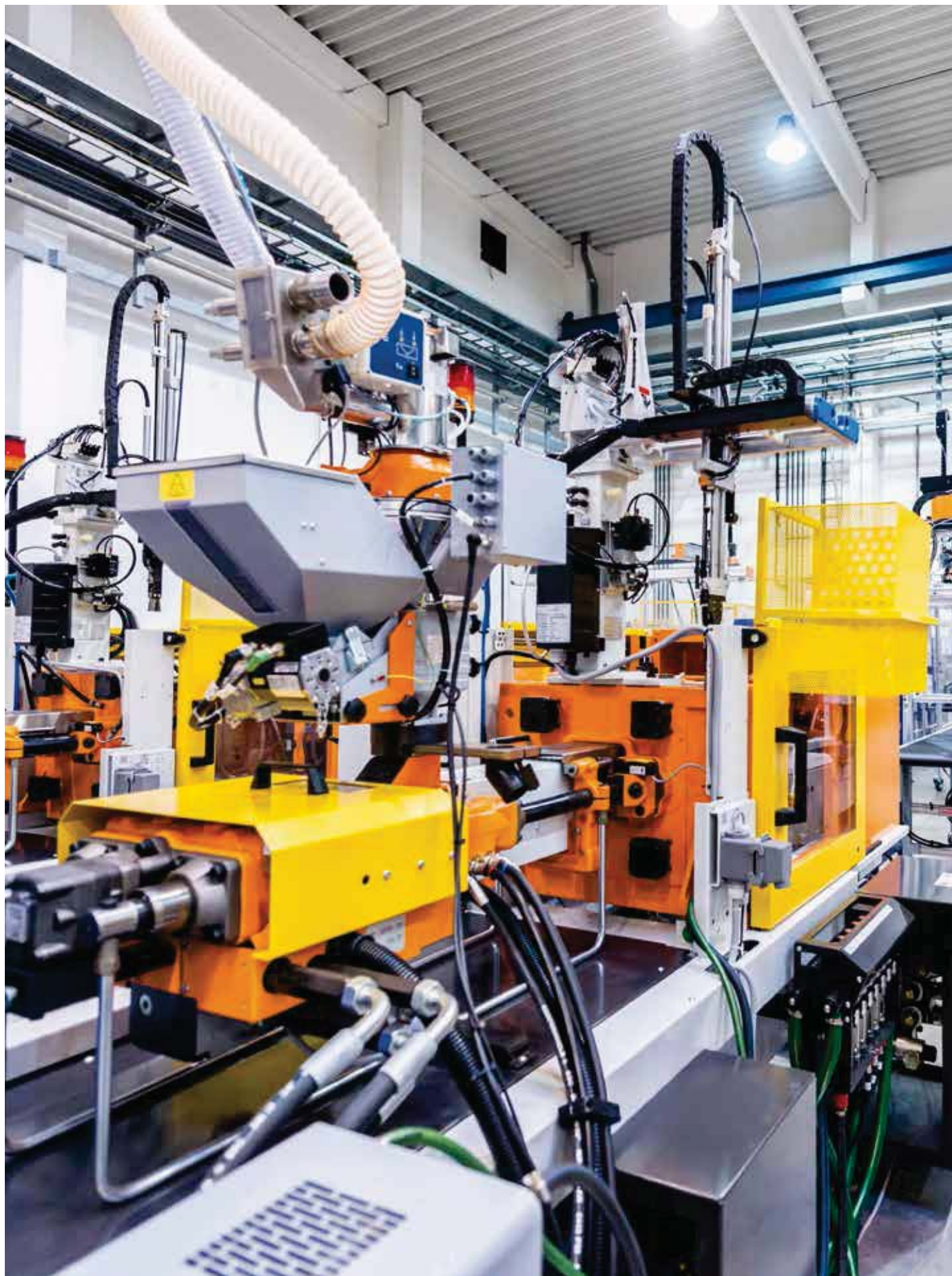
**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

### Wiring Schematic







# PNEUMATIC VALVE ACTUATED PRODUCTS

Solon Manufacturing's Pneumatic Valve Actuators simplify circuits by eliminating the need for wire shielding, transformers, and solenoids by converting air pressure into linear or rotary motion. Pneumatic Valve Actuators are an effective pressure switch solution in applications where extreme temperatures and spark hazards are problematic.

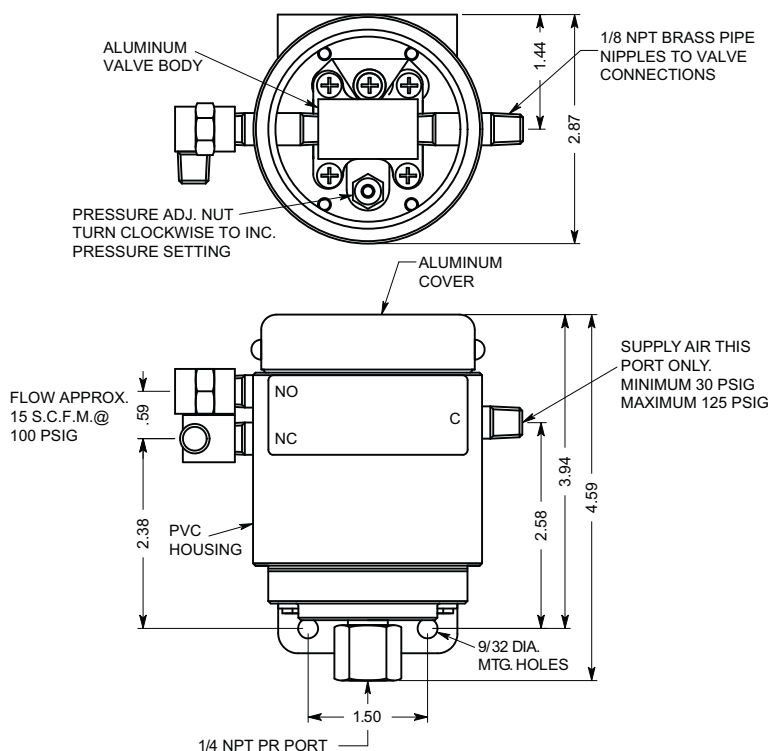
The versatile design of the Solon Manufacturing Pneumatic Valve Actuators allows a wide variety of sensing element arrangements and materials to be used in their constructions. Diaphragm, bellows, and piston models can be configured for pressure, vacuum and differential pressure applications. Lightweight and economical, the compact design of Solon's Pneumatic Valve Actuator products meet tight envelope requirements, delivering an alternative to higher priced options.

# 2PV-MV

## PNEUMATIC VALVE ACTUATOR

### DIAPHRAGM SENSING ELEMENT

- Range 2-300 psi
- Snap-acting 3-way valve
- High max. pressure available
- Various wetted materials available



#### GENERAL DESCRIPTION

- PVC housing with aluminum components
- Employs a 3-way block-and-bleed valve that is actuated by increase/decrease of pressure at the sensing element
- Vacuum-sensing element with Buna-N elastomer diaphragm
- Flexible & compact footprint accommodate a variety of sensing-element arrangements: diaphragm, bellows, and piston models can be configured for pressure, vacuum, and differential applications

#### SPECIFICATIONS

##### PHYSICAL DATA (STANDARD)

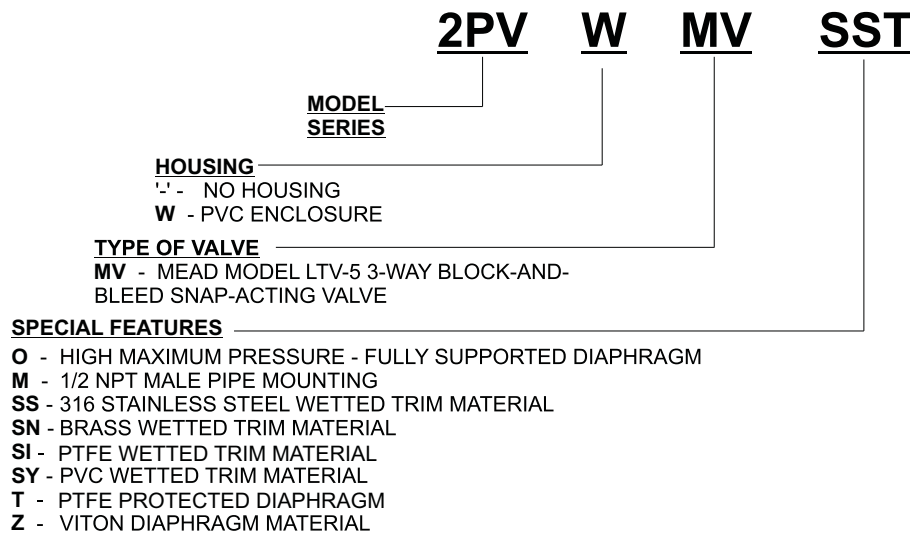
-see page 2 for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** 0°F  
**Pressure Connection:** 1/4 NPT  
**Housing:** PVC housing with aluminum components  
**Deadband:** Fixed  
**Weight:** Approx. 1.5 lbs.  
**Port Material:** Brass and Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**Valve:** Model LTV-5 Three Way Block-and-Bleed  
**Valve Connections:** 1/8 NPT  
**Valve Flow Capacity:** 15 SCFM at 100 PSI  
**Valve Pilot Pressure:** 30 to 125 PSIG



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUST. PRESSURE RANGE	FIXED VALVE DEADBAND	MAXIMUM WORKING PRESSURE	MAXIMUM PRESSURE TYPE "O"
0-2 PSI	.25 PSI	20 PSI	1000 PSI
0-5 PSI	.27 PSI	20 PSI	1000 PSI
0-10 PSI	.34 PSI	50 PSI	1000 PSI
0-20 PSI	.50 PSI	50 PSI	1000 PSI
0-50 PSI	1.6 PSI	250 PSI	1500 PSI
0-100 PSI	1.9 PSI	250 PSI	1500 PSI
0-200 PSI	4.4 PSI	500 PSI	1500 PSI
0-300 PSI	5.3 PSI	500 PSI	1500 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the nominal valve differentials when the valve is operated at 100 PSIG. Deadbands are decreased as pilot pressure is reduced. Contact factory for more detailed information on deadbands.

## INSTALLATION NOTES

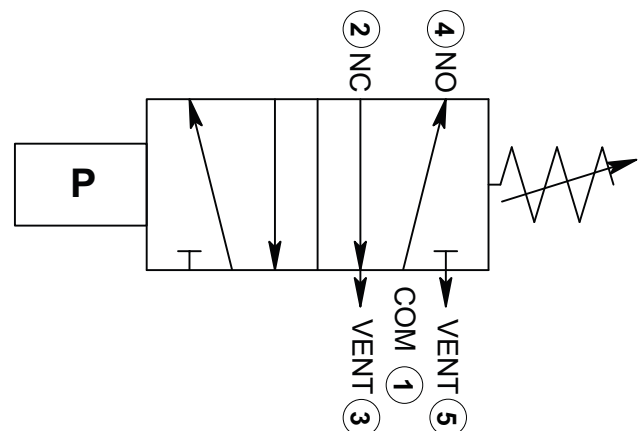
**Orientation** - The 2PV-MV will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Valve Connections** - Valve port connections are 1/8 NPT and are marked C, NO, NC. Pilot pressure should be supplied at the common (C) port. Minimum 30 PSI is required to operate valve.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Valve Schematic



# 2PV-MVAC

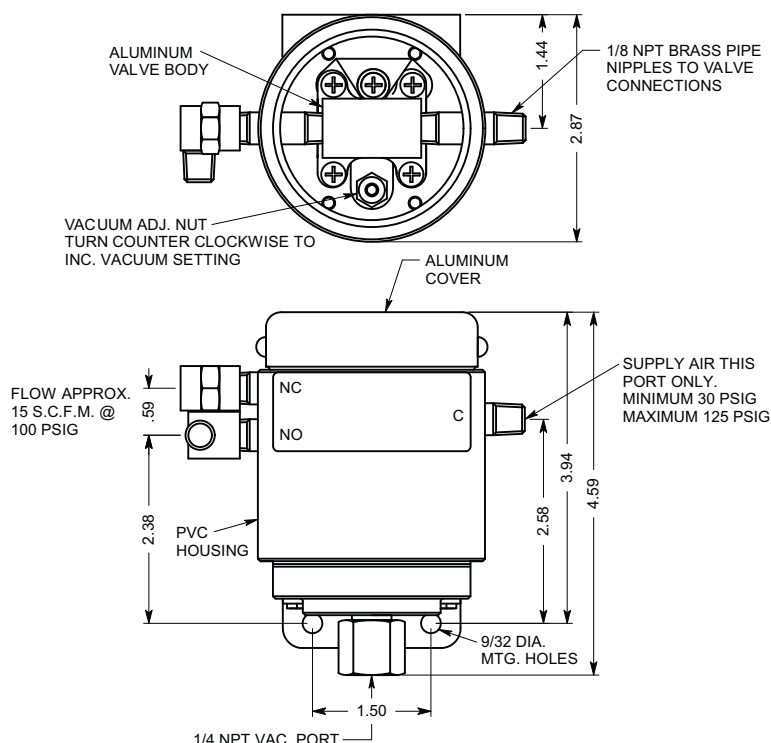
## VACUUM PNEUMATIC VALVE ACTUATOR

### DIAPHRAGM SENSING ELEMENT

- Range 2-300 psi
- Pneumatic control
- Snap-acting 3-way valve
- High max. pressure available
- Various wetted materials available



SHOWN WITHOUT HOUSING



#### GENERAL DESCRIPTION

- 3-way block-and-bleed valve
- Elastomer diaphragm sensing element
- Aluminum Buna-N standard wetted parts
- Pneumatic valve pilot pressures ranging from 30-125 psi

#### SPECIFICATIONS

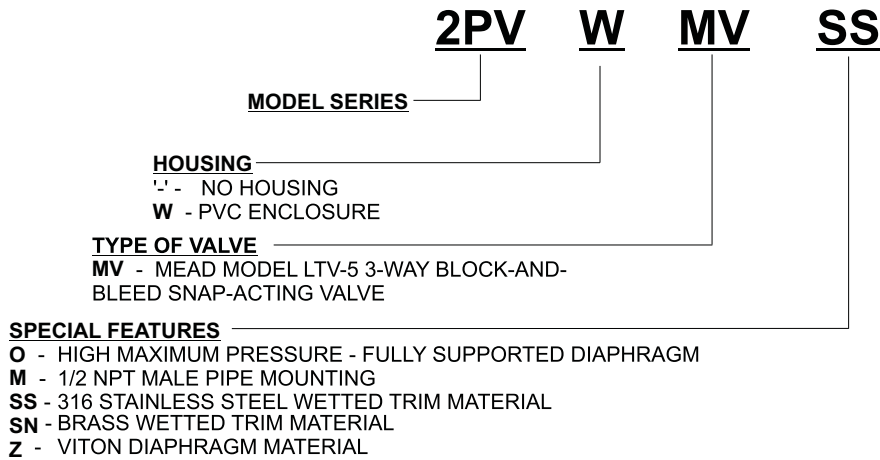
##### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** 0°F  
**Vacuum Connection:** 1/4 NPT  
**Housing:** PVC housing  
**Deadband:** Fixed  
**Weight:** Approx. 1.5 lbs.  
**Port Material:** Brass and Aluminum  
**Diaphragm Material:** Buna N  
**Set Point Adjustment:** Screw type, field adjustable  
**Valve:** Model LTV-5 Three Way Block-and-Bleed  
**Valve Connections:** 1/8 NPT  
**Valve Flow Capacity:** 15 SCFM at 100 PSI  
**Valve Pilot Pressure:** 30 to 125 PSIG



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



## 2. SPECIFY A RANGE

ADJUSTABLE VACUUM RANGE	MAXIMUM VALVE DEADBAND	MAXIMUM WORKING PRESSURE
0-5 IN/HG	.53 HG	20 PSI
0-15 IN/HG	.67 HG	20 PSI
0-30 IN/HG	.90 HG	20 PSI
-30/0/30 IN/HG	1.40 HG	20 PSI

\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the nominal valve differentials when the valve is operated at 100 PSIG. Deadbands are decreased as pilot pressure is reduced. Contact factory for more detailed information on deadbands.

## INSTALLATION NOTES

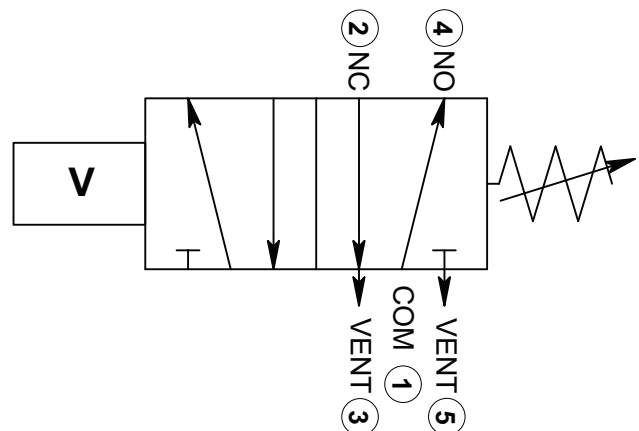
**Orientation** - The 2PV-MVAC will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Valve Connections** - Valve port connections are 1/8 NPT and are marked C, NO, NC. Pilot pressure should be supplied at the common (C) port. Minimum 30 PSI is required to operate valve.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn vacuum adjustment nut counter clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Valve Schematic



# 2PV-MVB

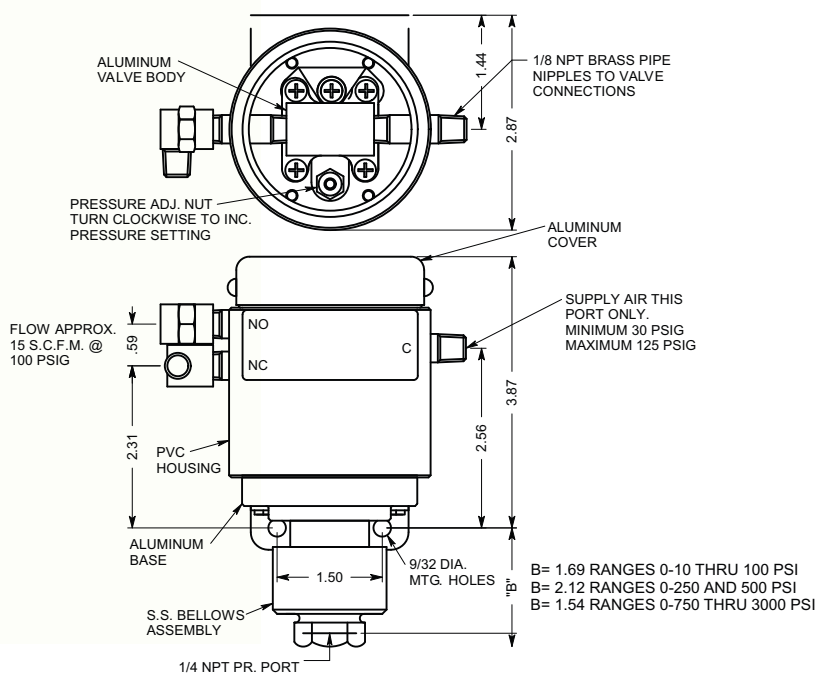
## PNEUMATIC VALVE

### BELLOWS SENSING ELEMENT

- Range 10-3000 psi
- Snap-acting 3-way valve
- High max. pressure available
- Various wetted materials available



SHOWN WITHOUT HOUSING



## GENERAL DESCRIPTION

- PVC housing with aluminum components
- Employs a 3-way block-and-bleed valve that is actuated by increase/decrease of pressure at the sensing element
- Vacuum-sensing element with Buna-N elastomer diaphragm
- Flexible and compact footprint accommodates a variety of sensing-element arrangements: diaphragm, bellows, and piston models can be configured for pressure, vacuum, and differential applications
- All-welded 316 S/S bellows

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** 0°F

**Pressure Connection:** 1/4 NPT

**Housing:** PVC housing with aluminum components

**Deadband:** Fixed

**Weight:** Approx. 1.5 lbs.

**Port Material:** All Welded 316SS

**Bellows Material:** All Welded 316SS

**Set Point Adjustment:** Screw type, field adjustable

**Valve:** Model LTV-5 Three Way Block-and-Bleed

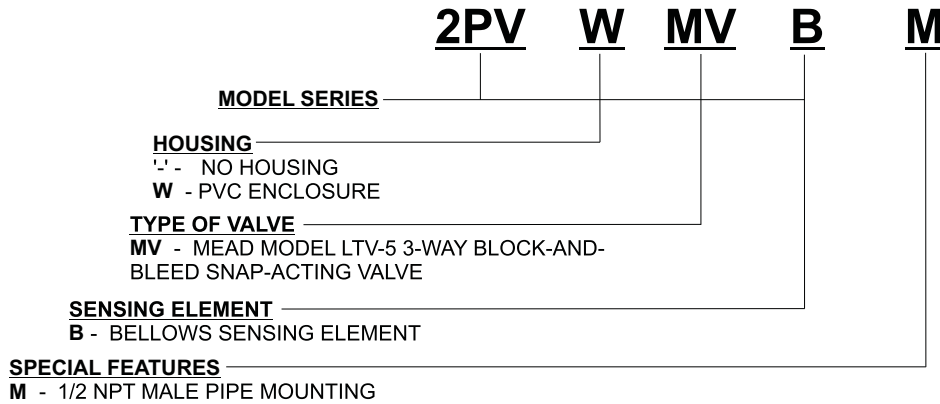
**Valve Connections:** 1/8 NPT

**Valve Flow Capacity:** 15 SCFM at 100 PSI

**Valve Pilot Pressure:** 30 to 125 PSIG

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



## 2. SPECIFY A RANGE

ADJUST. PRESSURE RANGE	VALVE DEADBAND	MAXIMUM WORKING PRESSURE
0-10 PSI	.80 PSI	300 PSI
0-20 PSI	.90 PSI	300 PSI
0-50 PSI	1.0 PSI	300 PSI
0-100 PSI	1.5 PSI	300 PSI
0-250 PSI	6 PSI	1500 PSI
0-500 PSI	8 PSI	1500 PSI
0-750 PSI	16 PSI	2500 PSI
0-1000 PSI	19 PSI	2500 PSI
0-2000 PS	60 PSI	5000 PSI
0-3000 PSI	66 PSI	5000 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the nominal valve differentials when the valve is operated at 100 PSIG. Deadbands are decreased as pilot pressure is reduced. Contact factory for more detailed information on deadbands.

## INSTALLATION NOTES

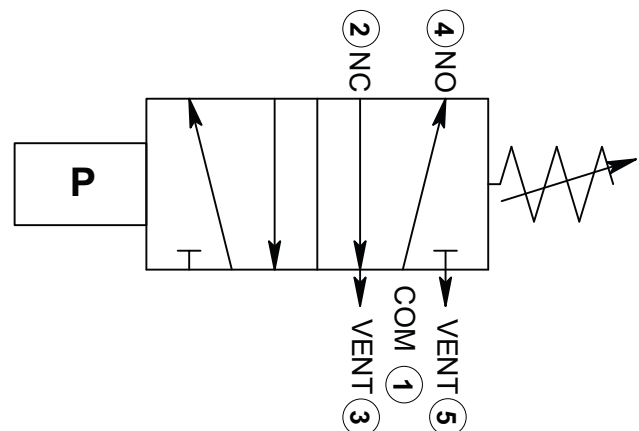
**Orientation** - The 2PV-MVB will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Valve Connections** - Valve port connections are 1/8 NPT and are marked C, NO, NC. Pilot pressure should be supplied at the common (C) port. Minimum 30 PSI is required to operate valve.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Valve Schematic



# 2PV-MVD

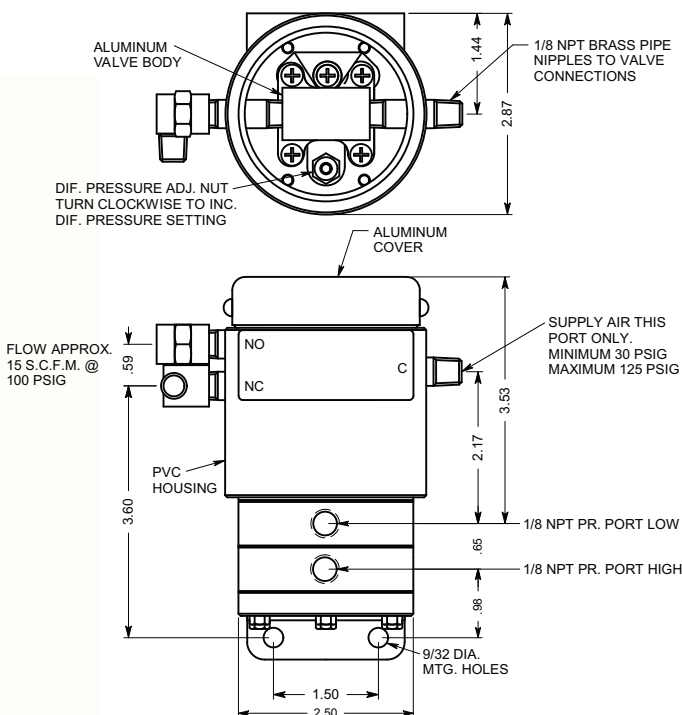
## DIFFERENTIAL PRESSURE ACTUATED VALVE

### DIAPHRAGM SENSING ELEMENT

- Range 10-3000 psi
- Snap-acting 3-way valve
- High max. pressure available
- Various wetted materials available



SHOWN WITHOUT HOUSING



## GENERAL DESCRIPTION

- PVC housing with aluminum components
- Employs a 3-way block-and-bleed valve that is actuated by increase/decrease in differential pressure at the sensing element
- Other useful options can easily be specified with this model, including the “O” special feature for applications requiring higher working pressures
- Standard pressure-sensing element constructed of aluminum alloy using a strong Buna-N elastomer diaphragm (other diaphragm and wetted materials are available)
- Flexible and compact footprint accommodate a variety of sensing-element arrangements: diaphragm, bellows, and piston models can be configured for pressure, vacuum, and differential applications

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

-see page 2 for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** 0°F

**Pressure Connections:** 1/8 NPT

**Housing:** PVC

**Deadband:** Fixed

**Weight:** Approx. 2 lbs.

**Port Material:** Aluminum

**Diaphragm Material:** Buna N

**Set Point Adjustment:** Screw type, field adjustable

**Valve:** Model LTV-5 Three Way Block-and-Bleed

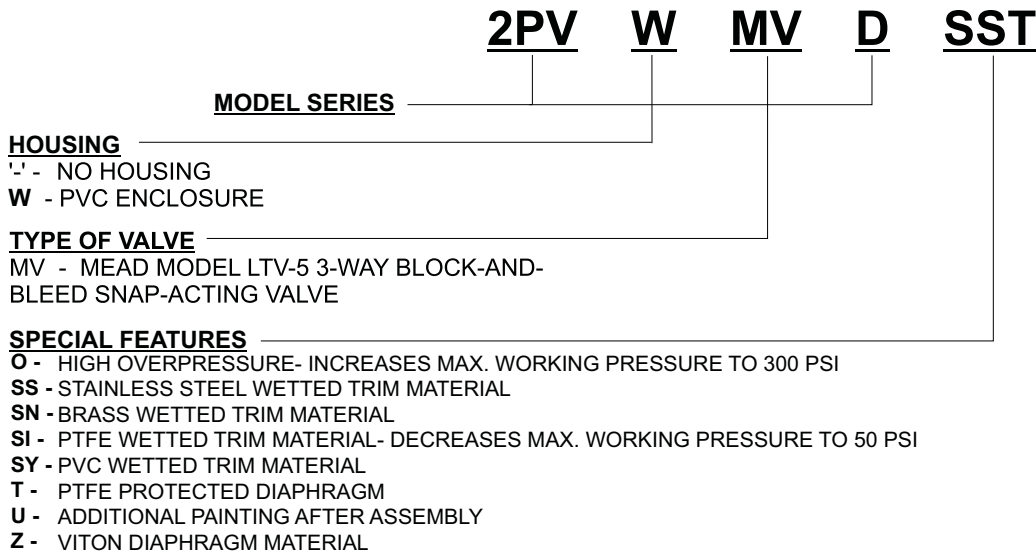
**Valve Connections:** 1/8 NPT

**Valve Flow Capacity:** 15 SCFM at 100 PSI

**Valve Pilot Pressure:** 30 to 125 PSIG

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



\* SPECIAL FEATURES SUCH AS STAINLESS TAGGING, OR SPECIAL WETTED PARTS; KYNAR, KALREZ, HASTELLOY, ETC. ARE AVAILABLE ON REQUEST. CONSULT FACTORY FOR CAPABILITIES AND PRICING FOR ANY FEATURES NOT SHOWN.

## 2. SPECIFY A RANGE

ADJUSTABLE PRESSURE RANGE	MAXIMUM VALVE DEADBAND	MAX. WORKING PRESSURE
0-10 PSID	.40 PSID	100 PSI
0-20 PSID	.53 PSID	100 PSI
0-50 PSID	.90 PSID	100 PSI
0-100 PSID	1.3 PSID	100 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the nominal valve differentials when the valve is operated at 100 PSIG. Deadbands are decreased as pilot pressure is reduced. Contact factory for more detailed information on deadbands.

## INSTALLATION NOTES

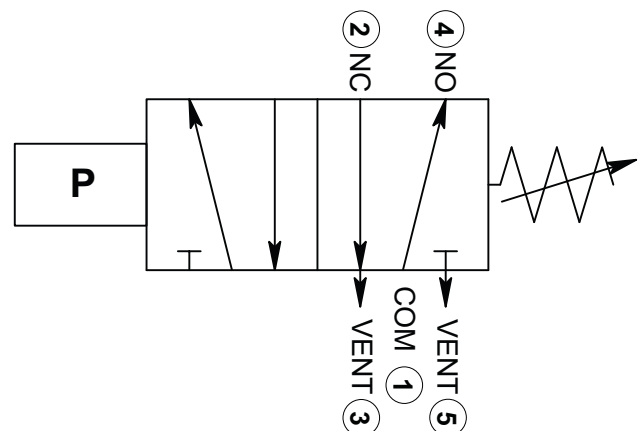
**Orientation** - The 2PV-MVD will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Valve Connections** - Valve port connections are 1/8 NPT and are marked C, NO, NC. Pilot pressure should be supplied at the common (C) port. Minimum 30 PSI is required to operate valve.

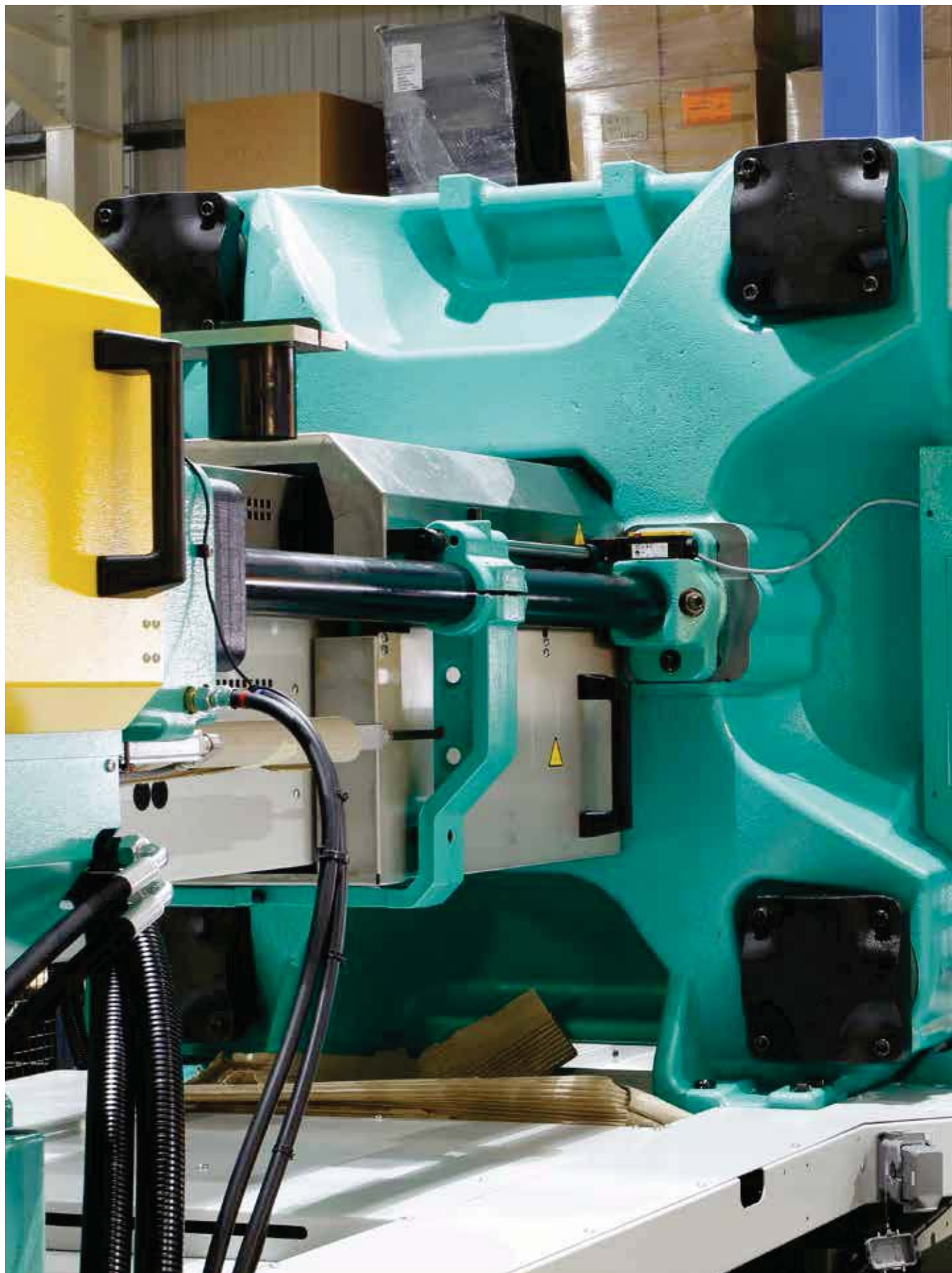
**Pressure Connection** - 1/4 NPT female is standard.

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Valve Schematic







# HEAVY DUTY PRODUCTS

The Solon Heavy-Duty Pressure Switch series will withstand high-shock/high duty-cycle applications which can cause premature failure of traditional pressure controls. Specifically designed for tough applications such as hydraulic punch press, injection molding machines, and high-pressure gas systems.

# 2PSH

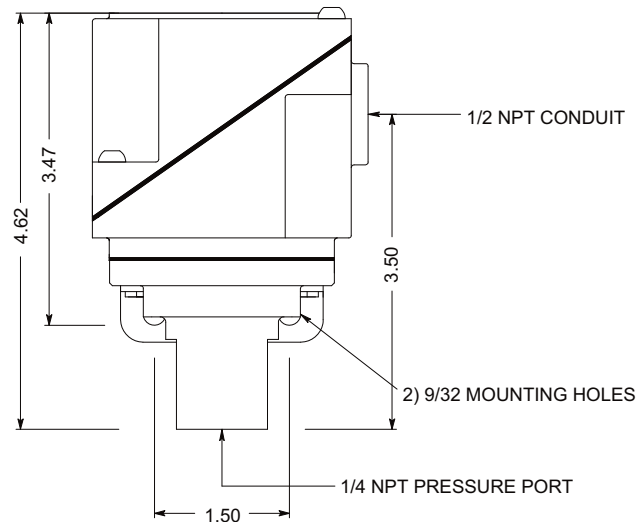
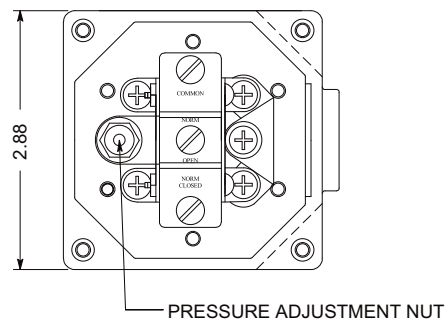
## HEAVY-DUTY PRESSURE SWITCH

### PISTON SENSING ELEMENT

- Range from 200-10000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts



SHOWN WITH COVER REMOVED



#### GENERAL DESCRIPTION

- Designed to withstand high-shock/high duty-cycle applications
- Die-cast aluminum housing
- Low-friction piston-sensing element
- Available with one or two SPDT electric switches that are independently adjustable
- Fixed deadband
- Optimized for salt spray testing (paint per ASTM B117 standards)

#### SPECIFICATIONS

##### PHYSICAL DATA (Standard) -see page 2 for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** -40°F  
**Pressure Connection:** 1/4 NPT  
**Electrical Connection:** 1/2 NPT  
**Housing:** Diecast Aluminum - Painted per ASTM B117  
**Deadband:** Fixed  
**Weight:** Approx. 1.5 lbs.  
**Contact Ratings:** 15A - 125, 250, 480 VAC  
**Port Material:** Brass  
**Piston Material:** Carbide - 90 Rc  
**Seal Material:** PTFE based material  
**Set Point Adjustment:** Screw type, field adjustable  
**No. Contacts:** One or Two S.P.D.T.  
**Contact Listings:** UL Recognized

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**2PS    W    1    H    U    2**

**MODEL SERIES** ————

**HOUSING**  
 ' ' - NO HOUSING  
 W - WATERTIGHT - NEMA 4 & 12

**NUMBER OF ELECTRIC SWITCHES**  
 1 - ONE S.P.D.T.  
 2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SENSING ELEMENT**  
 H - PISTON SENSING ELEMENT

**SPECIAL FEATURES**  
 M - 1/2 NPT MALE PIPE MOUNTING  
 U - ADDITIONAL PAINTING AFTER ASSEMBLY  
 V - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

**TYPE OF ELECTRIC SWITCHES**  
 1 - LOW DEADBAND  
 15A - 125, 250, 480 VAC  
 2 - STANDARD DEADBAND  
 15A - 125, 250, 480 VAC; 0.5A - 125 VDC  
 3 - HIGH DC RATED (MAGNETIC BLOW-OUT) 10A - 125 VDC; 3A - 250 VDC  
 4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC  
 5 - SUB MINIATURE SWITCH - 2 S.P.D.T. 5A - 125, 250 VAC; 0.5A - 125 VDC

## 2. SPECIFY A RANGE

### 3/16" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
20-200 PSI	20-90 PSI	5000 PSI
50-500 PSI	40-135 PSI	5000 PSI
100-1000 PSI	80-225 PSI	5000 PSI
200-2000 PSI	150-300 PSI	5000 PSI
300-3000 PSI	170-315 PSI	5000 PSI
400-4000 PSI	180-330 PSI	5000 PSI

### 1/8" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
250-2500 PSI	200-570 PSI	10000 PSI
450-4500 PSI	400-1000 PSI	10000 PSI
700-7000 PSI	700-1250 PSI	10000 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the nominal switch differentials when the standard (type "2") microswitch is used. For piston type switches the deadband is raised as the switch setpoint increases. This is why a range is given for the deadband.

Deadband is also affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

**Type "1"** - *Low Deadband* - Subtract 10 PSI from table values.

**Type "2"** - *Std. Deadband* - Use table values

**Type "3"** - *High DC Rated* - Add 20 PSI to table values.

**Type "4"** - *Hermetically Sealed Switch* - Use table value UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.

**Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Add 30 PSI to table values.

## INSTALLATION NOTES

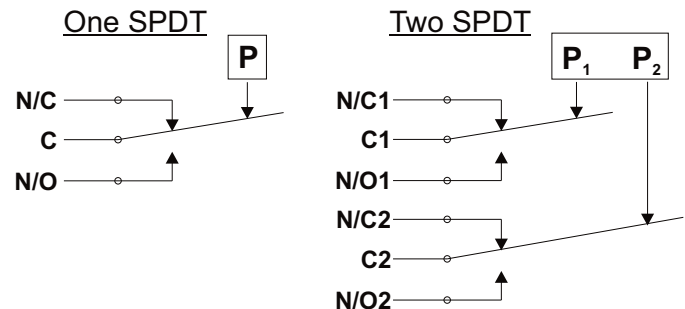
**Orientation** - The 2PSH will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on microswitch(es). Single switch units have #6 screw terminals while dual switch versions employ a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## Wiring Schematic



# 2PV-MVH

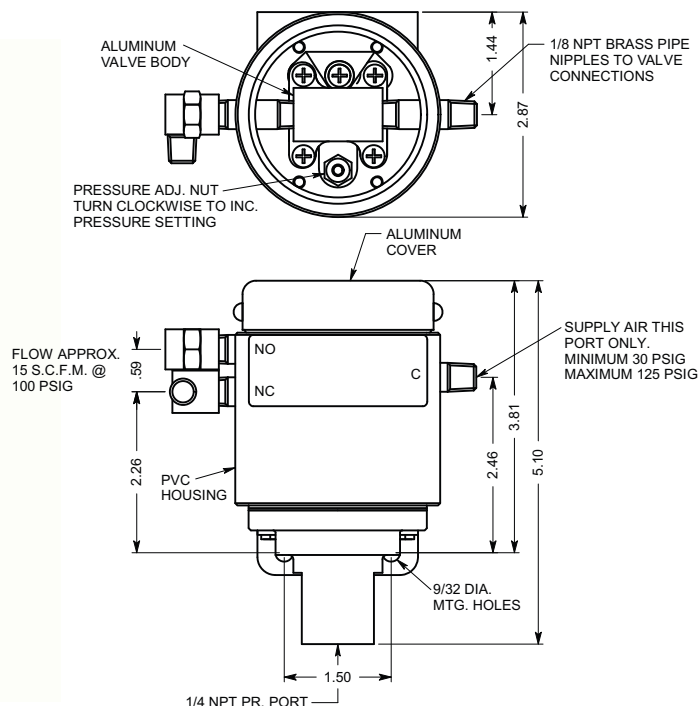
## HEAVY-DUTY PNEUMATIC VALVE ACTUATOR

### PISTON SENSING ELEMENT

- Range 200-10000 psi
- Pneumatic control
- Snap-acting 3-way valve



SHOWN WITH COVER REMOVED



## GENERAL DESCRIPTION

- Designed to withstand high-shock/high duty-cycle applications
- PVC housing with aluminum components
- Low-friction piston-sensing element
- Employs a 3-way block-and-bleed valve that is actuated by increase/decrease of pressure at the sensing element
- Fixed deadband

## SPECIFICATIONS

### PHYSICAL DATA (Standard)

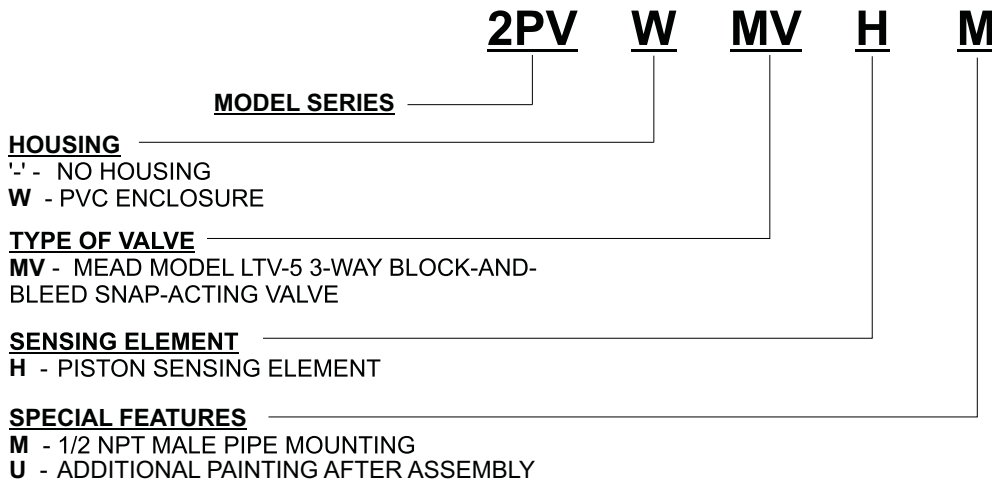
-see page 2 for special features

**Maximum Ambient Temperature:** 180°F  
**Minimum Ambient Temperature:** 0°F  
**Pressure Connection:** 1/4 NPT  
**Housing:** PVC  
**Deadband:** Fixed  
**Weight:** Approx. 2 lbs.  
**Port Material:** Brass  
**Piston Material:** Carbide - 90 Rc  
**Seal Material:** PTFE based material  
**Set Point Adjustment:** Screw type, field adjustable  
**Valve:** Model LTV-5 Three Way Block-and-Bleed  
**Valve Connections:** 1/8 NPT  
**Valve Flow Capacity:** 15 SCFM at 100 PSI  
**Valve Pilot Pressure:** 30 to 125 PSIG



# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER



## 2. SPECIFY A RANGE

### 3/16" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
20-200 PSI	20-60 PSI	5000 PSI
50-500 PSI	40-90 PSI	5000 PSI
100-1000 PSI	80-150 PSI	5000 PSI
200-2000 PSI	150-200 PSI	5000 PSI
300-3000 PSI	170-210 PSI	5000 PSI
400-4000 PSI	180-220 PSI	5000 PSI

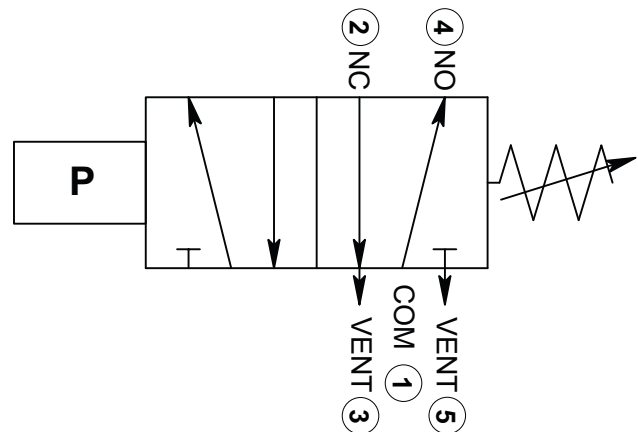
### 1/8" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
250-2500 PSI	200-380 PSI	10000 PSI
450-4500 PSI	400-700 PSI	10000 PSI
700-7000 PSI	700-850 PSI	10000 PSI

## DEADBAND NOTES

The deadbands listed in the tables are the nominal valve differentials when the valve is operated at 100 PSIG. Deadbands are decreased as pilot pressure is reduced. Contact factory for more detailed information on deadbands.

## Valve Schematic



## INSTALLATION NOTES

**Orientation** - The 2PV-MVH will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Valve Connections** - Valve port connections are 1/8 NPT and are marked C, NO, NC. Pilot pressure should be supplied at the common (C) port. Minimum PSI is required to operate valve.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 male is available ("M" option).

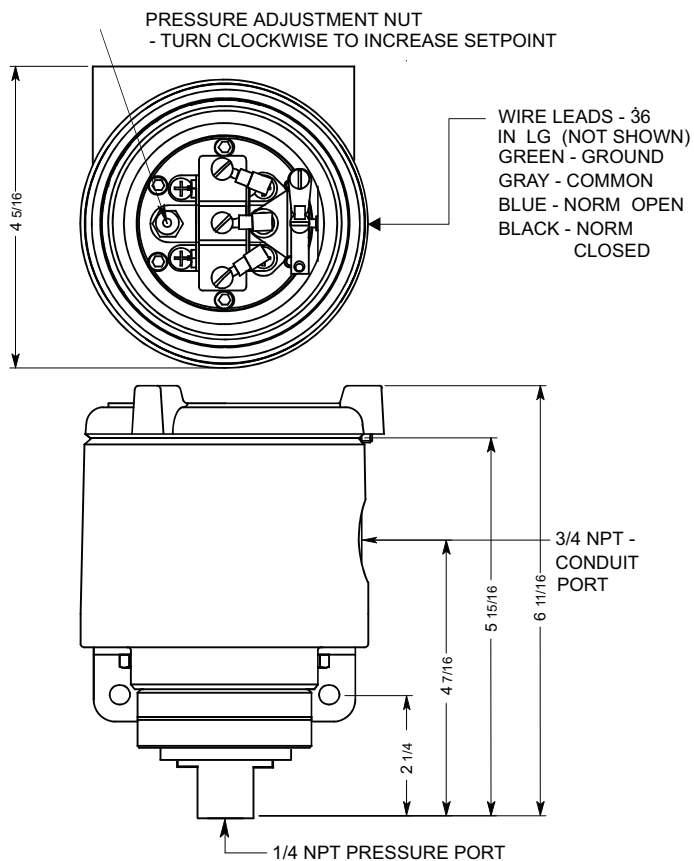
**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

# 42PSH

## HEAVY-DUTY PRESSURE SWITCH

### PISTON SENSING ELEMENT

- Range 200-10000 psi
- NEMA 4, 7, & 9 housing
- Class I, Div. I, Gr. A, B, C, D
- One or two SPDT contacts



### GENERAL DESCRIPTION

- Designed to withstand high-shock/high duty-cycle applications
- Die-cast aluminum housing
- Low-friction piston-sensing element
- Available with one or two SPDT electric switches that are independently adjustable
- Fixed deadband



### SPECIFICATIONS

#### PHYSICAL DATA (Standard) -see back for special features

**Maximum Ambient Temperature:** 180°F

**Minimum Ambient Temperature:** -20°F

**Pressure Connection:** 1/4 NPT

**Electrical Connection:** 3/4 NPT

**Housing:** 355/356 Cast Aluminum

**Deadband:** Fixed

**Sensitivity:** 1% of range (for 1 SPDT)

**Weight:** Approx. 4 lbs.

**Contact Ratings:** 15A - 125, 250 VAC (1 S.P.D.T.)

**OR:** 5A - 125, 250 VAC (2 S.P.D.T.)

**Port Material:** Brass

**Piston Material:** Carbide - 90 Rc

**Seal Material:** PTFE based material

**Set Point Adjustment:** Screw type, field adjustable

**No. Contacts:** One or Two S.P.D.T.

**Contact Listings:** UL Recognized, CSA Certified



All models shown are Underwriters Laboratories, Inc. listed for use in Class I, Groups A, B, C, & D; Class II, Groups E, F, & G hazardous locations under File E65371.

# ORDERING A SWITCH

## 1. SPECIFY A MODEL NUMBER

**42PS**   **X**   **1**   **H**   **U**   **2**

MODEL SERIES

**TYPE OF ELECTRIC SWITCHES**

1 - LOW DEADBAND  
15A - 125, 250, 480 VAC

2 - STANDARD DEADBAND  
15A - 125, 250, 480 VAC; 0.5A - 125 VDC

3 - HIGH DC RATED (MAGNETIC BLOWOUT)  
10A - 125 VDC; 3A - 250 VDC

5 - SUB MINIATURE SWITCH - 2 S.P.D.T.  
5A - 125, 250 VAC; 0.5A - 125 VDC

**HOUSING**

X - EXPLOSION PROOF - NEMA 4, 7 & 9

**NUMBER OF ELECTRIC SWITCHES**

1 - ONE S.P.D.T.

2 - TWO S.P.D.T. - (SWITCH TYPE "5" ONLY)

**SENSING ELEMENT**

H - PISTON SENSING ELEMENT

**SPECIAL FEATURES**

M - 1/2 NPT MALE PIPE MOUNTING

U - ADDITIONAL PAINTING AFTER ASSEMBLY

V - HIGH TEMPERATURE SERVICE - INCREASED FROM 180°F TO 250°F AMBIENT

## 2. SPECIFY A RANGE

### 3/16" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
20-200 PSI	20-90 PSI	5000 PSI
50-500 PSI	40-135 PSI	5000 PSI
100-1000 PSI	80-225 PSI	5000 PSI
200-2000 PSI	150-300 PSI	5000 PSI
300-3000 PSI	170-315 PSI	5000 PSI
400-4000 PSI	180-330 PSI	5000 PSI

### 1/8" PISTON

ADJUSTABLE PRESSURE RANGE	DEADBAND RANGE TYPE "2"	MAXIMUM SYSTEM PRESSURE
250-2500 PSI	200-570 PSI	10000 PSI
450-4500 PSI	400-1000 PSI	10000 PSI
700-7000 PSI	700-1250 PSI	10000 PSI

## INSTALLATION NOTES

**Orientation** - The 4PSH will operate satisfactorily in any position, however, mounting the device vertically will allow the easiest adjustability and reduce sediment in the pressure chamber.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals on microswitch(es). Single switch units have #6 screw terminals while dual switch versions employ a screw terminal block.

**Pressure Connection** - 1/4 NPT female is standard. 1/2 NPT male is available ("M" option).

**Adjustment** - Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation & calibration instructions are provided for every shipment. Factory setting is available at no charge.

## DEADBAND NOTES

The deadbands listed in the tables are the nominal switch differentials when the standard (type "2") microswitch is used. For piston type switches the deadband is raised as the switch setpoint increases. This is why a range is given for the deadband.

Deadband is also affected by the type of microswitch used. Each type of microswitch's effect on deadband is as follows:

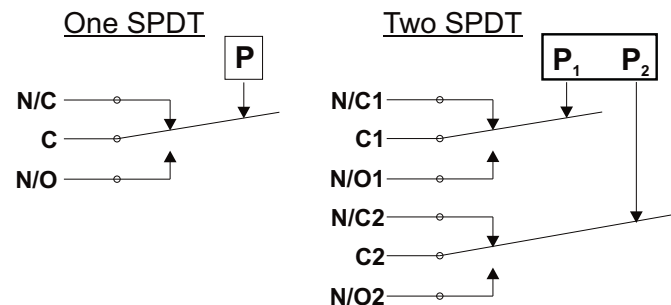
**Type "1"** - *Low Deadband* - Subtract 10 PSI from table values.

**Type "2"** - *Std. Deadband* - Use table values

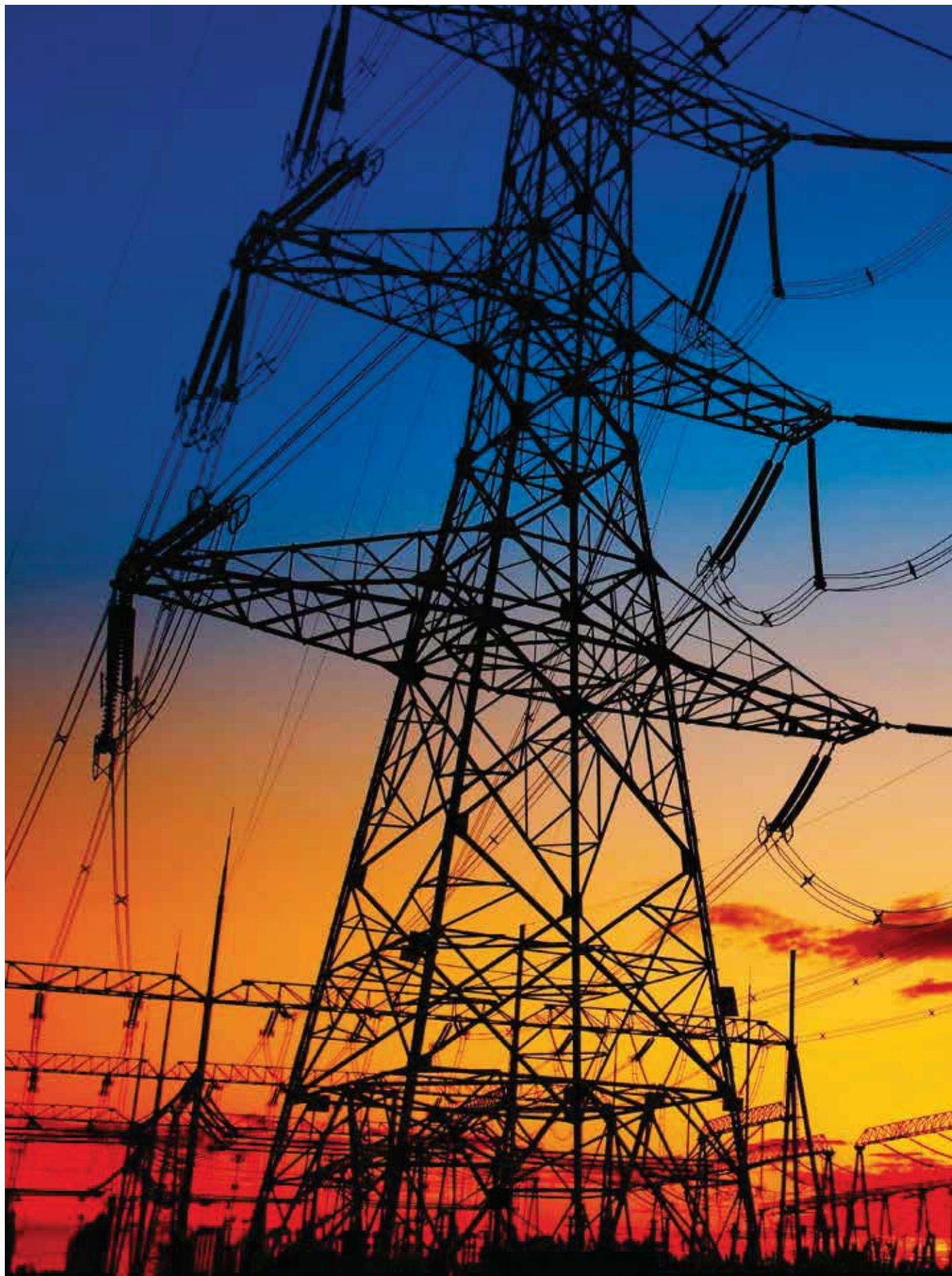
**Type "3"** - *High DC Rated* - Add 20 PSI to table values.

**Type "5"** - *Sub Miniature* - 2 S.P.D.T. - Add 30 PSI to table values.

## Wiring Schematic







# **GAS DENSITY MONITORS**

## **TEMP CONTROLLED SWITCHES**

Sulfur Hexafluoride (SF6) Temperature-Compensated (TC) Pressure Switches. Solon Manufacturing's temperature-compensated SF6 gas density monitoring pressure switches, are an economical and reliable way to monitor SF6 gas density and leakage over a wide temperature range. Temperature-compensated pressure switches automatically adjust their settings to follow temperature changes for all SF6 density levels including mixed gases. SF6 gas density monitors are primarily used to measure the density of SF6 gas in high voltage circuit breakers. Solon manufactures two design styles: Intrinsic and Remote Bulb. The 2TC is also available with an integral gauge feature.



# 2TC

## SF<sub>6</sub> GAS DENSITY SWITCH

### INTRINSIC GAUGE DESIGN

- Temperature range -60°F to 180°F
- NEMA 4X housing
- Up to four SPDT contacts
- Intrinsic design
- *Optional integral gauge available\**



#### GENERAL DESCRIPTION

- Designed for use in all high-voltage circuit breaker applications
- Cast-aluminum housing
- Measures and regulates gas density and leakage
- Provides alarm at the reserve
- Lockout feature
- Compact footprint for flexible mounting
- Low-maintenance
- Accommodates a wide temperature range
- *Available with optional integral gauge, which features clear, visual indication of the gas density*

#### SPECIFICATIONS

##### Switching

2, 3, or 4 S.P.D.T. snap acting switches

##### Electrical Connection

Screw terminal block (3mm / #6 ring terminal)

##### Switch Contact Ratings

2A; 125, 250 VAC

##### Setpoint Adjustment

Factory set per customer specifications

##### Temperature Range

-60°F to 180°F Ambient

##### Accuracy

± 1.5 PSI at 70°F

± 2 PSI at temperature extremes 180°F to -60°F

##### Deadband (Switch Differential)

Fixed; 1-6 PSI

##### Pressure Sensing Element

Phosphor Bronze Bellows - 100% leak inspected with Helium mass spectrometry to 6 X 10<sup>-8</sup> cc/sec.

##### Pressure Adjustment Range

5-100 psi

Maximum pressure 150 psi

##### Pressure Port

1/4 NPTF and 7/16-20 SAE are standard options, others can be incorporated upon request

##### Enclosure (Optional)

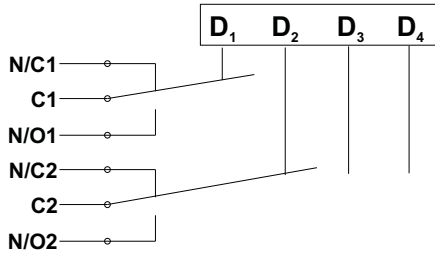
Diecast aluminum

##### Weight

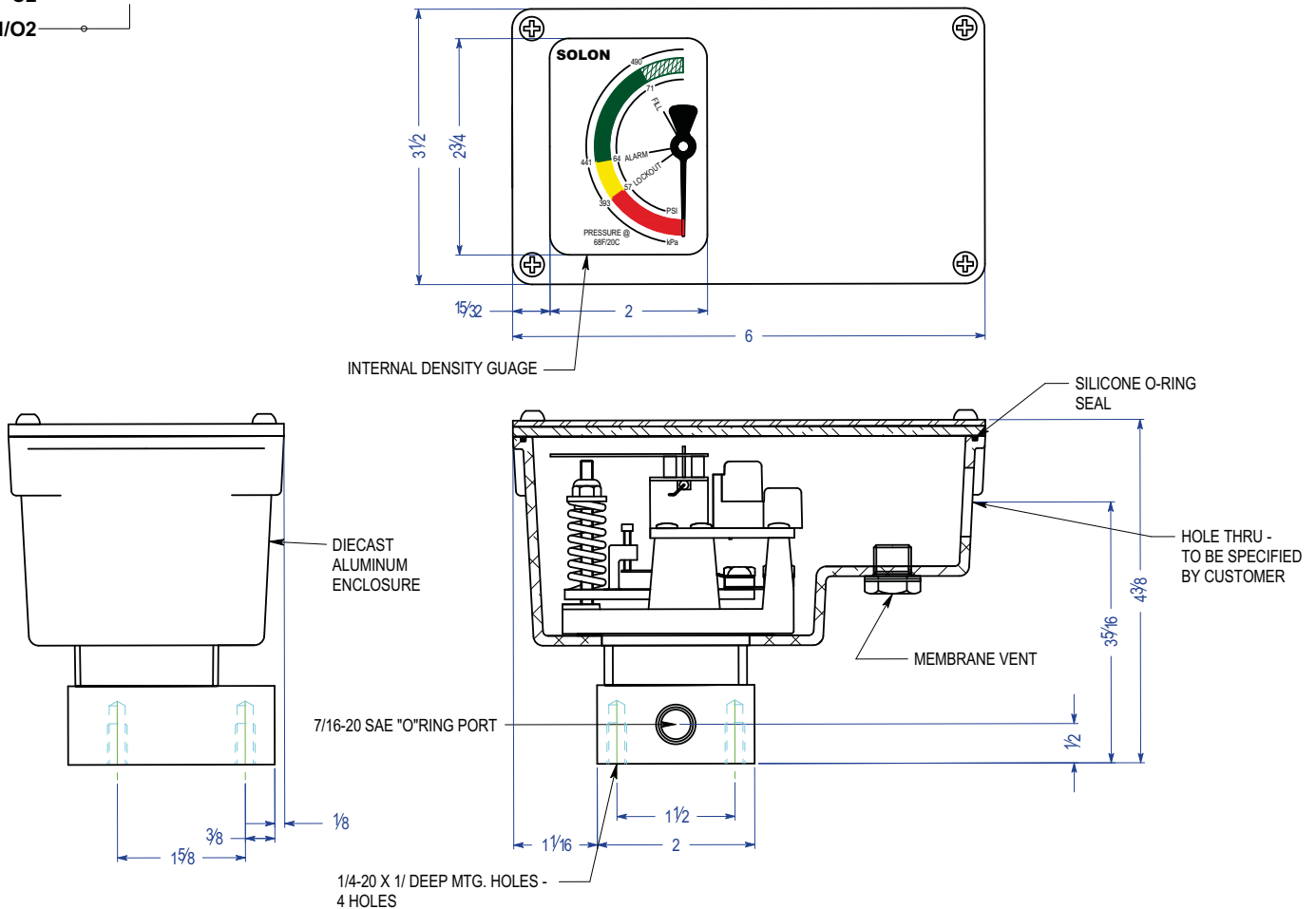
Approximately 4 lb. (0.9 kg).

## SWITCH DIMENSIONS

### Wiring Schematic



NOT TO SCALE  
DIMENSIONS IN  
INCHES



## SPECIFYING A SWITCH

1. Specify the fill pressure and set points for each switch. Set points should be given at room temperature (68F) and at either of the temperature extremes.
2. Designate the pressure port fitting.
3. Choose the type of electrical connection.
4. Indicate NEMA 4 or NEMA 1 housing.
5. Describe other requirements such as special testing, labeling, tagging, packaging, etc.
6. Once a switch is specified and an order is placed, Solon Manufacturing will assign a "slant number" (2TC/XXX) to the switch. This ensures that the fit, form, and function of the device will not change.

## INSTALLATION NOTES

- Orientation** - The 2TC will operate satisfactorily in any position.
- Wiring** - Factory pre-wiring available.
- Adjustment** - Factory setting to customer specifications is standard. Unit is not field adjustable.

# 2TCSS

## SF<sub>6</sub> GAS DENSITY SWITCH

### SMART SWITCH MONITORING SYSTEM

- Range -14.7 to 150 psi
- NEMA 4X housing
- Sensitive leak detection, prompt reporting
- Customerconfigurableovernetworkinterfaces
- Long-term data storage and trending
- Facilitatesreportingofregulatoryrequirements



#### GENERAL DESCRIPTION

The 2TC Smart Switch Monitoring System integrates advanced electronic gas monitoring and network manageability while incorporating the design, reliable gas interface, and proven protection of its mechanical SF<sub>6</sub> Gas Density Switch predecessor.

The 2TC Smart Switch interfaces with the breaker tank and SF<sub>6</sub> gas using the same leak-proof design proven over years of experience with the 2TC Standard Switch. Customer-specified, temperature-compensated settings include: fill, alarm, and lockout points that operate using proven mechanisms identical to the Standard Switch.

The 2TC Smart Switch incorporates a sophisticated, non-contacting metrology system and digital signal processing. Without influencing the Standard Switch operation, the 2TC Smart Switch adds a high resolution gas monitoring layer. The plug-and-play design allows customers to receive an advanced network manageable gas sensor with a proven gas density switch.

#### SPECIFICATIONS

Ambient Temperature Range	-60°F to 180°F
Switching	2, 3, or 4 SPDT snap acting switches
Electrical Connection	IP67 quick connector
Switch Contact Ratings	2A; 125, 250 VAC, 0.5A; 125 VDC
Setpoint Adjustment	Factory set per customer specifications
Accuracy	± 1.5 PSI at 70°F ± 2 PSI at temperature extremes -60°F to 180°F
Deadband	Fixed; 1-6 PSI
Pressure Sensing Element	Phosphor Bronze Bellows- 100% leak inspected with Helium mass spectrometry to 6 X 10 <sup>-8</sup> cc/sec.
Pressure Adjustment Range	-14.7-150 PSI
Pressure Port	1/4 NPTF standard; Optional port options include, but are not limited to: 1/4 NPTM, G 1/2A to DIN 16 288. 7/16-20 SAE, 1/4 BSP, etc.
Enclosure	Diecast Aluminum
Weight	Approximately 2 lb. (0.9 kg)
Size	Approximately 6 in. x 4.4 in. x 5.2 in.



#### SMART SWITCH SPECIFICATIONS

Pressure Sensing Element	Non-contacting, redundant displacement sensors utilizing the basic 2TC standard switch Phosphor Bronze Bellows
Temperature Sensing Elements	Redundant gas encapsulated thermistors
Electrical Connection	Included in 2TC standard switch IP67 quick connector
Indicators	Green, amber, and red LED lights
Power Supply	Included in 2TC standard switch IP67 quick connector
Measurements	Pressure, temperature, gas mass, gas density
Accuracy	
Pressure	± 1 PSI: LOCKOUT ≤ P ≤ MAX ± 2 PSI: 0 ≤ P ≤ LOCKOUT
Temperature	± 2°C
Gas Mass	Please consult with Solon Manufacturing Co. for more information
Gas Density	Please consult with Solon Manufacturing Co. for more information
Data Logging	All measurements logged and uploaded on demand

## DATA LOGGING

Time	Temperature (°C)	Pressure (psig)	SF <sub>6</sub> (kg)	Alarm State
7/1/12 20:23	34.65	85.66	37.09	OPERATE
7/1/12 22:47	35.92	86.05	37.08	OPERATE
7/2/12 01:11	37.77	86.62	37.07	OPERATE
7/2/12 03:35	38.59	86.86	37.06	OPERATE
7/2/12 05:59	37.65	86.53	37.05	OPERATE
7/2/12 08:23	40.62	87.47	37.04	OPERATE
7/2/12 10:47	35.51	85.78	37.03	OPERATE
7/2/12 13:11	35.03	85.59	37.02	OPERATE
7/2/12 15:35	36.50	85.78	37.01	OPERATE
7/2/12 17:59	35.19	85.59	37.00	OPERATE
7/2/12 20:23	40.55	87.31	36.99	OPERATE
7/2/12 22:47	34.33	85.26	36.98	OPERATE

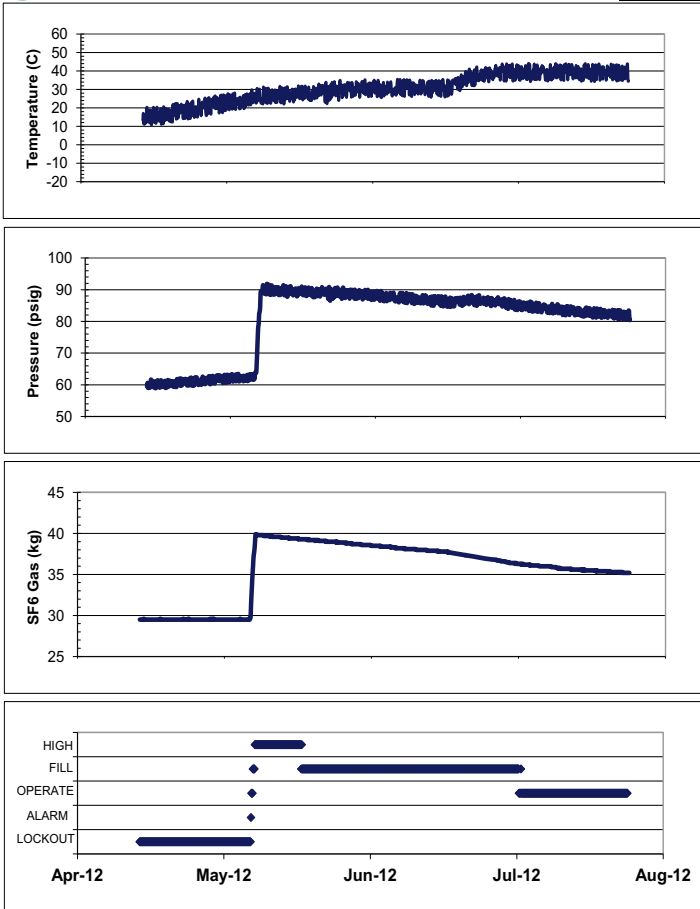
## ADVANCED TREND ANALYSIS

Long term data logging combined with advanced digital signal processing and gas process modeling delivers accurate, outlier-free data streams to facilitate SF<sub>6</sub> gas accounting and breaker management.

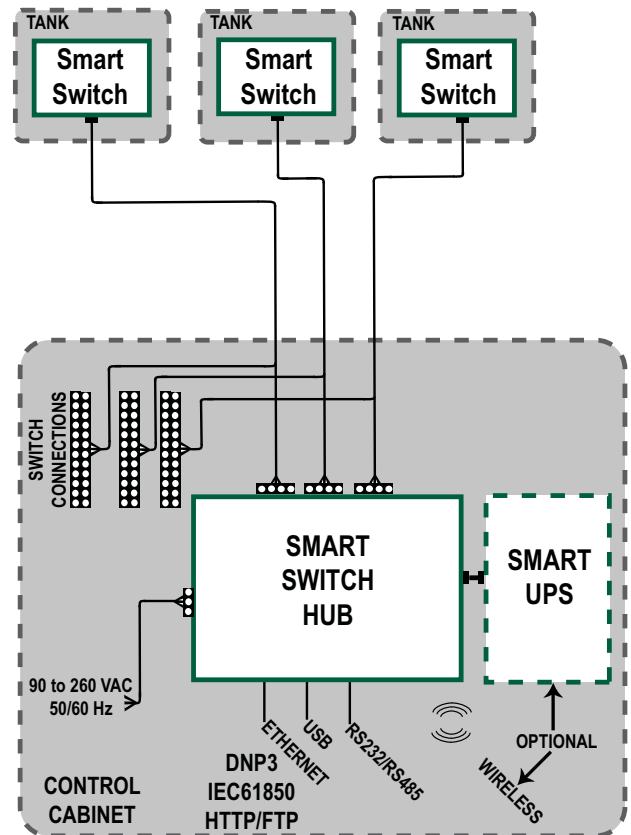


### 2TC SMART SWITCH TRENDING

UPDATE



## SYSTEM BLOCK DRAWING



## SMART SWITCH INTERFACING



## LINE POWER INPUT



## SMART SWITCH HUB



The Smart Switch Hub interfaces with the customer's management network and up to three 2TC Smart Switches. This simple, panel-mounted unit resides within the control cabinet and runs directly from international line power without using an external power converter. User configurable digital signal processing, long term trending, and network protocol support combine to deliver high resolution SF<sub>6</sub> monitoring.

### SMART SWITCH HUB SPECIFICATIONS

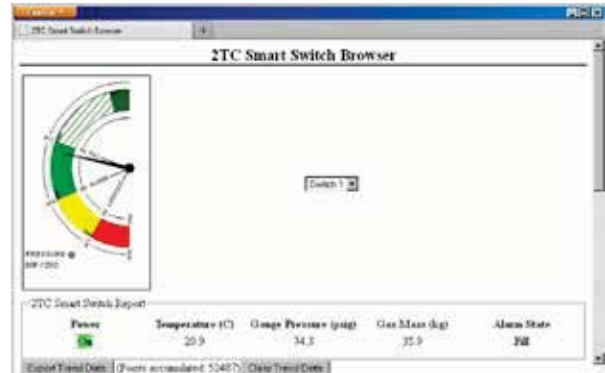
Electrical Connections	
Power	1 x 9.53 mm terminal strip, 3-pole, #6-32 screw terminals
Smart Switches	3 x 9.53 mm terminal strip, 4-pole, #6-32 screw terminals
Network	1 x RJ45, 1 x USB type A, a x DB9
Indicators	Green, amber, and red LED lights
Power Supply	90 VAC to 260 VAC, 50 to 60 Hz, 25W maximum
Battery Backup (optional)	SMART UPS, 4 to 24 hours run time
Network Management	Ethernet, TCP/IP, DNP3, IEC61850, MMS, ISO9506, XML standard, RS232/485, optional embedded webserver management
Temperature Range	-40°F to 160°F (-40°C to 70°C)
Enclosure	Aluminum, IP65, approximately 8.6 in. x 5.4 in. x 2.2 in.



## ADVANCED FEATURES

### SMART SWITCH BROWSER

The 2TC system includes a built-in web server that enables a familiar graphical user interface without the need to load any product-specific software on the user's computer. Any platform (PC, Mac, etc.) using any operating system and web browser may be used to access each 2TC smart Switch via its IP address. Information including configuration settings, real-time measurements, and logged historical data is simply managed via the intuitive graphical environment the product-specific web pages provide.



The rich set of configuration information can also be managed using the DNP3/IEC61850 management interface via the system-wide Network Management System. Parameters include operate, alarm, lockout, and overpressure setpoints and breaker parameters, including tank volumes or SF<sub>6</sub> gas content.

Parameter	Value
SF <sub>6</sub> Ref Temp (°C)	75
Operate (psig)	36.3 kg
Alarm (psig)	33.9 kg
Lockout (psig)	31.8 kg
Overpressure Relief (psig)	39.3 kg
Breaker Nom V (kV)	720
Breaker Nom I (kA)	80
Atmosphere (psig)	14.7
Tank Volume (m³)	36.3 kg

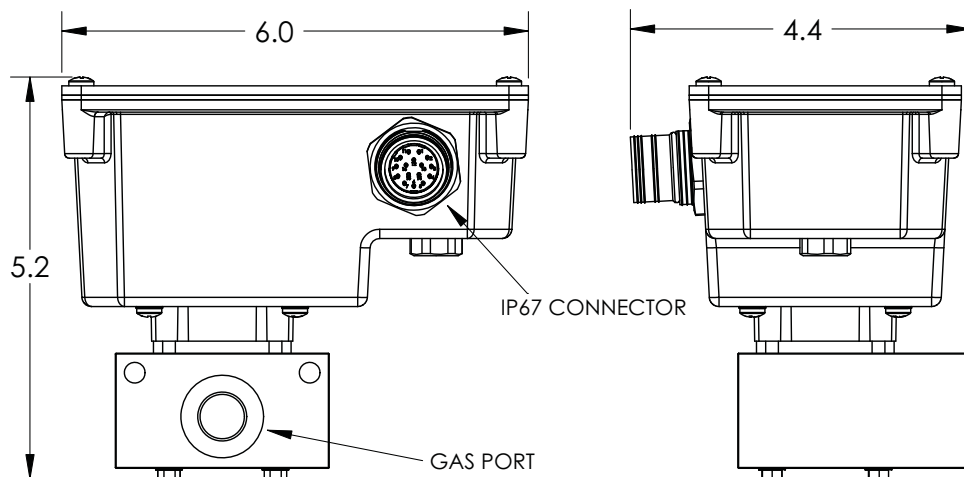
DNP3 and IEC61850 object model protocol support is included.

Name	Value
Application Abnormal	0
Application Normal	0
Secure Auth Normal	0
Key Change Counter	0
Rx Valid Auth Resp	0

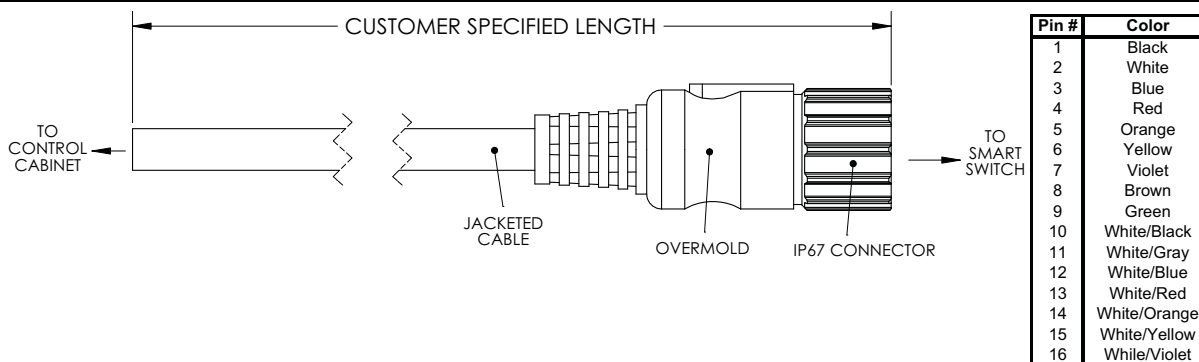
  

Name	Value
Stn4_Bi2	0
Stn4_Bi1	0
Stn4_Bi0	0

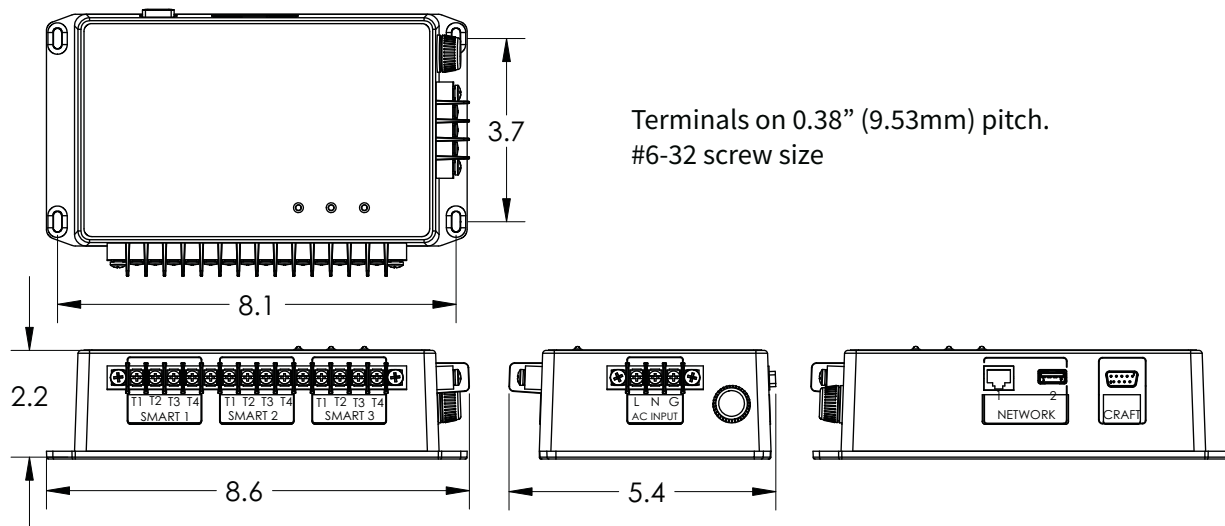




### OVERMOLDED CONNECTOR CABLE



### SMART SWITCH HUB



# 5TCB

## SF<sub>6</sub> GAS DENSITY SWITCH

### BULB DESIGN

- Temperature range -40°F-140°F (0°-180°F available)
- NEMA 1, 4 housing options
- Two SPDT contacts
- Bulb design temperature sensor



#### GENERAL DESCRIPTION

- Designed to measure SF<sub>6</sub> gas density in all high-voltage circuit breaker applications
- Cast-aluminum housing
- Bulb design senses temperature change; indicating loss of gas
- Low-maintenance
- Accommodates a wide temperature range
- Phosphor bronze or stainless steel bellows

#### SPECIFICATIONS

##### Switching

2 S.P.D.T. snap acting switches

##### Electrical Connection

Screw terminals standard

Pre-wired with 18" leads available

##### Switch Contact Ratings

15A; 125, 480 VAC / 6A res.; 28 VDC std.

##### Setpoint Adjustment

Factory set per customer specifications

##### Temperature Range

-40°F to 140°F Ambient Standard

0°F to 180°F Available

##### Accuracy (Standard)

± 1.5 PSI at 70°F

± 3 PSI at temperature extremes 140°F to -40°F

Higher accuracy devices are available

##### Deadband (Switch Differential)

Fixed; 1-6 PSI Typical (per Cust. Requirements)

##### Pressure Sensing Element

Phosphor Bronze or Stainless Steel Bellows - 100% leak inspected with Helium mass spectrometry to  $6 \times 10^{-8}$  cc/sec.

##### Pressure Adjustment Range

Phosphor Bronze Bellows: 5-100 PSI; 150 PSI max.

Stainless Stl. Bellows: 5-100 PSI; 300 PSI max.

150-500 PSI; 1000 PSI max.

##### Pressure Port

¼ NPTF or 7/16-20 SAE are standard; Other port options are available.

##### Enclosure

NEMA 1 Standard

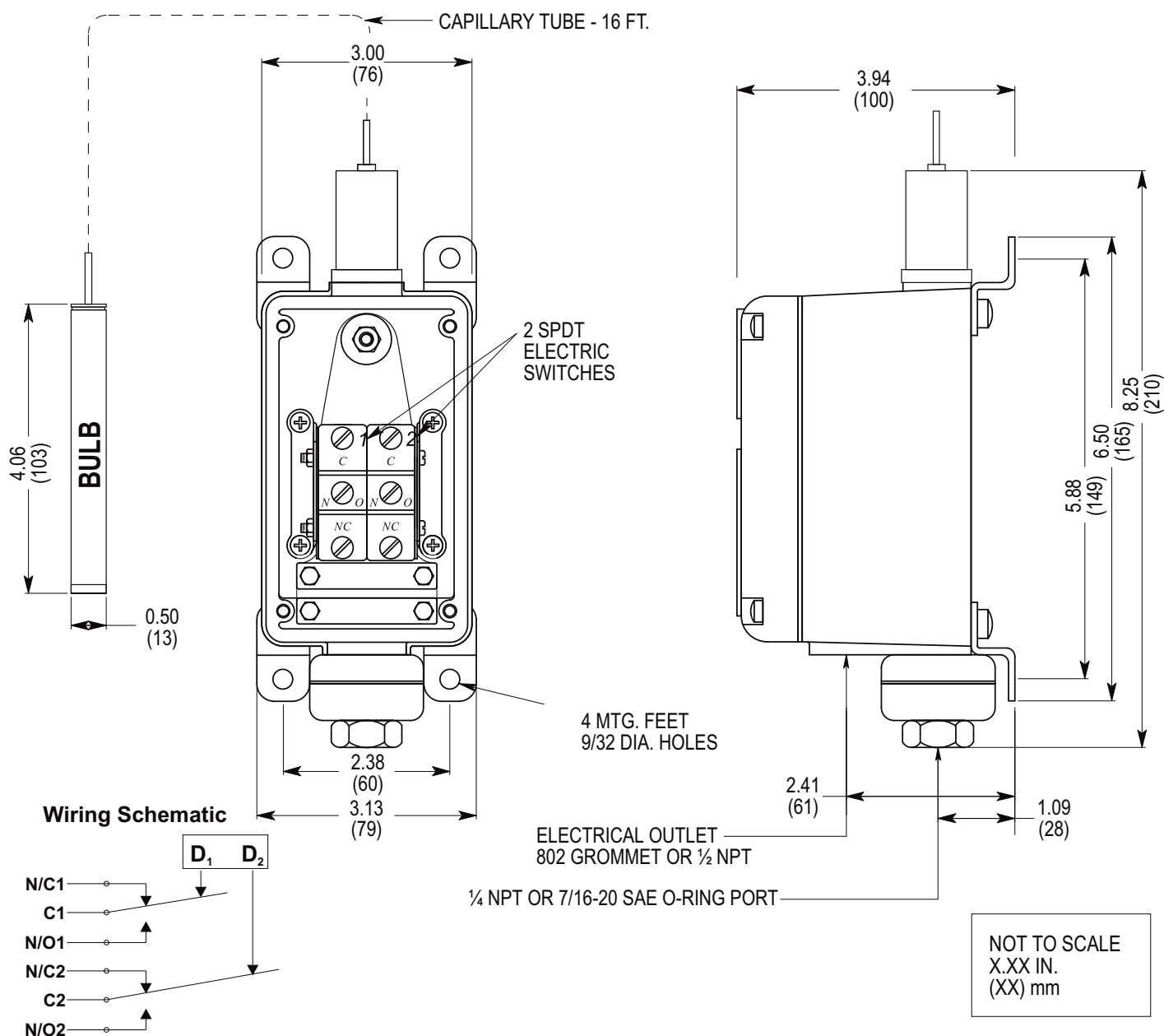
NEMA 4 Available

Material 356 Cast Aluminum

##### Weight

Approximately 3 ½ lbs. (1 ½ kg).

## SWITCH DIMENSIONS



## SPECIFYING A SWITCH

1. Specify the set points for each switch. Set points should be given at room temperature (68F) and at either of the temperature extremes.
2. Designate the pressure port fitting.
3. Choose the type of electrical connection;
  - \* Screw terminals or,
  - \* Prewired - Color coded 18 GA. MTW, 18" Lg.
4. Describe other requirements such as special testing, labeling, tagging, packaging, etc.
5. Once a switch is specified and an order is placed, Solon Manufacturing will assign a "slant number" (5PS/XXX) to the switch. This ensures that the fit, form, and function of the device will not change.

## INSTALLATION NOTES

**Orientation** - The 5PS will operate satisfactorily in any position.

**Location** - The bulb should be installed where it will follow the temperature of the SF<sub>6</sub> gas (out of direct sunlight.) The location of the switch housing does not effect performance.

**Wiring** - Switches may be wired to 'normally open' or 'normally closed' terminals of the switch contacts.

**Adjustment** - Factory setting to customer specifications is standard. Consult factory for field calibration instructions.

# 5TCI

## SF<sub>6</sub> GAS DENSITY SWITCH

### INTRINSIC DESIGN

- Temperature range -60°F - 160°F
- NEMA 4 housing
- One or two SPDT contacts
- Intrinsic design sensor



IMAGE SHOWN:  
NEMA 4  
SS BELLOWS

#### GENERAL DESCRIPTION

- Designed to measure SF<sub>6</sub> gas density in all high-voltage circuit breaker applications
- Cast-aluminum housing
- Intrinsic design for enhanced temperature & density measurement accuracy
- Low-maintenance
- Accommodates a wide temperature range
- Phosphor bronze or stainless steel bellows

#### SPECIFICATIONS

##### Switching

1 or 2 S.P.D.T. snap acting switches

##### Electrical Connection

Screw terminals standard

Pre-wired with 18" leads available

##### Switch Contact Ratings

15A; 125, 480 VAC / 6A res.; 28 VDC std.

##### Setpoint Adjustment

Factory set per customer specifications

##### Temperature Range

-60°F to 160°F Ambient Standard

##### Accuracy (Standard)

± 1.5 PSI at 70°F

± 3 PSI at temperatures of 140°F to -40°F

Higher accuracy devices are available

##### Deadband (Switch Differential)

Fixed; 1-6 PSI Typical (per Cust. requirements)

##### Pressure Sensing Element

Phosphor Bronze or Stainless Steel Bellows - 100% leak inspected with Helium mass spectrometry to  $6 \times 10^{-8}$  cc/sec.

##### Pressure Adjustment Range

Phosphor Bronze Bellows: 5-100 PSI; 150 PSI max.

Stainless Stl. Bellows: 5-100 PSI; 300 PSI max.

150-500 PSI; 1000 PSI max.

##### Pressure Port

¼ NPTF or 7/16-20 SAE are standard; Other port options are available.

##### Enclosure (optional)

NEMA 4 design

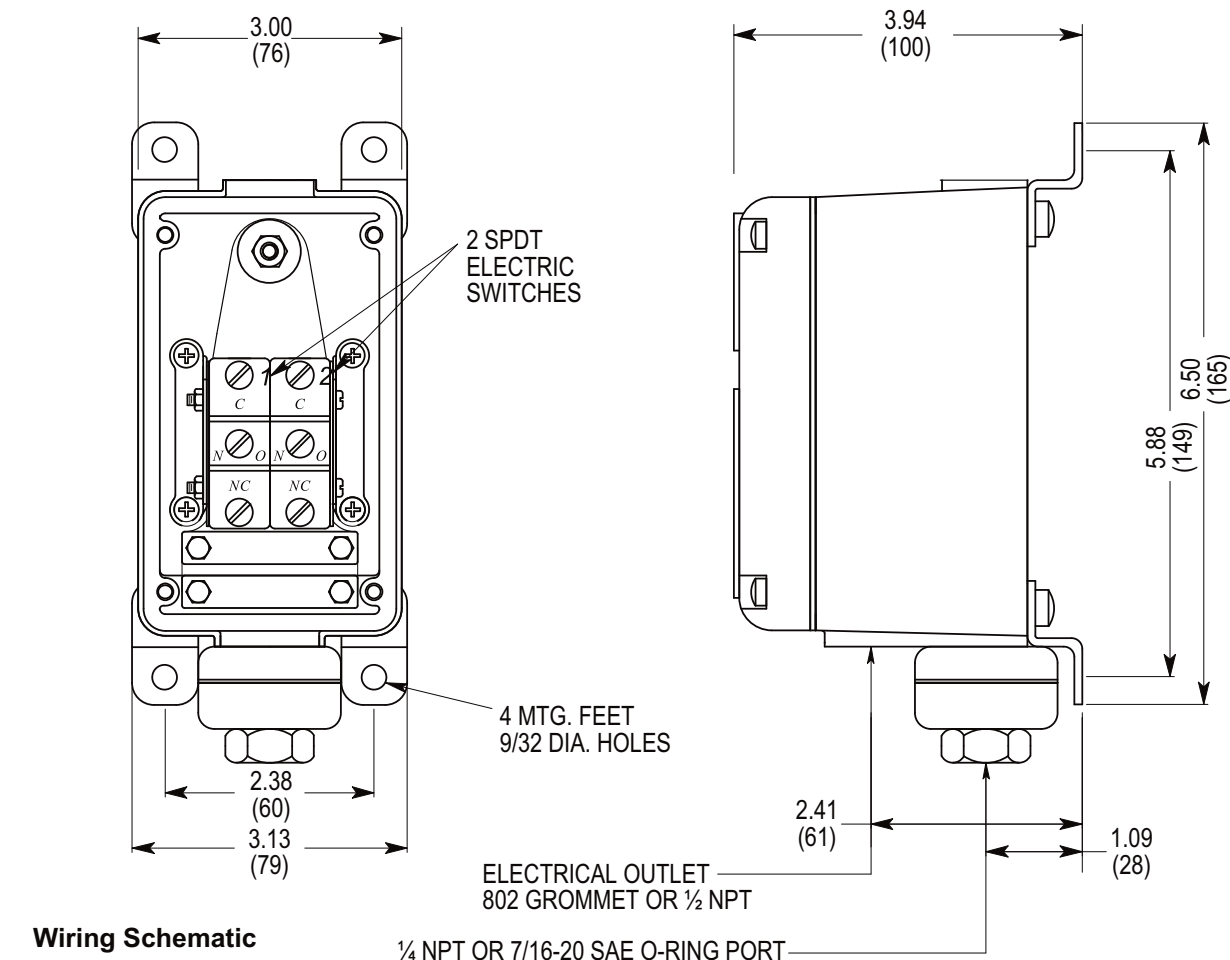
Base material cast aluminum

Cover material cast aluminum

##### Weight

Approximately 3 lbs (1.4 kg).

## SWITCH DIMENSIONS



## SPECIFYING A SWITCH

1. Specify the set points for each switch. Set points should be given at room temperature (68F) and at either of the temperature extremes.
2. Designate the pressure port fitting.
3. Choose the type of electrical connection;
  - \* Screw terminals or,
  - \* Prewired - Color coded 18 GA. MTW, 18" Lg.
4. Describe other requirements such as special testing, labeling, tagging, packaging, etc.
5. Once a switch is specified and an order is placed, Solon Mfg. Co. will assign a "slant number" (5PS/XXX) to the switch. This ensures that the fit, form, and function of the device will not change.

## INSTALLATION NOTES

**Orientation** - The 5PS will operate satisfactorily in any position.

**Location** - The switch body should be installed where it will follow the temperature of the SF<sub>6</sub> gas (out of direct sunlight and away from any heating elements.)

**Wiring** - No. 6 screw terminals are standard. Switches may be wired to 'normally open' or 'normally closed' terminals of the switch contacts. Always connect positive to the common terminal. Care should be taken so that wires do not contact the mechanism or spring.

**Piping** - Always use a wrench to hold the pressure port while the fitting is tightened (do not over-tighten). Thread sealant should always be used on NPT threads.

**Checking Calibration** - First, obtain a pressure vs. temp. curve. Second, accurately record the temperature of the switch body. Third, lower pressure slowly and record set points. Make certain that there is a load (8V or 150 mA min) on the switch. Finally, compare settings to the graph. DO NOT ADJUST SETTINGS IN THE FIELD.



# 6TCB

## SF<sub>6</sub> GAS DENSITY SWITCH

### BULB DESIGN

- Temperature range -40F to 140F
- Up to four SPDT contacts
- Bulb design temperature sensor



#### GENERAL DESCRIPTION

- Designed to measure SF6 gas density in all high-voltage circuit breaker applications
- PVC housing with aluminum components
- Bulb design senses temperature change, indicating loss of gas
- Low-maintenance
- Accommodates a wide temperature range
- Phosphor bronze or S/S bellows

#### SPECIFICATIONS

##### Switching

2, 3, or 4 S.P.D.T. snap acting switches

##### Electrical Connection

Screw terminals standard

Pre-wired with 18" leads available

##### Switch Contact Ratings

15A; 125, 480 VAC / 6A res.; 28 VDC std.

##### Setpoint Adjustment

Factory set per customer specifications

##### Temperature Range

-40°F to 140°F Ambient Standard

0°F to 180°F Available

##### Accuracy (Standard)

± 1.5 PSI at 70°F

± 3 PSI at temperature extremes 140°F to -40°F

Higher accuracy devices are available

##### Deadband (Switch Differential)

Fixed; 1-6 PSI Typical (per Cust. requirements)

##### Pressure Sensing Element

Phosphor Bronze or Stainless Steel Bellows - 100% leak inspected with Helium mass spectrometry to  $9 \times 10^{-9}$  cc/sec.

##### Pressure Adjustment Range

Phosphor Bronze Bellows: 5-100 PSI; 150 PSI max.

Stainless Stl. Bellows: 5-100 PSI; 300 PSI max.

150-500 PSI; 1000 PSI max.

##### Pressure Port

¼ NPTF or 7/16-20 SAE are standard; Other port options are available.

##### Enclosure

Unenclosed design

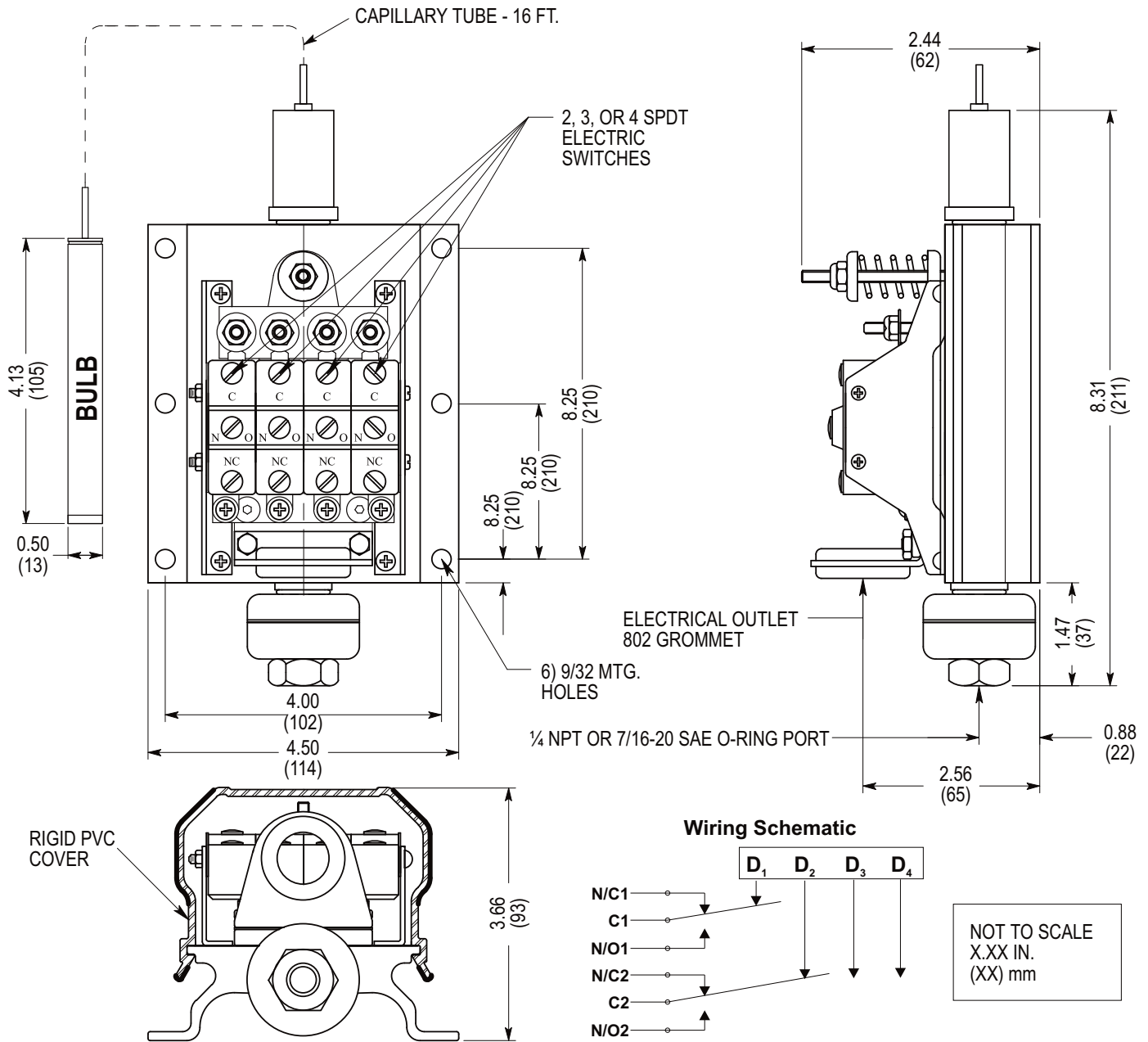
Base material 6063-T6 extruded aluminum

Cover material rigid PVC

##### Weight

Approximately 3 lbs (1.4 kg).

## SWITCH DIMENSIONS



## SPECIFYING A SWITCH

1. Specify the set points for each switch. Set points should be given at room temperature (68F) and at either of the temperature extremes.
2. Designate the pressure port fitting.
3. Choose the type of electrical connection;
  - \* Screw terminals or,
  - \* Prewired - Color coded 18 GA. MTW, 18" Lg.
4. Describe other requirements such as special testing, labeling, tagging, packaging, etc.
5. Once a switch is specified and an order is placed, Solon Mfg. Co. will assign a "slant number" (6TC/XXX) to the switch. This ensures that the fit, form, and function of the device will not change.

## INSTALLATION NOTES

- Orientation** - The 6TC will operate satisfactorily in any position.
- Location** - The bulb should be installed where it will follow the temperature for the SF<sub>6</sub> gas (out of direct sunlight). The location of the switch housing does not affect performance.
- Capillary Tube** - The minimum bend radius for the capillary tube is 1/2 inch.
- Wiring** - No. 6 screw terminals are standard. Switches may be wired to 'normally open' or 'normally closed' terminals of the switch contacts. Always connect the positive to the common terminal. Care should be taken so that wires do not contact the mechanism or spring.
- Piping** - Always use a wrench to hold the pressure port while the fitting is tightened (do not over-tighten). Thread sealant should always be used on NPT threads.
- Checking calibration** - First, obtain a pressure vs. temp. curve. Second, accurately record the temperature of the bulb. Third, lower pressure slowly and record set points. Make certain that there is a load (8V or 150 mA min) on the switch. Finally, compare settings to the graph. **DO NOT ADJUST SETTINGS IN THE FIELD.**

# 6TCI

## SF<sub>6</sub> GAS DENSITY SWITCH

### INTRINSIC DESIGN

- Temperature range -60°F - 160°F
- NEMA 1 housing
- Up to four SPDT contacts
- Intrinsic design temperature sensor



#### GENERAL DESCRIPTION

- Designed to measure SF<sub>6</sub> gas density in all high-voltage circuit breaker applications
- Cast-aluminum housing
- Intrinsic design for enhanced temperature and density measurement accuracy
- Low-maintenance
- Accommodates a wide temperature range
- Phosphor bronze or stainless steel bellows

#### SPECIFICATIONS

##### Switching

2, 3, or 4 S.P.D.T. snap acting switches

##### Electrical Connection

Screw terminals standard

Pre-wired with 18" leads available

##### Switch Contact Ratings

15A; 125, 480 VAC / 6A res.; 28 VDC std.

##### Setpoint Adjustment

Factory set per customer specifications

##### Temperature Range

-60°F to 160°F Ambient Standard

##### Accuracy (Standard)

± 1.5 PSI at 70°F

± 3 PSI at temperatures of 140°F to -40°F

Higher accuracy devices are available

##### Deadband (Switch Differential)

Fixed; 1-6 PSI Typical (per Cust. requirements)

##### Pressure Sensing Element

Phosphor Bronze or Stainless Steel Bellows - 100% leak inspected with Helium mass spectrometry to  $9 \times 10^{-9}$  cc/sec.

##### Pressure Adjustment Range

Phosphor Bronze Bellows: 5-100 PSI; 150 PSI max.

Stainless Stl. Bellows: 5-100 PSI; 300 PSI max.

150-500 PSI; 1000 PSI max.

##### Pressure Port

¼ NPTF or 7/16-20 SAE are standard; Other port options are available.

##### Enclosure (optional)

NEMA 1 design

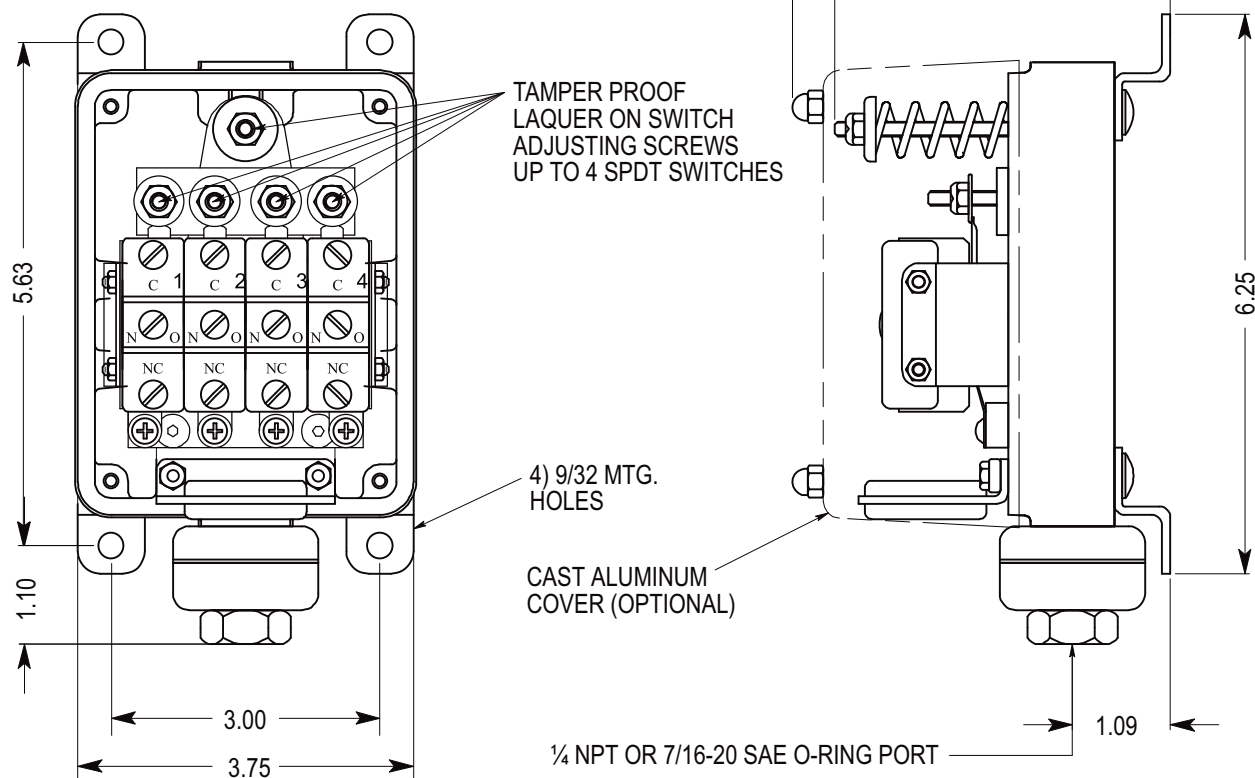
Base material 356 cast aluminum

Cover material cast aluminum

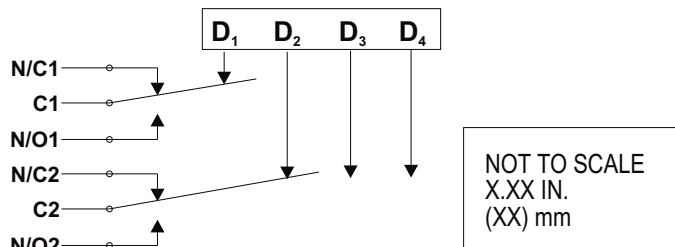
##### Weight

Approximately 3 lbs (1.4 kg).

## SWITCH DIMENSIONS



### Wiring Schematic



## SPECIFYING A SWITCH

- Specify the set points for each switch. Set points should be given at room temperature (68F) and at either of the temperature extremes.
- Designate the pressure port fitting.
- Choose the type of electrical connection;
  - \* Screw terminals or,
  - \* Prewired - Color coded 18 GA. MTW, 18" Lg.
- Describe other requirements such as special testing, labeling, tagging, packaging, etc.
- Once a switch is specified and an order is placed, Solon Mfg. Co. will assign a "slant number" (6PS/XXX) to the switch. This ensures that the fit, form, and function of the device will not change.

## INSTALLATION NOTES

**Orientation** - The 6PS will operate satisfactorily in any position.

**Location** - The switch body should be installed where it will follow the temperature of the SF<sub>6</sub> gas (out of direct sunlight and away from any heating elements.)

**Wiring** - No. 6 screw terminals are standard. Switches may be wired to 'normally open' or 'normally closed' terminals of the switch contacts. Always connect positive to the common terminal. Care should be taken so that wires do not contact the mechanism or spring.

**Piping** - Always use a wrench to hold the pressure port while the fitting is tightened (do not over-tighten). Thread sealant should always be used on NPT threads.

**Checking Calibration** - First, obtain a pressure vs. temp. curve. Second, accurately record the temperature of the switch body. Third, lower pressure slowly and record set points. Make certain that there is a load (8V or 150 mA min) on the switch. Finally, compare settings to the graph. DO NOT ADJUST SETTINGS IN THE FIELD.

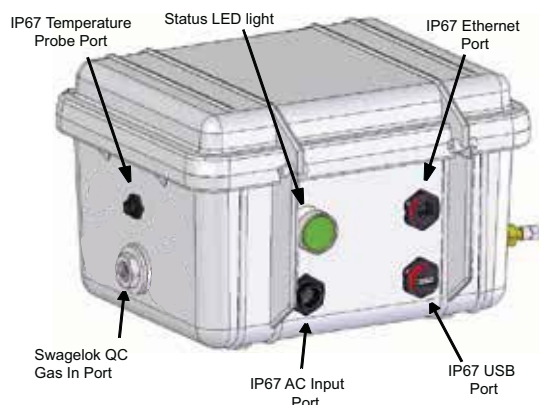
# WM/100

## WATCHMAN SF<sub>6</sub>

### SF<sub>6</sub> GAS DENSITY MONITOR

#### WATCHMAN SF<sub>6</sub> SPECIFICATIONS

Operating Temperature Range	-40°F to 140°F (-40°C to 60°C)
Gas Type	Selectable, pure gas or gas mix - user configurable
SF <sub>6</sub> Density Range	0 to 53.0 kg/m <sup>3</sup> at 20°C
SF <sub>6</sub> Density Resolution	0.04 kg/m <sup>3</sup> at 20° and 80 psig
Main Enclosure	Polypropylene Material, IP67
Size	11.9" x 9.9" x 7.1" (31 x 25 x 18 cm)
Weight	9 lb. (4.1 kg)
Temperature Sensor	10 ft. (3.04) coaxial cable IP67 circular connector (-60°F to 180°F (-50°C to 80°C) 0.03°C resolution at 20°C 1°C accuracy at 20°C
Pressure Sensor	0 to 100 psi measurement range ±0.03 psi resolution ±1 psi accuracy 200 psi overpressure tolerance
Gas Hose	10 ft. x 3/8" OD Parker Parflex hose, abrasion-resistant jacket, Swagelok QC quick connect Male to Female DESO fittings with integrated flow control
Data Ports	USB Ethernet
Data Retrieval	USB Flash Drive Web Browser Wireless Network (optional)
Power Requirements	103.5 VAC to 126.5 VAC, 50 to 60 Hz 60W Maximum
Power Cord	14-3 cable, NEMA 5-15R to IP67 circular connector
Fill Module (FM)	Automatically maintains density and gas levels
Communication Module	Provides secure encrypted network connection including WiFi and available 3G/4G/LTE wireless data retrieval



 **Watchman SF<sub>6</sub>**<sup>TM</sup>

Portable Gas Monitoring  
**SMART. PORTABLE. PRECISE.**



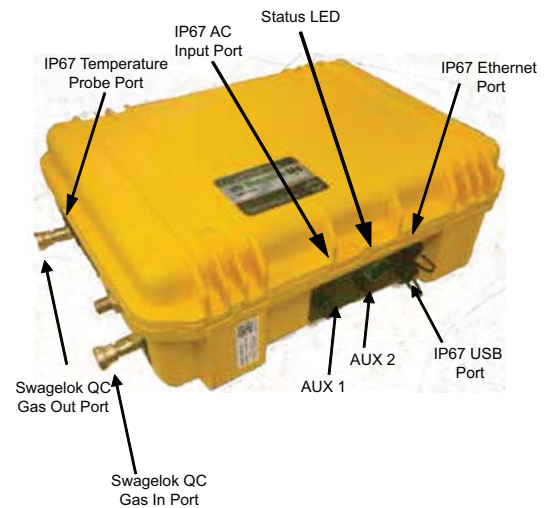
# WF/100

## WATCHMAN SF<sub>6</sub> AUTOFILL

### SF<sub>6</sub> GAS DENSITY MONITOR

#### WATCHMAN SF<sub>6</sub> SPECIFICATIONS

Operating Temperature Range	-40°F to 140°F (-40°C to 60°C)
Gas Type	Selectable, pure gas or gas mix - user configurable
SF <sub>6</sub> Density Range	0 to 53.0 kg/m <sup>3</sup> at 20°C
N <sub>2</sub> Density Range	0 to 9.1 kg/m <sup>3</sup> at 20°C
SF <sub>6</sub> Density Resolution	0.04 kg/m <sup>3</sup> at 20°C and 80 psig
N <sub>2</sub> Density Resolution	0.007 kg/m <sup>3</sup> at 20°C and 80 psig
Main Enclosure	Polypropylene Material, IP67
Size	19" x 17" x 7" (49 x 36 x 18 cm)
Weight	25 lb. (11 kg)
Temperature Sensor	Moisture proof encapsulated thermistor 10 ft. (3.04) coaxial cable IP67 circular connector Polypropylene insulated isolation block EPDM foam cable insulation Heavy duty polypropylene tank retention strap (-60°F to 180°F (-50°C to 80°C) 0.03°C resolution at 20°C 1°C accuracy at 20°C
Pressure Sensor, Breaker Side	0 to 100 psi measurement range ±0.03 psi resolution ±1 psi accuracy 200 psi overpressure tolerance
Pressure Sensor, Supply Side	0 to 300 psi measurement range ±0.1 psi resolution ±3 psi accuracy 600 psi overpressure tolerance
Gas Hose	Gas hose, supply and breaker 10 ft. x 3/8" OD Parker Parflex hose, abrasion-resistant jacket, Swagelok QC quick connect Male to Female DESO fittings with integrated flow control
Data Ports	USB Ethernet
Data Retrieval	USB Flash Drive Web Browser Wireless Network (optional)
Power Requirements	103.5 VAC to 126.5 VAC, 50 to 60 Hz 60W Maximum
Power Cord	14-3 cable, NEMA 5-15R to IP67 circular connector
Secure Access Module (SAM)	Connects to Density Module providing secure encrypted network connection including WiFi and available 3G/4G/LTE wireless data retrieval
Communication Module	Provides secure encrypted network connection including WiFi and available 3G/4G/LTE wireless data retrieval



**Watchman SF<sub>6</sub>™**  
**AutoFill**

Portable Gas Monitoring  
**SMART. PORTABLE. PRECISE.**

# INDUSTRIES & PARTNERS

Solon Manufacturing supplies engineered solutions to industries and markets worldwide, with our off-the-shelf and customized products serving a wide array of customers; both OEMs and distributors in over forty countries.

- \* Aviation/Aerospace
- \* Automation
- \* Agriculture
- \* Energy
- \* Fluid Filtration
- \* Food & Beverage
- \* Heavy Equipment
- \* HVAC
- \* Manufacturing
- \* Medical
- \* Packaging
- \* Pump & valve manufacturing
- \* Transportation

We appreciate our relationships with our partners and are proud to have an increased presence among distributors nationwide. We are capable of effectively supporting both high-mix low-volume as well as private label initiatives unique to the OEM space.

# FREQUENTLY ASKED QUESTIONS

**Q: Are Solon Pressure Switches compatible with all processes?**

A: Yes, with the help of Solon's engineering group the required wetted parts can be suggested for virtually any process. Solon has extensive materials to choose from that can be used in the wetted areas as well as applying diaphragm seals as needed used to isolate the process from the switch.

**Q: How can I ensure that my switches won't leak?**

A: All pressure switch designs have been tested and proven well beyond the maximum pressure stated in catalog specifications. Solon uses a Helium Mass Spectrometer leak detection system for bellows type switches . This technology is used to test 100% of all bellows pressure sensing assemblies, ensuring no measurable leakage in the field.

**Q: Which pressure switch works best for my application?**

A: Depending on your installation requirements, an application engineer can suggest a model series that will satisfy your requirements.

**Q: Which switch models does Solon Manufacturing stock?**

A: Solon offers short lead times on all model numbers. Contact our sales team for availability on specific models – 800.323.9717 | [sales@solonmfg.com](mailto:sales@solonmfg.com)



## ENGINEERED SOLUTIONS FOR INDUSTRIES WORLDWIDE

SOLON® BELLEVILLE SPRINGS | SOLON® PRESSURE SWITCHES | SOLON® WATCHMANSF6™

### PRESSURE SWITCH CONFIGURATION WORKSHEET

Use this worksheet as a guide to configure a Solon Pressure Switch. If unknown, leave the section blank. Once completed, email this document to our technical support and sales team at [techsupport@solonmfg.com](mailto:techsupport@solonmfg.com) and we will provide you with additional suggestions and options as well as price and delivery. You may also call 800.323.9717 for assistance, or use the *Live Chat* feature at [www.solonmfg.com](http://www.solonmfg.com).

Company: \_\_\_\_\_ Contact: \_\_\_\_\_ Phone: \_\_\_\_\_

### HOW TO CONFIGURE A PRESSURE SWITCH

Model Series (Housing Guide & Type)			Housing Option	# of Electric Switches	Special Features				Type & Rating of Electric Switches	

### HOUSING SIZE GUIDE

2	Compact, lightweight--single or dual switching. Available for all types: General Purpose, Differential, Explosion-Proof, Heavy-Duty, Pneumatic Valve Actuated, Sanitary, Temperature-Compensated (TC), & Weather-Tight
42	Compact housing for high-pressure applications. Available for types: Differential, Explosion-Proof, & Heavy-Duty
47	Compact housing with wide base, ideal for low-pressure-sensing. Available for types: Explosion-Proof
5	Rugged cast-housing for single or dual switching. Available for types: General Purpose, Differential, Explosion-Proof, Temperature-Compensated (TC), & Weather-Tight
6	Larger housing accommodates up to four electric switches. Available for types: General Purpose, Differential, Explosion-Proof, Temperature-Compensated (TC), Vacuum, & Weather-Tight
7	Designed for low-pressure applications. The larger housing accommodates up to four electric switches. Available for types: General Purpose, Differential, Explosion-Proof, Temperature-Compensated (TC), Vacuum, & Weather-Tight

### SPECIFY A RANGE

Specify an adjustable pressure range, maximum deadband PSI and/or maximum working pressure range. Ranges vary based on model number. For additional support or questions determining a range for your requirement, contact our sales or engineering team.

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## ENGINEERED SOLUTIONS FOR INDUSTRIES WORLDWIDE

SOLON® BELLEVILLE SPRINGS | SOLON® PRESSURE SWITCHES | SOLON® WATCHMAN SF6™

### BUILD A SOLON PRESSURE SWITCH

Using the guide below, plug the values into the configurator on the previous page to determine your Solon model number. Note: Not all values and features apply to all models. Consult our sales and engineering team with questions.

**1. SELECT MODEL SERIES (Based on housing guide table from previous page).**

• 2 • 42 • 47 • 5 • 6 • 7

**2. SELECT A TYPE OF PRESSURE SWITCH**

- General Purpose (PS) • Differential\* (PSD) • Explosion-Proof (PSX) • Heavy-Duty (PSH)
- Pneumatic Valve Actuator (PV) • Sanitary (SAN) • Vacuum (PSVAC) • Weather-tight (PSW)
- Temperature-Compensated (TC) Density Switch

**3. SELECT A HOUSING OPTION**

- No Housing • X (Explosion-Proof; NEMA 4, 7, 9) • W (Weather-Tight; NEMA 4X & 12)

**4. SELECT SPECIAL FEATURES** There are many special features available to accommodate specific needs, including: pressure, hydraulic, vacuum, and explosion-proof. You may choose among some of the most common features, or we can help you select from the list below or discuss a custom requirement. Not all special features are available for all models. (If you have selected a Differential pressure switch, see the *Differential Pressure Switch Special Features* below).

“-” - No Special Features

**A** - Adjustable Deadband

**B** - Bellows Actuated

**E** - External Pressure Adjustment

**EE** - Two External Pressure Adjustments

**F** - Flange Base Mounting

**G** - Double Diaphragm

**J** - Safety Seal

**LL** - Indicator Lights

**M** - Male Pipe Mounting

**O** - High Over Pressure Diaphragm

**Q** - Double Snap-Acting Belleville Spring

**R>** - Manual Reset, Switch on Increase Pressure

**R<** - Manual Reset, Switch on Decrease Pressure

**SS** - Special Trim Base 316 Stainless Steel

**SI** - Special Trim Base PTFE (Not on X switches)

**SN** - Special trim Base Brass

**SY** - Special Trim Base PVC (Not on X switches)

**T** - PTFE Protected Diaphragm

**U** - Additional Painting after Assembly

**V** - High Temp Service - Not a UL-Listed Feature

**Z** - Viton Diaphragm

**DIFFERENTIAL PRESSURE SWITCH SPECIAL FEATURES**

**BD** - Bellows Actuated Differential Pressure

**DD** - Diaphragm Actuated Differential Pressure

**DDG** - Double Diaphragm Differential Pressure

**DO** - High Pressure - Low Differential Pressure

**DOSS** - Special Trim Base 316 Stainless Steel

**DOSN** - Special Trim Base Brass

**DDO** - High Pressure Two-Way Differential Pressure

**DSS** - Special Trim Base 316 Stainless Steel

**DSI** - Special Trim Base Teflon

**DSY** - Special Trim Base PVC

**DSK** - Aluminum Trim Base

**5. SELECT TYPE OF ELECTRIC SWITCHES (If unknown, fill out the application/environmental considerations and return to Solon).**

- 1 - Low Deadband: 15A-125, 250, 480 VAC
- 2 - Standard Deadband: 15A-125, 250, 480 VAC; 0.5A-125 VDC
- 3 - High DC Rated (Magnetic Blowout): 10A-125 VDC; 3A-250 VDC
- 4 - Hermetically Sealed 11AMP, 125, 250 VAC; 5A-30 VDC
- 5 - Sub Miniature Switch: 2SPDT
- 6 - Gold Contact: 1A-125 VAC

**Application:** \_\_\_\_\_ **Environmental Considerations:** \_\_\_\_\_

*For any questions on how to configure a Solon Pressure Switch, please contact Solon Manufacturing Co.*

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