PERFORMANCE UNDER PRESSURE
A Full Line of Electromechanical and Pneumatic Valve Actuated Pressure Switches & Temperature Controlled Density Switches
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>About Solon Manufacturing</td>
</tr>
<tr>
<td>Technical Glossary</td>
</tr>
<tr>
<td>Classes, Divisions, and Groups</td>
</tr>
<tr>
<td>How to Order a Pressure Switch</td>
</tr>
<tr>
<td>Special Features</td>
</tr>
<tr>
<td>Vacuum Products</td>
</tr>
<tr>
<td>Differential Products</td>
</tr>
<tr>
<td>Sanitary Products</td>
</tr>
<tr>
<td>Explosion Proof Products</td>
</tr>
<tr>
<td>Weather Tight Products</td>
</tr>
<tr>
<td>General Purpose Products</td>
</tr>
<tr>
<td>Pneumatic Valve Actuated Products</td>
</tr>
<tr>
<td>Heavy Duty Products</td>
</tr>
<tr>
<td>Gas Density Monitor Products</td>
</tr>
<tr>
<td>Industries and Partners</td>
</tr>
<tr>
<td>Frequently Asked Questions</td>
</tr>
<tr>
<td>Configuration Worksheet</td>
</tr>
</tbody>
</table>
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.
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.
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.

INSTRINSIC
These intrinsically compensated controls are compact, temperature-compensated pressure switches which use calibrated bimetal 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.
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 I: Normal conditions**

Division I 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, morphline, 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.*
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 or call 800.323.9717.

How to Configure a Pressure Switch

<table>
<thead>
<tr>
<th>Model Series (Housing Guide and Type)</th>
<th>Housing Option</th>
<th># of Electric Switches</th>
<th>Special Features</th>
<th>Type &amp; Rating of Electric Switches</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Compact, lightweight—single or dual switching. Available for all types: vacuum, differential, sanitary, explosion-proof, weather-tight, general-purpose, pneumatic-valve actuated, heavy-duty, &amp; temperature-compensated (TC).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Compact housing for high-pressure applications. Available for types: differential, explosion-proof, heavy-duty.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>47</td>
<td>Compact housing with wide base, ideal for low-pressure sensing. Available for types: explosion-proof.</td>
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<tr>
<td>5</td>
<td>Rugged cast housing for single or dual switching. Available for types: differential, explosion-proof, weather-tight, general-purpose, temperature-compensated (TC).</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Larger housing accommodates up to four electric switches. Available for types: vacuum, differential, explosion-proof, weather-tight, general-purpose, temperature-compensated (TC).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>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).</td>
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</tr>
</tbody>
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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; i.e., 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 ½ 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 EXPOXY 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.
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

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Maximum Ambient Temperature</td>
<td>180°F</td>
</tr>
<tr>
<td>Minimum Ambient Temperature</td>
<td>-20°F</td>
</tr>
<tr>
<td>Vacuum Connection</td>
<td>¼ NPT</td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>1/2 NPT</td>
</tr>
<tr>
<td>Housing</td>
<td>Diecast Aluminum - Painted per ASTM B117</td>
</tr>
<tr>
<td>Deadband</td>
<td>Fixed</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>1/2% of range (for one SPDT switch)</td>
</tr>
<tr>
<td>Drift</td>
<td>&lt;1% of range (100,000 operations)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 1.5 lbs.</td>
</tr>
<tr>
<td>Contact Ratings</td>
<td>15A - 125, 250, 480 VAC</td>
</tr>
<tr>
<td>Port Fitting Material</td>
<td>Brass</td>
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<tr>
<td>Trim Material</td>
<td>Anodized Aluminum</td>
</tr>
<tr>
<td>Diaphragm Material</td>
<td>Buna N</td>
</tr>
<tr>
<td>Set Point Adjustment</td>
<td>Screw type, field adjustable from 10 to 100% of range</td>
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<tr>
<td>No. Contacts</td>
<td>One or Two S.P.D.T.</td>
</tr>
<tr>
<td>Contact Listings</td>
<td>UL Recognized</td>
</tr>
</tbody>
</table>
### ORDERING A SWITCH

1. **SPECIFY A MODEL NUMBER**

   **MODEL SERIES**
   - 2PS
   - W
   - 1 SSU
   - 2

   **HOUSING**
   - "W" - 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

### 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.

### 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; TEFLOX, PVC, KYNAR, KALREZ, HASTELLOY, ECT. 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 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.

### Wiring Schematic

**One SPDT**

```
N/O → N/C

\[ V \]
```

**Two SPDT**

```
N/O1 → C1
N/C1 → N/O2
N/C2

\[ V, V_2 \]
```
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

**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)**
- 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

**FLOW APPROX.**
15 S.C.F.M. @ 100 PSIG

**MATERIALS**
- 1/4 NPT Brass Pipe Nipples to Valve Connections
- 9/32 Dia. MTG. HOLES
- 1/8 NPT Vac. Port

**DESCRIPTION**
- Aluminum Valve Body
- Vacuum Adj. Nut
- Turn Counter Clockwise to Inc. Vacuum Setting
- Supply Air This Port Only. Minimum 30 PSIG Maximum 125 PSIG

**DIAGRAM**

![Diagram of 2PV-MVAC Vacuum Pneumatic Valve Actuator](image.png)

**SHOWN WITHOUT HOUSING**

Solon Manufacturing | www.solonmfg.com
ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>2PV</th>
<th>W</th>
<th>MV</th>
<th>SS</th>
</tr>
</thead>
</table>

HOU SING
- NO HOUSING
- PVC ENCLOSURE

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

SPECIAL FEATURES
- O - HIGH MAXIMUM PRESSURE - FULLY SUPPORTED DIAPHRAGM
- M - 1/2 NPT MALE PIPE MOUNTING
- SS - 316 STAINLESS STEEL WETTED TRIM MATERIAL
- SN - BRASS WETTED TRIM MATERIAL
- Z - VITON DIAPHRAGM MATERIAL

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE VACUUM RANGE</th>
<th>MAXIMUM VALVE DEADBAND</th>
<th>MAXIMUM WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 IN/HG</td>
<td>0.53 HG</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-15 IN/HG</td>
<td>0.67 HG</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-30 IN/HG</td>
<td>0.90 HG</td>
<td>20 PSI</td>
</tr>
<tr>
<td>-30/0/30 IN/HG</td>
<td>1.40 HG</td>
<td>20 PSI</td>
</tr>
</tbody>
</table>

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

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 PSIG 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.

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

![Valve Schematic Diagram]
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 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)
  - 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.
1. SPECIFY A MODEL NUMBER

6PS W 1 SSZ 2

MODE 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 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
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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE VACUUM RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;1&quot;</th>
<th>MAXIMUM WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 IN/HG</td>
<td>.3 HG</td>
<td>50 PSI</td>
</tr>
<tr>
<td>-30/0/30 IN/HG</td>
<td>.5 HG</td>
<td>50 PSI</td>
</tr>
</tbody>
</table>

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.

ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

6PS W 1 SSZ 2

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 VDC
5 - 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.

Wiring Schematic

One SPDT

Up to Four SPDT

Solon Manufacturing | www.solonmfg.com
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

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

HOUING
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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE VACUUM RANGE</th>
<th>MAXIMUM DEADBAND WC TYPE &quot;1&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1.5 WC/VAC</td>
<td>.17 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-3 WC/VAC</td>
<td>.18 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-6 WC/VAC</td>
<td>.23 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-15 WC/VAC</td>
<td>.33 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-30 WC/VAC</td>
<td>.6 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-60 WC/VAC</td>
<td>.7 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-100 WC/VAC</td>
<td>.8 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-150 WC/VAC</td>
<td>1.2 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>15-30 IN/HG</td>
<td>.06 HG</td>
<td>15 PSI</td>
</tr>
<tr>
<td></td>
<td>.12 HG</td>
<td></td>
</tr>
</tbody>
</table>

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.

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

One SPDT

Up to Four SPDT
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**
  - 'X' - 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

**2. SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>MAXIMUM DEADBAND TYPE &quot;5&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSID</td>
<td>.67 PSID</td>
<td>1.6 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-20 PSID</td>
<td>.88 PSID</td>
<td>3.8 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-50 PSID</td>
<td>1.50 PSID</td>
<td>6.4 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>2.2 PSID</td>
<td>N/A</td>
<td>100 PSI</td>
</tr>
</tbody>
</table>

**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**

* 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.
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

HOUING
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

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM VALVE DEADBAND</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSID</td>
<td>.40 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-20 PSID</td>
<td>.53 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-50 PSID</td>
<td>.90 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>1.3 PSID</td>
<td>100 PSI</td>
</tr>
</tbody>
</table>

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 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.
### ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

<table>
<thead>
<tr>
<th>42PS</th>
<th>X</th>
<th>1</th>
<th>D</th>
<th>SST</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MODEL SERIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X - EXPLOSION PROOF - NEMA 4, 7 &amp; 9</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>NUMBER OF ELECTRIC SWITCHES</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - ONE S.P.D.T.</td>
<td></td>
</tr>
<tr>
<td>2 - TWO S.P.D.T. - (SWITCH TYPE &quot;5&quot; ONLY)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>D - DIFFERENTIAL PRESSURE</strong></th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>TYPE OF ELECTRIC SWITCHES</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - LOW DEADBAND - 1 S.P.D.T.</td>
<td></td>
</tr>
<tr>
<td>15A - 125, 250 VAC</td>
<td></td>
</tr>
<tr>
<td>2 - STANDARD DEADBAND - 1 S.P.D.T.</td>
<td></td>
</tr>
<tr>
<td>15A - 125, 250 VAC; 0.5A - 125 VDC</td>
<td></td>
</tr>
<tr>
<td>3 - HIGH DC RATED - 1 S.P.D.T.</td>
<td></td>
</tr>
<tr>
<td>(MAGNETIC BLOWOUT)</td>
<td></td>
</tr>
<tr>
<td>10A - 125 VDC; 3A - 250 VDC</td>
<td></td>
</tr>
<tr>
<td>5 - SUB MINIATURE SWITCH - 2 S.P.D.T.</td>
<td></td>
</tr>
<tr>
<td>5A - 125, 250 VAC; 0.5A - 125 VDC</td>
<td></td>
</tr>
<tr>
<td>6 - GOLD CONTACT - 1 S.P.D.T.</td>
<td></td>
</tr>
<tr>
<td>1A - 125 VAC</td>
<td></td>
</tr>
</tbody>
</table>

### 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.

### 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

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>MAXIMUM DEADBAND TYPE &quot;5&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSID</td>
<td>0.96 PSID</td>
<td>2.4 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-20 PSID</td>
<td>1.3 PSID</td>
<td>4.5 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-50 PSID</td>
<td>2.1 PSID</td>
<td>7.6 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>3.0 PSID</td>
<td>N/A</td>
<td>100 PSI</td>
</tr>
</tbody>
</table>

**Wiring Schematic**

**One SPDT**

- N/C
- C
- N/O

**Two SPDT**

- N/C1
- C1
- N/O1
- N/C2
- C2
- N/O2
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 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 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

**MODEL SERIES**

<table>
<thead>
<tr>
<th>W</th>
<th>1</th>
<th>BD</th>
<th>U</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>- WATERTIGHT - NEMA 4X, 12 &amp; 13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NUMBER OF ELECTRIC SWITCHES**

<table>
<thead>
<tr>
<th>1</th>
<th>- ONE S.P.D.T.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>- TWO S.P.D.T. INDEPENDENT ADJUSTMENT</td>
</tr>
</tbody>
</table>

**SENSING ELEMENT**

| BD | - BELLOWS ACTUATED DIFFERENTIAL PRESSURE |

**SPECIAL FEATURES**

- NO SPECIAL FEATURES
- ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)
- EXTERNAL PRESSURE ADJUSTMENT
- TWO EXTERNAL PRESSURE ADJUSTMENTS
- ONE INDICATOR LIGHT
- TWO INDICATOR LIGHTS
- MALE PIPE MOUNTING 1/4 NPT
- MANUAL RESET, SWITCH ON INCR. PR.
- MANUAL RESET, SWITCH ON DECR. PR.
- ADDITIONAL PAINTING AFTER ASSEMBLY
- MANUAL RESET, SWITCH ON INCR. PR.
- MANUAL RESET, SWITCH ON DECR. PR.
- ADDITIONAL PAINTING AFTER ASSEMBLY
- HIGH TEMPERATURE SERVICE

**TYPE OF ELECTRIC SWITCHES**

<table>
<thead>
<tr>
<th>1</th>
<th>- LOW DEADBAND 15A - 125, 250, 480 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>- STANDARD DEADBAND 15A - 125, 250, 480 VAC; 0.5A - 125 VDC</td>
</tr>
<tr>
<td>3</td>
<td>- HIGH DC RATED (MAGNETIC BLOWOUT) 10A - 125 VDC; 3A - 250 VDC</td>
</tr>
<tr>
<td>4</td>
<td>- HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VAC</td>
</tr>
<tr>
<td>5</td>
<td>- GOLD CONTACT - 1 A - 125 VAC</td>
</tr>
</tbody>
</table>

#### 2. SPECIFY A RANGE

**ADJUSTABLE PRESSURE RANGE**

<table>
<thead>
<tr>
<th>MAXIMUM PRESSURE</th>
<th>MAXIMUM DEADBAND PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE &quot;1&quot;</td>
<td>TYPE &quot;2&quot;</td>
</tr>
<tr>
<td>0-15 PSID</td>
<td>0.7</td>
</tr>
<tr>
<td>0-30 PSID</td>
<td>0.7</td>
</tr>
<tr>
<td>0-60 PSID</td>
<td>0.8</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>1.0</td>
</tr>
<tr>
<td>0-150 PSID</td>
<td>4.0</td>
</tr>
<tr>
<td>0-200 PSID</td>
<td>4.0</td>
</tr>
<tr>
<td>0-300 PSID</td>
<td>4.0</td>
</tr>
<tr>
<td>0-600 PSID</td>
<td>5.0</td>
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<tr>
<td>0-1000 PSID</td>
<td>12.0</td>
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<tr>
<td>0-2000 PSID</td>
<td>15.0</td>
</tr>
<tr>
<td>0-3000 PSID</td>
<td>37.0</td>
</tr>
<tr>
<td>0-5000 PSID</td>
<td>45.0</td>
</tr>
</tbody>
</table>

**MAX. WORKING PRESSURE**

| 300 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' terminis on electric switches 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.
**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

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**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

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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**

   ![Model Series](6PS W 1 BD 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**
   - BD - BELLOWS ACTUATED DIFFERENTIAL PRESSURE

   **SPECIAL FEATURES**
   - A - NO SPECIAL FEATURES
   - E - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)
   - M - DOUBLE SNAP ACTION (BELLEVILLE SPRING)
   - R - PANEL MOUNTING
   - Q - ONE INDICATOR LIGHT (NOT ON X HOUSING)
   - LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)
   - P - ADDITIONAL PAINTING AFTER ASSEMBLY
   - U - HIGH TEMPERATURE SERVICE - NOT A UL-LISTED FEATURE

2. **SPECIFY A RANGE**

   **ADJUSTABLE PRESSURE RANGE**

   **MAXIMUM DEADBAND PSI**
   - TYPE "1"
   - TYPE "2"

   **MAX. WORKING PRESSURE**

<table>
<thead>
<tr>
<th>PRESSURE RANGE</th>
<th>TYPE &quot;1&quot;</th>
<th>TYPE &quot;2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSID</td>
<td>.7</td>
<td>1.3</td>
</tr>
<tr>
<td>0-30 PSID</td>
<td>.7</td>
<td>1.4</td>
</tr>
<tr>
<td>0-60 PSID</td>
<td>.8</td>
<td>1.6</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>1.0</td>
<td>1.9</td>
</tr>
<tr>
<td>0-150 PSID</td>
<td>4.0</td>
<td>7.3</td>
</tr>
<tr>
<td>0-200 PSID</td>
<td>4.0</td>
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<td>12.0</td>
<td>25.0</td>
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<tr>
<td>0-2000 PSID</td>
<td>15.0</td>
<td>30.0</td>
</tr>
<tr>
<td>0-3000 PSID</td>
<td>37.0</td>
<td>75.0</td>
</tr>
<tr>
<td>0-5000 PSID</td>
<td>45.0</td>
<td>90.0</td>
</tr>
</tbody>
</table>

   The deadbands listed in the tables are the maximum switch differentials when the Type i1 or Type i2 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.

   **Wiring Schematic**

   - **One SPDT**
   - **Up to Four SPDT**
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 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

Underwriters Laboratories, Inc. Listed:
Industrial Controls Equipment Type 4 & 12, File E1301423,
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**

- **ADJUSTABLE DEADBAND** (ADJ. 10% - 50% OF RANGE)
- **EXTERNAL PRESSURE ADJUSTMENT**
- **TWO EXTERNAL PRESSURE ADJUSTMENTS**
- **ONE INDICATOR LIGHT** (NOT ON X HOUSING)
- **TWO INDICATOR LIGHTS** (NOT ON X HOUSING)
- **MALE PIPE MOUNTING ½ NPT**
- **PANEL MOUNTING**
- **MANUAL RESET, SWITCH ON INCR. PR.**
- **MANUAL RESET, SWITCH ON DECR. PR.**
- **SPECIAL TRIM BASE 316 STAINLESS STEEL** - INCREASES MAX WORKING PRESSURE TO 300 PSI
- **SPECIAL TRIM BASE BRASS** - INCREASES MAX WORKING PRESSURE TO 300 PSI
- **SPECIAL TRIM BASE ALUMINUM** - INCREASES MAX WORKING PRESSURE TO 300 PSI
- **SPECIAL TRIM BASE PVC** (NOT ON X SWITCHES)
- **PTFE PROTECTED DIAPHRAGM**
- **ADDITIONAL PAINTING AFTER ASSEMBLY**
- **HIGH TEMP SERVICE**
- **VITON DIAPHRAGM**

2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYPE &quot;1&quot;</td>
<td>TYPE &quot;2&quot;</td>
</tr>
<tr>
<td>0-15 PSID</td>
<td>.16 PSID</td>
<td>.32 PSID</td>
</tr>
<tr>
<td>0-30 PSID</td>
<td>.23 PSID</td>
<td>.47 PSID</td>
</tr>
</tbody>
</table>

**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 - Use table values by two.

- **Type "4"** - Hermetically Sealed Switch - Use table values for 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**

- One SPDT
- Up to Four SPDT

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* 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.
6PSDO
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
* 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.

WETTED PARTS;

ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;1&quot;</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.3</td>
<td>.6</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.35</td>
<td>.7</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-60 PSI</td>
<td>.7</td>
<td>1.3</td>
<td>2500 PSI</td>
</tr>
</tbody>
</table>

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 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.

Wiring Schematic

One SPDT

Up to Four SPDT
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

<table>
<thead>
<tr>
<th>7PS</th>
<th>W</th>
<th>1</th>
<th>D</th>
<th>L</th>
<th>2</th>
</tr>
</thead>
</table>

**MODEL SERIES**

**HOUSING**
- W - WATER TIGHT - 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**
- 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.
- S - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX. WORKING PRESSURE TO 250 PSI (RANGES 0-15 WC/DP AND ABOVE)
- SSS - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)
- T - TFE PROTECTED DIAPHRAGM
- U - ADDITIONAL PAINTING AFTER ASSEMBLY
- V - HIGH TEMP SERVICE - NOT A UL- LISTED FEATURE
- Z - VITON DIAPHRAGM

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Maximum Deadband WC Type “1”</th>
<th>Maximum Working Pressure Type “2”</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1.5 WC/DP</td>
<td>.17”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-3 WC/DP</td>
<td>.18”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-6 WC/DP</td>
<td>.23”WC .45”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-15 WC/DP</td>
<td>.33”WC .65”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-30 WC/DP</td>
<td>.6”WC 1.2”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-60 WC/DP</td>
<td>.7”WC 1.4”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-100 WC/DP</td>
<td>.8”WC 1.6”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-150 WC/DP</td>
<td>1.2”WC 2.5”WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-200 WC/DP</td>
<td>1.8”WC 3.1”WC</td>
<td>25 PSI</td>
</tr>
</tbody>
</table>

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

For one SPDT switch:

- N/C or N/O to DP

For up to four SPDT switches:

- N/C1, N/C2, N/C3, N/C4 to DP1, DP2, DP3, DP4

Solon Manufacturing | www.solonmfg.com
**7PSDO**

**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)

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**SPECIFICATIONS**

**PHYSICAL DATA (Standard)**

- 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

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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.
- 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**

- 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 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 VDC
- 6 - Gold Contact - 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.

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.

**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**

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

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**

   **MODEL SERIES**
   - 2PS  W  1 SAN  T  2

**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 (250°F)
- T - PTFE PROTECTED DIAPHRAGM
- U - ADDITIONAL PAINTING AFTER ASSEMBLY

2. **SPECIFY A RANGE**

   **ADJUSTABLE PRESSURE RANGE**
<table>
<thead>
<tr>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>TYPE &quot;5&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 PSI</td>
<td>.25 PSI</td>
<td>.50 PSI</td>
</tr>
<tr>
<td>0-5 PSI</td>
<td>.27 PSI</td>
<td>.50 PSI</td>
</tr>
<tr>
<td>0-10 PSI</td>
<td>.34 PSI</td>
<td>.90 PSI</td>
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<td>0-20 PSI</td>
<td>.50 PSI</td>
<td>1.9 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.6 PSI</td>
<td>6 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.9 PSI</td>
<td>8.3 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>4.4 PSI</td>
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<tr>
<td>0-300 PSI</td>
<td>5.3 PSI</td>
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<td></td>
<td>500 PSI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500 PSI</td>
</tr>
</tbody>
</table>

**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 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.

**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.

**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**

- **One SPDT**
  - P
  - N/C
  - C
  - N/O

- **Two SPDT**
  - P
  - N/C1
  - C1
  - N/C2
  - C2
  - N/O2

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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: 1/2 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**

<table>
<thead>
<tr>
<th>NUMBER OF ELECTRIC SWITCHES</th>
<th>2PSX</th>
<th>SST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - ONE S.P.D.T.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2 - TWO S.P.D.T. - SWITCH TYPE &quot;5&quot; ONLY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

**2. SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYPE &quot;2&quot;</td>
<td>TYPE &quot;5&quot;</td>
</tr>
<tr>
<td>0-2 PSI</td>
<td>.25 PSI</td>
<td>.23 PSI</td>
</tr>
<tr>
<td>0-5 PSI</td>
<td>.27 PSI</td>
<td>.50 PSI</td>
</tr>
<tr>
<td>0-10 PSI</td>
<td>.34 PSI</td>
<td>.90 PSI</td>
</tr>
<tr>
<td>0-20 PSI</td>
<td>.50 PSI</td>
<td>1.9 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.6 PSI</td>
<td>6 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.9 PSI</td>
<td>8.3 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>4.4 PSI</td>
<td>16 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>5.3 PSI</td>
<td>22 PSI</td>
</tr>
</tbody>
</table>

**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 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.

**Wiring Schematic**

- **One SPDT**
  - N/C
  - C
  - N/O

- **Two SPDT**
  - N/C1
  - C1
  - N/O1
  - N/C2
  - C2
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: ¼ 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**

   MODEL SERIES

   2PSX  1  B  M  2

   **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

2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>TYPE &quot;5&quot;</th>
<th>MAXIMUM PRESSURE TYPE &quot;2&quot;</th>
<th>TYPE &quot;5&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSI</td>
<td>.80 PSI</td>
<td>1.5 PSI</td>
<td>300 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-20 PSI</td>
<td>.90 PSI</td>
<td>2.3 PSI</td>
<td>300 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.0 PSI</td>
<td>5.2 PSI</td>
<td>300 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.5 PSI</td>
<td>13 PSI</td>
<td>300 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-250 PSI</td>
<td>6 PSI</td>
<td>27 PSI</td>
<td>1500 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-500 PSI</td>
<td>8 PSI</td>
<td>58 PSI</td>
<td>1500 PSI</td>
<td>2500 PSI</td>
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<tr>
<td>0-750 PSI</td>
<td>16 PSI</td>
<td>77 PSI</td>
<td>2500 PSI</td>
<td>2500 PSI</td>
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<td>0-1000 PSI</td>
<td>19 PSI</td>
<td>183 PSI</td>
<td>2500 PSI</td>
<td>5000 PSI</td>
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<td>0-2000 PSI</td>
<td>60 PSI</td>
<td>240 PSI</td>
<td>5000 PSI</td>
<td>5000 PSI</td>
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<tr>
<td>0-3000 PSI</td>
<td>66 PSI</td>
<td>N/A</td>
<td>5000 PSI</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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 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.

**Wiring Schematic**

- One SPDT
  - N/C
  - C
  - N/O
- Two SPDT
  - N/C1
  - C1
  - N/O1
  - C2
  - N/O2

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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 or pressure-sensing elements accommodate 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: ¼ 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
1. SPECIFY A MODEL NUMBER

2PSX 1 SSU 2

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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE VACUUM RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>MAXIMUM DEADBAND TYPE &quot;5&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 IN/HG</td>
<td>.53 HG</td>
<td>N/A</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-15 IN/HG</td>
<td>.67 HG</td>
<td>N/A</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-30 IN/HG</td>
<td>.90 HG</td>
<td>2.0 HG</td>
<td>20 PSI</td>
</tr>
<tr>
<td>-30/0/30 IN/HG</td>
<td>1.4 HG</td>
<td>N/A</td>
<td>20 PSI</td>
</tr>
</tbody>
</table>

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.

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

One SPDT

N/O

C

N/C

Two SPDT

V1

N/O1

C1

N/C1

V2

N/O2

C2

N/C2
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

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Maximum Ambient Temperature</td>
<td>180°F</td>
</tr>
<tr>
<td>Minimum Ambient Temperature</td>
<td>-20°F</td>
</tr>
<tr>
<td>Pressure Connection</td>
<td>1/4 NPT</td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>3/4 NPT</td>
</tr>
<tr>
<td>Housing</td>
<td>Cast Aluminum</td>
</tr>
<tr>
<td>Deadband</td>
<td>Fixed</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>1/2% of range (for one SPDT switch)</td>
</tr>
<tr>
<td>Drift</td>
<td>&lt;1% of range (100,000 operations)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 5 lbs.</td>
</tr>
<tr>
<td>Contact Ratings</td>
<td>15A - 125, 250, 480 VAC</td>
</tr>
<tr>
<td>Port Material</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Diaphragm Material</td>
<td>Buna N</td>
</tr>
<tr>
<td>Set Point Adjustment</td>
<td>Screw type, field adjustable</td>
</tr>
<tr>
<td>No. Contacts</td>
<td>1, 2, 3 or 4 S.P.D.T or 1 D.P.D.T.</td>
</tr>
<tr>
<td>Contact Listings</td>
<td>UL Recognized, CSA Certified</td>
</tr>
</tbody>
</table>

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**

   MODEL SERIES
   ![Model Series Diagram]

   **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

**SPECIFIC 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

2. **SPECIFY A RANGE**

   **ADJUSTABLE PRESSURE RANGE**
<table>
<thead>
<tr>
<th>MAXIMUM DEADBAND PSI TYPE &quot;1&quot;</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.2</td>
<td>.3</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.2</td>
<td>.5</td>
</tr>
<tr>
<td>0-60 PSI</td>
<td>.5</td>
<td>1.0</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>0-150 PSI</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>2.0</td>
<td>3.5</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>3.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**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**

![Wiring Schematic Diagram]
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
- Accomodates 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)
-se-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.
**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.

---

**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**

One SPDT  
Up to Four SPDT

---

Solon Manufacturing | www.solonmfg.com
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
- Accomodates 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
- A wide variety of adjustable pressure ranges are available
- S/S bellows

PHYSICAL DATA (Standard)

-see page 2 for special features

SPECIFICATIONS

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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>6PS</th>
<th>W</th>
<th>1</th>
<th>BD</th>
<th>U</th>
<th>2</th>
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<tbody>
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<td>HOUSING</td>
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<tr>
<td>W - WATERTIGHT - NEMA 4X &amp; 12</td>
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<td></td>
</tr>
<tr>
<td>X - EXPLOSION PROOF - NEMA 7 &amp; 9</td>
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</thead>
<tbody>
<tr>
<td>TYPE OF ELECTRIC SWITCHES</td>
<td>1 - LOW DEADBAND</td>
<td>15A - 125, 250, 480 VAC</td>
<td>2 - STANDARD DEADBAND</td>
<td>15A - 125, 250, 480 VAC; 0.5A - 125 VDC</td>
<td>3 - HIGH DC RATED (MAGNETIC BLOWOUT)</td>
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<tr>
<td></td>
<td>4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VOC</td>
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<tr>
<td></td>
<td>6 - GOLD CONTACT -</td>
<td>1 A - 125 VAC</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

| 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 - 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

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;1&quot;</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSID</td>
<td>.7</td>
<td>1.3</td>
<td>300 PSI</td>
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<tr>
<td>0-30 PSID</td>
<td>.7</td>
<td>1.4</td>
<td>300 PSI</td>
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<tr>
<td>0-60 PSID</td>
<td>.8</td>
<td>1.6</td>
<td>300 PSI</td>
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<tr>
<td>0-100 PSID</td>
<td>1.0</td>
<td>1.9</td>
<td>300 PSI</td>
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<tr>
<td>0-150 PSID</td>
<td>4.0</td>
<td>7.3</td>
<td>1500 PSI</td>
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<tr>
<td>0-200 PSID</td>
<td>4.0</td>
<td>7.6</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-300 PSID</td>
<td>4.0</td>
<td>8.2</td>
<td>1500 PSI</td>
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<tr>
<td>0-600 PSID</td>
<td>5.0</td>
<td>10.0</td>
<td>1500 PSI</td>
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<tr>
<td>0-1000 PSID</td>
<td>12.0</td>
<td>25.0</td>
<td>3000 PSI</td>
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<tr>
<td>0-2000 PSID</td>
<td>15.0</td>
<td>30.0</td>
<td>3000 PSI</td>
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<tr>
<td>0-3000 PSID</td>
<td>37.0</td>
<td>75.0</td>
<td>7000 PSI</td>
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<tr>
<td>0-5000 PSID</td>
<td>45.0</td>
<td>90.0</td>
<td>7000 PSI</td>
</tr>
</tbody>
</table>

3. 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.

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 for a 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

One SPDT

Up to Four SPDT

Solen Manufacturing | www.solonmfg.com
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)**

- 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.
**INSTALLATION NOTES**

* 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.

**ORDERING A SWITCH**

1. **SPECIFY A MODEL NUMBER**

<table>
<thead>
<tr>
<th>6PS</th>
<th>W</th>
<th>1</th>
<th>D</th>
<th>R&gt;</th>
<th>2</th>
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<tbody>
<tr>
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<td></td>
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<tr>
<td>HOUSING</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>W - WATERTIGHT - NEMA 4X &amp; 12</td>
<td></td>
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</tr>
<tr>
<td>X - EXPLOSION PROOF - NEMA 7 &amp; 9</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF ELECTRIC SWITCHES</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1 - ONE S.P.D.T.</td>
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<tr>
<td>11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.</td>
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<tr>
<td>2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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<tr>
<td>3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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<tr>
<td>4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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<tr>
<td>SENSING ELEMENT</td>
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<td>SPECIAL FEATURES</td>
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<tr>
<td>NO SPECIAL FEATURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)</td>
<td></td>
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<td>E - EXTERNAL PRESSURE ADJUSTMENT</td>
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<tr>
<td>EE - TWO EXTERNAL PRESSURE ADJUSTMENTS</td>
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<tr>
<td>L - ONE INDICATOR LIGHT (NOT ON X HOUSING)</td>
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<tr>
<td>LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)</td>
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<tr>
<td>M - MALE PIPE MOUNTING ½ NPT</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>P - PANEL MOUNTING</td>
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<tr>
<td>R&gt; - MANUAL RESET, SWITCH ON INCR. PR.</td>
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<td>R&lt; - MANUAL RESET, SWITCH ON DECR. PR.</td>
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<td>S - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX WORKING PRESSURE TO 300 PSI</td>
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<td>SN - SPECIAL TRIM BASE BRASS - INCREASES MAX WORKING PRESSURE TO 300 PSI</td>
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<td>SI - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES) - DECREASES MAX WORKING PRESSURE TO 50 PSI</td>
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<td>SY - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)</td>
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<td>T - PTFE PROTECTED DIAPHRAGM</td>
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<td>U - ADDITIONAL PAINTING AFTER ASSEMBLY</td>
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<td>V - HIGH TEMP SERVICE - NOT A UL-LISTED FEATURE</td>
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<td>Z - VITON DIAPHRAGM</td>
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2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI</th>
<th>MAX. WORKING PRESSURE</th>
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<tbody>
<tr>
<td>0-15 PSID</td>
<td>0.16 PSID</td>
<td>100 PSI</td>
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<tr>
<td>0-30 PSID</td>
<td>0.23 PSID</td>
<td>100 PSI</td>
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</table>

**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**

[Diagram showing wiring configurations: One SPDT and Up to Four SPDT connections]
6PSXDO
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 diaphragms 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.
**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**

**One SPDT**

```
 N/C  C  N/O
```

**Up to Four SPDT**

```
 N/C1  C1  N/O1
 N/C2  C2  N/O2
```

---

**ORDERING A SWITCH**

**1. SPECIFY A MODEL NUMBER**

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>6PS W 1 DO E 2</td>
</tr>
</tbody>
</table>

- **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 1/2 NPT
  - P - Panel Mounting
  - 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

**2. SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Maximum Deadband PSI</th>
<th>Maximum Working Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.3</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.35</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-60 PSI</td>
<td>.7</td>
<td>2500 PSI</td>
</tr>
</tbody>
</table>

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**DEADBAND NOTES**

* 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.
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 a 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
- Accomodates 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)**
- 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.

LISTED Class I, Groups C & D; Class II, Groups E, F, & G File E65371.
**ORDERING A SWITCH**

1. SPECIFY A MODEL NUMBER

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>6PS</th>
<th>W</th>
<th>1</th>
<th>SSZ</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>WATERTIGHT - NEMA 4X &amp; 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>EXPLOSION PROOF - NEMA 7 &amp; 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF ELECTRIC SWITCHES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ONE S.P.D.T.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>THREE S.P.D.T. INDEPENDENT ADJUSTMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>FOUR S.P.D.T. INDEPENDENT ADJUSTMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPE OF ELECTRIC SWITCHES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>LOW DEADBAND</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>STANDARD DEADBAND</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>HIGH DC RATED (MAGNETIC BLOWOUT)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>GOLD CONTACT - 1 A - 125 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPECIAL FEATURES**

- ASTM - 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 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
- SL - 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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE VACUUM RANGE</th>
<th>MAXIMUM DEADBAND PSI</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 IN/HG</td>
<td>.3 HG</td>
<td>50 PSI</td>
</tr>
<tr>
<td>-30/0/30 IN/HG</td>
<td>.5 HG</td>
<td>50 PSI</td>
</tr>
</tbody>
</table>

**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.

**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**

[Diagram showing wiring connections for one SPDT and up to four SPDT D.P.D.T. switches]
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
- Accomodates 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, hermically-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)**

- 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,
LISTED Class I, Groups C & D; Class II, Groups E, F, & G File E65371.
ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>7PS</th>
<th>W</th>
<th>1</th>
<th>SST</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>W - WATERTIGHT - NEMA 4X &amp; 12</td>
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<td></td>
</tr>
<tr>
<td>X - EXPLOSION PROOF - NEMA 7 &amp; 9</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF ELECTRIC SWITCHES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - ONE S.P.D.T.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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</tr>
<tr>
<td>4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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</tr>
<tr>
<td>SPECIAL FEATURES</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>&quot;*&quot; - NO SPECIAL FEATURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E - EXTERNAL PRESSURE ADJUSTMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE - TWO EXTERNAL PRESSURE ADJUSTMENTS</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>F - FLANGE BASE MOUNTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G - DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PR</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>J - SAFETY SEAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L - ONE INDICATOR LIGHT (NOT ON X HOUSING)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M - MALE PIPE MOUNTING ½ NPT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P - PANEL MOUNTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&gt; - MANUAL RESET, SWITCH ON INCR. PR.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Rc - MANUAL RESET, SWITCH ON DECR. PR.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SS - SPECIAL TRIM BASE 316 STAINLESS STEEL</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>S1 - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SY - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T - PTFE PROTECTED DIAPHRAGM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U - ADDITIONAL PAINTING AFTER ASSEMBLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V - HIGH TEMP SERVICE - NOT A UL-LISTED FEATURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z - VITON DIAPHRAGM</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND WC TYPE “1”</th>
<th>TYPE “2”</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1.5 WC</td>
<td>.15</td>
<td>-</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-3 WC</td>
<td>.16</td>
<td>-</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-6 WC</td>
<td>.2</td>
<td>.4</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-15 WC</td>
<td>.3</td>
<td>.6</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-30 WC</td>
<td>.6</td>
<td>1.1</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-60 WC</td>
<td>.7</td>
<td>1.4</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-100 WC</td>
<td>.8</td>
<td>1.6</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-150 WC</td>
<td>1.2</td>
<td>2.4</td>
<td>25 PSI</td>
</tr>
</tbody>
</table>

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.

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

One SPDT

Up to Four SPDT

Solon Manufacturing | www.solonmfg.com
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
- Accomodates 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 SPDT or 1 DPDT
- Contact Listings: UL Recognized, CSA Certified

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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.
**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 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**

**One SPDT**

- N/C
- C
- N/O

**Up to Four SPDT**

- N/C
- C
- N/O1
- C1
- N/O2
- C2
- N/O3
- C3
- N/O4
- C4

---

**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**
   - 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 1/4 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 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

2. **SPECIFY A RANGE**

   **ADJUSTABLE PRESSURE RANGE**

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum pressure</th>
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<tbody>
<tr>
<td>WC/DP</td>
<td>WC</td>
</tr>
<tr>
<td>0-1.5 WC/DP</td>
<td>.17’WC</td>
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<tr>
<td>0-3 WC/DP</td>
<td>.18’WC</td>
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<tr>
<td>0-6 WC/DP</td>
<td>.23’WC</td>
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<td>.6’WC</td>
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<tr>
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<td>.7’WC</td>
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<td>.8’WC</td>
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<tr>
<td>0-150 WC/DP</td>
<td>1.2’WC</td>
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<td>0-200 WC/DP</td>
<td>1.8’WC</td>
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   **MAXIMUM DEADBAND WC**

<table>
<thead>
<tr>
<th>Type &quot;1&quot;</th>
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<td>WC</td>
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<tr>
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<td>0-150 WC/DP</td>
</tr>
<tr>
<td>0-200 WC/DP</td>
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   **MAXIMUM WORKING PRESSURE**

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<tbody>
<tr>
<td>WC</td>
<td>PS</td>
</tr>
<tr>
<td>0-1.5 WC/DP</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-3 WC/DP</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-6 WC/DP</td>
<td>25 PSI</td>
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<tr>
<td>0-15 WC/DP</td>
<td>25 PSI</td>
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<tr>
<td>0-30 WC/DP</td>
<td>25 PSI</td>
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<td>25 PSI</td>
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<tr>
<td>0-100 WC/DP</td>
<td>25 PSI</td>
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<tr>
<td>0-150 WC/DP</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-200 WC/DP</td>
<td>25 PSI</td>
</tr>
</tbody>
</table>

---

* 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.
7PSXDO
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
- Accomodates 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.

UL LISTED: Class I, Groups C & D; Class II, Groups E, F, & G File E65371.
1. SPECIFY A MODEL NUMBER

**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
- SS - SPECIAL TRIM BASE 316 STAINLESS STEEL
- U - ADDITIONAL PAINTING AFTER ASSEMBLY
- V - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

**SPECIAL FEATURES**
- NO SPECIAL FEATURES
- ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)
- EXTERNAL PRESSURE ADJUSTMENT
- ONE INDICATOR LIGHT (NOT ON X HOUSING)
- TWO INDICATOR LIGHTS (NOT ON X HOUSING)
- MALE PIPE MOUNTING ½ NPT
- PANEL MOUNTING
- MANUAL RESET, SWITCH ON INCR. PR.
- MANUAL RESET, SWITCH ON DECR. PR.

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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND WC TYPE “1”</th>
<th>MAXIMUM DEADBAND WC TYPE “2”</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 WC/DP</td>
<td>1.1</td>
<td>2.2</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-15 WC/DP</td>
<td>1.2</td>
<td>2.3</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-30 WC/DP</td>
<td>1.2</td>
<td>2.3</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-60 WC/DP</td>
<td>1.3</td>
<td>2.5</td>
<td>1500 PSI</td>
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<tr>
<td>0-100 WC/DP</td>
<td>1.5</td>
<td>2.9</td>
<td>1500 PSI</td>
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<td>0-150 WC/DP</td>
<td>1.7</td>
<td>3.4</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-200 WC/DP</td>
<td>1.9</td>
<td>3.8</td>
<td>1500 PSI</td>
</tr>
</tbody>
</table>

**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 values, 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**

- **One SPDT**
  - N/C  
  - C  
  - N/O  

- **Up to Four SPDT**
  - N/C1  
  - C1  
  - N/O1  
  - N/C2  
  - C2  
  - N/O2
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

UL 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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>7PS W 1 SSZ 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING</td>
<td>W - WATERTIGHT - NEMA 4X &amp; 12</td>
</tr>
<tr>
<td></td>
<td>X - EXPLOSION PROOF - NEMA 7 &amp; 9</td>
</tr>
</tbody>
</table>

NUMBER OF ELECTRIC SWITCHES

1 - ONE S.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 VDC
5 - GOLD CONTACT - 1A - 125 VAC

SPECIAL FEATURES

* 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.

Wiring Schematic

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.
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**

   **MODEL SERIES**
   
   **HOUSING**
   - W - WATER-TIGHT - 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 VDC
   - 6 - GOLD CONTACT
     - 1 A - 125 VAC

   **SPECIAL FEATURES**
   - * 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 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.
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

**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

**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: 355/35 6 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.


Ordining a switch

1. Specify a model number

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>42PS</th>
<th>X</th>
<th>1</th>
<th>SST</th>
<th>2</th>
</tr>
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<tbody>
<tr>
<td>HOUSING</td>
<td>X - EXPLOSION PROOF - NEMA 4, 7 &amp; 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Special features
- "J" - NO SPECIAL FEATURES - STANDARD CONSTRUCTION
- 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

2. Specify a range

<table>
<thead>
<tr>
<th>Adjustable pressure range</th>
<th>Maximum deadband type &quot;2&quot;</th>
<th>Maximum deadband type &quot;5&quot;</th>
<th>Max. working pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 PSI</td>
<td>0.5 PSI</td>
<td>0.7 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-10 PSI</td>
<td>0.6 PSI</td>
<td>0.7 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-20 PSI</td>
<td>0.7 PSI</td>
<td>1.3 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>2.1 PSI</td>
<td>7.5 PSI</td>
<td>600 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>3.0 PSI</td>
<td>9.8 PSI</td>
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<td>0-200 PSI</td>
<td>3.9 PSI</td>
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<tr>
<td>0-300 PSI</td>
<td>5.0 PSI</td>
<td>17.5 PSI</td>
<td>600 PSI</td>
</tr>
</tbody>
</table>

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

One SPDT

Two SPDT

Solon Manufacturing | www.solonmfg.com
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

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

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

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.

Solon Manufacturing | www.solonmfg.com
ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

<table>
<thead>
<tr>
<th>42PS</th>
<th>X</th>
<th>1</th>
<th>B</th>
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<tr>
<td>MODEL SERIES</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**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.

**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.

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

---

**ORDERING A SWITCH**

1. SPECIFY A MODEL NUMBER

<table>
<thead>
<tr>
<th>42PS</th>
<th>X</th>
<th>1</th>
<th>B</th>
<th>U</th>
<th>2</th>
</tr>
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<tbody>
<tr>
<td>MODEL SERIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

**2. SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>MAXIMUM PRESSURE TYPE &quot;2&quot;</th>
<th>MAXIMUM DEADBAND TYPE &quot;5&quot;</th>
<th>MAXIMUM PRESSURE TYPE &quot;5&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSI</td>
<td>1.2 PSI</td>
<td>300 PSI</td>
<td>2.9 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-20 PSI</td>
<td>1.5 PSI</td>
<td>300 PSI</td>
<td>3.8 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.7 PSI</td>
<td>300 PSI</td>
<td>7.2 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>2.3 PSI</td>
<td>300 PSI</td>
<td>20.2 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-250 PSI</td>
<td>8.8 PSI</td>
<td>1500 PSI</td>
<td>36.8 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-500 PSI</td>
<td>12.0 PSI</td>
<td>1500 PSI</td>
<td>84 PSI</td>
<td>3000 PSI</td>
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<td>0-750 PSI</td>
<td>24.5 PSI</td>
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<td>107 PSI</td>
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<td>0-1000 PSI</td>
<td>31.2 PSI</td>
<td>3000 PSI</td>
<td>257 PSI</td>
<td>7000 PSI</td>
</tr>
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<td>0-1500 PSI</td>
<td>83 PSI</td>
<td>7000 PSI</td>
<td>317 PSI</td>
<td>7000 PSI</td>
</tr>
<tr>
<td>0-3000 PSI</td>
<td>100 PSI</td>
<td>7000 PSI</td>
<td>385 PSI</td>
<td>7000 PSI</td>
</tr>
</tbody>
</table>

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**MODEL REFERENCE GUIDE EXPLOSION PROOF PRODUCTS**

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Wiring Schematic

One SPDT

Two SPDT

---
**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.

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

```
42PS  X  1  D  SST  2
```

**MODEL SERIES**

- **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

**NUMBER OF ELECTRIC SWITCHES**

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

**D - DIFFERENTIAL PRESSURE**

**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

**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.

**2. SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>MAXIMUM DEADBAND TYPE &quot;5&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSID</td>
<td>0.96 PSID</td>
<td>2.4 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-20 PSID</td>
<td>1.3 PSID</td>
<td>4.5 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-50 PSID</td>
<td>2.1 PSID</td>
<td>7.6 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>3.0 PSID</td>
<td>N/A</td>
<td>100 PSI</td>
</tr>
</tbody>
</table>

**INSTALLATION NOTES**

- **Orientation** - The 42PS XD 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**

- One SPDT
  - N/C → dP → C
  - N/O → C

- Two SPDT
  - N/C1 → dP₁ → C1 → N/O1
  - N/C2 → C2

---

**Special Features**

- O - 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.
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

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

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

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

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)

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

SPECIFIC FEATURES
"U" - 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

* 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

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
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<td>TYPE &quot;5&quot;</td>
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</tr>
<tr>
<td>0-5 WC</td>
<td>1.42 WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-10 WC</td>
<td>1.49 WC</td>
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<td>1.55 WC</td>
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<td>0-50 WC</td>
<td>1.68 WC</td>
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<td>0-100 WC</td>
<td>2.3 WC</td>
<td>25 PSI</td>
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<td>0-150 WC</td>
<td>3.4 WC</td>
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</tr>
<tr>
<td>0-200 WC</td>
<td>3.8 WC</td>
<td>25 PSI</td>
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</table>

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

One SPDT

N/C  P  C

Two SPDT

N/C1  P  P1

C1  N/C2

N/O1  C2

N/O2

Solon Manufacturing | www.solonmfg.com
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 or 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: ¼ 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

<table>
<thead>
<tr>
<th>2PS</th>
<th>W</th>
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<th>SST</th>
<th>2</th>
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</thead>
</table>

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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0-200 PSI</td>
<td>4.4 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>5.3 PSI</td>
</tr>
</tbody>
</table>

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 for UL-recognized component, guide WSQ2, File E85076. All stainless steel construction.
Type "5" - Sub Miniature - 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 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.
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: ¼ 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
**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 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**

The wiring schematic shows how to wire a single SPDT and a dual SPDT switch.

- **One SPDT**
  - N/C to P
  - C to P
  - N/O to P

- **Two SPDT**
  - N/C1 to P1
  - C1 to P1
  - N/O1 to P1
  - N/C2 to P2
  - C2 to P2
  - N/O2 to P2
2PSWH
WEATHER TIGHT PRESSURE SWITCH
PISTON SENSING ELEMENT

- Range 200 - 10,000 psi
- NEMA 4X, 12 & 13 housing
- One or two SPDT contacts

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)

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

<table>
<thead>
<tr>
<th>2PS</th>
<th>W</th>
<th>1</th>
<th>H</th>
<th>U</th>
<th>2</th>
</tr>
</thead>
</table>

**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

2. SPECIFY A RANGE

3/16" PISTON

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>DEADBAND RANGE TYPE &quot;2&quot;</th>
<th>MAXIMUM SYSTEM PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-200 PSI</td>
<td>20-90 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>50-500 PSI</td>
<td>40-135 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>100-1000 PSI</td>
<td>80-225 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>200-2000 PSI</td>
<td>150-300 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>300-3000 PSI</td>
<td>170-315 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>400-4000 PSI</td>
<td>180-330 PSI</td>
<td>5000 PSI</td>
</tr>
</tbody>
</table>

1/8" PISTON

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>DEADBAND RANGE TYPE &quot;2&quot;</th>
<th>MAXIMUM SYSTEM PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>250-2500 PSI</td>
<td>200-570 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>450-4500 PSI</td>
<td>400-1000 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>700-7000 PSI</td>
<td>700-1250 PSI</td>
<td>10000 PSI</td>
</tr>
</tbody>
</table>

**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 each 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**

One SPDT Two SPDT

---
Solon Manufacturing | www.solonmfg.com

95
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 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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>5PS W 1 B U 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING</td>
<td>W - WATERTIGHT - NEMA 4X, 12 &amp; 13</td>
</tr>
</tbody>
</table>

| 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 | 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 |

### 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

### 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 onelectric 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.

---

### ORDERING A SWITCH

1. **SPECIFY A MODEL NUMBER**

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

### 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 onelectric 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.
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

<table>
<thead>
<tr>
<th>5PS</th>
<th>W</th>
<th>1</th>
<th>B</th>
<th>U</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W - WATERTIGHT - NEMA 4X, 12 &amp; 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NUMBER OF ELECTRIC SWITCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - ONE S.P.D.T.</td>
</tr>
<tr>
<td>11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.</td>
</tr>
<tr>
<td>2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TYPE OF ELECTRIC SWITCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - LOW DEADBAND</td>
</tr>
<tr>
<td>15A - 125, 250, 480 VAC</td>
</tr>
<tr>
<td>2 - STANDARD DEADBAND</td>
</tr>
<tr>
<td>15A - 125, 250, 480 VAC; 0.5A - 125 VDC</td>
</tr>
<tr>
<td>3 - HIGH DC RATED (MAGNETIC BLOWOUT)</td>
</tr>
<tr>
<td>10A - 125 VDC; 3A - 250 VDC</td>
</tr>
<tr>
<td>4 - HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VDC</td>
</tr>
<tr>
<td>6 - GOLD CONTACT</td>
</tr>
<tr>
<td>1 A - 125 VAC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECIAL FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>* - NO SPECIAL FEATURES</td>
</tr>
<tr>
<td>A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)</td>
</tr>
<tr>
<td>E - EXTERNAL PRESSURE ADJUSTMENT</td>
</tr>
<tr>
<td>EE - TWO EXTERNAL PRESSURE ADJUSTMENTS</td>
</tr>
<tr>
<td>L - ONE INDICATOR LIGHT</td>
</tr>
<tr>
<td>LL - TWO INDICATOR LIGHTS</td>
</tr>
<tr>
<td>M - MALE PIPE MOUNTING ½ NPT</td>
</tr>
<tr>
<td>R&gt; - MANUAL RESET, SWITCH ON INCR. PR.</td>
</tr>
<tr>
<td>R&lt; - MANUAL RESET, SWITCH ON DECR. PR.</td>
</tr>
<tr>
<td>U - ADDITIONAL PAINTING AFTER ASSEMBLY</td>
</tr>
<tr>
<td>V - HIGH TEMPERATURE SERVICE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switches may be wired to 'normally open' or 'normally closed' terminals on electric switch(es).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 NPT female is standard. 1/2 NPT male is available ('M' option).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn pressure adjustment nut(s) clockwise to increase setpoint. Detailed installation &amp; calibration instructions are provided for every shipment. Factory setting is available at no charge.</td>
</tr>
</tbody>
</table>

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 |

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**

For One SPDT:

- N/C
- C
- N/O

For Two SPDT:

- N/C1
- C1
- N/O1
- N/C2
- C2
- N/O2
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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>5PS</th>
<th>W</th>
<th>1</th>
<th>BD</th>
<th>U</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING’</td>
<td>W - WATERTIGHT - NEMA 4X, 12 &amp; 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF ELECTRIC SWITCHES</td>
<td>1 - ONE S.P.D.T.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.</td>
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</tr>
<tr>
<td></td>
<td>2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SENSING ELEMENT</td>
<td>BD - BELLOWS ACTUATED DIFFERENTIAL PRESSURE</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SPECIAL FEATURES</td>
<td>A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>E - EXTERNAL PRESSURE ADJUSTMENT</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>EE - TWO EXTERNAL PRESSURE ADJUSTMENTS</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>L - ONE INDICATOR LIGHT</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LL - TWO INDICATOR LIGHTS</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>M - MALE PIPE MOUNTING ½ NPT</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Rρ - MANUAL RESET, SWITCH ON INCR. PR.</td>
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<tr>
<td></td>
<td>Rr - MANUAL RESET, SWITCH ON DECR. PR.</td>
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<tr>
<td></td>
<td>U - ADDITIONAL PAINTING AFTER ASSEMBLY</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>V - HIGH TEMPERATURE SERVICE</td>
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</tr>
</tbody>
</table>

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSID</td>
<td>.7</td>
<td>1.3</td>
</tr>
<tr>
<td>0-30 PSID</td>
<td>.7</td>
<td>1.4</td>
</tr>
<tr>
<td>0-60 PSID</td>
<td>.8</td>
<td>1.6</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>1.0</td>
<td>1.9</td>
</tr>
<tr>
<td>0-150 PSID</td>
<td>4.0</td>
<td>7.3</td>
</tr>
<tr>
<td>0-200 PSID</td>
<td>4.0</td>
<td>7.6</td>
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<tr>
<td>0-300 PSID</td>
<td>4.0</td>
<td>8.2</td>
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<td>0-600 PSID</td>
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<td>0-1000 PSID</td>
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<td>25.0</td>
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<tr>
<td>0-2000 PSID</td>
<td>15.0</td>
<td>30.0</td>
</tr>
<tr>
<td>0-3000 PSID</td>
<td>37.0</td>
<td>75.0</td>
</tr>
<tr>
<td>0-5000 PSID</td>
<td>45.0</td>
<td>90.0</td>
</tr>
</tbody>
</table>

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
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

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.
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 deadband, 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)

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.
### 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.

### Ordering a Switch

**1. Specify a Model Number**

<table>
<thead>
<tr>
<th>Model Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>6PS W 1 SST 2</td>
</tr>
</tbody>
</table>

**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 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

**2. Specify a Range**

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Maximum Deadband PSI Type &quot;1&quot;</th>
<th>Maximum Deadband PSI Type &quot;2&quot;</th>
<th>Maximum Working Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.2</td>
<td>.3</td>
<td>50 PSI</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.2</td>
<td>.5</td>
<td>100 PSI</td>
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<td>0-60 PSI</td>
<td>.5</td>
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<td>200 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.0</td>
<td>2.0</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-150 PSI</td>
<td>1.0</td>
<td>2.5</td>
<td>300 PSI</td>
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<tr>
<td>0-200 PSI</td>
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<td>500 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>3.0</td>
<td>5.0</td>
<td>500 PSI</td>
</tr>
</tbody>
</table>

**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 Values.

**Type "5"** - Sub Miniature - Use TYPE 5 Table values.

**Type "6"** - Gold Contact - Use Table 2 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.
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
- Accomodates 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

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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>6PS</th>
<th>W</th>
<th>1</th>
<th>B</th>
<th>U</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING</td>
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</tr>
<tr>
<td></td>
<td>W - WATERTIGHT - NEMA 4X &amp; 12</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>X - EXPLOSION PROOF - NEMA 7 &amp; 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 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 |     |   |   |   |   |   |
| 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 |     |   |   |   |   |   |
| 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 |     |   |   |   |   |   |

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE “1”</th>
<th>MAXIMUM DEADBAND PSI TYPE “2”</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.7</td>
<td>1.3</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.7</td>
<td>1.4</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-60 PSI</td>
<td>.8</td>
<td>1.6</td>
<td>300 PSI</td>
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<td>0-100 PSI</td>
<td>1.0</td>
<td>1.9</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-150 PSI</td>
<td>4.0</td>
<td>7.3</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>4.0</td>
<td>7.6</td>
<td>1500 PSI</td>
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<tr>
<td>0-300 PSI</td>
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<td>1500 PSI</td>
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<tr>
<td>0-600 PSI</td>
<td>5.0</td>
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<td>0-1000 PSI</td>
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<td>3000 PSI</td>
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<tr>
<td>0-3000 PSI</td>
<td>37.0</td>
<td>75.0</td>
<td>7000 PSI</td>
</tr>
<tr>
<td>0-5000 PSI</td>
<td>45.0</td>
<td>90.0</td>
<td>7000 PSI</td>
</tr>
</tbody>
</table>

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.

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 “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

**One SPDT**

```
/\  
<table>
<thead>
<tr>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
</tr>
<tr>
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</tr>
</tbody>
</table>
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**Up to Four SPDT**

```
/\  
<table>
<thead>
<tr>
<th>P_1</th>
<th>P_2</th>
<th>P_3</th>
<th>P_4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/O1</td>
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<tr>
<td>N/C1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

* 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.
**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 deadband, high direct current ratings, gold contacts, hermetically-sealed contacts
- S/S bellows

**PHYSICAL DATA (Standard)**

- 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

**SPECIFICATIONS**

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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>6PS W 1 BD U 2</th>
</tr>
</thead>
</table>

**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**
- 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 (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

2. SPECIFY A RANGE

No special features

**Adjustable Pressure Range**

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Maximum Deadband PSI Type &quot;1&quot;</th>
<th>Maximum Deadband PSI Type &quot;2&quot;</th>
<th>Max. Working Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSID</td>
<td>.7</td>
<td>1.3</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-30 PSID</td>
<td>.7</td>
<td>1.4</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-60 PSID</td>
<td>.8</td>
<td>1.6</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>1.0</td>
<td>1.9</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-150 PSID</td>
<td>4.0</td>
<td>7.3</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-200 PSID</td>
<td>4.0</td>
<td>7.6</td>
<td>1500 PSI</td>
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<td>0-300 PSID</td>
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<td>8.2</td>
<td>1500 PSI</td>
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<td>5.0</td>
<td>10.0</td>
<td>1500 PSI</td>
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<td>0-1000 PSID</td>
<td>12.0</td>
<td>25.0</td>
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<td>0-2000 PSID</td>
<td>15.0</td>
<td>30.0</td>
<td>3000 PSI</td>
</tr>
<tr>
<td>0-3000 PSID</td>
<td>37.0</td>
<td>75.0</td>
<td>7000 PSI</td>
</tr>
<tr>
<td>0-5000 PSID</td>
<td>45.0</td>
<td>90.0</td>
<td>7000 PSI</td>
</tr>
</tbody>
</table>

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.

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.

2. SPECIFY A RANGE

- 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

MODEL REFERENCE GUIDE WEATHER TIGHT PRODUCTS
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)

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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>6PS W 1 D R&gt; 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSING</td>
<td>W - WATERTIGHT - NEMA 4X &amp; 12</td>
</tr>
<tr>
<td></td>
<td>X - EXPLOSION PROOF - NEMA 7 &amp; 9</td>
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<tr>
<td>NUMBER OF ELECTRIC SWITCHES</td>
<td>1 - ONE S.P.D.T.</td>
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<tr>
<td></td>
<td>11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.</td>
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<tr>
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<td>2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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<td>3 - THREE S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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<td>4 - FOUR S.P.D.T. INDEPENDENT ADJUSTMENT</td>
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<tr>
<td>SENSING ELEMENT</td>
<td>D - DIFFERENTIAL PRESSURE</td>
</tr>
<tr>
<td>SPECIAL FEATURES</td>
<td>A - ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)</td>
</tr>
<tr>
<td></td>
<td>E - EXTERNAL PRESSURE ADJUSTMENT</td>
</tr>
<tr>
<td></td>
<td>EE - TWO EXTERNAL PRESSURE ADJUSTMENTS</td>
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<td></td>
<td>L - ONE INDICATOR LIGHT (NOT ON X HOUSING)</td>
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<td>LL - TWO INDICATOR LIGHTS (NOT ON X HOUSING)</td>
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<td>M - MALE PIPE MOUNTING ½ NPT</td>
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<tr>
<td></td>
<td>P - PANEL MOUNTING</td>
</tr>
<tr>
<td></td>
<td>R&gt; - MANUAL RESET, SWITCH ON INCR. PR.</td>
</tr>
<tr>
<td></td>
<td>R&lt; - MANUAL RESET, SWITCH ON DECR. PR.</td>
</tr>
<tr>
<td></td>
<td>SS - SPECIAL TRIM BASE 316 STAINLESS STEEL - INCREASES MAX WORKING PRESSURE TO 300 PSI</td>
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<tr>
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<td>SN - SPECIAL TRIM BASE BRASS - INCREASES MAX WORKING PRESSURE TO 300 PSI</td>
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<td>SK - SPECIAL TRIM BASE ALUMINUM - INCREASES MAX WORKING PRESSURE TO 300 PSI</td>
</tr>
<tr>
<td></td>
<td>SI - SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES) - DECREASES MAX WORKING PRESSURE TO 50 PSI</td>
</tr>
<tr>
<td></td>
<td>SY - SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)</td>
</tr>
<tr>
<td></td>
<td>T - PTFE PROTECTED DIAPHRAGM</td>
</tr>
<tr>
<td></td>
<td>U - ADDITIONAL PAINTING AFTER ASSEMBLY</td>
</tr>
<tr>
<td></td>
<td>V - HIGH TEMP SERVICE - NOT A UL-LISTED FEATURE</td>
</tr>
<tr>
<td></td>
<td>Z - VITON DIAPHRAGM</td>
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</table>

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI</th>
<th>MAX. WORKING PRESSURE</th>
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</thead>
<tbody>
<tr>
<td>0-15 PSID</td>
<td>.16 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-30 PSID</td>
<td>.23 PSID</td>
<td>100 PSI</td>
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</table>

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

One SPDT

Up to Four SPDT
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)

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.
1. ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

<table>
<thead>
<tr>
<th>6PS</th>
<th>W</th>
<th>1</th>
<th>DO</th>
<th>E</th>
<th>2</th>
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<tr>
<td></td>
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</tbody>
</table>

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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE “1”</th>
<th>MAXIMUM DEADBAND PSI TYPE “2”</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.3</td>
<td>.6</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.35</td>
<td>.7</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-60 PSI</td>
<td>.7</td>
<td>1.3</td>
<td>2500 PSI</td>
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</tbody>
</table>

3. 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.

4. 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.

5. TYPE OF ELECTRIC SWITCHES

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>TYPE OF ELECTRIC SWITCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LOW DEADBAND 15A - 125, 250, 480 VAC</td>
</tr>
<tr>
<td>2</td>
<td>STANDARD DEADBAND 15A - 125, 250, 480 VAC; 0.5A - 125 VDC</td>
</tr>
<tr>
<td>3</td>
<td>HIGH DC RATED (MAGNETIC BLOWOUT) 10A - 125 VDC; 3A - 250 VDC</td>
</tr>
<tr>
<td>4</td>
<td>HERMETICALLY SEALED 11 AMP, 125, 250 VAC; 5A-30 VDC</td>
</tr>
<tr>
<td>6</td>
<td>GOLD CONTACT 1A - 125 VAC</td>
</tr>
</tbody>
</table>

* 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.
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)

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.
1. SPECIFY A MODEL NUMBER

6PS W 1 SSZ 2

MODEL SERIES

**INSTALLATION NOTES**

**ORDERING A SWITCH**

1. SPECIFY A MODEL NUMBER

**MODEL SERIES**

**HOUSING**

**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**

A - ADJUSTABLE DEADBAND (ADD. 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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE VACUUM RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;1&quot;</th>
<th>MAX. WORKING PRESSURE</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 IN/HG</td>
<td>.3 HG</td>
<td>50 PSI</td>
<td>.6 HG</td>
<td>50 PSI</td>
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<tr>
<td>-30/0/30 IN/HG</td>
<td>.5 HG</td>
<td>50 PSI</td>
<td>1.0 HG</td>
<td>50 PSI</td>
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</table>

**Wiring Schematic**

One SPDT

Up to Four SPDT

**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.
**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 deadband, high direct current ratings, gold contacts, hermically-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**

<table>
<thead>
<tr>
<th>Physical Data (Standard)</th>
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<tr>
<td>Minimum Ambient Temperature:</td>
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<td>Pressure Connection:</td>
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<tr>
<td>Electrical Connection:</td>
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<td>Housing:</td>
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<td>Deadband:</td>
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<td>Sensitivity:</td>
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<td>Diaphragm Material:</td>
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<tr>
<td>Set Point Adjustment:</td>
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<tr>
<td>No. Contacts:</td>
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<tr>
<td>Contact Listings:</td>
</tr>
</tbody>
</table>

**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.

Solon Manufacturing | www.solonmfg.com
ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

MODEL SERIES

7PS W 1 SST 2

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 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
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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND WC TYPE &quot;1&quot;</th>
<th>MAXIMUM DEADBAND WC TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
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<tbody>
<tr>
<td>0-1.5 WC</td>
<td>.15</td>
<td>-</td>
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<tr>
<td>0-150 WC</td>
<td>1.2</td>
<td>2.4</td>
<td>25 PSI</td>
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</table>

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.

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

One SPDT

Up to Four SPDT

<table>
<thead>
<tr>
<th>N/C</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
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<td>C2</td>
<td></td>
</tr>
<tr>
<td>N/O2</td>
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</table>

* 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.
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
- Accomodates 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**

- 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.

**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 “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**

- One SPDT
  - DP
  - N/C, C, N/O
- Up to Four SPDT
  - DP, DP1, DP2, DP3, DP4
  - N/C, C1, N/O1, N/C2, C2, N/O2

**MODEL REFERENCE GUIDE WEATHER TIGHT PRODUCTS**

Solon Manufacturing | www.solonmfg.com
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

MODEL SERIES
7PS W 1 DO E 2

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
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.
S - SPECIAL TRIM BASE 316 STAINLESS STEEL
U - ADDITIONAL PAINTING AFTER ASSEMBLY
V - HIGH TEMPERATURE SERVICE - NOT A UL LISTED FEATURE

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND WC TYPE “1”</th>
<th>TYPE “2”</th>
<th>MAX. WORKING PRESSURE</th>
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</thead>
<tbody>
<tr>
<td>0-6 WC/DP</td>
<td>1.1</td>
<td>2.2</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-15 WC/DP</td>
<td>1.2</td>
<td>2.3</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-30 WC/DP</td>
<td>1.2</td>
<td>2.3</td>
<td>1500 PSI</td>
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<td>0-60 WC/DP</td>
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<td>2.5</td>
<td>1500 PSI</td>
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<td>0-100 WC/DP</td>
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<td>2.9</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-150 WC/DP</td>
<td>1.7</td>
<td>3.4</td>
<td>1500 PSI</td>
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<tr>
<td>0-200 WC/DP</td>
<td>1.9</td>
<td>3.8</td>
<td>1500 PSI</td>
</tr>
</tbody>
</table>

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

One SPDT

Up to Four SPDT
7PSWVAC
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**

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>7PS  W 1 SSZ 2</td>
</tr>
</tbody>
</table>

**HOUSING**
- W - Watertight - NEMA 4X & 12
- X - Explosion Proof - NEMA 7 & 9

**NUMBER OF ELECTRIC SWITCHES**
- 1 - One S.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**
- "A" - 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 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

2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>Adjustable Vacuum Range</th>
<th>Maximum Deadband WC Type &quot;1&quot;</th>
<th>Maximum Working Pressure</th>
</tr>
</thead>
<tbody>
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<td>.17 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-3 WC/VAC</td>
<td>.18 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-6 WC/VAC</td>
<td>.23 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-15 WC/VAC</td>
<td>.33 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-30 WC/VAC</td>
<td>.6 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-60 WC/VAC</td>
<td>1.4 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-100 WC/VAC</td>
<td>1.6 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>0-150 WC/VAC</td>
<td>2.5 WC</td>
<td>15 PSI</td>
</tr>
<tr>
<td>15-30 IN/HG</td>
<td>.06 HG</td>
<td>15 PSI</td>
</tr>
</tbody>
</table>

**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.

**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 switch used. Each type of electric switch's effect on deadband is as follows:

Type "1" - Low Deadband
- 15A - 125, 250, 480 VAC

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.

**Wiring Schematic**

One SPDT

```
N/C  V  N/C1
   C   C1
   N/O
```

Up to Four SPDT

```
V1  V2  V3  V4
N/C1  C1
N/C2  C2
N/O1  N/O2
```

* 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.
7PSWVACPR
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 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 contructed 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 Rating: 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** - WATER TIGHT - 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.
- **S** - SPECIAL TRIM BASE 316 STAINLESS STEEL
- **S** - SPECIAL TRIM BASE TFE (NOT ON X HOUSINGS)
- **U** - ADDITIONAL PAINTING AFTER ASSEMBLY
- **V** - HIGH TEMP SERVICE - NOT ON X HOUSING
- **Z** - VITON DIAPHRAGM

2. **SPECIFY A RANGE**

```
<table>
<thead>
<tr>
<th>ADJUSTABLE RANGE</th>
<th>MAXIMUM DEADBAND WC TYPE &quot;1&quot;</th>
<th>MAXIMUM DEADBAND WC TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3/0/3 WC</td>
<td>.45 WC</td>
<td>.87 WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>-6/0/6 WC</td>
<td>.8 WC</td>
<td>1.6 WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>-15/0/15 WC</td>
<td>1.7 WC</td>
<td>3.4 WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>-30/0/30 WC</td>
<td>2.5 WC</td>
<td>5.0 WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>-60/0/60 WC</td>
<td>4.8 WC</td>
<td>9.6 WC</td>
<td>25 PSI</td>
</tr>
<tr>
<td>-100/0/100 WC</td>
<td>8.0 WC</td>
<td>16.0 WC</td>
<td>25 PSI</td>
</tr>
</tbody>
</table>
```

**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**

One SPDT

```
N/C C N/O
V/P
```

Up to Four SPDT

```
N/C1 C1 N/O1 N/C2 C2 N/O2
V/P, V/P2, V/P3, V/P4
```

**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.

* 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.
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: ¼ 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**
   - 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

2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Maximum Deadband Type &quot;2&quot;</th>
<th>Maximum Deadband Type &quot;5&quot;</th>
<th>Maximum Working Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 PSI</td>
<td>.25 PSI</td>
<td>.23 PSI</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-5 PSI</td>
<td>.27 PSI</td>
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<td>50 PSI</td>
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<tr>
<td>0-20 PSI</td>
<td>.50 PSI</td>
<td>1.9 PSI</td>
<td>50 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.6 PSI</td>
<td>6 PSI</td>
<td>250 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.9 PSI</td>
<td>8.3 PSI</td>
<td>250 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>4.4 PSI</td>
<td>16 PSI</td>
<td>500 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>5.3 PSI</td>
<td>22 PSI</td>
<td>500 PSI</td>
</tr>
</tbody>
</table>

**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.

**SPECIFY A RANGE**

   2PS \ W \ 1 \ SST \ 2

   **MODEL SERIES**

   **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

2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Maximum Deadband Type &quot;2&quot;</th>
<th>Maximum Deadband Type &quot;5&quot;</th>
<th>Maximum Working Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 PSI</td>
<td>.25 PSI</td>
<td>.23 PSI</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-5 PSI</td>
<td>.27 PSI</td>
<td>.50 PSI</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-10 PSI</td>
<td>.34 PSI</td>
<td>.90 PSI</td>
<td>50 PSI</td>
</tr>
<tr>
<td>0-20 PSI</td>
<td>.50 PSI</td>
<td>1.9 PSI</td>
<td>50 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.6 PSI</td>
<td>6 PSI</td>
<td>250 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.9 PSI</td>
<td>8.3 PSI</td>
<td>250 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>4.4 PSI</td>
<td>16 PSI</td>
<td>500 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>5.3 PSI</td>
<td>22 PSI</td>
<td>500 PSI</td>
</tr>
</tbody>
</table>

**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 WSSQ2, File E85076. All stainless steel construction
- **Type "5" - Sub Miniature** - Use TYPE 5 table values.
- **Type "6" - Gold Contact** - Use TYPE 2 table values.

**Wiring Schematic**

One SPDT

N/C → P → C → N/O

Two SPDT

N/C1 → P1 → C1 → N/O1

N/C2 → P2 → C2 → N/O2

* 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.
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 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: ½ 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

MODEL REFERENCE GUIDE GENERAL PURPOSE PRODUCTS
ORDERING A SWITCH

1. SPECIFY A MODEL NUMBER

2PS  W  1  B  V  2

MODEL SERIES

HOUSING
- '2' - 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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND TYPE &quot;2&quot;</th>
<th>MAXIMUM PRESSURE TYPE &quot;5&quot;</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td>0-10 PSI</td>
<td>.80 PSI</td>
<td>300 PSI</td>
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<td>0-20 PSI</td>
<td>.90 PSI</td>
<td>300 PSI</td>
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<tr>
<td>0-50 PSI</td>
<td>1.0 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.5 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-250 PSI</td>
<td>6 PSI</td>
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<td>0-500 PSI</td>
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<td>0-750 PSI</td>
<td>16 PSI</td>
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<td>0-1000 PSI</td>
<td>19 PSI</td>
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<tr>
<td>0-1500 PSI</td>
<td>60 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>0-3000 PSI</td>
<td>66 PSI</td>
<td>N/A</td>
</tr>
</tbody>
</table>

DEADBAND NOTES

The deadbands listed in the tables are the maximum swith 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 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.

The deadbands listed in the tables are the maximum swith 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:

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- **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

<table>
<thead>
<tr>
<th>5PS</th>
<th>W</th>
<th>1</th>
<th>A</th>
<th>2</th>
</tr>
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<tbody>
<tr>
<td><strong>MODEL SERIES</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>HOUSING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W - WATERTIGHT - NEMA 4X, 12 &amp; 13</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>NUMBER OF ELECTRIC SWITCHES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - ONE S.P.D.T.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11 - TWO TANDEM ELECTRIC SWITCHES OPERATE IN PARALLEL D.P.D.T.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 - TWO S.P.D.T. INDEPENDENT ADJUSTMENT</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE &quot;1&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.3</td>
<td>50 PSI</td>
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<tr>
<td>0-30 PSI</td>
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<td>0-60 PSI</td>
<td>.5</td>
<td>200 PSI</td>
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<td>0-100 PSI</td>
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<td>300 PSI</td>
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<td>0-150 PSI</td>
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</tr>
<tr>
<td>0-200 PSI</td>
<td>2.0</td>
<td>500 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>3.0</td>
<td>500 PSI</td>
</tr>
</tbody>
</table>

3. 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.

### 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 multipl calculated value from above by 1.5 to 2.

### Wiring Schematic

**One SPDT**

```
N/C  P
  C
N/O
```

**Two SPDT**

```
P1  P
  C1
N/C1
N/O1
C2
N/C2
N/O2
```
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 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
Bel lows 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**

   - **MODEL SERIES**
     - **5PS**
     - **W** 1 **B** **U** 2

   - **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

2. **SPECIFY A RANGE**

   - **ADJUSTABLE PRESSURE RANGE**
   - **MAXIMUM DEADBAND PSI**
   - **TYPE "1"**
   - **TYPE "2"**
   - **MAX. WORKING PRESSURE**

   | 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 | 80.0 | 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 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**

For One SPDT Switch:

- **N/C**
- **C**
- **N/O**

For Two SPDT Switches:

- **P1**
- **P2**
- **N/C1**
- **C1**
- **N/O1**
- **N/C2**
- **C2**
- **N/O2**
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
- Accomodates 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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>6PS W 1 SST 2</td>
</tr>
</tbody>
</table>

MODEL SERIES

- **Housing**
  - W - Watertight - NEMA 4X & 12
  - X - Explosion Proof - NEMA 7 & 9

- **Number of Electric Switches**
  - 1 - One S.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 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

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Maximum Deadband PSI Type &quot;1&quot;</th>
<th>Maximum Deadband PSI Type &quot;2&quot;</th>
<th>Maximum Working Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.2</td>
<td>.3</td>
<td>50 PSI</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.2</td>
<td>.5</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-60 PSI</td>
<td>.5</td>
<td>1.0</td>
<td>200 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.0</td>
<td>2.0</td>
<td>300 PSI</td>
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<tr>
<td>0-150 PSI</td>
<td>1.0</td>
<td>2.5</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>2.0</td>
<td>3.5</td>
<td>500 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>3.0</td>
<td>5.0</td>
<td>500 PSI</td>
</tr>
</tbody>
</table>

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

One SPDT

Up to Four SPDT

Solon Manufacturing | www.solonmfg.com
**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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>6PS</th>
<th>W</th>
<th>1</th>
<th>B</th>
<th>U</th>
</tr>
</thead>
</table>

**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**
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
Q - DOUBLE SNAP ACTION (BELLEVILLE SPRING)
R - MANUAL RESET, SWITCH ON INCR. PR.
Rc - MANUAL RESET, SWITCH ON DECR. PR.
U - ADDITIONAL PAINTING AFTER ASSEMBLY
V - HIGH TEMP SERVICE - NOT A UL -LISTED FEATURE

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM DEADBAND PSI TYPE “1”</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15 PSI</td>
<td>.7</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-30 PSI</td>
<td>.7</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-60 PSI</td>
<td>.8</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.0</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-150 PSI</td>
<td>4.0</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>4.0</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>4.0</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-600 PSI</td>
<td>5.0</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-1000 PSI</td>
<td>12.0</td>
<td>3000 PSI</td>
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<td>0-2000 PSI</td>
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<tr>
<td>0-3000 PSI</td>
<td>37.0</td>
<td>7000 PSI</td>
</tr>
<tr>
<td>0-5000 PSI</td>
<td>45.0</td>
<td>7000 PSI</td>
</tr>
</tbody>
</table>

**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.

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 of 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

One SPDT

Up to Four SPDT
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
- Accomodates 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

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>7PS W 1 SST 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>7PS W 1 SST 2</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>SPECIAL FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>- ADJUSTABLE DEADBAND (ADJ. 10% - 50% OF RANGE)</td>
</tr>
<tr>
<td>- EXTERNAL PRESSURE ADJUSTMENT</td>
</tr>
<tr>
<td>- TWO EXTERNAL PRESSURE ADJUSTMENTS</td>
</tr>
<tr>
<td>- DOUBLE DIAPHRAGM EXTRA SENSITIVE LOW PRESSURE</td>
</tr>
<tr>
<td>- SAFETY SEAL</td>
</tr>
<tr>
<td>- ONE INDICATOR LIGHT (NOT ON X HOUSING)</td>
</tr>
<tr>
<td>- TWO INDICATOR LIGHTS (NOT ON X HOUSING)</td>
</tr>
<tr>
<td>- MALE PIPE MOUNTING ½ NPT</td>
</tr>
<tr>
<td>- PANEL MOUNTING</td>
</tr>
<tr>
<td>- MANUAL RESET, SWITCH ON INCR. PR.</td>
</tr>
<tr>
<td>- MANUAL RESET, SWITCH ON DECR. PR.</td>
</tr>
<tr>
<td>- SPECIAL TRIM BASE 316 STAINLESS STEEL</td>
</tr>
<tr>
<td>- SPECIAL TRIM BASE PTFE (NOT ON X SWITCHES)</td>
</tr>
<tr>
<td>- SPECIAL TRIM BASE PVC (NOT ON X SWITCHES)</td>
</tr>
<tr>
<td>- PTFE PROTECTED DIAPHRAGM</td>
</tr>
<tr>
<td>- ADDITIONAL PAINTING AFTER ASSEMBLY</td>
</tr>
<tr>
<td>- HIGH TEMPERATURE SERVICE - NOT A UL-LISTED FEATURE</td>
</tr>
<tr>
<td>- VITON DIAPHRAGM</td>
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</tbody>
</table>

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE RANGE</th>
<th>MAXIMUM DEADBAND WITH TYPE &quot;1&quot;</th>
<th>MAXIMUM DEADBAND WITH TYPE &quot;2&quot;</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1.5 WC</td>
<td>.15</td>
<td>.15</td>
<td>25 PSI</td>
</tr>
<tr>
<td>0-3 WC</td>
<td>.16</td>
<td>.16</td>
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<td>0-6 WC</td>
<td>.2</td>
<td>.4</td>
<td>25 PSI</td>
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<tr>
<td>0-15 WC</td>
<td>.3</td>
<td>.6</td>
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<td>1.1</td>
<td>25 PSI</td>
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<tr>
<td>0-60 WC</td>
<td>.7</td>
<td>1.4</td>
<td>25 PSI</td>
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<tr>
<td>0-100 WC</td>
<td>.8</td>
<td>1.6</td>
<td>25 PSI</td>
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<tr>
<td>0-150 WC</td>
<td>1.2</td>
<td>2.4</td>
<td>25 PSI</td>
</tr>
</tbody>
</table>

3. 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.

**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 for 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**

- For One SPDT switch, use N/C and N/O terminals.
- For Up to Four SPDT switches, use P1, P2, P3, P4 terminals with P/N/C, P/C1, P/N/O1, P/N/C2, P/C2, P/N/O2.
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

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2PV</td>
<td>W</td>
</tr>
<tr>
<td>MV</td>
<td>SST</td>
</tr>
</tbody>
</table>

**Housing**
- O - 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 maximum pressure - fully supported diaphragm
- M - 1/2 NPT male pipe mounting
- SS - 316 stainless steel wetted trim material
- SN - Brass wetted trim material
- SI - PTFE wetted trim material
- SY - PVC wetted trim material
- T - PTFE protected diaphragm
- Z - Viton diaphragm material

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>FIXED VALVE DEADBAND</th>
<th>MAXIMUM WORKING PRESSURE</th>
<th>MAXIMUM PRESSURE TYPE &quot;O&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 PSI</td>
<td>.25 PSI</td>
<td>20 PSI</td>
<td>1000 PSI</td>
</tr>
<tr>
<td>0-5 PSI</td>
<td>.27 PSI</td>
<td>20 PSI</td>
<td>1000 PSI</td>
</tr>
<tr>
<td>0-10 PSI</td>
<td>.34 PSI</td>
<td>50 PSI</td>
<td>1000 PSI</td>
</tr>
<tr>
<td>0-20 PSI</td>
<td>.50 PSI</td>
<td>50 PSI</td>
<td>1000 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.6 PSI</td>
<td>250 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.9 PSI</td>
<td>250 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-200 PSI</td>
<td>4.4 PSI</td>
<td>500 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-300 PSI</td>
<td>5.3 PSI</td>
<td>500 PSI</td>
<td>1500 PSI</td>
</tr>
</tbody>
</table>

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.

Solon Manufacturing | www.solonmfg.com
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

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

2PV W MV SS

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 MAXIMUM PRESSURE - FULLY SUPPORTED DIAPHRAGM
M - 1/2 NPT MALE PIPE MOUNTING
SS - 3/16 STAINLESS STEEL WETTED TRIM MATERIAL
SN - BRASS WETTED TRIM MATERIAL
Z - VITON DIAPHRAGM MATERIAL

2. SPECIFY A RANGE

<table>
<thead>
<tr>
<th>Adjustable Vacuum Range</th>
<th>Maximum Valve Deadband</th>
<th>Maximum Working Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 IN/HG</td>
<td>.53 HG</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-15 IN/HG</td>
<td>.67 HG</td>
<td>20 PSI</td>
</tr>
<tr>
<td>0-30 IN/HG</td>
<td>.90 HG</td>
<td>20 PSI</td>
</tr>
<tr>
<td>-30/0/30 IN/HG</td>
<td>1.40 HG</td>
<td>20 PSI</td>
</tr>
</tbody>
</table>

* 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

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**

<table>
<thead>
<tr>
<th>2PV</th>
<th>W</th>
<th>MV</th>
<th>B</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL SERIES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOUSING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- NO HOUSING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W - PVC ENCLOSURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPE OF VALVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MV - MEAD MODEL LTV-5 3-WAY BLOCK-AND-BLEED SNAP-ACTING VALVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SENSING ELEMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B - BELLOWS SENSING ELEMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPECIAL FEATURES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M - 1/2 NPT MALE PIPE MOUNTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUST. PRESSURE RANGE</th>
<th>VALVE DEADBAND</th>
<th>MAXIMUM WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSI</td>
<td>.80 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-20 PSI</td>
<td>.90 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-50 PSI</td>
<td>1.0 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-100 PSI</td>
<td>1.5 PSI</td>
<td>300 PSI</td>
</tr>
<tr>
<td>0-250 PSI</td>
<td>6 PSI</td>
<td>1500 PSI</td>
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<tr>
<td>0-500 PSI</td>
<td>8 PSI</td>
<td>1500 PSI</td>
</tr>
<tr>
<td>0-750 PSI</td>
<td>16 PSI</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-1000 PSI</td>
<td>19 PSI</td>
<td>2500 PSI</td>
</tr>
<tr>
<td>0-2000 PSI</td>
<td>60 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>0-3000 PSI</td>
<td>66 PSI</td>
<td>5000 PSI</td>
</tr>
</tbody>
</table>

**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**

Solon Manufacturing | www.solonmfg.com
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

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**

<table>
<thead>
<tr>
<th>2PV</th>
<th>W</th>
<th>MV</th>
<th>D</th>
<th>SST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MODEL SERIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

2. **SPECIFY A RANGE**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>MAXIMUM VALVE DEADBAND</th>
<th>MAX. WORKING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 PSID</td>
<td>.40 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-20 PSID</td>
<td>.53 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-50 PSID</td>
<td>.90 PSID</td>
<td>100 PSI</td>
</tr>
<tr>
<td>0-100 PSID</td>
<td>1.3 PSID</td>
<td>100 PSI</td>
</tr>
</tbody>
</table>

**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.

**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

Solon Manufacturing | www.solonmfg.com
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

**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
### 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

**One SPDT**

```
N/C  P
  C
N/O
```

**Two SPDT**

```
N/C1  P1
  C1
N/O1
N/C2
  C2
N/O2
```

### DESIGN CONFIGURATION

**Wiring**

- **2PS**
- **W**
- **1**
- **H**
- **U**
- **2**

#### ORDERING A SWITCH

**1. SPECIFY A MODEL NUMBER**

<table>
<thead>
<tr>
<th>MODEL SERIES</th>
<th>W</th>
<th>1</th>
<th>H</th>
<th>U</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2PS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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**

**2. SPECIFY A RANGE**

#### 3/16" PISTON

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>DEADBAND RANGE TYPE &quot;2&quot;</th>
<th>MAXIMUM SYSTEM PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-200 PSI</td>
<td>20-90 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>50-500 PSI</td>
<td>40-135 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>100-1000 PSI</td>
<td>80-225 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>200-2000 PSI</td>
<td>150-300 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>300-3000 PSI</td>
<td>170-315 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>400-4000 PSI</td>
<td>180-330 PSI</td>
<td>5000 PSI</td>
</tr>
</tbody>
</table>

#### 1/8" PISTON

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>DEADBAND RANGE TYPE &quot;2&quot;</th>
<th>MAXIMUM SYSTEM PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>250-2500 PSI</td>
<td>200-570 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>450-4500 PSI</td>
<td>400-1000 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>700-7000 PSI</td>
<td>700-1250 PSI</td>
<td>10000 PSI</td>
</tr>
</tbody>
</table>

### 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 values
- **Type "5" - Sub Miniature Switch** - Add 30 PSI to table values.

**HEAVY DUTY PRODUCTS**

- **MODEL REFERENCE GUIDE**
- **HEAVY DUTY PRODUCTS**

---

Solon Manufacturing | www.solonmfg.com
2PV-MVH
HEAVY-DUTY PNEUMATIC VALVE ACTUATOR
PISTON SENSING ELEMENT

- Range 200-10000 psi
- Pneumatic control
- Snap-acting 3-way valve

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

2PV  W  MV  H  M

MODEL SERIES

HOUSING
- " - NO HOUSING
- W - PVC ENCLOSURE

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

SENSING ELEMENT
- H - PISTON SENSING ELEMENT

SPECIAL FEATURES
- M - 1/2 NPT MALE PIPE MOUNTING
- U - ADDITIONAL PAINTING AFTER ASSEMBLY

2. SPECIFY A RANGE

3/16" PISTON

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Deadband Range Type &quot;2&quot;</th>
<th>Maximum System Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-200 PSI</td>
<td>20-60 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>50-500 PSI</td>
<td>40-90 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>100-1000 PSI</td>
<td>80-150 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>200-2000 PSI</td>
<td>150-200 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>300-3000 PSI</td>
<td>170-210 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>400-4000 PSI</td>
<td>180-220 PSI</td>
<td>5000 PSI</td>
</tr>
</tbody>
</table>

1/8" PISTON

<table>
<thead>
<tr>
<th>Adjustable Pressure Range</th>
<th>Deadband Range Type &quot;2&quot;</th>
<th>Maximum System Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>250-2500 PSI</td>
<td>200-380 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>450-4500 PSI</td>
<td>400-700 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>700-7000 PSI</td>
<td>700-850 PSI</td>
<td>10000 PSI</td>
</tr>
</tbody>
</table>

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.

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

Solon Manufacturing | www.solonmfg.com
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

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

**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

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**

   - **MODEL SERIES**
   - **42PS X 1 H U 2**

   - **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**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>DEADBAND RANGE TYPE &quot;2&quot;</th>
<th>MAXIMUM SYSTEM PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-200 PSI</td>
<td>20-90 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>50-500 PSI</td>
<td>40-135 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>100-1000 PSI</td>
<td>80-225 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>200-2000 PSI</td>
<td>150-300 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>300-3000 PSI</td>
<td>170-315 PSI</td>
<td>5000 PSI</td>
</tr>
<tr>
<td>400-4000 PSI</td>
<td>180-330 PSI</td>
<td>5000 PSI</td>
</tr>
</tbody>
</table>

   - **1/8" PISTON**

<table>
<thead>
<tr>
<th>ADJUSTABLE PRESSURE RANGE</th>
<th>DEADBAND RANGE TYPE &quot;2&quot;</th>
<th>MAXIMUM SYSTEM PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>250-2500 PSI</td>
<td>200-570 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>450-4500 PSI</td>
<td>400-1000 PSI</td>
<td>10000 PSI</td>
</tr>
<tr>
<td>700-7000 PSI</td>
<td>700-1250 PSI</td>
<td>10000 PSI</td>
</tr>
</tbody>
</table>

3. **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

**One SPDT**

- **N/C**
- **C**
- **N/O**

**Two SPDT**

- **P1**
- **P2**
- **N/C1**
- **C1**
- **N/O1**
- **N/C2**
- **C2**
- **N/O2**
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
SF6 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 10⁻⁷ cc/sec.

Pressure Adjustment Range
- 5-100 psi
- Maximum pressure 150 psi

Pressure Port
- ¼ NPTF and ¾/16-20 SAE are standard options, others can be incorporated upon request

Enclosure (Optional)
- Diecast aluminum

Weight
- Approximately 4 lb. (0.9 kg).
**SPECIFYING A SWITCH**

1. Specify the fill pressure and set points for each switch. Set points should be given at room temperature (68°F) 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**

**SF₆ GAS DENSITY SWITCH**

**SMART SWITCH MONITORING SYSTEM**

- Range -14.7 to 150 psi
- NEMA 4X housing
- Sensitive leak detection, prompt reporting
- Customer-configurable over network interfaces
- Long-term data storage and trending
- Facilitates reporting of regulatory requirements

---

**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 SF₆ Gas Density Switch predecessor.

The 2TC Smart Switch interfaces with the breaker tank and SF₆ 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**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Temperature Range</td>
<td>-60°F to 180°F</td>
</tr>
<tr>
<td>Switching</td>
<td>2, 3, or 4 SPDT snap acting switches</td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>IP67 quick connector</td>
</tr>
<tr>
<td>Switch Contact Ratings</td>
<td>2A, 125, 250 VAC, 0.5A; 125 VDC</td>
</tr>
<tr>
<td>Setpoint Adjustment</td>
<td>Factory set per customer specifications</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 1.5 PSI at 70°F; ± 2 PSI at temperature extremes -60°F to 180°F</td>
</tr>
<tr>
<td>Deadband</td>
<td>Fixed; 1-6 PSI</td>
</tr>
<tr>
<td>Pressure Sensing Element</td>
<td>Phosphor Bronze Bellows- 100% leak inspected with Helium mass spectrometry to 6 X 10⁻⁸ cc/sec.</td>
</tr>
<tr>
<td>Pressure Adjustment Range</td>
<td>-14.7-150 PSI</td>
</tr>
<tr>
<td>Pressure Port</td>
<td>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.</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Diecast Aluminum</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 2 lb. (0.9 kg)</td>
</tr>
<tr>
<td>Size</td>
<td>Approximately 6 in. x 4.4 in. x 5.2 in.</td>
</tr>
</tbody>
</table>

---

**SMART SWITCH SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Sensing Element</td>
<td>Non-contacting, redundant displacement sensors utilizing the basic 2TC standard switch Phosphor Bronze Bellows</td>
</tr>
<tr>
<td>Temperature Sensing Elements</td>
<td>Redundant gas encapsulated thermistors</td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>Included in 2TC standard switch IP67 quick connector</td>
</tr>
<tr>
<td>Indicators</td>
<td>Green, amber, and red LED lights</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Included in 2TC standard switch IP67 quick connector</td>
</tr>
<tr>
<td>Measurements</td>
<td>Pressure, temperature, gas mass, gas density</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 1 PSI: LOCKOUT ≤ P ≤ MAX</td>
</tr>
<tr>
<td></td>
<td>± 2 PSI: 0 ≤ P ≤ LOCKOUT</td>
</tr>
<tr>
<td>Temperature</td>
<td>± 2°C</td>
</tr>
<tr>
<td>Gas Mass</td>
<td>Please consult with Solon Manufacturing Co. for more information</td>
</tr>
<tr>
<td>Gas Density</td>
<td>Please consult with Solon Manufacturing Co. for more information</td>
</tr>
<tr>
<td>Data Logging</td>
<td>All measurements logged and uploaded on demand</td>
</tr>
</tbody>
</table>
### DATA LOGGING

<table>
<thead>
<tr>
<th>Time</th>
<th>Temperature (°C)</th>
<th>Pressure (psig)</th>
<th>SF₆ (kg)</th>
<th>Alarm State</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/1/12 20:23</td>
<td>34.65</td>
<td>85.66</td>
<td>37.09</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/1/12 22:47</td>
<td>35.92</td>
<td>86.05</td>
<td>37.08</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 01:11</td>
<td>37.77</td>
<td>86.62</td>
<td>37.07</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 03:35</td>
<td>38.59</td>
<td>86.86</td>
<td>37.06</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 05:59</td>
<td>37.65</td>
<td>86.53</td>
<td>37.05</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 08:23</td>
<td>40.62</td>
<td>87.47</td>
<td>37.04</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 10:47</td>
<td>35.51</td>
<td>85.78</td>
<td>37.03</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 13:11</td>
<td>35.03</td>
<td>85.99</td>
<td>37.02</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 15:35</td>
<td>36.50</td>
<td>85.78</td>
<td>37.01</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 17:59</td>
<td>35.19</td>
<td>85.59</td>
<td>37.00</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 20:23</td>
<td>40.55</td>
<td>87.31</td>
<td>36.99</td>
<td>OPERATE</td>
</tr>
<tr>
<td>7/2/12 22:47</td>
<td>34.33</td>
<td>85.26</td>
<td>36.98</td>
<td>OPERATE</td>
</tr>
</tbody>
</table>

### 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 SF₆ gas accounting and breaker management.

### SMART SWITCH INTERFACING

![Smart Switch Interfacing Diagram]

- Line Power Input: 90 to 260 VAC, 50/60 Hz
- Control Cabinet: IEC61850, HTTP/FTP
- Optional: DNP3, Ethernet, Wireless, RS232/RS485/USB

### SYSTEM BLOCK DRAWING

![System Block Drawing]

- TANK TANK TANK
- SMART SWITCH HUB
- SMART UPS
- Switch Connections: ETHERNET, WIRELESS, RS232/RS485/USB
- Optional: DNP3, IEC61850, HTTP/FTP

### LINE POWER INPUT

![Line Power Input]

- LNG AC Input
- Control: 90 to 260 VAC, 50/60 Hz
- Connections: ETHERNET, WIRELESS, RS232/RS485/USB
- Optional: DNP3, IEC61850, HTTP/FTP

- MODELS: REFERENCE GUIDE, GAS DENSITY MONITORS

---

**SOLON MANUFACTURING**

- www.solonmfg.com
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 SF₆ monitoring.

### SMART SWITCH HUB SPECIFICATIONS

<table>
<thead>
<tr>
<th>Electrical Connections</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>1 x 9.53 mm terminal strip, 3-pole, #6-32 screw terminals</td>
</tr>
<tr>
<td>Smart Switches</td>
<td>3 x 9.53 mm terminal strip, 4-pole, #6-32 screw terminals</td>
</tr>
<tr>
<td>Network</td>
<td>1 x RJ45, 1 x USB type A, 1 x DB9</td>
</tr>
<tr>
<td>Indicators</td>
<td>Green, amber, and red LED lights</td>
</tr>
<tr>
<td>Power Supply</td>
<td>90 VAC to 260 VAC, 50 to 60 Hz, 25W maximum</td>
</tr>
<tr>
<td>Battery Backup (optional)</td>
<td>SMART UPS, 4 to 24 hours run time</td>
</tr>
<tr>
<td>Network Management</td>
<td>Ethernet, TCP/IP, DNP3, IEC61850, MMS, ISO9506, XML standard, RS232/485, optional embedded webserver management</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-40°F to 160°F (-40°C to 70°C)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Aluminum, IP65, approximately 8.6 in. x 5.4 in. x 2.2 in.</td>
</tr>
</tbody>
</table>

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 set points and breaker parameters, including tank volumes or SF₆ gas content.

### 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 that product-specific web pages provide.

DNP3 and IEC61850 object model protocol support is included.
**OVERMOLDED CONNECTOR CABLE**

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
</tr>
<tr>
<td>2</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>Red</td>
</tr>
<tr>
<td>5</td>
<td>Orange</td>
</tr>
<tr>
<td>6</td>
<td>Yellow</td>
</tr>
<tr>
<td>7</td>
<td>Violet</td>
</tr>
<tr>
<td>8</td>
<td>Brown</td>
</tr>
<tr>
<td>9</td>
<td>Green</td>
</tr>
<tr>
<td>10</td>
<td>White/Black</td>
</tr>
<tr>
<td>11</td>
<td>White/Gray</td>
</tr>
<tr>
<td>12</td>
<td>White/Blue</td>
</tr>
<tr>
<td>13</td>
<td>White/Red</td>
</tr>
<tr>
<td>14</td>
<td>White/Orange</td>
</tr>
<tr>
<td>15</td>
<td>White/Yellow</td>
</tr>
<tr>
<td>16</td>
<td>White/Violet</td>
</tr>
</tbody>
</table>

**SMART SWITCH HUB**

Terminals on 0.38” (9.53mm) pitch.

#6-32 screw size
5TCB
SF₆ 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

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 X 10⁻⁶ 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
  ¾ 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).
SPECIFYING A SWITCH

1. Specify the set points for each switch. Set points should be given at room temperature (68°F) 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 SF₆ 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
SF₆ GAS DENSITY SWITCH
INTRINSIC DESIGN

- Temperature range -60°F - 160°F
- NEMA 4 housing
- One or two SPDT contacts
- Intrinsic design sensor

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 X 10⁻⁶ 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.)

GENERAL DESCRIPTION

- Designed to measure SF6 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

IMAGE SHOWN:
NEMA 4
SS BELLOWS

MODEL REFERENCE GUIDE GAS DENSITY MONITORS

Solon Manufacturing | www.solonmfg.com
SPECIFYING A SWITCH

1. Specify the set points for each switch. Set points should be given at room temperature (68°F) 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 SF₆ 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
SF₆ GAS DENSITY SWITCH
BULB DESIGN

- Temperature range -40°F to 140°F
- 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 X 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
- ½ 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).
### SPECIFYING A SWITCH

1. Specify the set points for each switch. Set points should be given at room temperature (68°F) 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 SF6 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**  
**SF₆ 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 SF₆ 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 X 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).
SPECIFYING A SWITCH

1. Specify the set points for each switch. Set points should be given at room temperature (68°F) 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” (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 SF₆ 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 SF₆ SF6 GAS DENSITY MONITOR

## WATCHMAN SF₆ SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Temperature Range</strong></td>
<td>-40°F to 140°F (-40°C to 60°C)</td>
</tr>
<tr>
<td><strong>Gas Type</strong></td>
<td>Selectable, pure gas or gas mix - user configurable</td>
</tr>
<tr>
<td><strong>SF6 Density Range</strong></td>
<td>0 to 53.0 kg/m³ at 20°C</td>
</tr>
<tr>
<td><strong>SF6 Density Resolution</strong></td>
<td>0.04 kg/m³ at 20° and 80 psig</td>
</tr>
<tr>
<td><strong>Main Enclosure</strong></td>
<td>Polypropylene Material, IP67</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>11.9” x 9.9” x 7.1” (31 x 25 x 18 cm)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>9 lb. (4.1 kg)</td>
</tr>
<tr>
<td><strong>Temperature Sensor</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>Pressure Sensor</strong></td>
<td>0 to 100 psi measurement range, ±0.03 psi resolution, ±1 psi accuracy, 200 psi overpressure tolerance</td>
</tr>
<tr>
<td><strong>Gas Hose</strong></td>
<td>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</td>
</tr>
<tr>
<td><strong>Data Ports</strong></td>
<td>USB, Ethernet</td>
</tr>
<tr>
<td><strong>Data Retrieval</strong></td>
<td>USB Flash Drive, Web Browser, Wireless Network (optional)</td>
</tr>
<tr>
<td><strong>Power Requirements</strong></td>
<td>103.5 VAC to 126.5 VAC, 50 to 60 Hz, 60W Maximum</td>
</tr>
<tr>
<td><strong>Power Cord</strong></td>
<td>14-3 cable, NEMA 5-15R to IP67 circular connector</td>
</tr>
<tr>
<td><strong>Fill Module (FM)</strong></td>
<td>Automatically maintains density and gas levels</td>
</tr>
<tr>
<td><strong>Communication Module</strong></td>
<td>Provides secure encrypted network connection including WiFi and available 3G/4G/LTE wireless data retrieval</td>
</tr>
</tbody>
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### WATCHMAN SF₆ SPECIFICATIONS

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<td>Gas Type</td>
<td>Selectable, pure gas or gas mix - user configurable</td>
</tr>
<tr>
<td>SF₆ Density Range</td>
<td>0 to 53.0 kg/m³ at 20°C</td>
</tr>
<tr>
<td>N₂ Density Range</td>
<td>0 to 9.1 kg/m³ at 20°C</td>
</tr>
<tr>
<td>SF₆ Density Resolution</td>
<td>0.04 kg/m³ at 20°C and 80 psig</td>
</tr>
<tr>
<td>N₂ Density Resolution</td>
<td>0.007 kg/m³ at 20°C and 80 psig</td>
</tr>
<tr>
<td>Main Enclosure</td>
<td>Polypropylene Material, IP67</td>
</tr>
<tr>
<td>Size</td>
<td>19” x 17” x 7” (49 x 36 x 18 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>25 lb. (11 kg)</td>
</tr>
<tr>
<td>Temperature Sensor</td>
<td>Moisture proof encapsulated thermistor</td>
</tr>
<tr>
<td></td>
<td>10 ft. (3.04) coaxial cable</td>
</tr>
<tr>
<td></td>
<td>IP67 circular connector</td>
</tr>
<tr>
<td></td>
<td>Polypropylene insulated isolation block</td>
</tr>
<tr>
<td></td>
<td>EPDM foam cable insulation</td>
</tr>
<tr>
<td></td>
<td>Heavy duty polypropylene tank retention strap</td>
</tr>
<tr>
<td></td>
<td>-60°F to 180°F (-50°C to 80°C)</td>
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<tr>
<td></td>
<td>0.03°C resolution at 20°C</td>
</tr>
<tr>
<td></td>
<td>1°C accuracy at 20°C</td>
</tr>
<tr>
<td>Pressure Sensor, Breaker Side</td>
<td>0 to 100 psi measurement range</td>
</tr>
<tr>
<td></td>
<td>±0.03 psi resolution</td>
</tr>
<tr>
<td></td>
<td>±1 psi accuracy</td>
</tr>
<tr>
<td></td>
<td>200 psi overpressure tolerance</td>
</tr>
<tr>
<td>Pressure Sensor, Supply Side</td>
<td>0 to 300 psi measurement range</td>
</tr>
<tr>
<td></td>
<td>±0.1 psi resolution</td>
</tr>
<tr>
<td></td>
<td>±3 psi accuracy</td>
</tr>
<tr>
<td></td>
<td>600 psi overpressure tolerance</td>
</tr>
<tr>
<td>Gas Hose</td>
<td>Gas hose, supply and breaker 10 ft. x 3/8” OD Parker Parflex hose,</td>
</tr>
<tr>
<td></td>
<td>abrasion-resistant jacket, Swagelok QC quick connect Male to</td>
</tr>
<tr>
<td></td>
<td>Female DE50 fittings with integrated flow control</td>
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<td>Data Ports</td>
<td>USB</td>
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<td>Web Browser</td>
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<td>Wireless Network (optional)</td>
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<td>Power Requirements</td>
<td>103.5 VAC to 126.5 VAC, 50 to 60 Hz</td>
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<tr>
<td></td>
<td>60W Maximum</td>
</tr>
<tr>
<td>Power Cord</td>
<td>14-3 cable, NEMA 5-15R to IP67 circular connector</td>
</tr>
<tr>
<td>Secure Access Module (SAM)</td>
<td>Connects to Density Module providing secure encrypted network connection including WiFi and available 3G/4G/LTE wireless data retrieval</td>
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<tr>
<td>Communication Module</td>
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</table>
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.
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
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 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.

Company: ____________________________ Contact: ____________________________ Phone: ____________________________

HOW TO CONFIGURE A PRESSURE SWITCH

<table>
<thead>
<tr>
<th>Model Series (Housing Guide &amp; Type)</th>
<th>Housing Option</th>
<th># of Electric Switches</th>
<th>Special Features</th>
<th>Type &amp; Rating of Electric Switches</th>
</tr>
</thead>
</table>

HOUSING SIZE GUIDE

<table>
<thead>
<tr>
<th>Housing Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Compact, lightweight—single or dual switching. Available for all types: General Purpose, Differential, Explosion-Proof, Heavy-Duty, Pneumatic Valve Actuated, Sanitary, Temperature-Compensated (TC), &amp; Weather-Tight</td>
</tr>
<tr>
<td>42</td>
<td>Compact housing for high-pressure applications. Available for types: Differential, Explosion-Proof, &amp; Heavy-Duty</td>
</tr>
<tr>
<td>47</td>
<td>Compact housing with wide base, ideal for low-pressure-sensing. Available for types: Explosion-Proof</td>
</tr>
<tr>
<td>5</td>
<td>Rugged cast-housing for single or dual switching. Available for types: General Purpose, Differential, Explosion-Proof, Temperature-Compensated (TC), &amp; Weather-Tight</td>
</tr>
<tr>
<td>6</td>
<td>Larger housing accommodates up to four electric switches. Available for types: General Purpose, Differential, Explosion-Proof, Temperature-Compensated (TC), Vacuum, &amp; Weather-Tight</td>
</tr>
<tr>
<td>7</td>
<td>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, &amp; Weather-Tight</td>
</tr>
</tbody>
</table>

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.
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.

425 Center St. | Chardon, OH 44024 | 440.286.7149 Office | 800.323.9717 Toll-Free | 440.286.9047 Fax | www.solonmfg.com | www.sales@solonmfg.com