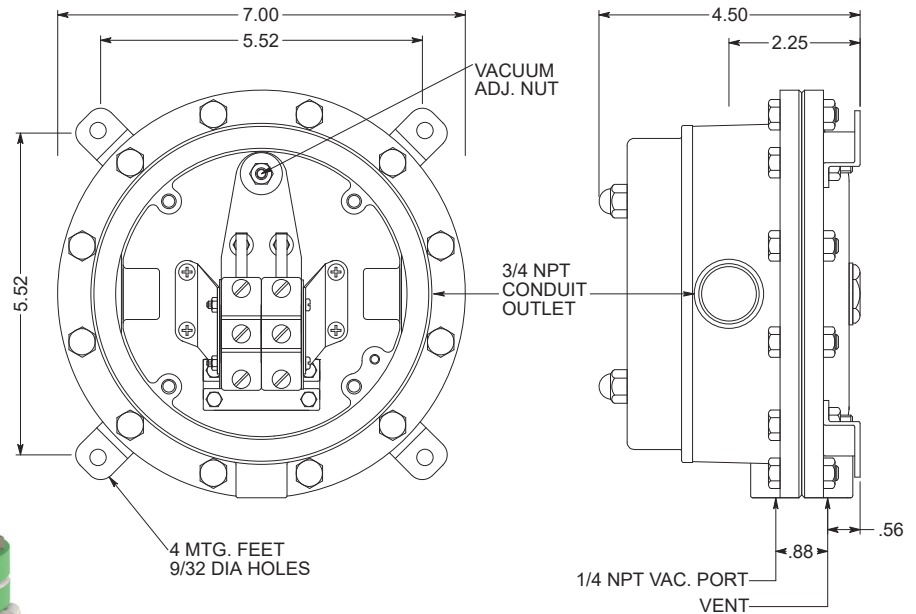




# MODEL SERIES 7PSXVAC Explosion-Proof Vacuum Switch Diaphragm Sensing Element

- 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



## 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

## 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)



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.

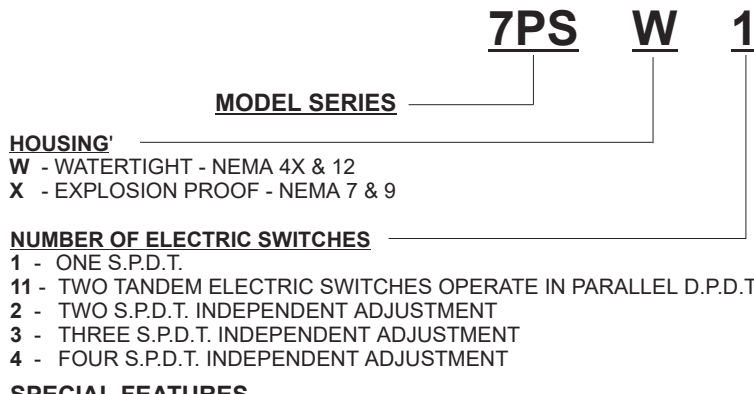
**SOLON MANUFACTURING COMPANY**

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solon@solonmfg.com | www.solonmfg.com

# ORDERING A SWITCH

# MODEL SERIES 7PSXVAC Explosion-Proof Vacuum Switch Diaphragm Sensing Element

## 1. SPECIFY A MODEL NUMBER



### 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. 25% - 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 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)
- T - PTFE DIAPHRAGM (5 PSI MAX. WORKING PRESSURE; MULTIPLY DEADBAND TABLE VALUE BY 1.5)
- U - ADDITIONAL PAINTING AFTER ASSEMBLY
- V - HIGH TEMPERATURE SERVICE - NOT A UL-LISTED FEATURE
- Z - VITON DIAPHRAGM

## 2. SPECIFY A RANGE

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

\*MAXIMUM DEAD BANDS MAY BE 50% GREATER

## 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.

### 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 (ADDING THIS OPTION REMOVES UL LISTING DESIGNATION)
- 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 CAPABILITES AND PRICING FOR ANY FEATURES NOT SHOWN.

## DEADBAND NOTES

The deadbands listed in the tables are the typical 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.

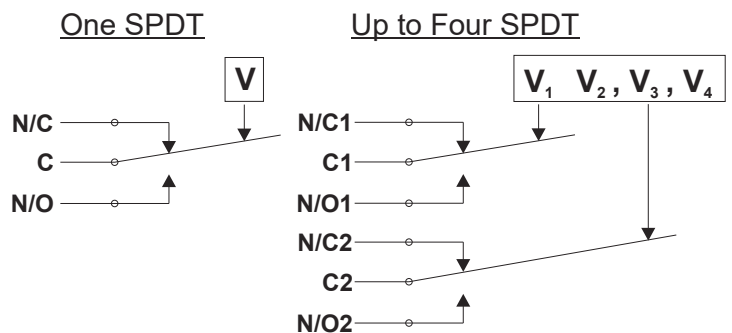
**Type "3"** - *High DC Rated* - Multiply TYPE 2 table values by two.

**Type "4"** - *Hermetically Sealed Switch* - Use TYPE 2 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



REV. 3/16/21

