

# PS81 – Ultra-Long Life Vacuum Switches

- ▶ 1.5" to 15" Hg (51 to 508 mbar)
- ▶ Sensitive Diaphragm for Lower Set Points
- ▶ Factory Fixed or Adjustable Set Points

For low vacuum applications, the longevity of our PS81 Series is hard to beat. A life expectancy of 1 million cycles means long-term reliability. Their brass housing and choice of four diaphragm materials ensures chemical compatibility with your system. PS81 series switches have a field adjustable set point or can be factory set.

## Specifications

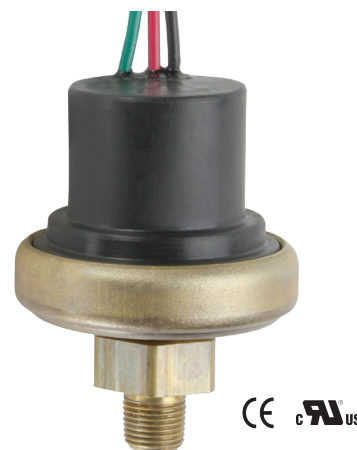
<b>Switch*</b>	5A @ 125/250 VAC, 3 Amp inductive @ 24 VDC (Std)
<b>Repeatability</b>	See Table 1
<b>Wetted Parts</b>	
<b>Diaphragm and O-Ring</b>	Nitrile standard (optional EPDM, Viton® or Kapton® with o-ring)
<b>Fitting</b>	Brass
<b>Housing</b>	Brass
<b>Spring</b>	300 Series SS
<b>Spring Guide</b>	Delrin®
<b>Electrical Termination**</b>	DIN 43650A IP00; Terminals IP00; Flying Leads IP00; IP option IP00
<b>Proof Pressure</b>	0 psia to 150 psig (-1 bar to 10.3 bar)
<b>Burst Pressure</b>	500 psi (34.5 bar)
<b>Approvals</b>	CE, UL Approved units available
<b>Weight, Approximate</b>	0.31 lbs. (0.14 kg)

\* Gold contacts (option G) may be required for less than 12 VDC and 20 mA.  
\*\* Plastic housing is vented to atmosphere. Consult factory for sealed versions.

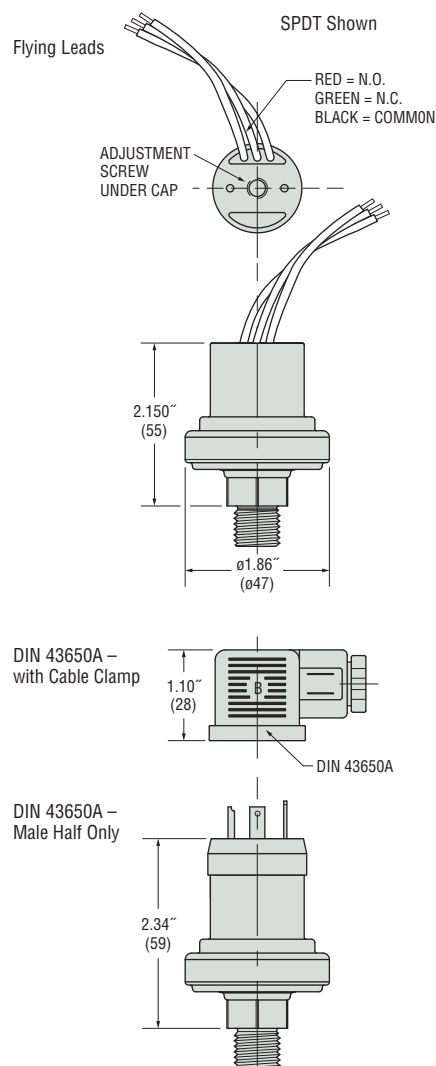
## Recommended Operating Temperature Limits

Diaphragm Material	Range
Nitrile	15°F to 250°F (-9°C to +121°C)
Viton®	0°F to 250°F (-18°C to +121°C)
EPDM	-40°F to +250°F (-40°C to +121°C)
Kapton®	-40°F to +250°F (-40°C to +121°C)

Note: Switches may function below the cold temperature limit but the set points and deadband will increase. Consult factory for details.



## Dimensions



## How To Order

Use the **Bold** characters from the chart below to construct a product code. Please reference Notes.

**PS81**   **-10**   **-4MNB**   **-C**   **-H**   **-XX**   **-XXXX**

1   
 2   
 3   
 4   
 5   
 6

### ① Pressure Range Code

Insert Pressure Range Code from Table 1, below.

### ② Pressure Fitting

- 2MNB = 1/8" NPTM Brass
- 4MNB = 1/4" NPTM Brass
- 2FNB = 1/8" NPTF Brass
- 4MGB = 1/4" BSPM Brass (G type)
- 4MSB = 7/16"-20 SAE Male, Brass
- 6MSB = 9/16"-18 SAE Male, Brass

### ③ Circuit

- A = SPST/N.O.
- B = SPST/N.C.
- C = SPDT

### ④ Electrical Termination

- FLXX = Flying Leads<sup>1</sup>
- ELXX = 1/2" NPT Male Conduit w/Flying Leads<sup>2</sup>
- H = DIN 43650A Male Half Only<sup>3</sup>
- HC = DIN 43650A 9mm Cable Clamp<sup>3</sup>
- HN = DIN 43650A with 1/2" Female NPT Conduit<sup>3</sup>

### ⑤ Options

- V = Viton® Diaphragm
- E = EPDM Diaphragm
- K = Kapton® Diaphragm (Nitrile O-ring)
- G = Gold Contacts  
(for loads less than 12 mA @ 12 VDC)
- OXY = Oxygen Cleaned
- IP = Ingress Protection<sup>4</sup>

### ⑥ Fixed Set Point (optional)

- A. Specify set point **-FS**  
(in Inches Hg or mBAR, see example)<sup>5</sup>
- B. Set Point Actuation  
**R** on Rising Vacuum  
**F** on Falling Vacuum  
Example: **-FS100MBARF** for 100 mBAR Falling  
or **-FS2INHGR** for 2" Hg Rising

#### Notes:

1. 18" is standard. Specify lead length in inches (max. 48"). e.g. **-FL18** or **-FL30**.
2. 18" is standard. Specify lead length in inches (max. 48"). e.g. **-EL18** or **-EL30**.
3. DIN connectors require **-C** SPDT circuit.
4. Ingress Protection is available only with **-FL** or **-EL** Electrical Termination and requires Fixed Set Point **-FS**.
5. Set Point must be within Pressure Range selected in Step 1.

Table 1 — Pressure Range Codes

Pressure Range Code	Pressure Range	Repeatability*	Average Deadband**
<b>10</b>	1.5-5" Hg (51-169 mbar)	±0.2" Hg (7 mbar) +3% of setting	0.3" Hg (10 mbar) +9% of setting
<b>20</b>	4-15" Hg (136-508 mbar)	±0.35" Hg (12 mbar) +4% of setting	0.6" Hg (20 mbar) +11% of setting

\* Repeatability and set point of units may change due to the effects of temperature.

\*\* In certain applications deadband can be tailored and controlled to customer specifications. Consult factory for details.



**APPLICATIONS**  
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