



**SW Series**

- Fluid and Gas applications
- Switch Setting 0.1 to 7 Bar
- 1A/3A/5A/10A@125/250 VAC SPDT /SDST
- Compact construction
- Shock and Vibration Resistance
- Pressure/Differential/Vacuum Measurement

The SW series differential/pressure/vacuum switches have been designed for most industrial pressure measurement where-considering the quality performance, reliability and low cost.

The separated diaphragm design and connection can be used for gas and liquid applications. The material is available in brass, SS316, PP, PVC, PVDF for different media.

The precision snap-acting switches provide a narrow dead band and repeatability. A convenient, externally accessible adjustment screw is multi-turn to provide easy set point adjustability.

### Typical Application

- Pressure differential between bottom and top of pressurized tank for liquid level measurement. Differential pressure on venture, orifice or other primary flow elements for flow rate measurement.
- Pump monitoring for hydronic heating and cooling systems in buildings.
- Improve efficiency by alerting operator of problem conditions for heat exchangers.

- Valve backflow prevention to ensure the safety of public water supply.
- Filter/Strainer monitoring in water purification systems.

### Specifications

#### PERFORMANCE

- Set Point Repeatability:**  
<±1.0% F.S
- Typical Dead:**  
< 2.0% F.S.
- Thermal Effect:**  
± 0.1% F.S for 10 °C

#### ENVIRONMENTAL

- Max Operating Temperature:**  
85 °C at 7 Bar
- Ambient Temperature Range:**  
0.....+70 °C
- Storage Temperature Range:**  
-25.....+85 °C
- Weatherproof Rating(Enclosure):**  
IP65 for Cable Gland, M12 , DIN43650

#### PHYSICAL DATA

- Material:**  
Brass, 316SS, PP, PVC or PVDF
- Connection:**  
1/8"PT-F, G1/8, 1/8"NPT, G1/4 or 1/4"NPT-F
- Fitting:**  
Brass Tongren 1/4"Tube, 316SS 1/4" Tube, Plastic Push in 1/4" Tube, PFA/PTFE/PVDF Thread Flare 1/4" Tube

**Diaphragm Seal:**  
Buna N, Viton, FFKM, Silicone, EPDM, CR

**Mounting:**  
Surface mount Surface mount with two screws through the holes

**Electrical Connector:**  
Cable Gland, DIN 43650A, M12 or Terminal Block  
**Max Working Pressure**  
7 Bar

**Proof Pressure**  
10 Bar

**Note:**  
The wetted parts including fitting, diaphragm and sealing gasket will be contacted with the media directly. Before installation, please check the wetted parts selected for compatibility to the process media.

**ELECTRICAL DATA Voltage Output**  
**Switch Output:**  
SPDT precision snap action micro-switch, SPST(NO)/SPST(NC) is available on request

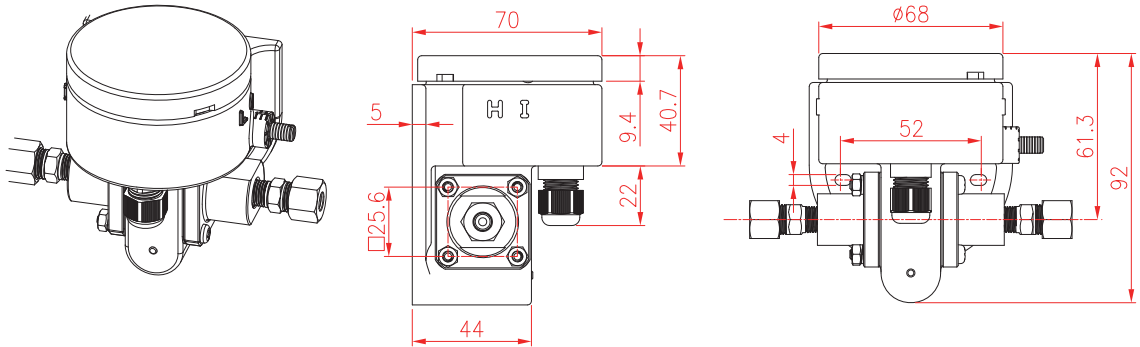
**Rating:**  
Rated to 5A at 125 VAC and 250 VAC, 1A/3A/10A rating is available on request

**Contact Resistance(Max):**  
D.C. 30V 1A 30mOhms

**Insulation Resistance(Min):**  
D.C. 500V 100MOhms

**Withstand Voltage:**  
A.C. 500V 1 minute

### Dimensions(mm)



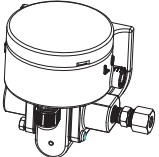
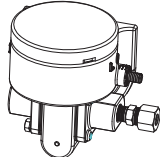
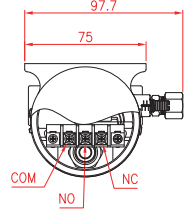
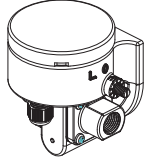
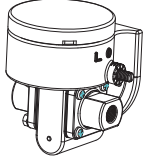
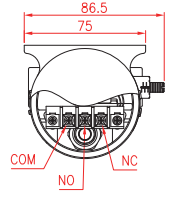
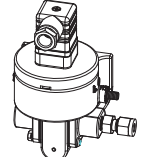
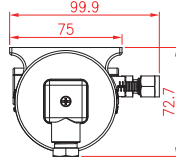
### Differential

			<ul style="list-style-type: none"> <li>■ Cable Gland/Terminal Block Brass Tongren 1/4" Tube Fittin</li> </ul>
			<ul style="list-style-type: none"> <li>■ Cable Gland, 1/4" NPT-F</li> <li>■ Terminal Block, 1/8" PT-F</li> </ul>
			<ul style="list-style-type: none"> <li>■ DIN 43650, 316SS 1/4" Tube Fitting</li> </ul>

### Pressure

			<ul style="list-style-type: none"> <li>■ Cable Gland/Terminal Block Brass Tongren 1/4" Tube Fitting</li> </ul>
			<ul style="list-style-type: none"> <li>■ Cable Gland, 1/4" NPT-F</li> <li>■ Terminal Block, 1/8" PT-F</li> </ul>
			<ul style="list-style-type: none"> <li>■ DIN 43650, 316SS 1/4" Tube Fitting</li> </ul>

### Vacuum

 <b>SWV10PF</b>	 <b>SWV10PT</b>		<ul style="list-style-type: none"> <li>■ Cable Gland/Terminal Block, Brass Tongren 1/4" Tube Fitting</li> </ul>
 <b>SWV1F4F</b>	 <b>SWV1FCT</b>		<ul style="list-style-type: none"> <li>■ Cable Gland, 1/4" NPT-F</li> <li>■ Terminal Block, 1/8" PT-F</li> </ul>
 <b>SWV12AA</b>			<ul style="list-style-type: none"> <li>■ DIN 43650, 316SS 1/4" Tube Fitting</li> </ul>

### Limited Warranty and Liability

■ Scale: Bar		■ Scale: Kg/cm <sup>2</sup>		■ Scale: PSI		■ Scale: MPA	
Code	Range	Code	Range	Code	Range	Code	Range
R04	0.1	G04	0.1	P21	1	M01	0.01
R05	0.16	G05	0.16	P23	2	M02	0.02
R06	0.2	G06	0.2	P25	3	M03	0.03
R07	0.25	G07	0.25	P28	5	M1	0.04
R08	0.3	G08	0.3	P29A	7	M1A	0.05
R1	0.4	G1	0.4	P31	10	M2	0.06
R09	0.5	G09	0.5	P32	15	M3	0.1
R2	0.6	G2	0.6	P32B	16	M4	0.16
R3	1	G3	1	P33	20	M5	0.2
R4	1.6	G4	1.6	P34	25	M6	0.25
R5	2	G5	2	P35	30	M7	0.3
R6	2.5	G6	2.5	P36	35	M8	0.35
R7	3	G7	3	P37	40	M9	0.4
R8	3.5	G8	3.5	P37B	45	M9A	0.45
R9	4	G9	4	P38	50	M10	0.5
R10	5	G10	5	P39	60	M11	0.6
R11	6	G11	6	P39A	70	M12	0.7
R12	7	G12	7	P40	80		
				P40A	85		
				P41	100		

Note: If you need the other ranges not listed, please contact with our distributors.

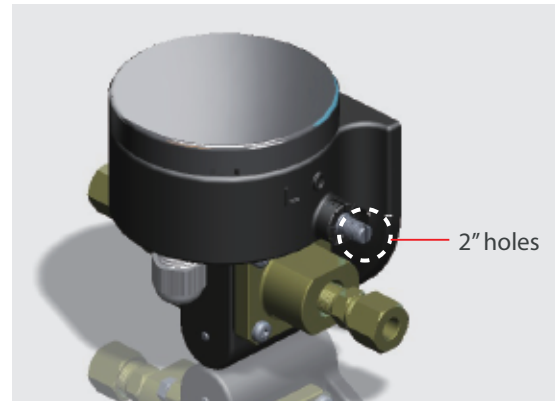
### Performance Matrix

Series	Reference	Adjustable Switch Setting Point Range	Typical Dead-band	Working Pressure	Proof Pressure
1	Vacuum	-1... ... -0.2 Bar	-0.038 Bar	-0.9 Bar	10 Bar
2	P/DP	0.35... ... 1 Bar	0.038 Bar	1 Bar	10 Bar
3	P/DP	0.5... ... 4 Bar	0.051 Bar	4 Bar	10 Bar
4	P/DP	2... ... 7 Bar	0.11 Bar	7 Bar	10 Bar

### Mounting&Installation:

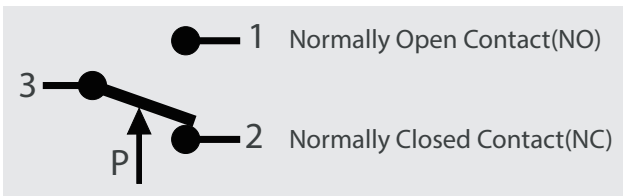
#### Surface Mounting

Insert two #6 screws through mounting ear holes on 2" centers.

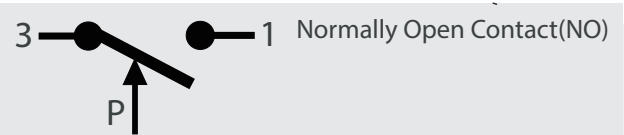


### Wiring/Connector

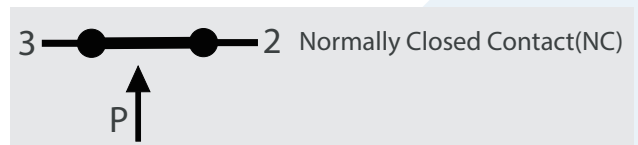
#### SPDT



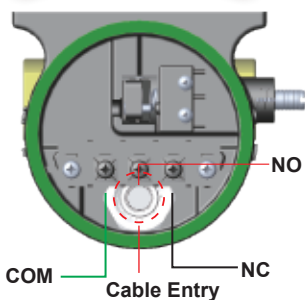
#### SPST(NO)



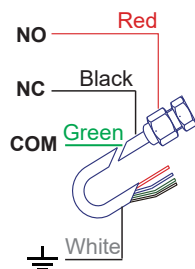
#### SPST(NC)



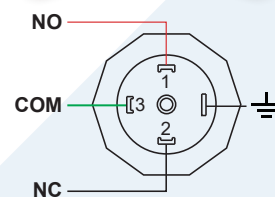
#### Terminal Block



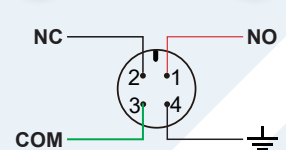
#### Gland Cable Connector



#### DIN Connection

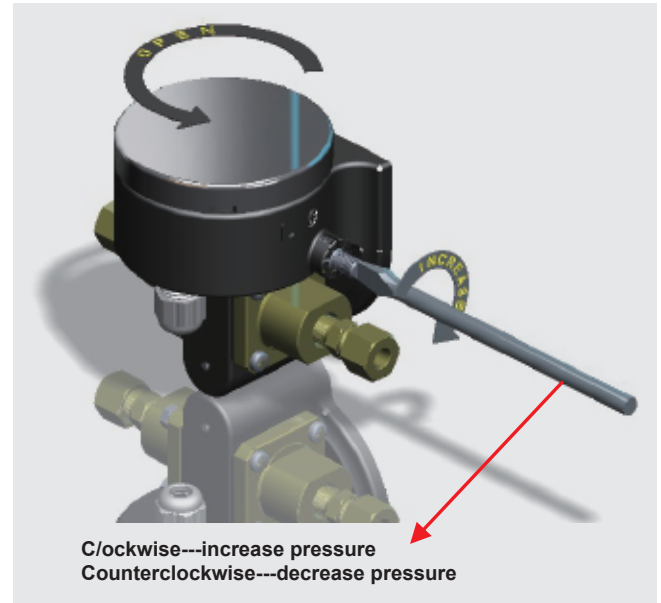
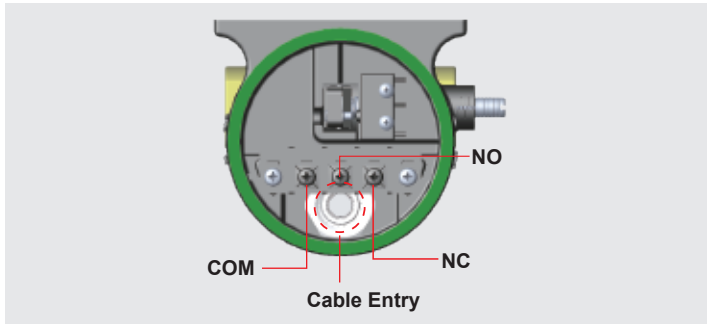


#### M12 Connector



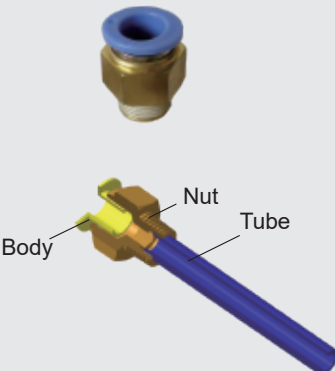
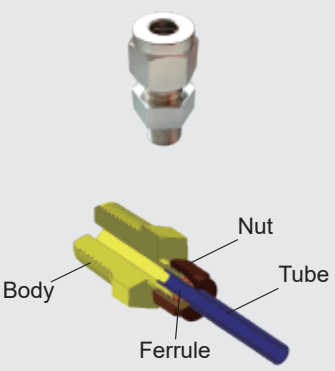
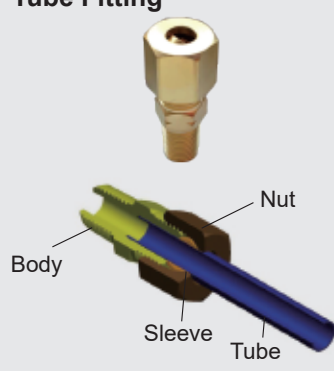
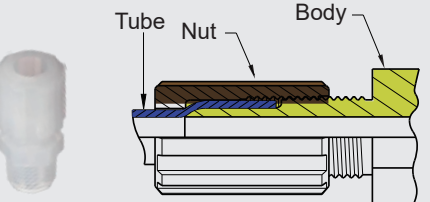

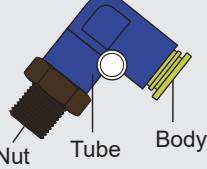
### Adjustable Switch Point

The device with a adjustable switch point function. The capacity of this adjustment should be within 10% of the current setting point. When you use the adjustable switch to increase or decrease the pressure, you should have a standard device to compare with.



### Tube Fitting Installation for Process Connection

1. Please cut tubing squarely and clean tube end to remove burrs
2. Kindly slide nut and sleeve onto tubing, place threaded end of nut face out.
3. Insert the tube into the fitting. Ensure the tube is bottomed on the fitting shoulder.
4. Assemble nut to body, and tighten "hand-tight" first.
5. Use a wrench to tighten the pressure connection.
6. For the soft metal tubing, please make 1.5-2.5 wrench turns. circuit ground to improve electrical noise rejection.

<p>■ Push-in Tube Fitting</p> 	<p>■ SS316 Ferrule Tube Fitting</p> 	<p>■ Brass Tongren Compression Tube Fitting</p> 
<p>■ PFA/PTFE/PVDF Flare Compression Tube Fitting</p> 	<p>■ Plastic Push-in Tube Fitting(Elbow)</p>	
	<p>Elbow</p> 	

### Order Information:

**P-23-SWD1B0PF0003D05R3BH**

Reference	Series	Body Material	Process Connection	Electrical Connection	Cable Length	Contact Functions	Contact Setting	Contact Rating	Switch Range
<b>D</b>	<b>1</b>	<b>B</b>	<b>0P</b>	<b>F</b>	<b>000</b>	<b>3</b>	<b>D</b>	<b>05</b>	<b>R3</b>
D-Differential	1-1...-0.2 Bar	S-SS316	FC-1/8"PT-F Connection	A-DIN43650	000-No Wiring	1-SPST, NO/C, 2 Wires	I-Increasing Pressure Setting by Factory	01-1A 125VAC	R04...0.1Bar
P-Pressure	2-0.35...-1 Bar	D-PVDF	FF-G1/8-F Connection	F-Gland Cable	0M5-0.5M	2-SPST, NC/C, 2 Wires	D-Decreasing Pressure Setting by Factory	03-3A 125VAC	R09...0.5Bar
V-Vacuum	3-0.5...4 Bar	V-PP	F8-1/8"NPT-F Connection	T-Terminal Block	0M7-0.7M	3-SPDT, NC/NO/C, 3 Wires	0-No Pressure Preseting by Factory	05-5A 125VAC/250VAC	R3...1Bar
	4-2...7 Bar	B-Brass	FE-G1/4-F Connection	M-M12	01M-1M			10-10A 125VAC/250VAC	R5...2Bar
		C-PVC	F4-1/4"NPT-F Connection	L-Others	02M-2M				R7...3Bar
		L-Others	0P-BrassTongren 1/4" Tube Fitting		03M-3M				R10...5Bar
			2A-SS316 1/4" Tube Fitting		8F3-8.3Feet				R12...7Bar
			0R-Plastic Push in 1/4" Tube Fitting		10F-10Feet				(Please refer to the range table and write down the code you need.)
			0U-Plastic Elbow Push-in Tube Fitting 1/4"		20F-20Feet				
			0N-PFA/PTFE/PVDF Thread Flare Fitting 1/4"		30F-30Feet				
					99F-99Feet				
					(Write down the cable length code which you need)				

### Sealing Option

**B** **H** **-N**

- B- NBR
- V- Viton
- S- Silicone Polymer
- K- FFKM
- N- CR (Neoprene)
- E- EPDM
- L- Other

### Option:



### Limited Warranty and Liability

HAWK GAUGE CO.,LTD warrants all its electrical instruments to be free from defects in materials and workmanship. HAWK Agrees to repair or replace any pressure transmitter or transducer if returned to our factory, transportation charges prepaid, and after which examination reveals is to be defective due to faculty workmanship or material. This warrant should not apply to subject to the following terms and conditions:

- A). The product has not been subjected to misuse, neglect, abuse , accident, incorrect wiring, improper use or misapplication such as negligence, accident, vandalism, shock or vibration.
- B). The performance of any system of which HAWK's products are a component part.
- C). The product has not been exposed to any other service, range or environment of greater severity than that for which the products were designed.
- D). The product has not been altered or repaired by anyone except HAWK GAUGE or its authorized service agencies.
- E). The serial number or date code has not been removed, defaced or changed.

Unless otherwise specified in a manual or warranty card, or agree to in a writing signed by HAWK GAUGE office, HAWK Pressure products shall be warranted for one year from the date of sale.

This warranty is in lieu of all other warranties expressed or implied, and of all obligations or liabilities on its part for damages including but not limited to consequential damages, following the use of misuse of instruments sold by it. No agent is authorized to assume for it any liability except as set forth above.

### Note

HAWK GAUGE CO.,LTD reserves the right to make product improvements and change its specifications at any time stated throughout this brochure without notification. Please contact the factory on all critical dimensions and specifications for verification. HAWK GAUGE is not expert in the customer's technical field and therefore doesn't warrant suitability of it's product for the application selected by customer.



Data Sheet No: MKDP23SWD1A2-E