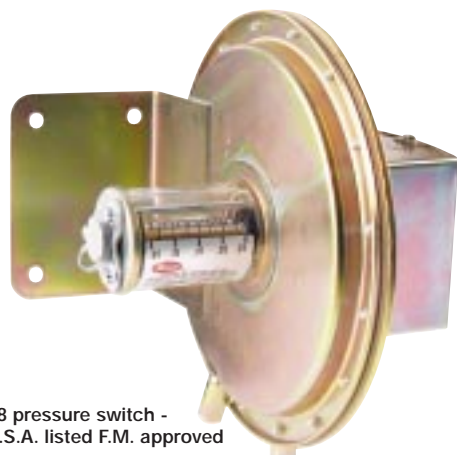


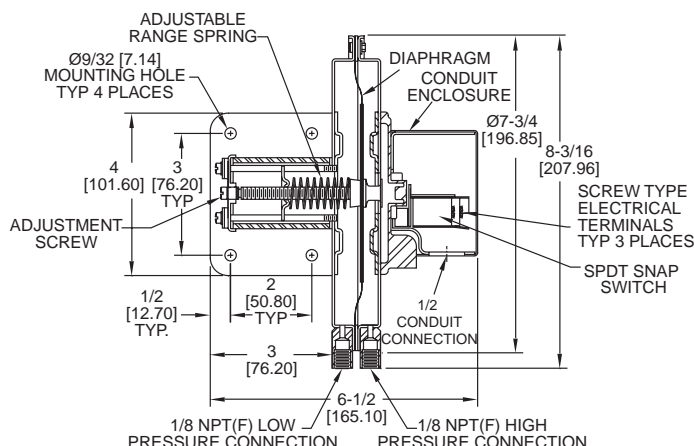


Series 1630 – Differential Pressure Switch

Specifications – Installation and Operating Instructions



Model 1638 pressure switch - U.L. and C.S.A. listed F.M. approved



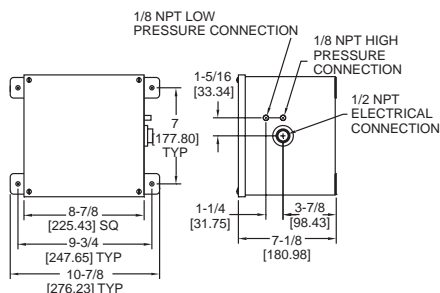
Our highest precision conventional large diaphragm pressure switch provides maximum dependability. In addition it incorporates a visible set point indicator for maximum convenience. U.L. and C.S.A. listed, F.M. approved for general service, these switches are suitable for most applications in air conditioning and industrial service. Electrical capability of 15 amps handles most small electrical loads.

**Environmental (MIL) Construction.** Unlisted Model 1635 can be furnished with special snap switch and silicone rubber diaphragm for high humidity and/or for government applications. Similar to standard Model 1638 except dead band is slightly greater. Specify Model No. 1635 (range No.) MIL in ordering. Example: 1635-5-MIL.

**HOUSINGS FOR USE WITH MODEL 1638 SWITCH**  
(also suitable for Models 1626, 1627 and 1640 switches)

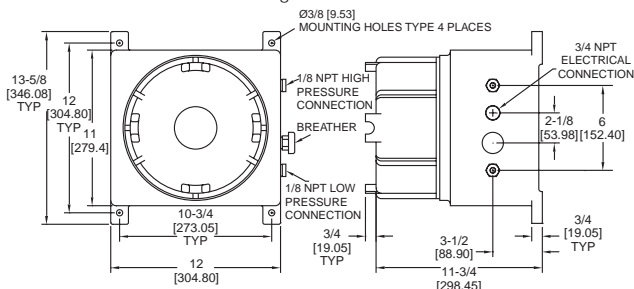
**Weatherproof Housing**

16 ga. steel enclosure for unusually wet or oily conditions. Withstands 200 hour salt spray test. Gasketed cover. Weight, 20 lbs. Switch must be installed at factory. Specify "WP" in addition to switch catalog.



**Explosion-proof Housing**

Killark cast alum. housing No. 4GRH with dome for No. 1638 switches and No. GRH with flat cover for No. 1626 and 1627 switches rated for Class I, Group D; Class II, Groups E, F and G and Class III. Approximate weight, 47 lbs. Specify "EXPL" in addition to switch catalog number.



**PHYSICAL DATA**

**Temperature Limits:** -30°F (-34.4°C) for dry air or gas to 110°F (43.3°C). (Consult factory for higher temperature applications.)

**Maximum Surge Pressure:** 25 psig.

**Rated Pressure:** 10 psig.

**Pressure Connections:** 1/8" NPT(F).

**Electrical Rating:** 15 amps, 120-480 volts, 60 Hz. A.C.

Resistive 1/8 H.P. @ 125 volts, 1/4 H.P. @ 250 volts, 60 Hz. A.C.

**Wiring Connections:** 3 screw type, common, normally open and normally closed.

**Set Point Adjustment:** Screw type with enclosed scale.

**Housing:** 16 ga. steel, zinc plated, dichromate dipped for 200 hour salt spray test.

**Diaphragm:** Silicone rubber.

**Calibration Spring:** Stainless steel.

**Weight:** 4 lbs., 14 oz. (2.21 kg).

**Installation:** Diaphragm vertical.

**MODEL 1638:**

**Operating Ranges, Dead Bands and Ratings.**

U.L. and C.S.A. Listed, F.M. Approved.

Model Number	Operating Range Inches, W.C.	Approximate Dead Band	
		At Min. Set Point	At Max. Set Point
1638-0	0.05 to 0.25	0.04	0.05
1638-1	0.20 to 1.0	0.04	0.06
1638-2	1.0 to 3.0	0.06	0.08
1638-5	2.0 to 6.0	0.07	0.25
1638-10	3.0 to 12	0.11	0.30

**Suggested Specification**

Differential pressure switches shall be diaphragm operated to actuate a single pole double throw snap switch. Motion of the diaphragm shall be restrained by a calibrated spring that can be adjusted to set the exact pressure differential at which the electrical switch will be actuated. Motion of the diaphragm shall be transmitted to the switch button by means of a direct mechanical linkage. Set point adjustment shall be screw type with set point indicated on a visual scale. Switches shall be Dwyer Instruments, Inc. Catalog No. 1638-\_\_\_\_\_ for the required operating ranges.

## INSTALLATION

1. Select a location free from excessive vibration where oil or water will not drip on the switch and where ambient temperature will be within a range of  $-30^{\circ}\text{F}$  ( $-34.4^{\circ}\text{C}$ ) (dry air or gas) to  $110^{\circ}\text{F}$  ( $43.3^{\circ}\text{C}$ ). See special housing for unusual requirements and MIL option for high humidity.

2. MOUNT THE SWITCH WITH THE DIAPHRAGM IN A VERTICAL PLANE. The switch is position sensitive so it must be recalibrated for each change in operating position.

3. Connect switch to source of air pressure differential. Metal tubing with  $1/4"$  O.D. is recommended, but any tubing system which will not restrict the air flow is satisfactory.

4. Electrical connections for all switches are marked Common, Normally Open and Normally Closed. Be certain connections are properly made and that no mechanical load can be transferred from the wiring to the snap switch.

## ADJUSTMENT AND CALIBRATION

1. The calibration or actuation point of the switch is indicated on the scale secured to the transparent range spring enclosure. Recalibration to another setting within the range of the switch is readily accomplished by turning the adjust-

ment screw, counter-clockwise to increase the pressure setting or clockwise to decrease the setting. Note that the indicated calibration is correct only if the switch is mounted with the diaphragm assembly in a vertical plane. If mounted in any other position, the switch must be recalibrated as follows:

a. Using a "T" assembly with three rubber tubing leads, all as short as possible and offering minimum flow resistance, run one lead to the pressure switch and the second lead to a manometer of appropriate range and known accuracy. Apply pressure through the third tube, preferably by successively pinching the tube tight with the fingers. Pinch off the tube and make the final approach to the set point slowly. Check the set point by listening for the click of the switch or by using a volt meter.

b. Note that the manometer and pressure switch will have different response characteristics due to their different internal volumes, lengths of tubing, fluid drainage, etc. Be certain that the switch is checked in the position it will assume in use, or preferably, that it is installed in its final location and then checked. When pressure reading has been established, replace scale to proper position, relating set point indicator to markings on scale.

