



GENERAL INFORMATION

The DBL Series Differential Pressure Switches are general purpose pressure switches designed for both HVAC and Energy Management applications. These pressure switches can be used to sense positive, negative, or differential air pressures when used in conjunction with an DBZ-06, A/SPT or A/VPT Series sampling tube. The NEMA 3 (IP54) rated weather proof plastic enclosure contains an On/Off, single stage micro switch and two pressure chambers separated by a silicone diaphragm. The enclosure also contains a 1/2" conduit knockout and guards against accidental contact with the live switch terminal screws as well as the factory calibrated linear set point adjusting knob. The set point can be adjusted without comparing to a field gauge, manometer or magnehelic.

MOUNTING INSTRUCTIONS

Mounting the switch in the vertical position, with the pressure port connection pointing downwards (see **Figure 2**).

If mounted in horizontal position, deduct 0.08 inch WC (20 Pa) from desired setpoint for offset adjustment. If the setpoint is at the bottom of the range, do not mount the pressure switch in the horizontal position. Never install the switch where the setpoint knob faces downward. This will cause incorrect switch performance.

SURFACE MOUNTING

Mount with four screws through bracket (see **Figure 3**). Do not tighten the screws excessively. It could deform the pressure switch and lead to air leakage.

DUCT AIR PICK-UP

To insure good airflow to the pressure switch, it is suggested to use the tubing and pitot kit DBZ-06 (see **Figure 4**).

PRESSURE PORT CONNECTIONS

Pressure port P1 (+) = high pressure, it is located on the lower part of the housing base. Pressure port P2 (-) = low pressure, it is located on the upper part of the housing base (see **Figure 1**).

FIGURE 1: DIMENSIONS

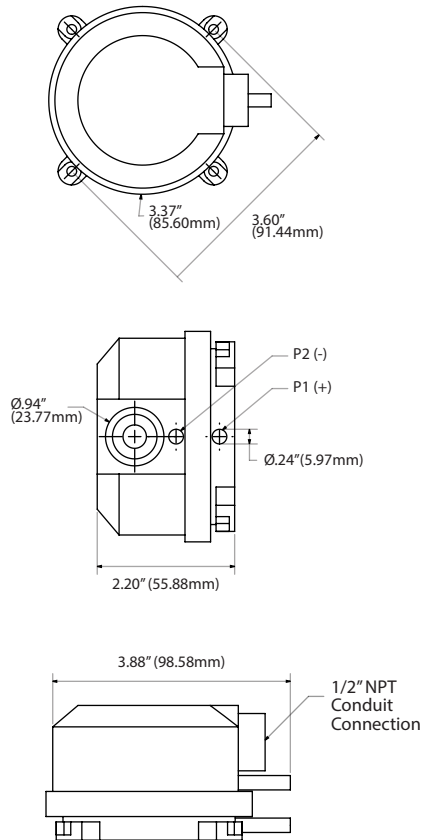


FIGURE 2: MOUNTING-VERTICAL POSITION

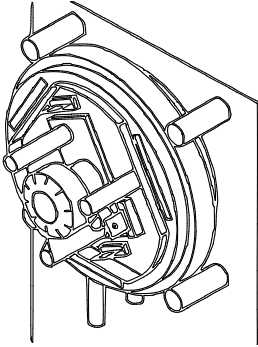


FIGURE 3: MOUNTING-SCREWS POSITION

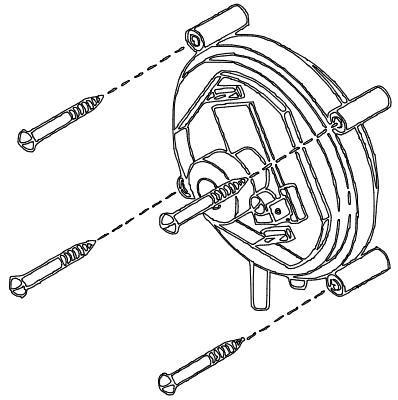


FIGURE 4: PITOT TUBE DUCT CONNECTIONS

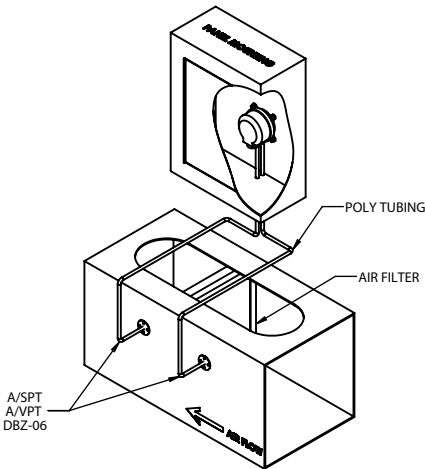
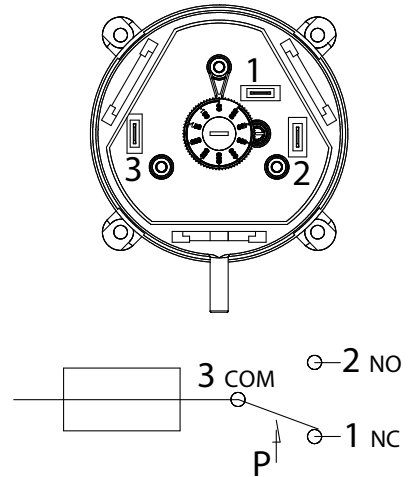


FIGURE 5: ELECTRICAL CONNECTIONS



ELECTRICAL CONNECTIONS

The enclosure contains a 1/2" conduit connection. ACI recommends 16 to 26 AWG twisted pair wires or shielded cable for all transmitters. Electrical connections are Spade Terminals. Refer to **FIGURE 5** for wiring diagrams. All wiring must comply with local and National Electric Codes.

Pressure increase, contact connection:3 to 2

Pressure decrease, contact connection:3 to 1

Pressure port P¹ (+) = high pressure

Pressure port P² (-) = low pressure

CONTROL SETTINGS

Do not adjust the setpoint knob or screw adjustment for the switching differential (see **FIGURE 6**) when high voltage power is connected to the pressure switch.

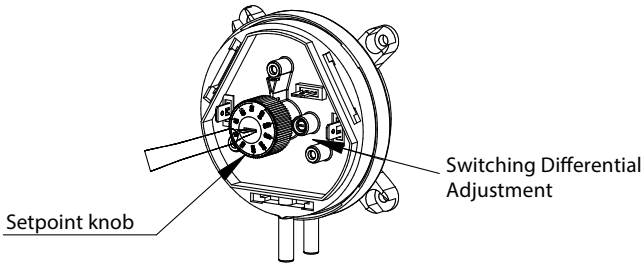
To increase set point, turn Setpoint knob clockwise.

ACI does not recommend adjusting the switching differential as this can cause damage to the switch. Please be aware that the switching differential is adjusted from factory to the lowest possible value. Any smaller switching differential might cause failures and will change the switch behavior so that the functions are not according to the datasheet anymore, i.e. when you change the mounting position or use high electrical rating.

HOUSING COVER INSTALLATION

Mount housing cover and tighten screw prior to operating the pressure switch.

FIGURE 6: SETPOINT ADJUSTMENT



PRODUCT SPECIFICATIONS

SPECIFICATIONS	
Input Pressure Range:	20" W.C (5000Pa)
Adjustable Set Point Range:	See ordering grid below (Internal Linear Scaled knob)
Adjustable Set Point Switching Differential:	Factory Default: +/- 15% of Trip / Set Point; See ordering grid below for adjustable switching differential range
Contact (Load) Rating:	250 VAC maximum, 1.5A Resistive (0.4A Inductive)
Contact Arrangement:	SPDT (Form 1C) w/ Automatic Reset
Measured Media:	Air and other non-combustible, non-aggressive gases
Diaphragm Material:	Silicone
Maximum Operating Pressure:	40" wc (10 kPa)
Life Expectancy:	1,000,000 cycles
Operating Storage Temperature Range:	-4 to 185°F (-20 to 85°C)
Sample Line Connections:	Accepts 3/16" ID Push on plastic/poly tubing

STANDARD ORDERING

Model #	Item #	Ranges Inches wc (Adjustable Set Point)	Adjustable Switching Differential Inches w.c.	Contact
DBL-205L	105934	0.08 to 0.8" wc	0.04 to 0.08" wc	SPDT
DBL-205B	102423	0.20 to 2.0" wc	0.08 to 0.16" wc	SPDT
DBL-205D	102424	0.80 to 4.0" wc	0.40 to 0.80" wc	SPDT
DBL-205E	106255	2.0 to 10.0" wc	0.60 to 1.20" wc	SPDT

