



# Installation and Operation Instructions

## Air & Gas Pressure Switches

### DESCRIPTION

Adjustable vacuum, pressure, and differential pressure switches for air and other non-combustible, non-aggressive gases. The A/DBL Series Pressure Switches are available in ranges from 0.08 to 0.8" w.c. all the way up to 2.0 to 10.0" w.c.. These units will automatically reset and have field adjustable setpoints and switching differentials. Each unit contains (1) SPDT contact rated for 250 VAC @ 1.5 Amps. All wiring connections are to be made with spade connectors and a maximum wire size of 16 AWG. The DBL Series pressure switches contain a 1/2" conduit connection and are mounted in a NEMA 3 transparent synthetic housing.



### APPLICATION

Air pressure control and monitoring of ducts, filters, fans and other devices in ventilation and air conditioning systems.

### FEATURES

- Compact & easy to install
- High accuracy & life cycles
- Adjustable switching differential
- Calibrated, scaled setpoint knob

certified ISO 9001

### SPECIFICATIONS

<b>Type of operation</b>	On/Off, single-stage, micro switch
<b>Output</b>	1 SPDT, 250 VAC, 1.5 (0.4) A
<b>Trip/setpoint</b>	Internal linearly scaled knob
<b>Switching differential</b>	Screw adjustable
<b>Sensing techniques</b>	2 pressure chambers separated by diaphragm
<b>Diaphragm material</b>	Silicone
<b>Life cycles</b>	1,000,000
<b>Capillary size</b>	Diameter 0.08 in. (2 mm)
<b>Permissible ambient temperature</b>	
- Working/Storage	-4°F to 185°F (-20°C to 85°C)
<b>Wire</b>	
- Connection	Spade
- Size	Maximum 16 AWG (1.5 mm <sup>2</sup> )
<b>Cable entry</b>	1/2" NPT conduit connection
<b>Housing</b>	
- Material	Synthetic, retardant
- Color	Transparent
- Protection	NEMA 3 (IP 54)
- Dimensions	Diameter 4.0x2.3 in. (100x58 mm)
<b>Installation</b>	Surface mounted
<b>Pressure port connection</b>	2 for PVC tube, P1 (+) and P2 (-)
<b>Ship weight</b>	0.4 lb (0.2 kg)

"Setpoint can be adjusted without field gauge reading"

Adj. Setpoint Range* Inch WC (Pa)	Adj. Switching Diff.** Inch WC (Pa)	Max. Operation Pressure Inch WC (Pa)	Scale Type	Part Number
0.08 to 0.8 (20 to 200)	0.04* to 0.08 (10 to 20)	20 (5000)	930.80	DBL-205L
0.16 to 0.4 (40 to 100)	0.08* to 0.16 (20 to 40)	20 (5000)	930.81	DBL-205
0.16 to 0.8 (40 to 200)	0.08* to 0.16 (20 to 40)	20 (5000)	930.82	DBL-205A
0.20 to 2.0 (50 to 500)	0.08* to 0.16 (20 to 40)	20 (5000)	930.83	DBL-205B
0.80 to 4.0 (200 to 1000)	0.40* to 0.80 (100 to 200)	20 (5000)	930.85	DBL-205D
2.0 to 10.0 (500 to 2500)	0.60* to 1.20 (150 to 300)	20 (5000)	930.86	DBL-205E
Kit: (2) Pitots, (2) Grommets, 6.5ft. (2.0 m) Tubing				DBZ-06

\* The adjustable trip/setpoint within the control range is calibrated for vertical mounting position pressure, port connection pointing downwards. If mounted in horizontal position, deduct 0.08 inch WC (20 Pa) from desired setpoint for field adjustment. If setpoint at the bottom of range, do not mount DBL in horizontal position.

\*\* Factory set switching differential is + 15% of trip/setpoint.

# DBL Installation

## DBL PRESSURE SWITCH INSTALLATION

### Mounting position

Mounting the switch in the vertical position, with the pressure port connection pointing downwards (figure 1).

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 (figure 2). 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 (figure 3).

### 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 (figure 4).

### Electrical connections

Electrical connection and switching function Electrical wiring connections must be done per local building and electrical codes.

### Control settings

Do not adjust the setpoint knob or screw adjustment for the switching differential (figure 5) when high voltage power is connected to the pressure switch.

### Housing cover installation

Mount housing cover (figure 6) prior to operating the pressure switch.

DBL -I nstall

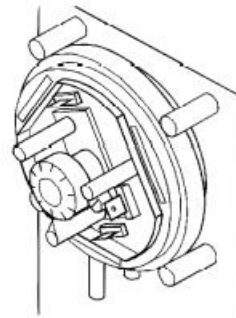
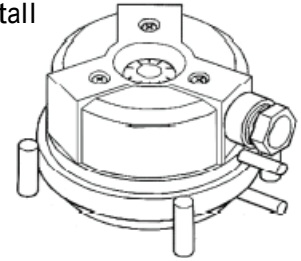


Figure 1

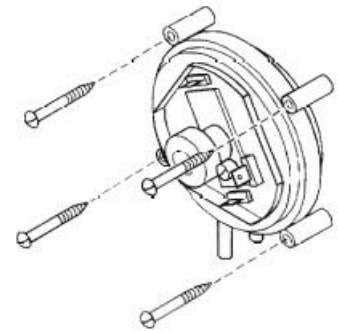


Figure 2

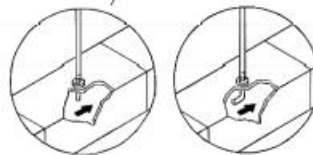
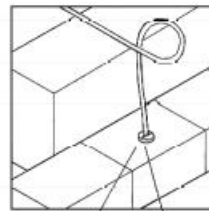


Figure 3

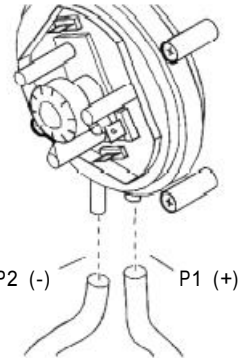
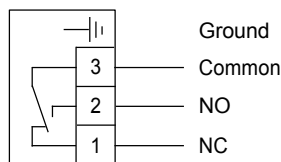


Figure 4

## WIRING DIAGRAM

### DBL



Pressure increase, contact connection: 3 to 2  
 Pressure decrease, contact connection: 3 to 1  
 Pressure port P<sup>1</sup> (+) = high pressure  
 Pressure port P<sup>2</sup> (-) = low pressure

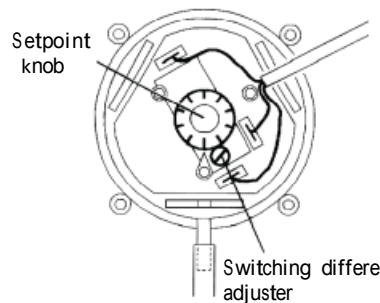


Figure 5

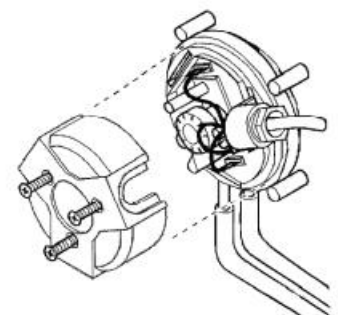


Figure 6