



Low Differential Pressure Switches: 500-301 to 500-309

Operating Manual

Description

Low differential pressure switches 500-301 to 309 series Sensors Ultra-Low Operation Differential Air Pressure Switch Range. Please read these instructions carefully before installing the switch.

Features

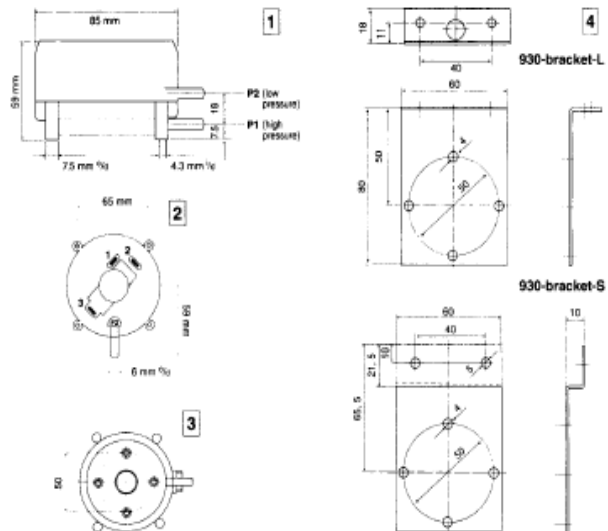
- Pressure medium, air and nonflammable, non-aggressive gasses
- Pressure indicating range adjustment knob marked in Pascals
- Manually adjustable visible Set Point, requires no manometer to set up
- Pressure connections moulded push-on for 5 to 6mm i/d plastic tubing P1 port is high pressure, P2 the low pressure side
- 3 position 1/2" Conduit entry with PGII connector
- Electrical Connections 6.3mm blade terminals 1 x NO, 1 x NC and 1 x COMMON
- Electrical Switch Rating SPDT 1.5 amp (0.4) 250 volts
- Diaphragm, Silicone Rubber
- Cover - 'O' Ring sealed to IP44 rating or better. A version with IP65 enclosure is available
- Maximum Operating Pressure 5kPa WC (30"WC)
- Temperature Limits -40 to 100°C
- The switch must be installed in a position free from vibration
- Do not install in a corrosive atmosphere Vertical or horizontal mounting is acceptable but please see the pressure range information and illustrations 5. and 6. Use the 4 fixing lugs provided to secure the switch to any flat surface, illustrations 1. and 2. Do not overtighten fixing screws, this could distort the switch housing causing a shift in the switching set point See illustration 2.



- Alternatively use the 4 fixing points in the base of the switch. Use only correct screw size i.e. M4 x 8 otherwise your risk penetrating the pressure capsule of the switch or distorting the switch housing causing a shift in the switching set point See illustration 3.
- Fixing Brackets, if required, are shown above, in illustration 4.

These range details apply to all switch models

Diaphragm Horizontal	Range Pascals wc	Pascals wc	Inches wc	Constant Switching Differential
930-80-ATP	20 - 200	20 - 200	0.08 - 0.8	20
930-83-ATP	50 - 500	50 - 500	0.20 - 2.0	50
930-85-ATP	200 - 1000	200 - 1000	0.80 - 4.0	100
Diaphragm Vertical				
930-80-ATP	20 - 200	20 - 180	0.08 - 0.7	20
930-83-ATP	50 - 500	30 - 480	0.12 - 1.9	50
930-85-ATP	200 - 1000	180 - 980	0.70 - 3.9	100



Pressure Port Connections - Connect pressure lines as follows in 5 or 6mm i/d plastic tubing of a wall thickness that deters kinking (our MH5/8 and A220 tubing is ideal)

Connections for **Differential Pressure** - connect Low Pressure Supply to Port marked P2. Connect High Pressure Supply to Port marked P1. See illustration 7.

Connections for **Pressure only** (pressure supply must be **above** atmospheric pressure) - leave Low Pressure Port marked P2 open to atmosphere. Connect pressure source to high pressure port marked P1 only. See illustration 8.

Connections for **Vacuum/negative Pressure** only (vacuum/negative pressure supply must be **below** atmospheric pressure) - connect Vacuum Supply to Low Pressure Port marked P2 only. Leave High Pressure Port marked P1 open to atmosphere. See illustration 9.

Pressure Sensing - Use good quality static pressure sensors at the pressure source. Very low pressures cannot be controlled or sensed accurately with poor static pick up or leakage around the point of entry of sensors into ductwork or other fitments. We recommend our duct fitting kit 930-DFK-2 comprising 2 metres PVC tube, 2 duct mounting grommets, 2 static tips or any of our line of low pressure fittings and tubing.

Electrical Connections - Complete all wiring in accordance with published regulations.

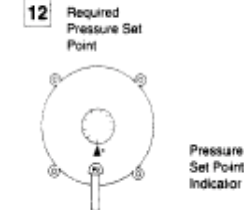
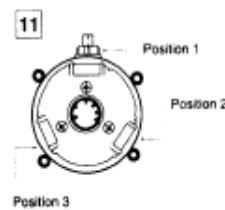
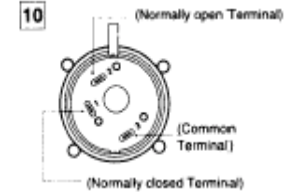
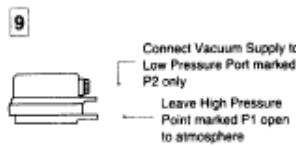
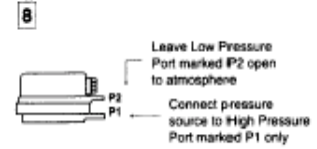
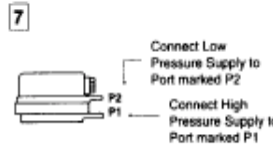
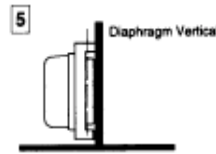
Electrical Connections - Remember to pass cable entry connector assembly onto wiring before making any connection. Standard switch connections are 6.4mm blade terminals. Fit appropriate shrouded female insulated terminals to your wiring. See illustration 10.

Cable entry - Adjustable for 3 positions. Rotate cover with gland nut to required position after making all necessary electrical connections. Ensure adequate wire lengths are used to allow required cable entry position without straining switch connections. Fasten cable entry connector gland nut and the cover securely. See illustration 11.

Pressure Switching Point Setting - Remove cover if fitted. The Pointer (a red arrow) indicating the pressure setting point is in line with the pressure port connections P1 and P2. Rotate pressure selection knob until desired trip pressure is opposite the set point indicator. Please remember that with switches mounted as shown in 5, the switch actuation point will vary by approx. 20Pa from the indicated pressure on the adjustment knob. Replace cover and reinstate electrical supply if safe to do so. See illustration 12.

Pressure Connections - Make final check that pressure connections remain secure at both switch and pressure source and check all tubing to ensure there are no sharp bends or kinks, tubing should be supported where necessary.

SAFETY - Never remove cover of any electrical control before isolating all electrical circuits.



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