

#42074 – 9/7/23

**Identification and Overview****Beck Adjustable Pressure Switch**

- Designed for Monitoring Overpressure, Vacuum and Differential Pressure of Air or Other Non-Combustible, Non-Aggressive Gases
- Ideal for Air Filter and Fan Status Monitoring, Industrial Cooling-Air Circuit Monitoring, Duct Air Flow Monitoring, Air Flow Proving for Heater Control and Frost Prevention Circuits
- Field-Adjustable Dial to Select Any Trip Value Within Each Pressure Range

**Total Probes and Tubing**

Two static pressure probes and two meters of pressure tubing are available as an accessory.



<b>Part #s:</b>	<b>N1-APSW1-65-A</b>	<b>N1-APSW1-A</b>
	<b>N1-APSW2-65-A</b>	<b>N1-APSW2-A</b>
	<b>N1-APSW3-65-A</b>	<b>N1-APSW3-A</b>

**Specifications**

**Burst Pressure:** 40" WC (10 kPa) for all pressure ranges

**Medium:** Air, non-combustible and non-aggressive gases

**Operating Temperature:** -4° to +185°F (-20 to +85°C)

**Storage Temperature:** -40°F to +185°F (-40 to +85°C)

**Accuracy:**

Deviation:  $\leq \pm 15\%$ , min.  $\pm 0.04$ " WC ( $\pm 10$  Pa) • Drift:  $\leq \pm 15\%$

**Diaphragm Material:**

Silicone, tempered at 392°F (200°C), free of gas emissions.

**Pressure Connections:**

2 plastic pipe connection pieces, external dia. 0.24" (6mm)

Marked "+" to higher pressure, marked "-" to lower pressure

**Body and Cover Material:** UV-resistant plastic

**Mechanical Working Life:** Over 1,000,000 switching operations.

**Electrical Rating:**

0.4A Inductive, 250 VAC • 1.5A Resistive, 250 VAC 0.8A Inductive, 125 VAC • 3.0A Resistive, 125 VAC 0.4A, 30VDC • 0.1A, 24 VDC

**Electrical connections:**

1/4" Spade Plug (AMP flat plug), 0.25" x 0.03" (6.3 x 0.8mm) in accordance with DIN 46244 or push-on screw terminals included.

**Protection Category:** IP54 or IP65

**Cable Conduit:** M20 threads for 0.25" to 0.375" OD cable (6.5 to 9.5mm)

**CE Conformity:**

Low Voltage Directive 2014/35/EU; RoHS Directive 2011/65/EU

**Dimensional Drawing**

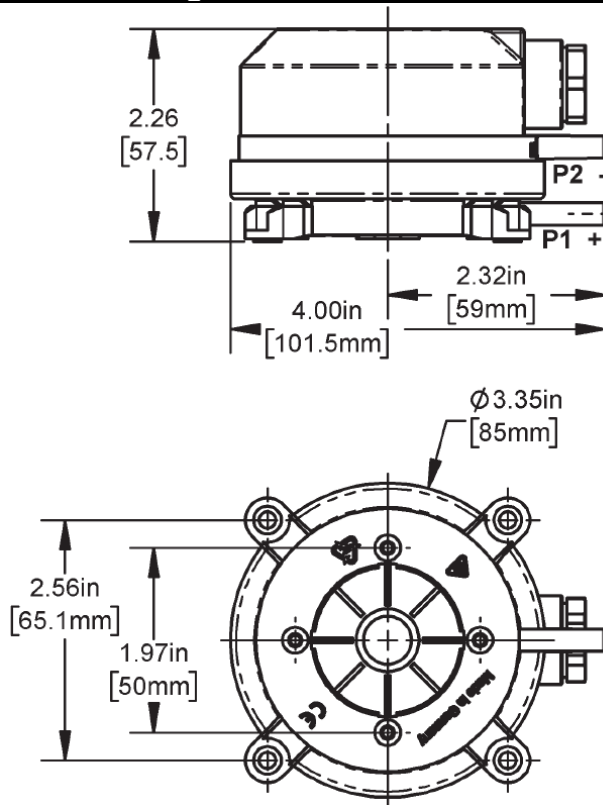


Figure 1: Pressure Switch Dimensions

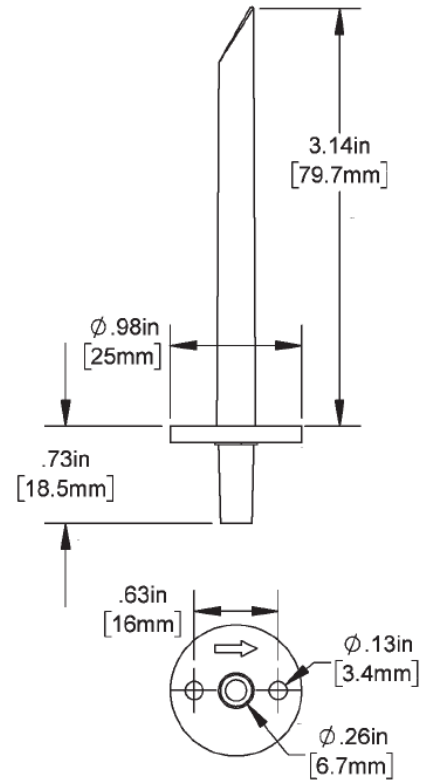


Figure 2: Total Tube Dimensions

**Ordering Information**

Part Number	Pressure Range	Accuracy/ Repeatability	Encl. Rating
N1-APSW1-A	0.08 to 1.2" WC / 20 to 300 Pa	±5% / min. ±0.02" WC (±5 Pa)	P54
N1-APSW2-A	0.2 to 2" WC / 50 to 500 Pa	±2.5% / min. ±0.02" WC (±5 Pa)	P54
N1-APSW3-A	0.8 to 4" WC / 200 to 1,000 Pa	±1% / min. ±0.02" WC (±5 Pa)	P54
N1-APSW1-65-A	0.08 to 1.2" WC / 20 to 300 Pa	±5% / min. ±0.02" WC (±5 Pa)	P65
N1-APSW2-65-A	0.2 to 2" WC / 50 to 500 Pa	±2.5% / min. ±0.02" WC (±5 Pa)	P65
N1-APSW3-65-A	0.8 to 4" WC / 200 to 1,000 Pa	±1% / min. ±0.02" WC (±5 Pa)	P65

**Mounting**

Hold the unit vertically (pressure connections pointing downward) in its mounting location and mark the holes in the mounting feet as shown in **Fig. 3** at right. For a more accurate vertical placement, use a combination or “speed” square with a level to draw an “X” and locate the mounting holes on the lines. Do not mount the pressure switch on uneven surfaces which can cause the unit to warp and eventually fail.

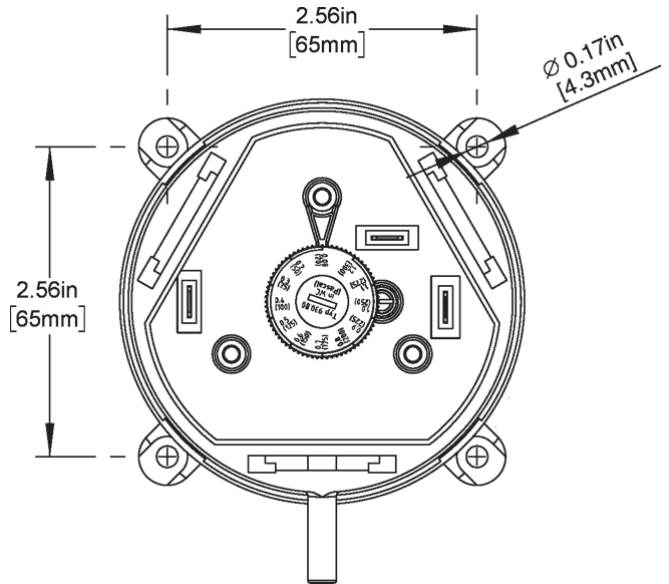


Figure 3: Pressure Switch Mounting

 <b>Caution</b>	<p>Only mount the unit horizontally (pressure connections pointing sideways) if no condensate can form. The unit is position sensitive, so when the unit is positioned horizontally, the switching values are approximately .08 WC (20 Pa) higher than indicated on the scale.</p>
--------------------	--

Mount the pressure switch with the pressure connections pointing downwards to drain condensation moisture which might occur. Mount the pressure switch above the pressure ports that are being monitored. This will allow condensation to drain to the pressure ports instead of being trapped in the tubing or forced into the pressure switch.

Using the included #8 screws, attach the unit to the mounting surface.

 <b>Caution</b>	<p>Do not over tighten the screws, which can deform the device’s base.</p>
--------------------	--

**Tube Connection**

Install the pressure tubing on the “P1 +” (high) and “P2 -” (low) ports.

 <b>Caution</b>	<p>Make sure that tubing is not bent or leaking after installation. Leaking tubing and connections will cause inaccurate measurements.</p>
--------------------	--

### Pressure Switch Adjustment

Remove power from unit before making any adjustments to the pressure switch. Remove the cover and use a screwdriver to set the desired trip pressure on the adjustment dial (**Fig. 4**)

Replace the cover (**Fig. 5**) and push on the cover until it latches. Secure the cover with the cover screw(s). Do not operate the system until the housing is closed. Check the trip and reset pressure by slowly increasing and decreasing pressure. Repeat the adjustment procedure if needed.

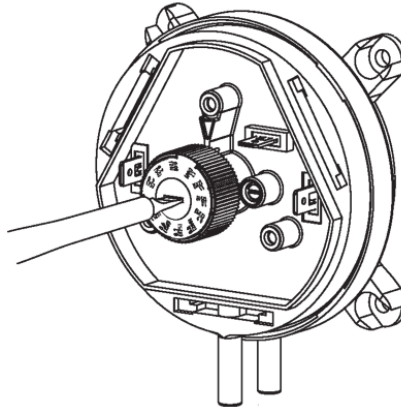


Figure 4: Pressure Switch Adjustment Dial

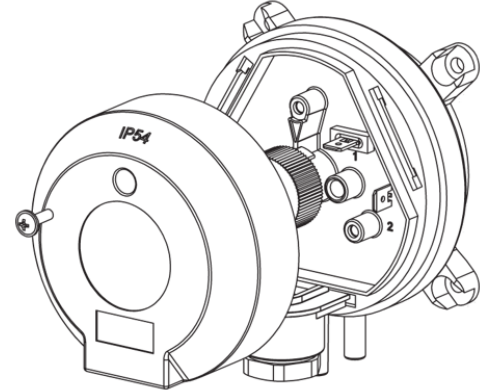


Figure 5: Cover Replacement and Screw

### Termination



#### Warning

Wire the product with power disconnected. Proper supply voltage, polarity and wiring connections are important to a successful installation. Not observing these recommendations may damage the product and void the warranty.

Remove the cover from the unit. Use a three-conductor cable if normally open, normally closed, and common terminals will all be used in the application. Use a two-conductor cable if only two terminals will be used. The outer diameter of the cable must be from 1/4 and 3/8" (5 to 10mm). Run the cable through the liquid tight fitting (**Fig. 6**) and tighten fitting until the cable is secure.

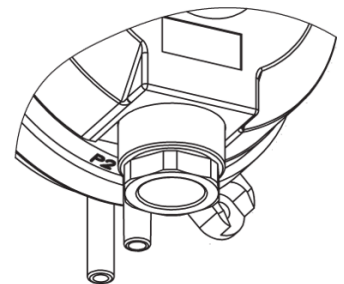


Figure 6: Included Liquid Tight Fitting

#42074 – 9/7/23

Attach included spade terminals to the ends of the electrical wires (**Fig. 7**).

Install the spade terminals on the three terminals inside the unit (**Fig. 8**). Standard 1/4" crimp-on spade connectors (not provided) may be used with stranded wire at installer's discretion.

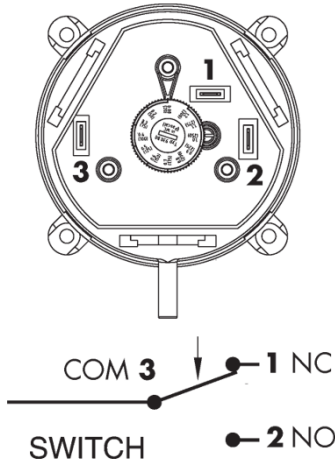


Figure 7: Pressure Switch Contacts

The switch in the unit is a “Form C” type contact. Pole 3 (COM) closes to Pole 2 (NO) when the pressure is above the trip point. Pole 3 closes to Pole 1 (NC) when the pressure is below the trip point. See Specifications on for switch electrical rating.

Replace the cover and push on the cover until it latches. Secure the cover with the cover screw.<sup>3</sup>

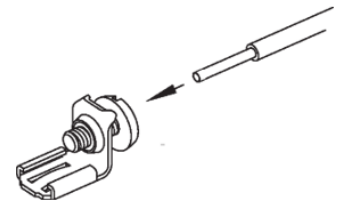


Figure 8: Included Spade Connectors

Diagnostics	
Possible Problems	Possible Solutions
Switch does not trip at correct pressure	<p>Make sure that the high and low pressure tubes are connected to the proper locations and are not kinked.</p> <p>Make sure that switch terminals are wired correctly as described in the “Termination” section.</p> <p>Make sure that the air mover is on.</p>

**Appendix – Symbols Key**

 <b>Warning</b>	Potential for death, serious injury, or permanent damage to a system.
 <b>Caution</b>	Potential for injury, damage to a system, or system failure.
 <b>Tip</b>	Useful information not related to injury or system damage.