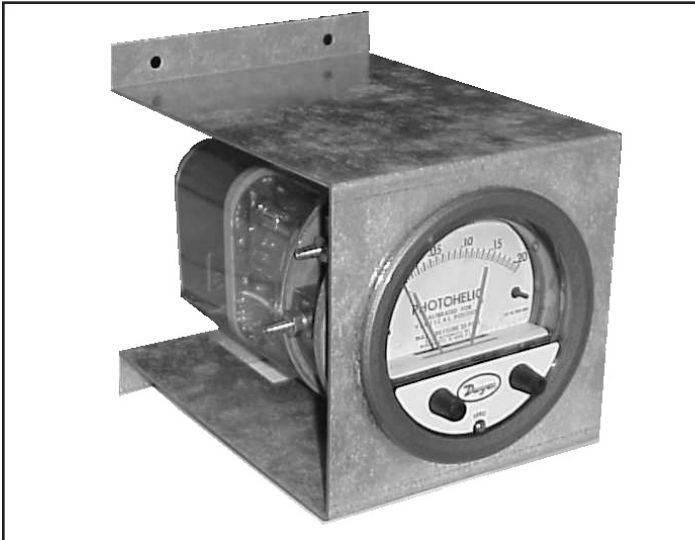


INSTALLATION & SUBMITTAL DATA

Photohelic Pressure Switch

gas direct and indirect-fired duct furnace/make-up air units

model series: “D”, “H”, “M”, “I”, “O”, & “Q”



⚠ WARNING

1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
2. All units must be wired strictly in accordance with wiring diagram furnished with the unit. Any wiring different from the wiring diagram could result in a hazard to persons and property.
3. All wiring must be done with a wiring material having a temperature rating of at least 105°C.

IMPORTANT

The use of this manual is specifically intended for a qualified installation and service agency. All installation and service of these units must be performed by a qualified installation and service agency. Modine manuals may contain excerpts from component supplier literature adapted for Modine products. Any accompanying component supplier literature is for general information.

APPLICATION

The purpose of the building pressure switch is to sense the difference between the indoor building pressure and outdoor atmospheric pressure. Typically the switch is used with fresh and return air dampers and a floating damper actuator to maintain a slightly positive pressure in the building to reduce infiltration. For units factory supplied with a variable frequency drive, the VFD varies the blower motor speed to maintain a slightly positive building pressure.

This is especially useful for buildings that have varying exhaust loads with one make-up air unit. As more exhaust fans are turned on, pressure in the building will tend to become negative. The building pressure switch senses this change in pressure and causes the floating damper actuator to adjust its position to bring the building pressure back to near atmospheric by introducing more outside air and reducing the amount of return air supplied to the unit. For units factory supplied with a variable frequency drive, the VFD will adjust blower motor speed to introduce more outside air.

COMPONENTS

- Dwyer A3000-00NC Pressure Switch/Gauge
Switch Action: Single Pole, Double Throw
Pressure Range: -0.05 to 0.20 inches water column, 25 psig max.
Power Required: 24VAC, 60Hz (“D”, “H”, “I”, and “O” series)
Power Required: 115VAC, 60Hz (“M” and “Q” series)
Ambient Temperature Range: 20 to 120°F
Calibrated for Vertical Position
- Dwyer A-306 Outdoor Static Pressure Sensor
- 50 feet of 1/8” tubing to connect to the sensor

INSTALLATION

Select an indoor location that is free of vibration where water or oil will not be permitted to drip on the pressure switch assembly. The ambient temperature must be within the range of 20 to 120°F. It is important that the location and means of mounting be such that no vibration will be transmitted to the pressure switch assembly.

The pressure switch assembly must be securely mounted in a level vertical position (face of pressure gauge is vertical).

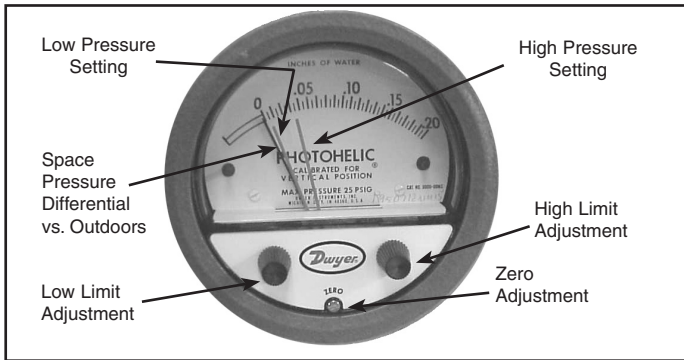
After mounting, verify that the black pressure indicating needle is located on the zero mark. If the needle position needs to be adjusted to zero, use a small flat-head screwdriver to turn the zero adjusting screw on the front face of the pressure gauge. Note that this adjustment can only be made with the high and low pressure taps both open to the atmosphere. The zero adjustment should be checked and reset periodically to maintain accuracy. See Figure 2.1.

Select an outdoor location that is free from vibration and where the outdoor static pressure sensor kit will be protected from the wind. The location should ideally be within 50 feet of the location of the indoor pressure switch assembly.

The outdoor static pressure sensor kit must be securely mounted in a vertical position. The mounting bracket included allows for mounting on uneven surfaces or antenna posts. The static pressure plate must face downward.

Attach one end of the 1/8" plastic tubing to the pressure tap located at the top of the outdoor static pressure sensor kit pick up body. Run the tubing to the indoor pressure switch assembly and attach that end of the 1/8" plastic tubing to the low pressure tap on the pressure switch assembly. The 1/8" plastic tubing must be securely fastened to the building structure along the distance between the outdoor static pressure sensor and the indoor pressure switch assemblies to prevent false readings from vibration or movement of the tubing.

Figure 2.1
Pressure switch gauge



WIRING

Installation of wiring must conform with local building codes, or in the absence of local codes, of the National Electric Code ANSI/NFPA 70 – Latest Edition. Unit must be electrically grounded in conformance to this code. In Canada, wiring must comply with CSA C22.1, Part 1, Electrical Code.

Use the terminal screws furnished with the control. Substitution of other screws may cause problems in making proper connections.

Refer to the job specific unit wiring diagram provided with the unit.

For deviations to these wiring diagrams or the job specific wiring diagrams, consult the factory.

SETTING INSTRUCTIONS

The control is supplied with a set of normally open or normally closed contacts with the switching point determined by the user within the range available to the control.

The low limit building pressure setting is indicated by the low limit switching indicator. This indicator is the left-hand red indicator needle. The knob on the left side of the front face of the pressure gauge can be adjusted to set the low limit building pressure setting. This is typically set for a positive building pressure of approximately 0.005" W.C.

The high limit building pressure setting is indicated by the high limit switching indicator. This indicator is the right hand red indicator needle. The knob on the right side of the front face of the pressure gauge can be adjusted to set the high limit building pressure setting. This is typically set for a positive building pressure of approximately 0.04" W.C.

Figure 2.3
Dimensions of Indoor Pressure Switch Assembly (inches)

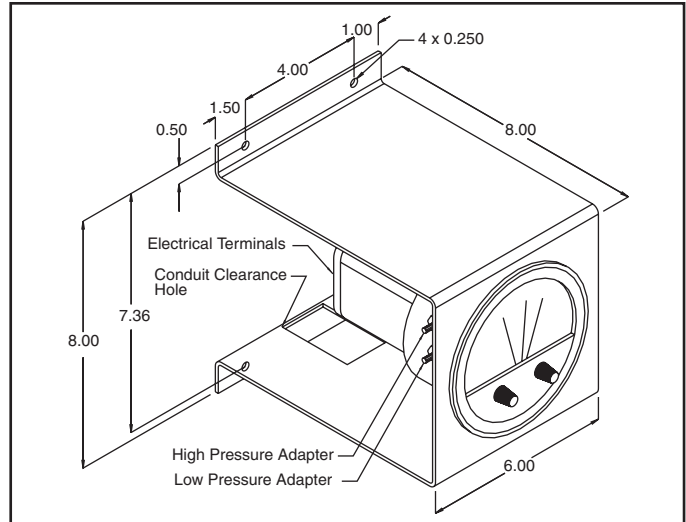


Figure 2.4
Dimensions of Outdoor Static Pressure Sensor (inches)

