

# Filter Alarm

## Supplemental Manual for Options: HE-Series, LE-Series, RD-Series

### **▲ WARNING**

RISK OF FIRE, ELECTRIC SHOCK, OR INJURY. OBSERVE ALL CODES AND THE FOLLOWING:

1. Wiring must be done by qualified personnel in accordance with requirements of the authority having jurisdiction.
2. Wiring penetrations into the unit must be sealed to be air-tight and maintain the thermal integrity of the unit insulation.
3. Unit must be installed so that the diaphragm of the pressure switch is in the vertical plane.
4. Differential pressure switch is suitable for use with Class 2 low-voltage power.
5. Differential pressure switch is rated for use a 300 VA pilot duty at 115–277 VAC.
6. Size wires according to loads switched by the differential pressure switch.
7. Differential pressure switch is pre-set at RenewAire, but we recommend adjustment to suit each installation.
8. A 7/8" diameter opening is provided in the differential pressure switch case for installation of conduit connector or wire clamp (by others).
9. Cover for wiring connections must be re-installed after adjustment of pressure differential.
10. When adjusting pressure differential take care not to contact electrical terminals.

## **1.0 OVERVIEW**

To provide remote indication that a filter in the Energy Recovery Ventilator (ERV) needs replacement, RenewAire offers a filter alarm as an option. The filter alarm is an adjustable differential pressure switch that measures static pressure upstream and downstream of the filter.

The differential pressure switch is in most cases located inside the ERV unit. Electrical connections from the switch to an alarm or indicator system are made by a qualified controls contractor. Installer must make provisions for routing wire into the unit case in accordance with local codes.

## **2.0 INSTALLATION**

### **2.1 CONNECTING TO ALARM SYSTEM**

The switch in the filter alarm is single-pole double throw. When the differential pressure is less than the setpoint, the switch contacts will be in the normally closed (NC) position, making a circuit between the common ("C") terminal and the "NC" terminal. When the pressure differential becomes greater than the setting of the switch (adjustable), the switch throws and makes contact between the "C" and the normally open (NO) contacts.

### **2.2 ADJUSTMENT RANGE OF PRESSURE DIFFERENTIAL SWITCH**

Adjustment range of the differential pressure switch is 0.05"–2.0". The adjusting knob can be turned approximately 9-3/4 revolutions. To increase differential setting, turn knob clockwise. From a starting position (knob fully backed out counter-clockwise), the first 4 turns only engage the tensioning spring, and do not change the differential setting. After the first 4 turns, each complete revolution of the adjustment knob changes the pressure setting by 0.2".

## 2.3 ADJUSTMENT OF PRESSURE SETTING

The filter alarm is set at RenewAire to 0.5" differential pressure. This is appropriate for installations at relatively high airflows, in which the clean filters have a pressure drop of 0.25" and the recommended filter loading imposes another 0.25" of pressure drop.

Because each system operates at different airflows, we recommend that the pressure differential be adjusted for each filter alarm **AFTER** the ERV unit has been balanced for airflow, using the following procedure:

1. Adjust the pressure differential switch to throw at a pressure differential just higher than that of the clean filter.
  - a. With clean filters and all other components in place, operate the ERV.
    - i. If alarm sounds, pressure differential setting will need to be increased.
    - ii. If alarm does not sound, pressure differential setting will need to be decreased.
  - b. Turn off ERV and adjust differential setting.
  - c. Operate the ERV again, repeating adjustment procedure until you have determined the highest pressure setting that does not sound the alarm.
2. Adjust the pressure differential switch for an additional pressure drop equal to the desired loading of the filter.
  - a. Typical recommended loading for pleated filters is an additional 0.25".
  - b. Turn adjustment knob clockwise to increase pressure setting. Each complete revolution of the adjustment knob changes the pressure setting by 0.2", so for a 0.25" setting, turn the knob 1-1/4 times revolutions.



FIGURE 2.3.0 SWITCH WITH COVER PLATE REMOVED

## 3.0 FACTORY ASSISTANCE

In the unlikely event that you need assistance from the factory for a specific issue with the ERV or its Filter Alarm Option, please call the Customer Service line at telephone number below. Please have the unit configuration code or serial number on hand to ensure faster service.

**To contact RenewAire Customer Service:**

**Call 800-627-4499**

**Email: [RenewAireSupport@RenewAire.com](mailto:RenewAireSupport@RenewAire.com)**

Remember that RenewAire Customer Service can only assist with the ERV and its options, it cannot resolve engineering issues that result from air handling system design by others.