

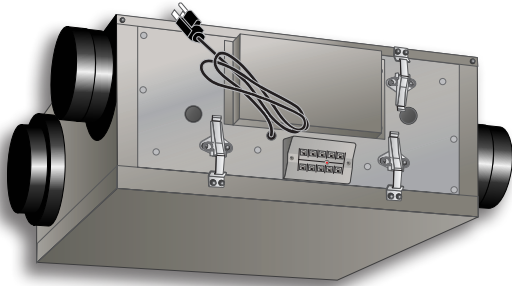


INDOOR AIR QUALITY
KIT AND ACCESSORIES

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Supersedes 01/2024

HEALTHY CLIMATE®
ERV AND HRV VENTILATORS

**INSTALLATION INSTRUCTIONS AND HOMEOWNER GUIDE FOR HEALTHY CLIMATE®
ENERGY RECOVERY VENTILATOR (ERV) AND HEAT RECOVERY VENTILATOR (HRV)**



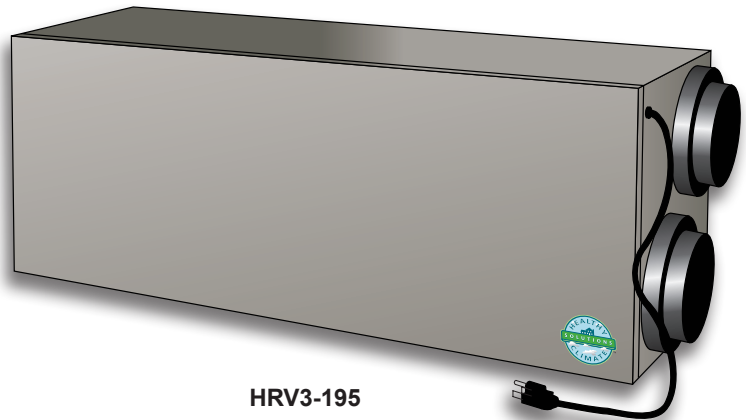
ERV5-130



**HRV5-150-TPD, HRV5-200-TPD,
HRV7-HEX095-TPD, HRV5-270-TPD-ECM,
ERV5-150-TPD, ERV5-175-TPD**



HRV6-150



HRV3-195

**THIS MANUAL MUST BE LEFT WITH THE OWNER
FOR FUTURE REFERENCE**

Recirculating Damper Defrost

Applicable Units:

HRV5-150-TPD, HRV6-150, HRV5-200-TPD, HRV7-HEX095-TPD, HRV5-270-TPD-ECM, ERV5-150-TPD, ERV5-175-TPD and ERV5-130)

During defrost a motor driven damper door mechanism closes off the supply air from outside allowing exhaust air to recirculate through the unit's core. During defrost cycle no ventilation is occurring. After the defrost period, the damper operates in the opposite direction to reopen the fresh air port. Defrost cycle repeats until the temperature rises above 27°F (-3°C).

Damper Defrost – Five Port Model (HRV3-195) - During defrost a motor driven damper door mechanism closes off the supply air from outside allowing a fifth port to open enabling warm air to be drawn in from around the unit. During defrost cycle stale air exhaust is still occurring.

After the defrost period, the damper operates in the opposite direction to reopen the fresh air port.

Defrost cycle re-peats until the temperature rises above 27°F (-3°C). (The defrost port can also be ducted to another location.)

Ventilation Operational Modes for both ERV and HRV

Today's modern, air tight homes require fresh outdoor air to maintain a healthy indoor air environment. The amount of ventilation required in a home depends upon:

- The number of occupants and their activity levels
- The way the home was built
- Personal preferences for air

The ERV/HRV introduces fresh air to your home while recovering energy from the air it exhausts. Specifically, an ERV/HRV that is properly installed, operated, and maintained will:

- Exhaust stale and contaminated air
- Introduce an equal amount of fresh outdoor air
- Recover the majority of the energy from the exhausted stale air
- Use the recovered energy to pre-heat or pre-cool outside air that is drawn into the house
- Distribute the fresh air throughout the house

How much ventilation is needed?

During seasons when windows and doors are closed (winter and summer, if air conditioned) the ERV/HRV should be set to operate continuously on low speed with the option of going to high speed as the need arises. For example, if a large number of people are present in the home, the unit should be switched temporarily to high speed. Conversely, when the home is unoccupied, an intermittent operational mode (e.g. 20 minutes on / 40 minutes off) may be used.

Selecting the Ventilation Rate That is Right for You.

The modes of operation and speeds are used to adjust your indoor ventilation rate. Experiment with the ventilation levels in your home to evaluate the ideal amount of ventilation to suit your home and personal preferences. Operational

modes available to you will depend on the main control that is installed. Some features and modes may be unavailable to you.

Table 7. Operational Modes



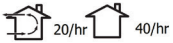
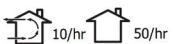




Mode	Icon	Description
Continuous Ventilation		This mode of operation provides continuous ventilation within the home. You may, for example, select Continuous Ventilation at low speed for normal operation and increase to high speed during increased activity levels, such as cooking and showering, etc.
20 Minutes On, 40 Minutes Recirculation*		This mode ventilates for 20 minutes and circulates the household air for 40 minutes each hour. This mode is not applicable if your HRV is connected to a forced air system. This mode is useful when "Continuous Ventilation" mode is providing too much ventilation.
20 Minutes On, 40 Minutes Standby*		This mode of operation provides 20 minutes of ventilation each hour. You can use this ventilation mode at low speed for low household activity levels or when the home is unoccupied. This mode is useful if "Continuous Ventilation" mode is providing too much ventilation.
10 Minutes On, 50 Minutes Standby*		This mode of operation provides 10 minutes of ventilation each hour. You can use this ventilation mode at low speed for low household activity levels or when the home is unoccupied. This mode is useful if "20 Minutes On, 40 Minutes Standby" mode is providing too much ventilation.
Continuous Recirculation*		This mode continuously recirculates your household air (no ventilation). This mode is not applicable if your HRV is connected to a forced air system.
Continuous Low Fan Speed		This mode will operate the fan in low speed continuously at the selected operating mode (Ventilation or Recirculation).
Continuous High Fan Speed		This mode will operate the fan in high speed continuously at the selected operating mode (Ventilation or Recirculation). This mode is HI useful when occupancy or activity levels in the home is high for an extended period of time.

Table 7. Operational Modes

Mode	Icon	Description
Recirculation		Recirculates existing household air without introducing fresh air. Recirculation modes (II and V) are not applicable if your HRV is connected to a forced air system, since your forced air system already circulates the household air. Recirculation modes are unavailable on some models.

* This mode of operation is only available on the Digital 5 Speed / 5 Mode Control (27C77).

Lennox Smart Thermostat Ventilation Control Installation and Setup Guide



Figure 6. Lennox S30 with Smart Hub 2.0



Figure 7. Lennox E30



Figure 8. Lennox S40



Figure 9. Lennox M30

All of the models reference in “Table 2. Model and Catalog Numbers” on page 3 have direct compatible with Lennox E30, M30 and S30 Smart Thermostats.

The Lennox S40 Smart Thermostat requires the use of a Equipment Interface Module (EIM), catalog number 22X18) for ventilation support.

!IMPORTANT

The ERV/HRV may be used with an Lennox Smart Thermostat control system. The S30 will require a 2.0 smart hub.

Do not connect the S30 or E30 to the ERV/HRV before confirming the thermostats have 03.50.XXX or higher software.

FEATURES

The referenced Lennox Smart Thermostats can support Lennox ERV or HRV models in the following modes:

- ASHRAE 62.2 compliant mode.
- Non-ASHRAE compliant mode - Environmental overrides uses outdoor temperature and outdoor dew point within a set parameter range.
- Timed mode - Runs ventilation equipment for a timed amount per hour.
- User demanded ventilation.
- Provides ventilation for zoned and non-zoned applications.

INSTALLATION OVERVIEW

- Refer to “ERV and HRV Wiring Diagrams” on page 13 for wiring connections.
- For installer information concerning ventilation rates and ventilation rates, thermostat ventilation control parameters, see the following sections.
- For end user information go to “Lennox Smart Thermostat Ventilation Control User Guide” on page 20.
- Additional help and on-line tutorials are also available on the Lennox support page at:

<http://www.support.lennoxicomfort.com/help/index.html>

when outdoor temperatures are less than 59°F (15°C) .

During the heating season, the operation of the HRV may reduce indoor humidity levels sufficiently to eliminate the need for further dehumidification. Use the adjustable dehumidistat feature located on the main control if your home requires further dehumidification during the heating season.

This feature aggressively addresses high indoor humidity levels by initiating high speed ventilation when the indoor humidity levels rise above the set point on the control. Once the humidity in the house is reduced, the HRV will revert back to its previous setting.

We suggest operating the HRV for the first few days without use of the Dehumidistat function to observe if a further dehumidification effect will be required.

The dehumidistat operates in percentage of RH (relative humidity) with 60 being high and 20 being low. If after a few days, further dehumidification is required (the house is still too humid), set the humidity level to a lower amount.

The average person is comfortable between 30% and 50% RH. The Dehumidistat should be set to **OFF** for all seasons except the heating season since a dehumidifying effect only occurs when the outdoor air is dryer than the indoor air.

Dehumidistat Notes

Dehumidistat Disable automatically disables the dehumidistat function on the main control when outdoor temperatures exceed 59°F (15°C) for a full 24 hour period. All other HRV features and functions operate normally while the Dehumidistat Function is disabled.

Dehumidistat Re-Enable automatically re-enables the dehumidistat function when the outdoor temperature drops below 59°F (15°C) for a full 24 hour period or if the HRV is reset (unplugged for 30 seconds).

H/C ERV/HRV Ventilation Push Button Control (Y8249)

The control offers the following features to control your home's ventilation.

- Two speed fan setting (LOW / HIGH)
- Standby setting (fan OFF)
- Electronic dehumidistat
- Compatible with wireless timers. Connect to 3-wire 20 gauge low voltage wire.
- Designed to be mounted in a standard 2 x 4" (51 x 102 mm) electrical box or surface mounted to a wall.

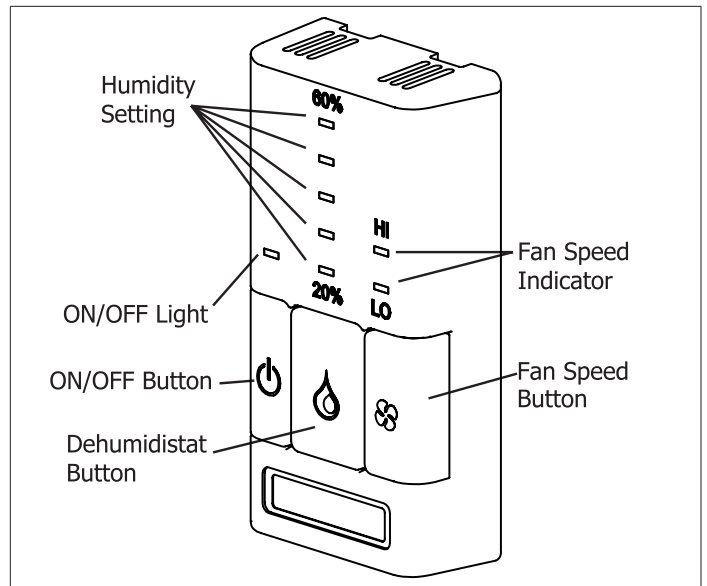


Figure 15. H/C ERV/HRV Ventilation Push Button Control (Y8249)

Table 11. H/C ERV/HRV Ventilation Push Button Control (Y8249) Settings

Settings	Icon	Description
Turning on the Control		Press and release the ON/OFF button. The light above will illuminate.
Setting the Ventilation Speed		Press and release the Fan button to select LOW or HIGH fan speed. The corresponding "Indicator Light" will illuminate. If both LO and Hi indicator lights are off, the fan is OFF but will turn ON if required by the Dehumidistat or remote Timer (if installed).
Humidity Control		Your unit will reduce indoor humidity when outdoor humidity levels are lower than indoor humidity levels. This feature is only effective when the outdoor temperature is below 59°F (15°C).
Setting the Dehumidistat		Press and release the Dehumidistat button until the Dehumidistat Light is at the desired setting. After a few seconds the Dehumidistat light will either flash or be on continuous. A flashing light indicates the humidity level is higher than the setting and the unit is operating on high speed ventilation. A continuous light indicates the humidity level is lower than the setting. The Dehumidistat will override the current speed setting to HIGH speed. The Dehumidistat function can be turned OFF by pressing the button until no Dehumidistat light is on. Refer to the "How the Dehumidistat Works" on page 20 section of this instruction for a detailed description of Dehumidistat functionality.

! IMPORTANT

Only one main control can be installed on the system. Timers will not function when mode of operation is set to "OFF", unless specifically installed for that function. See "Main Control Standby Setting" on page 35 in this instruction.

H/C ERV/HRV Deluxe Ventilation Control (27C77)

The control offers the most advanced features to control your home's ventilation.

- Five speed fan setting
- Standby setting (fan speed 0)
- Electronic dehumidistat
- 20/40/60 HIGH speed override button
- Compatible with H/C Ventilation Wireless Timer (Y8251)
- Easy to read back-lit LCD screen
- Slim-line design
- Connect to 3-wire 20 gauge low voltage wire

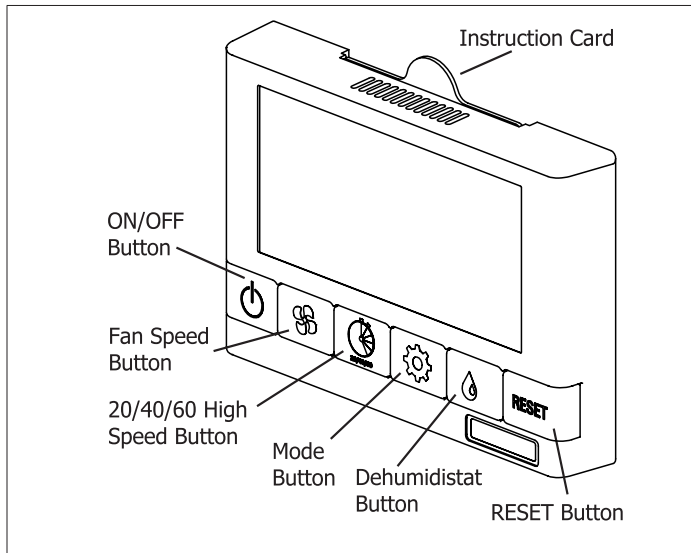


Figure 16. H/C ERV/HRV Deluxe Ventilation Control (27C77)

Table 12. Operational Modes

Function	Icon
Continuous Ventilation	
20 Minutes On, 40 Minutes Recirculation	
20 Minutes On, 40 Minutes OFF	
10 Minutes On, 50 Minutes OFF	

Table 12. Operational Modes

Function	Icon
Continuous Recirculation	

Table 13. Digital Control Operations

Mode	Icon	Description
Turning on the Control		Press and release the ON/OFF button. The light above will illuminate.
Setting the Ventilation Speed		Press and release the Fan button to select one of the five fan speeds. The fan speed will be displayed on the screen beside the Fan symbol. Standby mode (Fan OFF) is indicated as speed 0. The fan will turn ON if required by a remote Timer (if installed).
20/40/60 High Speed Button		Press and release the 20/40/60 High Speed button to temporarily initiate HIGH Fan speed for 20, 40 or 60 minutes. Press once for 20 minutes, twice for 40 minutes, three times for 60 minutes and four times to disable. The timer symbol will appear on the screen and the corresponding section of the clock will flash to indicate the time interval selected. When the timer runs out, the unit will return to its previous operating speed.
Setting the Mode of Operation		There are five modes of operation available with the Digital 5-Speed / 5-Mode Control. Pressing the Mode button will display the different modes of operation on the screen.
Setting the Dehumidistat		The Digital 5-Speed / 5-Mode Control displays the current indoor humidity in LARGE numbers and the Dehumidistat setting in SMALL numbers on the screen. If the indoor humidity is above the set point, the control will initiate HIGH Fan speed operation in Ventilation mode until the indoor humidity has been reduced below the set point. Press and release the Dehumidistat button to adjust the Dehumidistat setting. The Dehumidistat can be set between 25% RH and 60% RH. To disable the Dehumidistat function on the control, cycle through the setting until OFF is displayed. Refer to "How the Dehumidistat Works" on page 20 in this instruction for a detailed description of the Dehumidistat function.
Reset Button RESET		The RESET button will clear the current Fan, Timer, Mode and Dehumidistat settings and set the unit into LOW fan speed, Ventilation mode and a Dehumidistat setting of 40%.
Service Indicator		A service indicator appears when the unit requires routine maintenance. Refer to "Blower Assembly Service (Dealer Only)" on page 60" in this instruction. Press and hold the ON/OFF button for 5 seconds to reset the service indicator once maintenance has been performed.

H/C 20/40/60 Minute Timer (Y2169) (Optional) and H/C Ventilation Wireless Timer (Y8251)

Timers are available as wired or wireless. The Timer will override the operational mode of the main control (regardless of the setting) and initiate HIGH fan speed Ventilation for 20, 40 or 60 minutes. The ERV/HRV will return to your selected operational mode and fan speed setting upon completion of the timer cycle.

You may wish to have timers installed in the poorest air quality areas of you home (bathrooms, kitchen etc.).

USING TIMERS

Press the select button to initiate high speed ventilation for 20, 40 or 60 minutes. The corresponding status light will illuminate to indicate either 20, 40 or 60 minutes of high speed fan operation. Press the Select Button until the status lights are no longer illuminated to cancel high speed timer operation.

H/C 20/40/60 MINUTE TIMER (Y2169) (OPTIONAL)

The Wired Timer has a lockout mode feature that can be set to disable the Timer. Set lockout by holding the select button for five seconds. Unlock by holding for 5 seconds.

Connect to 3-wire, 20-gauge (min.) low-voltage wire and install in a standard 2 x 4" (51 x 102 mm) electrical box.



Figure 17. H/C 20/40/60 Minute Timer (Y2169) (Optional)

H/C VENTILATION WIRELESS TIMER (Y8251)

NOTE: Can only be used with basic control Y8249 or digital control 27C77.

The Ventilation Wireless Timer may be located in a remote location in the home (ex. Bathroom) when paired to the main wall control. Wireless Timers have an estimated range of 40 feet (12 meters) with no obstructions. To increase the range of a Wireless 20/40/60 Minute Timer, a Repeater (Y8252) may be used. Multiple timers can be paired to a single main control. Designed to be mounted in a standard 2 x 4" (51 x 102 mm) electrical box or surface mounted to a wall.

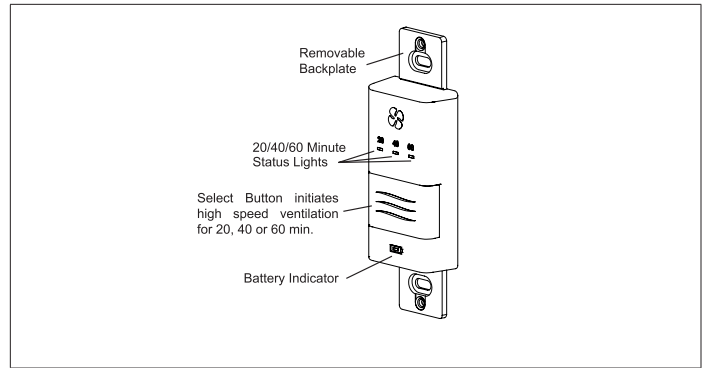


Figure 18. H/C Wireless 20/40/60 Minute Timer (Y8251)

REPLACING THE BATTERY

The red LED Battery indicator will illuminate when the battery on the timer needs to be replaced in the Wireless 20/40/60 Minute Timer. Replace the battery by:

- Pulling the face plate off the wall.
- Replacing the battery located on the back of the Timer Face Plate.
- Re-attaching the face plate to the back plate. Be careful not to damage the tabs on the back plate when re-attaching the face plate.

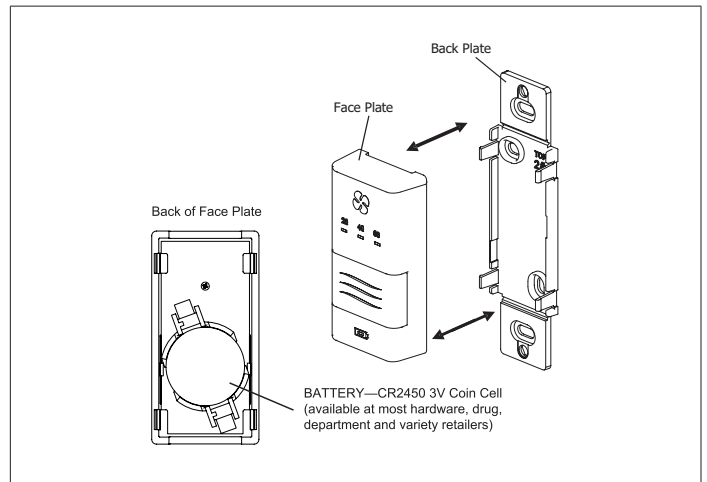


Figure 19. Replacing the Battery