ES-DVC (Digital Ventilation Control) Installation and Use Instructions

Thank you for purchasing the ES-DVC from Nu-Air Ventilation Systems Inc.!

The ES-DVC, with its easy-to-use, touch-sensitive pads, its on-board humidity sensor, and its wide array of operation modes, will enable you to control your H/ERV to suit your lifestyle and to maximize its efficiency.

⚠️ Installation Notes. Read carefully.

The ES-DVC is a central control unit intended for use with ES Series H/ERVs:

- For models ES100 and ES170 with serial number of **ES1001108429, ES1701108426 and higher**.
- For ES100 and ES170 models with lower serial numbers than those listed above (refer to the last three digits), ask your Nu-Air representative about a firmware update.

The ES-DVC should be centrally located in the living space, much like a central thermostat, to ensure optimal H/ERV operation.

Unplug your H/ERV when connecting your ES-DVC to it. Although your ES-DVC is protected against mis-wiring, incorrect wiring may lead to damage of your system. Only qualified individuals should install controls for any air management appliance.

Your ES-DVC is equipped with a memory which will allow it to resume its current state of operation in the case of a power interruption.

Your ES-DVC installation kit includes the following:

1. 1 ES-DVC control
2. 1 mounting plate
3. 2 mounting plate screws
Wiring: Connecting your ES-DVC to your H/ERV.

On the H/ERV, connect 4-strand wire to the removable 4-wire terminal block and to the designated wire traps on the back of the ES-DVC. Use a 2-3 mm flat-headed screwdriver.

✔ The ES-DVC runs on 12VDC supplied by the H/ERV—it is only ON when the H/ERV is plugged in and powered. The ES-DVC can be wired in series or parallel with other ES Series controls.

✔ 24V switches connected to the removable 10-wire 24V terminal block can be used with the ES-DVC (see: ES Series Installation Manual for options).

Mounting the ES-DVC on a wall.

1. Attach the mounting bracket (A) to a standard residential electrical wall box (not included) with the screws provided (B). Use drywall anchors (not included) to secure the bracket to the wall if a wall box is not present.
2. Fit the bottom of the ES-DVC case (C) over the points along the bottom edge of the mounting bracket so that these points set within the ES-DVC case as deeply as possible.
3. Slide the top of the ES-DVC over the top edge of the mounting bracket.

Typical location for the ES-DVC is in a central area of the living space.

Reverse steps 2 & 3 to remove the ES-DVC.
Using Your ES-DVC.

Please take a moment to become familiar with the features of your ES-DVC. The graphic at right depicts the ES-DVC while it is in an operation state (i.e., running) with a remote timer activated.

Current Mode/Product Model (flashes alternately)

Current Operation

Check Filter message (90-day run-time clock)

Ambient relative humidity (5% per bar)

Navigation Pads

RH sensor port

Navigation Pads and their functions:

<table>
<thead>
<tr>
<th>Button</th>
<th>Functions</th>
</tr>
</thead>
</table>
| +      | 1. increase relative humidity setting  
        | 2. scroll up when selecting menu options  
        | 3. navigate duration of the built-in high speed timer |
| -      | 1. decrease relative humidity setting  
        | 2. scroll down when selecting menu options  
        | 3. navigate duration of the built-in high speed timer |
| >>     | 1. open the SELECT MODE menu  
        | 2. select a desired operation mode  
        | 3. select “NEXT” when navigating sub-menus |
| <<     | 1. open the built-in timer menu  
        | 2. select “Exit” when navigating sub-menus |

* These pads are also used to enter SETTINGS codes which are discussed later.

After approximately 12 seconds of no navigation pad activity, any mode menu or sub-menu screen will revert back to the operation state screen.

Selected text while navigating is highlighted with a DARK BAR around it.

Language Selection

The factory default language of the ES-DVC is English, however, changing the language setting is easy:
1. Touch >> to enter the SELECT MODE menu, then use + or – until you reach MENU 2.
2. Use >> to select MENU 2.
3. Use + or – to navigate to LANGUAGE, then touch >> to enter the language sub-menu.
4. Touch + or – to navigate to the desired language, then touch >> to select a language.
Check Filter Alert.

The ES-DVC is equipped with an internal run-time clock which will alert you with a CHECK FILTER message after 90 days of run-time. When this message appears, you should check your filters to see if they need to be:

- cleaned (vacuuming tends to make filters last longer),
- washed, or
- changed (often after 2+ years).

✓ Note that the run-time clock will not count days when the H/ERV is in OFF mode or when the H/ERV is not powered.

✓ In the case of a power interruption, or if the H/ERV is temporarily unplugged, the run-time clock will save the current days of run-time and resume counting from the same point when the power supply resumes.

Resetting the Filter clock.

1. Navigate to MENU 2 and select FILTER
2. Touch >> to reset the run-time clock to 0 days.

Setting Relative Humidity (RH%).

When the ES-DVC is in an operation state (i.e. not displaying a MENU screen), the RH may be adjusted, using the + or – pads. With the first touch of one of these pads, you will notice that SET will flash on the bottom-centre of the screen, indicating that the ES-DVC is in RH adjustment mode. Subsequent touches of the + or – will change the RH setpoint 5% higher (to the right) or 5% lower (to the left). When you reach the desired RH level, simply stop pushing + or –.

✓ The RH% scale on the ES-DVC runs from 30% to 80%. Beneath this subdivided bar you will note approximate setting recommended for the season, based on typical outdoor temperatures. Generally, a dehumidistat is set in the 40-60% range in the fall, winter and spring, and in the 70-80% range in the summer. Based on lifestyle, individual comfort, and geographic location, you might alter your setting.

✓ When the relative humidity in the room exceeds the RH setpoint, the H/ERV will operate in high speed until the relative humidity in the space falls below the RH setpoint.
Selecting a Mode of Operation.

1. Touch the >> pad and the SELECT MODE menu will appear. You will note that OFF and STANDBY can be initiated from here.
2. Use the + or – pads to navigate to the desired mode.
3. Touch the >> pad to select the desired option. Touch the << pad to select an option from a mode sub-menu. Touch the << pad to EXIT any mode menu.

After approximately 12 seconds of no navigation pad activity, any mode menu screen will revert back to the operation state screen.

Operating Modes

OFF. The unit is off, but can be tuned on by an ES-M1, ES-M2, ES-M3, or ES-M4 control. The ES-T1 timer will not activate the H/ERV when the ES-DVC is set to OFF.

STANDBY. The unit is inactive, but ready for a command from the built-in humidity sensor, a remote timer or other remote switch.

VENTILATION. Two operating modes:

1. Low Speed: The H/ERV will run in low speed full-time. Timers, the built-in humidity sensor, or other remote switches are able initiate other modes of operation, such as high speed.
2. High Speed: The H/ERV will run in high speed full-time. Other switches are able to initiate other modes of operation.

CYCLES and RECIRCULATION (CYCLES/REIRC). Three operating cycles:

1. 20 Low/40 Standby: The H/ERV runs in a continuous cycle of 20 minutes in low speed, then 40 minutes in standby. Remote switches, timers or the built-in humidity sensor will temporarily override this cycle when they are activated.
2. 20 Low/40 Recirc: The H/ERV runs in a continuous cycle of 20 minutes in low speed, then 40 minutes in recirculation. Outside air is not introduced into the space. Remote switches, timers or the built-in humidity sensor will temporarily override this cycle when they are activated.
3. Recirc Low: The H/ERV runs continuously in recirculation mode. Outside air is not introduced into the space. Remote switches, timers or the built-in humidity sensor will temporarily override this cycle when they are activated.

In defrost and cycle modes, ES Series H/ERVs do not induce indoor negative pressure nor do they recycle exhaust air; rather, they redistribute ambient room air.

Using the Built-in Timer.

1. In the Operation State menu, touch the << to open the timer menu.
2. Use + or – pads to select from 15, 30, 45 or 60 minutes high speed operation. You can navigate to “0” to turn off the timer.
3. After 4 seconds of no navigation activity, the timed cycle will start, or you can actively start the timed cycle by touching >>.

The timer will count down from its setting so that you can observe how much time remains in the current high speed cycle by entering the timer screen.
If you use the ES-DVC to turn off the H/ERV while a timer is engaged, the system will complete the remainder of the timed cycle and then turn itself off.

Setup for Non-Recirculating Units.

Your ES-DVC is factory-set to work with recirculating H/ERVs. The ES-DVC recirculation setting can be altered in the field, but **this should only be done by individuals who are familiar with the characteristics and application of the associated model of H/ERV.** Consult Nu-Air or your local Nu-Air Representative before you attempt to change the recirculation feature.

You can change the recirculating feature once you have altered it, i.e. adjustments are not permanent.

Although the recirculating feature has other uses in warmer and/or cool, dry climates, the primary function of the recirculating mechanism is for defrosting the H/ERV recovery core under freezing conditions. Changing this function on the ES-DVC will not alter the way your H/ERV reacts to freezing conditions.

To alter the recirculation feature, follow this procedure:

1. In MENU 2 select SETUP. A warning message will appear. Touch >> to proceed.

2. Use + and/or – to navigate to 32 (you may press and hold), then touch >> to proceed.

   To help prevent unintended SETUP alterations, there is no NEXT prompt on this screen).

3. Use + and/or – to navigate to OUT OF SERVICE and >> to select it. This operation will remove recirculation functions from the SELECT MODE menu.

The next time you enter the SELECT MODE menu, you will notice that the CYCLES/RECIRC selection has now changed simply to CYCLE (below left). Subsequently, the CYCLE sub-menu will list only one option: 20 Low/40 STANDBY (below right).