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
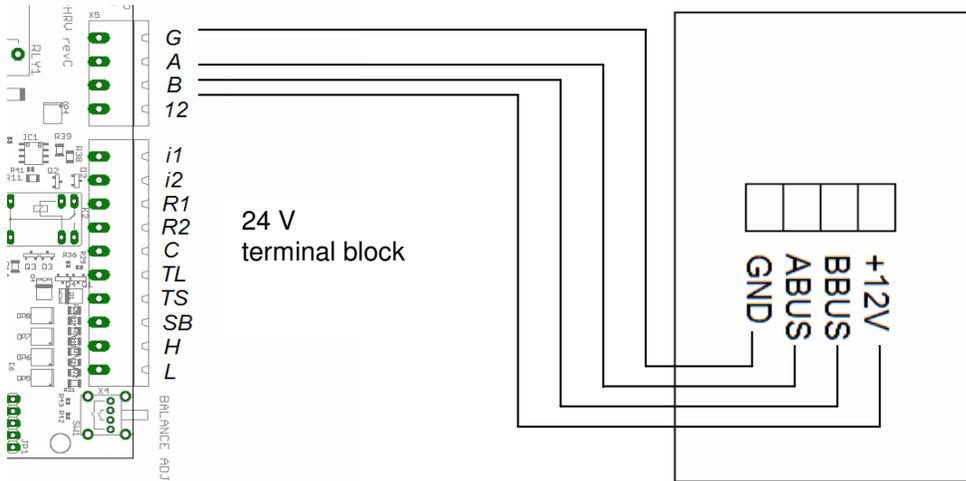
Wiring: Connecting your ES-DVC to your H/ERV.

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).
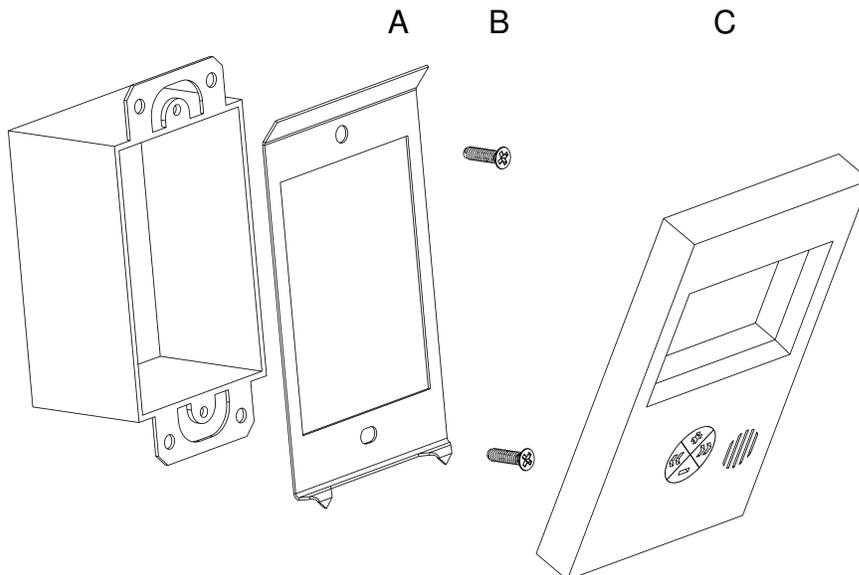
H/ERV 12VDC Connections   ES-DVC (Back View)

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.
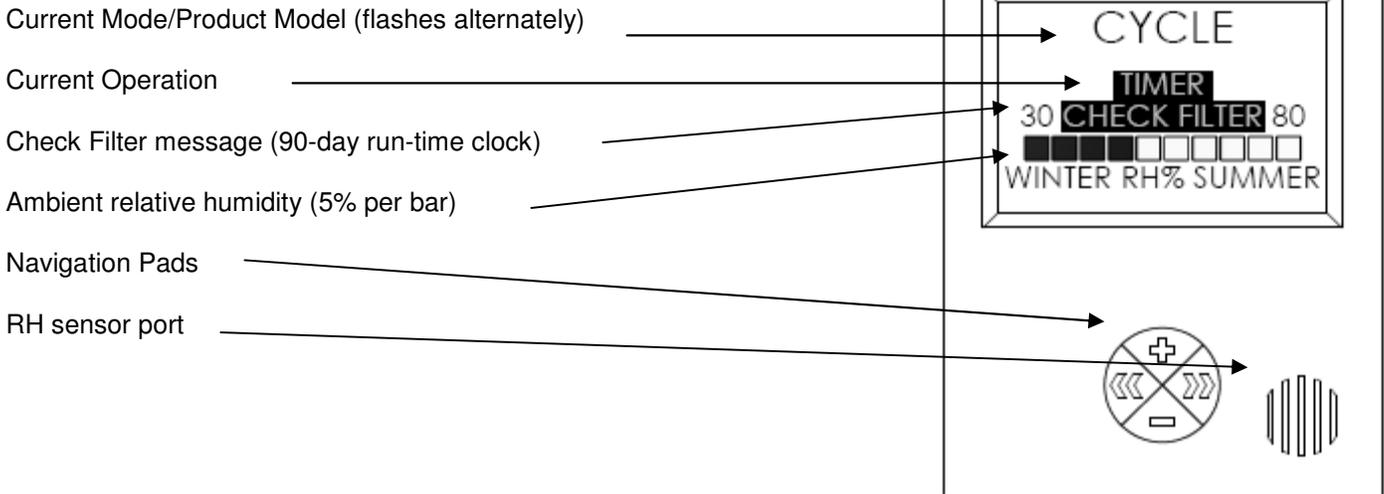3. Slide the top of the ES-DVC over the top edge of the mounting bracket.

A   B   C

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:

+ * "Plus Sign"	1. increase relative humidity setting 2. scroll up when selecting menu options 3. navigate duration of the built-in high speed timer
– * "Minus Sign"	1. decrease relative humidity setting 2. scroll down when selecting menu options 3. navigate duration of the built-in high speed timer
>> "Double-Right Arrow"	1. open the SELECT MODE menu 2. select a desired operation mode 3. select "NEXT" when navigating sub-menus
<< "Double-Left Arrow"	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.
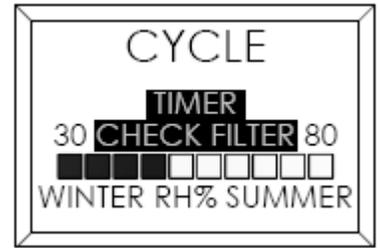
Check Filter Alert.

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.
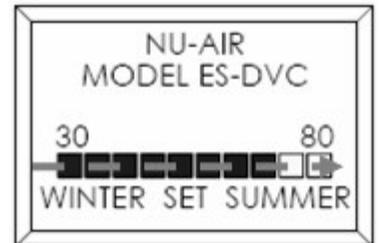
Resetting the Filter clock.

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.

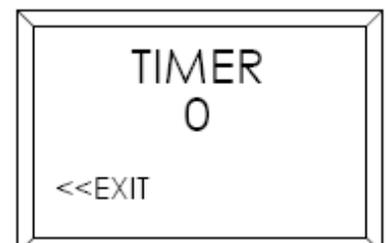**CYCLES and RECIRCULATION (CYCLES/REIRC).** Three operating cycles:
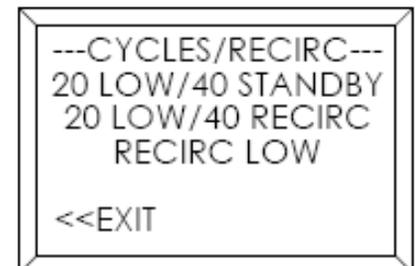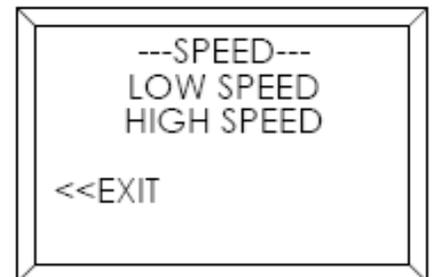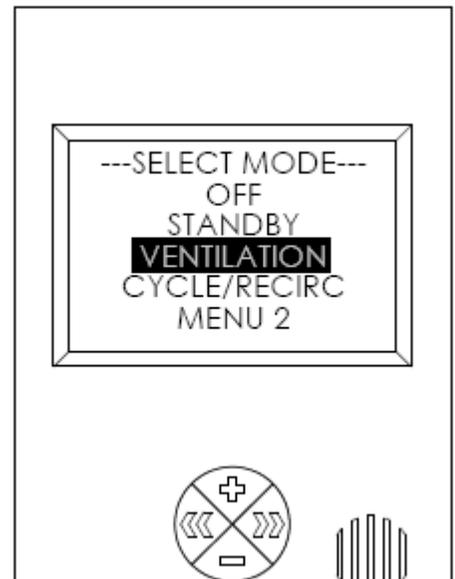
1. **20 Low/40 Standby:** The H/ERV runs in a continuous cycle of 20 minutes in low speed, then 40 minutes in standby. Remote switches, timers or the built-in humidity sensor will temporarily override this cycle when they are activated.

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/High:** 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 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**.

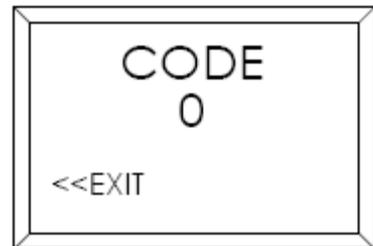You can change the recirculating feature once you have altered it, i.e. adjustments are not permanent.

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:

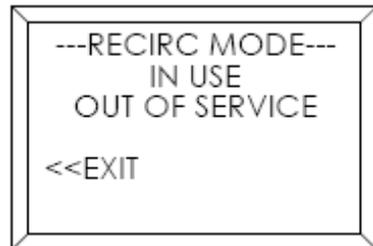1. In MENU 2 select SETUP. A warning message will appear.
Touch **>>** to proceed.

```
WARNING
CONSULT PRODUCT
MANUAL BEFORE
CHANGING SETUP

<<EXIT        NEXT>>
```

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).

```
CODE
0

<<EXIT
```

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.

```
---RECIRC MODE---
IN USE
OUT OF SERVICE

<<EXIT
```

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).

```
---SELECT MODE---
OFF
STANDBY
VENTILATION
CYCLE
MENU 2
```

```
---CYCLE---
20 LOW/40 STANDBY

<<EXIT
```