

Touchscreen Control+ (TC1+)

Setup Guide for EV Premium+ Series



PRIOR TO UNIT START-UP:

⚠ WARNING

Installation of unit and electrical wiring must be done by a qualified professional(s) in accordance with all applicable codes, standards and licensing requirements. Before servicing or cleaning the unit, switch power “off” at the disconnect switch or building service panel and lock-out/tag-out to prevent power from being accidentally turned on. This unit must be grounded as per instructions.

⚠ WARNING

ARC FLASH AND ELECTRIC SHOCK HAZARD

All RenewAire ERV models operate on high voltages that can cause severe electric shock. Some models use high voltages that are capable of causing dangerous arc flash. The Touchscreen Control+ uses a low voltage RS-485 connection. Whenever accessing any part or component of the unit, disconnect all electric power supplies, verify with a voltmeter that electric power is OFF and wear protective equipment per NFPA 70E when working within the electric enclosure. Failure to comply can cause serious injury or death.

The unit disconnect switch contain live high-voltage.

The only way to ensure that there is NO voltage inside the unit is to install and open a remote disconnect switch and verify that power is off with a voltmeter. Refer to unit electrical schematic.

Follow all local codes.

⚠ CAUTION

RISK OF ELECTRIC SHOCK OR EQUIPMENT DAMAGE

Whenever electrical wiring is connected, disconnected or changed, the power supply to the unit and its controls must be disconnected. Lock and tag the disconnect switch or circuit breaker to prevent accidental reconnection of electric power.

⚠ CAUTION

RISK OF CONTACT WITH HIGH-SPEED MOVING PARTS.

Disconnect all local and remote power supplies, verify with a voltmeter that electric power is off and all fan blades have stopped rotating before working on the unit.

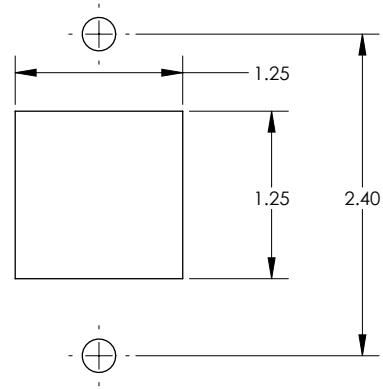
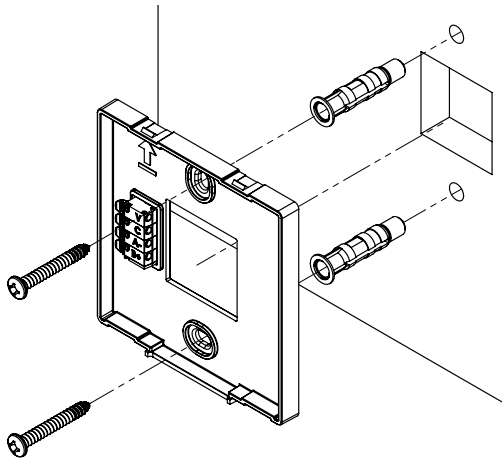
Do not operate this unit with any cabinet panels removed.

PURPOSE

The Touchscreen Control+ (TC1+) provides a user friendly touchscreen control to setup and operate our EV Premium+ series of energy recovery ventilators (ERVs). This accessory provides a solution to be compliant with 2025 California Energy Commission's (CEC) Title 24, Part 6 ERV Fault Indicator Display (FID) requirements.

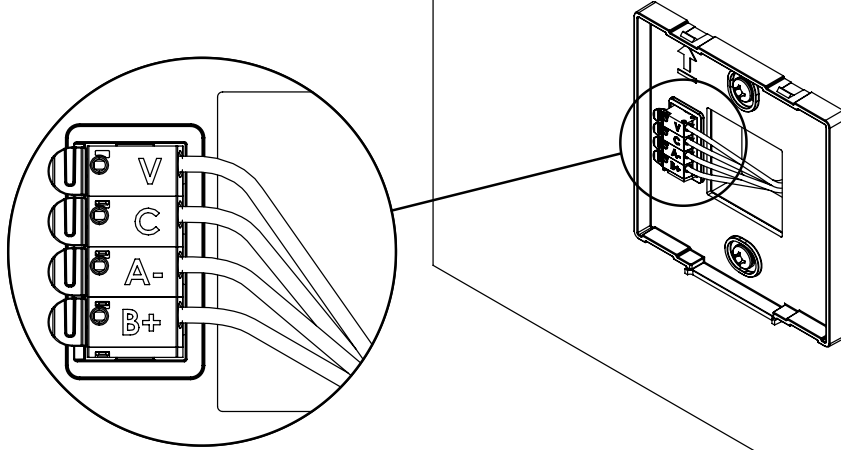
INSTALLATION

1. Mount back plate using provided screws and anchors.

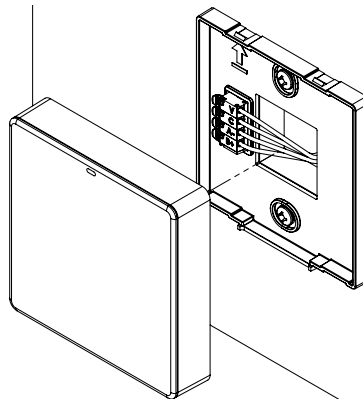


*Dimensions shown in inches.

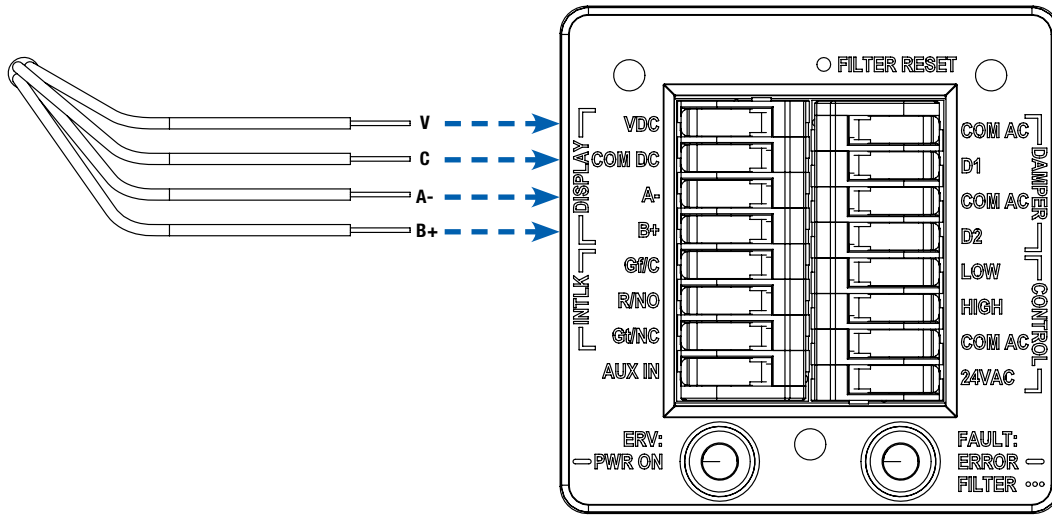
2. Connect 4-conductor wire to the back plate terminal block. It is recommended to use shielded, two twisted pairs cable, 18 to 22 AWG and keep the total length under 100 feet.



3. Attach screen to back plate.

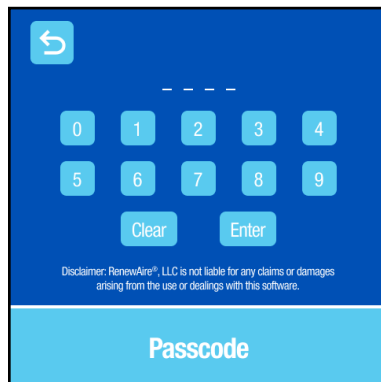


4. Connect 4-conductor wire to ERV terminal block. Wire connected to the V terminal on back plate needs to be wired to the VDC ERV terminal, C on back plate to COM DC on ERV terminal, A- to A-, and B+ to B+.



SETUP

STEP 1: PASSCODE



Input 1000 to edit, or 0000 to view, unit setup parameters, tap Enter to continue.



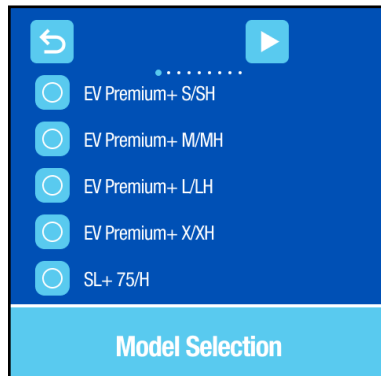
NOTE: From the factory:

- Unit will be set to ventilate in the supply and exhaust airstreams and the runtime will be set to External Signal or Off.
- EVP+ S/SH set to: LOW = 75 CFM, HIGH = 120 CFM
- EVP+ M/MH set to: LOW = 125 CFM, HIGH = 200 CFM
- EVP+ L/LH set to: LOW = 150 CFM, HIGH = 250 CFM
- EVP+ X/XH set to: LOW = 200 CFM, HIGH = 350 CFM



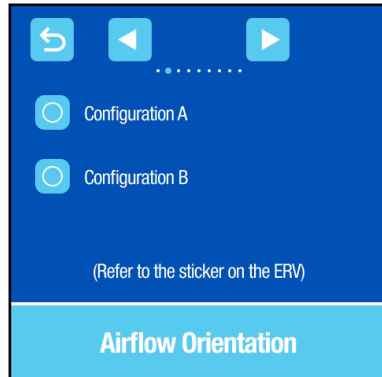
NOTE: By selecting the Factory Reset the unit will default to the Off state and airflow setpoints must be reprogrammed. In some instances, you may need to set the unit type, click save, then cycle unit power in order to be able to increase the constant volume setpoint above 120 CFM.

STEP 2: MODEL SELECTION

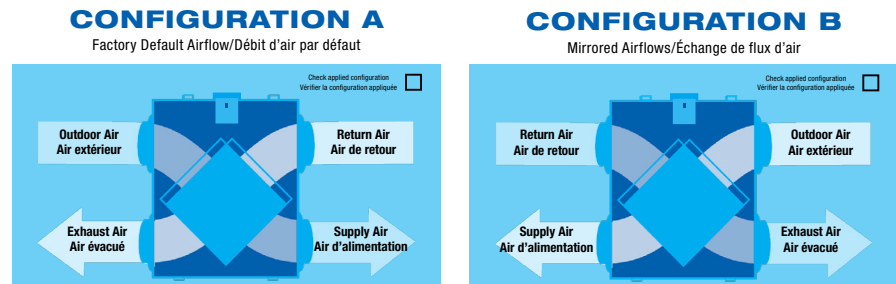


Confirm or select the ERV model paired with the TC1+ and arrow right.

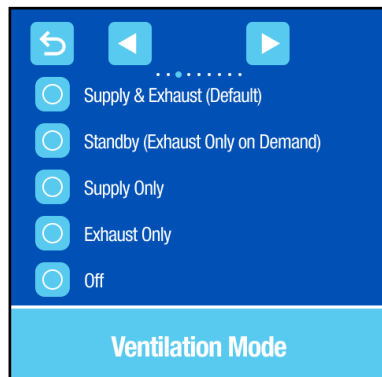
STEP 3: AIRFLOW ORIENTATION



Select the airflow configuration required for your installation. The unit will come in Configuration A from the factory.



STEP 4: VENTILATION MODE

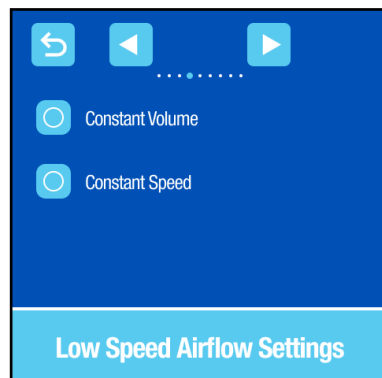


Select the desired ventilation mode for the unit to operate in.

RenewAire recommends using the default mode of both supply and exhaust active as the setup ventilation mode.

Standby mode results in both supply and exhaust airstreams idling, so there is no active ventilation. While in standby mode, when ventilation is activated by any control (e.g. boost mode on the touchscreen or by a countdown timer in the bathroom), only the exhaust fan will be activated. This mode is primarily a temporary one for when outside air conditions deteriorate, for example with high levels of PM2.5 from wildfires, but bathroom exhaust ventilation is achieved with the ERV.

STEP 5: LOW SPEED AIRFLOW SETTINGS



Select if you want to setup the unit in constant volume or constant speed mode. Constant volume commands the fans to auto balance to the desired CFM setpoints on the following screens, while the constant speed commands the fans to run at a constant speed. Units can be setup so low and high speed will function in any combination of constant volume and constant speed.



NOTE: If makeup air is required, the EV Premium+ series can provide this function while operating as a single-speed unit. To configure, set the Low Speed to the desired single speed settings. Then set the High Speed settings for your makeup air setpoint by selecting Constant Speed mode, adjust the Supply Air to the desired percentage of maximum fan speed, and set the Exhaust Air to zero. This allows the Boost function to activate Supply Air only.

STEP 6A: LOW SPEED AIRFLOW CONSTANT VOLUME

Set both the Supply and Exhaust desired CFM setpoints. Can be programmed in 5 CFM increments.

EV Premium+ S/SH range: 30–120 CFM

EV Premium+ M/MH range: 50–200 CFM

EV Premium+ L/LH range: 75–250 CFM

EV Premium+ X/XH range: 100–350 CFM



NOTE: If your ducting static pressures are too high, the fans may not reach the target setpoint.

STEP 6B: LOW SPEED AIRFLOW CONSTANT SPEED

Set both the Supply and Exhaust to the desired percent of max speed. Airstreams will need to be balanced based on the system effects. You can balance using the live values on the Home Screen or using a manometer. Can be programmed in 1% increments.

Typical unit percent operating range: 20-100%. Set at 0% for Off.

STEP 7: LOW SPEED RUNTIME

Select the low speed runtime in minutes per hour, Continuous, or External Signal or Off.

STEP 8: HIGH SPEED AIRFLOW SETTINGS

Repeat for the high speed setpoints.

Touchscreen activated Boost Mode or any external controller wired through the HIGH ERV terminal will run at the high speed setpoint.

STEP 9A: HIGH SPEED AIRFLOW CONSTANT VOLUME

Supply
200
CFM

Exhaust
200
CFM

High Speed Airflow

STEP 9B: HIGH SPEED AIRFLOW CONSTANT SPEED

Supply
100
% of Max Speed

Exhaust
100
% of Max Speed

High Speed Airflow

STEP 10: SAVE SETUP

Save & Start Ventilation

Cancel (Not Saved)

Factory Reset

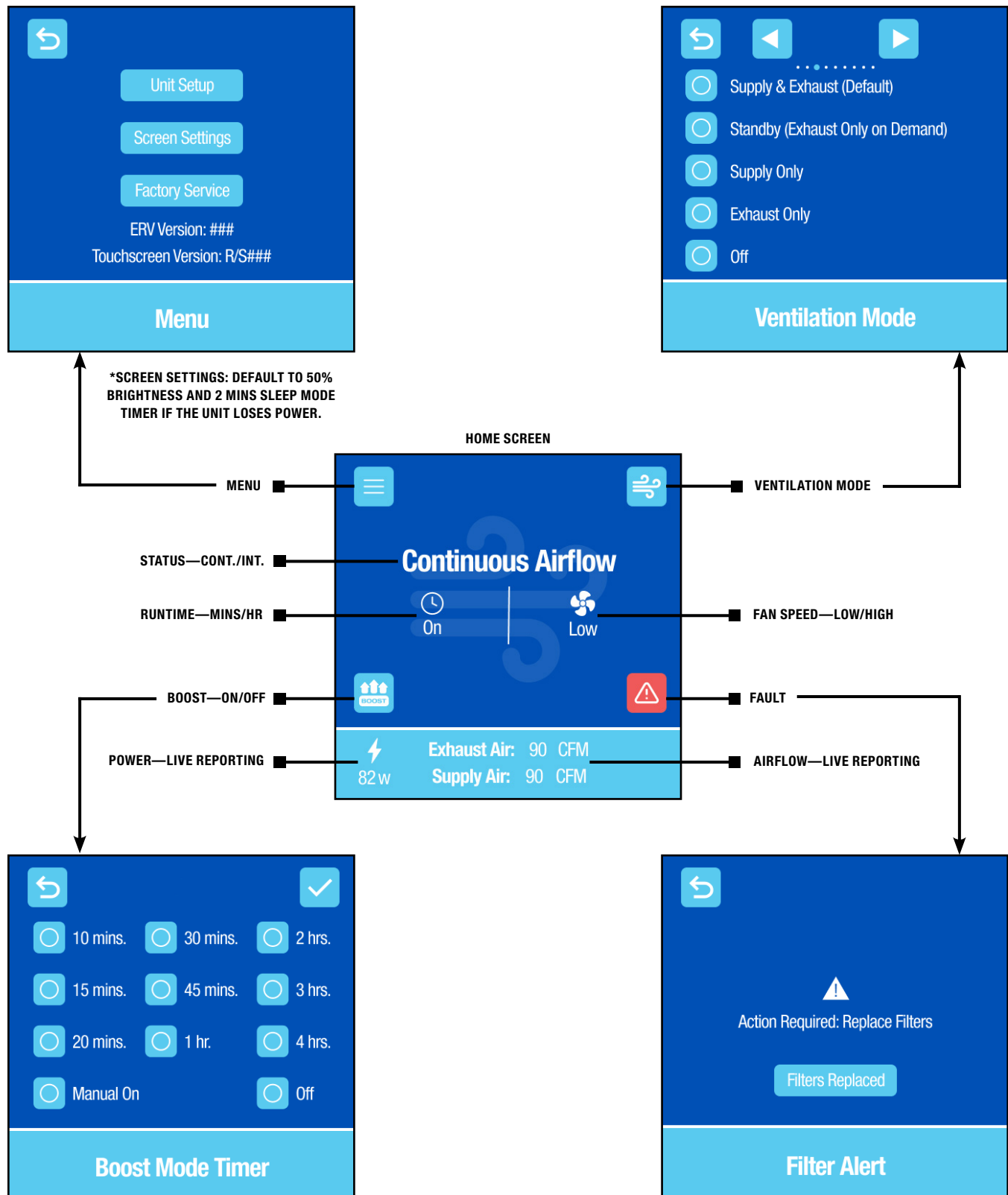
Setup Complete

Save and Start Ventilation to complete unit setup. You may cancel out of this screen if you do not wish to save your changes. You may also do a factory reset if required.



NOTE: By selecting the Factory Reset the unit will default to the Off state and airflow setpoints must be reprogrammed. In some instances, you may need to set the unit type, click save, then cycle unit power in order to be able to increase the constant volume setpoint above 120 CFM.

USER INTERACTION



TROUBLESHOOTING



NOTE: Ensure power is shut off to the unit before servicing.

Fault	Possible Cause	Action	Fault Clearing
Filter fault	Filter replacement is passed the recommended replacement period	Replace filters	1. Tap onscreen button 2. Press button on ERV terminal block
Airflow low SA or Airflow low EA*	Dirty or clogged filter	Replace filter	1. Tap onscreen button 2. Auto clear in 10s once acceptable conditions re-established
	Dirty or clogged enthalpic core	Remove and vacuum according to the ERV maintenance procedure in the Installation, Operation, and Maintenance Manual	
	Obstruction in the duct work or vent grill	Remove obstruction	
	Static pressure in duct run too high	Lower duct static pressure	
Motor RPM low SA or Motor RPM low EA	Wire connection interrupted or shorted	Inspect wire termination inside of the ERV from the start of the wire run on the motor all the way to the connection on the control board	1. Cycle unit power 2. Auto clear; the indication is intermittent (cyclical) until acceptable conditions reestablished
	Software glitch	Unplug or electrically disconnect the ERV for 10s minimum and reconnect	
	Physical restriction or excessive debris	Remove/clean any obstruction	
Communication fault	Wire connection at termination loose, disconnected, or broken	Inspect wire termination at ERV and TC1+ per pages 2 and 3 of this manual	1. Cycle unit power 2. Auto clear when communication re-established
	Software glitch	Unplug or electrically disconnect the ERV for 10s minimum and reconnect	
	Damaged wire behind walls or in open space from fasteners or objects	Inspect the wire run between the ERV and TC1+	

* Airflow low SA or Airflow low EA only active in Constant Volume mode.

FACTORY ASSISTANCE

In the unlikely event that you need assistance from the factory for a specific issue, make sure that you have the information called for in the Unit Information page in the front of this manual. The person you speak with at the factory will need that information to properly identify the unit.

To contact RenewAire Customer Service:

Call 800-627-4499

Email: RenewAireSupport@RenewAire.com