

Commercial ERV & DOAS Units with Commercial Controls

Start-up Guide for HE, LE, & DN Units

To ensure the quality of the installation and the proper operation of this unit, the following Start-Up routines should be completed. Please follow the procedures and recommendations identified in this report and record start-up information in the specified areas. If a problem with the unit becomes apparent, correct the problem by referring to the installation manual or contact the Factory Representative for further assistance. Please verify the accuracy of all model and serial number information before contacting the manufacturer.

JOB NAME:	TAG:	DATE:
MODEL NO:	SERIAL NO:	
CONTRACTOR:	TESTED BY:	

This unit should be started up for a brief period immediately after high and low-voltage wiring are complete. The purpose of the initial start-up is only to verify correct fan rotation direction and that the dampers are opening and closing properly. After the unit has been run for a brief period, it is to be shut back down until the entire installation is complete. **The unit is not to be used for building ventilation before the building has been completed.**

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.

- The unit must be in its final location.
- Verify all prefilters are in place and on the correct airstreams (i.e. inlet face of core exhaust and the inlet face of the core supply) if previously removed.
- High-voltage supply wiring must be complete.
- All low-voltage wiring, including field-installed sensors, must be completed.
- All debris or construction materials must be removed from the unit.
- All doors and access panels must be in place.
- Initial start-up should not be performed if the air is laden with construction dust. Filters will quickly become dirty and require changing for other subsequent testing.
- If this unit was purchased with a Remote User Terminal (RUT) for the controller, connect the RUT and perform start-up steps with the RUT. If there is no RUT, perform the start-up steps by using the buttons on the Integrated Programmable Controller or the internal web pages.
- Make sure all power to the unit is "off" and all disconnects are in the "off" position before making final power connections
- FOR INDOOR UNITS:** Confirm that the supply and exhaust vent connections have been properly connected and the penetration points have been separated by a minimum of 10', are free of obstructions, and are screened and properly terminated as per directions. Inspect the OA and EA vent pipes to confirm that they are pitched ¼" per foot away from the unit and insulated with vapor barrier insulation.
- FOR ROOFTOP UNITS:** Inspect and confirm that all ductwork has been connected and sealed as per installation instructions.
- Confirm circuit breaker amperage does not exceed the MOP on the nameplate and verify the unit is wired with the correct line voltage.
- Set sheaves using unit ratings table and job design requirements. Check the belts for proper tension and pulley alignment if an adjustment has been made. (Belt drive units only).
- Spin each blower wheel to assure they are not rubbing and are in alignment in the blower housing.
- Check all set screws and fasteners on blowers, bearings, sheaves, and drives (if adjustments have been made) to assure tightness.

⚠ 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.

⚠ WARNING

ARC FLASH AND ELECTRIC SHOCK HAZARD

All RenewAire models operate on high voltages that can cause severe electric shock. Some models use high voltages that are capable of causing dangerous arc flash. 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.

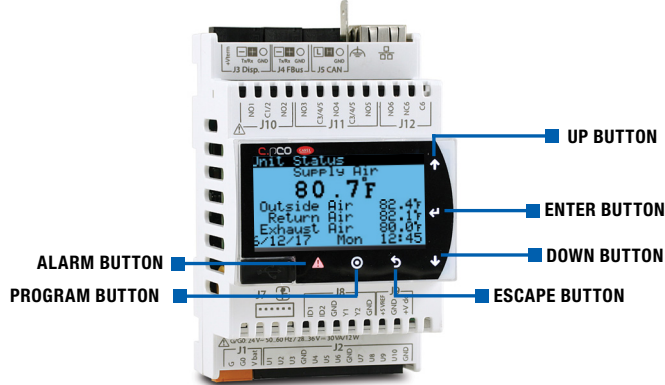
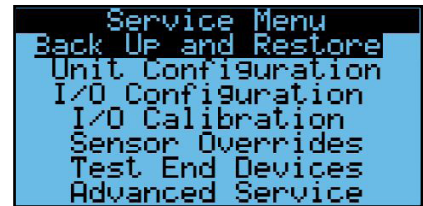
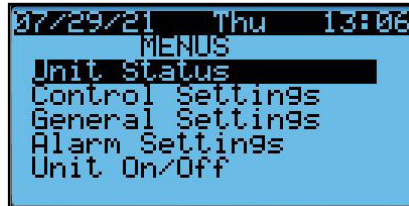
The only way to ensure that there is NO voltage inside the unit is to install and open a remote disconnect switch and verify that power is off with a voltmeter. Refer to unit electrical schematic.

Follow all local codes.

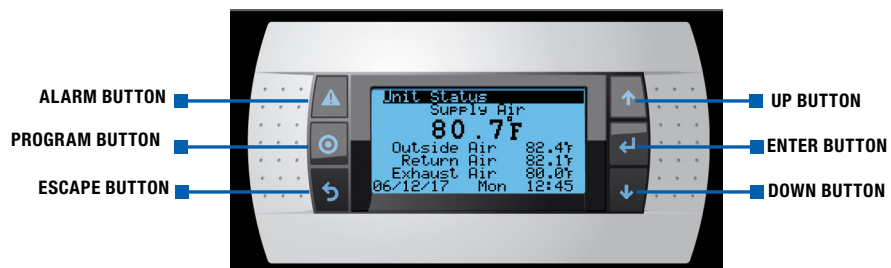
CONTROL MENU STRUCTURE

- Each screen has a bar at the top to show within which set of menus it resides.
 - Access the Main Menus by pressing the Escape button.
 - Access the Service Menus by pressing the Program Button and entering the password 1000.

NOTE: For more information regarding setpoints and unit configurations, see the *Enhanced and Premium Controls User Manuals* furnished with the unit.



INTEGRATED PROGRAMMABLE CONTROLLER



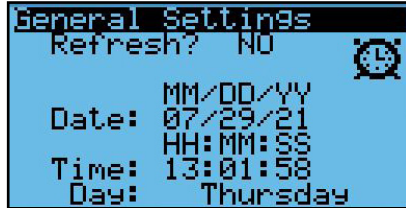
OPTIONAL REMOTE USER TERMINAL (RUT)

- Pressing Up and Down when the cursor is in the upper left-hand corner will move you from screen to screen.
- Pressing Enter on a screen will move from field to field and Up and Down on another field will change the value.

SET THE TIME AND UNIT OF MEASURE

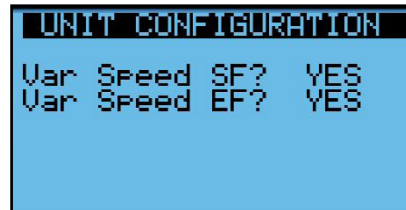
The controller needs the correct time and date for alarm stamps, etc.

The unit of measure setting will determine the values that show on the display.



CONFIRM THE CONFIGURATION

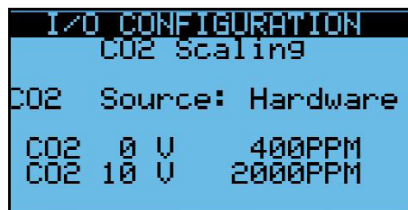
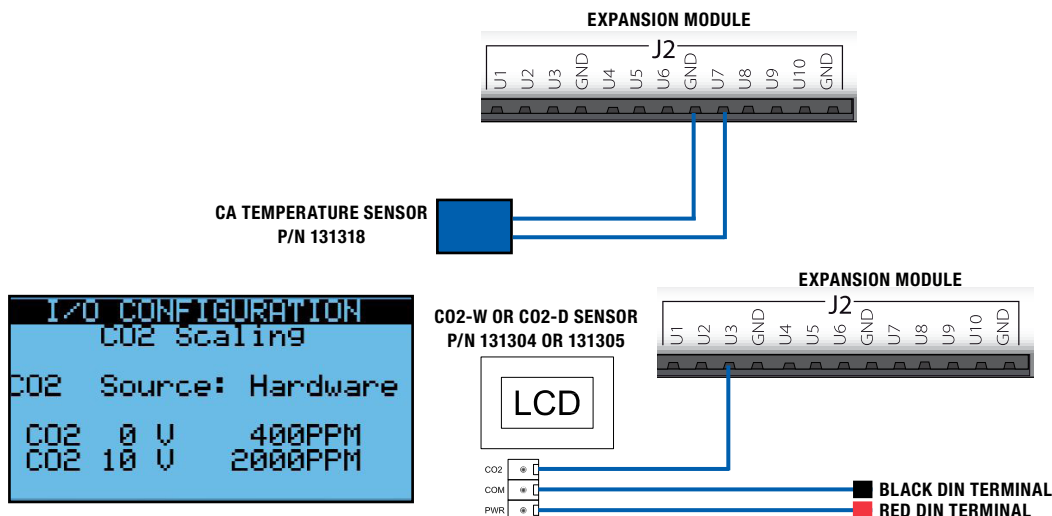
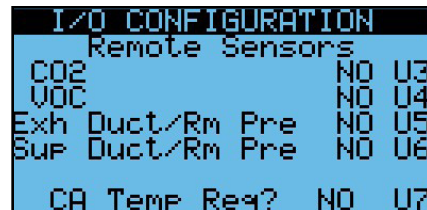
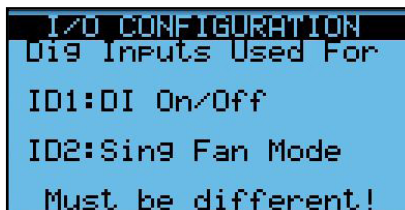
Using these two screens, confirm that the unit has the correct configuration. Heating and cooling are available with premium controls only.

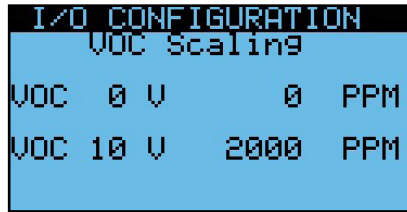


ADD ANY REQUIRED SENSORS

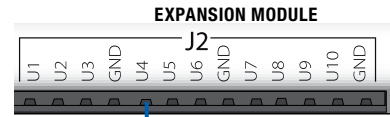
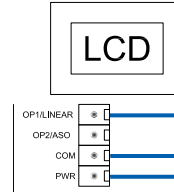
If using premium controls and require the ability to control airflow based on CO2, VOC, Duct Static, or room static, the sensor must be enabled here and installed on the unit. Any scaling can be adjusted in the screens following, if needed.

If using premium controls for heating and/or cooling, the supply air temperature sensor must be enabled and installed.

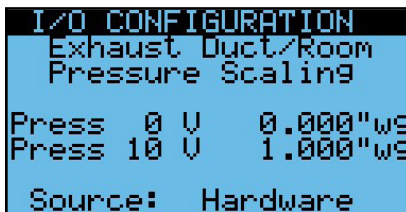




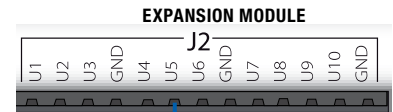
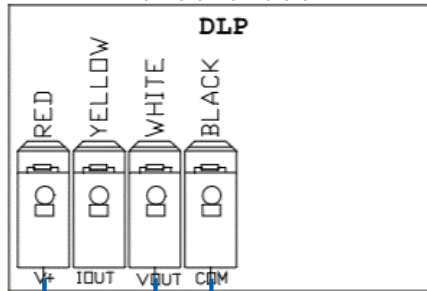
IAQ-W OR IAQ-D SENSOR
P/N 131308 OR 131307



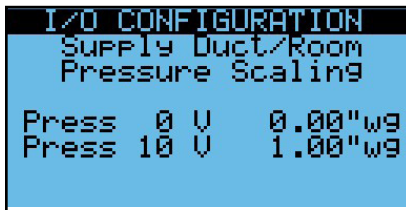
BLACK DIN TERMINAL
RED DIN TERMINAL



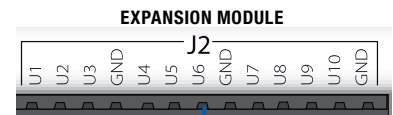
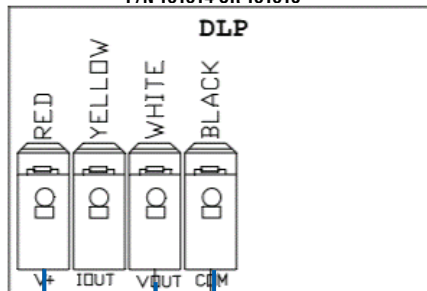
EXHAUST PRESSURE TRANSDUCER
P/N 131314 OR 131315



RED DIN TERMINAL
BLACK DIN TERMINAL



SUPPLY PRESSURE TRANSDUCER
P/N 131314 OR 131315

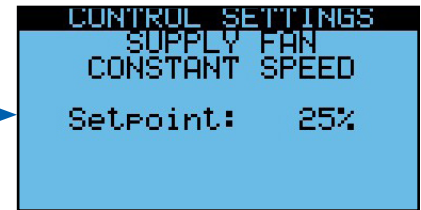


RED DIN TERMINAL
BLACK DIN TERMINAL

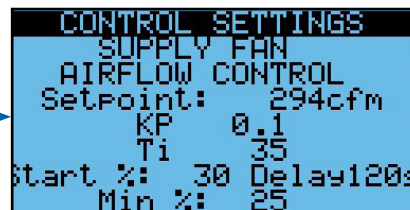
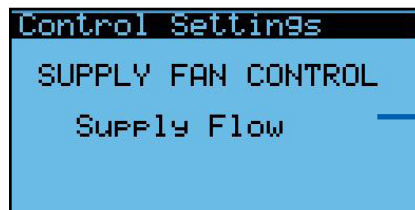
CONFIGURE AIRFLOW FOR SUPPLY AND RETURN FANS

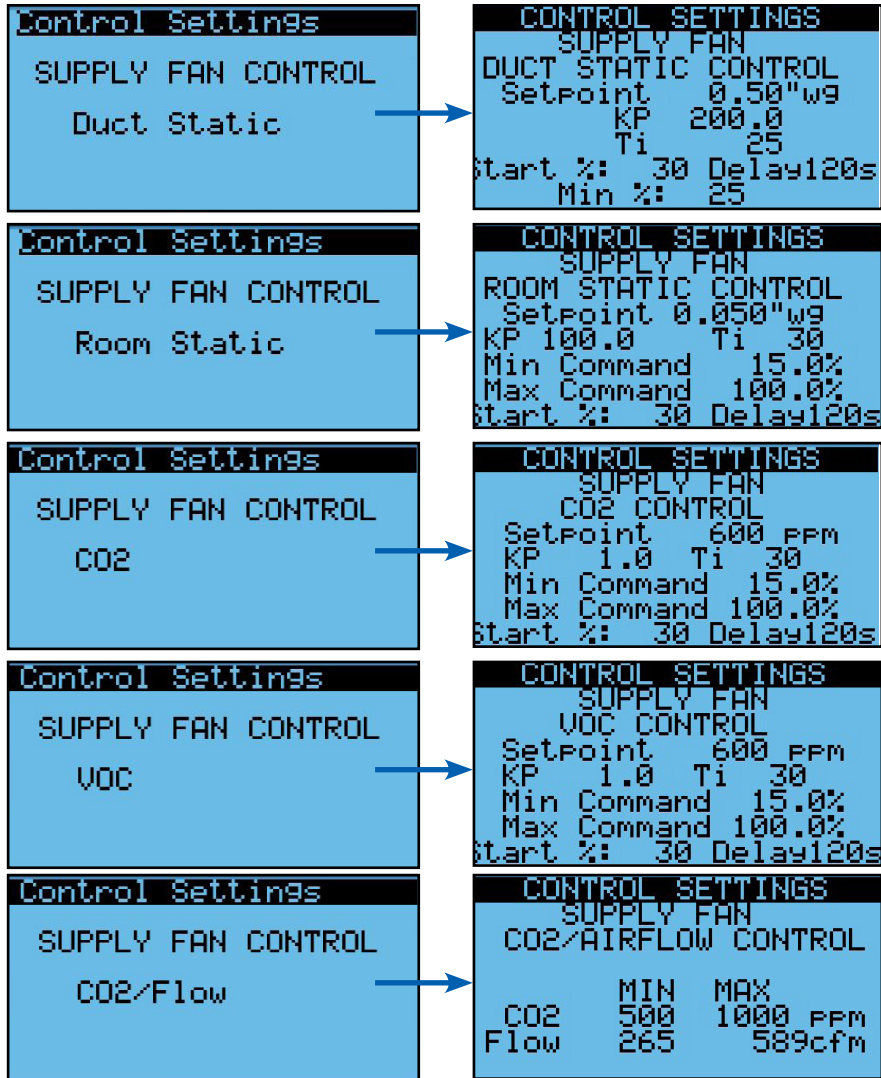
If using enhanced controls and variable speed fans, you will be allowed to set the variable speed fans to a specific fan speed as a percentage.

If using premium controls with variable speed fans you will have these additional options. Choose your type and set the corresponding settings for that type.

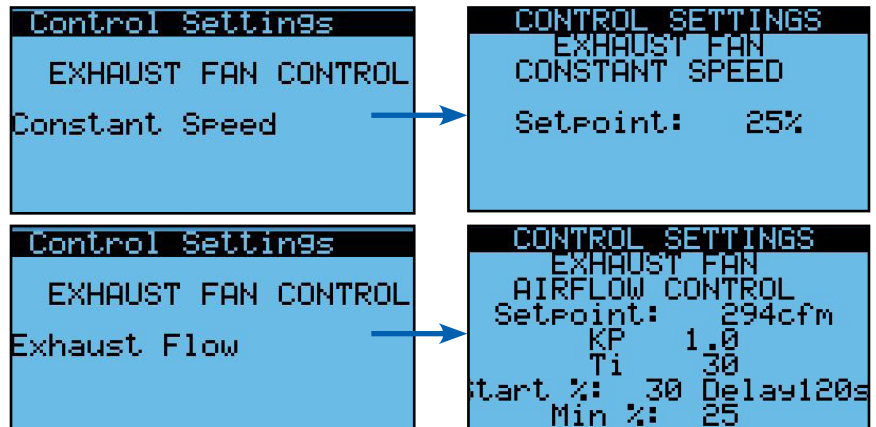


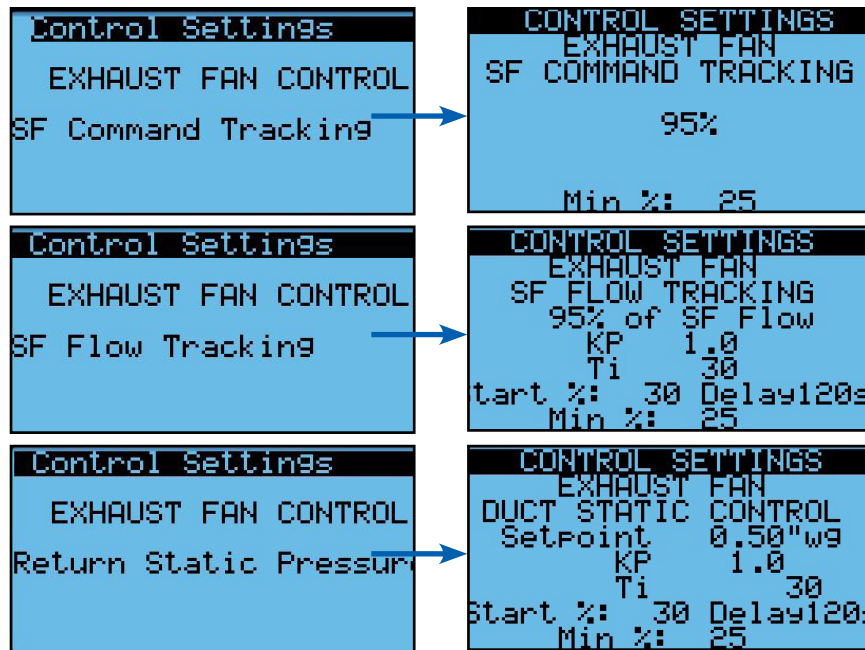
NOTE: FOR AIRFLOW CONTROL WITH VFDS YOU MAY NEED TO SET THE KP VALUES AS LOW AS 0.1 TO PREVENT HUNTING.





Repeat for exhaust fan.



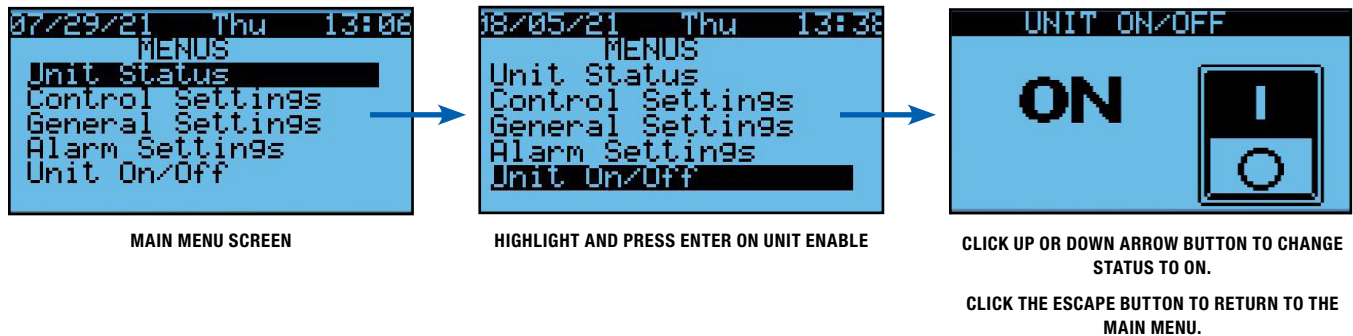


UNIT START-UP:

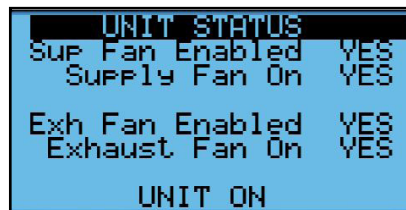
Start the unit through the keypad.

The unit is now powered up and the dampers should begin moving. Once the dampers are in their programmed positions, the fans will begin to run.

- Verify that fans are turning the correct direction and that dampers are functioning. If fan rotation is reversed, change any two of the three-phase high-voltage supply wires to the motor.



Observe this status screen for status of fans and unit. All four answers should be “YES” and the Unit should show UNIT ON. If the Fan On is NO when the fans are running the current switch for that fan needs to be adjusted.



- Shut down the unit by switching UNIT ON/OFF back to OFF and turning the disconnect switch to OFF.
- SECURE ALL PANELS AND DOORS TO PREVENT ACCIDENTAL ACCESS TO LIVE HIGH-VOLTAGE OR TO THE FANS.

SET THE HEATING SETTINGS (PREMIUM ONLY)

- Confirm that the correct heating type is set. Make sure the connections are physically in place.
- Choose to control to the heating setpoint or to a reset schedule with outdoor air.
- Choose between control off supply or return air.
- Be sure to make sure the outdoor air lockout temperature is below the current outdoor temperature.
- Depending upon the heating type, set the appropriate setting. Refer to the appropriate manual to proceed for heating checkout.

```
CONTROL SETTINGS
HEATING
Gas Mod - Adjustable

Setpoint 75.2°F
KP 1.0
Ti 30
```

```
Control Settings
HEATING
Type Gas Mod
Setpoint OA Reset
Control Supply Air
```

```
CONTROL SETTINGS
HEATING
OA Reset

OA TEMP SETP
MIN 0°F 70°F
MAX 50°F 60°F
```

SET THE COOLING SETTINGS (PREMIUM ONLY)

- Confirm that the correct cooling type is set. Make sure the connections are physically in place.
- Choose to control to the cooling setpoint or to a reset schedule with return air.
- Choose between control off supply or return air.
- Be sure to make sure the outdoor air lockout temperature is above the current outdoor temperature.
- Depending upon the cooling type, set the appropriate setting. Refer to the appropriate manual to proceed for cooling checkout.

```
CONTROL SETTINGS
COOLING
Type 2 Stage
SetP Adjust
Control Return Air
OA Lockout Below 70.0°F
```

```
CONTROL SETTINGS
COOLING
Type CW Mod
SetP Adjust
Control Return Air
OA Lockout Below 70.0°F
```

```
CONTROL SETTINGS
COOLING
RA Reset

RA TEMP SETP
MIN 70°F 64°F
MAX 80°F 54°F
```

SET THE HUMIDIFICATION SETTINGS (PREMIUM ONLY)

- Enable HGRH, if applicable, in the *Unit Configuration*.
- Enable the dehumidification in the *I/O Configuration* by setting to use either RA or OA dewpoint for changeover.
- Assign HGRH to U8, if used, in *I/O Configuration*.
- Set setpoint for dehumidification setpoint
- Set the dehumidification setpoint and the reheat setpoint, if applicable.
- Set additional HGRH settings, if applicable.

```
UNIT CONFIGURATION
En Mod HGRH: YES
En 2Pos HGRH: NO
If HGRH enabled, go to
I/O Config and set
Dehum changeover mode
and assign LAT sensor
to a free input.
```

```
I/O CONFIGURATION
Dehumidification
Changeover Selection
Return Air Value

Choose Outdoor Air for
applications w/19 ams
of Outdoor Air/changes
```

```
I/O CONFIGURATION
U8 0-10 VDC Output
(Expansion Module)

Mod HGRH
```

```
CONTROL SETTINGS
Dehumid Mode On
Based on Return Air
Dewpoint:

On above SP + Hyst.
60.0°F(SP) 1.7°F(hyst)
Off below SP
```

```
CONTROL SETTINGS
Dehumidification

Reheat performed with
HGRH:

Cooling Coil LAT 50.0°F
CA Reheat SetP 64.4°F
```

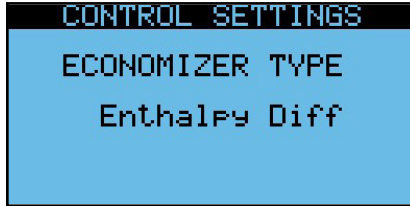
```
CONTROL SETTINGS
HGRH Settings

KP 0.6
Ti 40
Low Continuous 10.0%
Low Time Limit 600s
High Override 50.0%
Override Time 60s
```

OPTIONAL SETTINGS

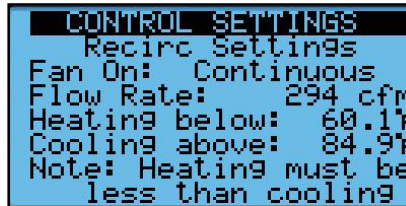
Economizer

If the unit will support an economizer, set the following settings.



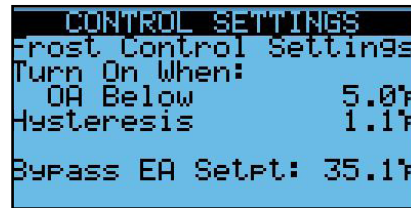
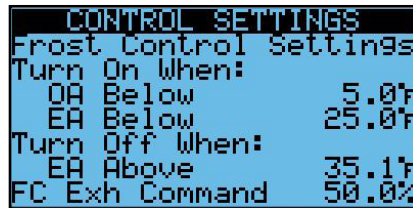
Recirculation (Premium only, recirculation damper required)

If the unit will run in unoccupied mode, set the following settings.



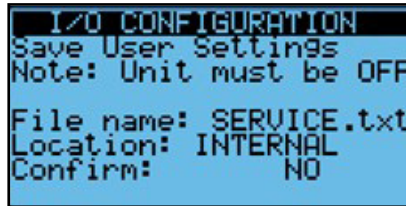
Frost Control

If the unit will bypass for defrost, set the following settings. The screen on the left is for ERV units which cycle the supply fan for frost control; the screen on the right is for DN units with modulating bypass frost control.



SAVE YOUR SETTINGS

Once done save the parameters for future use.



ENGINEERED DESIGN CONDITIONS			ACTUAL PERFORMANCE CONDITIONS		
EXHAUST (RA) CFM	E.S.P.	BLOWER R.P.M.	EXHAUST (RA) CFM	E.S.P.	BLOWER R.P.M.
SUPPLY (FA) CFM	E.S.P.	BLOWER R.P.M.	SUPPLY (FA) CFM	E.S.P.	BLOWER R.P.M.
MCA (MIN CIR. AMPS)	MFS (MAX FUSE SIZE)		MOTOR AMPS (OA)	MOTOR AMPS (EA)	
UNIT VOLTAGE:			LINE VOLTAGE L1-L2	L2-L3	L3-L1