

nano



# User Guide

## AEHD PLC/HMI Navigation and Operation

revision: 2024-0109 document: 17-110-8021  
[www.nano-purification.com](http://www.nano-purification.com)

## **nano Aircel AEHD-SERIES System Navigation and Operation**

**(Note:** the following navigation and operation manual will provide an overview of the dryer system operation; refer to the manual for safety information, startup, shutdown, and any additional information ... before operation)

### **Door Device Descriptions:**

**SYSTEM DISPLAY SCREEN:** The display screen provides the operator with various system operation information, alarms, etc. for quick review of dryer system operation ... discussed in the following pages. (**Note:** The RUNNING/OPERATION screens should be the normal displayed screen.)

**POWER ON/OFF switch:** The POWER on/off switch turns power on or off to the dryer control system and display (**note:** display takes a minute or two to boot- up) (**note:** when power on/off switch is ON, dryer may not actually be running... make certain the SYSTEM OFF/ON push button in the MAIN is set to ON.)

**POWER ON green light:** The POWER ON light indicates power is turned on to the dryer system; however, the dryer may or may not be actually running ... (**Note:** Dryer will not be running If POWER ON light is ON and the COMMON SHUTDOWN ALARM red light is ON, this is one indication the dryer is not running... also, the SYSTEM OFF/ON button may be turned OFF in the MAIN menu screen, make certain the SYSTEM OFF/ON button in the MAIN menu screen is allowing system to run)

**COMMON SHUTDOWN red light:** The COMMON SHUTDOWN red light indicates a shutdown alarm has occurred and halted dryer operation (**note:** anytime this light is ON the dryer will be shutdown) ... operator attention is required... For the alarm/s that triggered the COMMON SHUTDOWN light, refer to the ALARM STATUS screen to find out what alarm/s tripped and then read the possible causes and solutions for the alarm in this display screen shot description section and the manual. (**Note:** The ALARM STATUS screen is accessed from the CONTROL/MAIN MENU screen then press the ALARM STATUS button ... the active alarm/s will be highlighted red for shut-down, green for no alarm and yellow for cautionary)

**NORMAL DRYER SYSTEM OPERATION setup:**

For normal dryer system operation, the following should be done: (**note:** for formal start-up refer to owner's manual... this operation sequence is a quick reference)

1. Make certain all gauge isolation valves, vent valves, instrument valves, pre-filter drain valves, etc., are in the correct open or closed positions.
2. Make certain the system has been slowly pressurized to line pressure.
3. Make certain control air system has pressure; control air pressure is set via the control air regulator and should be set at 100 psi or highest available air pressure below 100 psi.
4. Make certain the dew point sensor and mid-bed relative humidity valves are setup correctly... the valve upstream of the dew point sensor should be fully open... valve downstream of the dew point/mid-bed relative humidity sensor should be slightly open until a slight air flow is noticed at the end of the exhaust coil.
5. The 'POWER' on/off switch is 'ON'
6. The "SYSTEM OFF/ON" button in the MAIN MENU screen must say "ON" ... this is accomplished by pressing the SYSTEM OFF/ON button on the display in the MAIN MENU screen.
7. ENERGY MANAGEMENT can be turned OFF or ON in the CONTROL/MAIN menu ... push the ENERGY MANAGEMENT OFF/ON button, the drying period will be extended if below outlet DEWPOINT DEMAND (if applicable) and/or MID-BED RELATIVE HUMIDITY setting in the SETTINGS screen ..... When the ENERGY MANAGEMENT OFF/ON button is off, this is the fixed time mode. The dryer will switch continuously on a standard time cycle mode.
8. Typically the RUNNING SCREENS/OPERATION screens should be the normal screens displayed on the system display when in operation. Other screens can be displayed as the normal operation screen, if needed... such as, the MAIN MENU screen.

(Continued next page)

## nano Aircel AEHD-SERIES PLC/HMI Navigation and Operation

9. Verify no Common Shutdown alarms are active and require attention.
10. The system is ready to go online and dry the process air, make certain any filter, dryer, or user block and bypass valves are in the correct positions.
11. Verify the purge control pressure is set to 50 PSI (90 PSI for Venturi). The purge pressure gauge is located on the heater inlet... the purge pressure can be adjusted when one tower is drying at line pressure and the other tower is regenerating or purging and the tower pressure at near zero psi... the purge adjustment valve near the purge pressure gauge can now be adjusted to 50 PSI (90 PSI for Venturi), open or close the valve to maintain constant air flow on the purge pressure gauge (note: some slight variation in pressure may be noticed as line pressure fluctuates, setting at a slightly higher pressure may compensate for this)
12. Verify settings in the display at the SETPOINT ENTRY MENU SCREEN, set as needed... listed below are factory settings. The set point entry menu screen is where the system operating settings can be set and maintained. (Note: refer to the below section on the SETPOINT ENTRY MENU SCREEN for more information.

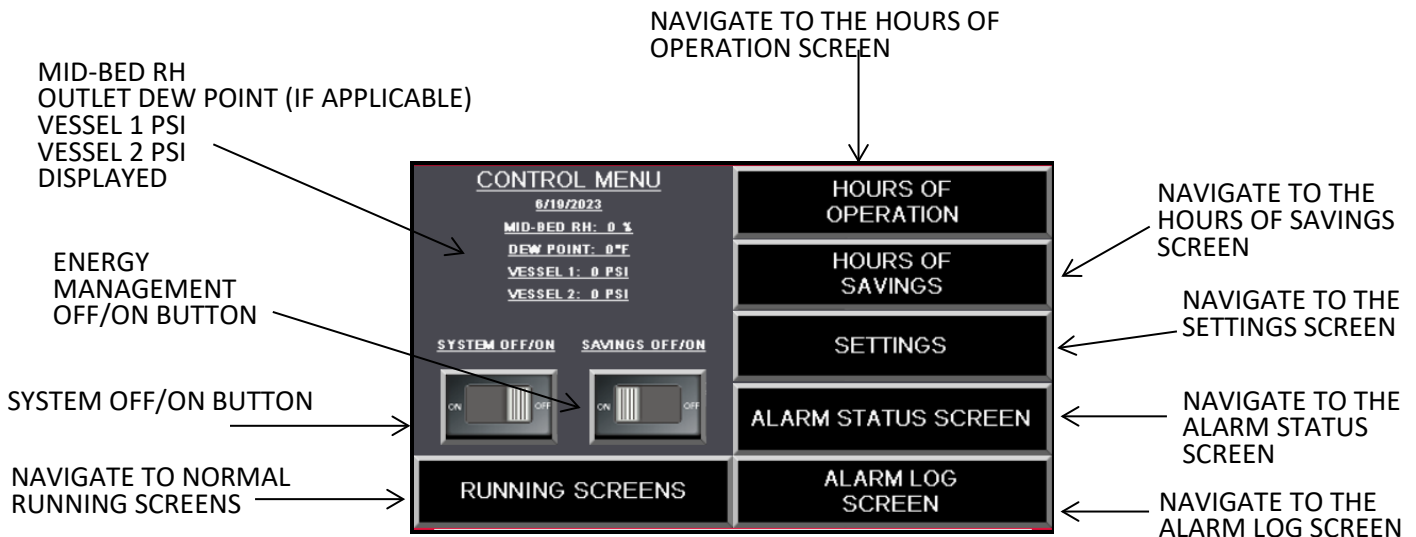
The initial factory settings are:

- HEATER OUTLET CONTROL SETPOINT 400°F
- DEWPOINT DEMAND -50°F (IF APPLICABLE)
- HIGH HUMIDITY 10°F (IF APPLICABLE)
- FAILURE TO SWITCH 60 PSI
- MID-BED RH 7%

13. Verify dryer operation at each operation step.

## CONTROL/MAIN MENU SCREEN

The CONTROL/MAIN MENU screen allows the user some control over system operation; as well as navigates to the other status and alarm screens.



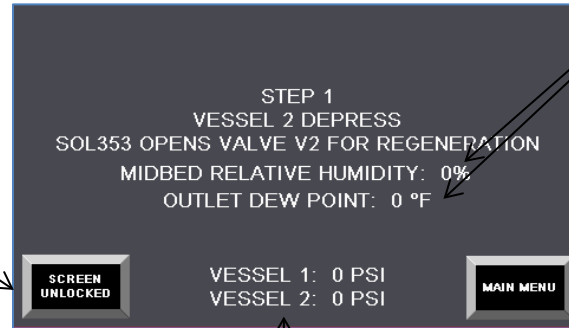
- **SYSTEM OFF/ON:** Button toggles SYSTEM OFF/ON...
- **SAVINGS OFF/ON:** Button, toggles energy saving mode OFF/ON.... when displayed ON energy saving mode is enabled, the drying period will be extended if below outlet DEWPOINT DEMAND (IF APPLICABLE)/MID-BED RELATIVE HUMIDITY setting in the SETTINGS screen.  
When SAVINGS OFF/ON displays OFF energy saving mode is disabled and fixed time cycle mode is enabled, system cycles on a continuous cycle.  
Normal SAVINGS OFF/ON button position is ON
- **RUNNING SCREENS:** Button navigates to the main operation screen. This is where each step can be viewed during the operation of the unit.
- **HOURS OF OPERATION SCREEN:** Button navigates to the hours of operation screen. This screen allows the user to see the total run time of the unit.
- **HOURS OF SAVINGS SCREEN:** button navigates to the hours of savings screen. This screen allows the user to see the total energy savings time.
- **SETTINGS SCREEN:** Button navigates to the settings screen. This is where the heater outlet control temperature, Mid-bed Relative Humidity, Failure to Switch and Dew Point (when applicable) settings can be manipulated.
- **ALARM STATUS:** Button navigates to the ALARM STATUS screen
- **ALARM LOG:** Button navigates to the ALARM LOG screen
- **SETTINGS:** Button navigates to the SETTINGS entry screen

**STEP 1 – VESSEL 2 DEPRESSURIZATION**  
**RUNNING/OPERATION SCREEN**

OUTLET DEW POINT/MID-BED  
RELATIVE HUMIDITY  
DISPLAYED

NOTE: DEW POINT ONLY  
VISIBLE IF ACTIVATED WITH  
ADDED OPTION

RUNNING SCREEN  
button



VESSEL PRESSURES

NAVIGATE TO MAIN MENU  
(Note: SCREEN button  
must be UNLOCKED before  
pressing MAIN MENU  
button)

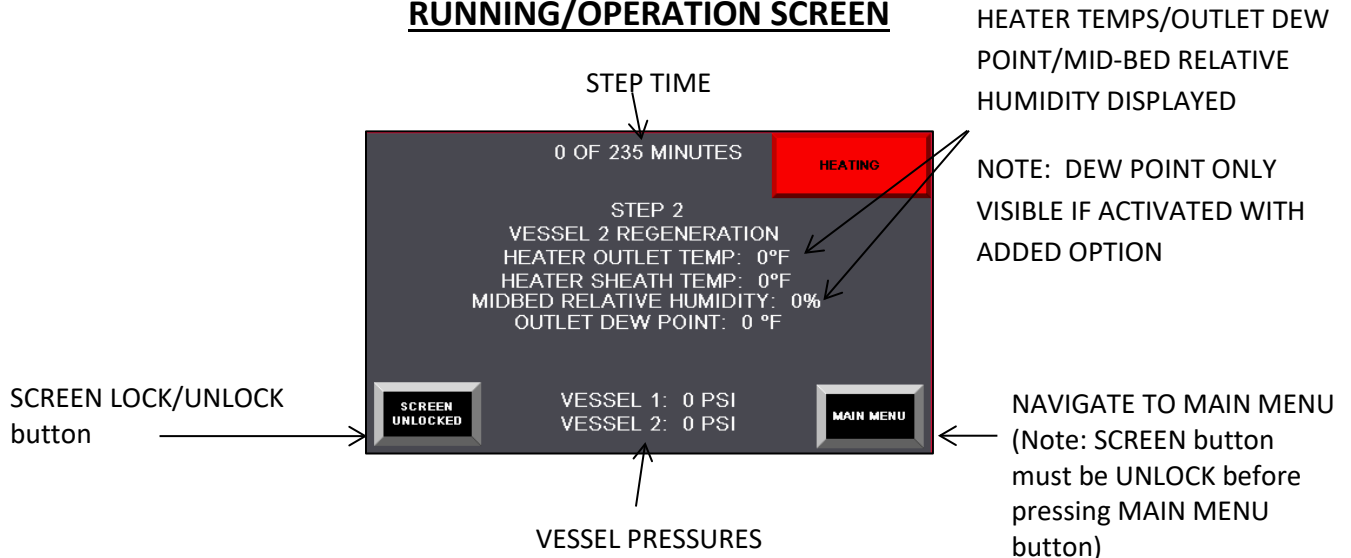
**STEP 1:** Vessel 2 depressurizes to at near zero tower pressure.

The running/operation screens allow the user to view each step of the process. To navigate from this screen, press the “**SCREEN UNLOCK**” button then press the “**MAIN MENU**” button.

(**CAUTION:** if the screen is unlocked, the screen will not advance. For normal operation screen lock/unlock button is to be locked)

## STEP 2 - VESSEL 2 HEATING AND COOLING

### RUNNING/OPERATION SCREEN



**STEP 2:** A continuation of Step 1: Vessel 2 depressurizes to at near zero tower pressure. Control system energizes solenoid SOL361, which closes Vessel 2 inlet valve and opens Vessel 2 purge exhaust valve... Vessel 1 inlet valve should be open and drying the inlet air. (**Note:** If valves are not in the correct open and closed positions, check the pilot solenoid valves, plc outputs and the control air system).

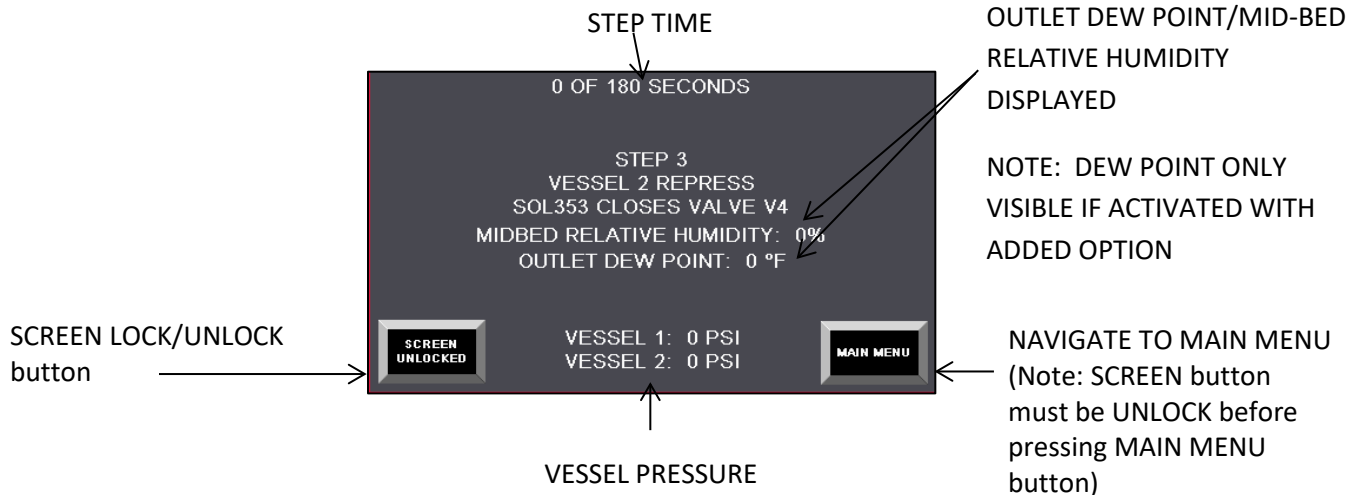
Vessel 2 begins the heating process of regeneration denoted by the red heating indicator. Optional Venturi is activated during this step and will increase the purge pressure flow through the heater. Vessel 1 inlet valve should be open and drying the inlet air. Heater time = 180 minutes.

Once the heater time is complete (180 minutes), Vessel 2 begins the cooling process of regeneration denoted by the blue cooling indicator. Optional Venturi is closed during this step. Cooling time = 55 minutes

The step screens allow the user to view each step of the process. To navigate from this screen, press the **"SCREEN UNLOCK"** button then press the **"MAIN MENU"** button.

**(CAUTION:** if the screen is unlocked, the screen will not advance. For normal operation screen lock/unlock button is to be locked)

**STEP 3 - VESSEL 2 REPRESSURIZATION**  
**RUNNING/OPERATION SCREEN**



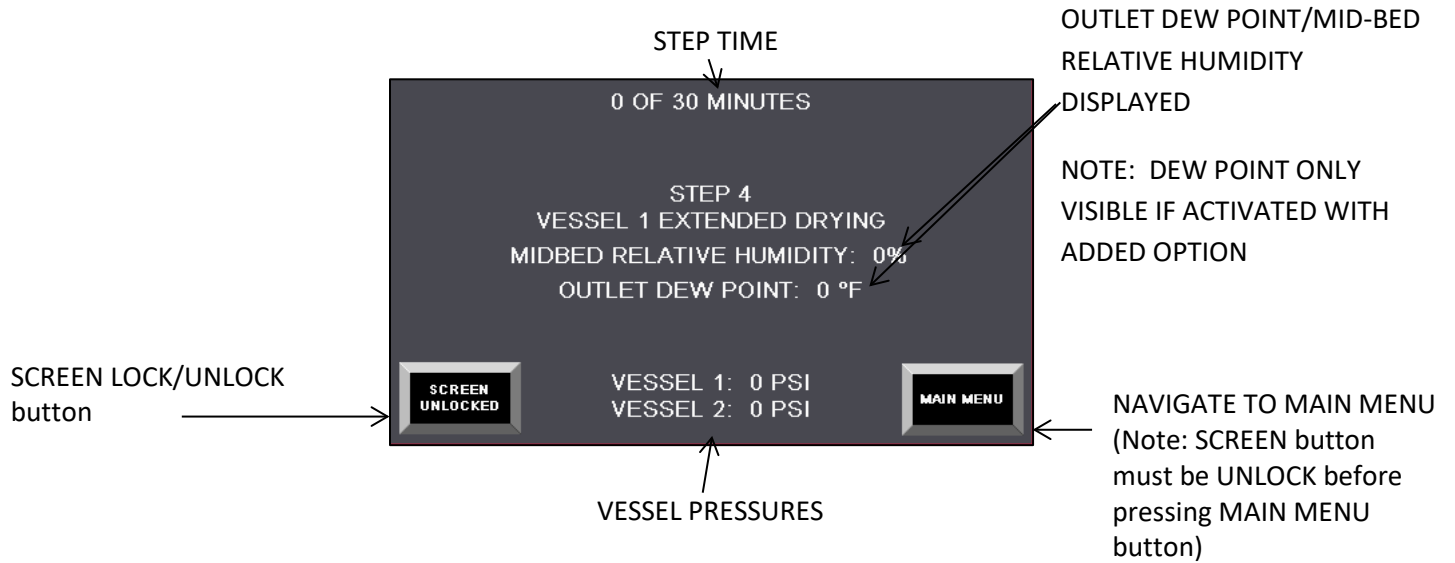
**STEP 3:** Vessel 2 repressurizes.

The step screens allow the user to view each step of the process. To navigate from this screen, press the “**SCREEN UNLOCK**” button then press the “**MAIN MENU**” button.

(**CAUTION:** if the screen is unlocked, the screen will not advance. For normal operation screen lock/unlock button is to be locked)



**STEP 4 VESSEL 2 ENERGY SAVINGS**  
**RUNNING/OPERATION SCREEN**

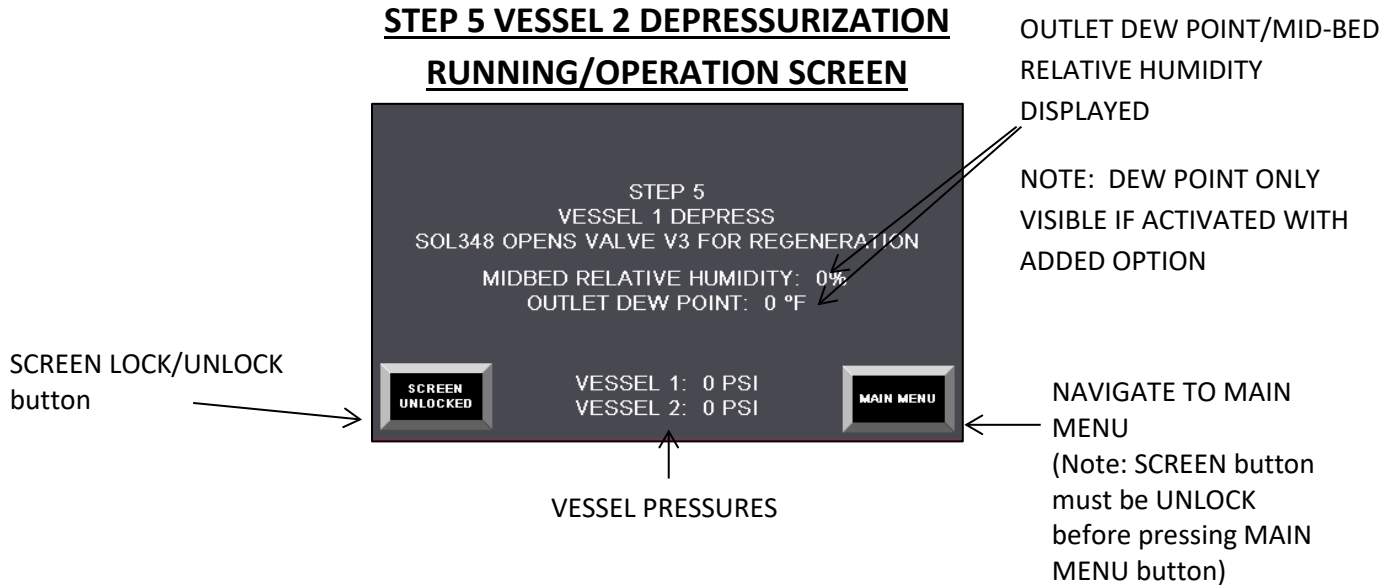


**STEP 4:** Energy savings extended drying step. This step in the process will allow the current drying tower to remain drying if the Mid-Bed Relative Humidity (and outlet Dew Point if selected) reading(s) do not rise above the set point(s) for up to 30 minutes savings time.

The step screens allow the user to view each step of the process. To navigate from this screen, press the **“SCREEN UNLOCK”** button then press the **“MAIN MENU”** button.

**(CAUTION:** if the screen is unlocked, the screen will not advance nor will the **PRESS TO PROCEED** button appear when the step is complete during the service mode routine. For normal operation screen lock/unlock button... to be locked)

**STEP 5 VESSEL 2 DEPRESSURIZATION**  
**RUNNING/OPERATION SCREEN**

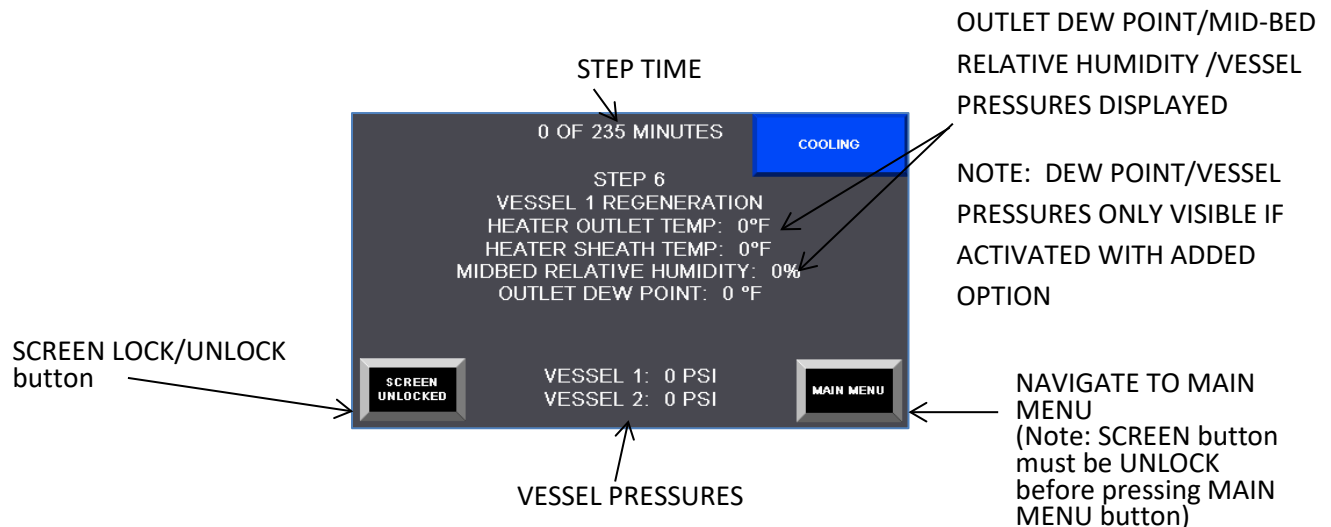


**STEP 5:** Vessel 1 depressurizes to at near zero tower pressure.

The step screens allow the user to view each step of the process. To navigate from this screen, press the **“SCREEN UNLOCK”** button then press the **“MAIN MENU”** button.

**(CAUTION:** if the screen is unlocked, the screen will not advance nor will the **PRESS TO PROCEED** button appear when the step is complete during the service mode routine. For normal operation screen lock/unlock button... to be locked)

## STEP 6 VESSEL 2 HEATING AND COOLING RUNNING/OPERATION SCREEN



**STEP 6:** A continuation of Step 5: Vessel 1 depressurizes to at near zero tower pressure. Control system energizes solenoid SOL356, which closes Vessel 1 inlet valve and opens Vessel 1 purge exhaust valve... Vessel 2 inlet valve should be open and drying the inlet air. (**Note:** If valves are not in the correct open and closed positions, check the pilot solenoid valves, plc outputs and the control air system).

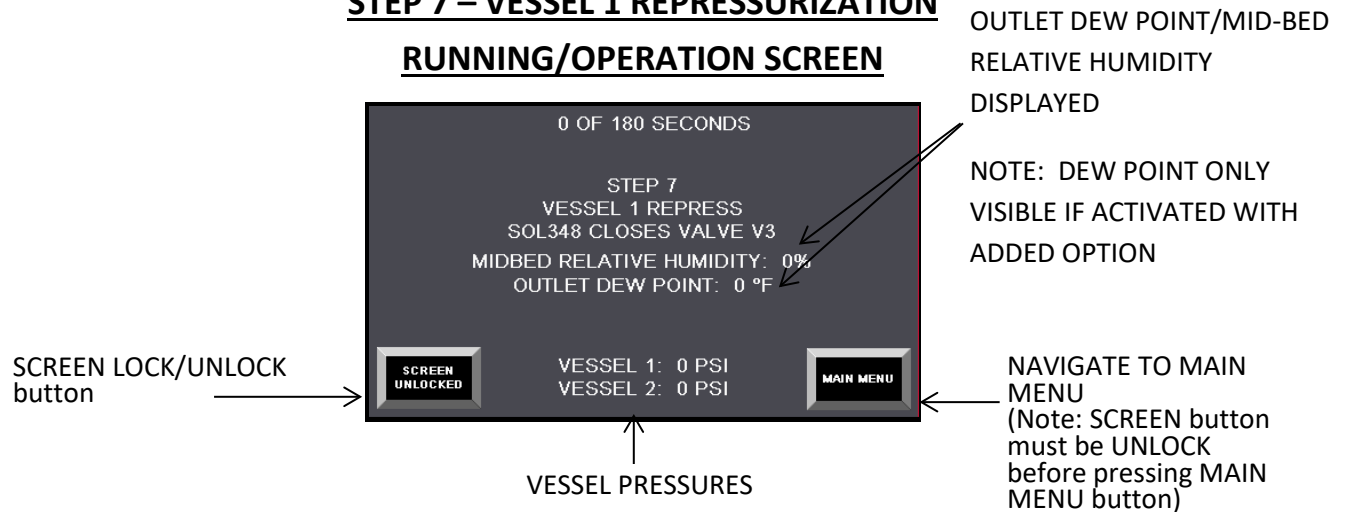
Vessel 1 begins the heating process of regeneration denoted by the red heating indicator. Optional Venturi is activated during this step and will increase the purge pressure flow through the heater. Vessel 2 inlet valve should be open and drying the inlet air. Heater time = 180 minutes.

Once the heater time is complete (180 minutes), Vessel 1 begins the cooling process of regeneration denoted by the blue cooling indicator. Optional Venturi is closed during this step. Cooling time = 55 minutes

The step screens allow the user to view each step of the process. To navigate from this screen, press the **“SCREEN UNLOCK”** button then press the **“MAIN MENU”** button.

**(CAUTION:** if the screen is unlocked, the screen will not advance. For normal operation screen lock/unlock button is to be locked)

**STEP 7 – VESSEL 1 REPRESSURIZATION**  
**RUNNING/OPERATION SCREEN**



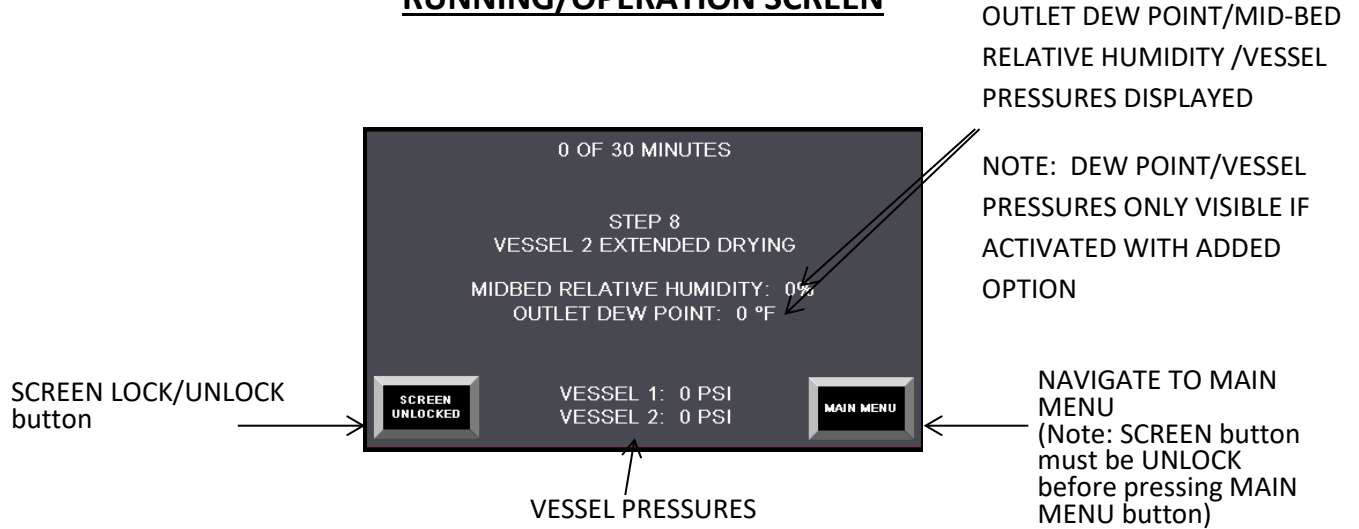
**STEP 7:** Vessel 1 is repressurizing.

The running/operation screens allow the user to view each step of the process. To navigate from this screen, press the “**SCREEN UNLOCK**” button then press the “**MAIN MENU**” button.

(**CAUTION:** if the screen is unlocked, the screen will not advance. For normal operation screen lock/unlock button is to be locked)

## STEP 8 VESSEL 1 ENERGY SAVINGS

### RUNNING/OPERATION SCREEN



**STEP 8:** Energy savings extended drying step. This step in the process will allow the current drying tower to remain drying if the Mid-Bed Relative Humidity (and outlet Dew Point if selected) reading(s) do not rise above the set point(s) for up to 30 minutes savings time.

The step screens allow the user to view each step of the process. To navigate from this screen, press the **“SCREEN UNLOCK”** button then press the **“MAIN MENU”** button.

**(CAUTION:** if the screen is unlocked, the screen will not advance nor will the **PRESS TO PROCEED** button appear when the step is complete during the service mode routine. For normal operation screen lock/unlock button... to be locked)

## Operation ALARM BANNER SCREEN



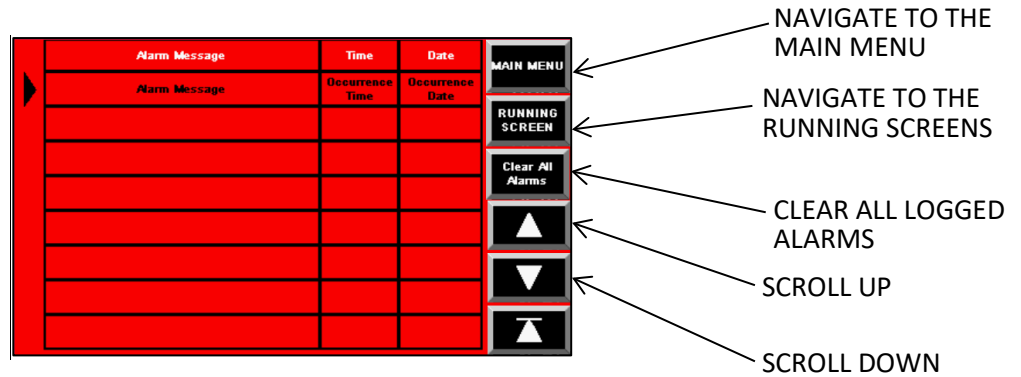
ALARM RESET BUTTON - RESETS  
VISIBLE ACTIVE ALARM ON SCREEN  
IF ALARM IS READY TO BE RESET

CLEAR BANNER BUTTON - CLEARS  
ALARM BANNER ONLY... RETURNS  
TO LAST SCREEN VISIBLE

**ALARM BANNER SCREEN:** The alarm banner screen is visible or pops-up when there is an active alarm. It is not recommended to reset the alarm until the issue has been resolved. This banner provides a quick visual full screen alarm indication. The alarm is captured in the Alarm Status Screen and logged in the Alarm log screen ... refer to the Alarm Status Screen after clearing alarm banner and after troubleshooting to make certain the alarm has been reset or can be manually reset. (Note: Common shutdown alarm red light will be ON when active... and OFF if no shutdown alarms are active... the system should be back in operation when the Common shutdown alarm red light is OFF)

- ALARM RESET BUTTON: RESETS THE ACTIVE ALARM (if the alarm condition has been corrected or able to be reset)
- CLEAR BANNER BUTTON: CLEARS THE ALARM BANNER ONLY (will return to the last screen visible... other screens can be accessed after clear banner button is pushed...  
**note:** The alarm may still be active, and troubleshooting will be required)

## ALARM LOG SCREEN



**ALARM LOG SCREEN:** The ALARM LOG SCREEN lists the alarm triggered, provides time and date at which the alarm occurred.

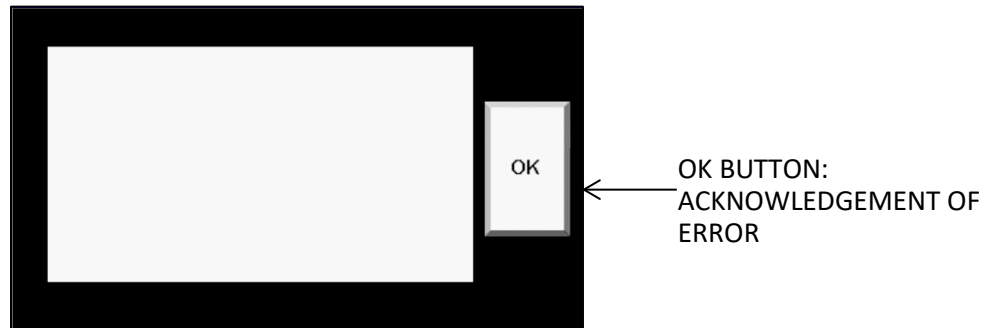
The alarm log will list 50 alarm occurrences, after the 50<sup>th</sup> alarm ... the first or no.1 alarm is pushed out to allow the new current alarm to be logged ... if another alarm is triggered, then alarm no.2 will be pushed out to make room ... This alarm logging process will be repeated.

- **MAIN MENU** BUTTON: NAVIGATE BACK TO THE MAIN MENU
- **RUNNING SCREENS** BUTTON: NAVIGATE TO THE MAIN OPERATION SCREEN
- **CLEAR LIST** BUTTON: CLEARS ALL ALARMS IN THE LIST (NOT RECOMMENDED WITHOUT APPROVAL FROM AIRCEL SERVICE TECH) (**NOTE: MAKE A LOG OR TAKE A PICTURE BEFORE CLEARING FOR FUTURE RECORDS**)

➤ BUTTON: SCROLLS UP THE ALARM LOG

➤ BUTTON: SCROLLS DOWN THE ALARM LOG

Operation **DIAGNOSTICS SCREEN**



**DIAGNOSTIC SCREEN:** is visible if a communication or HMI error or failure occurs.

- **OK BUTTON:** USED TO VERIFY THE ERROR HAS BEEN READ AND ACKNOWLEDGED (this screen is provided by the HMI to show communications errors, between the host and the HMI, and diagnostic failures of the HMI.)



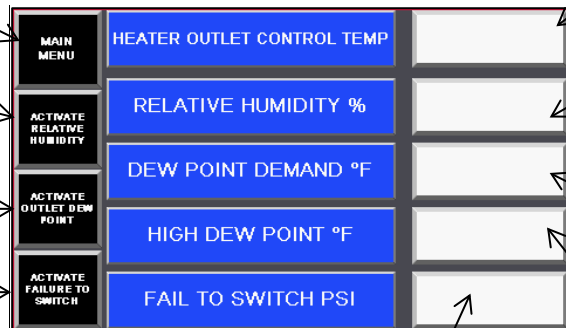
NAVIGATE TO MAIN MENU

ACTIVATE/DEACTIVATE MID-BED RELATIVE HUMIDITY

ACTIVATE/DEACTIVATE OUTLET DEW POINT IF OPTION IS SELECTED

ACTIVATE/DEACTIVATE FAILURE TO SWITCH

### SETTINGS ENTRY MENU SCREEN



SET HEATER OUTLET CONTROL TEMPERATURE

SET MID-BED RELATIVE HUMIDITY SETPOINT (FOR ENERGY MANAGEMENT CONTROL SYSTEM)

SET DEW POINT SETPOINT (FOR ENERGY MANAGEMENT CONTROL SYSTEM)

SET OUTLET DEWPOINT HIGH HUMIDITY SETTING

SET FAILURE TO SWITCH PRESSURE

**SETPOINT ENTRY MENU SCREEN:** The set point entry menu screen is where some system operating settings can be set and maintained.

The entry boxes to the right of the screen can be selected to make changes as needed ... a pop-up number screen will appear when the box or button is pressed to make the desired set point entry change.

The initial factory settings are:

<b>HEATER OUTLET CONTROL:</b>	<b>400F</b>
<b>RELATIVE HUMIDITY %:</b>	<b>7%</b>
<b>DEWPOINT DEMAND:</b>	<b>-50°F</b>
<b>HIGH HUMIDITY:</b>	<b>10°F</b>
<b>FAILURE TO SWITCH:</b>	<b>60 PSI</b>

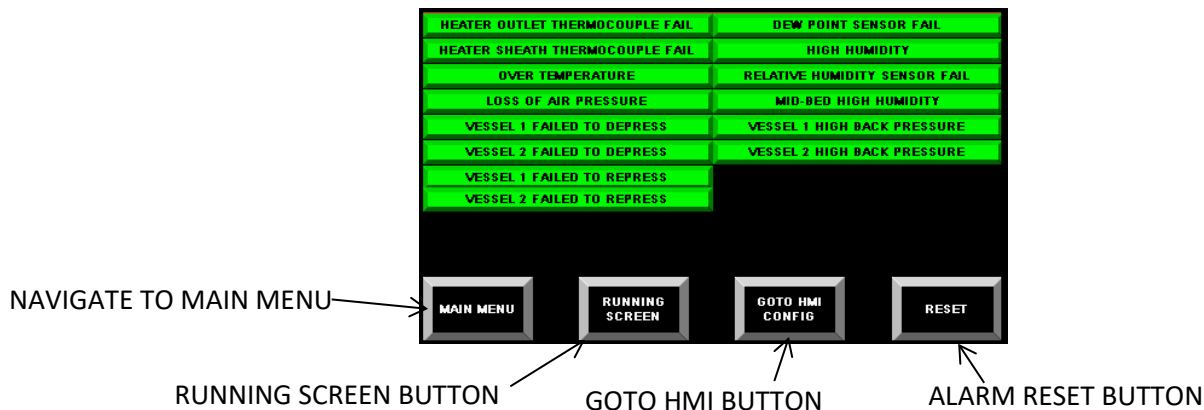
- **MAIN MENU BUTTON:** NAVIGATE TO THE MAIN MENU SCREEN
- **RELATIVE HUMIDITY ACTIVATE/DEACTIVATE BUTTON:** Allows the technician to deactivate the relative humidity sensor if the readings are out of range. This will allow the unit to run without alarms until the sensor can be replaced.
- **DEWPOINT ACTIVATE/DEACTIVATE BUTTON:** Allows the technician to deactivate the outlet dew point sensor and relative humidity settings if the readings are out of range. This will allow the unit to continue to run without alarms until the sensor can be calibrated or replaced.
- **FAILURE TO SWITCH ACTIVATE/DEACTIVATE BUTTON:** Allows the technician to deactivate the failure to switch pressure transducers if they fail or become out of range. This will allow the unit to run until the transducers can be replaced.
- **HEATER OUTLET CONTROL SETPOINT** – Setting is the control setting to control the heater contactor. This is set to 400°F to keep the contactor from cycling too often for proper regeneration temperature on the regenerating bed.

(Continued next page)

## nano Aircel AEHD-SERIES PLC/HMI Navigation and Operation

- **MID-BED RH** – SETTING is the Mid-Bed relative humidity at which the energy management/dew point demand system will be controlled. Typical recommended range of setting is from 1% to 7%. The energy management system/demand cycle control is an energy saving control system to conserve energy and money. This dryer control system feature monitors the mid-bed relative humidity (and Outlet Dew Point when option is selected) to allow extended drying time of the on-line drying vessel until the set point(s) is(are) reached, or goes above, such as 8% relative humidity (-38°F dew point), or a maximum time of 30 minutes has elapsed (failsafe max time)... when the Energy Management set point(s) or 30 minute maximum time has been reached the control system will advance to the next step and continue operation.
- **DEW POINT DEMAND (option)** – SETTING is the air outlet pressure dew point temperature at which the energy management system will be controlled.... typical recommended range of setting is from -15°F to -100°F (**Note:** setting should be set 20°F lower than lowest ambient temperature and/or 10 to 20°F lower than required outlet dew point)
- **HIGH HUMIDITY (Dew Point Demand option)** – SETTING is the air outlet pressure dew point temperature at which the high humidity or high outlet dew point alarm will be activated (**Note:** user may want to set this to a lower value if system can't tolerate the initial factory setting of +10°F outlet pressure dew point)
- **FAIL TO SWITCH PSI** – SETTING is the point at which the unit will fail if the pressure in each vessel does not reach the selected set point pressure. For example; if vessel 2 did not reach the factory setting of 60 PSI during Step-3 (Vessel 2 repress) within the allotted time (180 sec) then the FAIL TO SWITCH alarm would be Vessel 2 failed to re-pressurize.

## ALARM STATUS SCREEN



**ALARM STATUS screen:** gives the user a quick view of alarms and conditions.

The green highlighted condition is an ok or not active condition or status.

The highlighted red condition is an active shut down alarm and requires quick attention... any shutdown alarm will energize the enclosure door red common shutdown alarm light; an alarm banner is also displayed on the display screen... the system and timing is halted.

**(Note:** the system will continue to dry the inlet air if the dryer inlet and outlet valves are ok and the purge valves adjacent to the drying vessel containing pressure are ok, but regeneration will be shut down or halted)

When the common shutdown alarm red light is active, the customer common shutdown alarm 'dry contact' in the electrical enclosure will change state or de-energize for remote indication.

The highlighted yellow condition is an active non-shut down alarm and does not require quick attention... any non-shutdown alarm will not energize the enclosure door red common shutdown alarm light; an alarm banner is still displayed on the display screen... the system and timing continues normal operation.

When the cautionary alarms are active, the customer dew point system alarm 'dry contact' in the electrical enclosure will change state or de-energize for remote indication.

The following is a list of each alarm with a description of possible causes and troubleshooting ideas:

- **OVER TEMPERATURE:** alarm is caused by the temperature exceeding the maximum allowed temperature in the heater sheath or heater outlet. Possible causes for exceeding temperatures are as follows:
  - Lack of air flow across heater
  - A contactor has become stuck in the closed position
  - A thermocouple has failed high (out of range)
  - A thermocouple wire has been disconnected or broken
  - PLC thermocouple input card not functioning

(Continued next page)

## nano Aircel AEHD-SERIES PLC/HMI Navigation and Operation

There are failsafe's in place to ensure that once heater has reached the high limit, it will shut off and cool down. If this alarm continues to happen, the user will need to find and correct the issue. This alarm will automatically reset once the temperature falls below a certain set point.

- **Heater Outlet Over Temp:** See Over Temperature alarm on previous page.
- **Loss of Air Pressure:** alarm occurs when the pressure of the drying tower drops below 60 PSI. known causes are as follows:
  - Transducer Failure
  - Valve Failure
- **DEPRESS V1 FAILURE:** alarm occurs when vessel 1 fails to depressurize within the allotted time. Possible causes are (note: a shutdown alarm):
  - Loss of air pressure on control air line
  - Depressurization valve failure
  - Depressurization pilot solenoid valve failure
  - Bad vessel pressure transducer
  - PLC input or output problem
  - Wiring issue
  - A main switching valve leaking high pressure air into the low-pressure regenerating vessel.
- **DEPRESS V2 FAILURE:** alarm occurs when vessel 2 fails to depressurize within the allotted time. Possible causes are (note: a shutdown alarm):
  - Loss of air pressure on control air line
  - Depressurization valve failure
  - Depressurization pilot solenoid valve failure
  - Bad vessel pressure transducer
  - PLC input or output problem
  - Wiring issue
  - A main switching valve leaking high pressure air into the low-pressure regenerating vessel.
- **REPRESS V1 FAILURE:** alarm occurs when vessel 1 does not reach the minimum operating pressure (set in the setting screen) within the allotted time. Possible causes are (note: a shutdown alarm):
  - Loss of air pressure on control air line
  - Re-pressurization valve failure
  - Re-pressurization pilot solenoid valve failure
  - Bad vessel pressure transducer
  - PLC input or output problem
  - Wiring issue
  - A main switching valve leaking high pressure air into the ambient.

(Continued next page)

- **REPRESS V2 FAILURE:** alarm occurs when vessel 2 does not reach the minimum operating pressure (set in the setting screen) within the allotted time. Possible causes are (note: a shutdown alarm):
  - Loss of air pressure on control air line
  - Re-pressurization valve failure
  - Re-pressurization pilot solenoid valve failure
  - Bad vessel pressure transducer
  - PLC input or output problem
  - Wiring issue
  - A main switching valve leaking high pressure air into the ambient.
- **RELATIVE HUMIDITY SENSOR FAIL:** alarm occurs when the relative humidity sensor drifts out of range. This alarm may be caused by the following (note: a cautionary non-shutdown alarm):
  - The sensor cable is unplugged, or wire is broken
  - The sensor is out of calibration
  - A bad PLC input or analog card
  - A damaged relative humidity sensor
- **MID-BED HIGH HUMIDITY:** alarm occurs when the mid-bed relative humidity rises above the set point set on the settings screen. (Activated when the mid-bed RH exceeds the mid-bed RH setting) This alarm may be caused by the following (note: a cautionary non-shutdown alarm):
  - The sensor is out of calibration
  - A bad PLC input or analog card
  - A damaged relative humidity sensor
  - Poor regeneration
  - Desiccant media is contaminated and in need of replacement
  - System not functioning properly... check system operation
- **DEWPOINT SENSOR FAIL:** alarm occurs when the dew point sensor drifts out of range. This alarm may be caused by the following (note: a cautionary non-shutdown alarm) :
  - The sensor cable is unplugged, or wire is broken
  - The sensor is out of calibration
  - A bad PLC input or analog card
  - A damaged dew point sensor
- **HIGH HUMIDITY:** alarm occurs when the dew point reading rises above the high humidity alarm point setting (factory set at +10°F... can be adjusted as needed). Possible causes below (note: a cautionary non-shutdown alarm):
  - The sensor is out of calibration
  - A bad PLC input or analog card
  - A damaged dew point sensor
  - Poor regeneration
  - Desiccant media is contaminated and in need of replacement
  - System not functioning properly... check system operation

## nano Aircel AEHD-SERIES PLC/HMI Navigation and Operation

- **HEATER OUTLET THERMOCOUPLE FAIL:** alarm happens when the thermocouple becomes out of range. This happens when there is a break in the thermocouple wires or if the thermocouple is bad. This alarm will reset automatically once the issue has been corrected.
- **HEATER SHEATH THERMOCOUPLE FAIL:** alarm happens when the thermocouple becomes out of range. This happens when there is a break in the thermocouple wires or if the thermocouple is bad. This alarm will reset automatically once the issue has been corrected.

## OPERATIONAL TIME SCREEN



**OPERATIONAL TIME screen:** gives the user a quick view of the total time of the unit. This is the total accumulated time of the unit.

## SAVINGS TIME SCREEN



**SAVINGS TIME screen:** gives the user a quick view of the total savings time of the unit. This is the total accumulated time of the unit achieved energy savings.



Experience. Customer. Service.



**nano-purification solutions**  
Charlotte, North Carolina  
Tel: +1 704 897 2182  
support@nano-purification.com  
www.nano-purification.com



**nano-purification solutions**  
Maryville, Tennessee  
Tel: +1 704 897 2182  
support@nano-purification.com



**nano-purification solutions**  
St. Catharines, Ontario, Canada  
Tel: +1 905 684 6266  
canadasupport@nano-purification.com



**nano-purification solutions**  
Gateshead, United Kingdom  
Tel: +44 (0) 191 497 7700  
sales\_uk@nano-purification.com



**nano-purification solutions**  
Erkelenz, Germany  
Tel: +49 (0) 2431 9550 600  
sales\_de@nano-purification.com



**nano-purification solutions**  
Singapore  
Tel: +65 6748 7988  
sales.asia@nano-purification.com