TECHNICAL GUIDE · CN-IC2E-04 · EXTERNAL

Flō i-Controller 2.0e

Display Navigation For

Rev 301.00

Document: CN-IC2e-04 **Title:** i-Controller 2.0e Display Navigation REV.301

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IMPORTANT: Read Before Continuing

i-Controller Unit Types: Some unit types, such as Water-Source Heat Pumps, Chilled Water Units, and Make-Up Air Units, have screens that are specific to that unit type and may not be reflected in this guide.

Working with Building Management Systems: Once an i-Controller Modbus or BACnet connection to the Building Management System (BMS) has been established and the controller is online, the BMS becomes the master controller. All setpoint and schedule changes should be made at the BMS. Changes made on the i-Controller are temporary and will be overwritten by the BMS.

To make a temporary setting change, perform the following steps:

1. Unwire the RS485 connections from the terminal block inside the unit.
2. Wait at least 90 seconds until the BMS Status on the Network Info screen on the display reads Offline.
3. Adjust the necessary settings for testing or change the desired variable (for instructions on how to navigate the display, please refer to the instructions below).
4. When testing or changes are complete, reconnect the RS485 wiring to the terminal block inside the unit.
5. Once the Modbus/BACnet connection has been re-established and the controller shows Online on the Network Info screen, verify that the changed variable is correct.
6. If the changed variable has been overwritten, the variable change must be made at the BMS.

Introduction Screen

Introduction screens are displayed during controller startup. Press any button to enter the Overview Screen.

Figure 1. Introduction Splash Screen / Standby Screen

Page Navigation

A blinking cursor will default to the upper right corner of the screen. When the cursor is in this home location, the Up and Down arrows can be used to navigate from page to page within the selected menu.

Pressing the Enter button will open the page and place the cursor on the first editable field. Once the cursor is on an editable field, the Up and Down arrows can be used to change the value. Press the Enter button to accept the changed value. Continue pressing the Enter button to navigate to the other editable fields on the page. At the end of the page, the cursor will return to the home location for page navigation.

Button	Descr.	Description
⚠	Alarm	Press to enter alarm menu
◎	Prog	Press to cycle menu options
↩	Esc	Press to go back. Long press to return to the Overview screen.
↑	Up	Increase value
↵	Enter	Confirm value change
↓	Down	Decrease value

Table 1. Navigation Buttons

When editing a value, you can press the Escape button to return the cursor to its home location without saving the changed value. From any menu, a long press on the Escape button will return you to the Overview Screen.

Overview Screen

The Overview screen displays the date and time, controller IP address, space conditions, and current mode of operation. When one or more overrides are present, the unit is in a Test Mode, or an invalid parameter file is loaded, a warning message is displayed on the Overview screen.

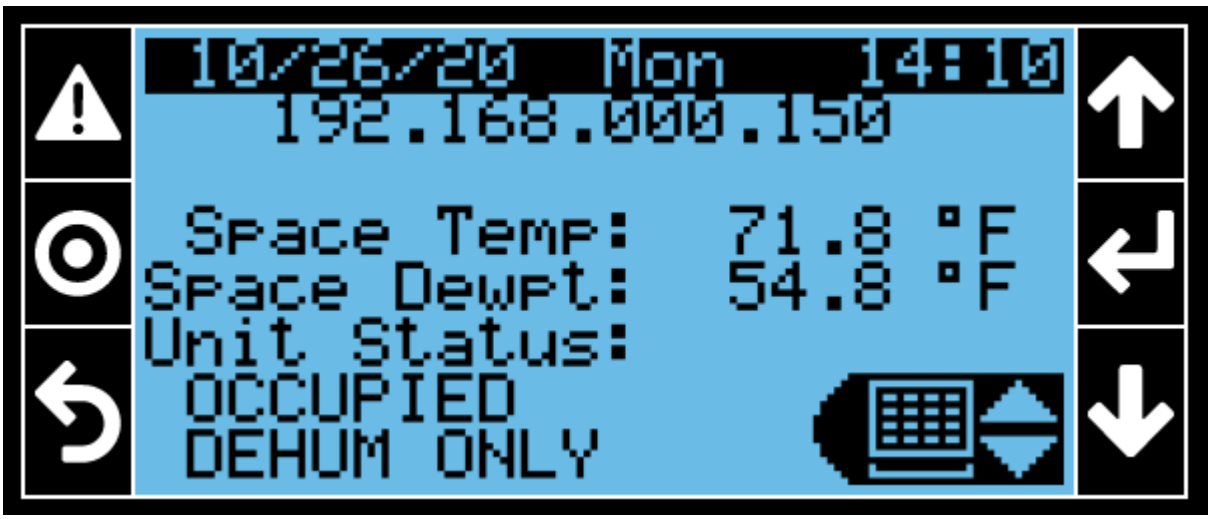

Figure 2. Overview Screen

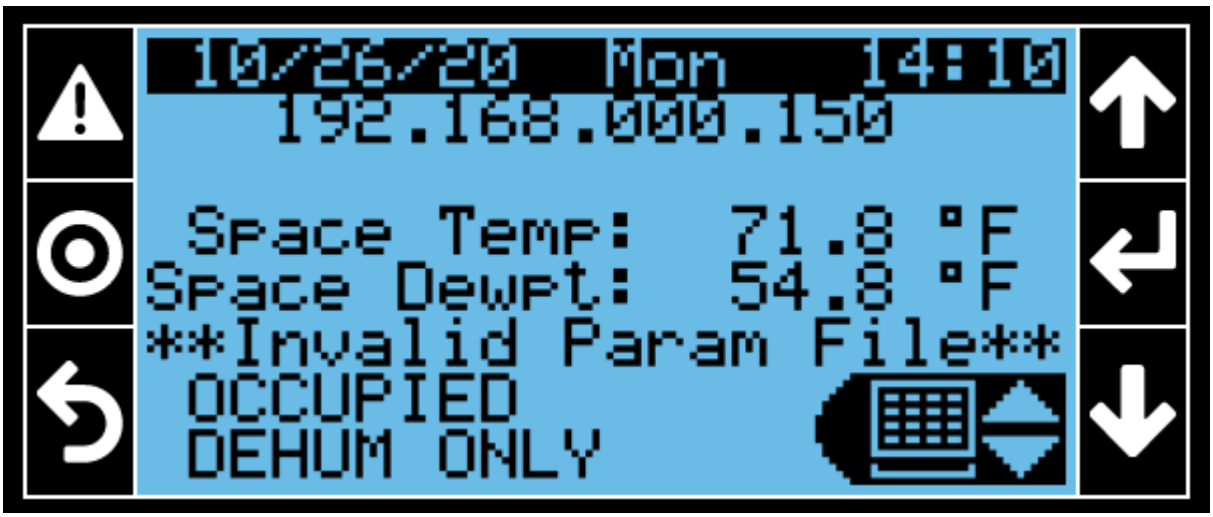

Figure 3. Invalid Parameter File Message

Quick Menu

The Quick Menu provides access to the Schedule Menu, Setpoints, Status Menu, and Information Menu. From the Overview screen, use the Up and Down arrows to select the desired Quick Menu option, then press Enter to open it.

Icon	Description	Function
	Schedule	Unit Schedule
	Setpoints	Unit Setpoints
	Status	Status Menu
	Info	Controller information

Table 2. Quick Menu Icons

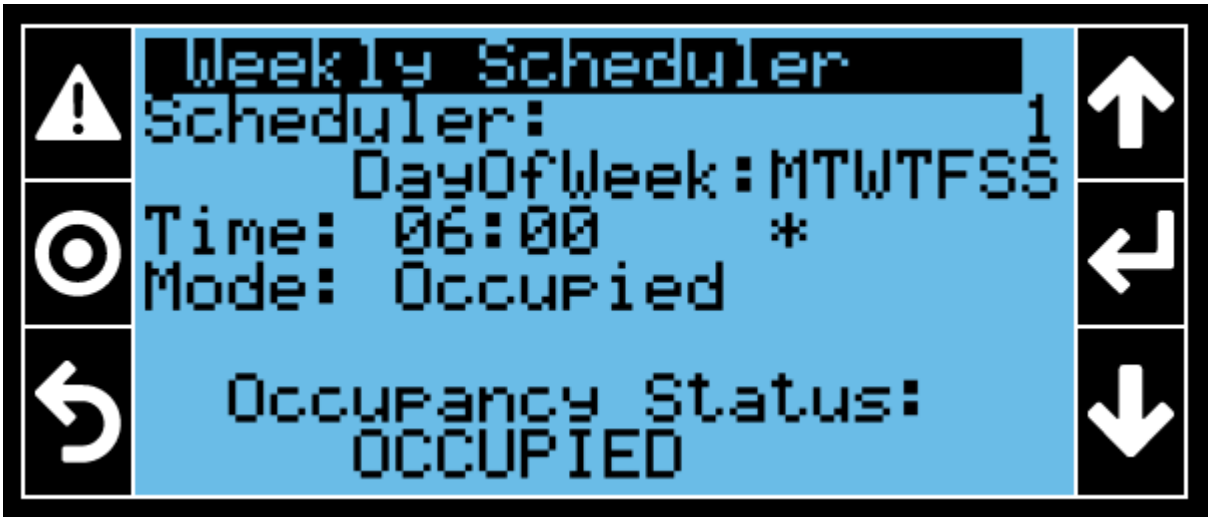

Figure 4. Schedule Screen

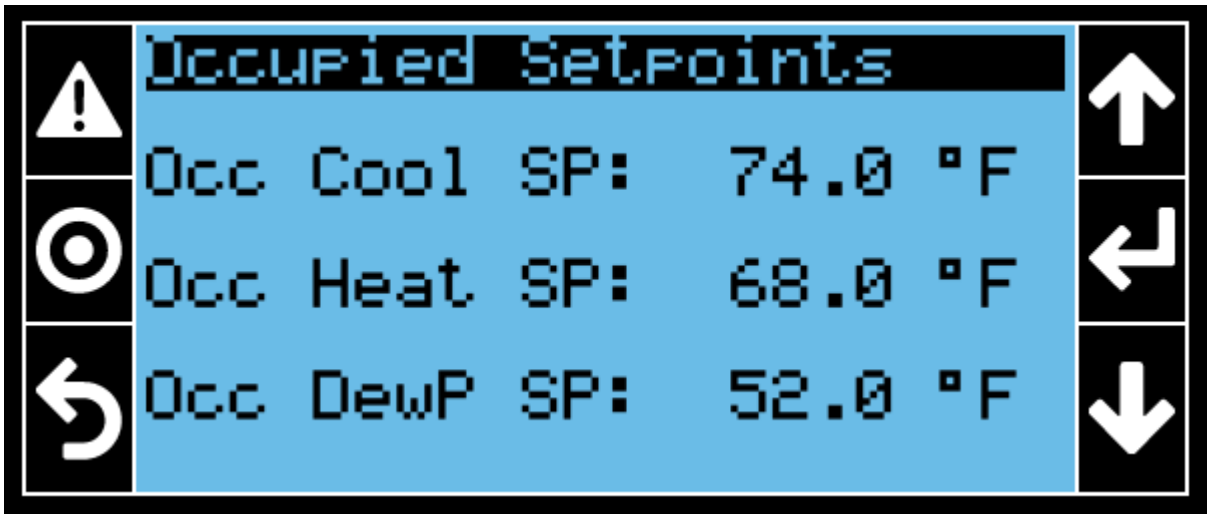

Figure 5. Setpoints Screen

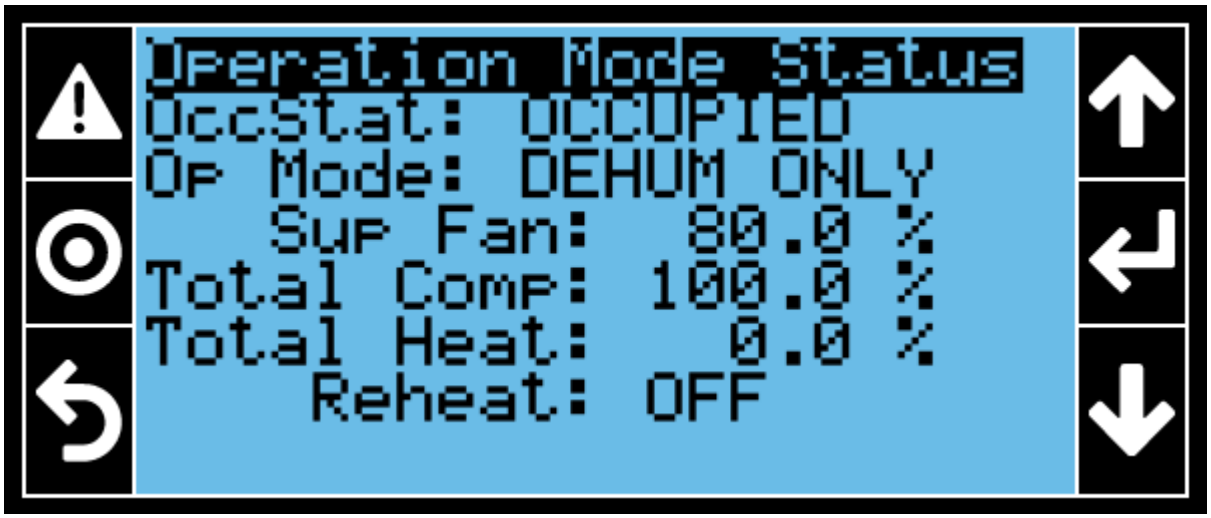

Figure 6. Status Screen

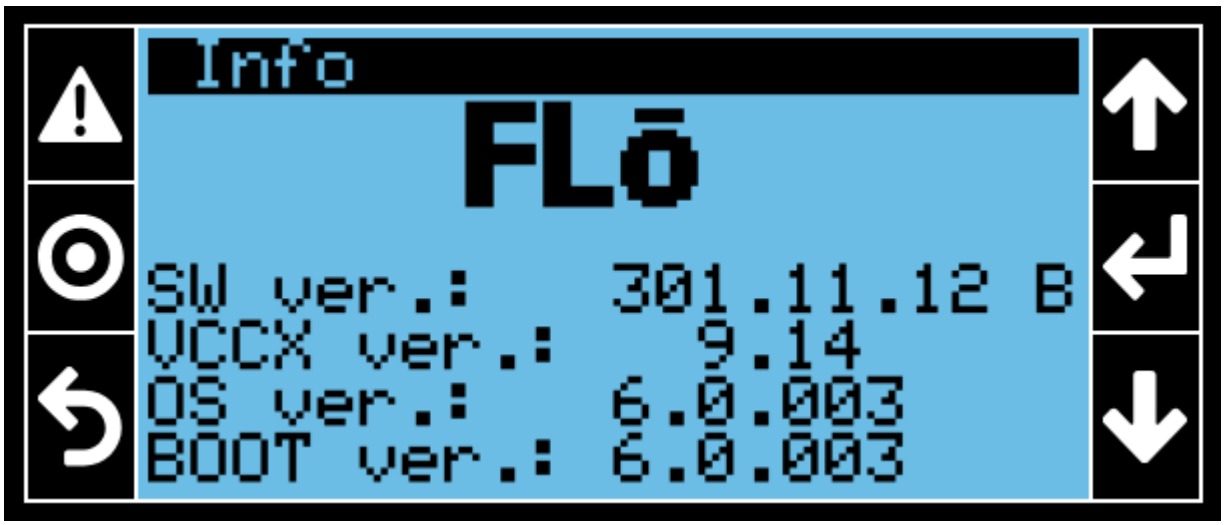

Figure 7. Information Menu Screen

Schedules

A schedule is used to activate or deactivate an event on a specified day and time. To create a scheduled event, use the arrow and Enter keys to select the event number, the hours and minutes for the event, the day of the week of the occurrence, and then Occupied or Unoccupied mode.

The Flō unit will operate in Occupied mode between the scheduled Occupied Time and Unoccupied Time listed for the selected day of the week.

Each time on the schedule should correspond with the store hours. All hours should be set in military time on a 24-hour basis. For example, on Mondays, the occupied time starts at 8:00 a.m. and the unoccupied time begins at 10:00 p.m. For 'Occupied', Scheduler '1' will be selected and an '*' will appear under 'M'. The time will be set to 8:00 and the mode will be set to 'Occupied'. *See Figure 8*.

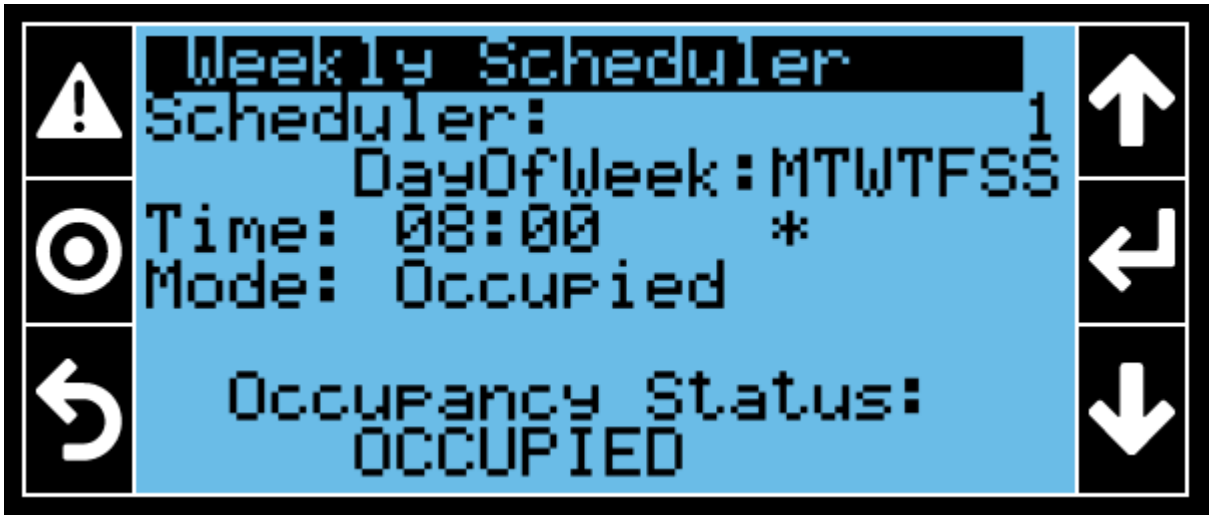

Figure 8. Monday 8am Occupied Schedule

For Unoccupied mode, Scheduler 2 will be selected and an asterisk (*) will appear under M. The time will be set to 22:00, and the mode will be set to Unoccupied. *See Figure 9.*

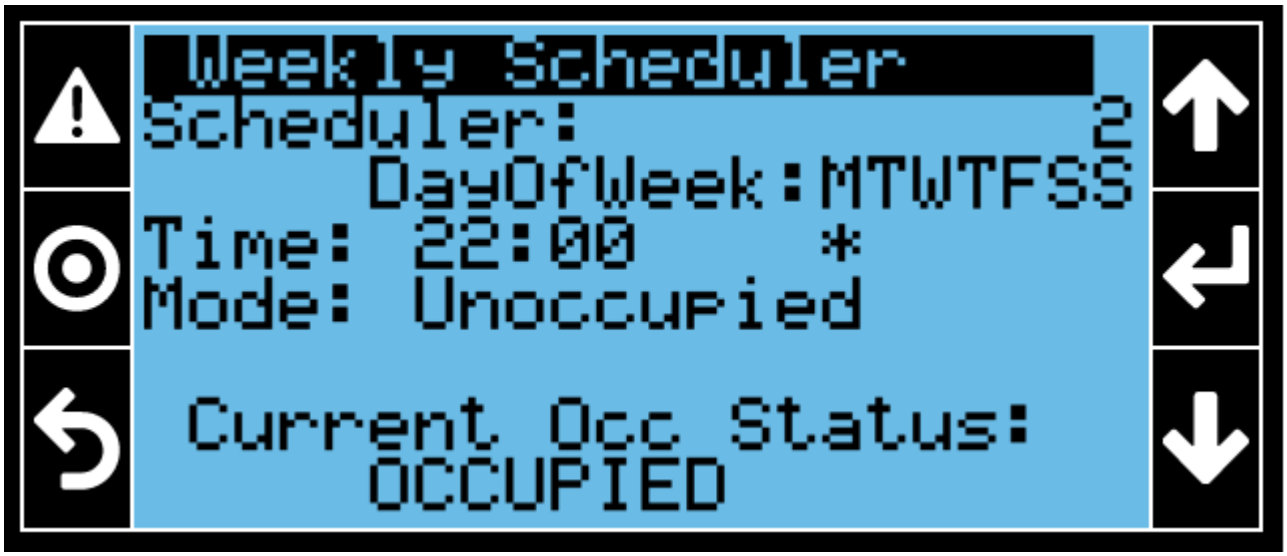

Figure 9. Monday 10pm Unoccupied Schedule

To Change Unit Occupied and Unoccupied Times:

1. From the 'Overview' screen, use the Quick Menu options to select the 'Schedule Menu' and press 'Enter'.
2. Press the 'Enter' button to move the cursor to the Scheduler selection. Using the 'Up' and 'Down' buttons, select the desired scheduler event and press 'Enter' to confirm the event.
3. Use the 'Up' / 'Down' arrows to select the hour and press 'Enter' to set the value. Then select the minute you wish to change and press 'Enter' to set the value.
4. Use the Up and Down arrows to select the operation mode, Occupied or Unoccupied, and press Enter to set the value.
5. Repeat steps 2–4 until all events in the schedule have been updated.
6. Once all changes have been completed, press the 'Escape' button to return to the Overview screen.

Setpoints

Setpoints are used as the cut-in/cutout values for various i-Controller 2.0e functions. The i-Controller 2.0e Setpoints section has three navigation screens.

The "Setpoints" option should only be used if operation setpoints **are not** being communicated to the Flō i-Controller 2.0e from a Building Management System (BMS).

If the Flō i-Controller 2.0e is connected to a BMS over Modbus, the setpoints shown on this screen will be automatically updated with the setpoints entered in the BMS. The setpoint limitations are as follows:

Cool SP: Heat SP + 4 °F to 85 °F

Heat SP: 50 °F to Cool SP - 4 °F

Dew Point SP: 48 °F to 60 °F

There must be a minimum of 4 degrees between the heating and cooling setpoints. If setpoints are entered too close together, the program will automatically adjust them according to the following rules:

Outdoor Air Temp > 60 °F: Heating Setpoint = Cooling Setpoint - 4 °F

Outdoor Air Temp < 50 °F: Cooling Setpoint = Heating Setpoint + 4 °F

To Change Unit Setpoints:

1. If the Flō i-Controller is **not** connected to a BMS, perform the following steps to modify the setpoints.
2. From the 'Overview' screen, use the Quick Menu options to select the 'Setpoints' option and press 'Enter'.
3. Once on the 'Occupied Setpoint' screen, the cursor will be in the home location.
4. With the cursor in the home location, use the Up and Down arrows to navigate to the desired setpoint screen.
5. Press the 'Enter' button to move the cursor to the setpoint you wish to change.
6. Use the 'Up' / 'Down' arrows to enter the desired setpoint value, then press 'Enter' to save the value.
7. Repeat steps 5-6 until all setpoint values have been set.
8. Press the 'Enter' button until the cursor returns to the home location.
9. Repeat step 4 to change screens.
10. Once all changes have been completed, press the 'Escape' button to return to the Overview screen.

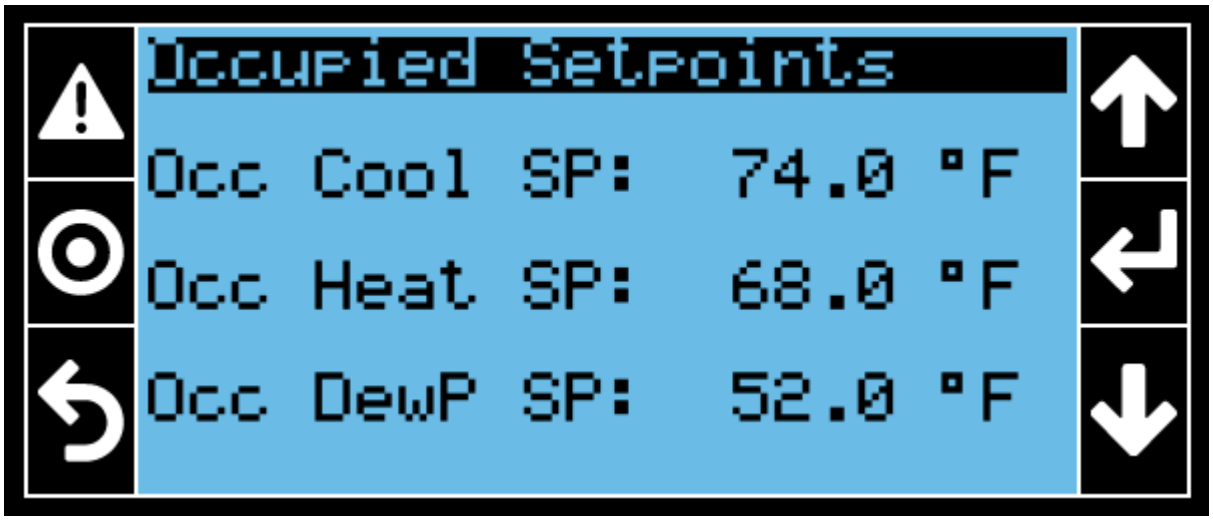

Figure 10. Occupied Setpoints - Screen 1

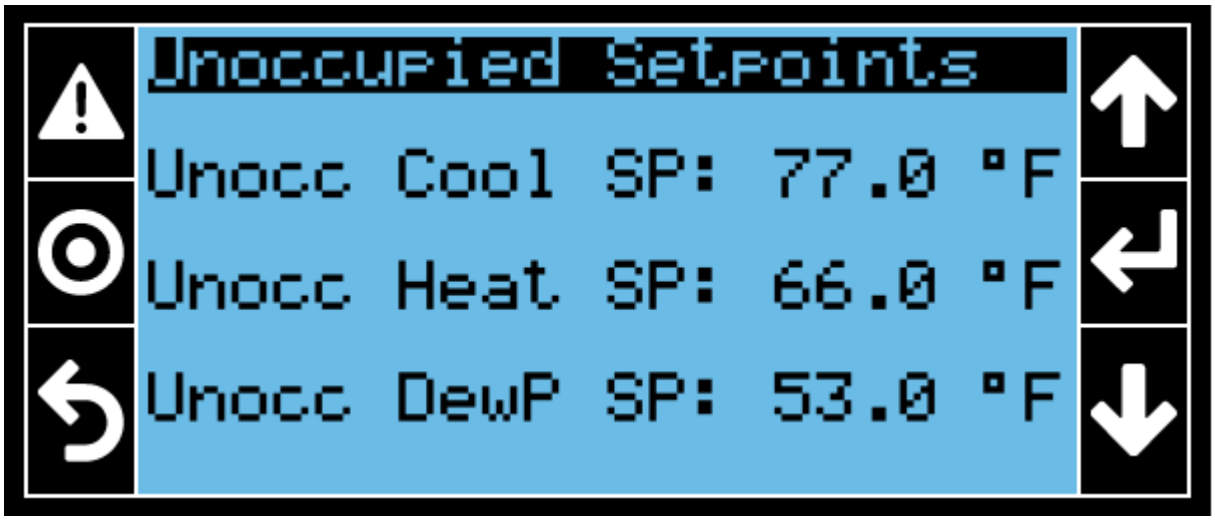

Figure 11. Unoccupied Setpoints - Screen 2

Figure 12. Reheat / Reclaim Setpoints - Screen 3

Status Menu

View the current operation mode (dehumidification, cooling, or heating), reheat or reclaim status, current occupancy, and other key system parameters.

To View Status Information:

1. From the 'Overview' screen, use the Quick Menu options to select the 'Status Menu' and press 'Enter'.
2. Once on the 'Operation Mode Status' screen, the cursor will be in the home location.
3. With the cursor in the home location, use the 'UP / 'DOWN' arrows to navigate to the desired screen.

Operation Mode Status Screen:

The 'Operation Mode Status' screen will display the following unit status and information.

1. **OccStat: The** occupancy status "Occupied" or "Unoccupied" Mode will display based on the occupancy schedule.
2. **Op Mode:** The second line will display the unit's operation mode. One of the following will appear, based on the unit's operation.
    - Standby
    - Fan-Only
    - Heat
    - Cool
    - Dehum
    - Dehum + Heat
    - Dehum + Cool
    - Pre-Emptive Dehum
    - Shutdown
    - Net Disable

- Return Temp Control**
- Econ Mode**
- Hydronic Freeze Protection Heat (only on units with Hydronic Heat equipped)

3. **Sup Fan:** Supply Fan Status will display a value from 0-100% of the supply fan operation.
4. **Total Comp:** Total compressor capacity will display a value from 0-100%.
5. **Total Heat:** Total auxiliary heat capacity will display a value from 0-100%.
6. **Reheat/Reclaim Status:** Reheat or Reclaim Stage 1 "ON" or "OFF" when the coil is activated and deactivated.
7. **CO2 Level (ppm)**:** If a CO2 sensor option is chosen, the CO2 level will be displayed in parts per million (ppm). This is the CO2 control value. If more than one CO2 sensor is being used, this value represents the max CO2 value.

** If Equipped

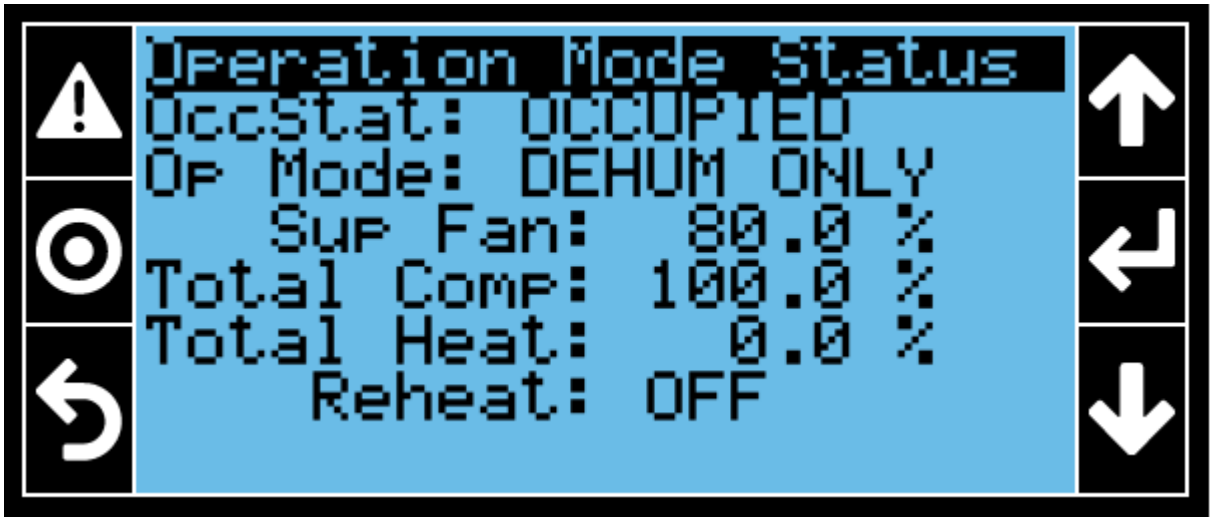

Figure 13. Operation Mode Status Screen

VCCX Status Screen:

The 'VCCX Status' screen will display the following status and information from the VCCX controller.

1. **AHU Op Mode: The operation mode of the VCCX controller. The displayed mode will be 'RUN' or 'OFF' and will indicate the commanded state of the supply fan.**
2. **HVAC Op Mode:** The HVAC Op Mode indicates the VCCX's commanded operation mode. One of the following will appear, based on the unit's mode of operation.
    - Vent
    - Cool
    - Heat
    - Vent DH
    - Cool DH
    - Heat DH
3. **VCCX Alarm:** This will indicate if the VCCX controller is in an alarm state.
4. **VCCX Comm Stat:** This indicates if the VCCX is in communication with the Flō i-Controller.

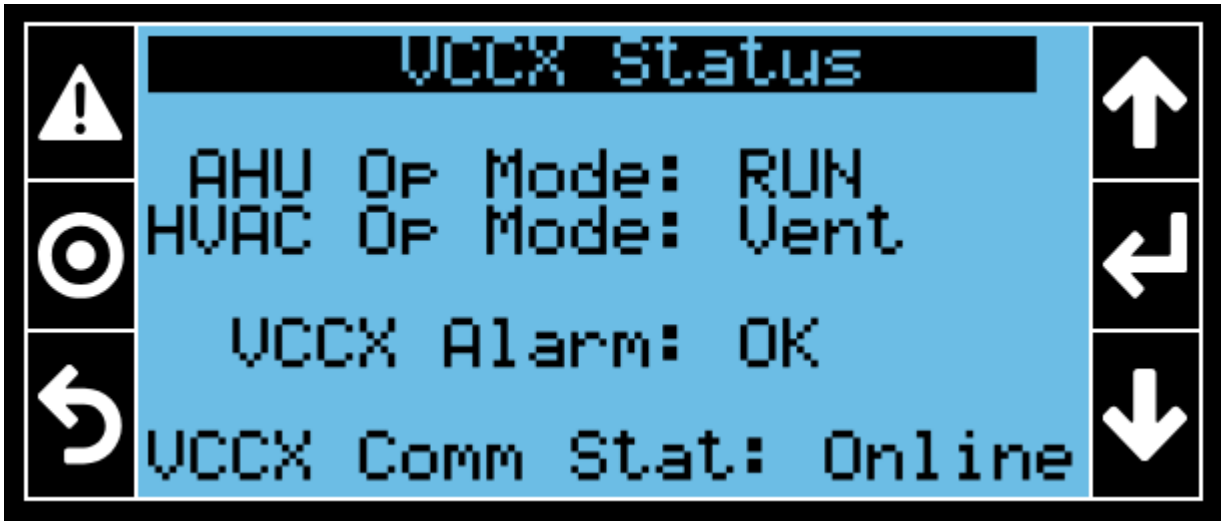

Figure 14. VCCX Status Screen

Information Menu

The Information Menu displays the current software versions and other controller hardware status details.

To View Controller Information:

1. From the 'Overview' screen, use the Quick Menu options to select the 'Information Menu' and press 'Enter'.
2. Use the Up and Down arrows to scroll through the screens.

The following controller files and software versions are displayed:

1. **SW ver.:** The version of the base program inside the i-Controller. This field should match the CRM field "Revision#" for a given unit.
2. **VCCX ver.:** The version of software inside the VCCX controller.
3. **OS ver.:** The version of operating system, OS, in the i-Controller.

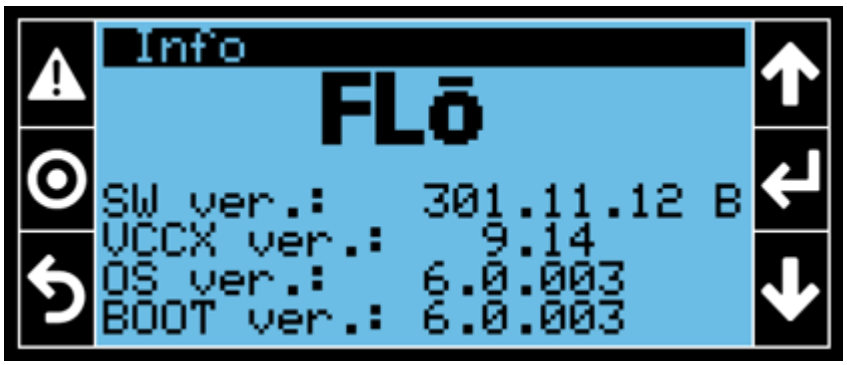

Figure 15. Software Versions Running

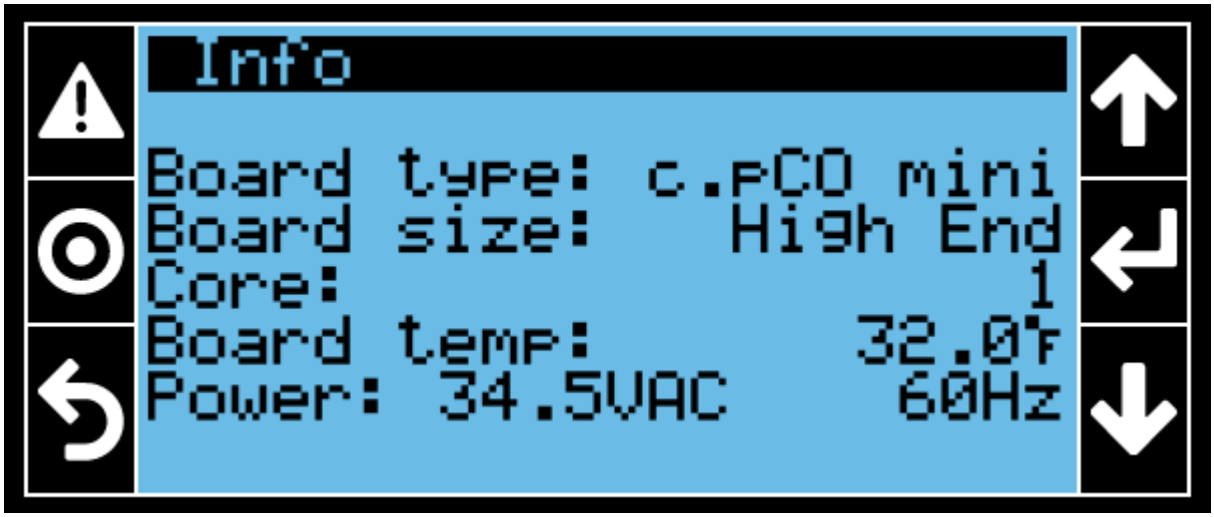

Figure 16. Controller Info Screen

Menu Options

The Program button provides access to controller information. When an alarm is present, the alarm indicator will blink red.

To navigate the menu options, press the Program button on the display to cycle through the menu list. Press the Escape button to return to the previous screen, then to the Overview screen.

Pressing the Program button will step you through the following menu options.

1. **Status Menu: View** Temperature Status, Cooling Status, Condenser Status, and Heating Status
2. **Field Tech Menu:** View and configure inputs and outputs, Enter Test Modes, and Damper Parameters to be set by a certified field technician only.
3. **Settings Menu: View** and configure controller configuration settings.

Status Menu

The Status Menu gives you access to the following status screens.

1. **Temperature Status: Status** screens display the reading of various temperature sensors throughout the unit.
2. **Cooling Status:** Status screens display compressor information.
3. **Condenser Status:** Status screens display condenser information.
4. **Heating Status:** Status screens display heating information.
5. **Damper & Fan Status:** Status screens display damper and fan information.
6. **Optional Eq Status:** Status screens display information for optional equipment such as ERV, exhaust fan, and Advanced Reclaim options. Note: this menu option is only available if the unit is equipped with these options.

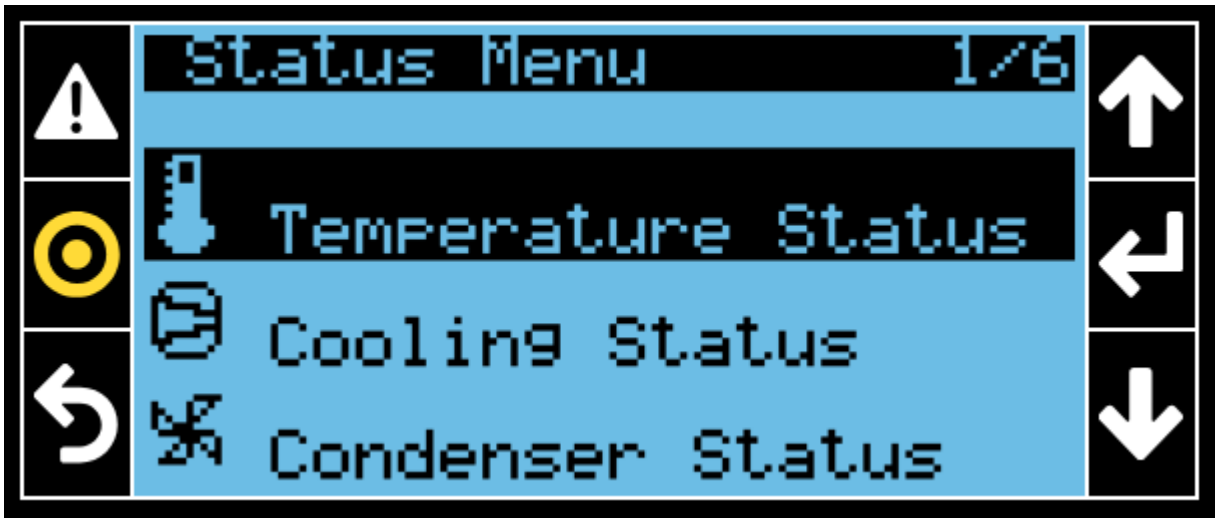

Figure 17. Status Menu

Temperature Status

The temperature status screens display the reading of various temperature sensors throughout the unit. NOTE: when an asterisk (*) is displayed to the right of the value, the value is in override. Information displayed on the status screen is as follows:

1. **Space Temperature:** Temperature reading from temperature probe mounted in the space.
2. **Space Dew Point:** Dew point calculated from the temperature and humidity probe readings mounted in the space.
3. **Supply Temperature:** Temperature reading from temperature probe mounted in the supply air duct.
4. **Return Air Temperature:** Temperature reading from temperature probe mounted in the return air duct.
5. **Outdoor Air Temperature:** Temperature reading from the temperature probe mounted underneath the rain hood on the Flō unit.
6. **Reheat/Reclaim In Temp:** Temperature reading from temperature probe mounted in the Reheat/Reclaim Stage 1 inlet.

To Enter the Temperature Status Screen:

1. Use the ‘UP’ / ‘DOWN’ arrows to highlight the menu item and press the ‘Enter’ button.
2. Use the ‘UP’ / ‘DOWN’ arrows to navigate to additional screens.

3. Press the ‘Escape’ button to return to the Status Menu.

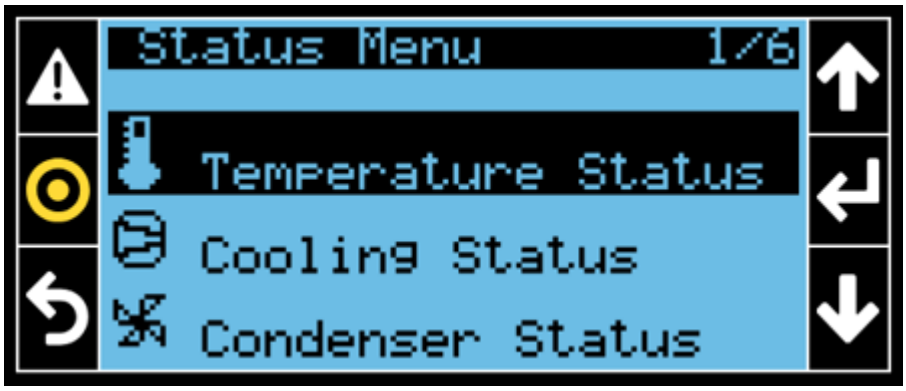

Figure 18. Status Menu

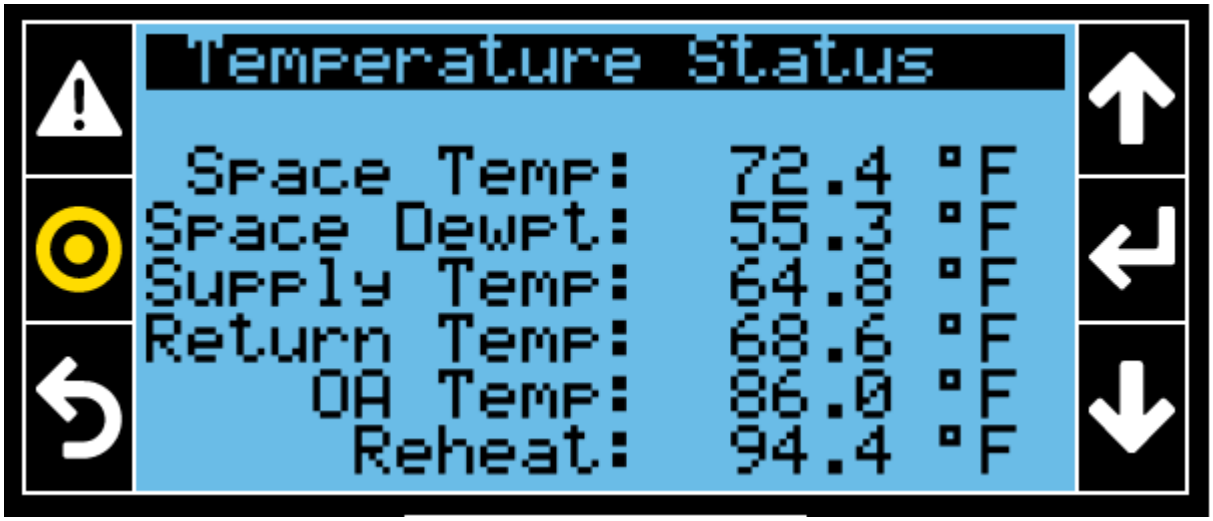

Figure 19. Temperature Status Screen

Cooling Status

There are up to 4 Compressor Status screens; however, Status screens are only displayed for compressors equipped in the unit. Compressor Status screens B1 and B2 will only be displayed when the unit is equipped with a third and fourth compressor. Information displayed on the status screen is as follows:

1. **Enable:** Compressor running status.
2. **Capacity:** Compressor operating percentage.
3. **Suct Press:** Suction pressure reading from the pressure transducer located on the denoted compressor.
4. **Disch Press:** Discharge pressure reading from the pressure transducer located on the denoted compressor.

5. **Suct Setpt:** Suction pressure set point set based on the current control strategy.

6. **Comp Alarm:** This will display the status of RSM module.

To Enter the Cooling Status Screen:

1. Use the 'UP' / 'DOWN' arrows to highlight the menu item and press the 'Enter' button.

2. Use the 'UP' / 'DOWN' arrows to navigate to additional compressor screens.

3. Press the 'Escape' button to return to the Status Menu.

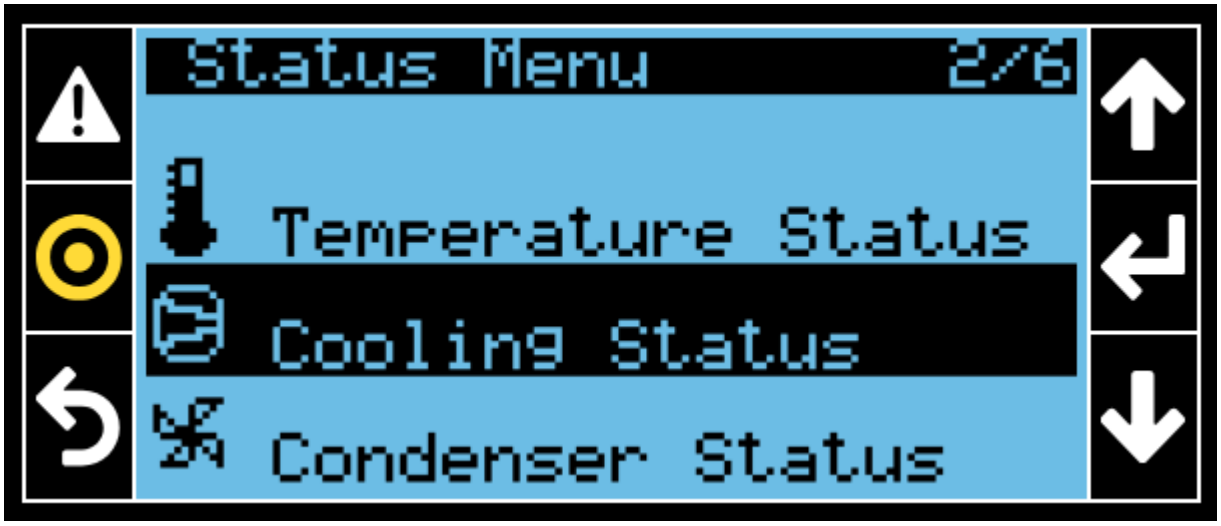

Figure 20. Status Menu

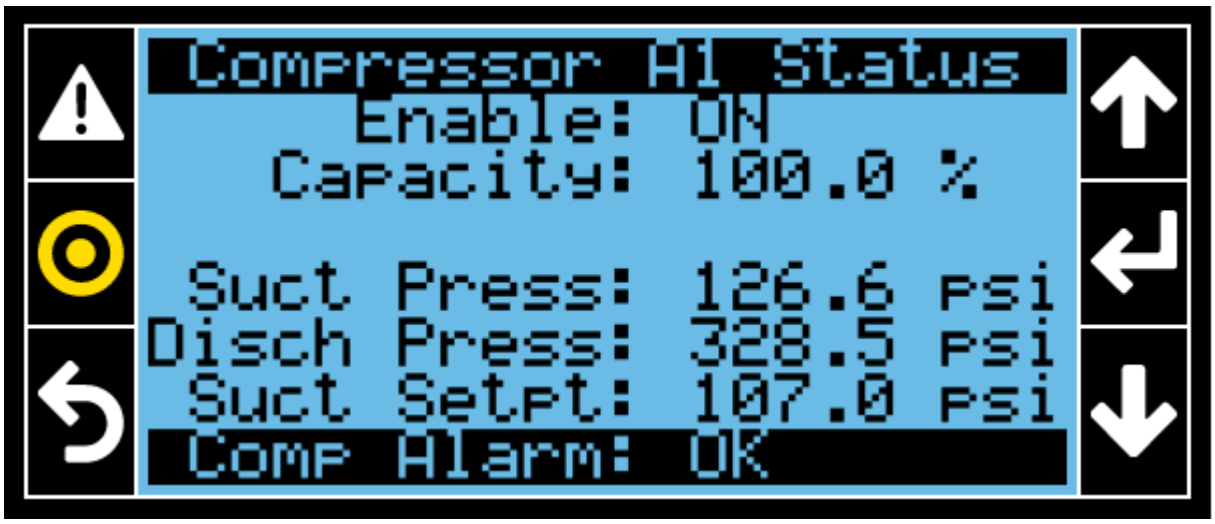

Figure 21. Cooling Status Screen

Condenser Status

There are up to 4 Condenser Status screens; however, status screens are only displayed if equipped. Information displayed on the status screen is as follows:

1. **Condenser Enable: Condenser running status.**
2. **Fan Signal:** Display percentage of condenser fan operation.
3. **Disch Press:** Discharge pressure reading from the pressure transducer located on the denoted compressor.
4. **Disch Setpt:** The desired discharge pressure control setpoint.
5. **Cond Alarm:** This will display the status of the RSM module.

To Enter the Condenser Status Screen:

1. Use the 'UP' / 'DOWN' arrows to highlight the menu item and press the 'Enter' button.
2. Use the 'UP' / 'DOWN' arrows to navigate to additional screens.
3. Press the 'Escape' button to return to the Status Menu.

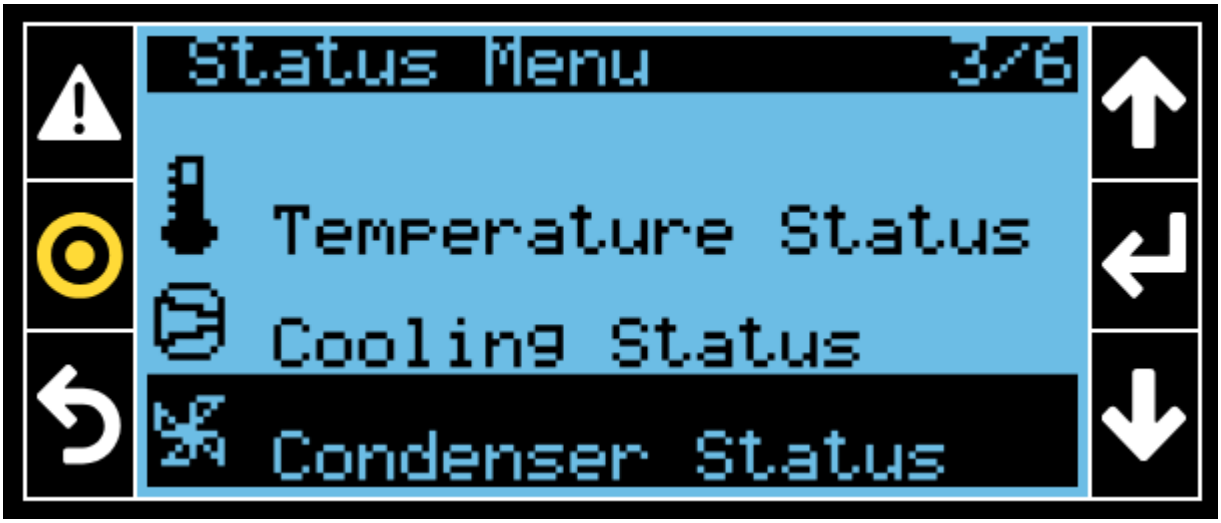

Figure 22. Status Menu

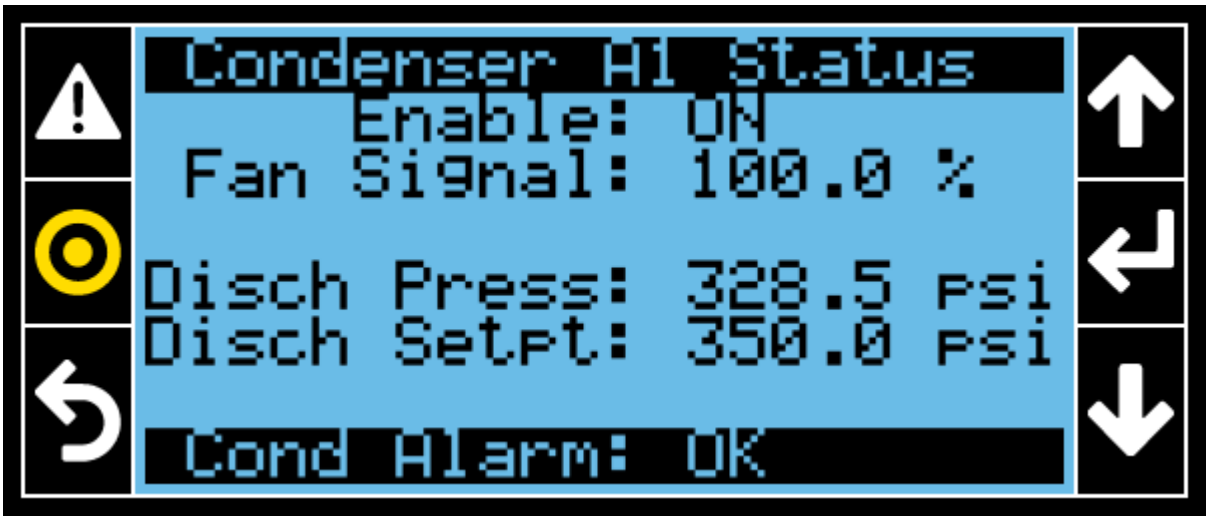

Figure 23. Condenser Status Screen

Heating Status

View the current heating operation mode and stage status. Information displayed on the status screen is as follows:

1. **Enable: Heating run status.**
2. **Capacity:** Heating operating percentage.
3. **Stg x:** Indicates active heating stage.

To Enter the Heating Status Screen:

1. Use the ‘UP’ / ‘DOWN’ arrows to highlight the menu item and press the ‘Enter’ button.
2. Use the ‘UP’ / ‘DOWN’ arrows to navigate to additional screens.
3. Press the ‘Escape’ button to return to the Status Menu.

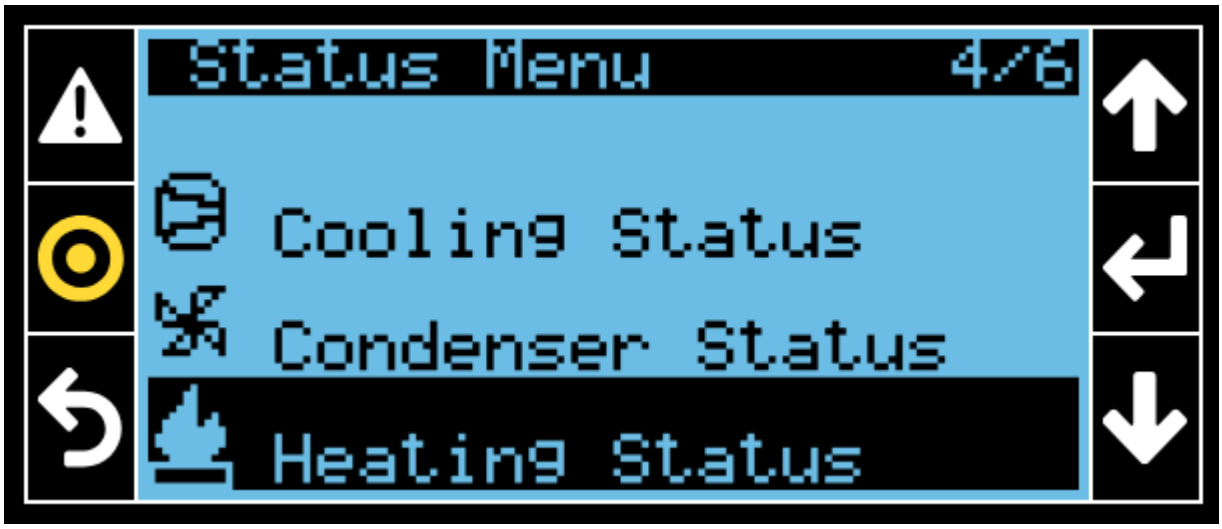

Figure 24. Status Menu

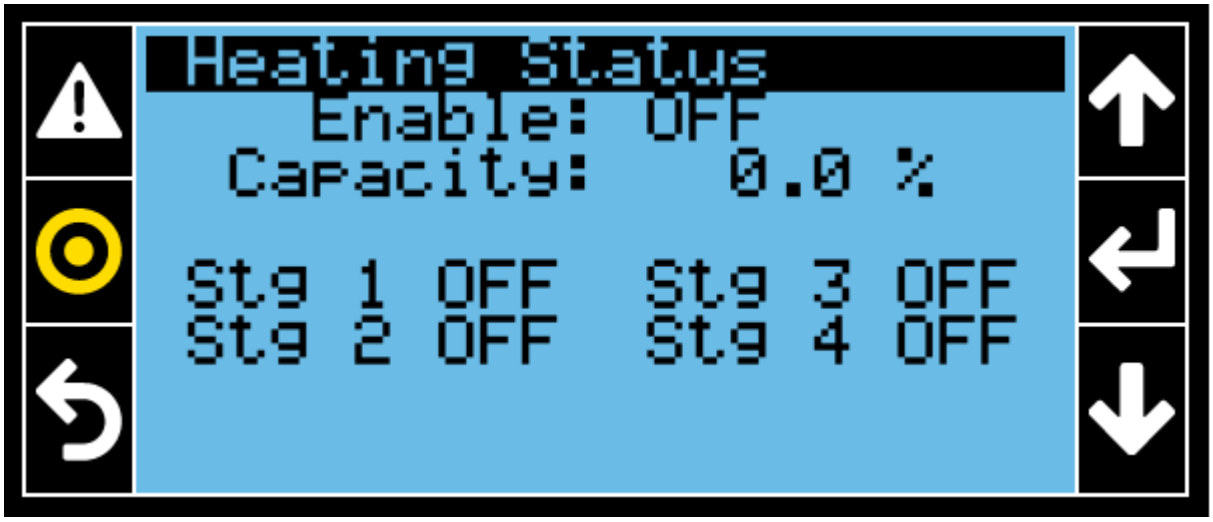

Figure 25. Heating Status Screen

Field Tech Menu

Use the Field Tech Menu to view and configure inputs and outputs, access Test Modes, and adjust Damper Parameters. These settings are intended for use by certified field technicians only.

The following options are available in the Field Tech Menu:

1. **Analog Inputs: View** and configure analog inputs and set offset calibration values.
2. **Binary Inputs:** View the status of the binary inputs values.
3. **Analog Outputs:** View the status of the analog output values.

4. **Binary Outputs:** View the status of the binary output values.
5. **Damper Position:** View current damper positions and set the damper operating percentage.
6. **Test Modes: Activate** test modes for dehumidification, comfort cooling, heating, occupancy mode, and gas pressure check.

To Enter the Field Tech Menu:

1. From the Overview Screen, press the program button  on the display twice.
2. Press the 'Escape' button once to return to the Status Menu and once more to return to the Overview Screen.

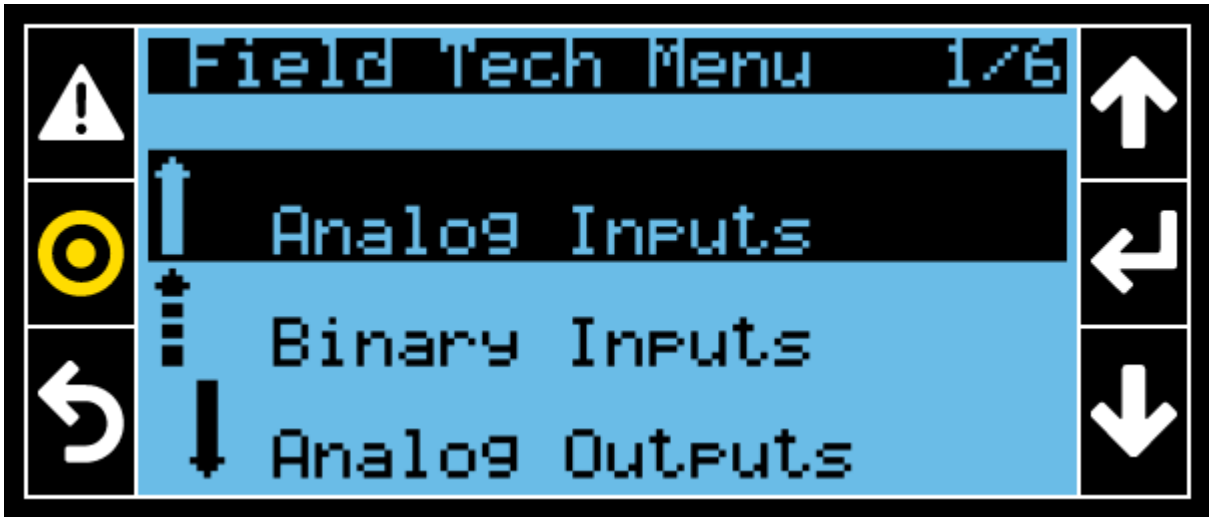

Figure 26. Field Tech Menu

Analog Inputs

Analog Input screens are used to view each analog input, set sensor offset values, and configure powered sensors. Only inputs specific to the Flō unit will be visible on the screens.

Note: Not all inputs are wired to the Flō i-Controller. It will be shown on the screen if the input is from the VCCX controller.

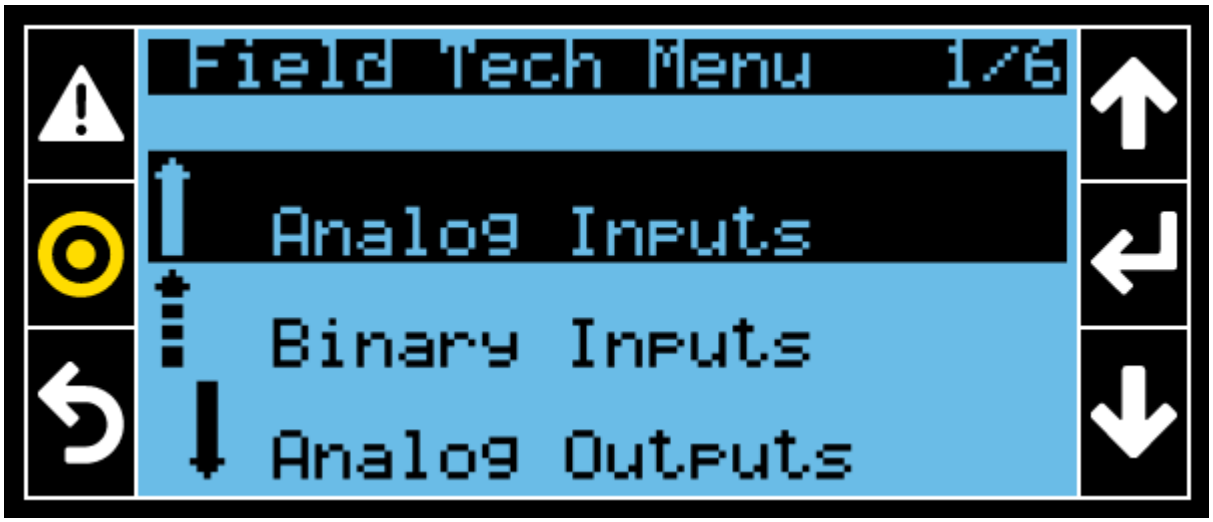

Figure 27. Field Tech Menu

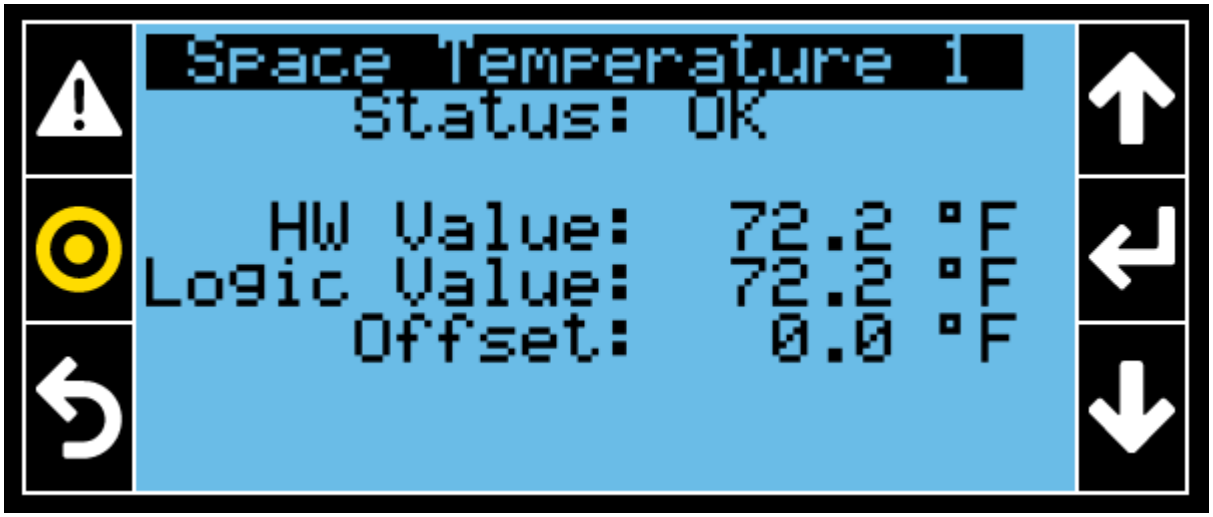

Figure 28. Analog Input – Wired to i-Controller

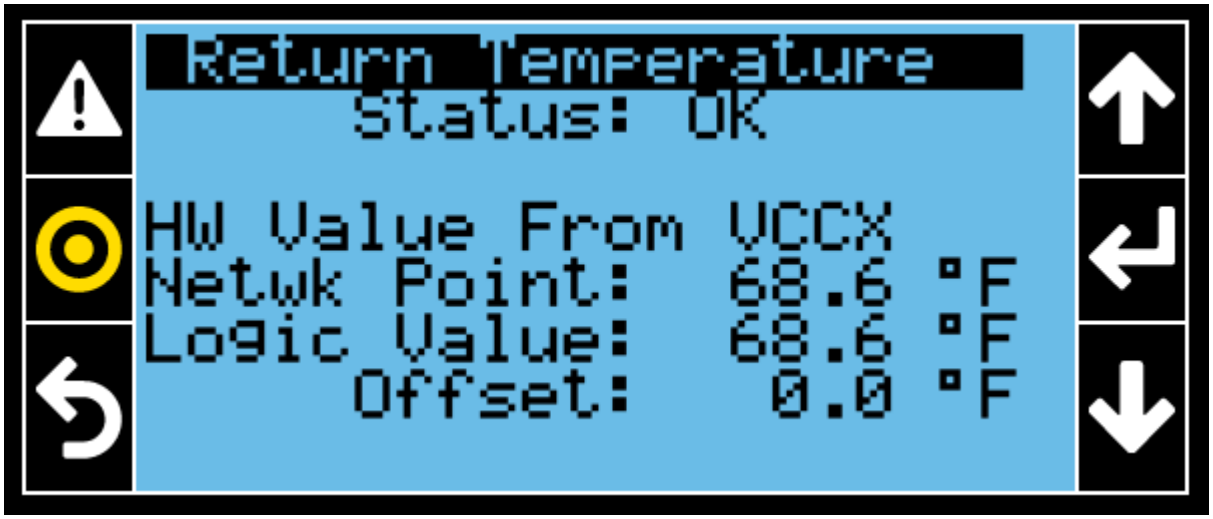

Figure 29. Analog Input – Wired to VCCX

To enter the Analog Input screens, from the Field Tech Menu use the 'UP' / 'DOWN' arrows to highlight the menu item and press the 'Enter' button. Use the 'UP' / 'DOWN' arrows to navigate to additional screens. Press the 'Escape' button to return to the Field Tech Menu.

Sensor Offsets

Sensor Offsets are used to calibrate devices for their unique environment. Each sensor reading can be adjusted (+/-) a small amount to refine the sensor reading. The default Offset is 0.0. When an Offset is used, the Sensor Reading value will include the Offset amount. NOTE: The order of pages may vary based on number of sensors and options present.

Sensor offsets are available for all Flō unit sensors. Sensor offsets should be set when an installed sensor reads differently from a calibrated device. **Maximum offset values for each sensor type are as follows:**

Temperature Sensors: +/- 3 ˚F

Pressure Transducers: +/- 5 psi

Humidity Sensor: +/- 3%

Dew Point Sensor: +/- 2 ˚F

CO2 Sensor: +/- 50 ppm

If the sensor requires a larger offset than listed above, then the sensor should be evaluated and replaced if necessary.

The CO2 sensor will only appear if the Flō unit contains the CO2 option. The second suction/ discharge pressure transducers will only appear if the Flō unit has more than two compressors. Next to each offset is the actual sensor reading including the offset.

To Adjust The Sensor Offset:

1. Navigate to the Field Tech Menu and select the Analog Input option.
2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the desired input to edit.
3. Once the input is located, press the 'Enter' button to move the cursor to the offset value location.
4. With the cursor on the offset value, use the 'UP' / 'DOWN' arrows to change the value to the desired offset value.
5. Press 'Enter' to update the offset value. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.

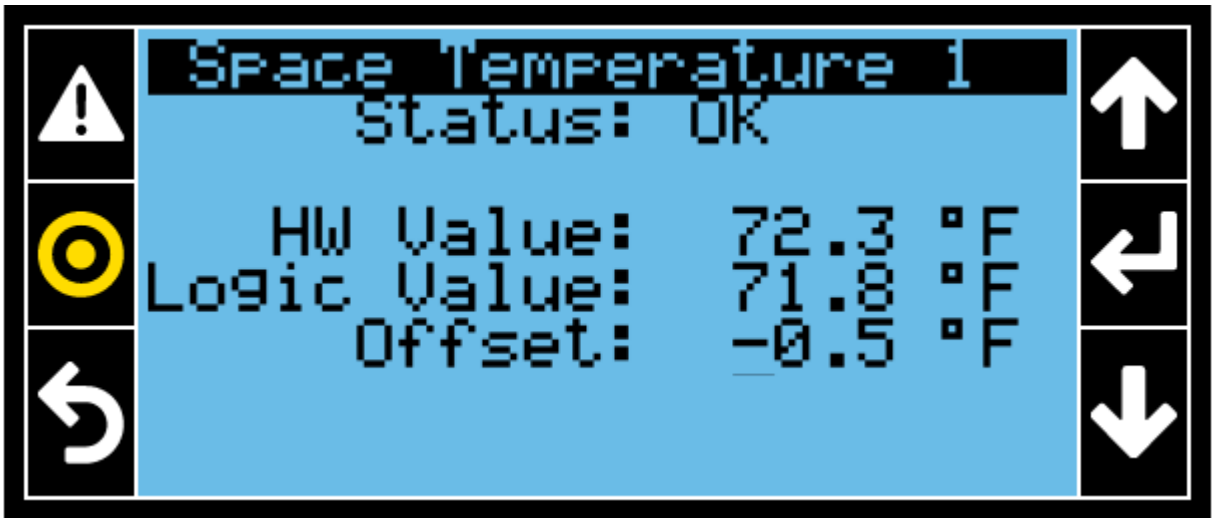

Figure 30. AI– Space Temperature Offset

To Configure Powered Sensors:

1. Navigate to the Field Tech Menu and select the Analog Input option.
2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the desired input to edit.
3. Once the input is located, press the 'Enter' button to move the cursor on the screen.
4. For powered sensors, sensor type, minimum value, and Maximum value are adjustable.
5. Using the 'Enter' button, move the cursor to the field you wish to edit.
6. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
7. Press 'Enter' to update the value. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.

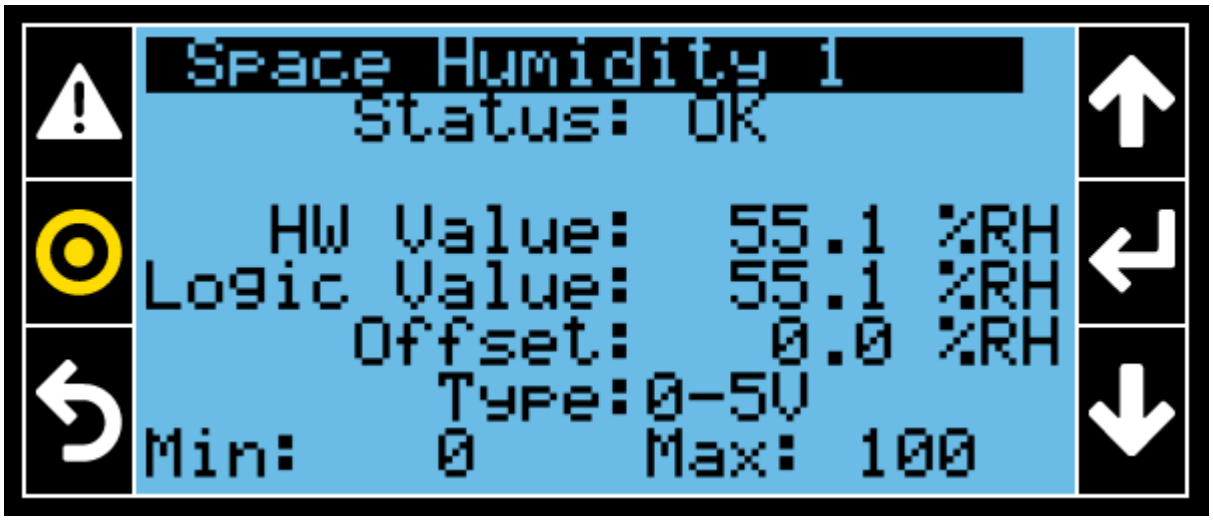

Figure 31. AI – Space Humidity Configuration

Binary Inputs

Binary Input screens are used to view the value of each binary input. Only inputs specific to the Flō unit will be visible on the screens. A 'HW Value' will be shown for the hardware input and a 'Logic Value' will be shown for the software values of each point.

Note: Not all inputs are wired to the Flō i-Controller. It will be shown on the screen if the input is from the VCCX controller.

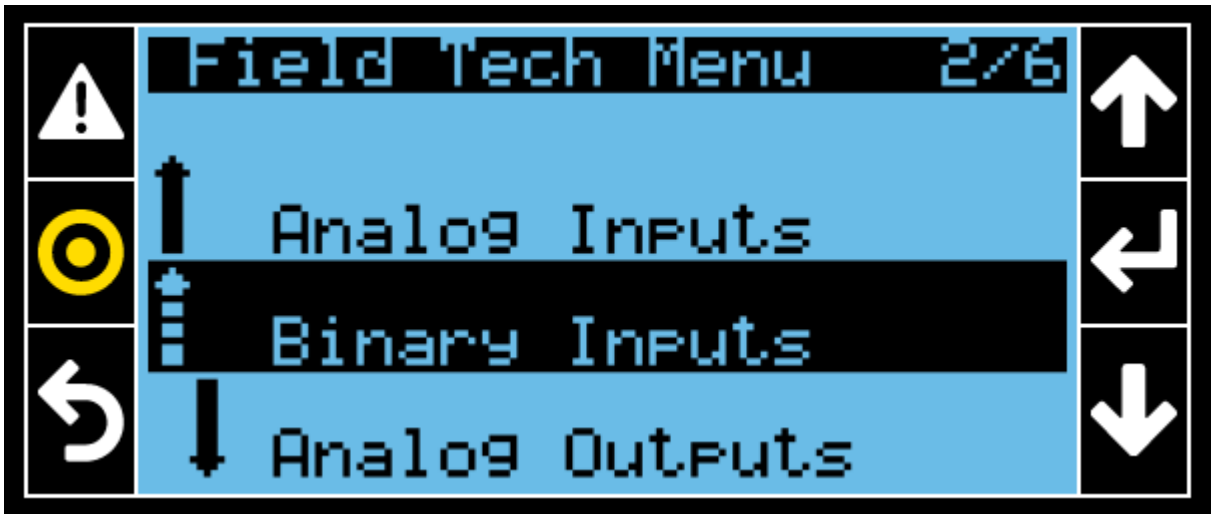

Figure 32. Field Tech Menu

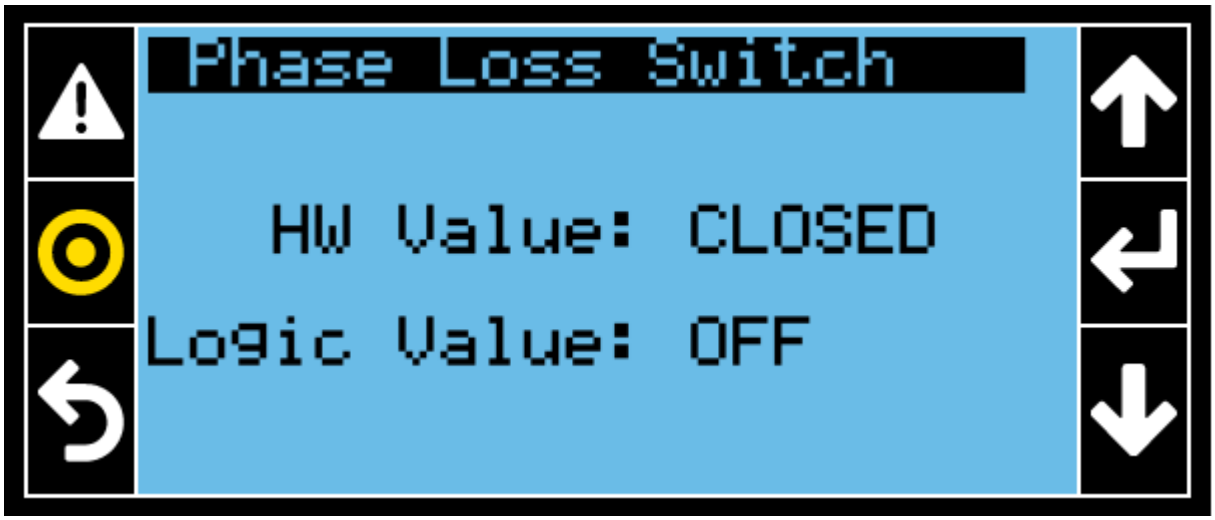

Figure 33. Binary Input – Wired to the i-Controller

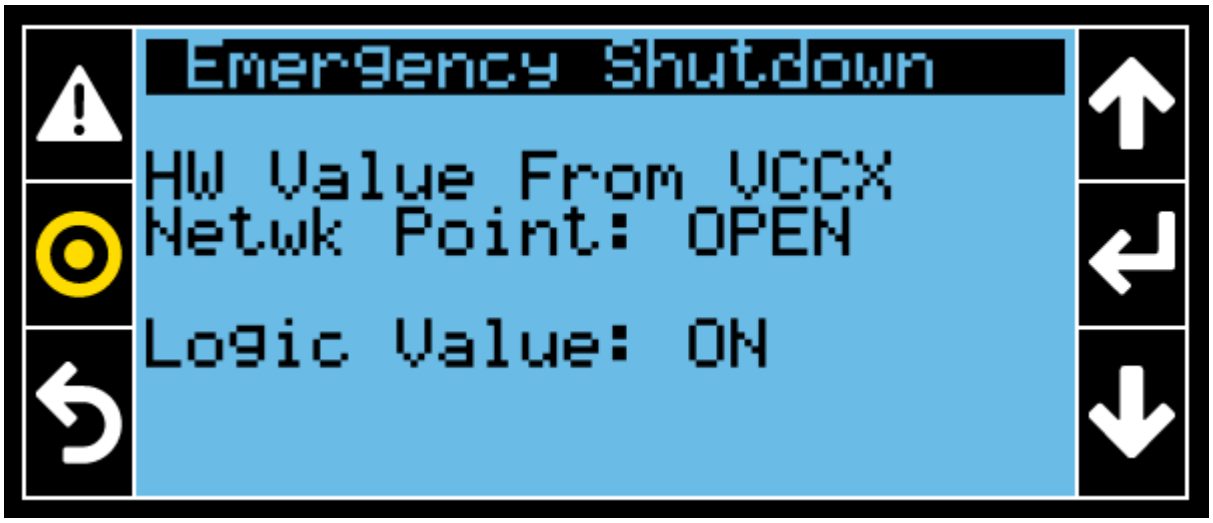

Figure 34. Binary Input – Wired to the VCCX

To enter the Binary Input screens, from the Field Tech Menu use the 'UP' / 'DOWN' arrows to highlight the menu item and press the 'Enter' button. Use the 'UP' / 'DOWN' arrows to navigate to additional screens. Press the 'Escape' button to return to the Field Tech Menu.

Analog Outputs

Analog Outputs screens are used to view each analog output. Only outputs specific to the Flō unit will be visible on the screens. A 'HW Value' will be shown for the hardware input and a 'Logic Value' will be shown for the software values of each point.

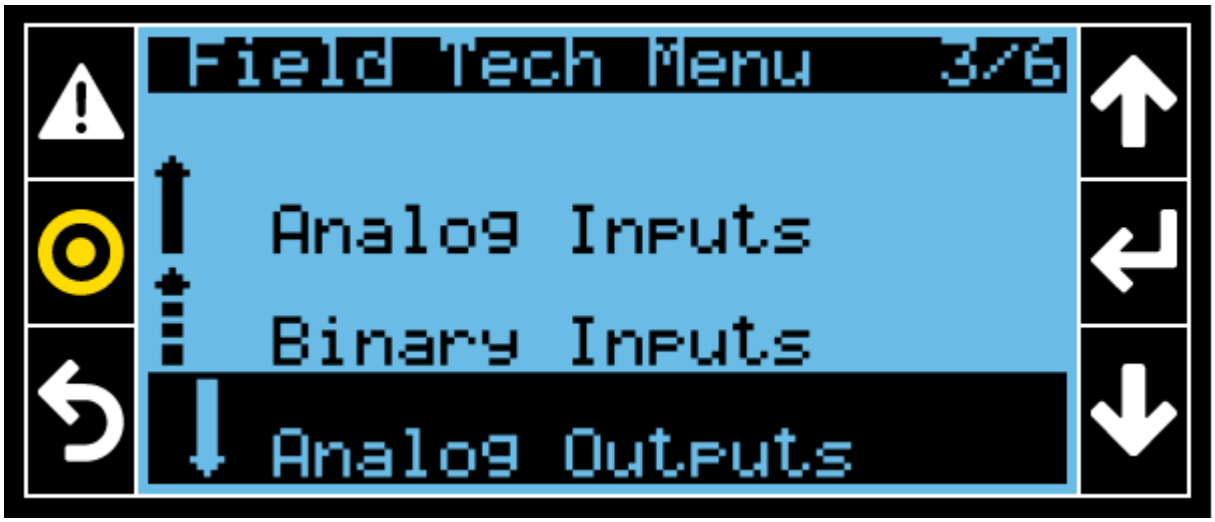

Figure 35. Field Tech Menu

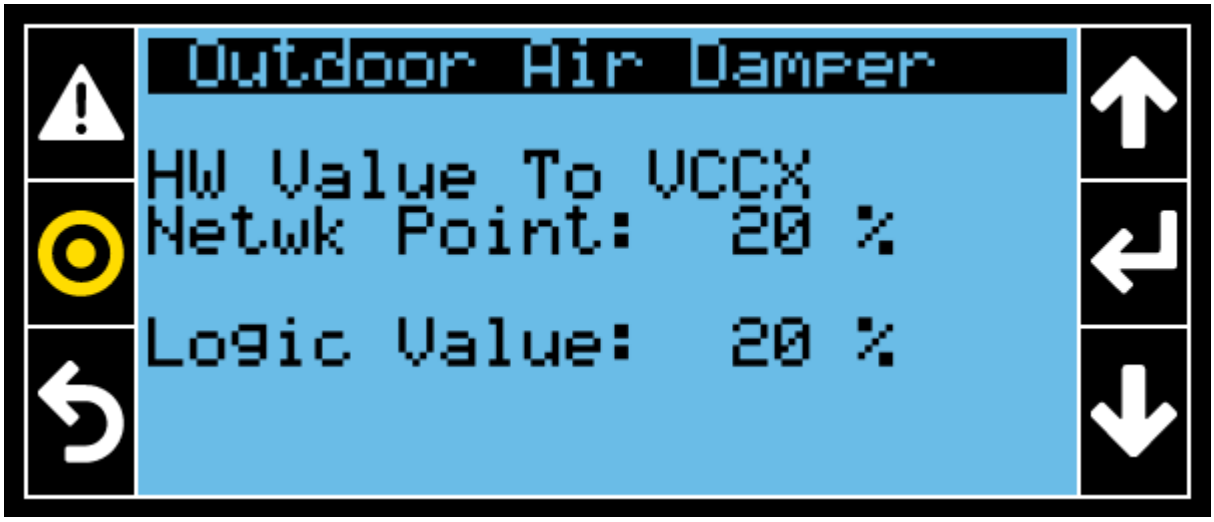

Figure 36. Analog Output – Wired to VCCX Controller

To enter the Analog Outputs screens, from the Field Tech Menu use the 'UP' / 'DOWN' arrows to highlight the menu item and press the 'Enter' button. Use the 'UP' / 'DOWN' arrows to navigate to additional screens. Press the 'Escape' button to return to the Field Tech Menu.

Binary Outputs

Binary Outputs screens are used to view each binary output. Only outputs specific to the Flō unit will be visible on the screens. A 'HW Value' will be shown for the hardware input and a 'Logic Value' will be shown for the software values of each point.

Note: Not all outputs are wired to the Flō i-Controller. It will be shown on the screen if the output is from the VCCX controller.

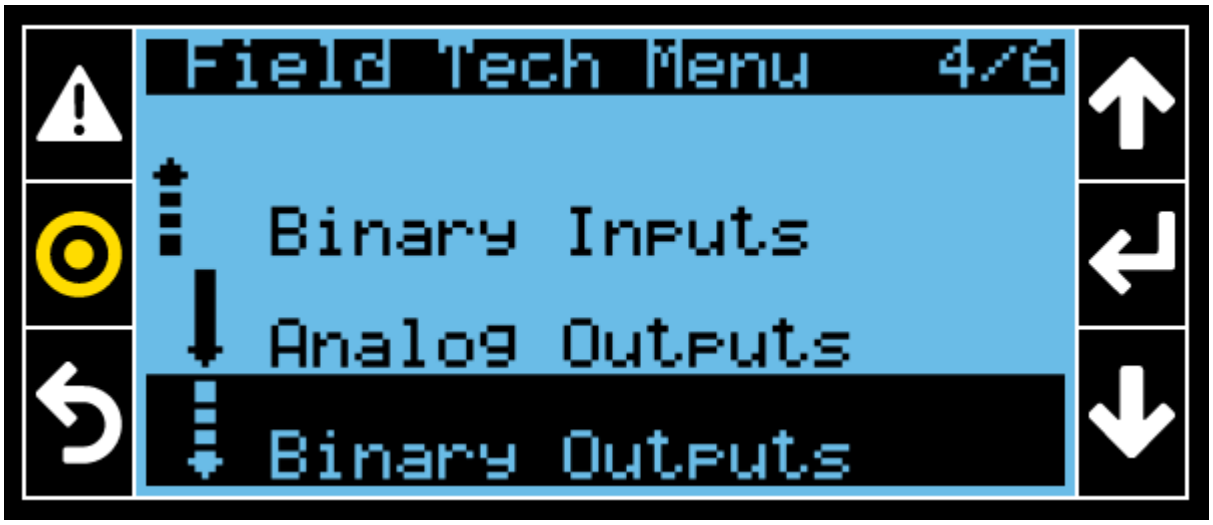

Figure 37. Field Tech Menu

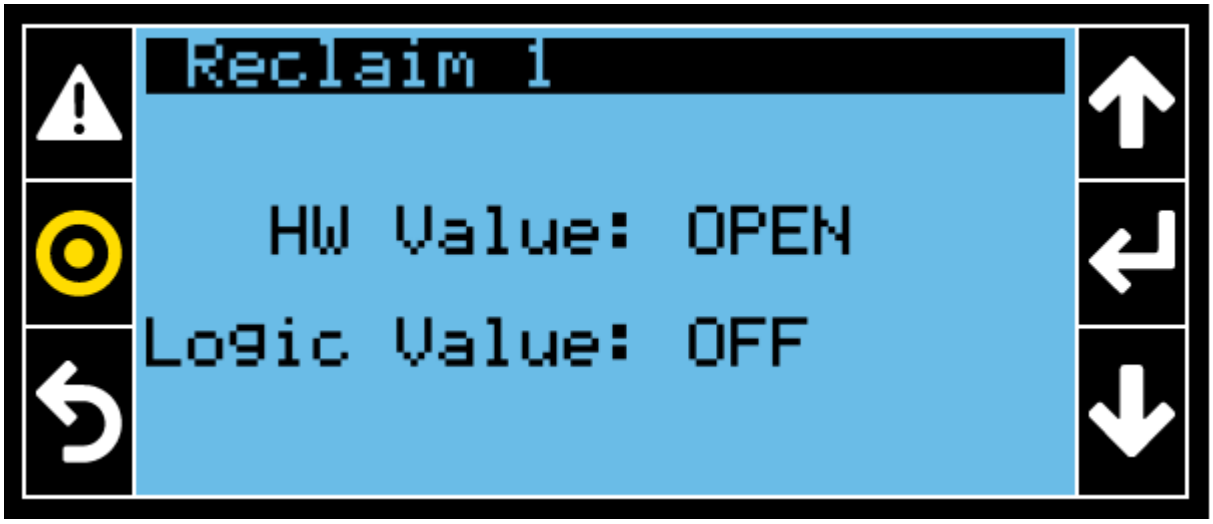

Figure 38. Binary Output – Wired to i-Controller

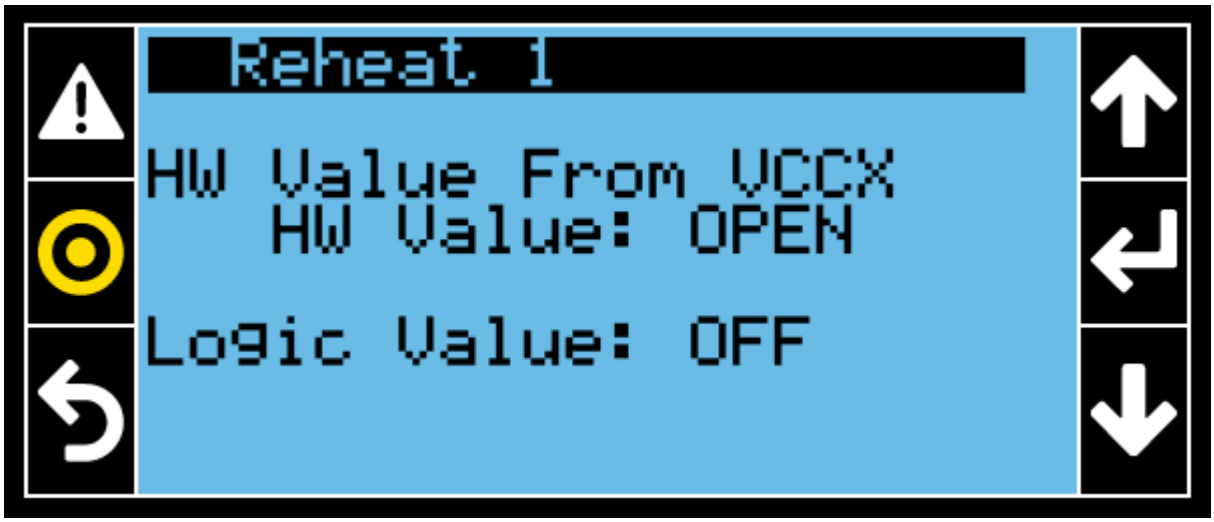

Figure 39. Binary Output – Wired to VCCX Controller

To enter the Binary Outputs screens, from the Field Tech Menu use the 'UP' / 'DOWN' arrows to highlight the menu item and press the 'Enter' button. Use the 'UP' / 'DOWN' arrows to navigate to additional screens. Press the 'Escape' button to return to the Field Tech Menu.

Damper Positions

Damper Position screens are used to view all damper positions, set minimum and maximum damper percentages and configure Demand Control Ventilation (DCV) settings for units equipped with CO2 sensors.

The following options are available in the Damper Positions section.

1. **Damper Positions: Screen** is used to view the positions of each damper.
2. **Set Damper Positions:** Screen is used to set the return and bypass damper percentages.
3. **Set Position for Intlk:** Screen is used to set addition percentages to be added to the outdoor air damper for an exhaust interlock.
4. **CO2 DCV Settings: Screen** is used to set ventilation and alarming parameter for units equipped with a CO2 sensor.

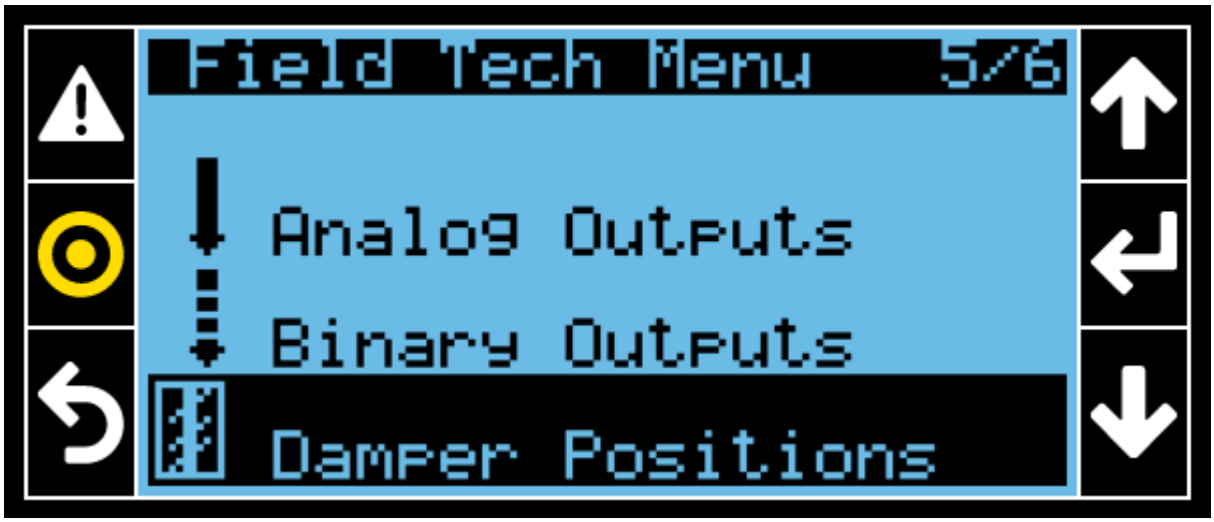

Figure 40. Field Tech Menu

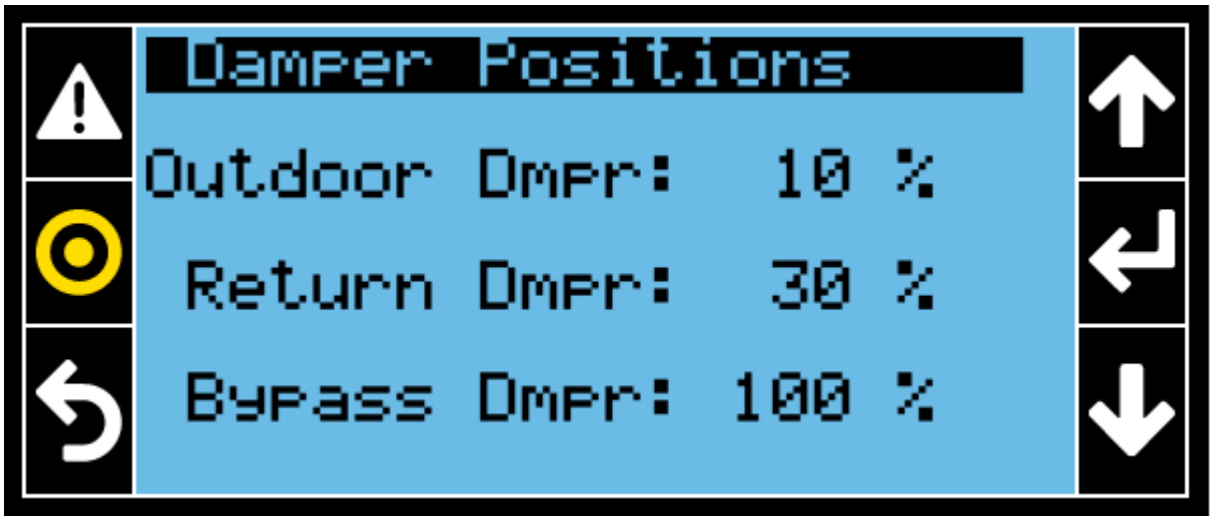

Figure 41. Damper Positions

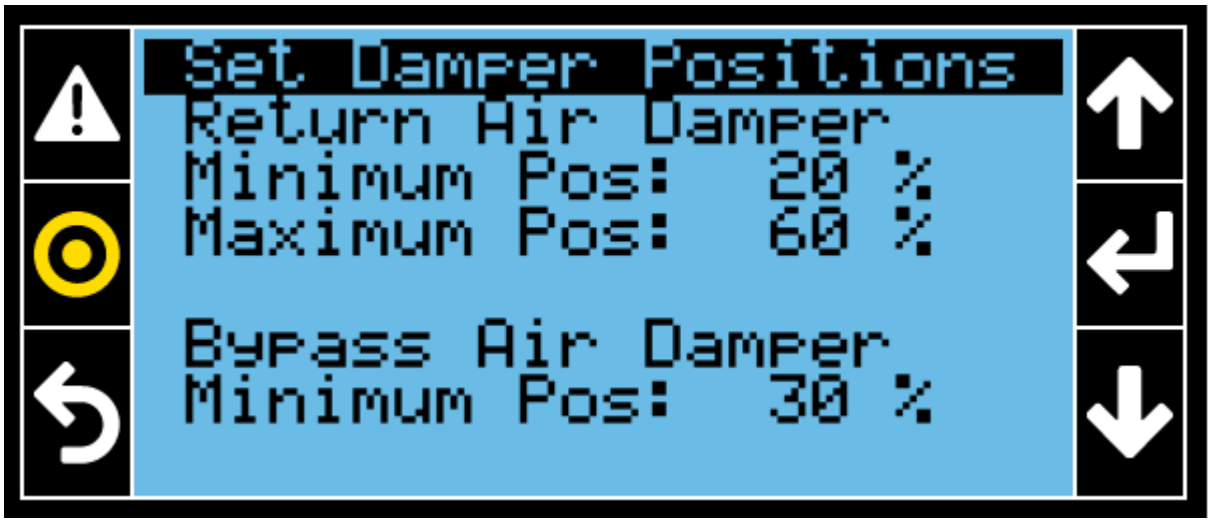

Figure 42. Set Damper Positions

To enter the Damper Positions screens, from the Field Tech Menu use the 'UP' / 'DOWN' arrows to highlight the menu item and press the 'Enter' button. Use the 'UP' / 'DOWN' arrows to navigate to additional screens. Press the 'Escape' button to return to the Field Tech Menu.

Set Damper Positions

The 'Set Damper Positions' screen is used to set the min/max percentage of the return air damper, the min position for the bypass damper. An asterisk will appear to the right of the damper percentage if the damper position is in override.

To Set Damper Positions:

1. Navigate to the Field Tech Menu and select the Damper Positions option.

2. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Set Damper Positions’ screen.
3. Using the ‘Enter’ button, move the cursor to the field you wish to edit.
4. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting.
5. Press ‘Enter’ to update the value. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.

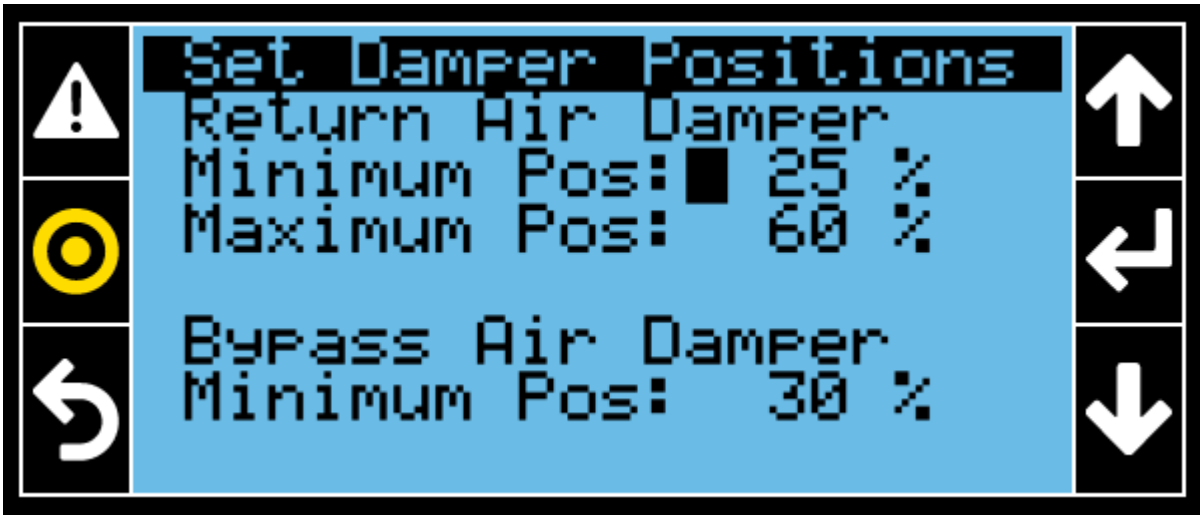

Figure 43. Set Damper Positions

Set Position For Intlk

The ‘Set Position For Intlk’ screen is used to set the additional outdoor air damper opening for exhaust fan interlocks. The Exhaust fan interlock options will not be visible if none are available. If exhaust fan interlocks exist on the Flō unit, only the number of interlocks for the unit will appear on the screen.

To Set Exhaust Interlock:

1. Navigate to the Field Tech Menu and select the Damper Positions option.
2. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Set Position For Intlk’ screen.
3. Using the ‘Enter’ button, move the cursor to the field you wish to edit.
4. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting.

5. Press ‘Enter’ to update the value. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.

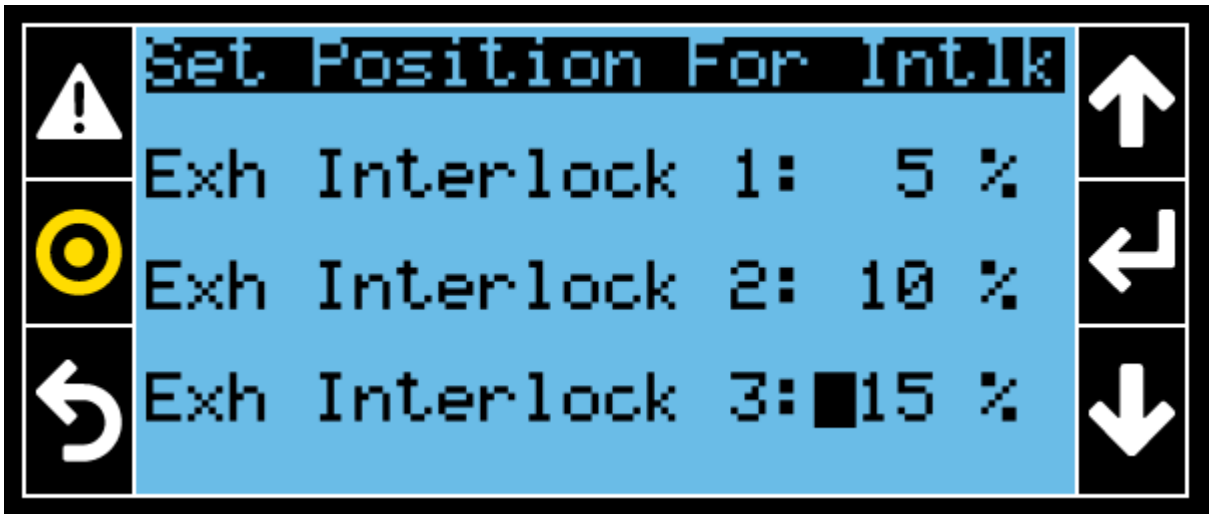

Figure 44. Set Positions For Exhaust Fan Interlocks

CO2 DCV Settings

The ‘CO2 DCV Settings’ screen is used to set ventilation parameters for units equipped with a CO2 Sensor. The beginning ventilation CO2 level, the max ventilation CO2 level, and alarm parameter can be adjusted in this screen.

To Set DCV Settings:

1. Navigate to the Field Tech Menu and select the Damper Positions option.
2. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘CO2 DCV Settings’ screen.
3. Using the ‘Enter’ button, move the cursor to the field you wish to edit.
4. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting.
5. Press ‘Enter’ to update the value. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.

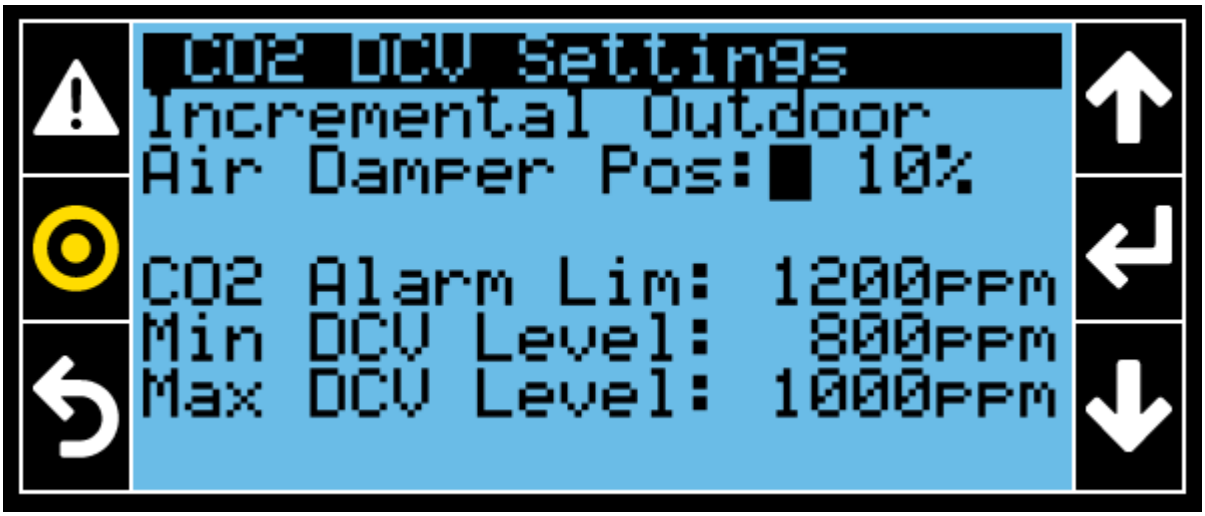

Figure 45. CO2 DVC Settings

Test Modes

Test Modes are available for verifying dehumidification, cooling, heating, occupancy, and gas pressure check operation. **All test modes time out after 30 minutes.**

The following menu options are available in this section:

1. Air Balancing Test
2. Cooling Test
3. Damper Test
4. Heating Test
5. Operation Test
6. Features Test
7. Clear Test Mode

Air Balancing Test

Air Balancing Test is used to position the dampers during air balancing. Air Balancing Test mode times out after 2 hours. The following test screens are available in this section.

1. **Supply Fan Balance Mode:** When turned to “ON”, the Outdoor Air Damper will completely close, the Return Air Damper will be set to 100%, and the Bypass Damper will be set to 30%. This allows for the total airflow requirements to be set with the VFD. The Outdoor, Return, and Bypass are

adjustable via the “Override Val” if necessary. Toggle Supply Fan Balance Completed to ‘YES’ when completed.

2. **OAD Balance Mode:** When turned “ON”, the Outdoor Air Damper will open to its default operating position, the Return Air Damper will be set to 65%, and the Bypass Damper will be set to 30%. This allows the total outdoor airflow requirements to be set with the Outdoor Air Damper position.

The OAD Max Pos value can be changed to achieve the desired outdoor airflow. Toggle Complete? to ‘YES’ when balancing is complete.

OAD Cur Position: The Outdoor Air Damper position in use.

OAD Max Pos: Displays during OAD Balance Mode and is used to adjust the Outdoor Air Damper position when balancing the outdoor airflow requirement.

Complete?: Set to “YES,” when each balancing is complete. This will save the inputted “OAD Max Pos” setting as the default outdoor air damper position, and the unit will revert to normal operation.

To Enter Air Balancing Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press ‘Enter’.

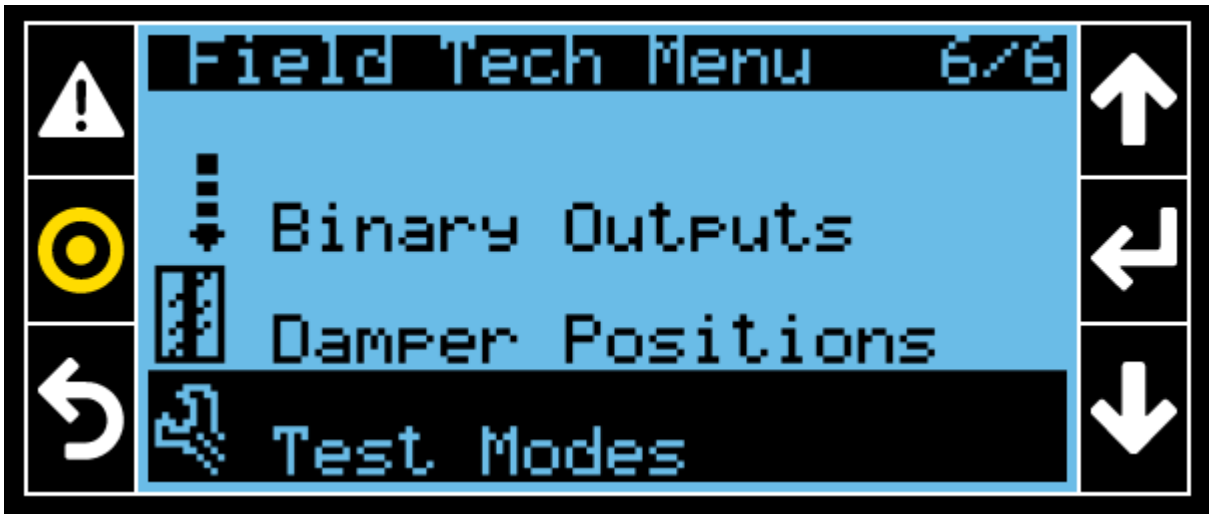

Figure 46. Field Tech Menu

1. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Air Balancing Test’ screen and press ‘Enter’.

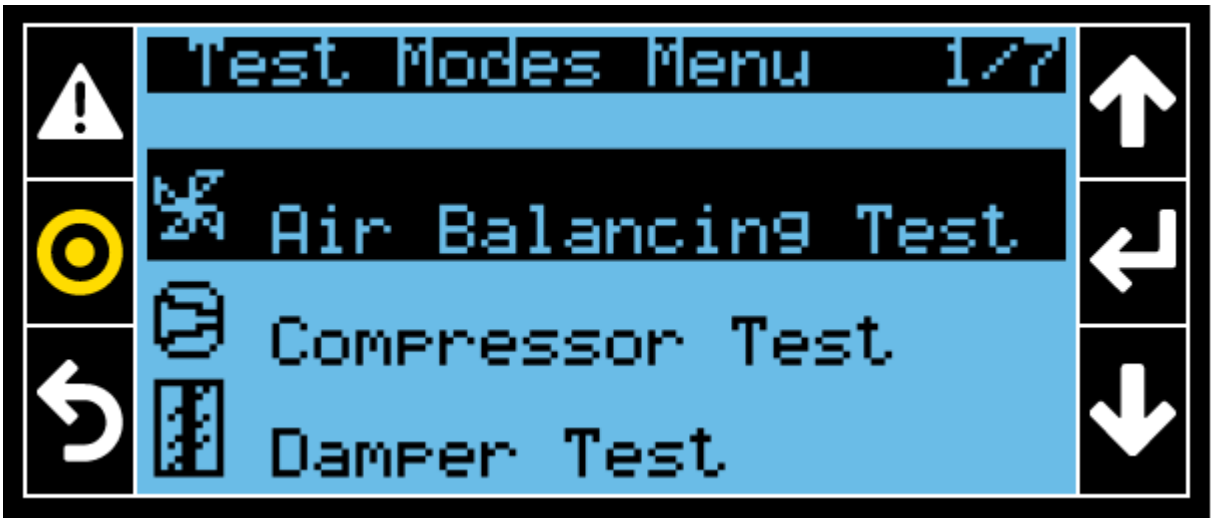

Figure 47. Test Modes Menu

1. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll between the 'Sup Fan Balancing Mode' screen and the 'OA Damper Balance Mode'.

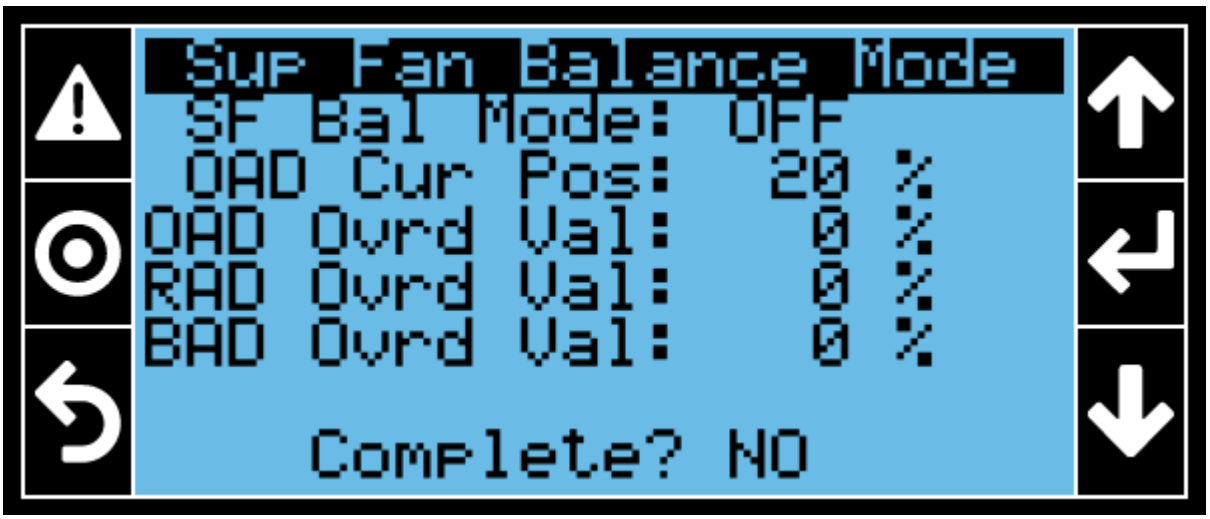

Figure 48. Supply Fan Balance Mode

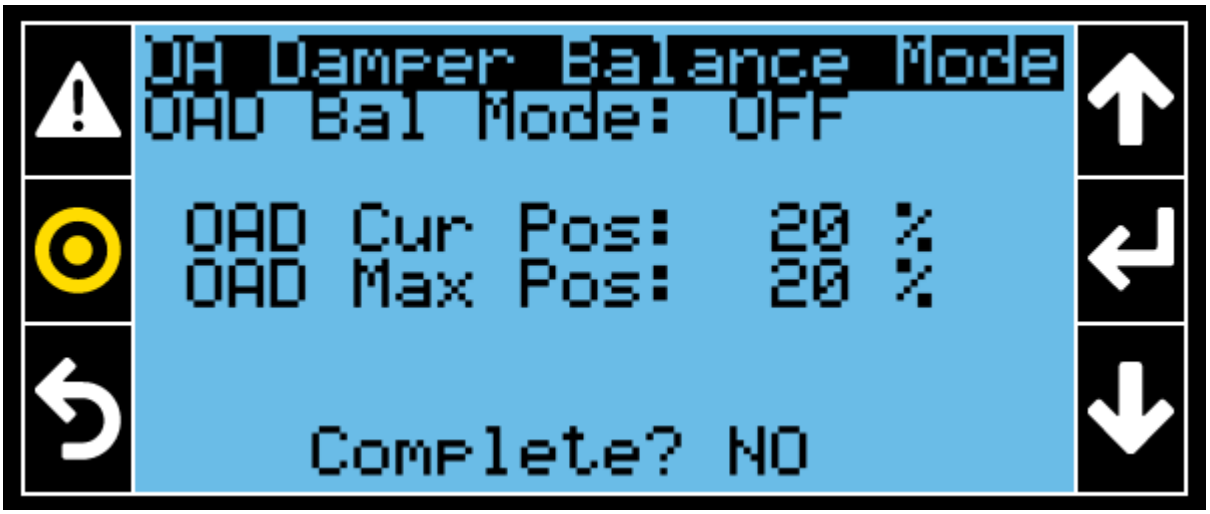

Figure 49. OA Damper Balance Mode

1. Using the Enter button, move the cursor to the field you wish to edit.
2. Use the Up and Down arrows to scroll to the desired setting.
3. Press Enter to update the value. Press Escape to exit edit mode without saving changes and return the cursor to the home location.

Cooling Test

Cooling Test is used to verify compressor operation. Cooling Test mode forces the unit into cooling and allows the compressors to stage up to meet the test demand.

Note: Depending on load, all compressors may not come on during test mode. No compressor will come on if the ambient temperature is below the ambient temperature lockout for cooling.

To Enter Cooling Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press ‘Enter’.

Figure 50. Field Tech Menu

1. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Cooling Test’ screen and press ‘Enter’.

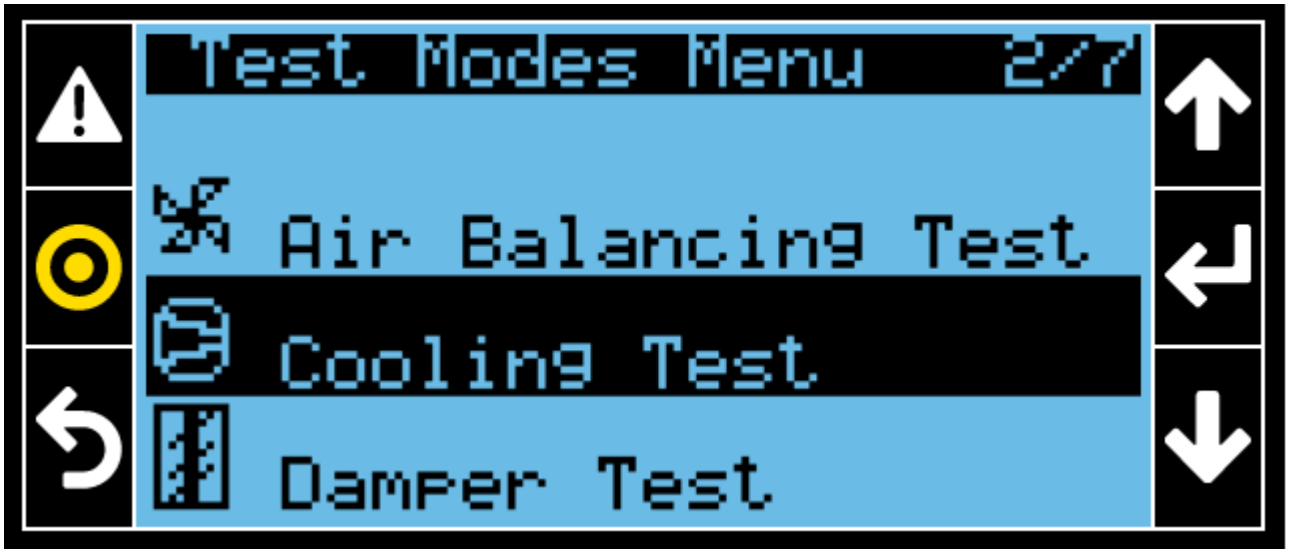

Figure 51. Test Modes Menu

1. Using the ‘Enter’ button, move the cursor to the ‘Test Mode’ selection.
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting.
3. Press ‘Enter’ or ‘Escape’ to return the cursor to the home location.

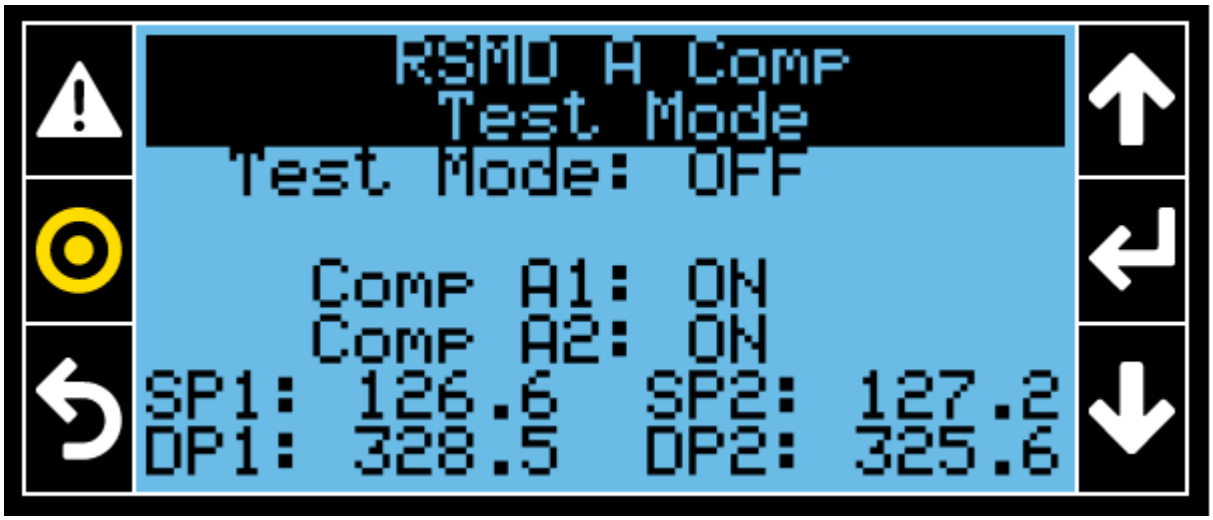

Figure 52. Compressor Test Mode

Damper Test

Damper Test is used to open the dampers to the user-specified position.

To Enter Damper Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press 'Enter'.

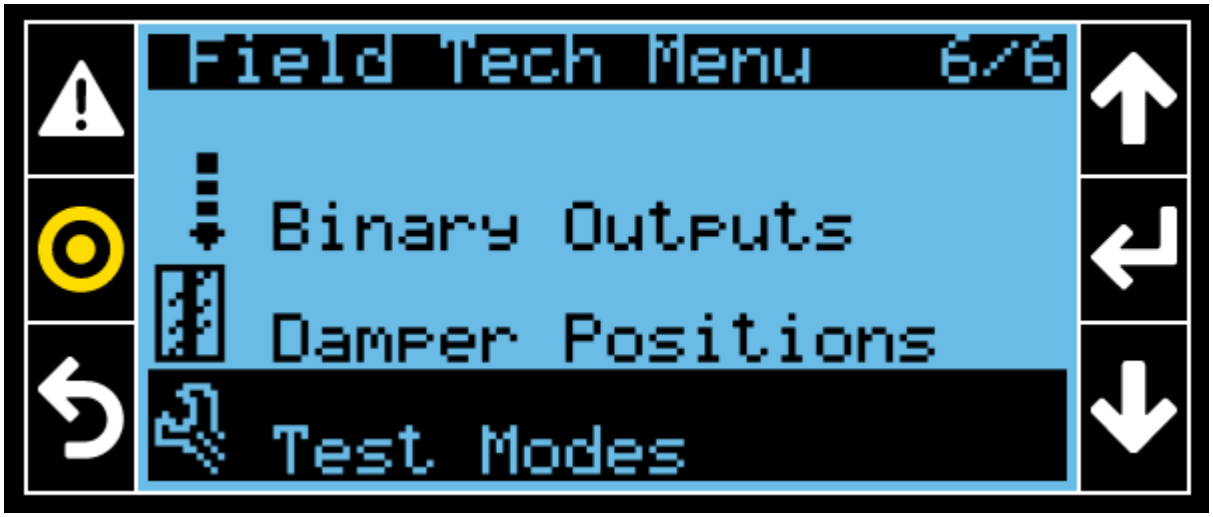

Figure 53. Field Tech Menu

1. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Damper Test' screen and press 'Enter'.

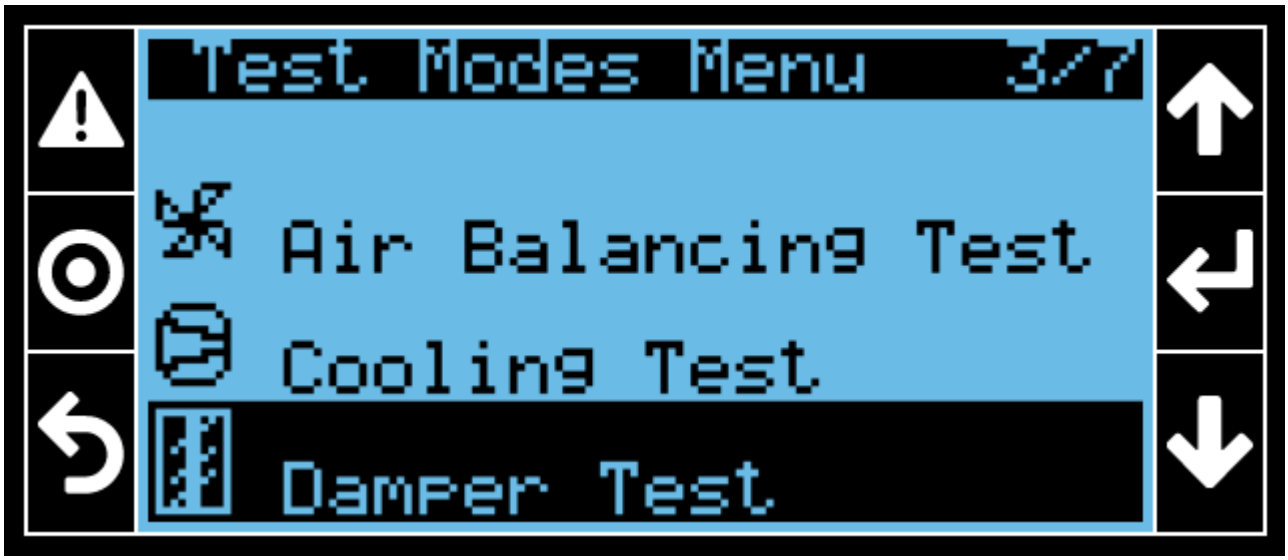

Figure 54. Test Modes Menu

1. Press the ‘Enter’ button to move the cursor to the ‘Test Mode’ selection.
2. Use the ‘UP’ / ‘DOWN’ arrows to select the desired setting.
3. Press ‘Enter’ to confirm the selection, or press ‘Escape’ to return the cursor to the home location.

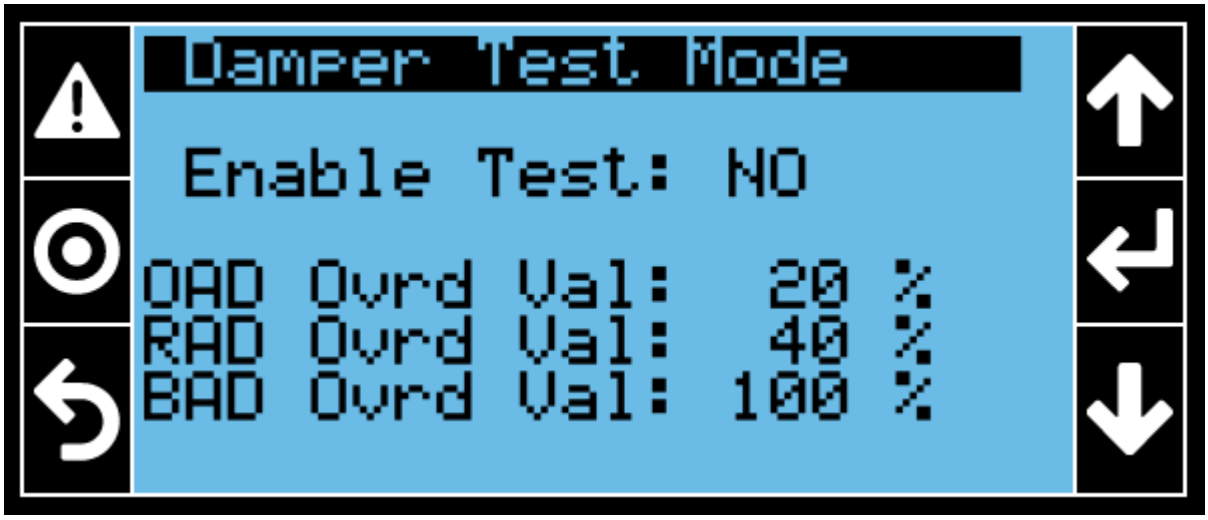

Figure 55. Damper Test Mode

Heating Test

Heating Test is used to verify heating stage operation. Full-capacity Heating Test mode turns each stage of heat ON individually.

Note: Heating stages will not activate if the ambient temperature is above the ambient temperature lockout for heating. If compressors had been running, there will be a delay in the start of Heating Test.

To Enter Heating Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press 'Enter'.

Figure 56. Field Tech Menu

1. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Heating Test' screen and press 'Enter'.

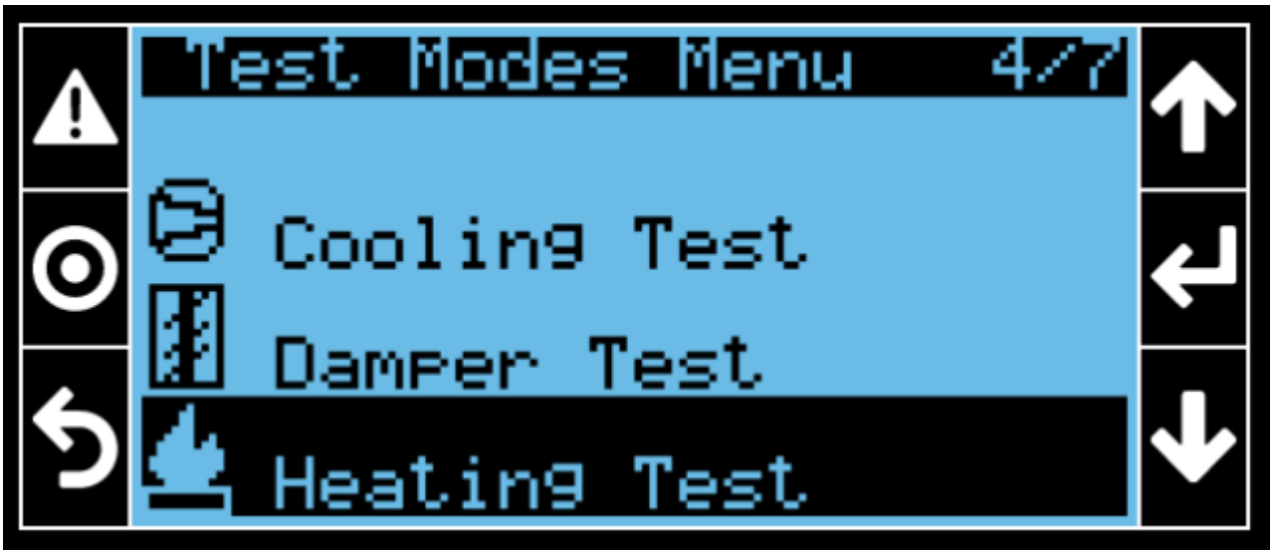

Figure 57. Test Modes Menu

1. Press the ‘Enter’ button to move the cursor to the ‘Test Mode’ selection.
2. Use the ‘UP’ / ‘DOWN’ arrows to select the desired setting.
3. Press ‘Enter’ to confirm the selection, or press ‘Escape’ to return the cursor to the home location.

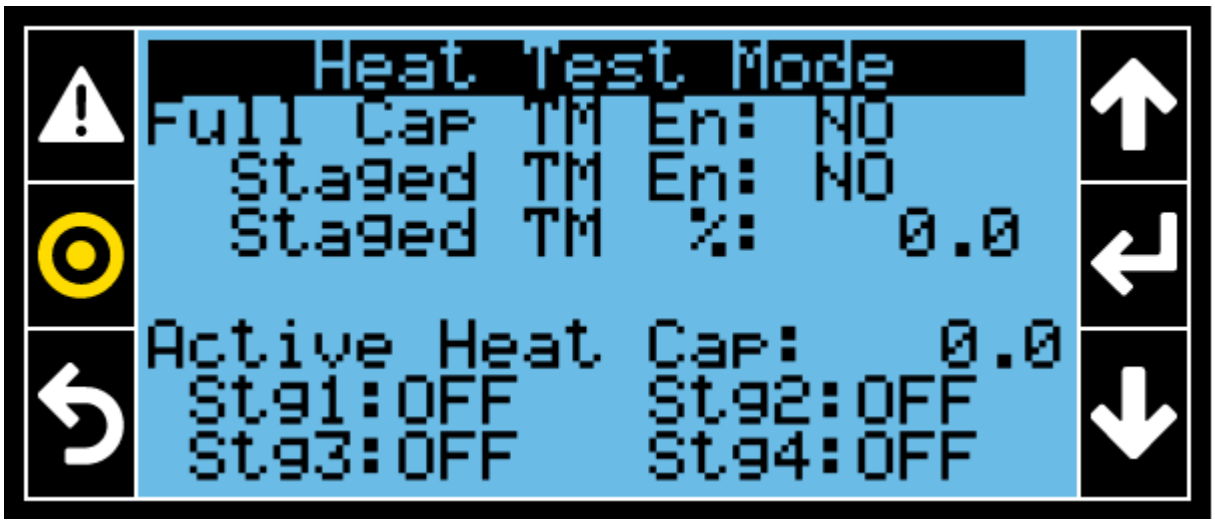

Figure 58. Heating Test Mode

Operation Test

Operation Test includes several tests used to evaluate different operating modes. These tests include Dehumidification, Comfort Cooling, Heating, and Fan Only modes. Compressors have a minimum runtime of five minutes and a one-minute mode change delay. When switching from Cooling or Dehumidification test mode to Heating Test mode, the response may be delayed until those time delays expire. **Operation Test modes will time out after 30 minutes.**

The following operation tests are available:

Occupancy: This input can be toggled between OCCUPIED and UNOCCUPIED. OCCUPIED forces the unit into an occupied state. UNOCCUPIED forces the unit into an unoccupied state for the test modes listed below. **UNOCCUPIED** is not allowed for Dehumidification test mode.

Dehumidification Test Mode: This mode is used to test the unit response to a call for space dehumidification. When activated, the space temperature and humidity are overridden so the displayed dew point rises above the dew point setpoint to enable dehumidification mode. To ensure compressor operation, the suction pressure setpoint is forced to its minimum setting of 107 PSI. If ambient conditions are above compressor lockout, the compressors will start.

Comfort Cooling Test Mode: This mode is used to test the unit response to a call for space cooling. When activated, the space temperature and humidity are overridden to drive the unit into cooling mode. To ensure compressor operation, the suction pressure setpoint is forced to its minimum setting of 120 PSI. If ambient conditions are above compressor lockout, the compressors will start.

Heating Test Mode: This mode is used to test the unit response to a call for space heating. When activated, the space temperature and humidity are overridden to drive the unit into heating mode.

Fan Only Test Mode: This mode is used to test unit operation with no heating, cooling, or dehumidification demand. When activated, the space temperature is set to the cooling setpoint minus the cooling cutout value, and the space humidity is overridden to 15%.

To Enter Operation Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press 'Enter'.

Figure 59. Field Tech Menu

1. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Operation Test' screen and press 'Enter'.

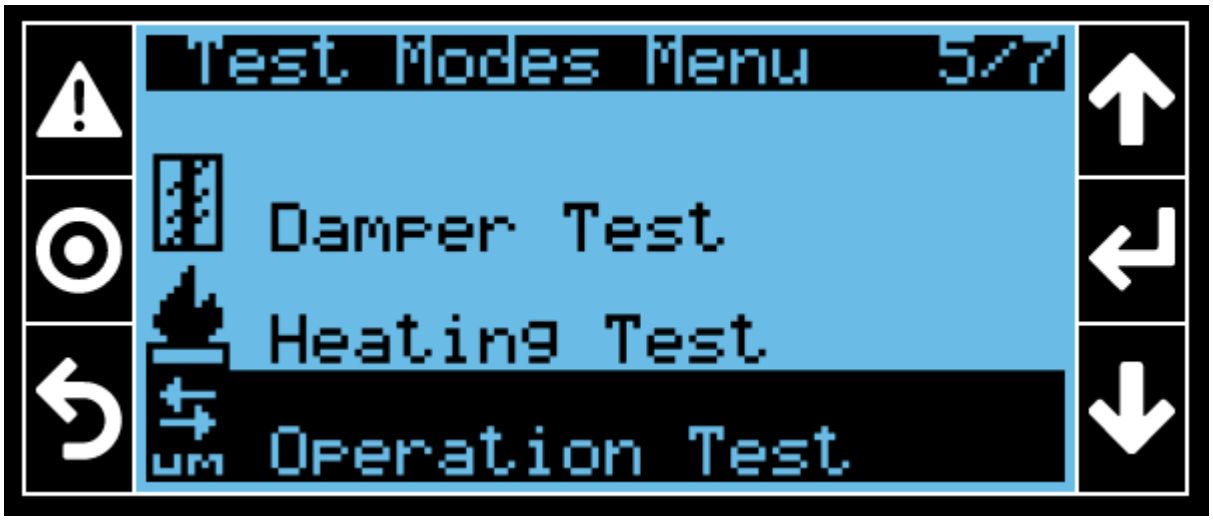

Figure 60. Test Modes Menu

1. Press the ‘Enter’ button to move the cursor to the ‘Test Mode’ selection.
2. Use the ‘UP’ / ‘DOWN’ arrows to select the desired setting.
3. Press ‘Enter’ to confirm the selection, or press ‘Escape’ to return the cursor to the home location.

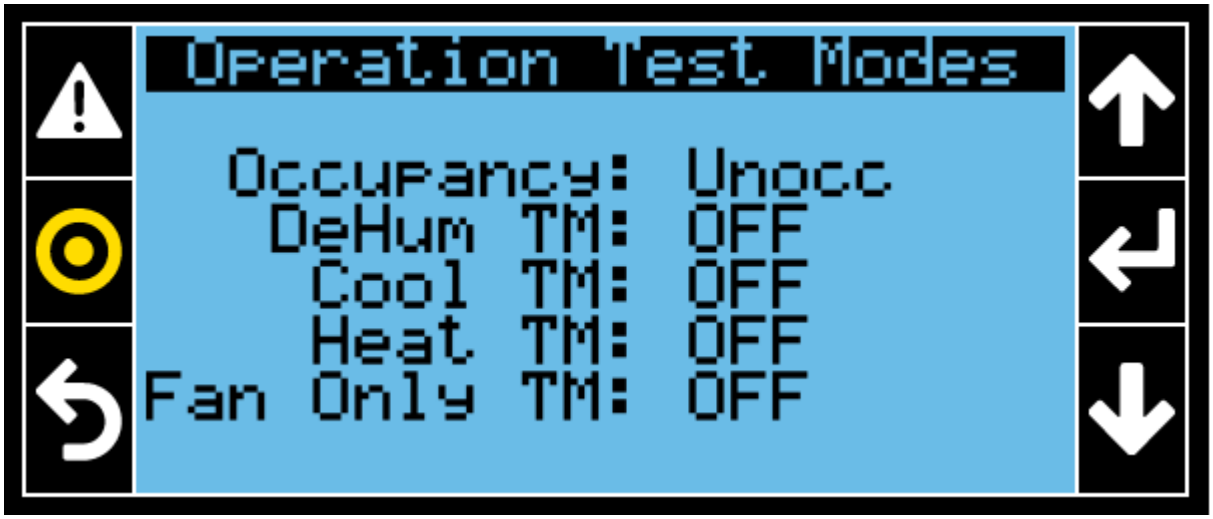

Figure 61. Operation Test Mode

Features Test

Features Test modes are used to test sequences related to optional features included in a unit. All tests in this section are available on equipped units only. Optional features include Return Temp Control, CO2 Control, Load Shed, Water Balance, Reheat, and Advanced Reclaim options (Standard Reclaim, Boosted Reclaim, and Modulating Reclaim).

The following features tests are available if equipped:

Return Temp Control Test Mode: Places the space temperature sensor into a failure state to test the return temperature failover logic. When active, space temperature will be overridden with the return temperature.

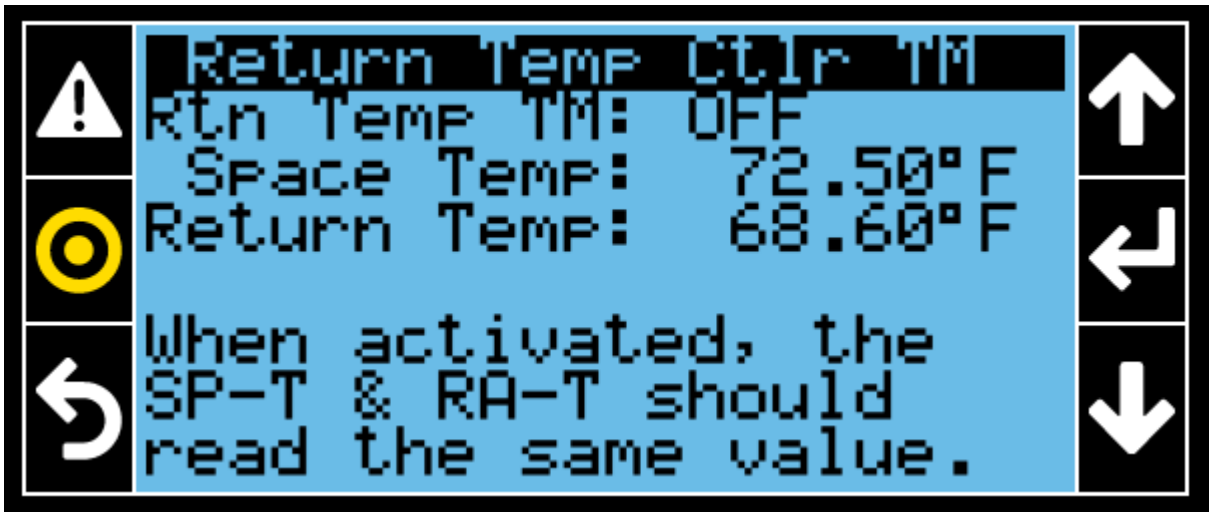

Figure 62. Return Temp Test Mode Screen

CO2 Test Mode: Overrides the CO2 sensor reading to enable Demand Controlled Ventilation (DCV), opening the outdoor air damper to the increased DCV position.

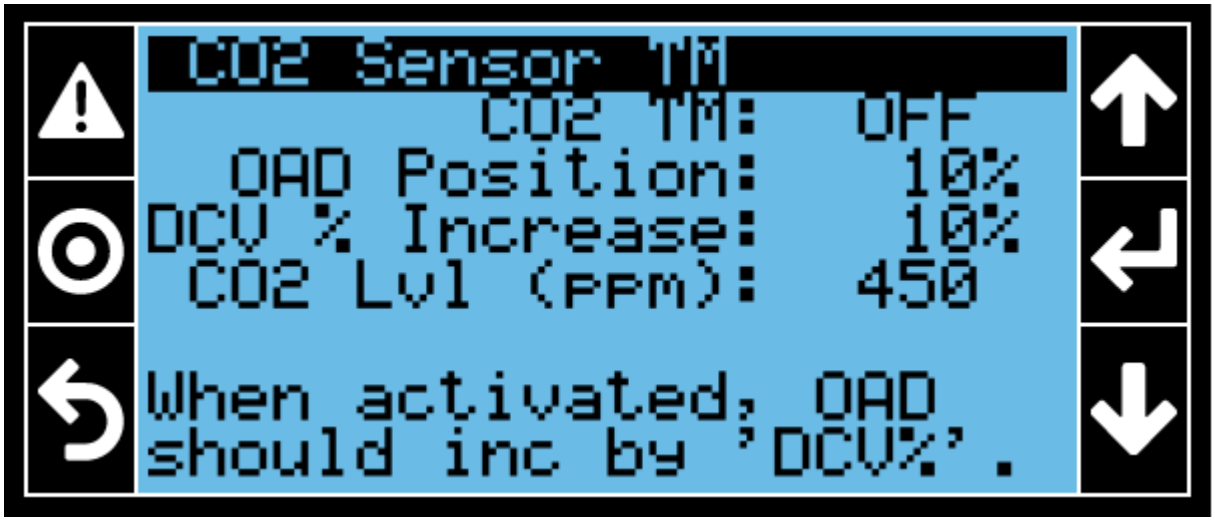

Figure 63. CO2 Test Mode Screen

**

**

Load Shed Test Mode: Enables load shed on the unit. Shifted unit setpoints will be displayed while active.

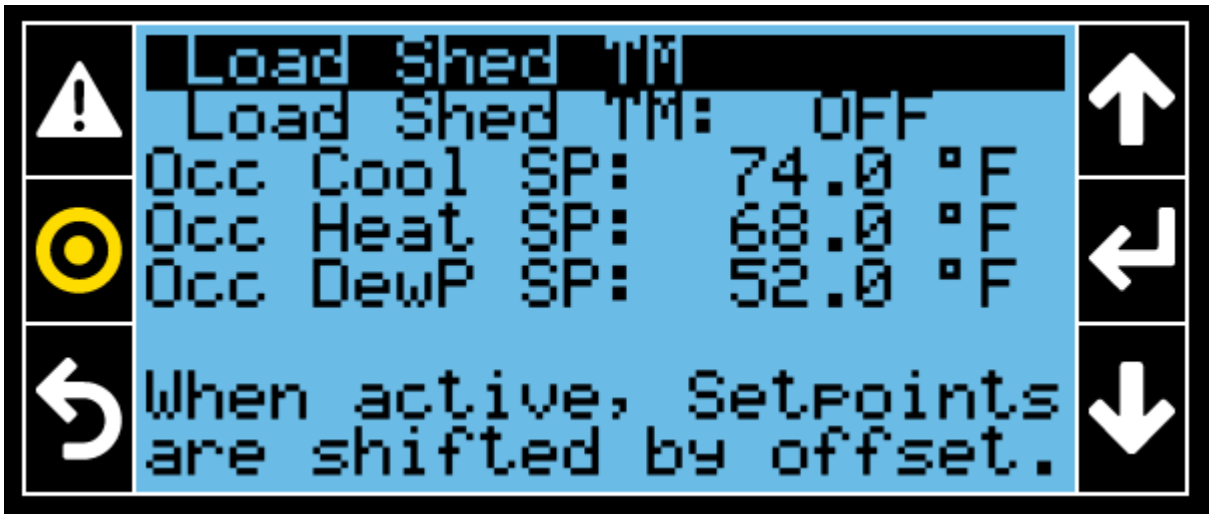

Figure 64. Features Test Mode Screen 3

Water Balance: Allows manual setting of the minimum valve position. Available on water-cooled condenser units or water source heat pumps only.

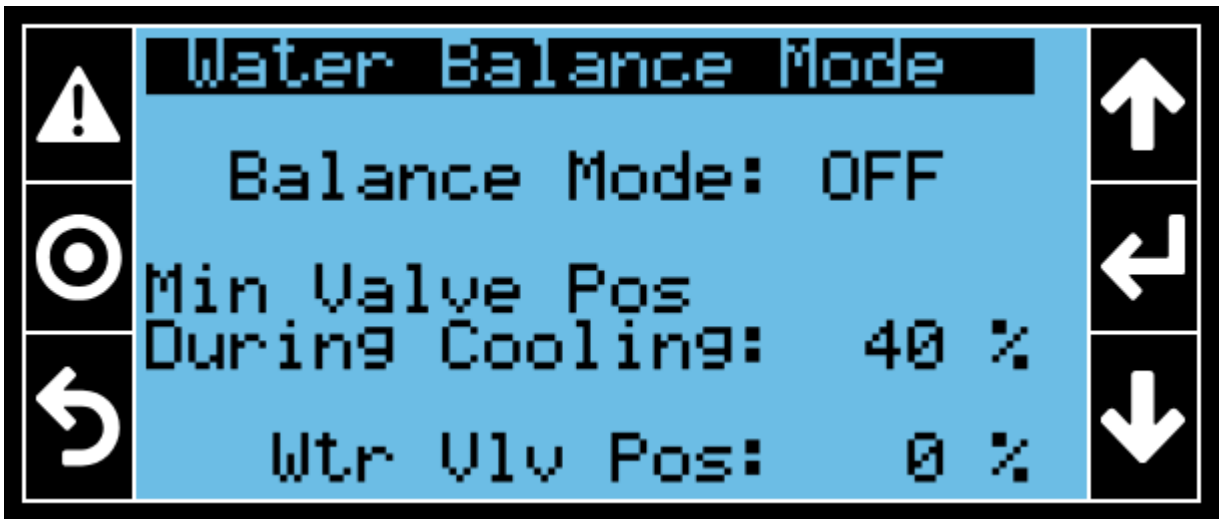

Figure 65. Water Balance Mode Screen

Reheat: Places the unit in dehumidification mode, enables the reheat circuit, and allows manual adjustment of the reheat valve position from 0 to 100%.

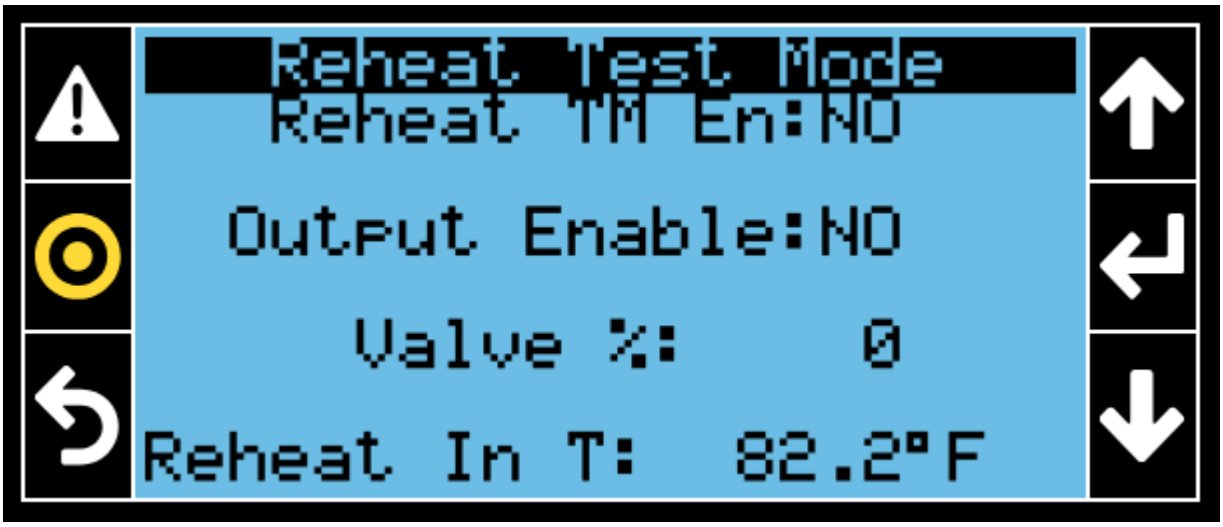

Figure 66. Reheat Test Mode Screen

Reclaim: Standard reclaim test mode places the unit in dehumidification mode and allows the reclaim output to be manually cycled on and off.

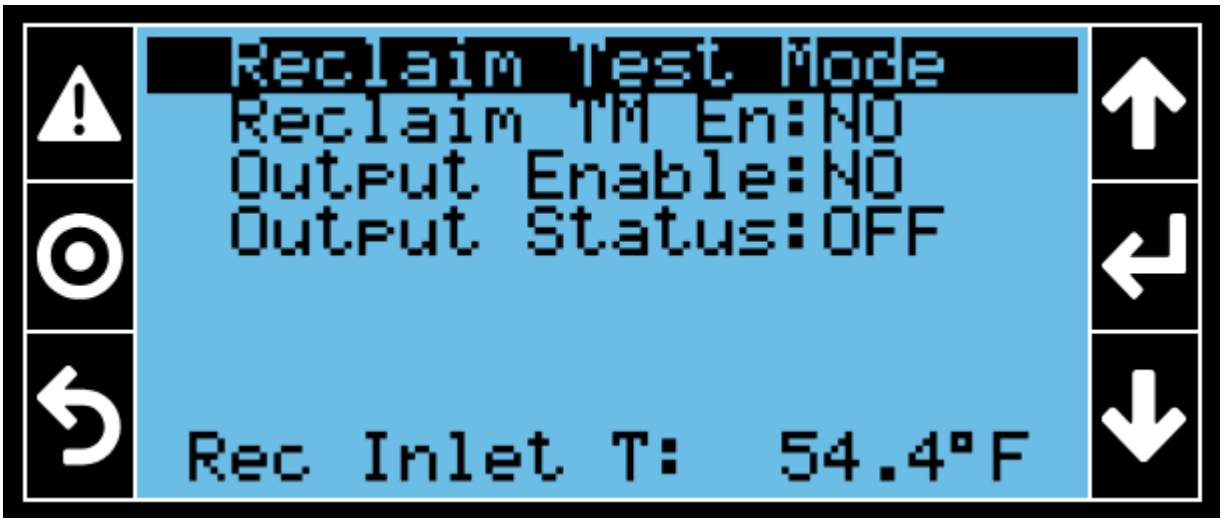

Figure 67. Reclaim Test Mode Screen

Reclaim Boost: Boosted reclaim test mode places the unit in dehumidification mode, allows the reclaim output to be manually cycled on and off, and allows the boost signal to be manually ramped from 0 to 100%.

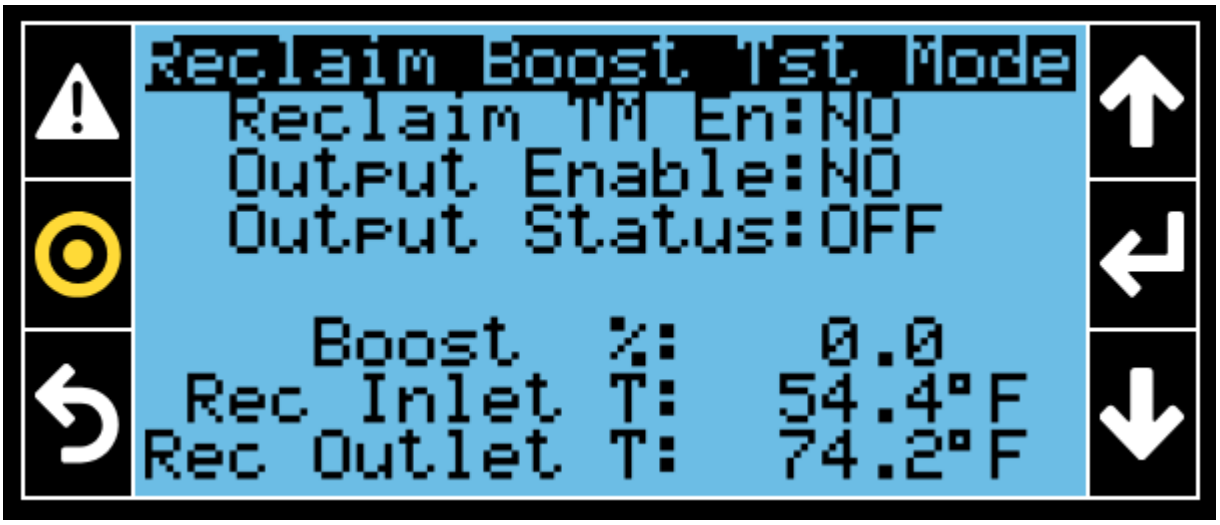

Figure 68. Reclaim Boost Test Mode Screen

Modulating Reclaim: Modulating reclaim places the unit in dehumidification mode, allows the reclaim output to be manually cycled on and off, and allows the modulating reclaim valve signal to be manually ramped from 0 to 100%.

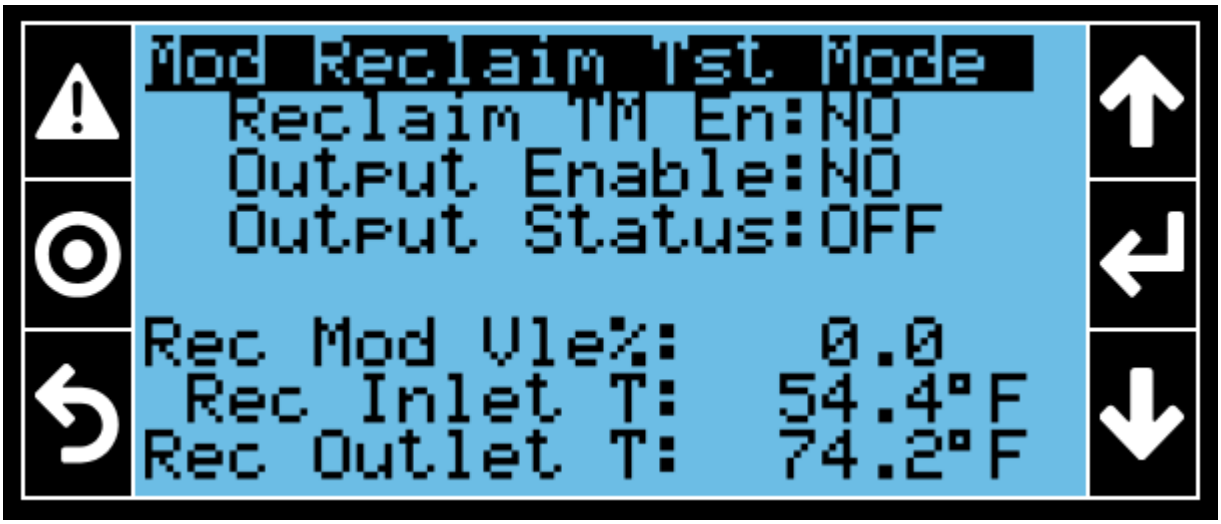

Figure 69. Modulating Reclaim Test Mode Screen

To Enter Features Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press ‘Enter’.

Figure 70. Field Tech Menu

1. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Features Test’ screen and press ‘Enter’.

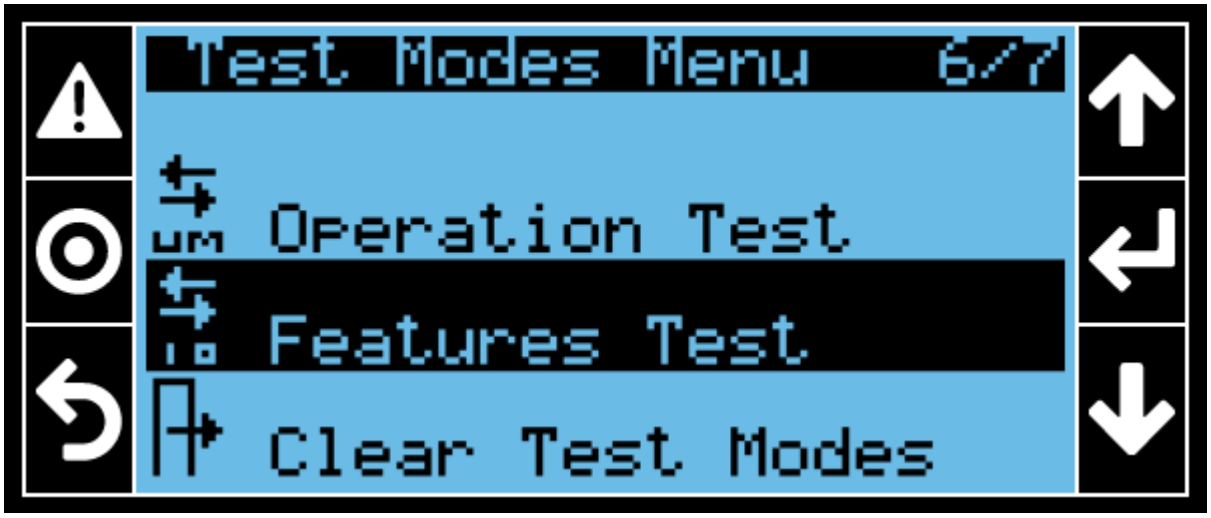

Figure 71. Test Modes Menu

1. Press the ‘Enter’ button to move the cursor to the ‘Test Mode’ selection.
2. Use the ‘UP’ / ‘DOWN’ arrows to select the desired setting.
3. Press ‘Enter’ to confirm the selection, or press ‘Escape’ to return the cursor to the home location.

Clear Test Modes

Once testing is complete, use the ‘Clear Test Modes’ screen to turn off all active test modes.

To Clear Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press ‘Enter’.

Figure 72. Field Tech Menu

1. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Clear Test Mode’ and press ‘Enter’.

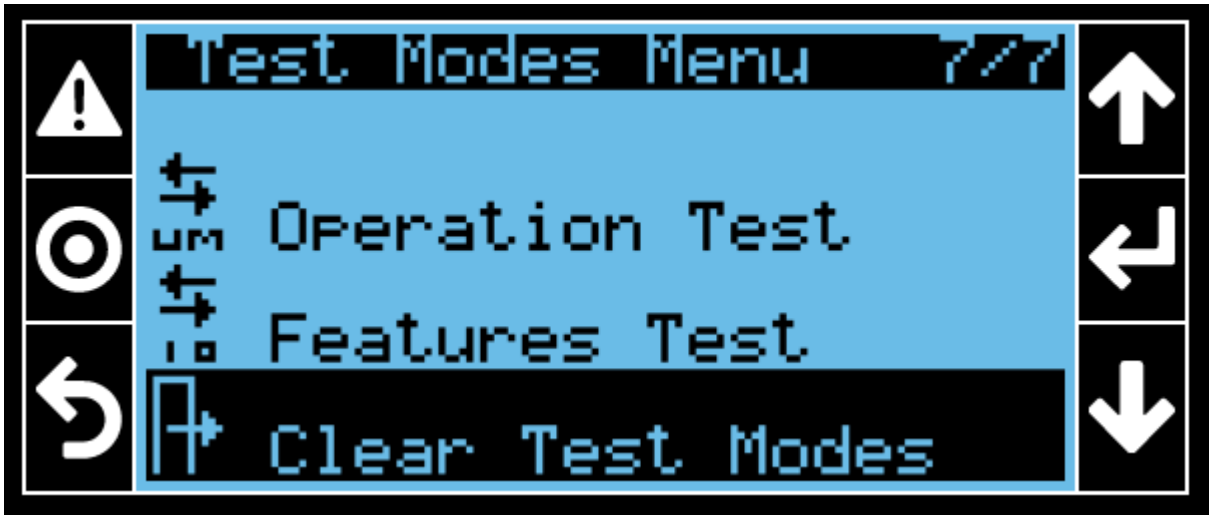

Figure 73. Test Modes Menu

1. Using the ‘Enter’ button, move the cursor to the ‘——’ selection on the Clear Test Modes screen.
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘CLEAR’ setting.

3. Press ‘Enter’ to clear test modes or ‘Escape’ to return the cursor to the home location without change.

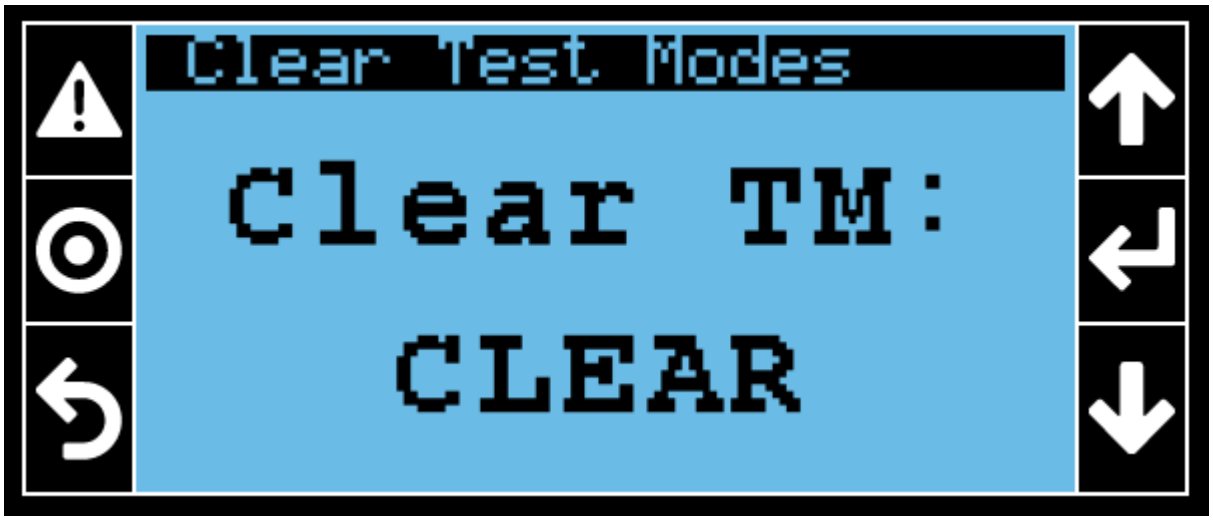

Figure 74. Clear Test Mode Screen

Settings Menu

The Settings Menu is used to configure controller settings, BMS communications, and program configuration files.

The following menu options are available in this section:

1. Date/Time
2. Language
3. Communications
4. Pwd Change
5. Initialization
6. UoM
7. Import/Export

Date/Time

Use this menu to set the controller date, time, time zone, and number of schedule events.

To Set Date/Time:

1. Navigate to the Settings Menu. Select the Date/Time option and press ‘Enter’.

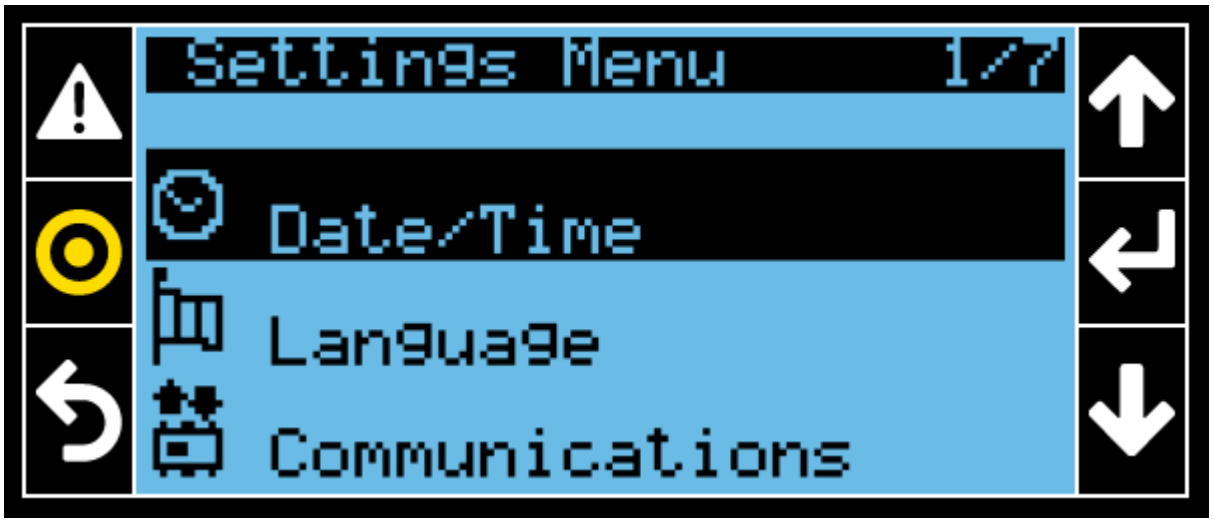

Figure 75. Settings Menu

1. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll from screen to screen.

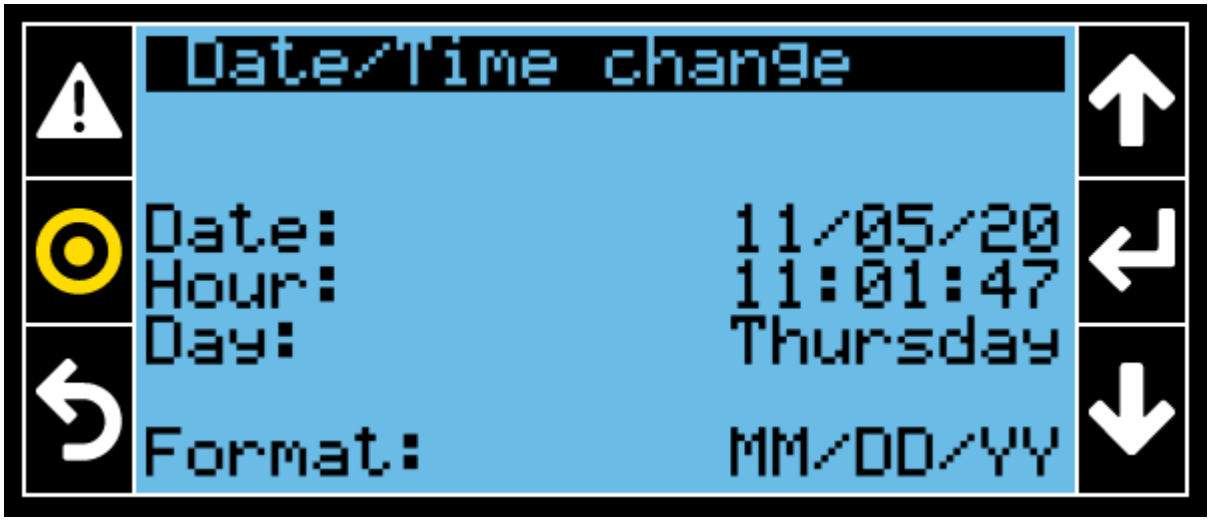

Figure 76. Date/Time Screen

Figure 77. Time Zone Screen

Figure 78. Schedule Events Screen

1. Using the 'Enter' button, move the cursor to the field you wish to edit.
2. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
3. Press 'Enter' to update the value. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.

Language

Currently, English is the only supported language option.

Communications

The Communications screen is used to configure controller communications to the Building Management System (BMS). The i-Controller 2.0e communication protocol (Modbus or BACnet), address, and baud rate can be configured here.

The following sub-menus are available in this section.

1. BMS Serial Config
2. BMS Ethernet Config
3. VCCX Config
4. Main Eth Config

BMS Serial Config

Use this sub-menu to set BMS serial communication protocol, controller address, and baud rate.

To Configure BMS Serial Config:

1. Navigate to the Settings Menu. Select the 'Communications' option and press 'Enter'.

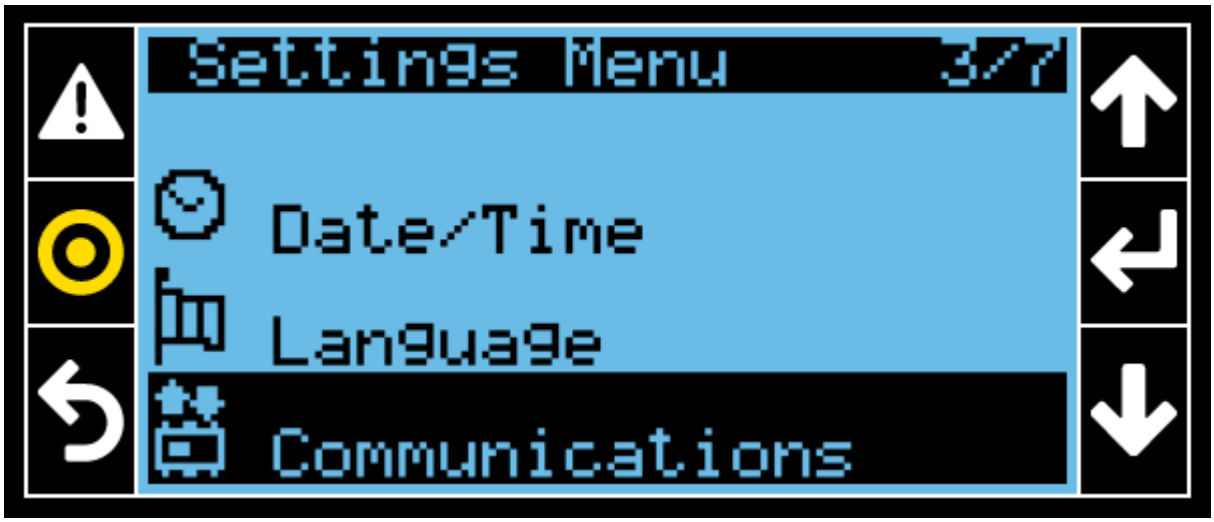

Figure 79. Settings Menu

1. On the Comm Menu screen, select 'BMS Serial Config' and press 'Enter'.

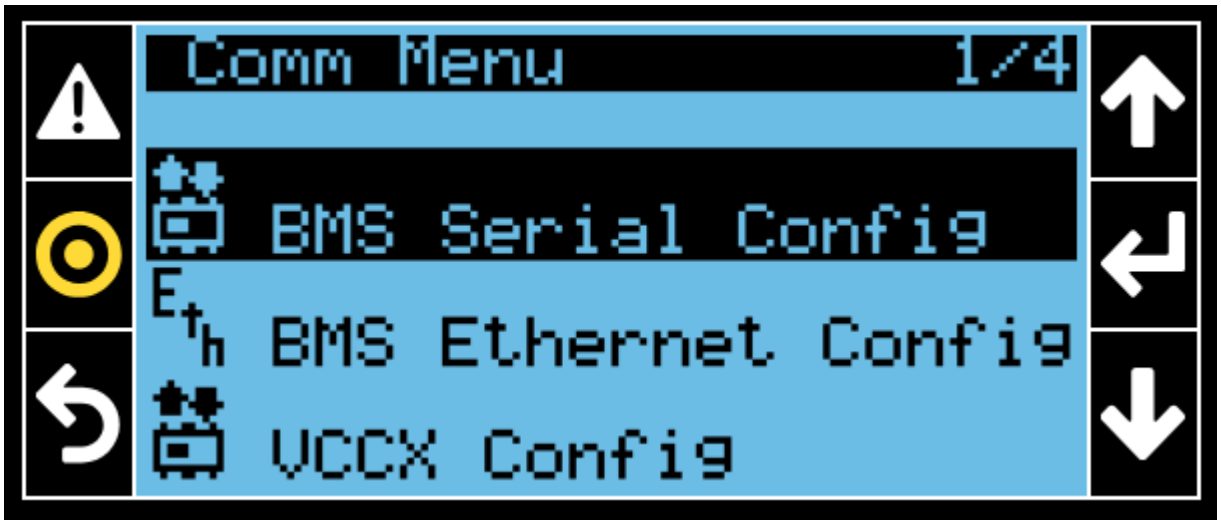

Figure 80. Comm Menu Screen

1. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll from screen to screen.

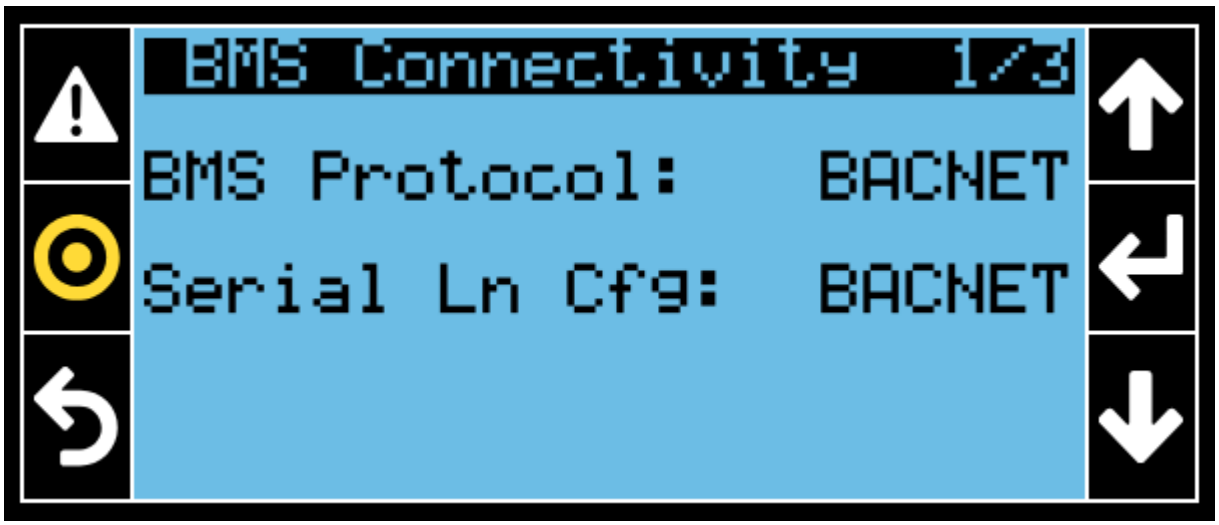

Figure 81. BMS Serial Config Screen 1

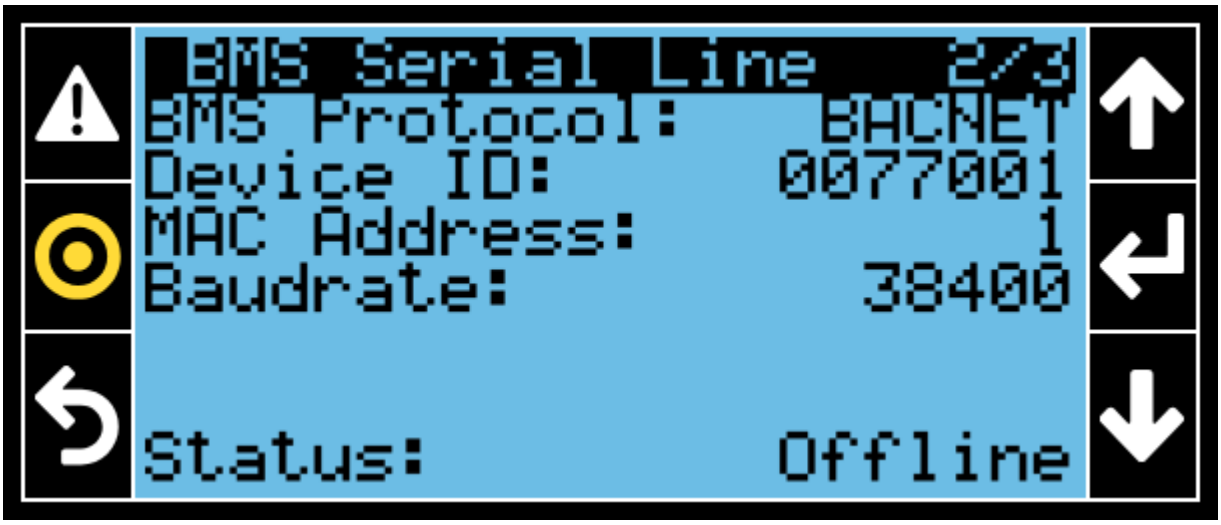

Figure 82. BMS Serial Config Screen 2

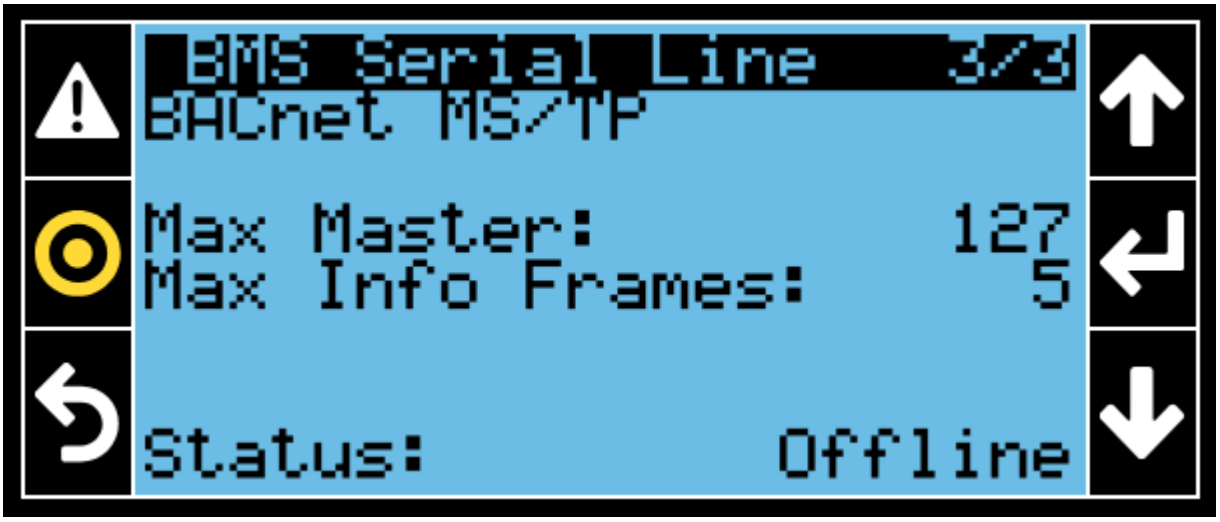

Figure 83. BMS Serial Config Screen 3

1. Using the 'Enter' button, move the cursor to the field you wish to edit.
2. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
3. Press 'Enter' to update the value. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.

BMS Ethernet Config

Use this sub-menu to configure Modbus TCP/IP or BACnet/IP settings.

To Configure BMS Ethernet Config:

1. Navigate to the Settings Menu. Select the 'Communications' option and press 'Enter'.

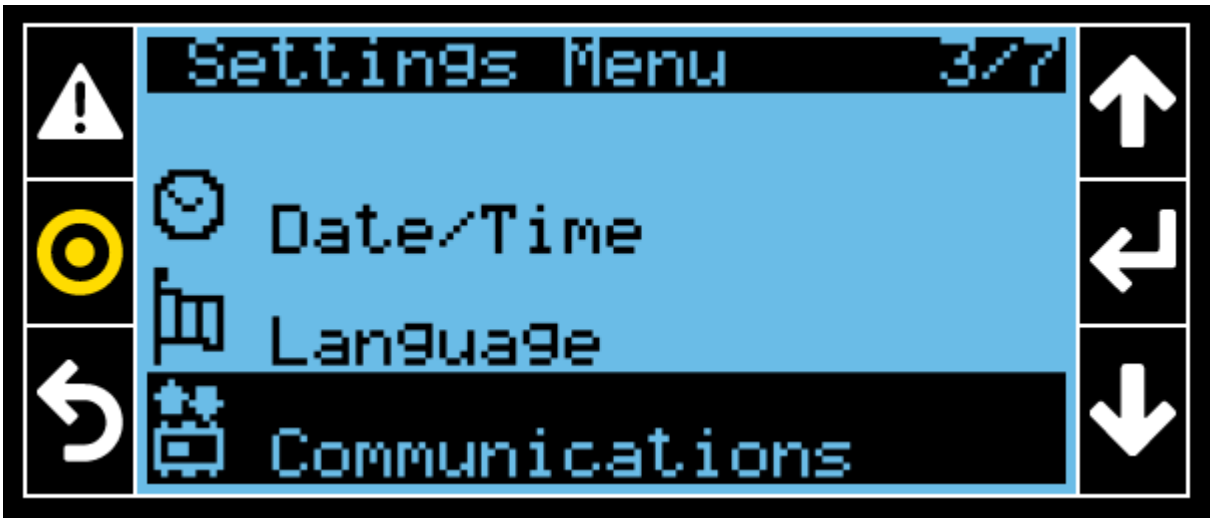

Figure 84. Settings Menu

1. On the Comm Menu screen, select ‘BMS Ethernet Config’ and press ‘Enter’.

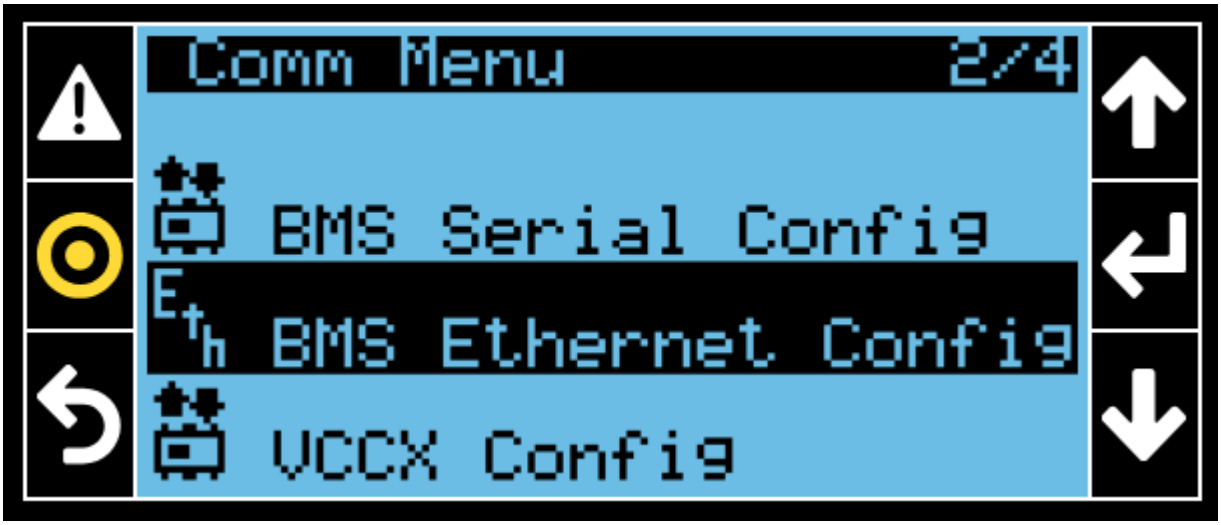

Figure 85. Comm Menu Screen

1. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll from screen to screen.

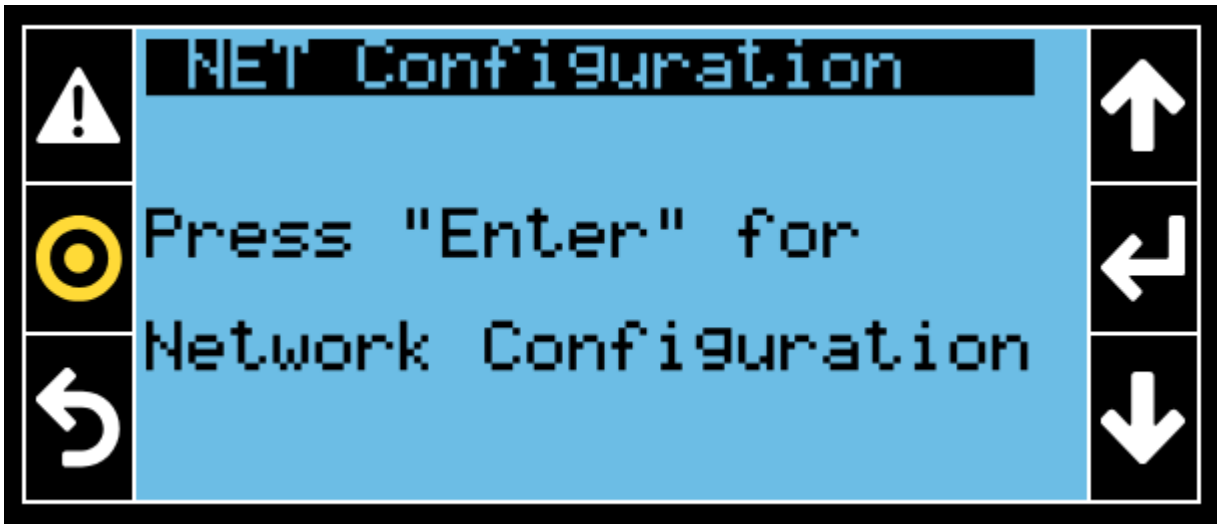

Figure 86. BMS Ethernet Config Screen 1

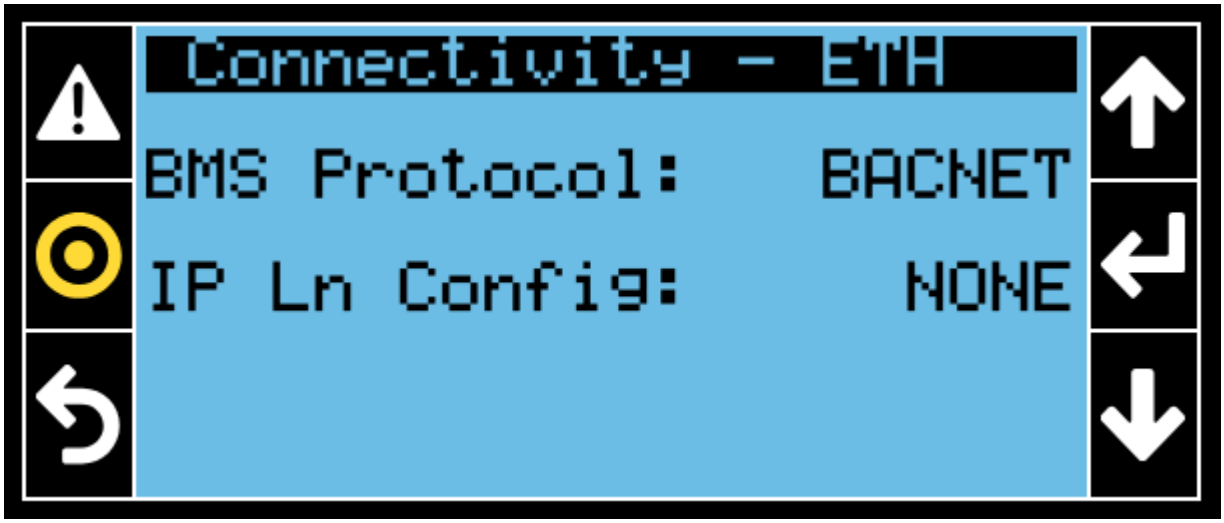

Figure 87. BMS Ethernet Config Screen 2

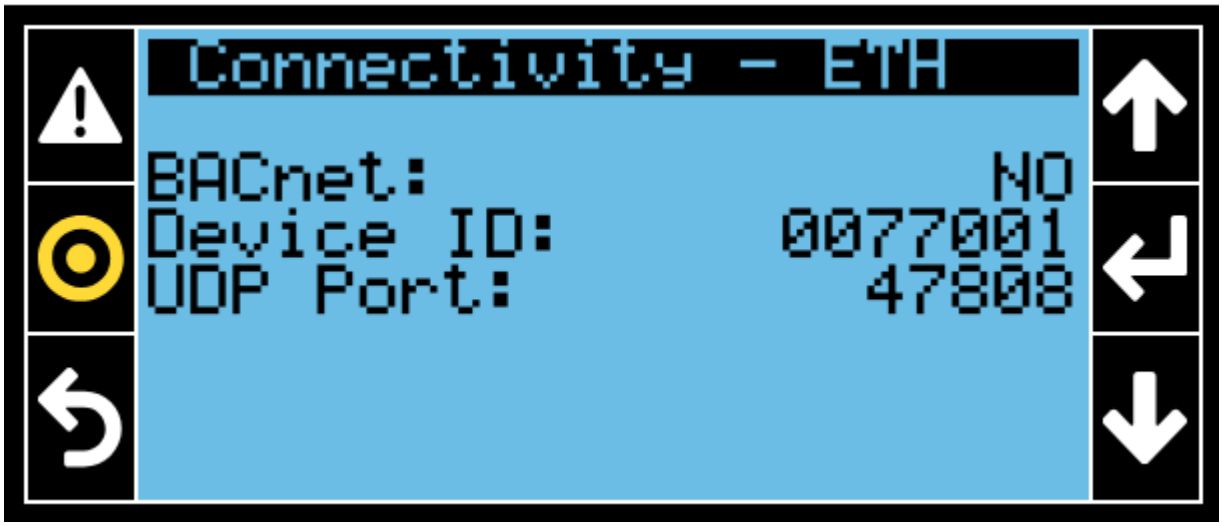

Figure 88. BMS Ethernet Config Screen 3

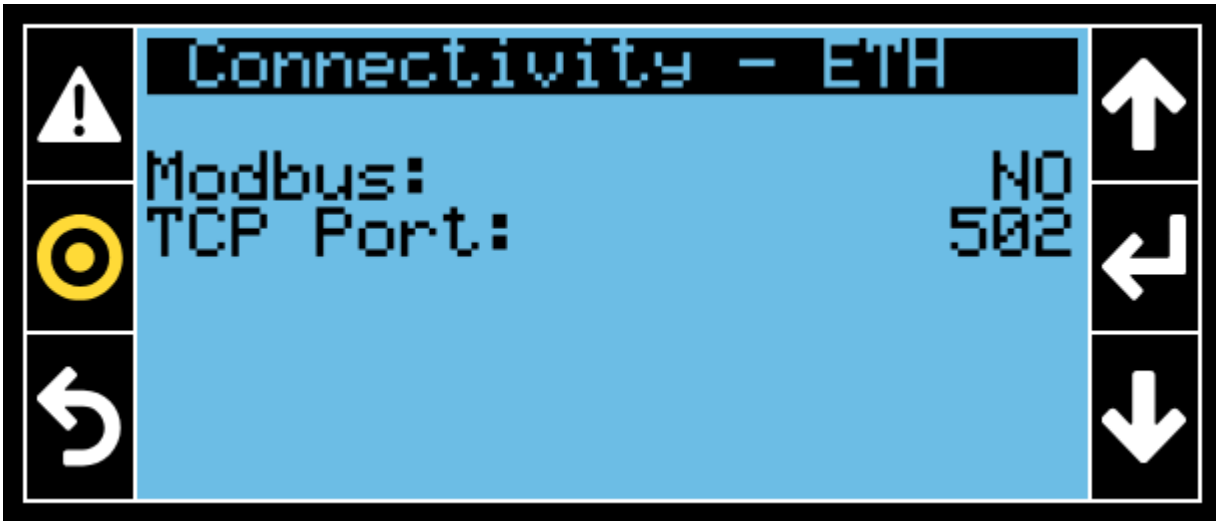

Figure 89. BMS Ethernet Config Screen 4

1. Using the ‘Enter’ button, move the cursor to the field you wish to edit.
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting.
3. Press ‘Enter’ to update the value. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.

To Configure BMS Ethernet Address:

1. Navigate to the Settings Menu. Select the ‘Communications’ option and press ‘Enter’.

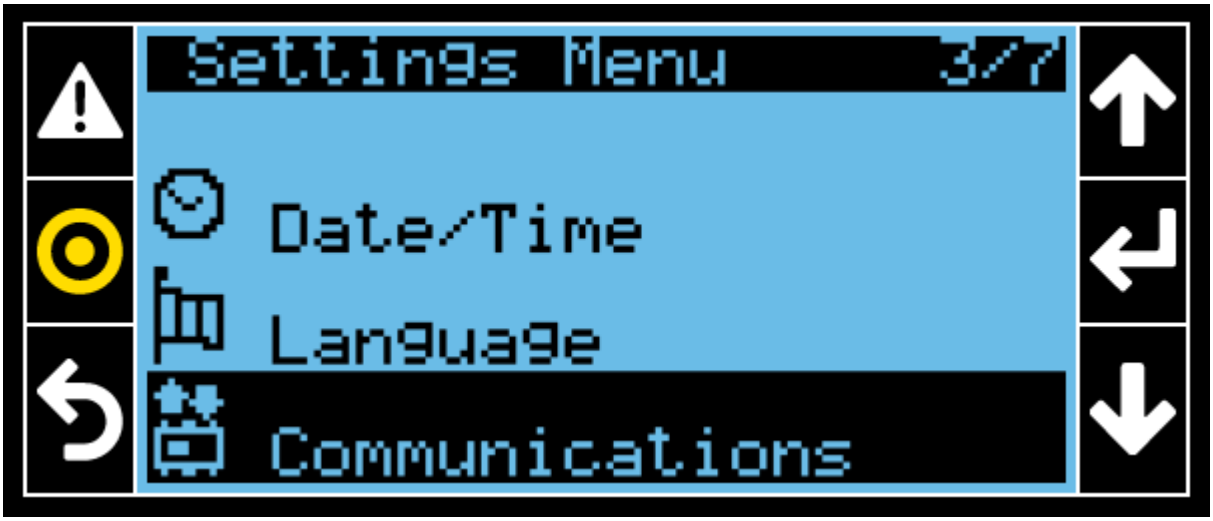

Figure 90. Settings Menu

1. On the Comm Menu screen, select ‘BMS Ethernet Config’ and press ‘Enter’.

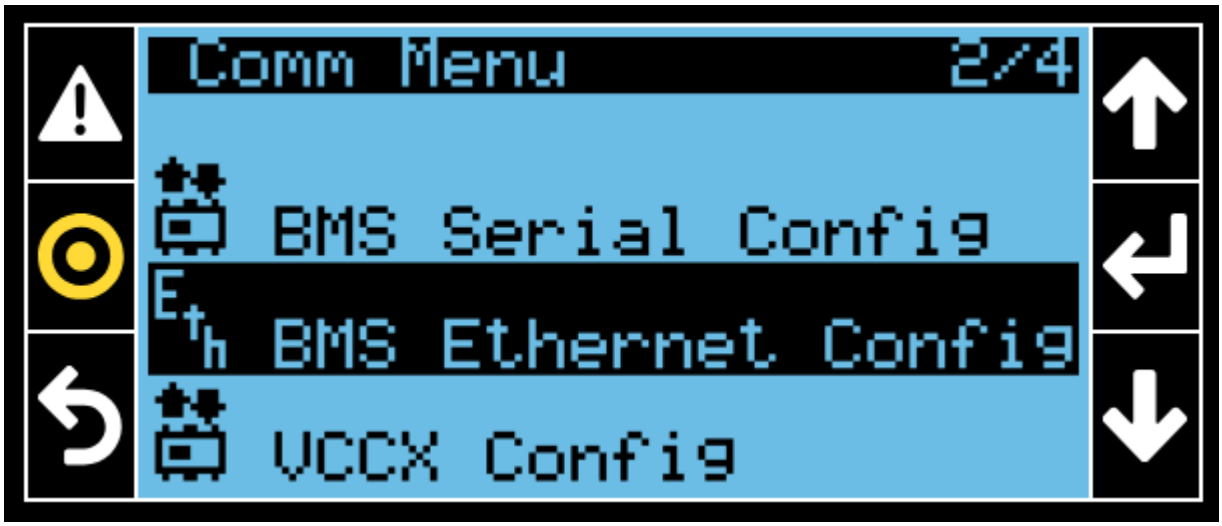

Figure 91. Comm Menu Screen

1. With the cursor in the home location, press ‘Enter’ to edit network address settings.

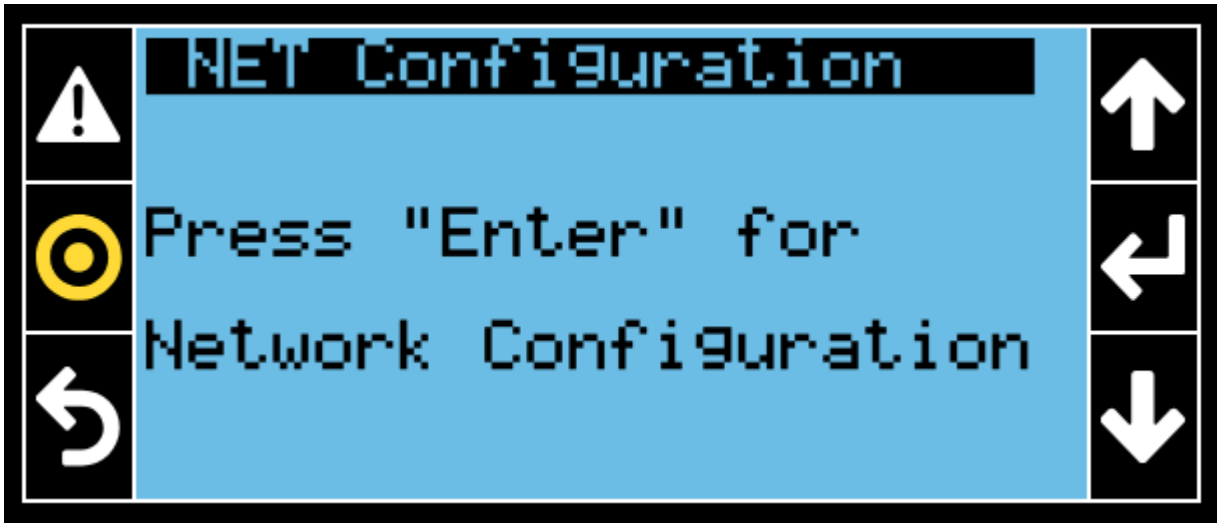

Figure 92. BMS Ethernet Config Screen 1

1. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll from screen to screen

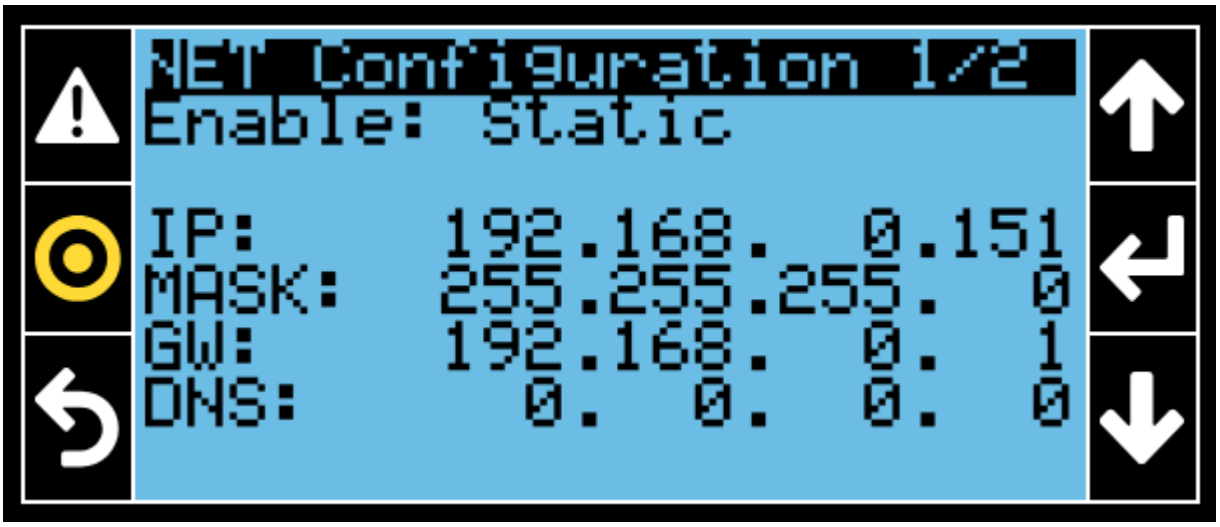

Figure 93. BMS IP Network Config Screen 1

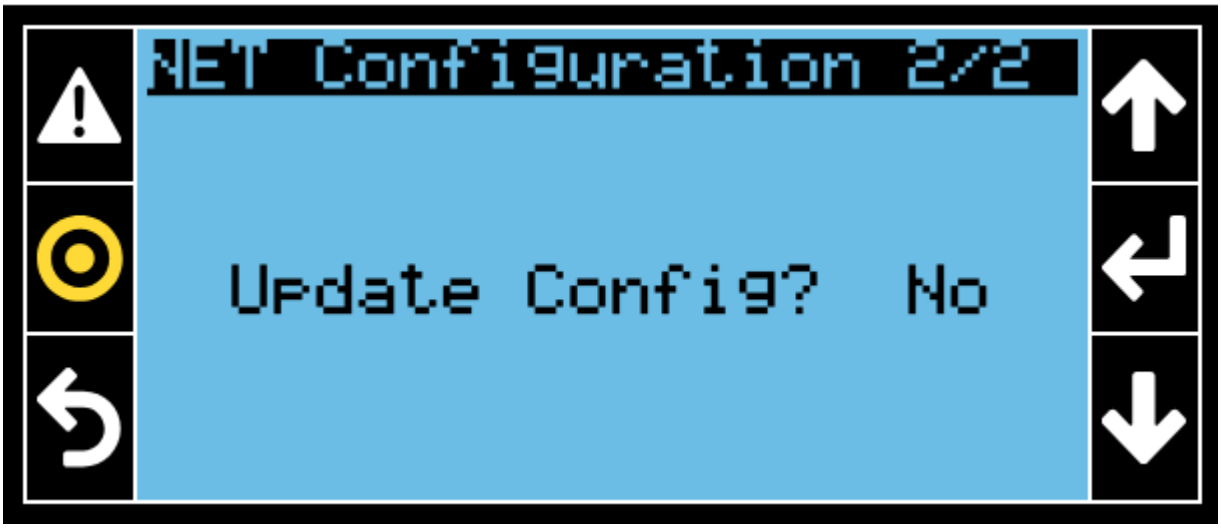

Figure 94. BMS IP Network Config Screen 2

1. Using the ‘Enter’ button, move the cursor to the field you wish to edit.
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting.
3. Press ‘Enter’ to update the value. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.
4. Once all settings are updated, go to page 2, set Update Config to ‘YES’, and press ‘Enter’ to reboot the controller.

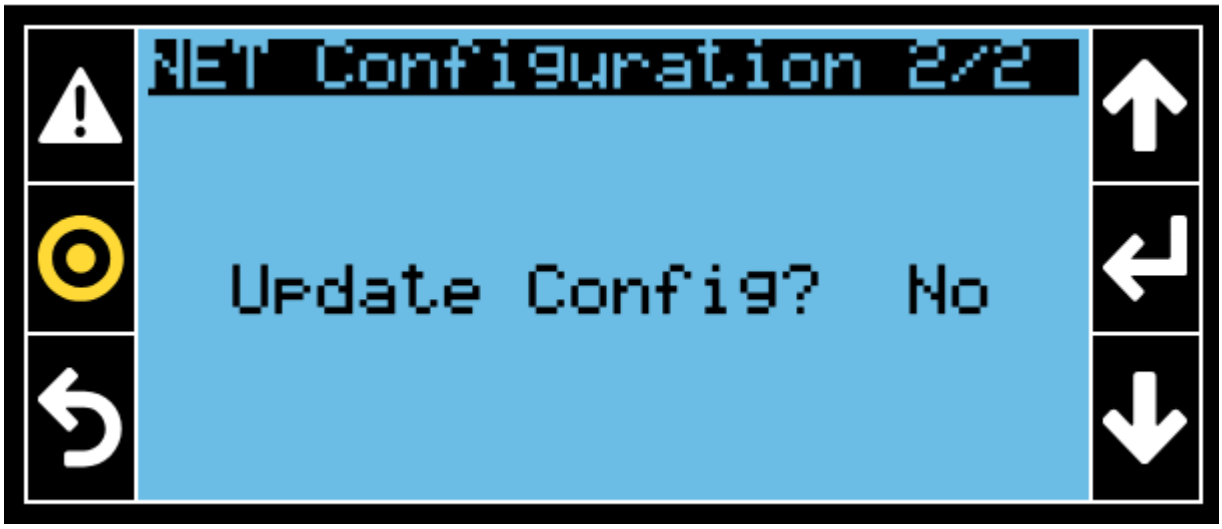

Figure 95. BMS IP Network Config Screen 3

VCCX Config

Use this sub-menu to set and verify BACnet MS/TP communication protocol, controller address, and baud rate for both the i-Controller 2.0e and VCCX controller.

To View BACnet Settings:

1. Navigate to the Settings Menu. Select the 'Communications' option and press 'Enter'.

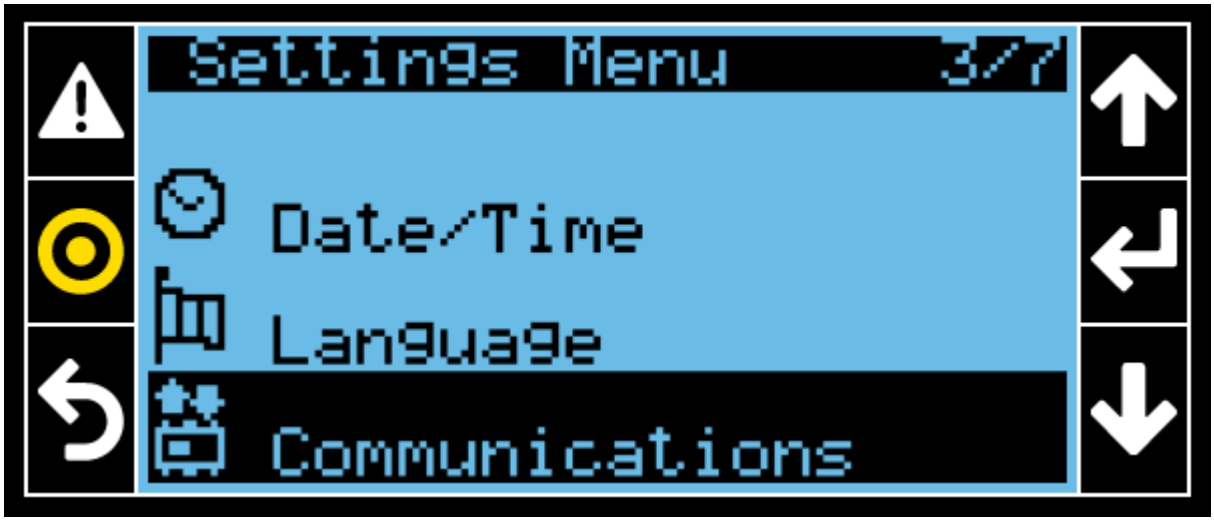

Figure 96. Settings Menu

1. On the Comm Menu screen, select 'VCCX Config' and press 'Enter'.

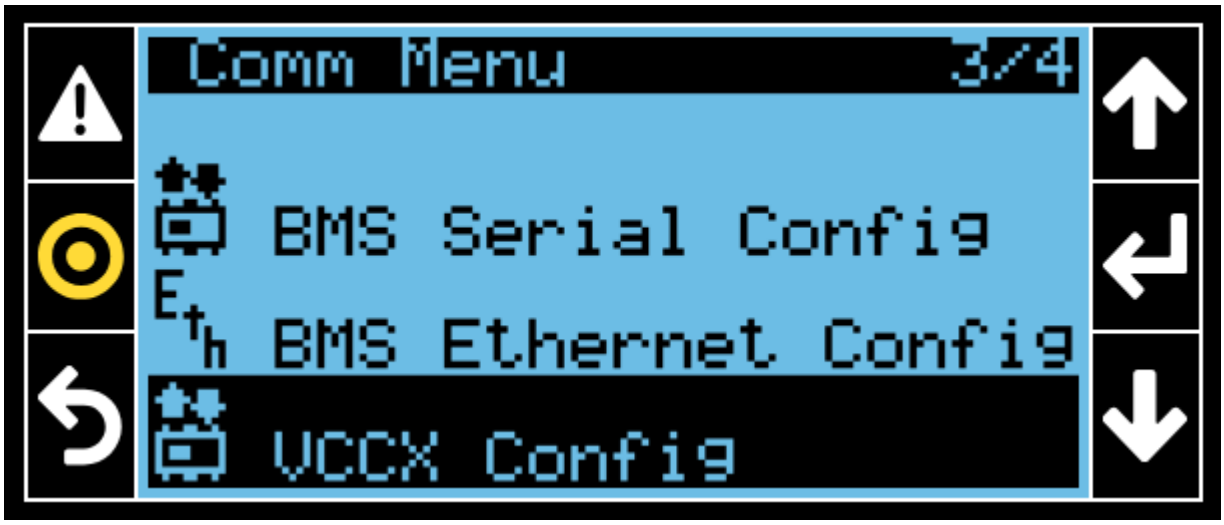

Figure 97. Comm Menu Screen

1. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll from screen to screen.

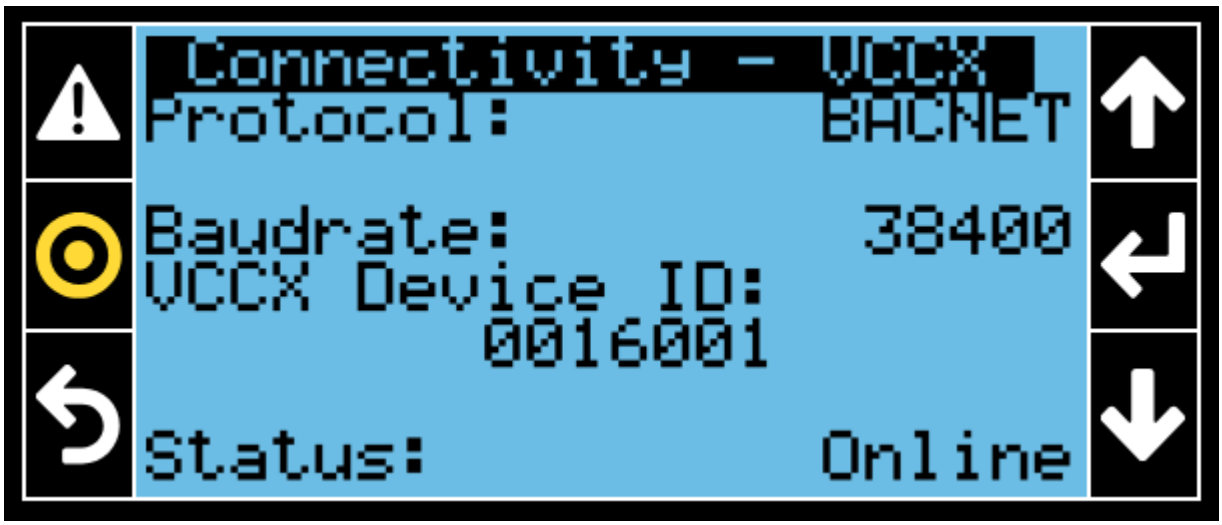

Figure 98. VCCX Connectivity Settings Screen 1

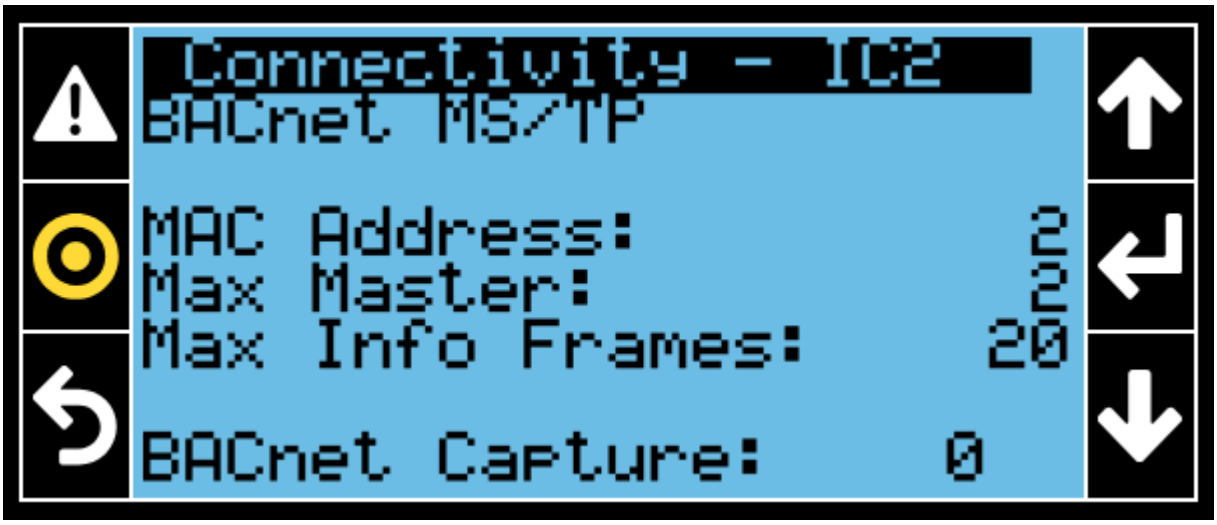

Figure 99. i-Controller 2.0e Connectivity Settings Screen 2

1. Using the 'Enter' button, move the cursor to the field you wish to edit.
2. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
3. Press 'Enter' to update the value. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.

Pwd Change

Use this sub-menu to change the user password in the i-Controller. This menu option is access protected, and the user must have the appropriate access level to update passwords.

Initialization

Initialization is used to delete alarm logs and to enable or disable controller alarm buzzer. The alarm buzzer is disabled by default.

To Clear Alarm Logs:

1. Navigate to the Settings Menu. Select the 'Initialization' option and press 'Enter'.

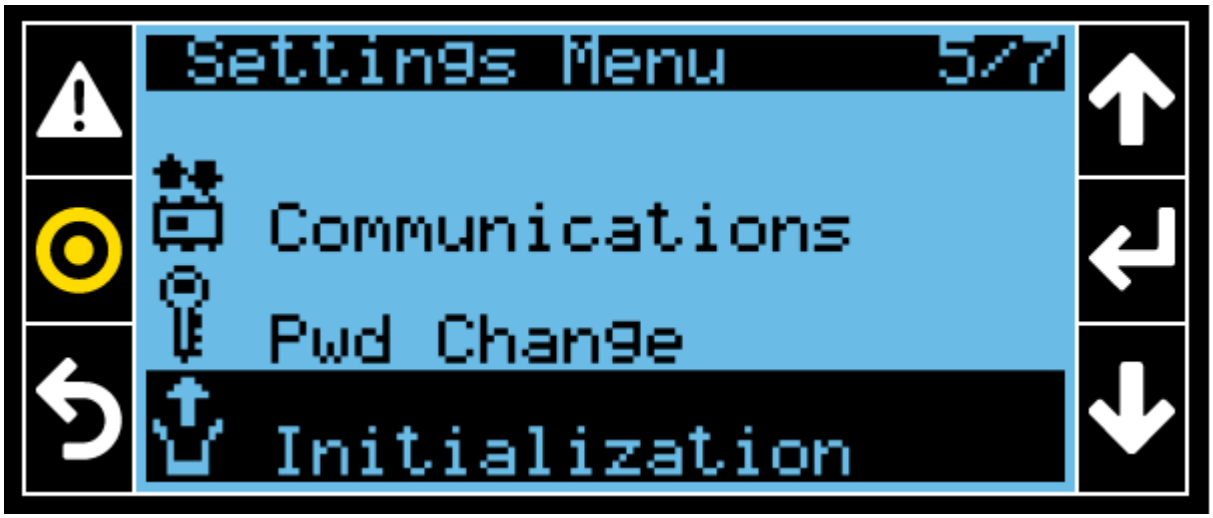

Figure 100. Settings Menu

1. Using the ‘Enter’ button, move the cursor to the field you wish to edit.
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting.

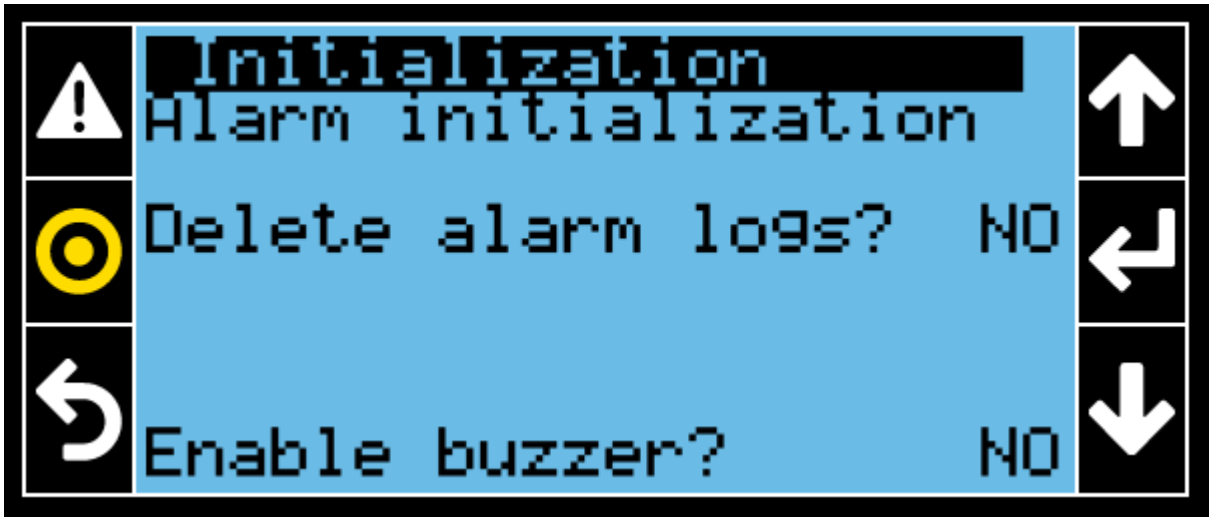

Figure 101. Initialization Screen

1. Press ‘Enter’ to update the value. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.

UoM

UoM, Unit of Measure, is used to set the unit of measure shown on the display. Default setting is USA.

Listed below are the available options:

1. SI: Temp = °C; Press kPa

2. USA: Temp = °F; Press = psi
3. UK: Temp = °F; Press = psi
4. CAN: Temp = °C; Press = psi

To Set UoM:

1. Navigate to the Settings Menu. Select the 'UoM' option and press 'Enter'.

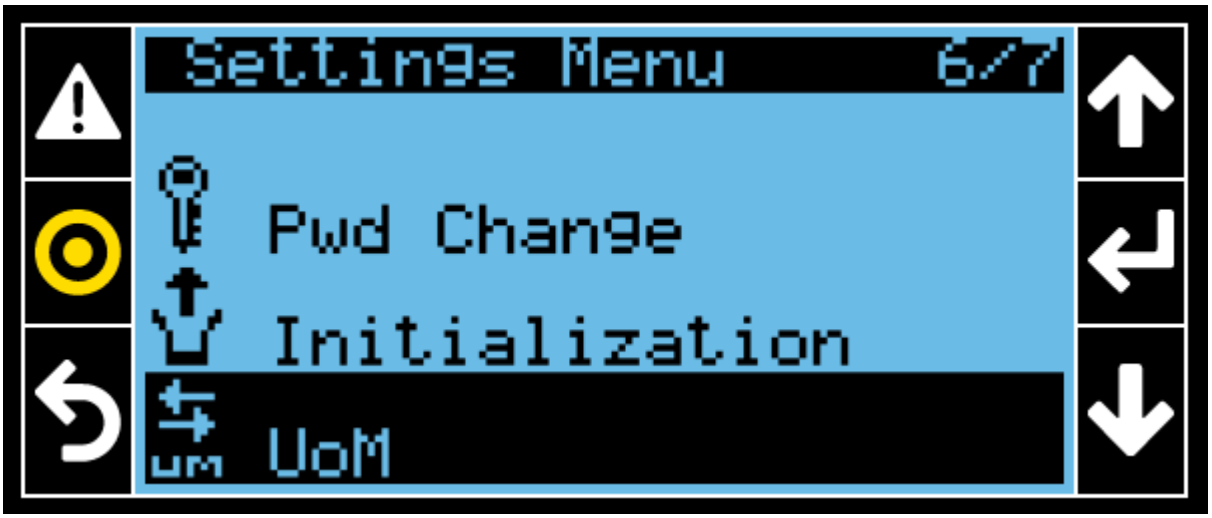

Figure 102. Settings Menu

1. Using the 'Enter' button, move the cursor to the field you wish to edit.
2. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.

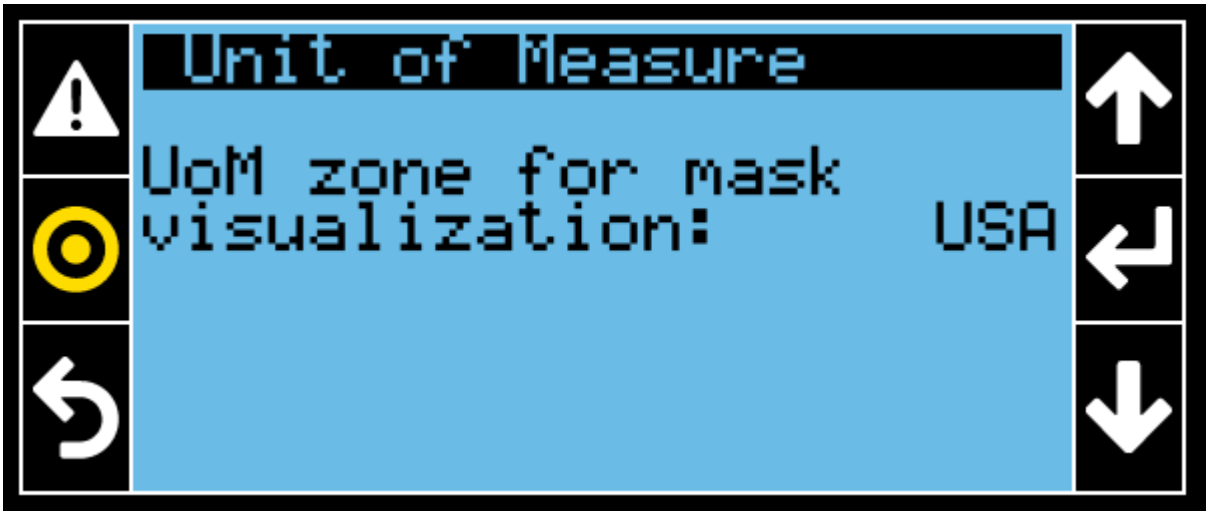

Figure 103. UoM Screen

1. Press ‘Enter’ to update the value. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.

Import/Export

Import/Export is used to import a new controller configuration file, export the existing controller configuration file, export alarm logs, and export trend logs. These files can be loaded from or saved to the controller’s internal memory or a USB drive.

To Import Configuration File:

1. Navigate to the Settings Menu. Select the ‘Import/Export’ option and press ‘Enter’.

Figure 104. Settings Menu

1. Using the ‘Enter’ button, move the cursor to the field you wish to edit.
2. Press ‘Enter’ to move the cursor to the ‘Import/Export’ selection.
3. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the desired setting. Press ‘Enter’ to make selection and move cursor to the next field.
4. Use the ‘UP / ‘DOWN’ arrows to select ‘Internal Memory’ or ‘USB’. Press ‘Enter’ to make selection and move cursor to the next field.
5. Use the ‘UP / ‘DOWN’ arrows to select the file name. Press ‘Enter’ to make selection and move cursor to the next field.
6. Use the ‘UP / ‘DOWN’ arrows to select ‘YES’ for confirmation.

7. Press ‘Enter’ to import or export file. Press ‘Escape’ to exit edit mode, without change, and return the cursor to the home location.

Figure 105. Import/Export Screen

Alarms

Alarm screens are used to view all active unit alarms, review alarm logs, and reset unit alarms. See the SOO for a list of unit alarms and alarm definitions.

To View Active Alarms:

1. From any screen, press the ‘Alarm’ button 
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll through the active alarms.
3. The Alarm screens display the alarm code in the upper left of the screen, the number of alarms in the upper right, the date and time of the alarm occurrence, and the alarm description.
4. Press ‘Escape’ to return to the Overview screen.

Figure 106. Standby Screen

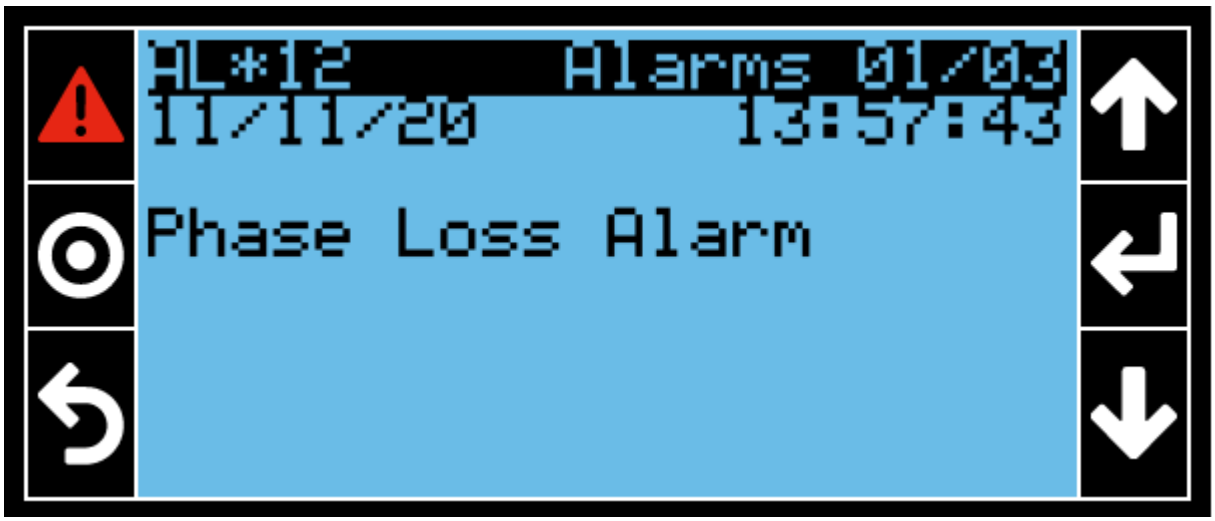

Figure 107. Alarm Screen

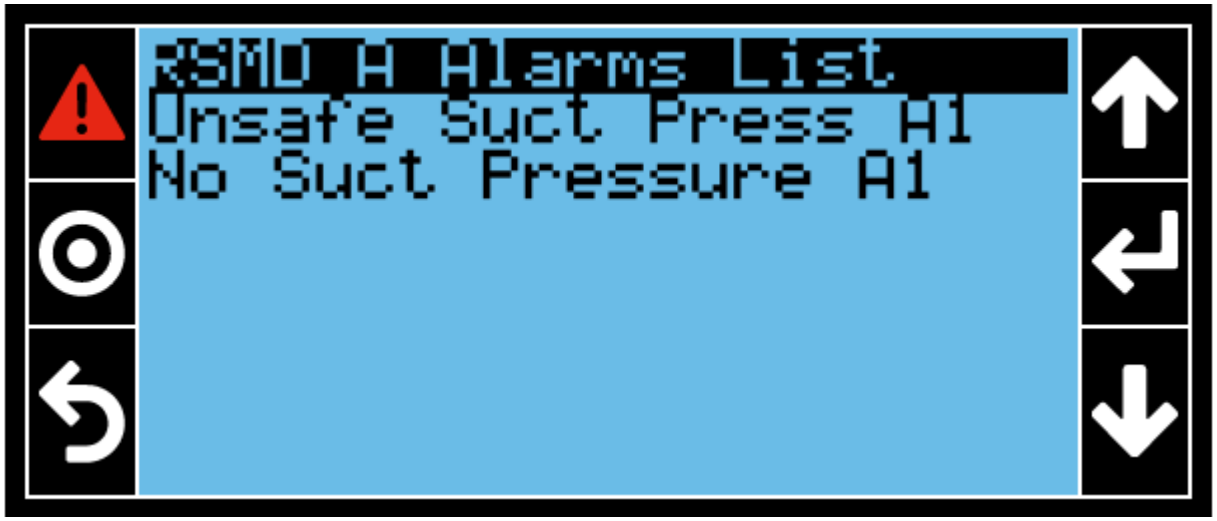

Figure 108. RSMD Alarm Screen

To Clear Alarms:

1. From any screen, press the ‘Alarm’ button 
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Alarms Reset’ screen.
3. Press and hold the Alarm button for three seconds to reset alarms. Active alarms will only reset if the alarm condition has been resolved.
4. Press ‘Escape’ to return to the Overview screen.

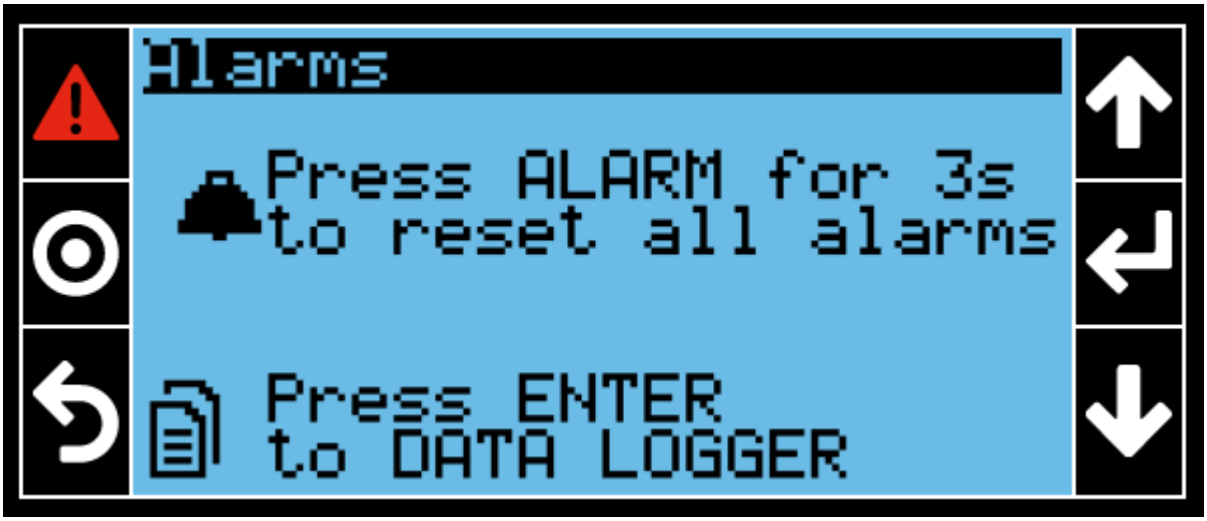

Figure 109. Alarms Reset Screen

To View Alarms Datalogger:

1. From any screen, press the ‘Alarm’ button 
2. Use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Alarms Reset’ screen.
3. Press the ‘Enter’ button to open the Data Logger screen.
4. Use the Up and Down arrows to scroll through the stored log records.
5. Press Escape to return to the Overview screen.

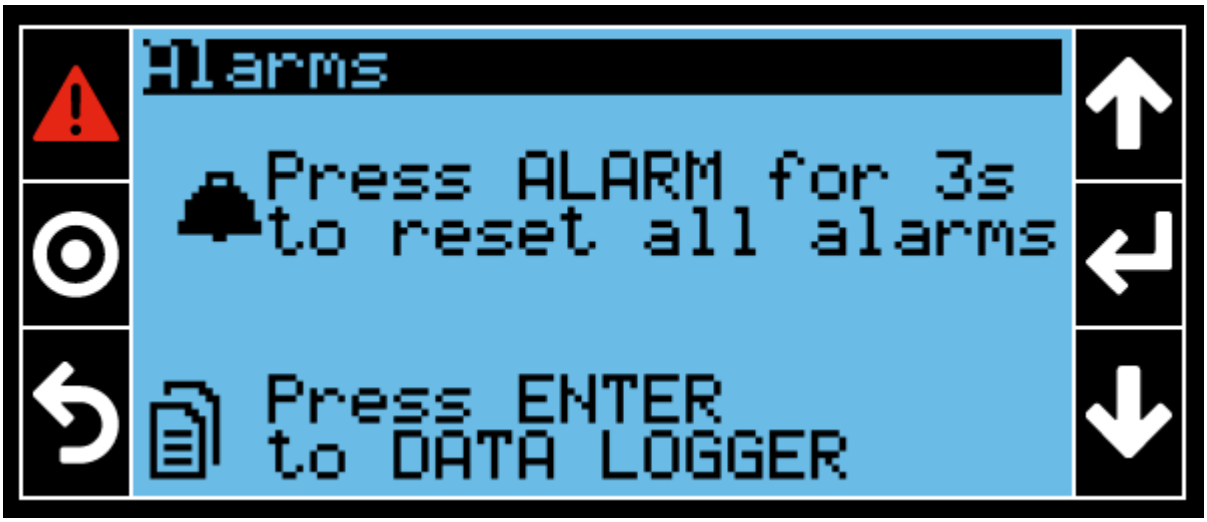

Figure 110. Alarms Reset Screen

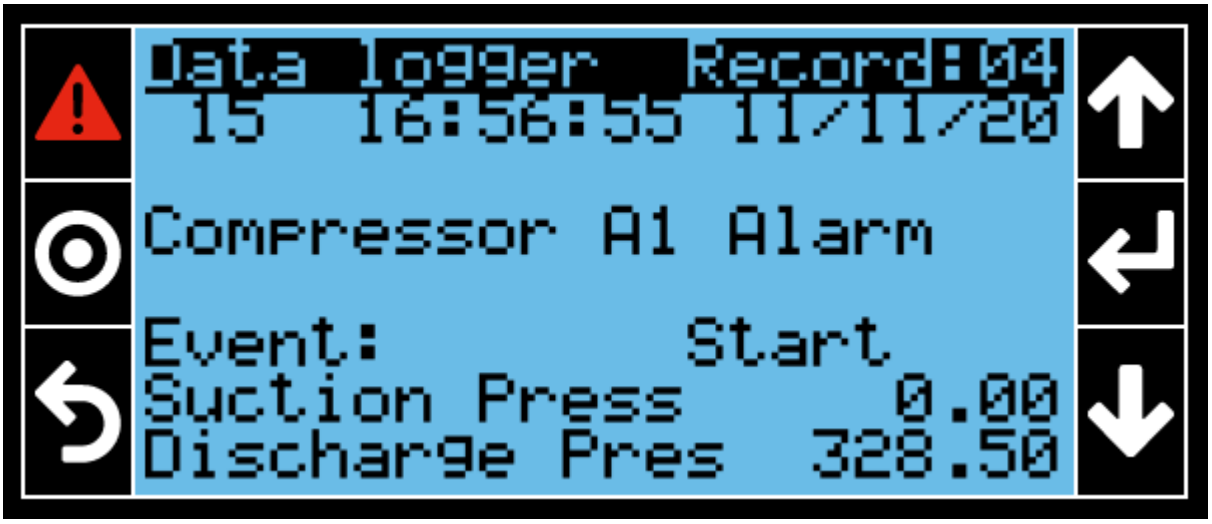

Figure 111. Alarms Data Logger Screen

Revision History

Revision (n-ddmonthyyyy)	**Modification**
1-16June2026	i-Controller 2.0e revisions

Approvals

Author	Manager	Product Manager
Richard Germany, CE	Laura Semidey	Steve Toth