



Technical Guide

CN-IC2-04

Title:

i-Controller 2.0 Display Navigation Rev.300

Flō i-Controller 2.0

Display Navigation For
Rev 300.00

EXTERNAL



Title: i-Controller 2.0 Display Navigation Rev.300

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i-Controller 2.0 Display Navigation Rev.300

IMPORTANT: Read Before Continuing

i-Controller Unit Types: Some unit types such as Water-Source Heat Pumps and Chilled Water Units have screens that are specific to that unit type. Refer to the 'Additional Unit Types' section for these specialized screens.

Working with Building Management Systems: Once an i-Controller Modbus or BACnet connection is established to the Building Management System (BMS) and the controller is ONLINE, the BMS is the Master controller. All set point and schedule changes are to be made at the BMS. Changes can be made on the i-Controller but 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/changes are complete, reconnect the RS485 back into the RS485 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, double check the changed variable to ensure that it is correct.
6. If the changed variable has been over-written, then the variable change needs to be made at the BMS.

Introduction Screens

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 location, the up and down arrows can be used to navigate from page to page within the selected menu.

Pressing the enter button will enter the page and place the cursor on the first editable field on the pages. Once the cursor is on an editable field, the up and down arrows can be used to change the value of the field. Press the enter button to accept the changed value. Continue to press the enter button to navigate to the other editable fields on the page. Once to the end of the page, the cursor will return to the home location for page navigation.

Button	Descr.	Function
	Alarm	Press to enter alarm menu
	Prog	Press to cycle menu options
	Esc	Press to go back. Long press to return to 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 set you back out 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 will be displayed on the Overview screen.

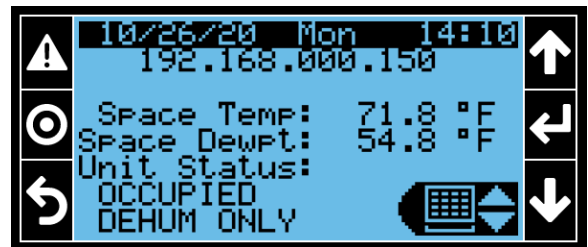


Figure 2. Overview screen

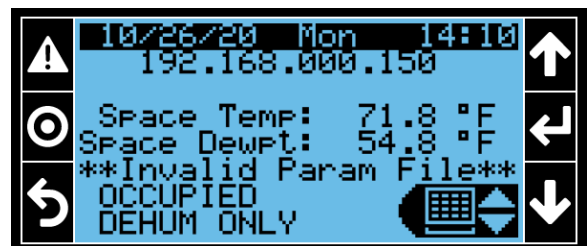


Figure 3. Invalid Parameter File Message

Quick Menu

Quick Menu accesses the internal schedule, setpoints, status, and controller information. From the Overview screen, use the 'UP' and 'DOWN' arrows to select the desired Quick Menu and then press 'Enter' to select the menu option.

Icon	Descr.	Function
	Schedule	Unit Schedule
	Setpoints	Unit Setpoints
	Status	Status Menu
	Info	Controller information

Table 2. Quick Menu Icons

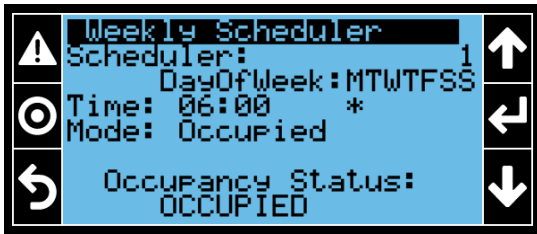


Figure 4. Schedule screen

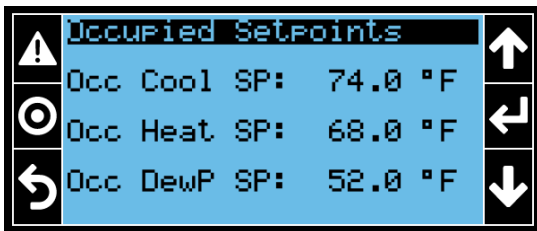


Figure 5. Setpoints screen

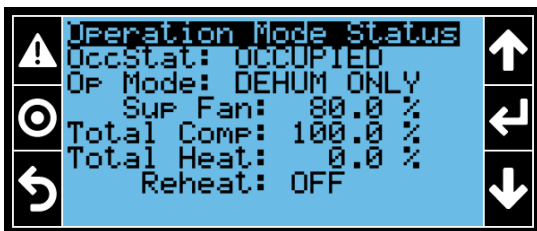


Figure 6. Status screen



Figure 7. Information screen

Schedules

A schedule is used to activate/ deactivate an event on a specified day/ 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” in between the scheduled event ‘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 24hr basis. For Example: on Mondays, the occupied time

starts at 8:00am and the unoccupied time begins at 10:00pm. For ‘Occupied’, Scheduler ‘1’ will be selected and an ‘*’ under the ‘M’. Time will be set for 8:00 and mode will be set for ‘Occupied’. See Figure 8.

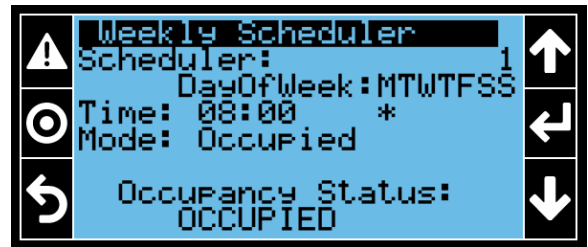


Figure 8. Monday 8am Occupied Schedule

For ‘Unoccupied’, Scheduler ‘2’ will be selected and an ‘*’ under the ‘M’. Time will be set for 22:00 and mode will be set for ‘Unoccupied’. See Figure 9.

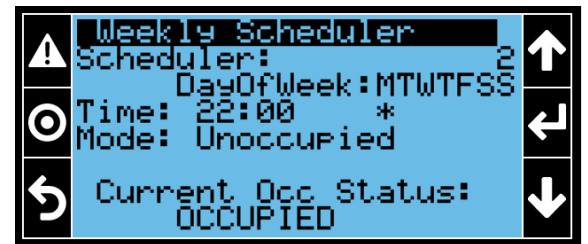


Figure 9. Monday 10pm Unoccupied Schedule

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 select event.
3. Using the ‘UP’ / ‘Down’ arrows to select the hour and press ‘Enter’ to set value. Then, select the minute that you wish to change, and press ‘Enter’ to set value.
4. Using the ‘UP’ / ‘Down’ arrows to select the operation mode ‘Occupied’ or ‘Unoccupied’ and press ‘Enter’ to set value.
5. Repeat steps 2-4 until all event in the schedule have been updated.

- Once all changes have been completed, press the 'Escape' button to return to the Overview screen.

Set Points

Set points are used as the cut in/ out for various i-controller functions. The i-Controller Set Point configuration section has 3 navigation screens.

The "Set Points" option should only be used if operation set points **are not** being communicated to the FLō i-Controller from a Building Management System (BMS).


If the FLō i-Controller is connected to a BMS over Modbus, the set points shown on this screen will be automatically updated with the set points entered in the BMS. The set points limitations are as follows:

Cool SP: Heat SP + 4 °F - 85F
 Heat SP: 50 – Cool SP – 4°F
 Dew Point SP: 48-60F

There must be a minimum of 4-degrees between the heating and cooling set points. If set points are inputted too close together, the program will automatically adjust the set points per the following rules:

Outdoor Air Temp > 60 °F: Heating Set Point = Cooling Set Point - 4 °F
 Outdoor Air Temp < 50 °F: Cooling Set Point = Heating Set Point + 4 °F

To Change Unit Setpoints:

- If the FLō i-Controller is **not** connected to a BMS, perform the following steps to modify the set points.
- From the 'Overview' screen, use the quick menu options to select the 'Setpoint Menu'  and press 'Enter'.
- Once on the 'Occupied Setpoint' screen, the cursor will be in the home location.
- With the cursor in the home location, use the 'UP' / 'DOWN' arrows to navigate to the desired setpoint screen.

- Press the 'Enter' button to move the cursor to the setpoint you wish to change.
- Using the 'UP' / 'Down' arrows to enter the desired set point value and press 'Enter' to set value.
- Repeat steps 5-6 until all setpoint values have been set.
- Press the 'Enter' button until the cursor returns to the home location.
- Repeat step 4 to change screens.
- Once all changes have been completed, press the 'Escape' button to return to the Overview screen.

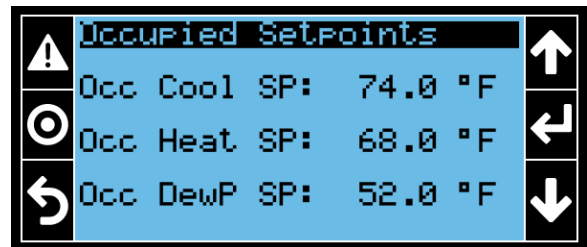


Figure 10. Occupied Set Points - screen 1

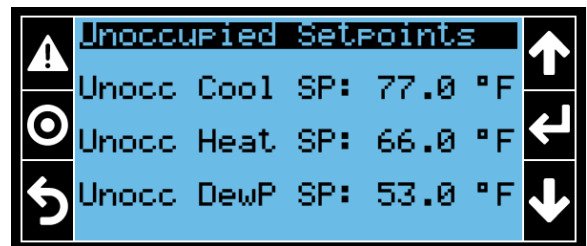


Figure 11. Unoccupied Set Points - screen 2

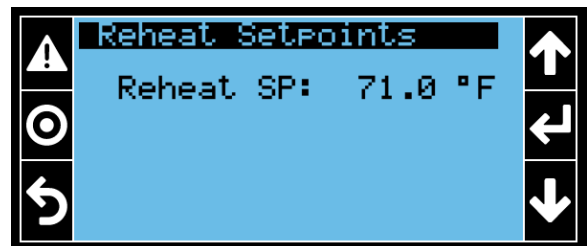



Figure 12. Reheat / Reclaim Set Points - screen 3

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 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

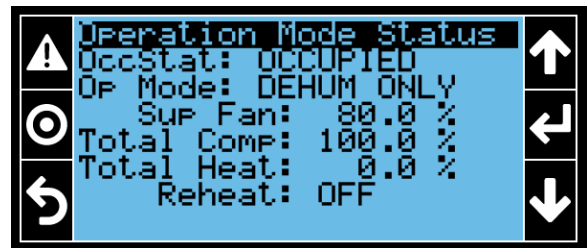


Figure 13. Operation Mode Status Screen

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. **Comm Status:** This indicates if the VCCX is in communication with the Flō i-Controller.

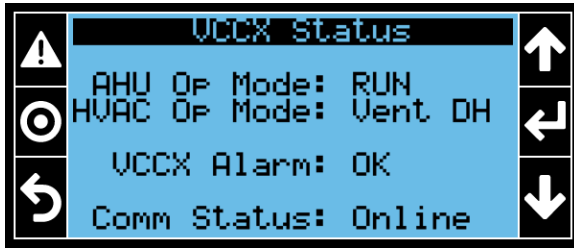


Figure 14. VCCX Status Screen

Information


The controller information screen indicates the current versions of software running, and other controller hardware status information.

File Descriptions

These are a list of the controller files and software versions.

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.

To View Controller Information:

1. From the 'Overview' screen, use the quick menu options to select the 'Information Menu'  and press 'Enter'.
2. Using the 'UP' / 'Down' arrows to scroll through the screens.

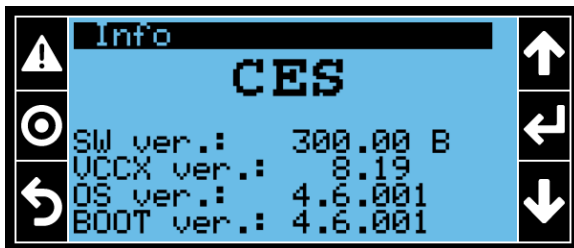


Figure 15. Software versions running

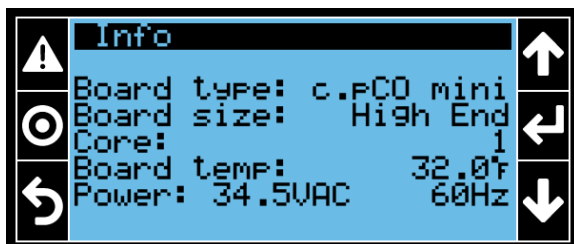





Figure 16. Controller info screen

Menu Options

The 'Program' button, , provides easy 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 the menu list. Press the 'Escape' button will return you to the previous screen and 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 will give 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 displays compressor information.
3. **Condenser Status:** Status screens displays condenser information.
4. **Heating Status:** Status screens displays heating information.

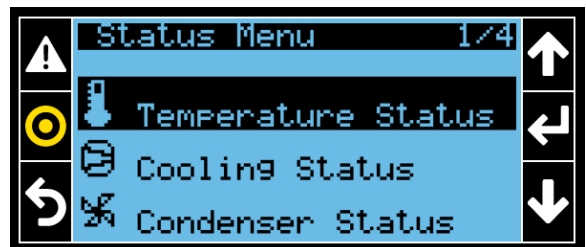


Figure 17. Status Menu

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 temperature probe mounted in underneath the rain hood on the FLO 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.

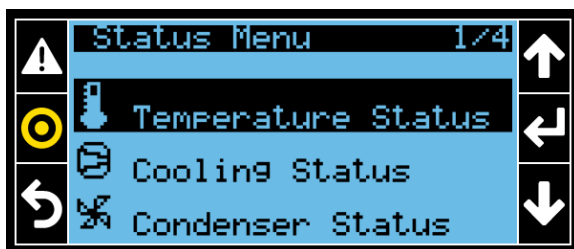


Figure 18. Status Menu

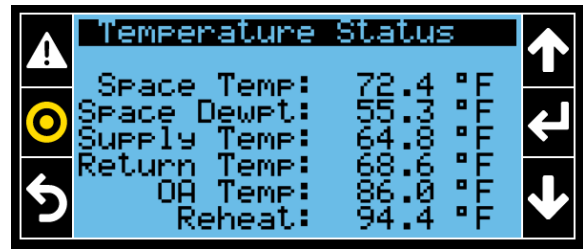


Figure 19. Temperature Status Screen

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.

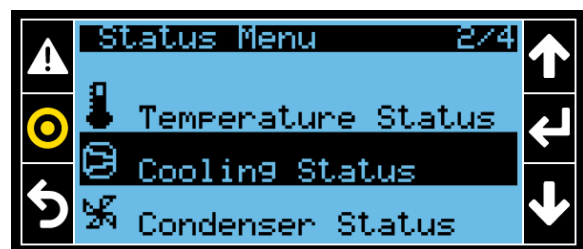


Figure 20. Status Menu

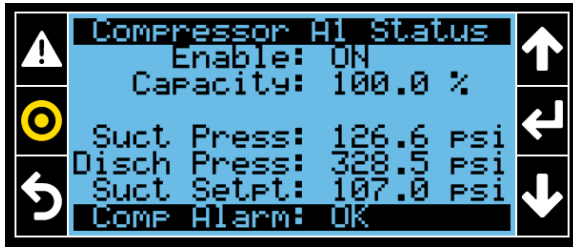


Figure 21. Cooling Status Screen

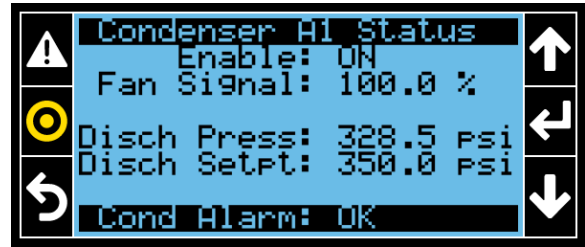


Figure 23. Condenser Status Screen

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.

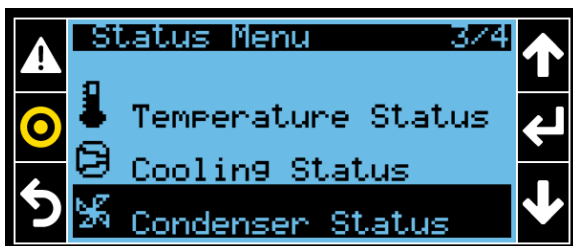


Figure 22. Status Menu

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.

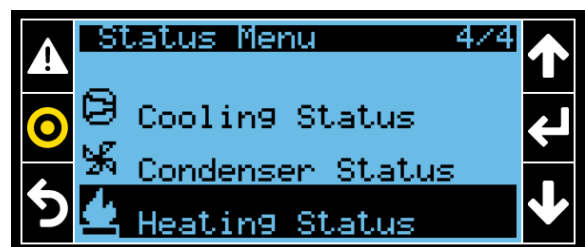


Figure 24. Status Menu

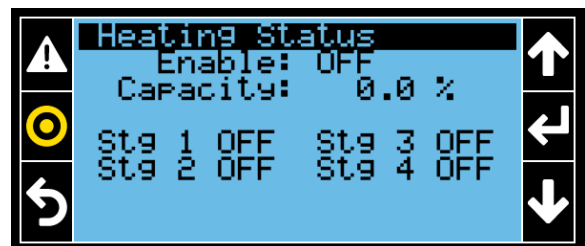


Figure 25. Heating Status Screen


Field Tech Menu

View and configure inputs and outputs, Enter Test Modes, and Damper Parameters to be set by a certified field technician 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. **Set 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.

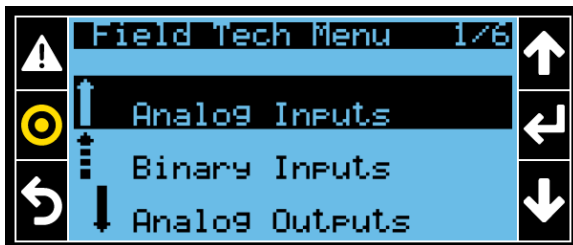


Figure 26. Field Tech Menu

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 VCCX controller.

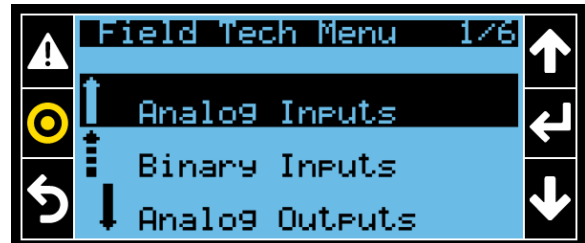


Figure 27. Field Tech Menu

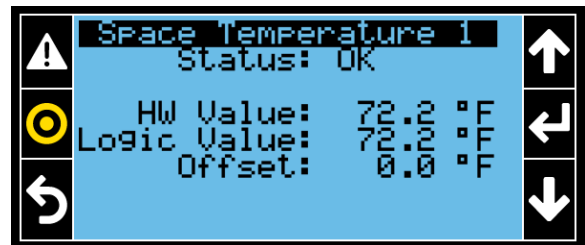


Figure 28. Analog Input – Wired to i-Controller

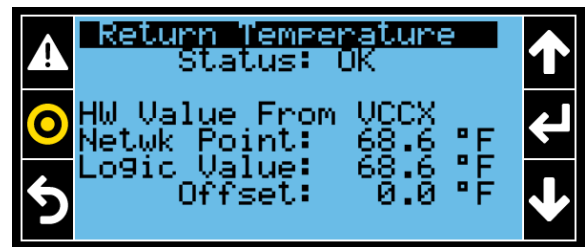


Figure 29. Analog Input – Wired to VCCX

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 are to be set when an installed sensor is reading differently from a calibrated device. **Maximum offset values for each sensor type are as follows:**

- Temperature Sensors: +/- 3 °F
- Pressure Transducers: +/- 5PSI
- Humidity Sensor: +/- 3%
- Dew Point Sensor: +/- 2 °F
- CO2 Sensor: +/- 50ppm

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.

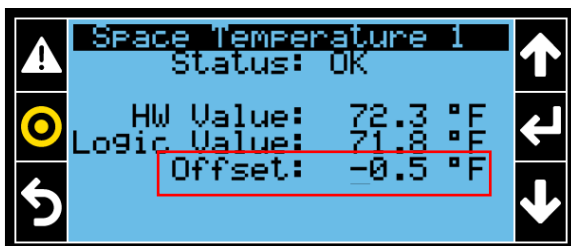


Figure 30. AI- Space Temperature Offset

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.

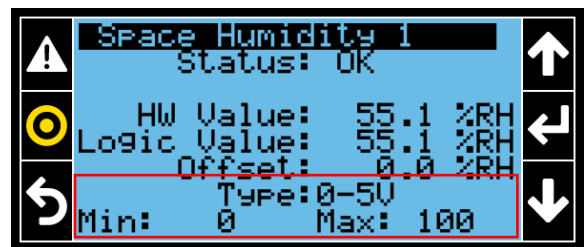


Figure 31. AI – Space Humidity Configuration

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 VCCX controller.

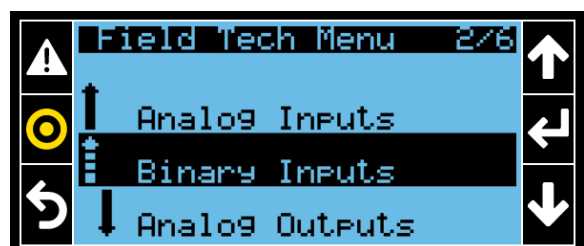


Figure 32. Field Tech Menu

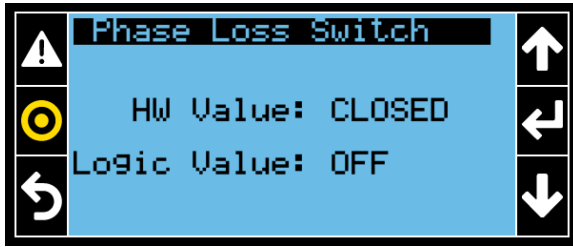


Figure 33. Binary Input – Wired to the i-Controller

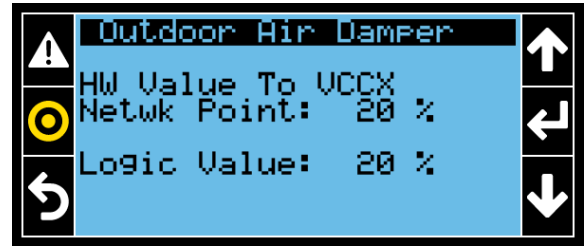


Figure 36. Analog Output – Wired to VCCX Controller

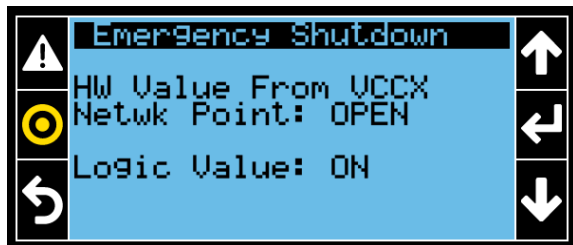


Figure 34. Binary Input – Wired to the VCCX

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.

Note: All analog outputs are wired to the 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 input is from VCCX controller.

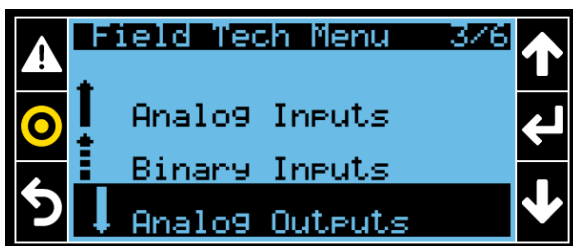


Figure 35. Field Tech Menu

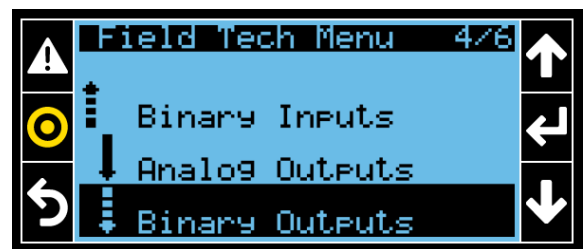


Figure 37. Field Tech Menu

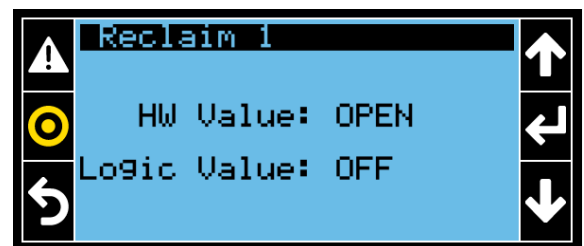


Figure 38. Binary Output – Wired to i-Controller

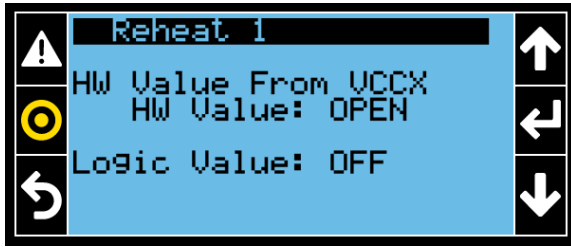


Figure 39. Binary Output – Wired to VCCX Controller

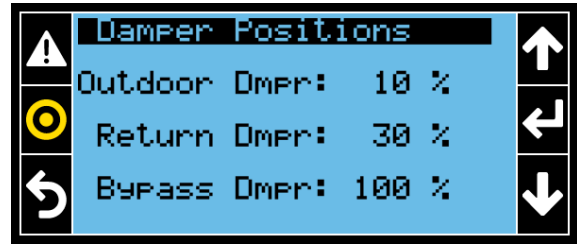


Figure 41. Damper Positions

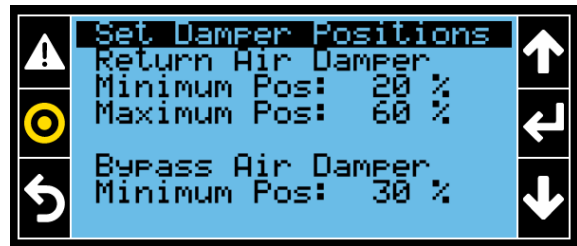


Figure 42. Set Damper Positions

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

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.

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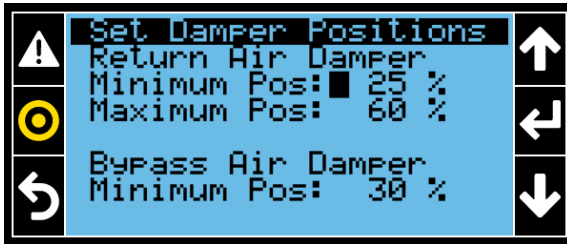


Figure 43. Set Damper Positions

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.

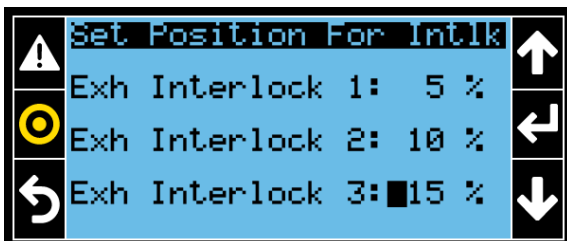


Figure 44. Set Positions For Exhaust Fan Interlocks

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.

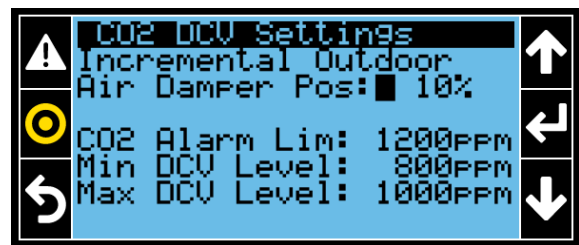


Figure 45. CO2 DVC Settings

Test Modes

Test modes are available for testing dehumidification mode, cooling mode, heating mode, occupancy, and a gas pressure check mode for verifying gas flow. **All test modes will 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

Is used to place the dampers in the proper location for air balancing. The Air Balance mode will time out after 2 hours. The following test screens are it 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.

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

The OAD Max Pos value can be changed to achieve the desired outdoor air flow. Toggle Supply Fan Balance Completed to ‘YES’ when completed.

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’.
2. With the cursor in the home location, use the ‘UP’ / ‘DOWN’ arrows to scroll to the ‘Air Balancing Test’ screen and press ‘Enter’.
3. 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’.

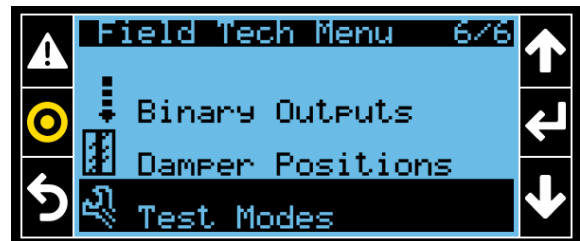


Figure 46. Field Tech Menu

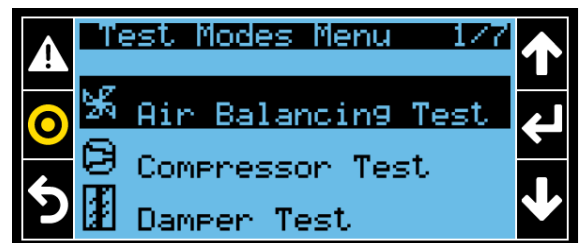


Figure 47. Test Modes Menu

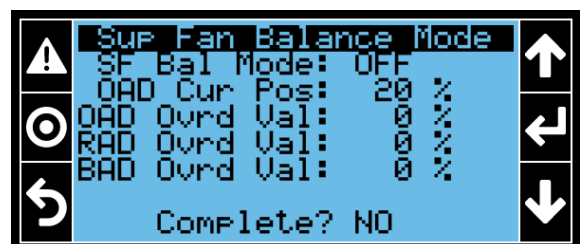


Figure 48. Supply Fan Balance Mode

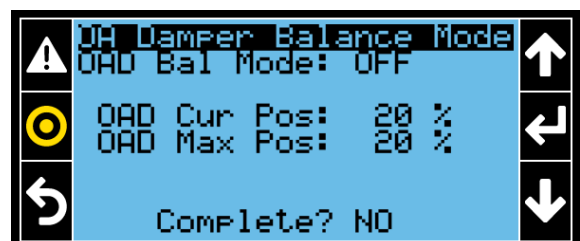


Figure 49. OA Damper Balance Mode

Cooling Test

Cooling Test is used to ensure operation of the compressors. The cooling test will initiate a forced cooling mode and the compressors will stage up to meet the demand of this mode.

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 lock out for cooling.

To Enter Cooling Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press 'Enter'.
2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Cooling Test' screen and press 'Enter'.
3. Using the 'Enter' button, move the cursor to the 'Test Mode' selection.
4. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
5. Press 'Enter' or 'Escape' to return the cursor to the home location.

To Enter Damper Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press 'Enter'.
2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Compressor Test' screen and press 'Enter'.
3. Using the 'Enter' button, move the cursor to the 'Test Mode' selection.
4. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
5. Press 'Enter' or 'Escape' to return the cursor to the home location.

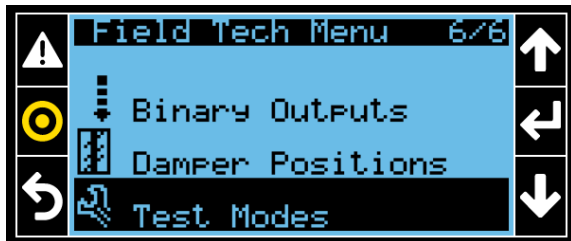


Figure 50. Field Tech Menu

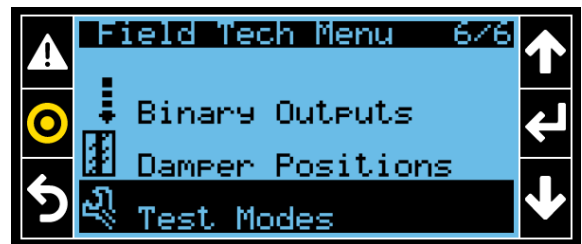


Figure 53. Field Tech Menu

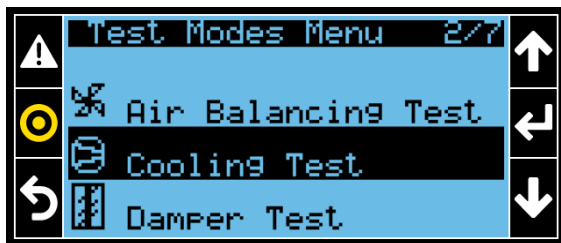


Figure 51. Test Modes Menu

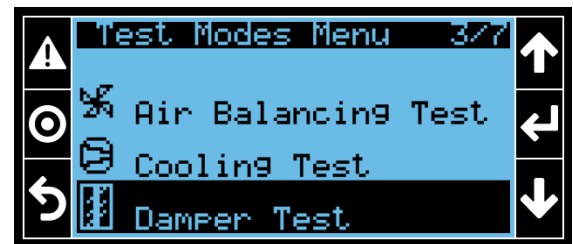


Figure 54. Test Modes Menu

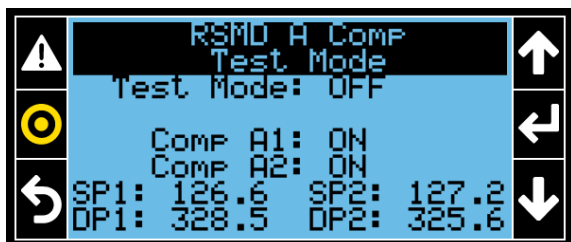


Figure 52. Compressor Test Mode

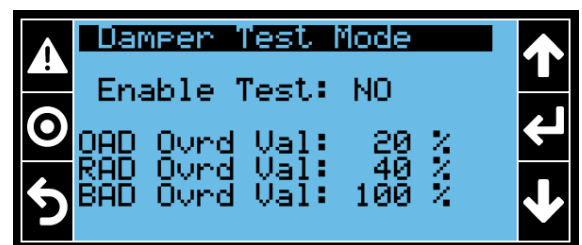


Figure 55. Damper Test Mode

Damper Test

Is used to open dampers to the user specified position.

Heating Test

Is used to test the heat stages. Full capacity heat test mode turns 'ON' each stage of heat individually.

To Enter Heating Test Mode:

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

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2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Heating Test' screen and press 'Enter'.
3. Using the 'Enter' button, move the cursor to the 'Test Mode' selection.
4. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
5. Press 'Enter' or 'Escape' to return the cursor to the home location.

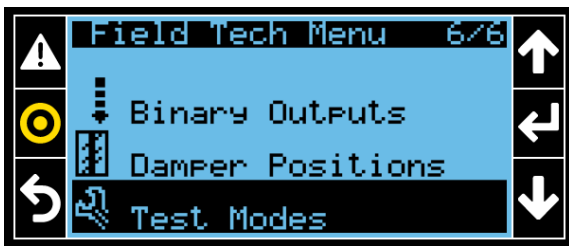


Figure 56. Field Tech Menu

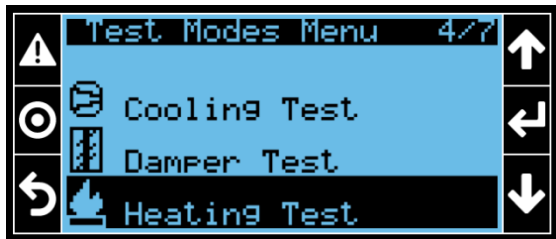


Figure 57. Test Modes Menu

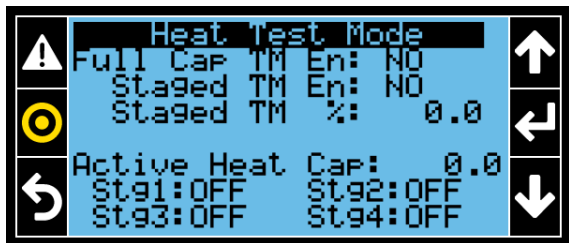


Figure 58. Heating Test Mode

Operation Test

Operational test modes are a variety of tests used to evaluate different modes of operation. Operational 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. Switching from Cooling or Dehumidification test mode to Heat test mode could have a delayed reaction. Once time delays expire, test mode will initiate. **Operation test modes will time out after 30-minutes.**

The following are the available operations test:

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 unit response to a call for space dehumidification. When activated the space temperature and humidity will be overridden resulting in a dewpoint reading above the dewpoint setpoint to enable dehumidification mode. To ensure the compressors initiate, the suction pressure set point will be set to its minimum setting of 107PSI. If the ambient conditions are above compressor lockout, compressors will start.

Comfort Cooling Test Mode: This mode is used to test unit response to a call for space cooling. When activated the space temperature and humidity will be overridden resulting in a space temperature to enable cooling mode. To ensure the compressors initiate, the suction pressure set point will be set to its minimum setting of 120PSI. If the ambient conditions are above compressor lockout, compressors will start.

Heating Test Mode: This mode is used to test unit response to a call for space heating. When activated the space temperature and humidity will be overridden resulting in a space temperature to enable heating mode.

Fan Only Test Mode: This mode is used to test unit response to no call. When activated, the space temperature will be set to the cooling setpoint minus the cooling cut out value and the space humidity will be overridden to 15%.

To Enter Operation Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press 'Enter'.
2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Operation Test' screen and press 'Enter'.
3. Using the 'Enter' button, move the cursor to the 'Test Mode' selection.

4. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
5. Press 'Enter' or 'Escape' to return the cursor to the home location.

4. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
5. Press 'Enter' or 'Escape' to return the cursor to the home location.

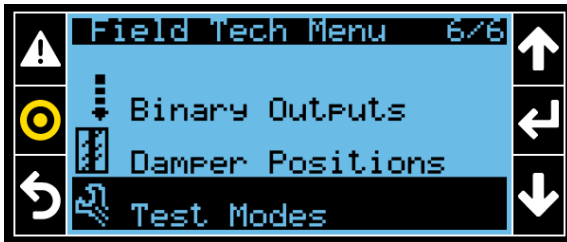


Figure 59. Field Tech Menu

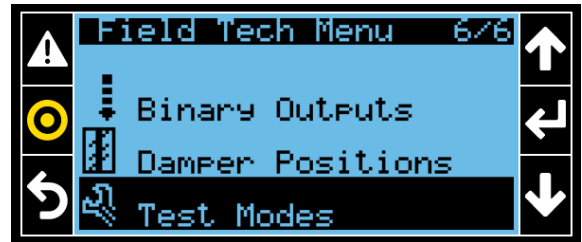


Figure 62. Field Tech Menu

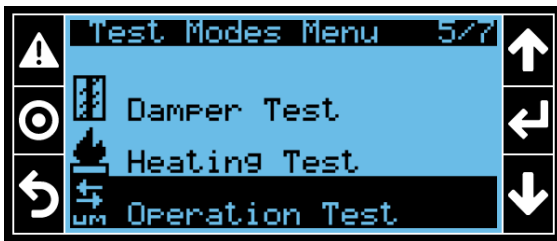


Figure 60. Test Modes Menu

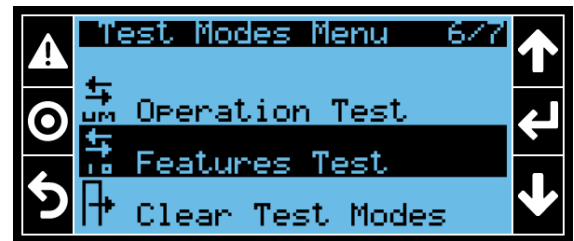


Figure 63. Test Modes Menu

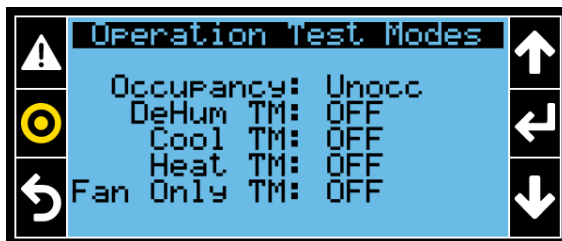


Figure 61. Operation Test Mode

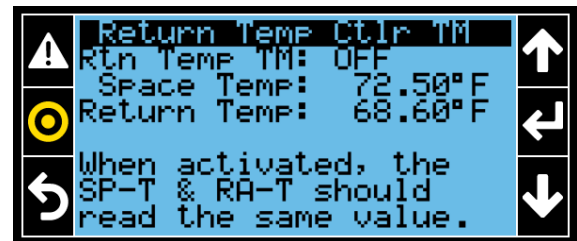


Figure 64. Operation Test Mode screen 1

Features Test

Feature test modes are used to test sequences related to optional features included in a unit. These features include Return temp control (for units equipped with a return temp sensor), CO2 control (for units equipped with a CO2 sensor), and Load Shed (for units with a load shed input wired to the controller).

To Enter Features Test Mode:

1. Navigate to the Field Tech Menu. Select the Test Modes option and press 'Enter'.
2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Features Test' screen and press 'Enter'.
3. Using the 'Enter' button, move the cursor to the 'Test Mode' selection.

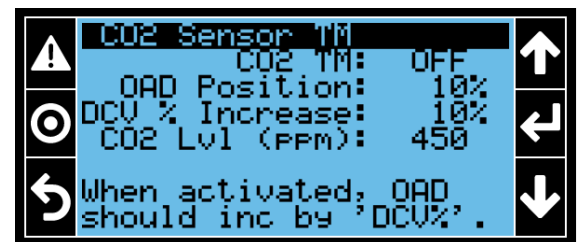


Figure 65. Operation Test Mode screen 2

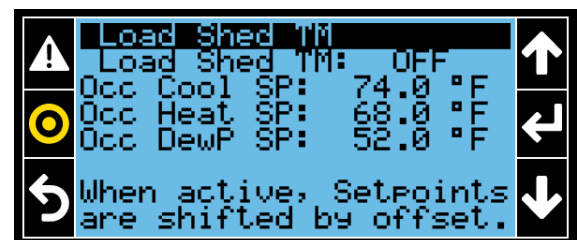


Figure 66. Operation Test Mode screen 3

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'.
2. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to the 'Clear Test Mode' and press 'Enter'.
3. Using the 'Enter' button, move the cursor to the '-----' selection on the Clear Test Modes screen.
4. Use the 'UP' / 'DOWN' arrows to scroll to the 'CLEAR' setting.
5. Press 'Enter' to clear test modes or 'Escape' to return the cursor to the home location without change.

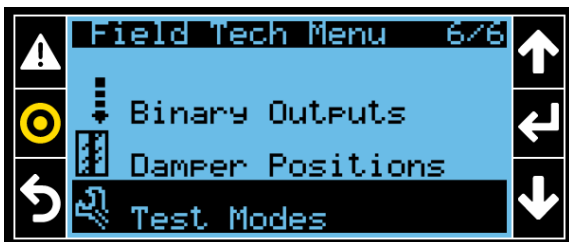


Figure 67. Field Tech Menu

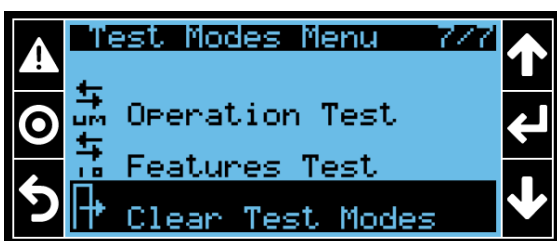


Figure 68. Test Modes Menu

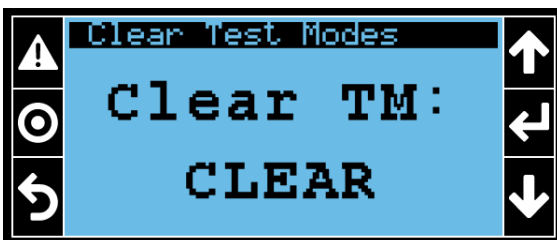


Figure 69. Clear Test Mode screen

Settings Menu

The 'Settings Menu' is used to set and configure controller specific settings, BMS communications, and

manage 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

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

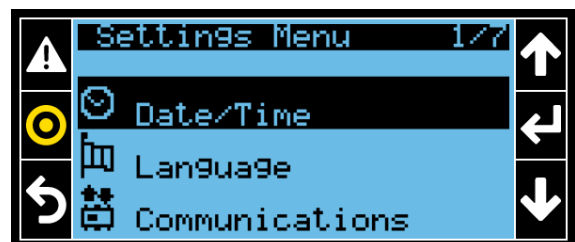


Figure 70. Settings Menu

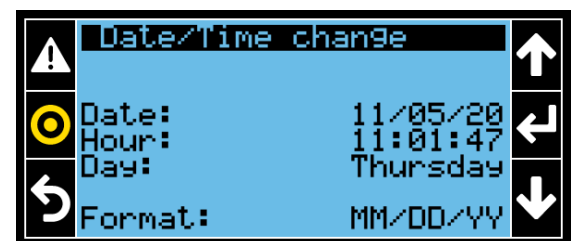


Figure 71. Date/Time Screen

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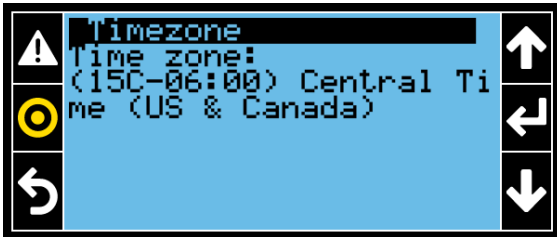


Figure 72. Time Zone Screen



Figure 73. Schedule Events Screen

5. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
6. Press 'Enter' to update the value. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.



Figure 74. Settings Menu

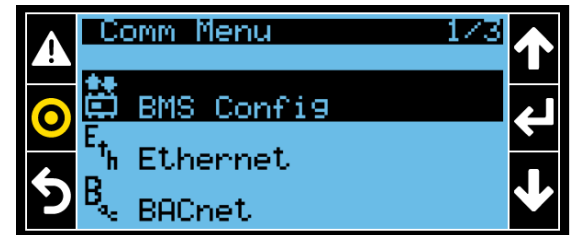


Figure 75. Comm Menu Screen

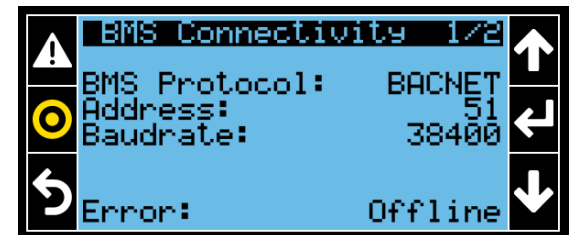


Figure 76. BMS Config Screen 1



Figure 77. BMS Config Screen 2

Language

Currently, English is the only supported language options.

Communications

Communications is used to configure the controller communications to the building management system (BMS). The i-Controller communication protocol (Modbus or BACnet), address, and baud rate can be configured here.

The following sub-menus are available in this section.

1. BMS Config
2. Ethernet
3. BACnet

BMS Config

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

To Configure BMS:

1. Navigate to the Settings Menu. Select the 'Communications' option and press 'Enter'.
2. On the Comm Menu screen, select 'BMS Config' and press 'Enter'.
3. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to from screen to screen.
4. Using the 'Enter' button, move the cursor to the field you wish to edit.

Ethernet

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

BACnet

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

To View BACnet Settings:

1. Navigate to the Settings Menu. Select the 'Communications' option and press 'Enter'.
2. On the Comm Menu screen, select 'BACnet' and press 'Enter'.
3. With the cursor in the home location, use the 'UP' / 'DOWN' arrows to scroll to from screen to screen.
4. Using the 'Enter' button, move the cursor to the field you wish to edit.
5. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting.
6. Press 'Enter' to update the value. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.



Figure 78. Settings Menu

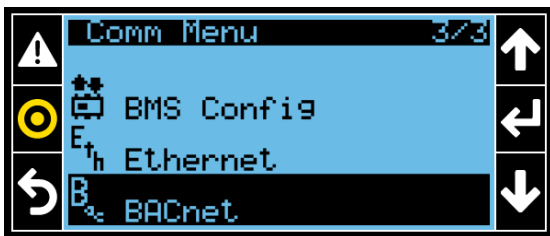


Figure 79. Comm Menu Screen

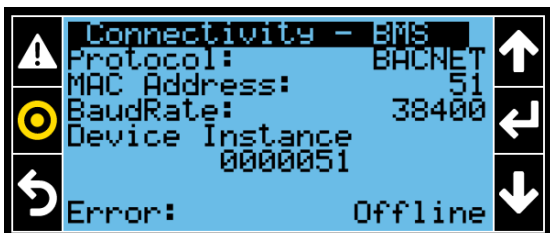


Figure 80. BACnet Screen 1 BMS connections

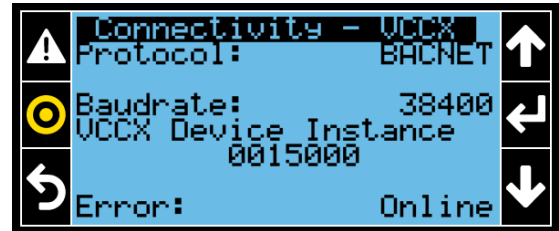


Figure 81. BACnet Screen 2 VCCX connections

Pwd Change

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

Initialization

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

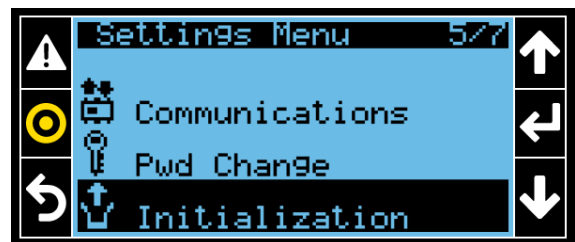


Figure 82. Settings Menu

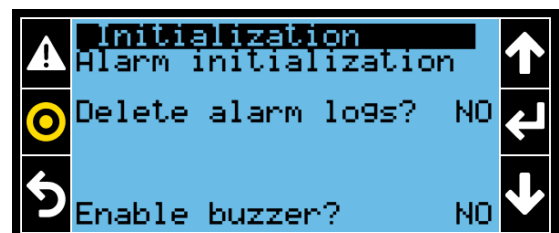


Figure 83. Initialization Screen

UoM

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

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

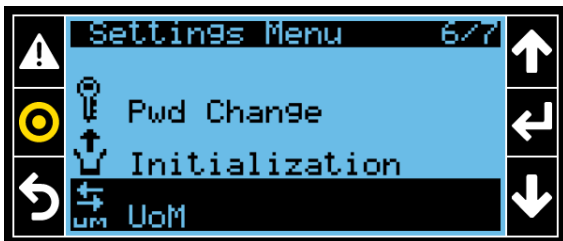


Figure 84. Settings Menu

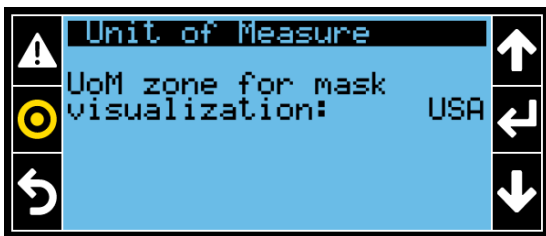


Figure 85. UoM Screen

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 stored to the controller internal memory or a USB drive.

To Import Config file:

1. Navigate to the Settings Menu. Select the 'Import/Export' option and press 'Enter'.
2. Using the 'Enter' button, move the cursor to the field you wish to edit.
3. Press 'Enter' to move the cursor to the 'Import/Export' selection.
4. Use the 'UP' / 'DOWN' arrows to scroll to the desired setting. Press 'Enter' to make selection and move cursor to the next field.
5. Use the 'UP' / 'DOWN' arrows to select 'Internal Memory' or 'USB'. Press 'Enter' to make selection and move cursor to the next field.
6. Use the 'UP' / 'DOWN' arrows to select the file name. Press 'Enter' to make selection and move cursor to the next field.
7. Use the 'UP' / 'DOWN' arrows to select 'YES' for confirmation.
8. Press 'Enter' to import or export file. Press 'Escape' to exit edit mode, without change, and return the cursor to the home location.



Figure 86. Settings Menu



Figure 87. Import/Export Screen

Alarms

Alarms screens are used to view all active unit alarms, alarm logs, and reset unit alarms. See the SOO for a list of all 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 will display the alarm code in the upper left of the screen, number of alarms will display and the upper right of the screen, date and time of the alarm occurrence., and alarm description.
4. Press 'Escape' to return to the Overview screen.



Figure 88. Standby Screen

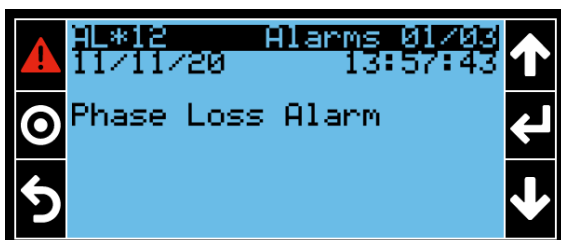


Figure 89. Alarm Screen

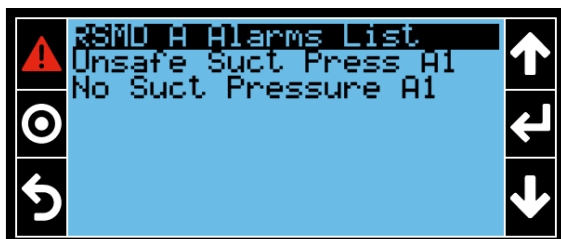


Figure 90. RSMD Alarm Screen

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 is resolved.
4. Press 'Escape' to return to the Overview screen.



Figure 91. 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 enter the Data logger screen
5. Use the 'UP' / 'DOWN' arrows to scroll through the stored log records.
4. Press 'Escape' to return to the Overview screen.

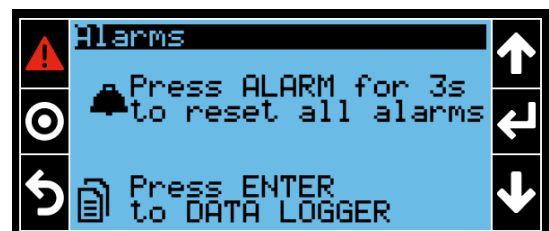


Figure 92. Alarms Reset Screen

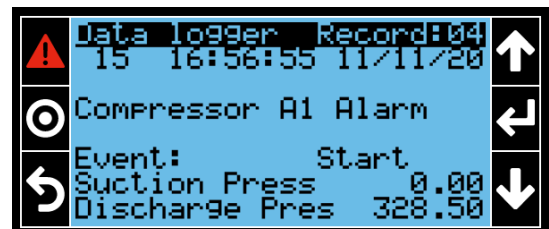


Figure 93. Alarms Data logger Screen