

# LX-4

## User Guide



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# WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

Disconnect power supply before making wiring connections or working on this equipment. Follow all applicable safety procedures to prevent accidental power up. Failure to do so can result in injury or death from electrical shock or moving parts and may cause equipment damage.

Improper control adjustments and manual mode control can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before making adjustments.

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## A NOTE ABOUT CUSTOM DESIGNS

AbsolutAire often builds equipment with special features as requested by the customer. This manual only covers standard features and does not include any changes made for special feature requests by the customer.



Touch Screen HMI



Edge534 Controller

## CONTROLLER OVERVIEW

The option features a JENESys Edge534 programmable controller. Highly advanced with a powerful microprocessor and fast processing speed.

### Unit Controller

- AM335x ARM Cortex A8 processor operating at 1GHz.
- 512 MB DDR3L 800 MHz, 4 GB 8-bit Embedded MMC on-board Flash.
- Real Time Clock with battery backup.
- Linux OS with Niagara 4.7.
- 2 RJ-45 10/100 Ethernet ports.
- 2 RS-485 serial ports.

### Touch-screen HMI (Human Machine Interface)

- Intel Atom x5-Z8350 processor operating at 1.44 GHz.
- 2 GB DDR3L-160, 32 GB eMMC storage.
- Intel HD 400 graphics.
- 16.7 M colors.
- Android Nougat 7.0 OS.
- 1 RJ-45 10/100/1000 Ethernet port.
- IP65 electrical panel mount rating.

### BMS Network Interface

- Modbus TCP/IP standard.
- BACnet IP standard.
- BACnet MS/TP standard.
- Other protocols upon request.

## TOUCH-SCREEN HMI MENU LAYOUT

The touch-screen HMI features an easy to read and intuitive display of user set points, system alarms, historic data and system status information. When viewing and changing screens, they are viewed as a HTML web page on the HMI. These screens are individually loaded from a web server the DDC controller. Due to the nature of HTML graphics it is common for there to be a 3 – 5 second delay between a button press and a screen load. This is normal operation for this type of graphics. A soft, deliberate finger-press or a soft tipped stylus works best for operating the HMI. A hard-tipped stylus, ink pen or other pointed objects should not be used as they can damage the screen.

Across the bottom of each screen are options to navigate directly to the six primary screens. These include the MAIN SCREEN, SYSTEM STATUS SCREEN, SYSTEM SETUP SCREEN, ALARM CONSOLE, HISTORY CHARTS and the CONTACT US information. The SYSTEM STATUS and SYSTEM SETUP screens have other sub-menu screens which can then be accessed.

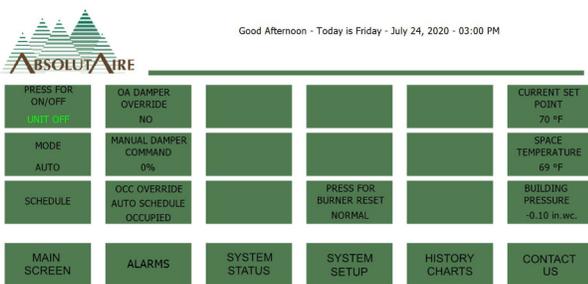


Six Primary Screen Buttons

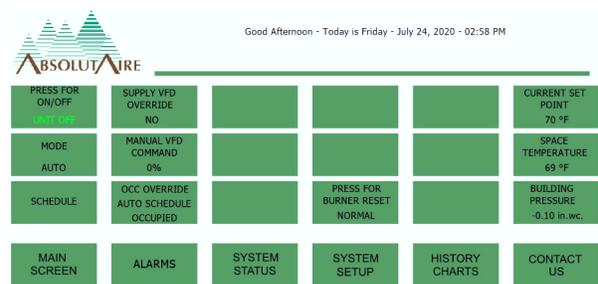
Set points are changed by pressing the desired button, which allows a dialogue box to appear. If the set point is capable of multiple text options, a pull-down menu will be available. If the set point accepts a numeric entry, a pop-up keypad will appear. Using either the pull-down menu or pop-up keypad enter the desired value and press 'OK'. When this is complete the screen will return to normal and display your entered value.

The HMI features 'intelligent menus' so only the options your system is equipped with will be shown. The following descriptions include all of the available standard options, some of which may not be included with your equipment configuration.

## Main Screen



Mixed Air Unit Main Screen



Variable Volume Unit Main Screen

The main screen contains the most commonly used items for control of the Make Up Air Unit. This is the screen that is initially displayed on power-up. It is identified by the welcome banner across the top which displays the current date and time.

**ON/OFF COMMAND** – This displays the current status of the unit. Pressing this button will bring up a dialogue box with options to turn the unit ON or OFF. If the unit is experiencing a Low Discharge Temperature Alarm the text 'OFF LTL' will be displayed. To reset a Low Discharge Temperature Alarm, press the button and select to turn the unit OFF.

**MODE** – This displays the current operating mode (HEAT/VENT/COOL/AUTO) of the unit. Pressing this button will bring up a dialogue box with options to select the operating mode. HEAT is heating or 'winter' mode and will allow the unit to provide heat. VENT is 'summer' or ventilation mode. COOL is cooling mode and will allow the unit to provide conditioned air. AUTO allows the unit to automatically change between HEAT, VENT and COOL modes as needed by the space temperature set point.

**SCHEDULE** – This button brings up the 7-day schedule. Occupied and unoccupied times can be entered as well as holidays and special events. When you are finished editing the schedule, return to the main screen by pressing the 'back arrow' at the bottom of the screen.

OA DAMPER OVERRIDE/VFD OVERRIDE – If the unit is equipped with a VFD this will display 'VFD OVERRIDE'. If the unit is equipped with mixed air dampers 'OA DAMPER OVERRIDE' will be displayed. This option allows you to override the calculated damper position or VFD speed for building pressure control. By selecting 'YES' building pressure control will be overridden and the dampers or VFD will be locked to the value entered in the option below. Selecting 'NO' allows for automatic damper position or VFD speed and building pressure control. When selecting 'YES' the text is displayed in orange as a reminder you are in override control.

MANUAL DAMPER/MANUAL VFD SPEED – This displays the current damper position or VFD speed in black when not in override. Pressing this button will allow you to enter an override value from 0% to 100%. When in override mode the override value is displayed in orange text as a reminder.

OCC OVERRIDE – This displays the current occupancy command and occupancy status. Pressing this button will allow you to select AUTO SCHEDULE, MAN OCCUPIED or MAN UNOCCUPIED. By selecting 'AUTO SCHEDULE' the unit will follow the occupied and unoccupied times entered in the schedule. By selecting 'MAN OCCUPIED' the unit will ignore the schedule and permanently assume the occupied status. By selecting 'MAN UNOCCUPIED' the system will ignore the schedule and permanently assume the unoccupied status.

PRESS FOR BURNER RESET – If the unit is experiencing a Burner Lockout Alarm the text will display 'BURNER LOCKOUT' in red. If the burner is operating normally the text will display 'NORMAL' in black. If there is a burner lockout alarm, press this button to reset the burner and attempt ignition again.

CURRENT SET POINT – This is the current set point the unit is controlling to. If you are in Space Temperature Control, this is your current occupied or unoccupied space temperature set point. If you are in Discharge Temperature Control, this is your current occupied or unoccupied discharge temperature set point.

SPACE TEMPERATURE/DISCHARGE TEMPERATURE – If you are using Space Temperature Control, this is the current space temperature as sensed by the space temperature sensor. If you are using Discharge Temperature Control, this is the current discharge temperature the unit is providing to the space.

BUILDING PRESSURE – This is the current building pressure, as sensed by the building pressure transmitter.

## System Status



Status Screen Buttons

The System Status screen is partitioned into 6 different sub-menu screens. Press UNIT STATUS, HEATING STATUS, COOLING STATUS, MAINTENANCE STATUS, PRESSURE STATUS or ENERGY STATUS to access the different sub-menu screens. Each sub-menu screen and its options are defined below.



Unit Status Screen

## UNIT STATUS

The Unit Status screen displays the overall status of various unit components. This provides an overview of current unit status.

**FAN STATUS** – Displays whether the unit fan is ON or OFF.

**MODE** – Displays the current HEAT/VENT/COOL operating mode of the unit.

**BUILDING PRESSURE** – Displays the current building pressure of the system.

**DISCHARGE TEMPERATURE** – The current discharge air temperature at the fan.

**OUTSIDE TEMPERATURE** – The current outside air temperature at the unit inlet.

**RETURN TEMPERATURE** – The current return air temperature at the return air inlet.

**SPACE TEMPERATURE** – The current space temperature at the space temperature sensor.

**COOLING COIL TEMPERATURE** – The current air temperature on the discharge side of the cooling coil.

**MIXED AIR TEMPERATURE** – The calculated mixed air temperature in the unit. This is a product of outside air temperature, return air temperature and percentage of outside and return air.

**MAX AVAILABLE** – Displays the maximum available discharge temperature. This is a calculated value based on the rules in ANSI Z83.18 for mixed air units.

**VFD SPEED** – Displays the current VFD speed percentage.

**UNIT CFM** – If the unit is equipped with an airflow monitoring station this is the measured discharge airflow of the unit. If the unit is not equipped with an airflow monitoring station, the constant value of the design maximum airflow is displayed.

OUTSIDE AIR PERCENT – This is the percentage of outside air on a mixed air unit.

RETURN AIR PERCENT – This is the percentage of return air on a mixed air unit.

OA CFM – This displays the CFM of outside air for a mixed air unit.

DISCHARGE AIR DENSITY – This displays the current pounds per cubic foot (lb/ft<sup>3</sup>) of the discharge air. This is based on an assumed discharge air dew point of 40° Fahrenheit.

DISCHARGE AIR VOLUME/LB – This displays the number of cubic feet per one pound of discharge air. This is based on an assumed discharge air dew point of 40° Fahrenheit.

## **HEATING STATUS**

The Heating Status screen displays the status of the heating components of the unit.

CURRENT SET POINT – If the unit is in Discharge Temperature Control, this is the current discharge temperature set point based on occupancy status. If the unit is in Space Temperature Control, this is the current space temperature set point based on occupancy status.

BURNER STATUS – This display indicates if the burner is ON or OFF.

BURNER COMMAND – The command percentage being issued to the burner.

## **COOLING STATUS**

The Cooling Status screen displays the status of the cooling components of the unit.

CURRENT SET POINT – If the unit is in Discharge Temperature Control, this is the current discharge temperature set point based on occupancy status. If the unit is in Space Temperature Control, this is the current space temperature set point based on occupancy status.

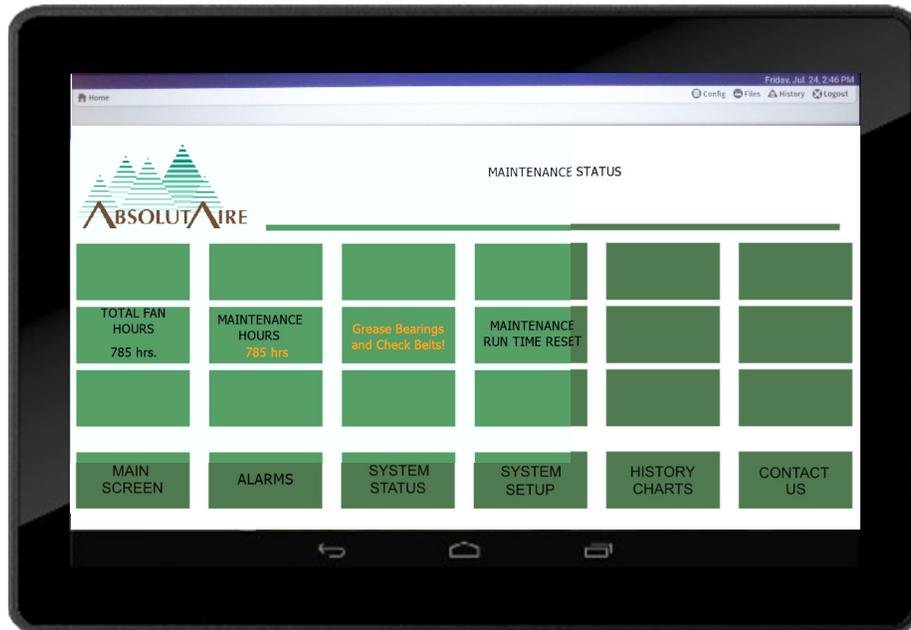
COOLING STATUS – Displays if cooling is currently Enabled or Disabled.

COOLING COMMAND – The command percentage being issued to the cooling system.

ACTIVE COOLING STAGES – Displays the number of active stages on a multi-stage DX cooling unit.

## **MAINTENANCE STATUS**

The Maintenance Status screen displays the overall maintenance status of the unit and includes a 'RESET' option for maintenance interval times.



Maintenance Status Screen

**TOTAL FAN HOURS** – Displays the total number of run time hours on the fan.

**MAINTENANCE HOURS** – Displays the elapsed run time for this maintenance cycle. If the elapsed run time exceeds the pre-set interval the hours will be displayed in ORANGE as a reminder that maintenance is due.

**MAINTENANCE MESSAGE** – Displays the current system maintenance message. If the unit is still within its scheduled maintenance interval the message *'Maintenance Good'* is displayed in black. If the elapsed run time hours have exceeded the scheduled maintenance interval time the message *'Grease Bearings and Check Belts!'* is displayed in ORANGE as a reminder that routine maintenance is due.

**MAINTENANCE RUN TIME RESET** – Once routine maintenance has been completed, press this option to reset the 'Maintenance Hours' back to zero. This will begin a new maintenance interval.

## **PRESSURE STATUS**

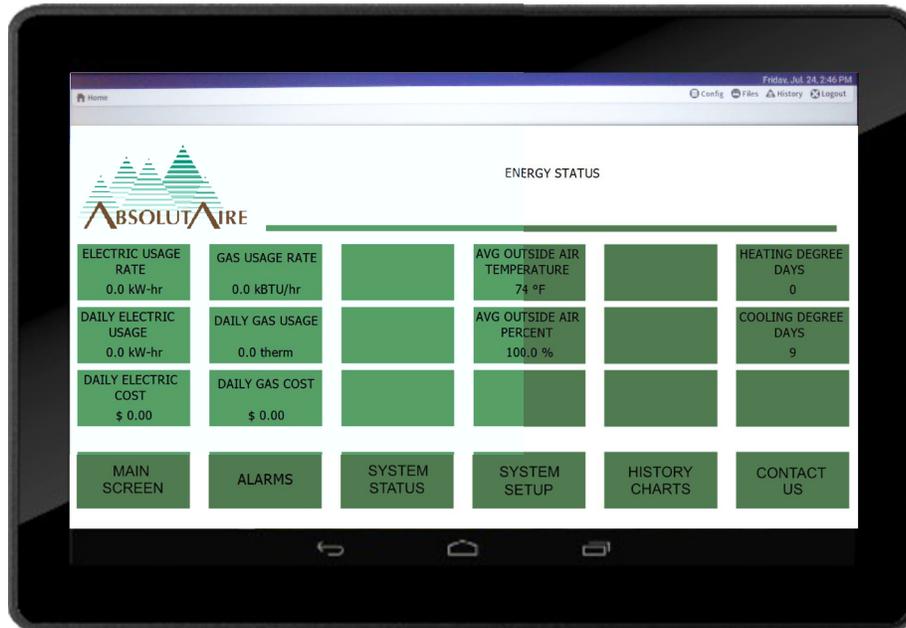
The Pressure Status screen displays the readings of the various pressure sensors on the unit.

**BUILDING PRESSURE** – Displays the current building pressure of the unit.

**INLET FILTER PRESSURE DROP** – Displays the pressure drop across the inlet filters.

**PRE FILTER PRESSURE DROP** – Displays the pressure drop across the pre-filters.

**FINAL FILTER PRESSURE DROP** – Displays the pressure drop across the final filters.



Energy Status Screen

## ENERGY STATUS

The Energy Status screen displays the calculated energy usage of the unit as well as other data to assist with energy usage calculations.

**ELECTRIC USAGE RATE** – Displays the current calculated KW/hr. rate of electric usage.

**DAILY ELECTRIC USAGE** – Displays the calculated electric usage for the previous day.

**DAILY ELECTRIC COST** – Displays the calculated electric cost for the previous day.

**GAS USAGE RATE** – Displays the current calculated KBTU/hr. rate of gas usage.

**DAILY GAS USAGE** – Displays the calculated gas usage for the previous day.

**DAILY GAS COST** – Displays the calculated gas cost for the previous day.

**AVERAGE OUTSIDE AIR TEMPERATURE** – Displays the average outside air temperature for the previous day.

**AVERAGE OUTSIDE AIR PERCENT** – Displays the average outside air percentage for the previous day.

**DAILY AVERAGE VFD SPEED** – Displays the average daily VFD speed for the previous day.

**HEATING DEGREE DAYS** – Displays the number of heating degree days for the previous day. This is based on the NOAA baseline of 65° Fahrenheit.

**COOLING DEGREE DAYS** – Displays the number of cooling degree days for the previous day. This is based on the NOAA baseline of 65° Fahrenheit.

## SYSTEM SETUP

The System Setup screen is partitioned into 4 different sub-menu screens. Press SET POINTS, CONFIGURATION, PID TUNING or ENERGY CONFIGURATION to access the different sub-menu screens. Each sub-menu screen and its options are defined below.



## Set Points



Set Points Screen

The Set Points screen is used for changing the most often used system set points.

**OCCUPIED HEAT** – This is the set point used for heating when the unit is occupied by the schedule or manual selection.

**UNOCCUPIED HEAT** – This is the set point used for heating when the unit is unoccupied by the schedule or manual selection.

**OCCUPIED COOL** – This is the set point used for cooling when the unit is occupied by the schedule or manual selection.

**UNOCCUPIED COOL** – This is the set point used for cooling when the unit is unoccupied by the schedule or manual selection.

**BUILDING PRESSURE** – This is the set point for control of building pressure.

**INLET FILTER PRESSURE DROP** – This set point is used to determine a dirty filter status for the inlet filters.

**PRE FILTER PRESSURE DROP** – This set point is used to determine a dirty filter status for the pre-filters.

**FINAL FILTER PRESSURE DROP** – This set point is used to determine a dirty filter status for the final filters.

## Configuration



Configuration Screen

The Configuration screen is used for setting the main configuration of the unit. These set points are typically not changed often and are used for master control parameters.

**MINIMUM DISCHARGE TEMPERATURE** – This set point defines the minimum temperature of air the unit will be allowed to discharge into the space.

**MAXIMUM DISCHARGE TEMPERATURE** – This set point defines the maximum temperature of air the unit will be allowed to discharge into the space.

**MINIMUM ECON PERCENT/MINIMUM VFD SPEED** – For mixed air units, this is the minimum allowable percentage of outside air. For variable volume units with a VFD, this is the lowest allowable speed the VFD will operate. This setting is typically used for air balancing.

**MAXIMUM ECON PERCENT/MAXIMUM VFD SPEED** – For mixed air units, this is the maximum allowable percentage of outside air. For variable volume units with a VFD, this is the highest allowable speed the VFD will operate. This setting is typically used for air balancing.

**HEAT LOCKOUT TEMPERATURE** – This temperature determines when heat is allowed. When the mixed air temperature on mixed air units, or the outside air temperature on 100% outside air units, is below this set point the burner will be allowed to light. When the mixed air or outside air temperature is above this set point, heat is automatically disabled.

**COOL LOCKOUT TEMPERATURE** – This temperature determines when cooling is allowed. When the mixed air temperature on mixed air units, or the outside air temperature on 100% outside air units, is above this set point cooling is enabled. When the mixed air or outside air temperature is below this set point, cooling is automatically disabled.

**LOW TEMP ALM SET POINT** – If the unit discharges air below this set point for 'LOW TEMP ALM DELAY TIME' minutes, the unit will shut itself off to protect the space from cold air.

**LOW TEMP ALM DELAY TIME** – If the unit discharges air below 'LOW TEMP ALM SET POINT' degrees for this delay time, the unit will shut itself off to protect the space from cold air.

**WATCHDOG DELAY** – If the unit fails to achieve its calculated discharge temperature within this time period, a watchdog condition is presented on the Alarm Screen.

**MOTOR ALARM DELAY** – If the motor fails to return a run status within this time period, a motor alarm condition is presented on the Alarm Screen.

**MAINTENANCE INTERVAL** – This set point defines the elapsed run time for a maintenance interval.

**SPACE CONTROL DEADBAND** – This is the deadband for space temperature control and automatic changeover from heating, ventilation and cooling modes.

**CONTROL TYPE** – This set point configures the unit for space temperature control or discharge temperature control. Space temperature control will control the space to the occupied and unoccupied set points. Discharge temperature control will control the fan discharge temperature to the occupied and unoccupied temperature set points.

**OA ALARM DELAY TIME** – This set point is the delay time for the initiation of an outside air alarm condition.

**OA ALARM DURATION** – This set point is the duration for the outside air alarm condition. After this amount of time expires the unit will attempt normal operation again.

**OA ALARM HORN TIME** – This set point determines the length of time the horn will sound at the initiation of an outside air alarm condition.

## PID Tuning



PID Tuning Screen

The PID Tuning screen is used to set how quickly the PID controls respond to changing conditions. Each PID response is selected via a drop-down menu with 11 choices ranging from 'Least Aggressive' to 'Most Aggressive'. Factory default is a 'Neutral' setting.

HEATING SPACE DEMAND PID – This PID controls how quickly the unit reacts to changes in space temperature when in heating mode. A setting too slow can cause fluctuations in space temperature. A setting too fast can cause the burner to change temperatures rapidly.

HEATING COMMAND PID – This PID controls how quickly the burner reacts to a demand change from the space. A setting too slow can cause fluctuations in space temperature. A setting too fast can cause the burner to 'hunt' or change temperatures rapidly.

COOLING SPACE DEMAND PID – This PID controls how quickly the unit reacts to changes in space temperature when in cooling mode. A setting too slow can cause fluctuations in space temperature. A setting too fast can cause erratic operation of condensing units or rapid fluctuations in cooling valve operation.

COOLING COMMAND PID – This PID controls how quickly the cooling equipment reacts to a demand change from the space. A setting too slow can cause fluctuations in space temperature. A setting too fast can cause erratic operation of condensing units or rapid fluctuations in cooling valve operation.

BUILDING PRESSURE PID. – This PID controls how quickly the mixed air dampers or VFD respond to changes in building pressure. A setting too slow will cause fluctuations in building pressure. A setting too fast will cause rapid fluctuations in damper activity or VFD speed control.

## **ENERGY CONFIGURATION**

The Energy Configuration screen is used to set the cost of electric and gas. These values are used in the daily energy cost calculations available on the Energy Status screen. For pricing reference, go to:

[https://www.bls.gov/regions/Midwest/data/averageenergyprices\\_selectedareas\\_table.html](https://www.bls.gov/regions/Midwest/data/averageenergyprices_selectedareas_table.html)

PRICE PER KILOWATT HOUR – This is the price of electricity per kilowatt hour.

PRICE PER THERM OF GAS – This is the price of gas per therm.

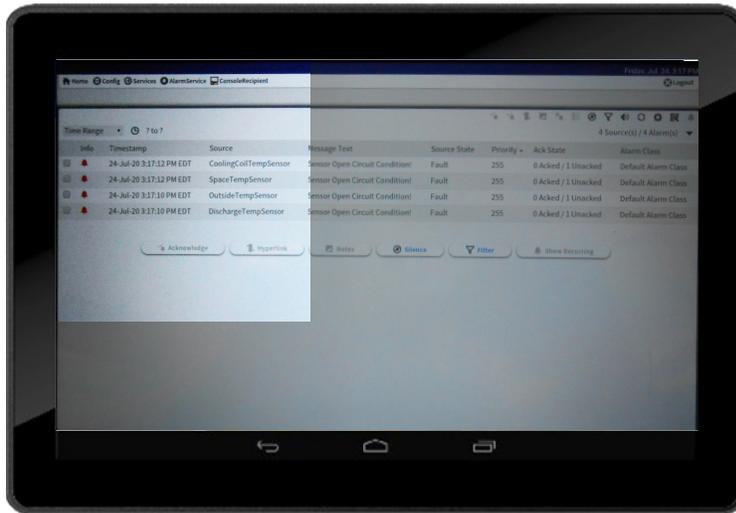
## **ALARMS**

When a system alarm is present the 'ALARMS' button at the bottom of the screen will change to red. Pressing the 'ALARMS' button will display the Alarm Console. The Alarm Console has several functions and features which are outlined below.



Red Alarm Button

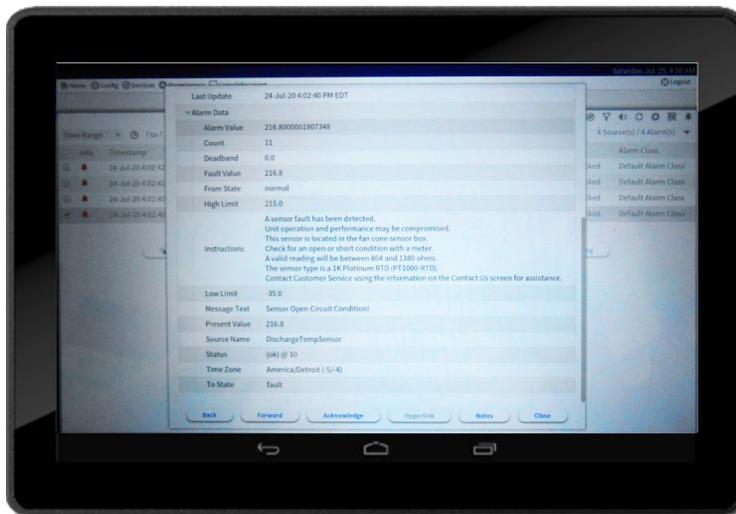
When viewing the alarm console, system alarms are displayed in chronological order beginning with the oldest alarm at the top. There are various fields for each alarm.



Alarm Screen with Active Alarms

On the left is a check box which can be used to select one or more alarms for acknowledgment. Next to the check box is an alarm bell, which will be either red or green. A red alarm bell indicates a system alarm which is currently active. A green alarm bell indicates a system alarm which has been corrected. Pressing this alarm bell will display the information regarding this alarm, including the time and date of the occurrence and its present state.

By expanding the 'Alarm Data' tree at the bottom the system displays more detailed information about the alarm condition, as well as detailed diagnostic instructions for the alarm.



Alarm Data Display

Pressing 'FORWARD' or 'BACK' allows you to scroll through the various alarms while still in the Alarm Details page. Pressing 'ACKNOWLEDGE' at the bottom of the display will acknowledge the alarm. Pressing 'NOTES' allows the entry of custom notes regarding the alarm, such as additional diagnostic procedures implemented during the troubleshooting process. Pressing 'CLOSE' will exit the Alarm Details page and return to the Alarm Console.

When the alarm bell is green, the check box on the left can be selected and the alarm can be cleared from the Alarm Console by pressing 'ACKNOWLEDGE' below the list of alarms.

The Alarm Console can be viewed at any time by pressing the 'ALARMS' button at the bottom of any screen. To exit the Alarm Console, press the back arrow at the bottom of the screen.

Depending on the options the system is equipped with, alarms are available for the following items.

- Temperature Sensor Alarms.
  - Outside Air Temperature Sensor.
  - Return Air Temperature Sensor.
  - Discharge Air Temperature Sensor.
  - Cooling Coil Temperature Sensor.
  - Space Temperature Sensor.
    - Open and Short circuit conditions are reported.
- Low Discharge Temperature Alarm.
  - This indicates the unit has been discharging cold air for a specified period of time and has shut itself off to protect the space. This temperature and time are defined on the SETUP/CONFIGURATION screen.
- Motor Not Responding Alarm.
  - This indicates the unit was commanded ON and the motor failed to report a run condition within a specified period of time. This time delay is specified on the SETUP/CONFIGURATION screen.
- Burner Lockout Alarm.
  - This indicates the burner failed an attempt to ignite.
    - This is reset by pressing 'BURNER RESET' on the Main Screen.
- Burner Watchdog Alarm.
  - This indicates the burner could not achieve the calculated and requested discharge temperature in the specified time period. This alert indicates a possible problem with the gas supply or gas piping. Diagnostic instructions are available in the Alarm Console.
    - This time period is defined on the SETUP/CONFIGURATION screen.
- Dirty Filter Alarms.
  - Inlet Filters.
  - Pre-Filters.
  - Final Filters.
    - Changing the filters will clear this condition.

- Damper Feedback Alarm.
  - This indicates the 2 – 10 VDC feedback signal from the Outside and Return Air Dampers is not being received by the controller.
    - Use the electrical diagram to check the mixed air dampers for proper wiring and operation.
- Outside Air Alarm.
  - This indicates the unit has been in 100% outside air mode during building pressure control for a determined amount of time. These times are defined on the SETUP/CONFIGURATION screen.
    - An alarm horn will sound for a determined amount of time.
    - The outside air dampers will close for a determined amount of time.
    - The heating temperature set point will change to the unoccupied temperature set point for a determined amount of time.
    - After the determined amount of time the system will return to normal operation.
- Power Exhaust Mode Alarm.
  - This indicates the system has been commanded into Power Exhaust Mode, either by a hardware input or a network command.
    - The burner will be disabled.
    - The outside air damper will close.
    - The return air damper will open.
    - The discharge air damper will close.
    - The exhaust damper will open.
    - The system will continue to exhaust the space until the hardware input returns to normal or until the network command is removed.

## HISTORY CHARTS

The system collects historical information on a number of data points. These are available for viewing by pressing the 'HISTORY' button at the bottom of the screen. When the 'HISTORY' button is pressed, a blank grid is presented with an icon menu at the top.



History Icon Menu

Pressing the pull-down menu labeled 'Today' allows the selection of a time-frame for the history chart to view. Select the time-frame you wish to view.

Pressing the '+' sign in the upper left displays a dialogue box. Expand the 'Histories' tree, then expand the tree named by the serial number of the unit. This presents a list of historical data files available for viewing. Select the historical data you wish to view. The selected historical data will be presented on the chart. Up to 10 history charts can be displayed at one time.



History Chart With Date

Historical data available for viewing includes the following. To conserve resources, the system only collects data on several of the points when the unit is operating. Because of this it is possible there will be what appears to be gaps in the data when the unit is not operating. Only the options the unit is equipped with will have captured historical data available.

- Building Pressure
- Building Pressure Set Point
- Cooling Coil Temperature
- Cooling Command
- Cooling Degree Days
- Cooling Set Point
- Daily Average Outside Air Percent
- Daily Average Outside Temperature
- Daily Average VFD Speed
- Daily Gas Cost
- Daily Gas Therm Usage
- Daily KWH Electric Cost
- Daily KWH Electric Usage
- Discharge Temperature
- Heating Command
- Heating Degree Days
- Heating Set Point
- HVAC Mode
- Manual VFD/Damper Override
- Occupancy Override
- Occupancy Status
- Outside Air Damper Percent
- Outside Temperature
- Return Temperature
- Space Temperature
- Unit Run Command
- VFD Speed Percent

## SCHEDULE

The system schedule is a 7-day schedule capable of accepting multiple occupied and unoccupied times. It is also capable of special events or holidays.

To access the schedule, press the 'SCHEDULE' button on the main screen.



Schedule Button

A weekly calendar is displayed. At the top are three tabs labeled 'WEEKLY SCHEDULE', 'SPECIAL EVENTS' and 'SUMMARY'. The default view when entering the schedule is the Weekly Schedule.

## WEEKLY SCHEDULE



Weekly Schedule Screen

The default status of any unscheduled time is the unoccupied state. To create an occupied event, gently press your finger (or stylus) to the screen on the day and time you need the scheduled event to begin then drag down to the end time. The beginning and ending times of the scheduled event are displayed as well as the occupied status of the event. To save this event press the 'disc' icon in the upper right corner of the screen.



Single Day Scheduled Event

If this needs to be a Monday through Friday event, press and hold the center of the scheduled event and select 'Apply M – F'. Repeat the above steps to add any scheduled events to the weekly calendar, pressing the 'save' button when finished.



M – F Scheduled Event

### SPECIAL EVENTS

Special events take priority over the weekly schedule. A special event may be scheduled to force the system to be occupied on a specific date and time, or to be unoccupied on a specific date and time. To schedule a special event, press the 'SPECIAL EVENT' tab at the top of the schedule screen.



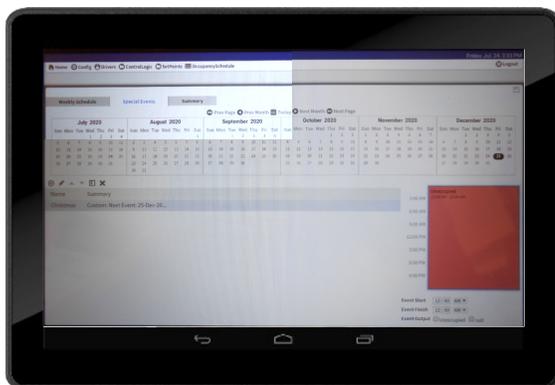
Special Event Screen

A list of currently scheduled special events is displayed. To add a special event, press the '+' symbol in the upper left of the event list. This presents a dialogue box for entering the name of the event as well as any dates and times for this event.



Create Christmas Event

When the event information is entered, press 'OK' to save and return to the Special Events main screen. The event is now displayed and a time bar is to the right. Press your finger (or stylus) to the time bar and drag to create the times for the special event. Leaving the 'occupied' box checked at the bottom will make this event occupied during the specified times. Un-checking the 'occupied' box will make this event unoccupied during the specified times.

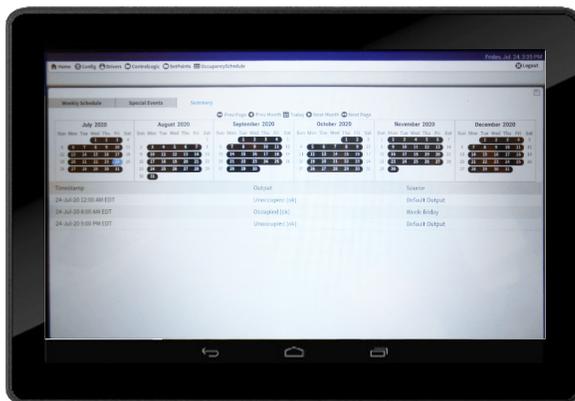


Unoccupied Christmas Holiday

After the special event is completely scheduled, press the 'save' icon in the upper right of the screen. Press the '+' symbol to create another event, or press the back arrow at the bottom of the screen to exit.

## SUMMARY

The summary tab displays the scheduled events which have taken place as well as the next scheduled event. This can be used as confirmation of the schedule operating as intended.



Schedule Summary Screen

When finished editing or viewing the schedule press the back arrow at the bottom of the screen to exit.

## CONTACT US

The Contact Us screen has the necessary information to contact us with questions about service, new equipment sales or for ordering parts.

When contacting the factory for support always reference the unit serial number in the lower right corner of the screen. This information will allow us to assist you in the most efficient manner possible.

- For technical support please call 1-800-804-4000 and ask for 'Customer Service'.
- For new equipment sales send your email to '[sales@absolutaire.com](mailto:sales@absolutaire.com)'.
- For replacement parts and general questions send your email to '[customerservice@absolutaire.com](mailto:customerservice@absolutaire.com)'.



As AbsolutAire, Inc. has a continuous product improvement program, it reserves the right to change design and specifications without notice.

LX-4 TOUCHSCREEN MENU TREE

| MENU SCREEN                       | SUB-MENU                          | OPTIONS                         | SETUP SCREEN   | SET POINTS |                                 |
|-----------------------------------|-----------------------------------|---------------------------------|----------------|------------|---------------------------------|
| MAIN SCREEN                       | MAIN                              | ON/OFF COMMAND                  |                |            | OCCUPIED HEAT SET POINT         |
|                                   |                                   | HVAC MODE SELECT                |                |            | UNOCCUPIED HEAT SET POINT       |
| ALARM SCREEN                      | ALARMS                            | OCCUPANCY OVERRIDE              |                | CONFIG     | OCCUPIED COOL SET POINT         |
|                                   |                                   | OCCUPANCY STATUS                |                |            | UNOCCUPIED COOL SET POINT       |
|                                   |                                   | DAMPER/VFD OVERRIDE             |                |            | BUILDING PRESSURE SET POINT     |
|                                   |                                   | MANUAL DAMPER/VFD PERCENT       |                |            | INLET FILTER PRESSURE SET POINT |
|                                   |                                   | DAMPER/VFD POSITION/SPEED       |                |            | PRE-FILTER PRESSURE SET POINT   |
|                                   |                                   | SCHEDULE                        |                |            | FINAL FILTER PRESSURE SET POINT |
|                                   |                                   | CURRENT SET POINT               |                |            | MINIMUM DISCHARGE TEMPERATURE   |
|                                   |                                   | CURRENT SPACE/DISCH TEMPERATURE |                |            | MAXIMUM DISCHARGE TEMPERATURE   |
|                                   |                                   | CURRENT BUILDING PRESSURE       |                |            | MINIMUM ECONOMIZER PERCENT      |
|                                   |                                   | BURNER RESET                    |                |            | MAXIMUM ECONOMIZER PERCENT      |
| ALARM SCREEN                      | ALARMS                            | OUTSIDE TEMPERATURE SENSOR      |                | PID TUNING | HEAT LOCKOUT TEMPERATURE        |
|                                   |                                   | DISCHARGE TEMPERATURE SENSOR    |                |            | COOL LOCKOUT TEMPERATURE        |
|                                   |                                   | RETURN TEMPERATURE SENSOR       |                |            | LOW TEMP ALARM SET POINT        |
|                                   |                                   | SPACE TEMPERATURE SENSOR        |                |            | LOW TEMP ALARM DELAY TIME       |
|                                   |                                   | COOLING COIL TEMPERATURE SENSOR |                |            | BURNER WATCHDOG TIME            |
|                                   |                                   | LOW DISCHARGE TEMPERATURE ALARM |                |            | MAINTENANCE INTERVAL HOURS      |
|                                   |                                   | MOTOR NOT RESPONDING ALARM      |                |            | MOTOR ALARM DELAY TIME          |
|                                   |                                   | BURNER LOCKOUT ALARM            |                |            | SPACE DEADBAND SET POINT        |
|                                   |                                   | BURNER WATCHDOG ALARM           |                |            | CONTROL TYPE                    |
|                                   |                                   | DIRTY INLET FILTER ALARM        |                |            | OA ALARM DELAY TIME             |
| STATUS SCREEN                     | HEAT                              | CURRENT SET POINT               | HISTORY CHARTS | HISTORY    | OA ALARM DURATION               |
|                                   |                                   | BURNER STATUS                   |                |            | OA ALARM HORN TIME              |
|                                   | BURNER COMMAND                    | HEATING SPACE DEMAND PID        |                |            |                                 |
|                                   | COOL                              | CURRENT SET POINT               |                |            | HEATING COMMAND PID             |
|                                   |                                   | COOLING STATUS                  |                |            | COOLING SPACE DEMAND PID        |
|                                   |                                   | COOLING COMMAND                 |                |            | COOLING COMMAND PID             |
|                                   |                                   | ACTIVE COOLING STAGES           |                |            | BUILDING PRESSURE PID           |
|                                   | UNIT                              | CURRENT HVAC MODE               |                |            | KWH PRICE                       |
|                                   |                                   | FAN STATUS                      |                |            | THERM PRICE                     |
|                                   |                                   | OUTSIDE TEMPERATURE             |                |            | HEATING SET POINT               |
| RETURN TEMPERATURE                |                                   | COOLING SET POINT               |                |            |                                 |
| SPACE TEMPERATURE                 |                                   | SPACE TEMPERATURE               |                |            |                                 |
| DISCHARGE TEMPERATURE             |                                   | BUILDING PRESSURE SET POINT     |                |            |                                 |
| COOLING COIL TEMPERATURE          |                                   | BUILDING PRESSURE               |                |            |                                 |
| MIXED AIR TEMPERATURE             |                                   | VFD SPEED PERCENT               |                |            |                                 |
| BUILDING PRESSURE                 |                                   | OUTSIDE AIR DAMPER PERCENT      |                |            |                                 |
| OUTSIDE AIR PRECENT               |                                   | DISCHARGE TEMPERATURE           |                |            |                                 |
| RETURN AIR PERCENT                | OUTSIDE TEMPERATURE               |                                 |                |            |                                 |
| ETL MAXIMUM DISCHARGE             | RETURN TEMPERATURE                |                                 |                |            |                                 |
| VFD SPEED PERCENT                 | HEATING COMMAND                   |                                 |                |            |                                 |
| UNIT CFM                          | COOLING COMMAND                   |                                 |                |            |                                 |
| OUTSIDE AIR CFM                   | UNIT RUN COMMAND                  |                                 |                |            |                                 |
| DISCHARGE AIR DENSITY [lb/cu.ft.] | HVAC MODE                         |                                 |                |            |                                 |
| DISCHARGE AIR VOLUME [cu.ft./lb]  | MANUAL VFD OVERRIDE               |                                 |                |            |                                 |
| ENERGY                            | ELECTRIC USAGE RATE               | OCCUPANCY OVERRIDE              |                |            |                                 |
|                                   | DAILY ELECTRICITY USAGE           | OCCUPANCY STATUS                |                |            |                                 |
|                                   | DAILY ELECTRICITY COST            | DAILY KWH ELECTRIC USAGE        |                |            |                                 |
|                                   | GAS USAGE RATE                    | DAILY ELECTRIC COST             |                |            |                                 |
|                                   | DAILY GAS USAGE                   | DAILY GAS THERM USAGE           |                |            |                                 |
|                                   | DAILY GAS COST                    | DAILY GAS COST                  |                |            |                                 |
|                                   | DAILY AVERAGE OUTSIDE AIR TEMP    | DAILY AVERAGE OUTSIDE TEMP      |                |            |                                 |
|                                   | DAILY AVERAGE OUTSIDE AIR PERCENT | COOLING DEGREE DAYS             |                |            |                                 |
|                                   | DAILY AVERAGE VFD SPEED           | HEATING DEGREE DAYS             |                |            |                                 |
|                                   | HEATING DEGREE DAYS               | DAILY AVERAGE VFD SPEED         |                |            |                                 |
| COOLING DEGREE DAYS               | DAILY AVERAGE OUTSIDE AIR PERCENT |                                 |                |            |                                 |
| MAINTENANCE                       | TOTAL FAN HOURS                   | UNIT SERIAL NUMBER              |                |            |                                 |
|                                   | ELAPSED MAINTENANCE HOURS         | CUSTOMER SERVICE PHONE NUMBER   |                |            |                                 |
|                                   | MAINTENANCE STATUS MESSAGE        | SALES EMAIL ADDRESS             |                |            |                                 |
|                                   | MAINTENANCE RUN TIME RESET        | CUSTOMER SERVICE EMAIL ADDRESS  |                |            |                                 |
| PRESSURES                         | CURRENT BUILDING PRESSURE         | ABSOLUTAIRE STREET ADDRESS      |                |            |                                 |
|                                   | CURRENT INLET FILTER PRESSURE     |                                 |                |            |                                 |
|                                   | CURRENT PRE-FILTER PRESSURE       |                                 |                |            |                                 |
|                                   | CURRENT FINAL FILTER PRESSURE     |                                 |                |            |                                 |
|                                   |                                   |                                 | CONTACT US     | CONTACT US |                                 |

| Target Name                        | Description   | BACnet Information |          |  | Modbus Information |          |              |
|------------------------------------|---|--------------------|----------|--|--------------------|----------|--------------|
|                                    |   | Object Type        | Inst Num | BACnet Writable Priority Levels  | Data Address       | Reg Type | Data Type    |
| UnitRunCommand                     | 1=OFF/2=ON  | Multi State Value  | 0        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40001       | Holding  | Integer Type |
| OperationMode                      | 1=HEAT/2=VENT/3=COOL/4=AUTO   | Multi State Value  | 1        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40002       | Holding  | Integer Type |
| MinimumDischarge                   | Minimum allowable discharge temperature   | Analog Value       | 1        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40003       | Holding  | Integer Type |
| MaximumDischarge                   | Maximum allowable discharge temperature   | Analog Value       | 0        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40006       | Holding  | Integer Type |
| HeatLockoutSetPoint                | Mixed air temperature above this set point disables the burner  | Analog Value       | 2        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40007       | Holding  | Integer Type |
| CoolLockoutSetPoint                | Mixed air temperature below this set point disables cooling (if available)  | Analog Value       | 4        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40008       | Holding  | Integer Type |
| LowTempAlarmDelayMinutes           | Discharge temperature below this set point shuts the unit down  | Analog Value       | 3        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40009       | Holding  | Integer Type |
| OccupiedHeatSetPoint               | Heating set point for Occupied Status   | Analog Value       | 7        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40010       | Holding  | Integer Type |
| UnoccupiedHeatSetPoint             | Heating set point for Unoccupied Status   | Analog Value       | 6        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40016       | Holding  | Integer Type |
| OccupiedCoolSetPoint               | Cooling set point (if available) for Occupied Status  | Analog Value       | 8        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40018       | Holding  | Integer Type |
| UnoccupiedCoolSetPoint             | Cooling set point (if available) for Unoccupied Status  | Analog Value       | 9        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40019       | Holding  | Integer Type |
| OccupancyOverride                  | 1=MANUAL UNOCCUPIED/2=MANUAL OCCUPIED/3=AUTO [FOLLOW SCHEDULE]  | Multi State Value  | 2        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40003       | Holding  | Integer Type |
| ManualVFD Override                 | Allows for override of the VFD Speed or Economizer [1=NO/2=YES]   | Multi State Value  | 3        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40004       | Holding  | Integer Type |
| ManualFanSpeed                     | Manual VFD Speed or Economizer Set Point  | Analog Value       | 10       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40011       | Holding  | Integer Type |
| BuildingPressureSetPoint           | Building Pressure Set Point in inches of water  | Analog Value       | 11       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40013       | Holding  | Float Type   |
| MaintenanceSetPointHours           | Scheduled elapsed run time between automated maintenance reminders  | Analog Value       | 12       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40015       | Holding  | Integer Type |
| ElapsedRunTimeReset                | Resets the elapsed maintenance reminder elapsed run time [toggle 1 to 2 or 2 to 1]  | Multi State Value  | 4        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40014       | Holding  | Integer Type |
| InletFilterPressureSetPoint        | Inlet dirty filter pressure set point [for units with filter pressure transmitters]   | Analog Value       | 14       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40023       | Holding  | Float Type   |
| PreFilterPressureSetPoint          | Pre filter pressure set point [for units with filter pressure transmitters]   | Analog Value       | 15       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40025       | Holding  | Float Type   |
| FinalFilterPressureSetPoint        | Final filter pressure set point [for units with filter pressure transmitters]   | Analog Value       | 13       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40027       | Holding  | Float Type   |
| Electric_KWH_Price                 | Electric Price per KWH  | Analog Value       | 17       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40031       | Holding  | Float Type   |
| GasThermPrice                      | Gas Price per Therm   | Analog Value       | 16       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40033       | Holding  | Float Type   |
| BurnerWatchdogDelayTime            | Delay Time for Burner Watchdog Notification   | Analog Value       | 18       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40033       | Holding  | Integer Type |
| MotorAlarmDelayTime                | Motor Not Responding Alarm Delay Minutes  | Analog Value       | 19       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40035       | Holding  | Integer Type |
| MinimumEconomizer                  | Minimum VFD Speed / Economizer Setting  | Analog Value       | 21       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40037       | Holding  | Integer Type |
| MaximumEconomizer                  | Maximum VFD Speed / Economizer Setting  | Analog Value       | 20       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40039       | Holding  | Integer Type |
| Speed_Position                     | Two Position Economizer Setting / Two Speed Fan Setting [1=MINIMUM/2=MAXIMUM]   | Multi State Value  | 5        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40041       | Holding  | Integer Type |
| HeadBurnerCommand_PID_Tuning       | Heating - Burner Command PID Tuning [1 to 11 with 1 being most aggressive, 11 being least aggressive, 6 being neutral default]  | Multi State Value  | 7        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40042       | Holding  | Integer Type |
| HeadRoomDemand_PID_Tuning          | Heating - Room Demand PID Tuning [1 to 11 with 1 being most aggressive, 11 being least aggressive, 6 being neutral default]     | Multi State Value  | 8        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40043       | Holding  | Integer Type |
| CoolingRoomDemand_PID_Tuning       | Cooling - Room Demand PID Tuning [1 to 11 with 1 being most aggressive, 11 being least aggressive, 6 being neutral default]     | Multi State Value  | 9        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40044       | Holding  | Integer Type |
| CoolingCommandControl_PID_Tuning   | Cooling - Cooling Command PID Tuning [1 to 11 with 1 being most aggressive, 11 being least aggressive, 6 being neutral default] | Multi State Value  | 10       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40045       | Holding  | Integer Type |
| BuildingPressureControl_PID_Tuning | Building Pressure PID Tuning [1 to 11 with 1 being most aggressive, 11 being least aggressive, 6 being neutral default]         | Multi State Value  | 6        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40046       | Holding  | Integer Type |
| BurnerReset                        | Burner Reset Command [toggle 1 to 2 or 2 to 1]  | Multi State Value  | 22       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40046       | Holding  | Integer Type |
| ChangeoverHysteresis               | Auto Mode Changeover Space Deadband   | Analog Value       | 24       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40048       | Holding  | Integer Type |
| OutsideAirAlarmDelay               | Time delay for initiation of the Outside Air Alarm Condition [0 to 30 minutes]  | Analog Value       | 24       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40048       | Holding  | Integer Type |
| OutsideAirAlarmDuration            | Duration of the Outside Air Alarm Condition [10 to 45 minutes]  | Analog Value       | 25       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40050       | Holding  | Integer Type |
| OutsideAirAlarmHornTime            | Horn time for the Outside Air Alarm Condition [1 to 30 seconds]   | Analog Value       | 23       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40051       | Holding  | Integer Type |
| NetworkPowerExhaustCommand         | Network Power Exhaust Enable Command [0=OFF / 1=ENABLE]   | Binary Value       | 0        | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40052       | Holding  | Integer Type |
| ControlType                        | Space or Discharge Temperature Control [1=Space / 2=Discharge]  | Multi State Value  | 12       | in1.in2.in3.in4.in5.in6.in7.in8.in9.in10.in11.in12.in13.in14.in15.in16 | modbus-40052       | Holding  | Integer Type |
| OutsideTempSensorAlarm             | 0=Normal/1=Alarm  | Binary Input       | 0        | no   | modbus-10004       | Input    | Input        |
| DischargeTempSensorAlarm           | 0=Normal/1=Alarm  | Binary Input       | 1        | no   | modbus-10006       | Input    | Input        |

|                                |   |                   |    |    |              |       |
|--------------------------------|---|-------------------|----|----|--------------|-------|
| SpaceTempSensorAlarm           | 0=Normal/1=Alarm  | Binary Input      | 2  | no | modbus:10007 | Input |
| ReturnTempSensorAlarm          | 0=Normal/1=Alarm  | Binary Input      | 3  | no | modbus:10005 | Input |
| CoolingCoilTempSensorAlarm     | 0=Normal/1=Alarm  | Binary Input      | 4  | no | modbus:10016 | Input |
| LowDischargeTempAlarm          | 0=Normal/1=Alarm  | Binary Input      | 5  | no | modbus:10008 | Input |
| MotorNotRespondingAlarm        | 0=Normal/1=Alarm  | Binary Input      | 6  | no | modbus:10009 | Input |
| BurnerLockoutAlarm             | 0=Normal/1=Alarm  | Binary Input      | 7  | no | modbus:10012 | Input |
| BurnerWatchdogAlarm            | 0=Normal/1=Alarm  | Binary Input      | 8  | no | modbus:10017 | Input |
| DirtyFinalFilterAlarm          | 0=Normal/1=Alarm  | Binary Input      | 9  | no | modbus:10002 | Input |
| DirtyInletFilterAlarm          | 0=Normal/1=Alarm  | Binary Input      | 10 | no | modbus:10003 | Input |
| DamperFeedbackFault            | 0=Normal/1=Alarm  | Binary Input      | 11 | no | modbus:10001 | Input |
| HVAC_Mode                      | Current Mode [1=HEAT/2=VENT/3=COOL (if available)]  | Multi State Input | 12 | no | modbus:30040 | Input |
| MixedAirTemperature            | Current mixed air temperature [for mixed air units]                                       | Analog Input      | 0  | no | modbus:30017 | Input |
| ANS_MaxDischarge               | Calculated maximum allowable discharge temperature  | Analog Input      | 1  | no | modbus:30018 | Input |
| UnitCFM                        | Unit listed CFM   | Analog Input      | 2  | no | modbus:30020 | Input |
| Current_OA_CFM                 | Current outside air CFM [for mixed air units]   | Analog Input      | 3  | no | modbus:30019 | Input |
| OA_Percent                     | Current outside air percentage  | Analog Input      | 4  | no | modbus:30015 | Input |
| RA_Percent                     | Current return air percentage [for mixed air units]                                       | Analog Input      | 5  | no | modbus:30016 | Input |
| BurnerCommand                  | Current burner command percentage [if available]  | Analog Input      | 6  | no | modbus:30001 | Input |
| CoolingCommand                 | Current cooling command percentage [if available]   | Analog Input      | 7  | no | modbus:30002 | Input |
| ActiveCoolingStages            | Number of active cooling stages [if staged cooling is available]                          | Analog Input      | 8  | no | modbus:30012 | Input |
| VD_Speed_Economizer_Command    | Current VFD speed [for Economizer Command on mixed air units]                             | Analog Input      | 9  | no | modbus:30003 | Input |
| DischargeAirDensity            | Current density of the discharge air based on discharge temperature                       | Analog Input      | 10 | no | modbus:30034 | Input |
| DischargeAirCubicFeetPerPound  | Current volume per pound of air based on discharge temperature                            | Analog Input      | 11 | no | modbus:30021 | Input |
| MaintenanceMessage             | Current maintenance message [BACnet is enumerated / Modbus 0=Normal/1=Maintenance Needed] | Multi State Input | 1  | no | modbus:10010 | Input |
| ElapsedMaintenanceRunTime      | Current elapsed run time since last maintenance reset                                     | Analog Input      | 12 | no | modbus:30004 | Input |
| DailyElectricUsage             | Previous day total calculated electric usage  | Analog Input      | 13 | no | modbus:30026 | Input |
| DailyGasUsage                  | Previous day total calculated gas usage   | Analog Input      | 14 | no | modbus:30030 | Input |
| DailyAverageOutsideTemperature | Previous day average outside temperature  | Analog Input      | 15 | no | modbus:30034 | Input |
| DailyElectricCost              | Previous day calculated electric cost [based on price per kWh input]                      | Analog Input      | 16 | no | modbus:30028 | Input |
| DailyGasCost                   | Previous day calculated gas cost [based on price per therm input]                         | Analog Input      | 17 | no | modbus:30032 | Input |
| DailyAverageVfdFrequency       | Previous day average VFD speed percent  | Analog Input      | 18 | no | modbus:30038 | Input |
| DailyAverageOaPercent          | Previous day average outside air percent  | Analog Input      | 19 | no | modbus:30039 | Input |
| YesterdayHeatingDegreeDays     | Previous day Heating Degree Days [based on average OA temperature and 65 degree baseline] | Analog Input      | 20 | no | modbus:30036 | Input |
| YesterdayCoolingDegreeDays     | Previous day Cooling Degree Days [based on average OA temperature and 65 degree baseline] | Analog Input      | 21 | no | modbus:30037 | Input |
| Fan_ON                         | Current fan status [0=OFF/1=ON]   | Binary Input      | 13 | no | modbus:10014 | Input |
| BurnerOn                       | Current burner status [0=OFF/1=ON]  | Binary Input      | 14 | no | modbus:10015 | Input |
| BuildingPressure               | Current building pressure reading   | Analog Input      | 22 | no | modbus:30006 | Input |
| DischargeTemperature           | Current discharge temperature reading   | Analog Input      | 23 | no | modbus:30008 | Input |
| OutsideTemperature             | Current outside temperature reading   | Analog Input      | 24 | no | modbus:30009 | Input |
| ReturnTemperature              | Current return temperature reading [for mixed air units]                                  | Analog Input      | 25 | no | modbus:30010 | Input |
| SpaceTemperature               | Current space temperature reading [for space control units]                               | Analog Input      | 26 | no | modbus:30011 | Input |
| CoolingCoilTemperature         | Current cooling coil exit temperature [for units with cooling]                            | Analog Input      | 27 | no | modbus:30011 | Input |
| OccupancyStatus                | Current occupancy status [1=Occupied/0(false)=UNOCCUPIED]                                 | Binary Input      | 15 | no | modbus:10013 | Input |
| TotalHours                     | Total accumulated unit hours of operation   | Analog Input      | 28 | no | modbus:30013 | Input |
| PowerExhaustMode               | Power Exhaust Mode Status [0=Inactive / 1=Active]   | Binary Input      | 16 | no | modbus:10018 | Input |