

Instruction Guide:

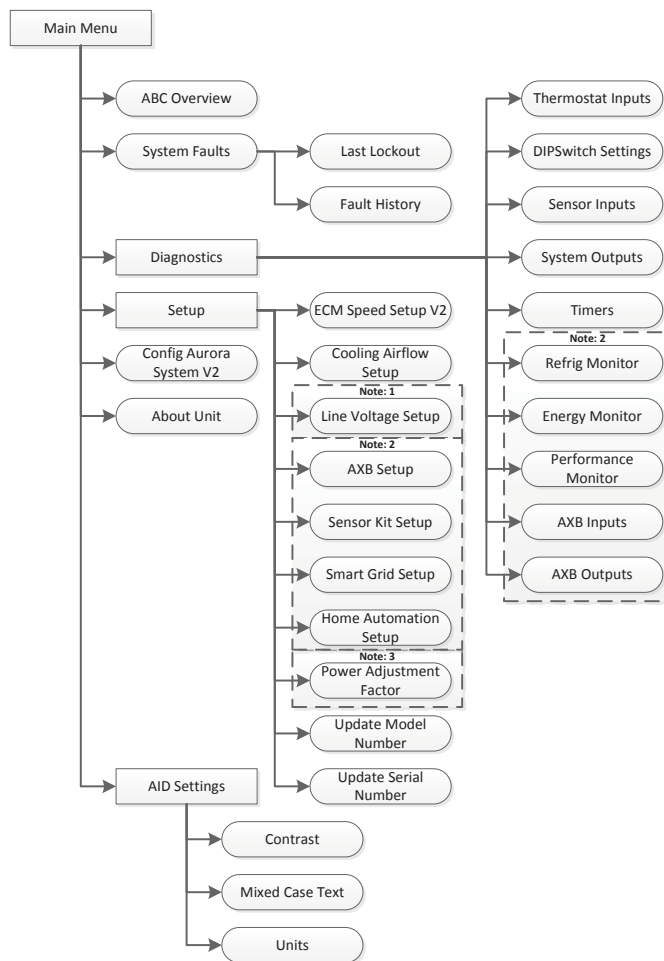
Aurora Interface and Diagnostics (AID) Tool

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Menu Diagram - Aurora Advanced Control (ABCSTD Version 2.xx)

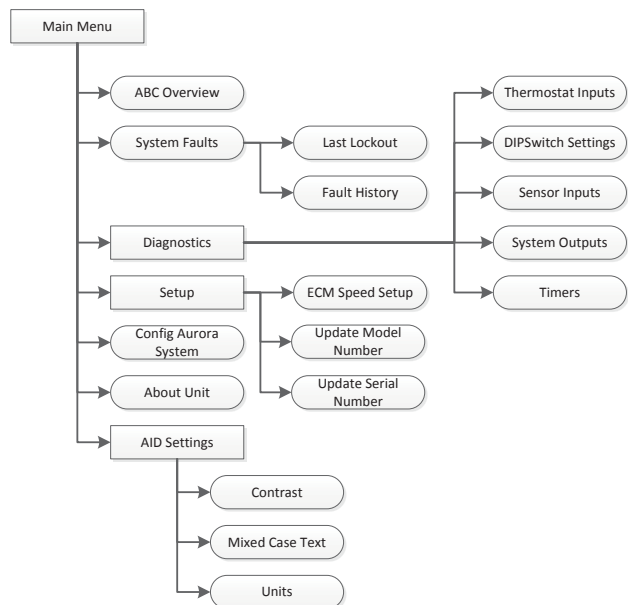


Note 1 - Available only when the AXB is NOT installed.
Note 2 - Available only when the AXB is installed.
Note 3 - Available on ABCSTD version 2.04 with an AXB installed.

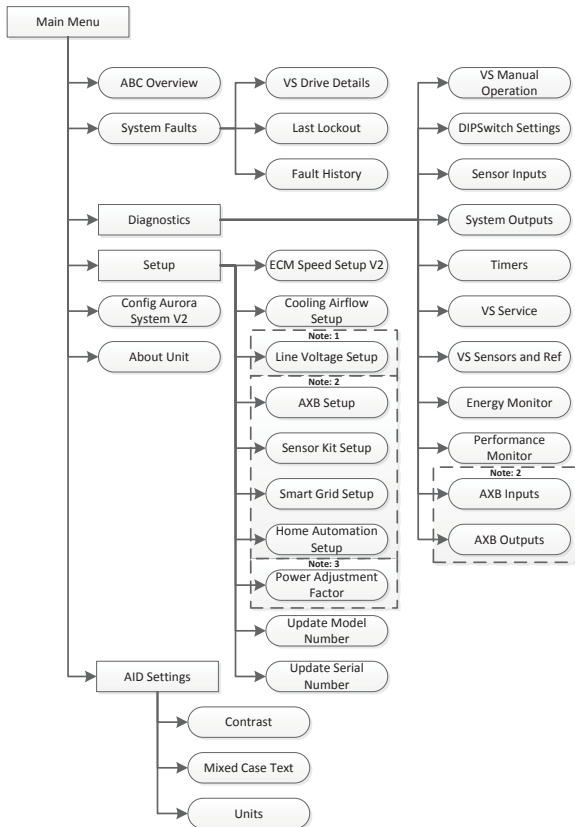
General

The Aurora Interface and Diagnostics (AID) Tool is a device that is a member of the Aurora network. The AID Tool is used to troubleshoot equipment which use the Aurora control via Modbus RTU communication. The AID Tool provides diagnostics, fault management, ECM setup, and system configuration capabilities to the Aurora family. The AID Tool has a 2-1/2 in. x 2-1/2 in. LCD display and five push buttons. The up, down, right and left buttons will be referenced as ▲, ▼, ► and ◀, respectively. The center button is the enter button and will be referenced as ■.

Menu Diagram - Aurora Base Control (ABCSTD Version 1.xx)



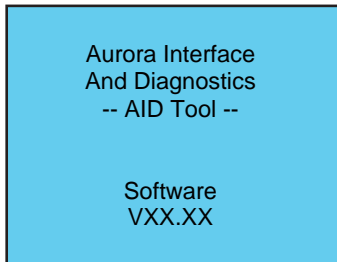
Menu Diagram - Aurora Advanced Control for Variable Speed (ABCVSP Version 2.xx)



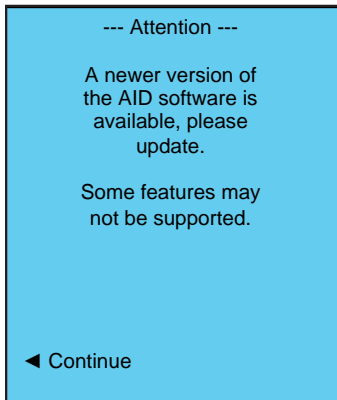
- Note 1** - Available only when the AXB is NOT installed.
- Note 2** - Available only when the AXB is installed.
- Note 3** - Available on ABCVSP version 2.04 with an AXB installed.

Startup

When the AID Tool is plugged into the AID Tool port on the front corner post or directly to P8 on the Aurora Base Control (ABC), a flash screen will appear for 5 seconds.



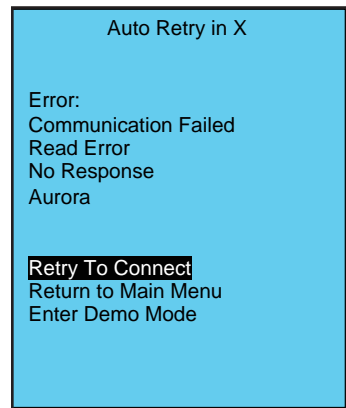
The tool will then initialize. If the AID Tool's software version is older than what the ABC requires, an 'Attention' screen will appear, otherwise the ABC Overview screen will appear. Press the ◀ button to continue to the ABC Overview screen.



NOTE: If the AID Tool's software version is older than what is required by the ABC, some features may not be supported by the AID on the ABC.

Communication Failure/Error

In the event of a communication failure or error, this screen will appear. One of the following will be displayed: READ ERROR NO RESPONSE, READ ERROR CRC, READ ERROR EXCEPTION, WRITE ERROR NO RESPONSE, or WRITE ERROR EXCEPTION



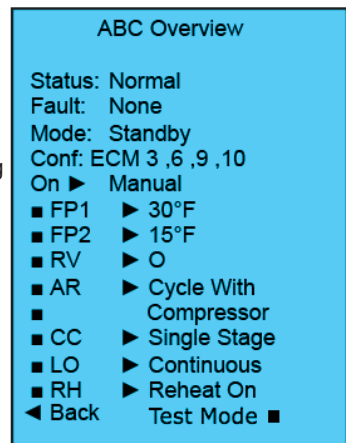
The communication cable and connection should be checked to make sure a solid connection has been made with the ABC and that the cable connecting the AID Tool and ABC is not damaged. To retry to connect to the ABC, highlight the RETRY TO CONNECT using the ▲ and ▼ buttons and then press the ■ button to select the option or return to the Main Menu.

Demo mode is also available. Demo mode will allow the technician to navigate through the AID Tool without being connected to an ABC control. Once demo mode has been entered, power must be removed from the AID Tool to restart communication.

The AID Tool will automatically retry communication in 30 seconds after the fault.

ABC Overview

The ABC Overview screen provides the ABC control status, fault status, current mode of operation, DIP configuration mode, and DIP setting. You can go to the Main Menu by pressing the ◀ button. Test Mode can be enabled or disabled by pressing the ■ button.



Status - displays the current controller status.

- NORMAL – Normal Mode
- TEST – Test Mode
- DEHUMID – Dehumidification Mode
- LOAD SHED – Load Shed
- E SHUTDOWN – Emergency Shutdown
- LOCKOUT - Lockout

Faults - displays the current fault status.

- None – No Faults
- Retry HP X – A high pressure fault has occurred, and the ABC is retrying. The X represents the number of times this fault has occurred.
- Retry LP X – A low pressure fault has occurred, and the ABC is retrying. The X represents the number of times this fault has occurred.
- Retry FP1 X – A freeze detection sensor number 1 fault has occurred, and the ABC is retrying. The X represents the number of times this fault has occurred.
- Retry FP2 X – A freeze detection sensor number 2 fault has occurred, and the ABC is retrying. The X represents the number of times this fault has occurred.

Retry Cond X – A condensate overflow fault has occurred, and the ABC is retrying. The X represents the number of times this fault has occurred.

O/U Volt – An over/under voltage fault has occurred.

Lock HP – A high pressure lockout has occurred.

Lock LP – A low pressure lockout has occurred.

Lock FP1 – A freeze detection sensor number 1 lockout has occurred.

Lock FP2 – A freeze detection sensor number 2 lockout has occurred.

Lock Cond – A condensate overflow lockout has occurred.

Lock O/U Volt – An over/under voltage lockout has occurred.

Lock Inputs – An inputs fault has occurred.

Lock Sensor – A FP1 or FP2 sensor error has occurred.

Mode - Displays the ABC's current operation.

Rdm Strt XXX – The random start delay is counting down before the ABC will begin normal operation.

Waiting XXX – This displays the compressor short cycle timer when there is a demand for compressor operation.

Standby – The ABC is idle and is waiting for a thermostat input.

Lockout – The ABC is currently locked out.

Blower Only – The ABC is in blower only mode.

Cooling – The ABC is in cooling mode and the stage is indicated by the number that follows.

Heating – The ABC is in heating mode and the stage is indicated by the number that follows.

Aux – This will be displayed in addition to the HEATING mode to indicate the auxiliary heat has been engaged.

Dehum – The ABC is in dehumidification mode.

Reheat – The ABC is in reheat mode.

Emergency – The ABC has engaged the emergency heat outputs.

Conf - Displays the ECM and DIP Switch configuration setting.

ECM X, X, X, X – This displays the "G", Low, High, and Aux Heat variable speed ECM speed settings.

Manual – The physical DIP Switches have NOT been overridden and control the configuration of the ABC.

Overridden – The physical DIP Switches have been overridden and are not active.

DIP Switch Settings – These are the current settings either physically set on the ABC or overridden.

FP1 – OFF = 15°F
ON = 30°F

FP2 – OFF = 15°F
ON = 30°F

RV – OFF = B
ON = O

AR – OFF, OFF = Cycle with Compressor
ON, ON = Cycle with Blower

ON, OFF = Slow Opening Water Valve
OFF, ON = Cycle with T-stat Humidification Call
(Communicating T-stat Only)

CC – OFF = Dual Capacity
ON = Single Capacity

LO – OFF = Pulse Output
ON = Continuous Output

RH/DH – OFF = Reheat Enabled
ON = Dehumidification Enabled

Main Menu

This screen allows the technician to select different screens to view information or change settings. Change the highlighted item using the ▲ and ▼ buttons and then press the ■ button to select the item. Press the ◀ button to return to the ABC Overview screen. ABC OVERVIEW – Provides a general overview of the ABC status and settings.

System Faults – Provides the ABC's current fault and historical counts of faults.

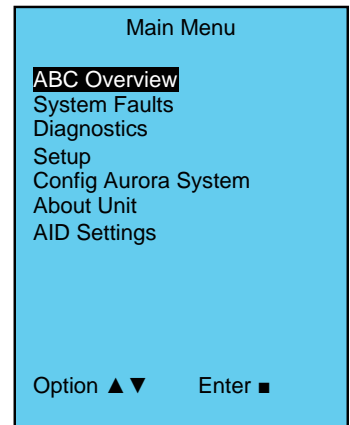
Diagnostics – Provides the ability to see the current thermostat inputs, outputs, DIP Switch settings and view sensor status and values. This also allows the technician to override the thermostat inputs for testing and clear a DIP Switch override.

Setup – This allows the technician to set the variable speed ECM Blower Speed settings.

Config Aurora System – Provides the ability to see what devices are connected to the Aurora system. Software Version information can be found on this screen.

About Unit – Allows the technician to view the ABC board's software version and program name, along with the unit's model and serial number.

AID Settings – Allows adjustment of AID Tool screen contrast or upper to lower case text option.



System Faults

This screen shows the technician the current fault status of the ABC. The technician can then view the fault details and also the fault history. Change the highlighted item using the ▲ and ▼ buttons and then press the ■ button to select the item. Press the ◀ button to return to the Main Menu.

Status – displays the current fault status of the ABC.

No Fault – No active faults.

Retry – A fault has occurred and the ABC is attempting a retry.

Lockout – The ABC is currently locked out.

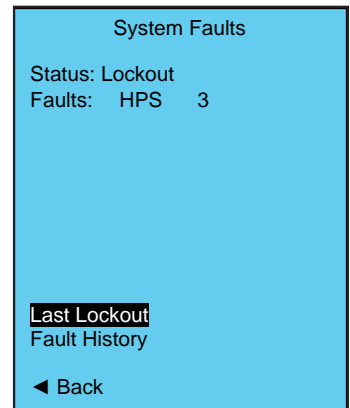
Fault – Displays the fault that has either caused a retry or a lockout. (See the unit's installation manual for fault details.)

HPS – High Pressure Fault.

LPS – Low Pressure Fault

FP1 – Freeze Detection Sensor 1 Fault

FP2 – Freeze Detection Sensor 2 Fault



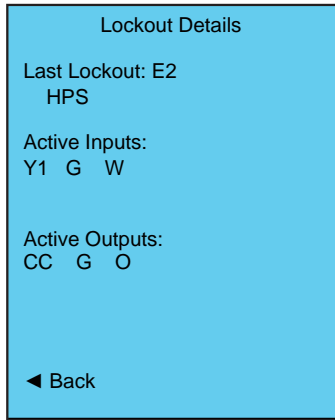
- Condensate – Condensate Overflow Fault
- Input Faults – Input Fault (W thermostat input and O thermostat input were present at the same time.)
- O/U Volt SD – Over/Under Voltage Shutdown Fault (The supply voltage was too high or too low and the controller was shut down.)
- Sensor Error – Sensor Error Fault (The FP1 and FP2 sensors should be checked.)

Lockout Details – Shows the inputs and outputs at the time of the active or the last lockout.

Fault History – Displays the number of faults that have occurred since the controller has been cleared.

Lockout Details

This screen shows the technician the active or the last lockout along with the inputs and outputs at the time of the lockout. Press the ◀ button to return to the previous screen.



- Last Lockout – This shows what fault caused a lockout.
- HPS – High Pressure Fault.
 - LPS – Low Pressure Fault
 - FP1 – Freeze Detection Sensor 1 Fault
 - FP2 – Freeze Detection Sensor 2 Fault

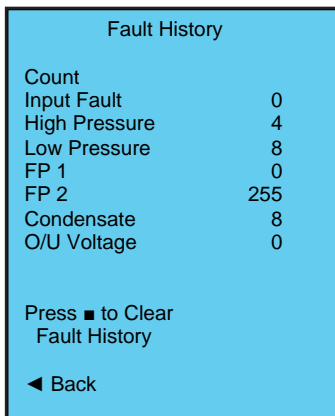
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- O/U Volt SD – Over/Under Voltage Shutdown Fault (The supply voltage was too high or too low and the controller was shut down.)
- Sensor Error – Sensor Error Fault (The FP1 and FP2 sensors should be checked.)

Active Inputs – The active thermostat inputs at the time of the lockout.

Active Outputs – The active ABC outputs at the time of the lockout.

Fault History

This screen displays the number of each fault that has occurred since the last time the ABC was cleared. Press the ◀ button to return to the previous screen. Press the ■ button to clear the fault counters.

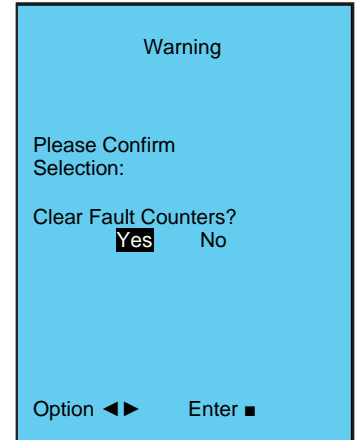


NOTE: There are multiple Fault History pages for ABCSTD Version 2.xx and ABCVSP Version 2.xx.

Clear Fault Counters

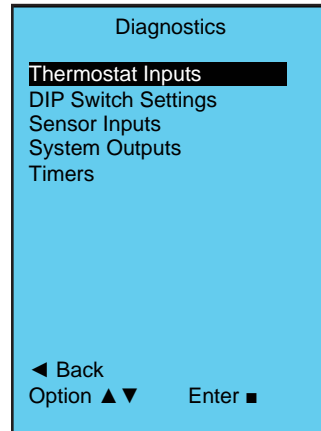
This screen confirms that the fault counters are to be reset. Change the highlighted item using the ◀ and ▶ buttons and then press the ■ button to select the item.

Selecting YES will clear the fault counters, while selecting NO will return to the previous screen.

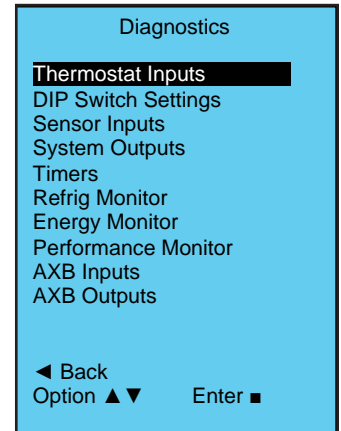


Diagnostics

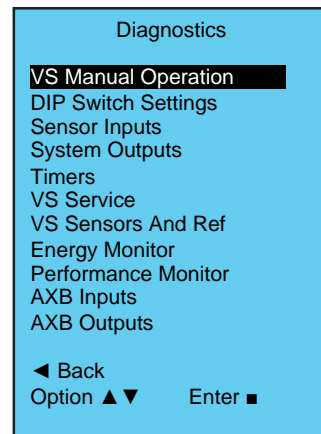
The diagnostics menu will allow the technician to view the current thermostat inputs, override the thermostat inputs, view DIP Switch settings, clear DIP Switch override, view the sensor inputs, view the active outputs, and view the timers. Change the highlighted item using the ▲ and ▼ buttons and then press the ■ button to select the item. Press the ◀ button to return to the Main Menu.



ABCSTD Version 1.xx



ABCSTD Version 2.xx with AXB



ABCVSP Version 2.xx with AXB

Thermostat Inputs – View the current thermostat inputs and/or override the thermostat inputs.

DIP Switch Settings – View the current DIP Switch settings and clear a DIP Switch override.

Sensor Inputs – View the ABC sensor inputs.

System Outputs – View the ABC’s active outputs.

Timers – View the timers.

Refrig Monitor – Allows the technician to monitor the pressures and temperatures of the system. Refrigerant Monitoring Kit sensors must be installed. Standard on the variable speed product.

Energy Monitoring – Allows the technician to monitor energy use for the compressor, blower, and aux heat. The pump power is estimated based upon the configuration of the flow center. Energy Monitoring Kit sensors must be installed. This option is standard on variable speed products.

Performance Monitoring – Allows the technician to monitor heat of extraction and rejection performance of the heat pump thru entering and leaving water temps, water flow rate, and some selected air temperatures. Performance Monitoring Kit sensors must be installed.

AXB Inputs – Allows the technician to monitor AXB inputs such as hot water sensor, pump slaving, home automation digital inputs, smart grid/On Peak input etc.

AXB Outputs - Allows the technician to monitor AXB outputs such as Loop pump relay, HW pump relay, variable speed pump PWM etc.

Thermostat Inputs

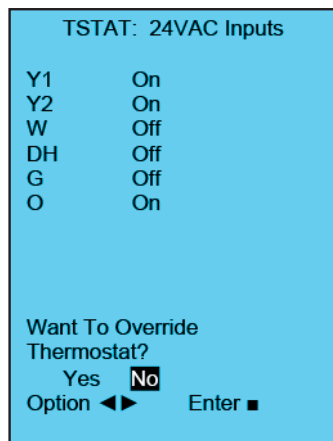
This screen allows the technician to view the current thermostat inputs to the ABC. An active thermostat override will bypass this screen and show the thermostat overridden screen. Change the highlighted item using the ◀ and ▶ buttons and then press the ■ button to select the item.

NOTE: The DH will be displayed as DH/RH if the reheat option is enabled.

NOTE: DH = Dehumidification Mode, RH = Reheat Mode

Selecting YES will start a thermostat override, while selecting NO will return to the previous screen.

NOTE: Communicating thermostats although do not have a 24VAC connection for Y1, Y2 etc. the display will show the equivalent communicating calls.



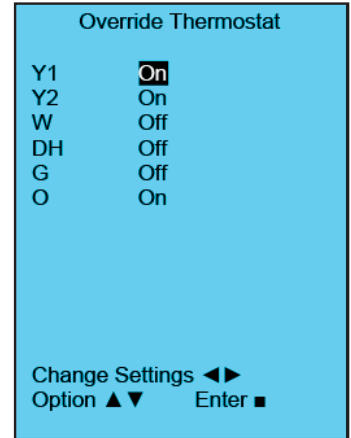
Thermostat Override

This screen will allow the technician to simulate thermostat inputs and override the current thermostat inputs. Change the highlighted item using the ▲ and ▼ buttons. Change the status by pressing ◀ and ▶ buttons. Press the ■ button to complete the override.

NOTE: The ABC will return to normal after 1 minute if the AID Tool is removed during an override.

NOTE: The DH will be displayed as DH/RH if the reheat option is enabled.

NOTE: DH = Dehumidification Mode, RH = Reheat Mode



Thermostat Overridden

This screen shows the active override inputs. The override can be ended or updated. Change the highlighted item using the ▲ and ▼ buttons. Press the ■ button to select the item.

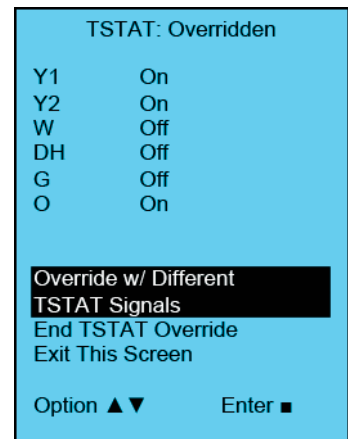
NOTE: The DH will be displayed as DH/RH if the reheat option is enabled.

NOTE: DH = Dehumidification Mode, RH = Reheat Mode

Override w/ Different Tstat Signals – Allows the technician to continue to override the thermostat inputs, but change the selection. This screen will allow the technician to simulate thermostat inputs and override the current thermostat inputs.

End Tstat Override – Return the thermostat to normal mode.

Exit This Screen – Returns to the previous screen.



DIP Switch Settings

DIP Switch: Manual

On ▶

- FP1 ▶ 15°F
- FP2 ▶ 15°F
- RV ▶ B
- AR ▶ Cycle With Compressor
- CC ▶ Dual Stage
- LO ▶ Pulse
- RH ▶ Reheat On

◀ Back

DIP Switch: Overridden

On ▶

- FP1 ▶ 30°F
- FP2 ▶ 30°F
- RV ▶ O
- AR ▶ Cycle With Blower
- CC ▶ Single Stage
- LO ▶ Continuous
- DH ▶ Dehum On

Press ■ To Clear Override

◀ Back

This screen allows the technician to view the DIP switch settings and determine if the physical DIP switches have been overridden. The technician can clear the override if the DIP switches have been overridden. Press the ◀ button to return to the previous screen. If the DIP switches have been overridden, press the ■ button to clear the override.

DIP Switch Settings – These are the current settings on the ABC.

- FP1 – OFF = 15°F
ON = 30°F
- FP2 – OFF = 15°F
ON = 30°F
- RV – OFF = B
ON = O
- AR – OFF, OFF = Cycle with compressor
ON, ON = Cycle with Blower
ON, OFF = Slow Opening Water Valve
OFF, ON = Cycle with T-stat Humidification Call
(Communicating T-stat Only)
- CC – OFF = Dual Capacity
ON = Single Capacity
- LO – OFF = Pulse Output
ON = Continuous Output
- RH/DH – OFF = Reheat Enabled
ON = Dehumidification Enabled

If the DIP switches have been overridden and you wish to clear them, see the Clear DIP Switch Override screen for further detail.

Clear DIP Switch Override

This screen confirms that the DIP switch override is to be cleared. Change the highlighted item using the ◀ and ▶ buttons and then press the ■ button to select the item.

Selecting YES will clear the DIP switch override, while selecting NO will return to the previous screen.

Warning

Please Confirm Selection:

Clear DIP Switch Override?
Yes No

Option ◀▶ Enter ■

Sensor Inputs

This screen displays the ABC's sensor inputs. Press the ◀ button to return to the previous screen.

NOTE: If FP2 is not installed a “—” will be displayed in place of the temperature.

- FP1 – Freeze Detection Sensor 1 Fault
- FP2 – Freeze Detection Sensor 2 Fault
- HPS – High Pressure Switch Status – Open/Closed
- LPS – Low Pressure Switch Status – Open/Closed
- Condensate – Condensate Overflow Status – Fault/Normal
- Emergency Shutdown – Emergency Shutdown Status – On/Off
- Load Shed – Load Shed Status – On/Off
- Fault – Displays the fault that has either caused a retry or a lockout. (See the unit's installation manual for fault details.)

Sensor Inputs

FP1: 55 °F

FP2: 29 °F

LPS: Closed

HPS: Closed

Condensate: Normal

Emergency Shutdown: Off

Load Shed: Off

Fault: None

◀ Back

System Outputs

This screen displays the ABC's current outputs. Press the ◀ button to return to the previous screen.

- RV – Reversing Valve – On/Off
 - CC – Compressor Low Capacity – On/Off
 - CC2 – Compressor High Capacity – On/Off
 - Blower – Blower Relay – On/Off
 - Alarm – Alarm Output – On/Off
- NOTE:** This will be replaced by Reheat if reheat is enabled.

- Accessory – Accessory Relay – On/Off
- Lockout – Lockout – On/Off
- EH1 – Electric Heat Stage 1 – On/Off
- EH2 – Electric Heat Stage 2 – On/Off
- ECM Speed - Displays the variable speed ECM blower speed Off, Low (G or Fan), Med (Y1), High (Y2), Aux (W).
- 5-Spd ECM Speed - Displays the 5-Speed ECM blower speed Off, Low (G or Fan), Med (Y1 or CC), High (Y2 or CC2), Aux (W or EH1).

System Outputs

RV: On

CC: On

CC2: Off

Blower: On

Alarm: Off

Accessory: Off

Lockout: Off

EH1: On

EH2: On

ECM: 0 - Off

5-Spd ECM: Off

◀ Back

Timers

This screen displays the ABC's timers. Press the ◀ button to return to the previous screen.

- Test Mode Tmr – Test Mode Timer – Test mode will expire when the timer reaches 0.
- Rdm Strt Delay – Random Start Delay
- Comp ASC Delay – Compressor Anti-Short Cycle Delay
- Min Run Time – Compressor Minimum Run Time
- Blower Off Dly – Blower Off Delay
- Aux/E Heat Stg – Auxiliary or Electric Heat Stage Delay
- SO Valve Dly – Slow Opening Water Valve Delay
- Reheat Delay – Reheat Valve Delay (Only displayed when the reheat option is enabled)

Timers	
Test Mode Tmr:	0
Rdm Strt Delay:	0
Comp ASC Delay:	0
Min Run Time:	0
Blower Off Dly:	0
Aux/E Heat Stg:	0
SO Valve Dly:	0
Reheat Delay:	0
◀ Back	

Refrigerant Monitoring

This screen displays the refrigerant monitoring sensors and calculation for super heat, subcooling and refrigerant pressures and temperatures. The optional Refrigerant Monitoring Kit sensors must be installed.

Refrig Monitor		
Discharge	375	psi
Suction	112	psi
	55.0	°F
Htg LL *	124.5	°F
Clg LL	165.3	°F
Sat Evap	36.8	°F
Sat Cond	72.0	°F
SuperHeat	12	°F
SubCooling	-10	°F
◀ Back		

Energy Monitoring

This screen displays the energy monitoring sensors and calculation for current and power draw of the compressor, fan, auxiliary heat. The pump watts are estimated based upon the flow center configuration. The optional Energy Monitoring Kit sensors must be installed.

Energy Monitor		
Line Voltage	229	V
Compressor 1	0.0	A
Compressor 2	0.0	A
Blower	0.0	A
Aux	0.0	A
Compressor	0	W
Blower	0	W
Aux	0	W
FC1	0	W
Total	0	W
◀ Back		

Performance Monitoring

This screen displays the performance monitoring sensors and calculation for heat of extraction and rejection as well as selected temperatures and flows. The optional Performance Monitoring Kit sensors must be installed.

Performance Monitor	
Ent Water	42.8 °F
Lvg Water	45.2 °F
WaterFlow	5.3 gpm
Brine	Antifreeze
Heat of Ext	6169 Btuh
Loop Press	NA
Ent Air	71.7 °F
Lvg Air	65.6 °F
◀ Back	

AXB Inputs

Allows the technician to monitor AXB inputs such as hot water sensor, pump slaving, home automation digital inputs, smart grid/On Peak input etc.

AXB Inputs	
Hot Water	67.3 °F
Loop Press	NA
Pump Slave	Off
Smart Grid	Off
Home Auto 1	Off
Home Auto 2	Off
On ▶	
■ MBA	▶ MB Address 3
■ NA	▶ Future Use
■ S3D	▶ STD W-To-A
■ AR2	▶ Cycle With
■	▶ T-Stat Dehum
◀ Back	

AXB Outputs

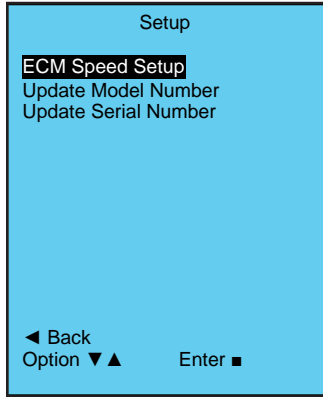
Allows the technician to monitor AXB outputs such as Loop pump relay, HW pump relay, variable speed pump PWM etc.

AXB Outputs	
Div Valve K1	Off
Dehum/Reheat K2	Off
Accessory 2 K3	Off
Loop Pump K5	Off
DHW Pump K6	Off
VS Pump Output	0%
◀ Back	

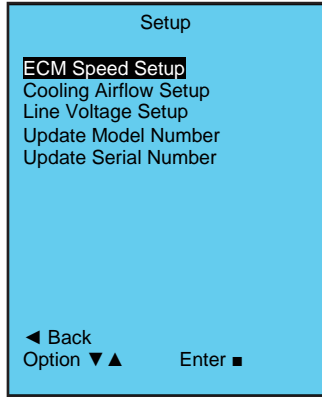


Setup

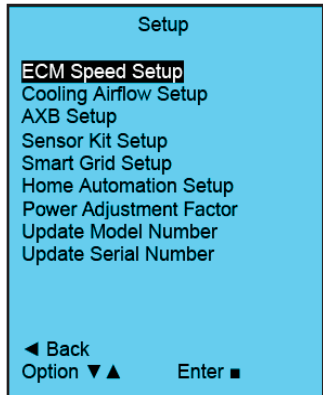
This menu will allow the technician to set the ECM blower speeds. Change the highlighted item using the ▲ and ▼ buttons and then press the ■ button to select the item. Press the ◀ button to return to the Main Menu.



ABCSTD Version 1.xx



ABCSTD Version 2.xx
without AXB

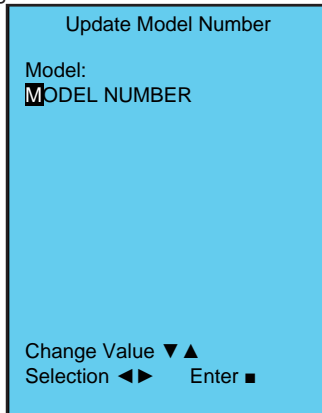
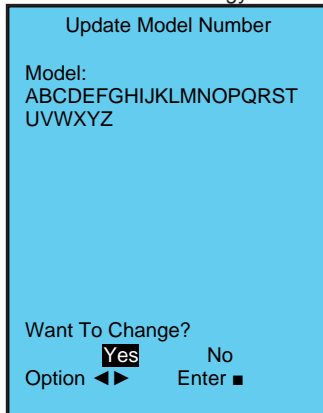


ABCSTD Version 2.xx
with AXB

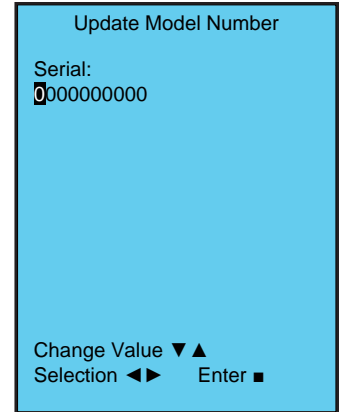
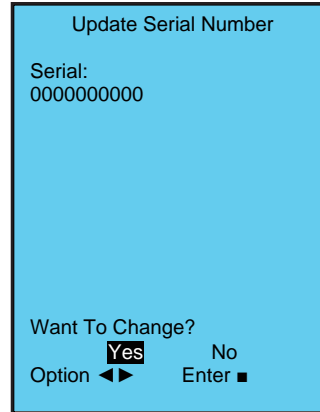
ECM Setup – View/Change the variable speed ECM blower speed settings

Cooling Airflow Setup – Allows the overall adjustment of cooling airflow relative to heating. (Variable Speed ECM only)

Line Voltage Setup – Allows the calibration of the line voltage reading for use in the energy monitoring calculation.

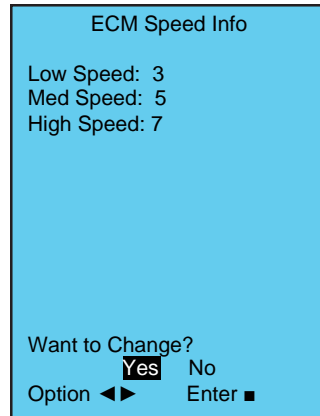


Update Model Number – For use in updating model number information primarily for replacement ABC boards.

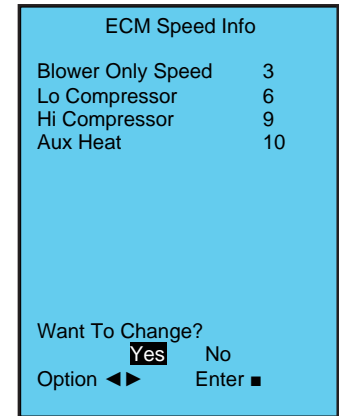


Update Serial Number - For use in updating serial number information primarily for replacement ABC boards.

ECM Speed Setup



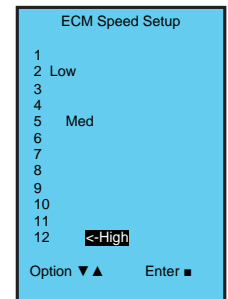
ABCSTD Version 1.xx



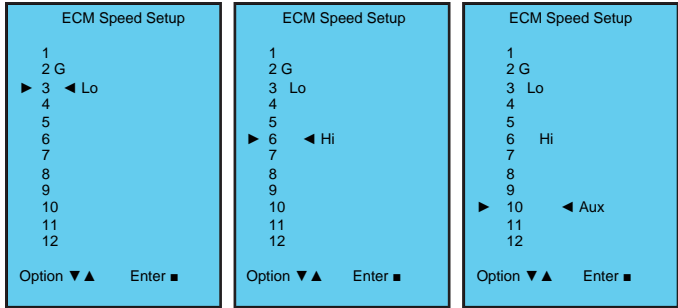
ABCSTD or ABCVSP Version
2.xx with AXB

This screen displays the current ECM settings. It allows the technician to enter the setup screens to change the ECM settings. Change the highlighted item using the ◀ and ▶ buttons and then press the ■ button to select the item.

Selecting YES will enter ECM speed setup, while selecting NO will return to the previous screen.



ABCSTD Version 1.xx



ABCSTD or ABCVSP Version 2.xx

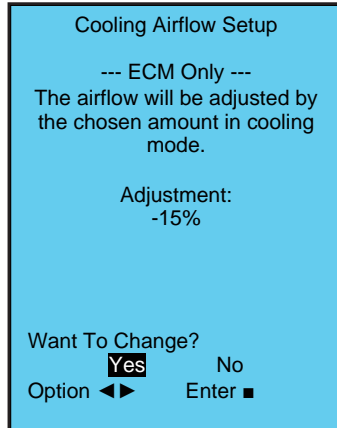
These screens allow the technician to select the “G”, low, high, and aux (version 2.00 and later) blower speed for the variable speed ECM blower motor. Change the highlighted item using the ▲ and ▼ buttons. Press the ■ button to select the speed.

After the Aux speed setting is selected the AID Tool will automatically transfer back to the ECM Setup screen.

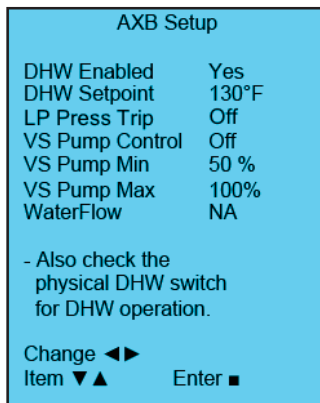
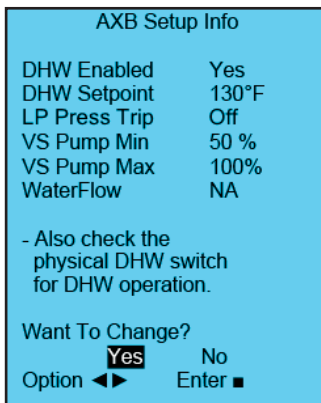
Cooling Airflow Setup

Allows the overall adjustment of cooling airflow relative to heating airflow. This can be equal to, 5% greater, 5% less, 10% less or 15% less than the heating airflow setup, when variable speed ECM is installed.

NOTE: When a Dehumidification input is received the blower will revert to a 15% lower airflow as compared to heating airflow. This is not 'additive' but will result in a MAXIMUM of 15% reduction in cooling airflow. Therefore if 15% is selected here the dehumidification input (also 15%) reduction will have no noticeable effect.



AXB Setup



DHW Enabled – Enable DHW pump. REMEMBER THE DHW SWITCH ON THE OUTSIDE OF THE CABINET STILL CAN DISABLE THE POWER!

DHW Setpoint – This is an installer configured setpoint for the DHW limit. Choices are 100 – 140 degF with 130 degF as the default.
 LP Press Trip – (Option disabled for ABC Standard v2.02 and below and ABC Variable Speed v2.04 and below.) This option sets the Loop Pressure Trip Point. This will cause a non-critical low loop pressure fault when the loop pressure falls below the Loop Pressure Trip Point.

VS Pump Control – (Option disabled for ABC Standard version 2.00.) This allows the VS pump to be ran at its Min/Max setting for flow rate adjustment. Turning on this option will temporarily disable compressor and blower operation.

VS Pump Min – This is the minimum waterflow for the unit. This should be setup by entering the 'Thermostat Input Mode' and override selecting the Y1 for minimum waterflow. Exit and then reenter the AXB Setup to measure the water flow and adjust the VS Pump Min.

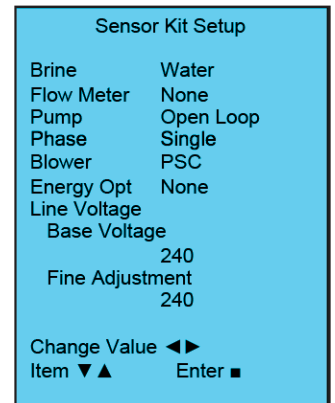
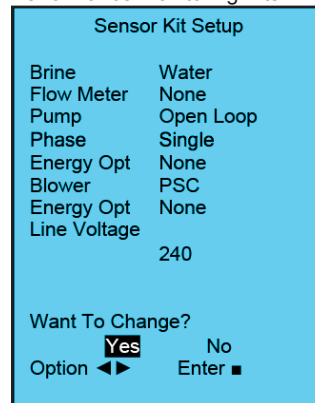
VS Pump Max – This is the Maximum waterflow for the unit. This should be setup by entering the 'Thermostat Input Mode' and override selecting the Y2 for maximum waterflow. Exit and then reenter the AXB Setup to measure the water flow and adjust the VS Pump Max.

WaterFlow – Will display here if the Performance Monitoring sensor kit is installed and a flow meter is available.

NOTE: When installer is unable to measure flow for setup, Dual capacities should be set at minimum = 75%, maximum = 100%. Variable speed compressor product should be set at minimum = 50%, maximum = 100%.

Sensor Kit Setup

This screen is to setup for the optional Refrigeration, Energy and Performance Monitoring Kits.



Brine – this selects between Water (factor = 500) and Brine (factor = 485) for use in the heat of extraction/rejection calculation. Select based upon loop fluid.

Flow meter - this activates the flow meter input on the AXB board.

Pump – This selects the pump watt estimate for the energy monitoring system with the choices: pump=well water, FC1=single pump flow center, FC2=dual pump flow center, VS=variable speed pump, VS + 26-99=variable speed pump and a 26-99 pump.

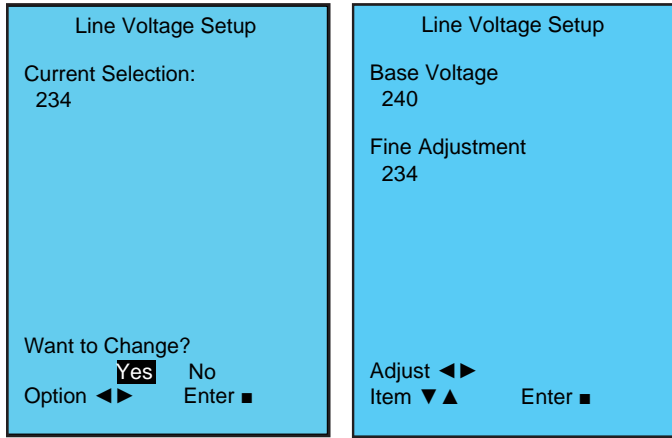
Phase – (Option disabled for ABC Standard v2.02 and below and ABC Variable Speed v2.04 and below.) This option allows the selection of single or three phase power for energy monitoring calculations.

Blower – This selects the current sensor setting for the Energy Monitoring Kit. PSC vs ECM/5-Speed ECM blower motor have differing sensor setups and erroneous Watt usage will result if setup incorrectly. 5-Speed ECM and ECM are the same selection.

Energy option – This selection expands the standard

compressor monitoring (two current sensors for compressor operation) and enables the 4 sensor Energy monitoring for Compressor Monitoring, Blower, and Aux heat current/watt measurement. Unless activated here the Energy Monitoring function will be disabled.

Line Voltage Setup – Allows the calibration of the line voltage



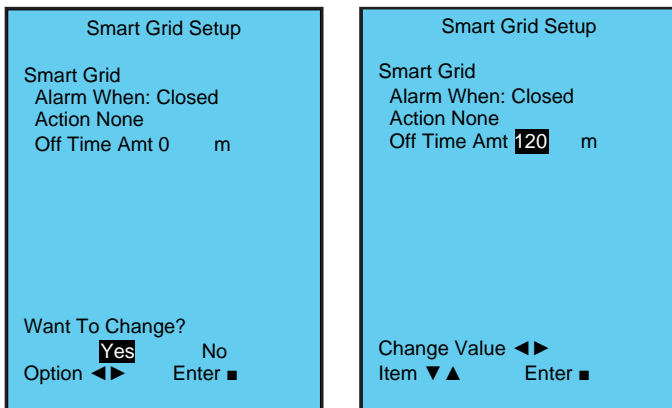
reading for use in the energy monitoring calculation. Installer should measure the line voltage at the unit with a multimeter during either heating or cooling operation and then select the closest base voltage and then fine adjust until it matches the multi-meter reading. This calibrates the ABC's internal voltage measurement with the selected transformer and VA draw of the system. After setup the Voltage should be accurate to within 2%.

NOTE: When high current draw solenoid valves are used such as those well water systems with slow closing valves with high VA draw. This procedure should be performed with these components active!

Smart Grid Setup

Smart Grid/On Peak allows a simple digital input to enable On Peak mode for the heat pump. The action this digital input initiates is selectable here. (When available)

- No Action
- Go to UnOccupied [Requires Com T-Stat]
- Disable Compressor operation
- Compressor limited to 50% or low Cap [Dual Cap or VS only]
- Disable Compressor operation 1/2 hr

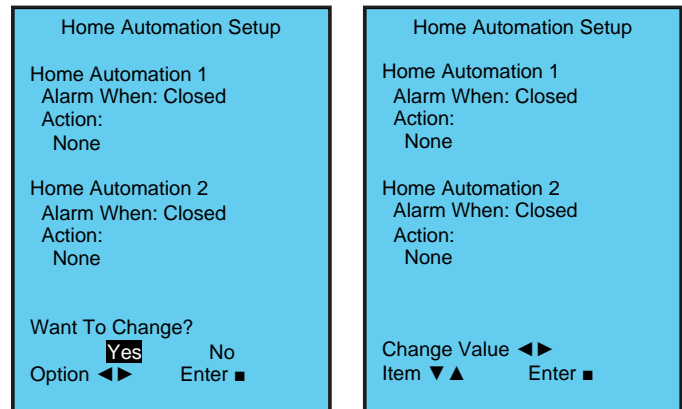


The "Alarm When" option will allow for Normally Open or Normally Closed devices to be used. When "Alarm When: Closed" is used and a normally open device closes the input will limit the operation and thus the power consumption of the unit by one of the above selections. Then Flash Code 7 on the Green LED for the 'On Peak' mode.

Home Automation Setup

Other external inputs can be brought into the Aurora control to benefit from the thermostat and internet connectivity for alarms. Including sump pumps or security systems. Two inputs are provided so that separate selections can be made with different resulting alarm codes (E23 and E24). The AID Tool will allow configuration of this input between:

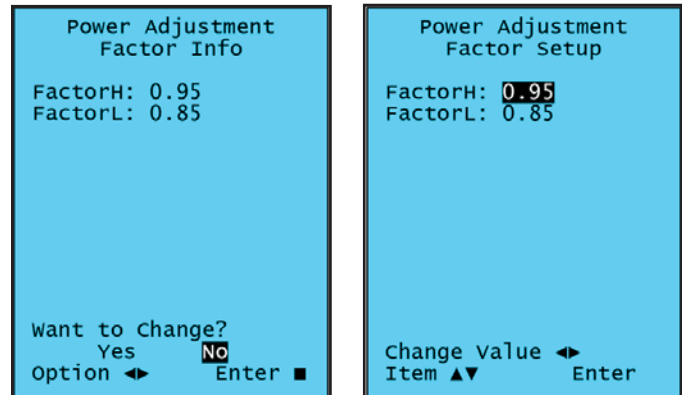
- No Action
- Home Automation Fault [no lockout info only]
- Security Alarm [no lockout info only]
- Sump Alarm Fault [no lockout info only]
- Smoke/CO Alarm Fault [no lockout info only]



The "Alarm When" option will allow for Normally Open or Normally Closed devices to be used. When "Alarm When: Closed" is used and a normally open device closes the input will cause an Alarm Code 23 or 24.

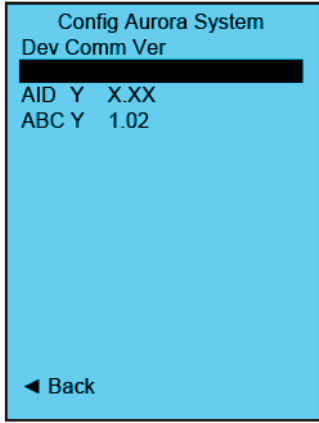
Power Adjustment Factor

The Power Adjustment Factor parameter can be set between 0.00 and 1.00 in increments of 0.01. This setting is used in conjunction with energy monitoring and measurement. Please consult the unit installation manual for a table of the proper settings. This is only available with AID Tool version 2.04 and later.

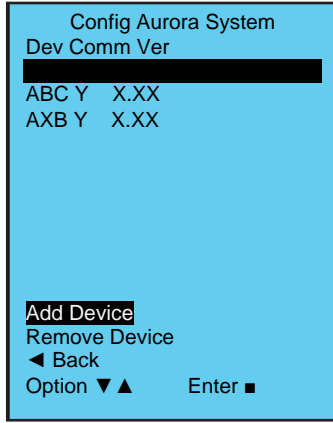


Configure Aurora System

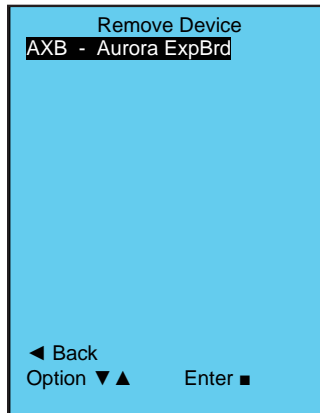
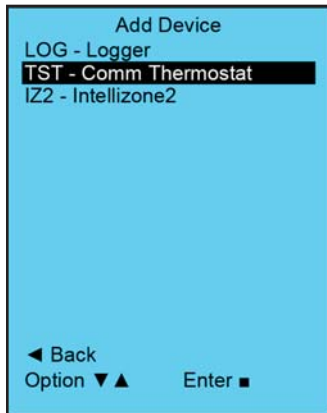
This screen will display the devices connected to the ABC along with the connected devices communication status, and software version. **NOTE:** All components will need to be configured here before the Aurora System can properly function. Press the ◀ button to return to the Main Menu.



ABCSTD Version 1.xx



ABCSTD Version 2.xx and
ABCVSP 2.xx



DEV – Device Identifier

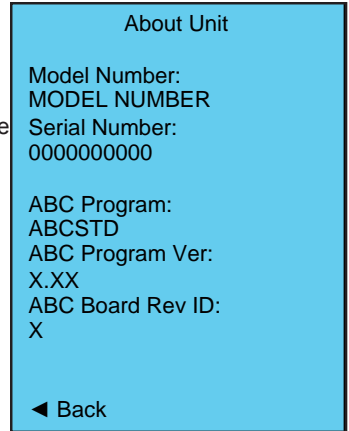
- AID – Aurora Interface and Diagnostics Tool
- ABC – Aurora Base Control
- AXB – Aurora Expansion Board
- AXBE – Vapor Injection Expansion Board
- AOC – VS Application Drive
- MOC – VS Power Drive
- TST – Communicating Thermostat
- IZ2 – IntelliZone2 Zoning System
- AWL – Aurora Weblink Device
- LOG – Service Data Logger
- EEV2 – VS Electronic Expansion Valve
- COMM – The device's communication status
 - Y – Active Communication
 - N – Device has been found, but communication has failed.
- VER – The device's software version.

NOTE: Not all devices will be used or available on every system.

About Unit

This screen will provide information about the unit including the unit model and serial number. It also provides the ABC's program/software name and version. Press the ◀ button to return to the Main Menu.

NOTE: Replacement boards will not have the Unit Model and Serial Number.



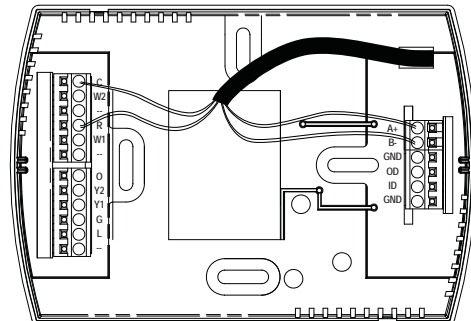
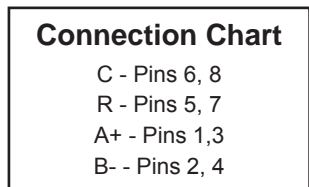
Rewiring Instructions

The AID Tool's communication cable can easily be replaced if damaged. Any Ethernet cable can be used to replace the cable by removing the connector on one end and rewiring the unit as specified below.

1. Disconnect from any boards or power sources.
2. Remove the foam protection around the AID Tool.
3. Open the AID Tool by pulling the front and back sections apart.
4. Rewire the unit.
5. Put the AID Tool front and back section back together.
6. Reinstall the foam protection around the AID Tool.

Tools and Materials Required:

- Small Philips Screw Driver
- Wire Cutters
- Wire Strippers
- Ethernet Cable



AID Settings

The AID Tool Settings allows the AID Screen Contrast to be adjusted. The characters displayed to be upper or mixed case (upper and lower case). And the units of measure can be specified as either Metric or US measurements.

AID Settings
VX.XX

Contrast
Mixed Case Text
Units

◀ Back
Option ▼▲ Enter ■

Contrast
18

◀ Back
Change ▼▲ Save ■

Mixed Case Text

Allow mixed case
Text?

Yes No

◀ Back
Option ◀▶ Save ■

Unit selection
select units to be
displayed.
Metric US

Option ◀▶ Save ■

Variable Speed Overview

This is the variable speed overview screen that is displayed at power up to give the user the ability to view a summary of the current condition of the variable speed system.

- Status – Reflects the Green Status LED of the ABC board normal, test etc.
- Mode – Reflects the mode of the heat pump as heat, cooling, or standby
- Faults – Active faults
- ECM – Displays the current configured ECM blower speed of G, Lo, Hi, EH(Aux), Clg% reduction.
- Comp Spd Des – Desired speed of the compressor 1-12
- Comp Spd Act – Actual speed of the compressor 1-12 (can differ from desired based upon oil recirc derating etc.)
- Blower Spd Act – The actual blower speed 1-12
- Room Setpoint – The actual room setpoint at the communicating thermostat
- Room Temp – Room Temp at the communicating thermostat

VS Overview

Status: Normal
Mode: Heating
Faults: None
G, Lo, Hi, EH, Clg%
ECM: 3, 3, 9, 12, 0%
Comp Spd Des 1
Comp Spd Act 1

Blower Spd Act 3
Room Setpoint 72 °F
Room Temp 71.7 °F

◀ Back

System Faults/Variable Speed Drive Details

This screen shows the actual hexadecimal fault and status words from the variable speed drive and EEV control boards. This information is provided only for use in extreme troubleshooting cases and would be requested by a technical service representative.

VS Drive Details

General	0000	0000
Derate	0000	0000
Safemode	0000	0000
Alarm	0000	0000
EEV2 Ctrl	0002	

No Faults

◀ Back

Diagnostics/Variable Speed Manual Operation

This screen allows the technician to place the variable speed unit into manual operation and select specific compressor speeds, turn on and off pumps, heating or cooling mode, electric heat off or on. This is important because in a communicating variable speed thermostat system there are no Y1, Y2 type signals to jumper and engage variable speed equipment.

Diagnostics

VS Manual Operation
DIP Switch Settings
Sensor Inputs
System Outputs
Timers
VS Service
VS Sensors And Ref
Energy Monitor
Performance Monitor
AXB Inputs
AXB Outputs

◀ Back
Option ▲▼ Enter ■

VS Manual Operation

Warning

Entering This Screen
Will Enable Manual
Operation Mode

Want To Enable Manual
Operation Mode?

Yes No
Option ◀▶ Enter ■

VS Manual Operation

Blower Speed	W/Comp
Comp Speed	0
Pump Speed	W/Comp
Mode	Htg
Aux/E Heat	Off

Change Settings
End Manual Operation
Exit This Screen

Option ▼▲ Enter ■

Variable Speed Service

This screen shows the variable speed drive conditions including drive supply voltage, line voltage, compressor power, drive temperature, and drive fan speed etc.

VS Service	
Drv Supply Volt	230V
Line Voltage	230V
UDC Voltage	300V
Comp Power	0W
Thermo Pwr	0 %
Inverter Temp	73.1°F
Drv Temp	73.1°F
Drv Fan Spd	0 %

◀ Back

Drv Supply Volt – Drive input voltage

Line Voltage – Line voltage to drive

UDC Voltage – Drive DC voltage

Comp Power – Compressor power (kW)

Thermo Pwr – Current power in % of nominal

Inverter Temp – Drive internal power module temperature

Drv Temp – VS drive temperature

Drv Fan Speed – Drive cooling fan speed % (100% = Full Speed)

Variable Speed Sensors and Refrigeration

This screen shows the Refrigerant conditions of the variable speed product including pressures, temperatures, super heat, subcooling and electronic expansion valve position etc.

VS Sensors And Ref		
Discharge	375	psi
	150.3	°F
Suction	112	psi
	55.0	°F
Htg LL *	124.5	°F
Clg LL	165.3	°F
Sat Evap	36.8	°F
Sat Cond	72.0	°F
EEV SH/Open%	10/50%	
SubCooling	21	°F
Comp Ambient	95.1	°F
VS Drv EWT	77.3	°F

◀ Back

Discharge – Discharge pressure (psi)

Discharge – Discharge temp (degF)

Suction – Suction pressure (psi)

Suction – Suction temp (degF)

Htg LL – Heating liquid line for heating subcooling calculation

Clg LL – Cooling liquid line for cooling subcooling calculation

Sat Evap – The saturated suction temperature based upon suction pressure

Sat Cond – The saturated discharge temperature based upon discharge pressure

EEV SH/%Open – The is the superheat in degF / followed by the % open of the valve 1-100%

Subcooling – Degrees of subcooling subtracting the LL from the sat discharge pressure

Comp Amb – The compressor ambient temperature surrounding the compressor.

VS Drv EWT – The entering water temperature is provided as a standard sensor on all variable speed systems.

System Faults

An extended list of faults is possible in variable speed systems. Consult the variable speed product manuals for a complete fault listing.



Revision Guide

Pages:	Description:	Date:	By:
All	Revision Guide Added	10 Oct 2012	DS
1-13	Updated Guide for AID Tool v2.04	13 Nov 2014	MA

Product: **AID Tool**
Document Type: Instruction Guide
Part Number: IG1563EW
Release Date: 11/14

