

AURORA

Aurora Universal Protocol Converter (UPC)

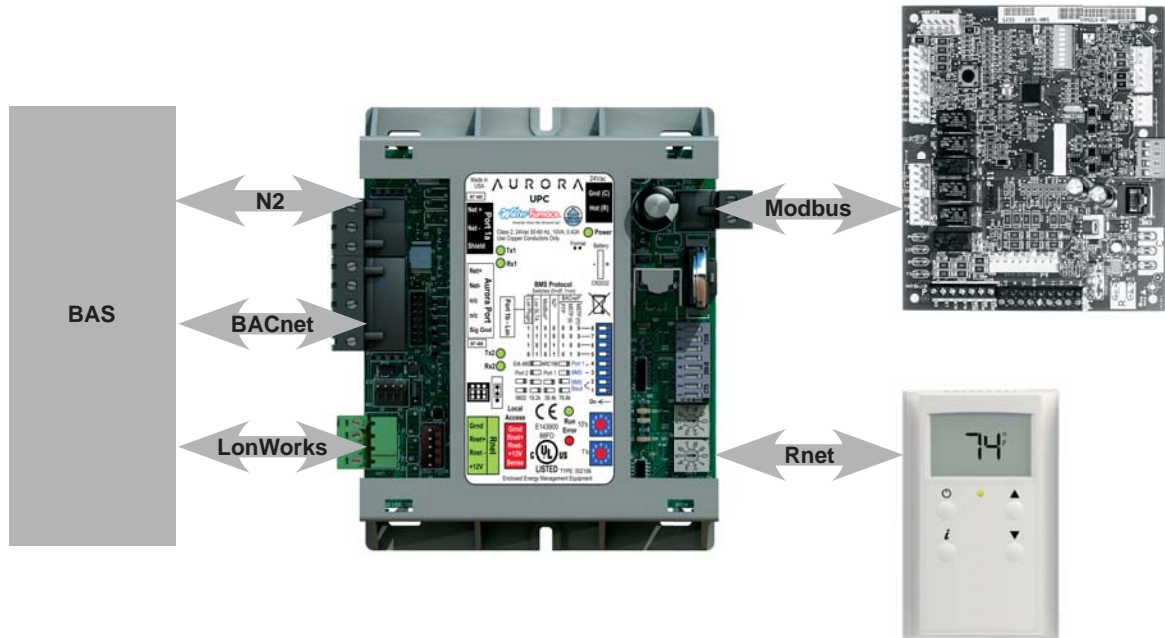
Submission Data
 English Language/IP Units
 SD1568EW 10/14

Contractor: _____ P.O.: _____

Engineer: _____

Project Name: _____ Unit Tag: _____

UPC Overview



Aurora UPC Features

- Rugged enclosure made of GE C2950 Cyclopol plastic
- Built-in surge transient protection circuitry
- Operating range of -20° to 140°F; 10 to 95% relative humidity, non-condensing
- Onboard CR123A battery has a life of 10 years with 720 hours of cumulative power outage
- Multi-Protocol field selectable communication port that supports:
 - EIA-485 BACnet MS/TP @ 9600, 19.2k, 38.4k, 76.8k baud
 - Metasys N2 Open
 - LonWorks TP/FT-10 (Requires optional LON plug-in communication card)
- Status of all unit operating conditions and fault lockouts
- Visual LED's for status of power, network communication, processor operation, and errors
- Provides gateway into Aurora heat pump controls for unsurpassed control flexibility
 - Network point for commanding unit into load shed
 - Network point for commanding unit into emergency shutdown
 - Network points to assist in fan speed selection
 - Network points for freeze protection settings
- Heating and cooling control from a remotely located zone sensor
- Rnet communication port which allows for multiple Rnet zone sensors (5) to be connected for space temperature averaging if desired.
- Local laptop or Aurora Touch Interface connection for field service
- FCC, UL and CE listed. BTL Certification is pending

Aurora UPC Optional Features

- LonWorks Communication Plug-in
- Aurora Touch Interface handheld display, needed for field configuration of fan speeds, set points, etc.
- Aurora Advanced Control adds the Aurora AXB expansion board and provides added I/O and standard features (Future Availability on Select Models/Configurations)
- Optional Sensor Kits (requires Aurora Advanced Control with AXB - Future Availability on Select Models/Configurations)
 - **Refrigeration Monitoring** – provides Suction and discharge pressure, Suction, liquid line temps and superheat and subcooling.
 - **Performance Monitoring** – provides entering and leaving loop water temperatures, loop flow rate as well as heat of extraction or rejection rate into the loop.
 - **Energy Monitoring** – provides real-time power measurement (Watt) of compressor, fan, auxiliary heat and zone pump.
- Graphics packages available in the future

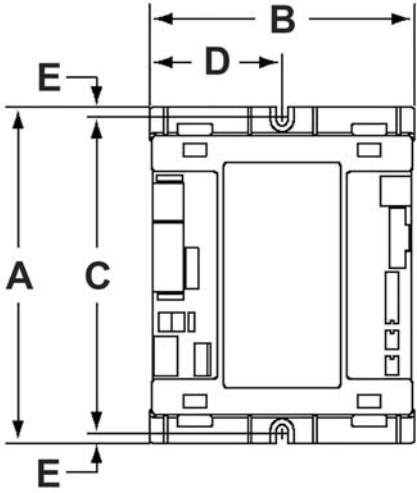
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UPC Physical Data

Overall	A	5-3/16"	13.2 cm
	B	4-1/8"	10.5 cm
Mounting Hole Dimensions	C	4-7/8"	12.4 cm
	D	2-1/20"	5.2 cm
	E	3/16"	0.5 cm
Depth		1-9/16"	4.0 cm
Weight		0.44 lbs	0.2 kg



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UPC Electrical Data

Power	24 Vac ± 10%, 50 to 60 Hz, 10 VA power consumption (16 VA with Aurora Touch Interface attached) 26 Vdc (25 V min, 30 V max) Single Class 2 source only, 100 VA or less
Physical	Rugged GE C2950 Cyclopol plastic.
Operating Range	-20° to 140°F (-29° to 60°C); 10 to 95% relative humidity, non-condensing
Communication Ports	Port 1a: Jumper-configurable for ARC156 or EIA-485 communication. In ARCNET mode, the port speaks BACnet (at 156k bps). In EIA-485 mode, the communication protocol and baud rate desired are DIP switch selectable between BACnet MS/TP, or N2 Port 2: Used for Aurora communications RNET: Local laptop and/or Aurora Touch Interface access port
Optional Card Port	LonWorks Option Card for connection to Free Topology LON networks (TP/FT-10 Channel)
Status Indication	Visual (LED) status of power, network communication, running, and errors
Battery	Battery CR123A has a life of 10 years with 720 hours of cumulative power outage
Protection	Built-in surge transient protection circuitry. Controller protected by internal solid state Polyswitches on incoming power and network connections. Polyswitches do not need to be replaced, as they will reset themselves once the condition that caused them to "trip" returns to normal.
BACnet support	Conforms to the Advanced Application Controller (B-AAC) Standard Device Profile as defined in ANSI/ASHRAE Standard 135-2004 (BACnet) Annex L
BACnet Certification	BTL Certification is pending
Listed by	FCC, UL, cUL, and CE listed. UL916 (Canadian Std C22.2 No. 205-M1983, CE, FCC Part 15 - Subpart B - Class A

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UPC Compliance

If Run LED shows...	And Error LED shows...	Status is...
2 flashes per second	Off	Normal
2 flashes per second	On	Exec halted after frequent system errors, due to: <ul style="list-style-type: none"> • Controller halted • Program memory corrupted • Address conflicts - duplicate MS/TP MAC addresses • One or more programs stopped
5 flashes per second	On	Exec start-up aborted, Boot is running
5 flashes per second	Off	Firmware transfer in progress, Boot is running
7 flashes per second	7 flashes per second, alternating with Run LED	Ten second recovery period after brownout
14 flashes per second	14 flashes per second, alternating with Run LED	Brownout
On	On	Failure. Try the following solutions: <ul style="list-style-type: none"> • Turn the UPC off, then on. • Download memory to the UPC. • Replace the UPC.

Serial Number

If you need the UPC's serial number when troubleshooting, the number is on:

- a sticker on the back of the main translator board
- a Module Status report (modstat) from WebCTRL , or thru the Aurora Touch Interface by accessing the "Module Setup" menu.

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications not expressly approved by the responsible party for compliance could void the user's authority to operate the equipment.

CE Compliance

The Aurora UPC conforms to the following standards. A full Declaration of Conformity is available on request.

Electromagnetic Emissions:	EN55022: 1994 Class A
Electromagnetic Compatibility:	
Immunity for Commercial Environments	EN61000-6-1: 2007
Electrostatic Discharge:	EN61000-4-2: 2008
Radiated Electromagnetic Field:	EN61000-4-3: 2010
Electronic Fast Transient/ Burst Requirements:	EN6100-4-4: 2004
Surge Immunity:	EN6100-4-5: 2005
Immunity to Conductive Disturbance:	EN6100-4-6: 2008
Power Frequency Magnetic Field Immunity:	EN6100-4-8: 2009
Immunity to Voltage Dips and Variations	EN6100-4-11: 2004
European Low Voltage Directive	
Restriction of the Use of Certain Hazardous Substances (RoHS)	

BACnet Compliance

BACnet® is a registered trademark of ASHRAE. ASHRAE does not endorse, approve or test products for compliance with ASHRAE standards. Compliance of listed products to requirements of ASHRAE Standard 135 is the responsibility of the BACnet manufacturers Association (BMA). BTL certification is pending. BTL® is a registered trademark of the BMA.

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UPC I/O Description

Aurora UPC - I/O						UPC with Aurora Advanced	UPC with Aurora Base	UPC with Aurora Advanced	Network Configurable	Hardware
Ref #	Description	Uses	Std Config (PCB Labeling)	PCB Location	UPC with Aurora Base	UPC with Aurora Advanced	Network Configurable	Hardware		
Analog In										
1	Leaving Air Temperature	Leaving Air Temperature	FP2	PCB	✓	✓	Standard Program	Factory Installed		
17	Leaving Water Temperature	Leaving Water Temperature	LWT	ABC	✓	✓	Standard Program	Optional Performance Monitoring Factory Installed Kit		
	Entering Water Temperature	Entering Water Temperature	EWI	AXB	✓	✓	Standard Program			
	Flow Meter In	Flow Meter In	Flow	AXB	✓	✓	Standard Program			
18	HQ Liquid Line Temperature	HQ Liquid Line Temperature	LLT	AXB	✓	✓	Standard Program	Optional Refrigeration Monitoring Factory Installed Kit		
	Discharge Pressure	Discharge Pressure	Disch	AXB	✓	✓	Standard Program			
	Suction Temperature	Suction Temperature	ST	AXB	✓	✓	Standard Program			
	Suction Pressure	Suction Pressure	SCP	AXB	✓	✓	Standard Program			
19	Compressor Current 1	Compressor Current 1	CC1	AXB	✓	✓	Standard Program	Optional Energy Monitoring Factory Installed Kit		
	Compressor Current 2	Compressor Current 2	CC2	AXB	✓	✓	Standard Program			
	Refrigerant Level	Refrigerant Level	RL	AXB	✓	✓	Standard Program			
	Aux Current	Aux Current	AC	AXB	✓	✓	Standard Program			
Digital In										
2	Compressor Proving	Compressor Proving	Y1	PCB	✓	✓	Standard Program	Factory Installed Option		
3	Valve End Switch	Valve End Switch	Y2	ABC	✓	✓	Standard Program	Field Installed Option		
4	Fan proving	Fan proving	G	ABC	✓	✓	Standard Program	Factory Option- required for E Heat		
5	Room Occupancy Sensor Input	Room Occupancy Sensor	RO	ABC	✓	✓	Standard Program	Field Installed Option		
6	Dry Filter Input	Dry Filter Switch	W	ABC	✓	✓	Standard Program	Field Installed Option		
Alarms										
7	Differential Alarms	All ABC/AXB Alarms		PCB	✓	✓	NA	Thru UPC		
8	English Alarm Description	In English		ABC	✓	✓	NA	Thru UPC		
Digital Out										
9	Alarm Contact Relay R1	Dry Alarm ZN/AC	Alarm	PCB	✓	✓	Network Configurable	Field Switchable and Installed (except Reheat Modals)		
10	Accessory Relay 1 - Dry Contact Relay R2 (Selectable operation)	Solenoid Valve w/ Delay Damper w/ Fan	ACC1	ABC	✓	✓	Solenoid Valve w/ Delay (Fcty) Close w/ Fan	Field or Factory Installed pumpsolen valve with delay		
11	Electric Heat 1	EH stage 1	EH1 - DC Out	ABC	✓	✓	Standard Program	WF EHeat Ready or Relay Kit for Other Eheat		
12	Electric Heat 2	EH stage 2	EH2 - DC Out	ABC	✓	✓	Network Configurable DO	Field Installed Relay Kit		
13	Accessory Relay 2 - Dry Contact Relay (Selectable operation)	Solenoid Valve Damper w/ Fan	K3 - ACC2	AXB	✓	✓	EHZ or DO using Relay Kit	Field Switchable and Installed		
Analog Out										
14	Modulating Reheat	Modulating Valve 0-10V	None	PCB	✓	✓	Network Configurable	Analog Out 0-10V		
Specialty I/O										
15	Variable Speed Pump/Wood Valve - PWM Out	VS Pump/Mod Valve	VS Pump	PCB	✓	✓	Standard Program	Field Installed Option		
16	Loop Pump Slaving	Slaving Other Aurora Units	Pump Slave	AXB	✓	✓	Standard Program	Field Installed Option		

The Aurora UPC can be applied in two control systems: Aurora Base (ABC board only) or the Aurora Advanced (ABC plus the AXB expansion board). The following table illustrates the possible I/O with the two control schemes and the following text describes the I/O operation and point name.

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UPC with Aurora Base Control (ABC Board Only)

1. **Leaving Air Temperature (LAT) Sensor** – This 10 kOhm NTC sensor is factory installed on all UPC equipped heat pumps. It typically is attached to wiring inside the blower cabinet on the suction side of the blower. This sensor is attached on ABC FP2 pins available as LAT AV-30.
2. **Compressor Proving Sensors** – This optional factory installed current sensor is connected to confirm compressor operation via the power wires. The sensor is attached at ABC Y1 and available at point BV-65.
3. **Valve End Switch** – This optional input is setup for a field installed flow valve end switch. This end switch input is attached at ABC Y2 and available at point BV-67.
4. **Fan Proving Sensors** – This optional factory installed current sensor is connected to confirm fan operation via the power wires. The sensor is attached at ABC G and available at point BV-33.
5. **Occupancy Sensor** - This optional field installed and wired room sensor and occupancy sensor are typically found in DDC systems. The occupancy Sensors are attached at ABC 0 and can be found at point BV-49.
6. **Dirty Filter Switch** – This optional field installed switch is connected to confirm dirty filter operation. The dirty filter switch can be found

through your commercial representative. The sensor is attached at ABC W and available at point BV-63.

7. **Fault, Configuration, and Status Codes** – The codes can be visible to the BAS if desired

Aurora Base Fault Codes (ABC Only) Fault LED (LED1, Red)

	Red Fault LED	LED Flash Code*	Lockout	Reset/Remove
ABC Basic Faults	Normal - No Faults	OFF	–	
	Fault - Input	1	No	Auto
	Fault - High Pressure	2	Yes	Hard or Soft
	Fault - Low Pressure	3	Yes	Hard or Soft
	Fault - Freeze Detection FP2	4	Yes	Hard or Soft
	Fault - Freeze Detection FP1	5	Yes	Hard or Soft
	Fault - Loss of Charge	6	Yes	Auto
	Fault - Condensate Overflow	7	Yes	Hard or Soft
	Fault - Over/Under Voltage	8	No	Auto
	Fault - FP1 & FP2 Sensor Error	11	Yes	Hard or Soft

NOTE: All codes >11 use long flash for tens digit and short flash for the ones digit. 20, 30, 40, 50, etc. are skipped.

Aurora Advanced Fault Codes (ABC + AXB Expansion Board) - Future Availability Fault LED (LED1, Red)

	Fault	Red Fault LED *	BAS Fault Code (Aurora UPC)	Lockout	Reset/Remove	Fault Condition Summary
ABC Basic Faults	Normal - No Faults	Off	0	-		
	Fault-Input	1	1	No	Auto	Tstat input error. Autoreset upon condition removal.
	Fault-High Pressure	2	2	Yes	Hard or Soft	HP switch has tripped (>600 psi)
	Fault-Low Pressure	3	3	Yes	Hard or Soft	Low Pressure Switch has tripped (<40 psi for 30 continuous sec.)
	Fault-Freeze Detection FP2	4	4	Yes	Hard or Soft	Freeze protection sensor has tripped (<15 or 30 degF for 30 continuous sec.)
	Fault-Freeze Detection FP1	5	5	Yes	Hard or Soft	Freeze protection sensor has tripped (<15 or 30 degF for 30 continuous sec.)
	Fault - Loss of Charge (Only Available with Aurora UPC)	6	6	Yes	Hard or Soft	Low Pressure Switch Open Prior to Compressor Start. **Compressor operation suspended until problem is resolved.
	Fault-Condensate Overflow	7	7	Yes	Hard or Soft	Condensate switch has shown continuity for 30 continuous sec.
	Fault-Over/Under Voltage	8	8	No	Auto	Instantaneous voltage is out of range. **Controls shut down until resolved.
	Fault-FP1 & 2 Snsr Error	11	11	Yes	Hard or Soft	If FP1 or 2 Sensor Error
ABC & AXB Advanced Faults	Fault-Compressor Monitor	10	10	Yes	Hard or Soft	Open Crkt, Run, Start or welded cont
	Non-CriticAXBSnsrErr	13	13	No	Auto	Any Other Sensor Error
	CriticAXBSnsrErr	14	14	Yes	Hard or Soft	Sensor Error for EEV or HW
	Alert-HotWtr	15	15	No	Auto	HW over limit or logic lockout. HW pump deactivated.
	Fault-VarSpdPump	16	16	No	Auto	Alert is read from PWM feedback.
	Not Used	17	17	No	Auto	IZ2 Com Fault. Autoreset upon condition removal.
	Non-CritComErr	18	18	No	Auto	Any non-critical com error
	Fault-CritComErr	19	19	No	Auto	Any critical com error. Auto reset upon condition removal
	Alarm - Low Loop Pressure	21	21	No	Auto	Loop pressure is below 3 psi for more than 3 minutes
	Alarm - Home Automation 1	23	23	No	Auto	Closed contact input is present on Dig 2 input - Text is configurable
Alarm - Home Automation 2	24	24	No	Auto	Closed contact input is present on Dig 3 input - Text is configurable	
UPC Fault	UPC Communication Loss	None	20	No	Auto	UPC has lost communication with the ABC board.
	UPC Zone Temperature Sensor Unreliable	None	30	No	Auto	UPC has lost communication with all Rnet Zone Temperature Sensors.

Notes:

*All codes >11 use long flash for tens digit and short flash for the ones digit. 20, 30, 40, 50 etc. will only be used with Aurora UPC and will not have an associated flash code for the red LED.

Alert' is a noncritical sensor or function that has failed. Normal operation of the heat pump is maintained but service is desired at some point.

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UPC with Aurora Base Control (ABC Board Only)

Aurora Base or Advanced Control Configuration and Status Codes

Status LED (LED3, Green)

Description of Operation	Fault LED, Green
Normal Mode	ON
Control is Non-functional	OFF
Test Mode	Slow Flash
Lockout Active	Fast Flash
Dehumidification Mode	Flash Code 2
Load Shed	Flash Code 5
Emergency Shutdown	Flash Code 6
On Peak Mode	Flash Code 7
(Future Use)	Flash Code 8
(Future Use)	Flash Code 9

Configuration LED (LED2, Yellow)

Description of Operation	Configuration LED, Yellow
No Software Overwritten	ECM Setting
DIP Switch Overwritten	Slow Flash
ECM Configuration Mode	Fast Flash
Reset Configuration Mode	OFF

8. Alarm Relay – The Alarm relay (ALM) is factory connected to 24 VAC via jumper JW2. By cutting JW2, ABC ALM becomes a dry contact connected to ABC ALG. The Relay is field switchable between Factory setting as an Alarm output or available for other uses.

Note on units with Hot Gas Reheat (DH, SW2-8 OFF)

When SW2-8 is set to the “OFF” position the Alarm/Reheat Output will be used to control a hot gas reheat valve. If the control receives a DH command and there is no requirement from the space for heating or cooling (Y1 or Y2 command) the control will operate in second stage cooling mode. 30 seconds after the compressor output (CC) energizes, the Alarm/Reheat output will be energized. The control will run reheat until the requirement has been satisfied or there is a command from the space for heating or cooling (Y1, Y2, or both). If the command from the space is for cooling (Y1, Y2, O) the control will simply de-energize the Alarm/Reheat output and cool the space without disabling the compressor. If there is still a command for dehumidification from the space once cooling is satisfied, the control re-energizes the Alarm/Reheat output without disabling the compressor output. If the command from the space is for heating the control will disable the compressor output and de-energize the Alarm/Reheat output. After the compressor short cycle delay is satisfied the control will re-start the unit in the heating mode. If there is still a command for dehumidification from the space once heating is satisfied the control will once again shut down the compressor for the compressor short cycle delay. Once the compressor short cycle delay has satisfied, the sequence for starting the reheat cycle will be repeated.

9. Accessory Relay1 – A configurable, accessory relay on the ABC is provided that can be cycled with the compressor, blower, or the com t-stat hum command. A third (factory) setting cycles the relay with the compressor but delays the compressor and blower output for 90 sec. Source pump or slow opening solenoid valves in well systems or variable speed primary pumping systems would be a prime use of this feature.

*Not available with UPC

10. Electric Heat EH1 – A digital 24VDC output is provided for electric heat powering. UPC’s Default programming has EH1 set for AUX/ELEC Heat operation and will be controlled using the UPC’s internal P.I.D. logic. However it can be changed by the BAS to be network controlled.

11. Electric Heat EH2 – A digital 24VDC output is provided for field options converted from the original EH2 output. Default UPC program has the EH2 output set for Network Control but can be changed by the BAS to be controlled by the UPC’s internal P.I.D logic for Aux/Electric Heat.

Access Relay Operation	SW2-4	SW2-5
Cycle with Blower	ON	ON
Cycle with Compressor	OFF	OFF
Water Valve Slow Opening	ON	OFF
Cycle with Comm. T-stat Hum Cmd*	OFF	ON

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UPC with Aurora Advanced Control (ABC + AXB Expansion Board)

Please note, these options will have future availability on select models/configurations.

- 1. Accessory Relay2** – A second, configurable, accessory relay on the AXB is provided that can be cycled with the compressor 1 or 2, blower, or the Dehumidifier (DH) input. This is to complement the Accessory 1 Relay on the ABC board.

Position	DIP 4	DIP 5	Description
1	ON	ON	Cycles with Fan or ECM (or G)
2	OFF	ON	Cycles with CC1 first stage of compressor or compressor spd 1-12
3	ON	OFF	Cycles with CC2 second stage of compressor or compressor spd 7-12
4	OFF	OFF	Cycles with DH input from ABC board

- 2. Analog Out** – A standard 0-10VDC analog output is provided. This output can be used to drive modulating dampers etc.
- 3. Variable Speed Pump or Modulating Water Valve** - This input and output are provided to drive and monitor a variable speed pump. The VS pump output is a PWM signal to drive the variable speed pump. The minimum and maximum level are set using the Aurora Touch UPC (ATU). 75% and 100% are the default settings respectively. The VS data input allows a separate PWM signal to return from the pump giving fault and performance information. Fault received from the variable speed pump will be displayed as E16. **Modulating Water Valve** - This Variable speed PWM output is provided to optionally drive a modulating water valve. Through advanced design a 0-10VDC valve can be driven directly from the VS pump output. The minimum and maximum level are set in the same way as the VS pump using the ATU. 75% and 100% are the default settings respectively.
- 4. Loop Pump Slaving** - This input and output are provided so that two units can be slaved together with a common flow center. When either unit has a call for loop pump, both unit's loop pump relays and variable speed pumps are energized. The flow center then can simply be wired to either unit. The output from one unit should be routed to the input of the other. If daisy chained up to 16 heat pumps can be wired and slaved together in this fashion.

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Monitoring Sensor Kits

Please note, these options will have future availability on select models/configurations.

- 1. Energy Monitoring (Standard Sensor Kit on 'Advanced' models)** - The Energy Monitoring Kit includes two current transducers (blower and electric heat) added to the existing two compressor sensors so that the complete power usage of the heat pump can be measured. The Aurora Touch Interface Tool provides configuration detail for the type of blower motor and a line voltage calibration procedure to improve the accuracy. This real time power usage information can be displayed on the ATU and is available thru network points when using BACnet or N2 Open.
- Compressor Current 1
 - Compressor Current 2
 - Fan Current
 - Aux Heat Current
 - Pump Selection
 - Voltage
 - Compressor Watts
 - Fan Watts
 - Aux Heat Watts
 - Pump Watts (VS Only)

- 2. Refrigerant Monitoring (optional sensor kit)** - The optional Refrigerant Monitoring Kit includes two pressure transducers, and three temperature sensors, heating liquid line, suction temperature and existing cooling liquid line (FP1). These sensors allow the measurement of discharge and suction pressures, suction and liquid line temperatures as well as superheat and subcooling. This information can be displayed on the ATU, or the network when using BACnet and N2.
- Htg Liquid Line
 - Clg Liquid Line
 - Discharge pressure
 - Suction Pressure
 - Discharge Saturated Temp
 - Suction Saturated Temperature
 - Superheat
 - SubCooling

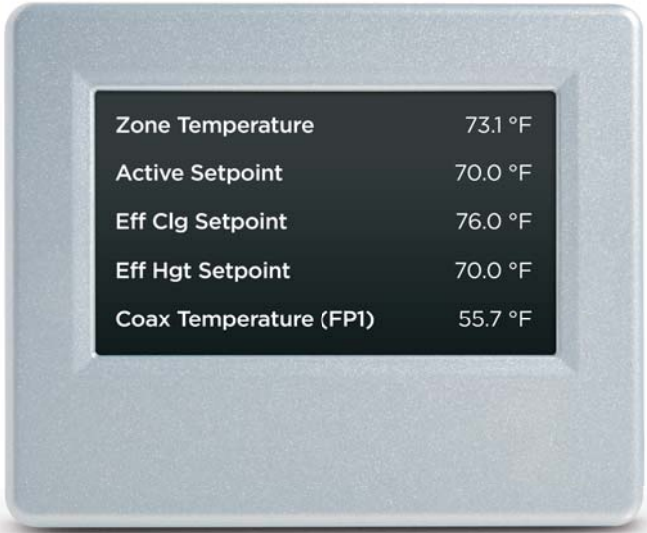
- 3. Performance Monitoring (optional sensor kit)** - The optional Performance Monitoring Kit includes: three temperature sensors, entering and leaving water, leaving air temperature and a water flow rate sensor. With this kit, heat of extraction and rejection will be calculated. This requires configuration using the ATU for selection of water or antifreeze.
- Leaving Air Temperature (supply)
 - Alt Leaving Air Temperature (Supply)
 - Entering Water Temperature
 - Leaving Water Temperature
 - Water Flow Meter
 - Entering Air Temperature (from zone sensor)
 - Brine Selection (water/antifreeze)
 - Heat of Extraction/Rejection

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Aurora Touch UPC (ATU)

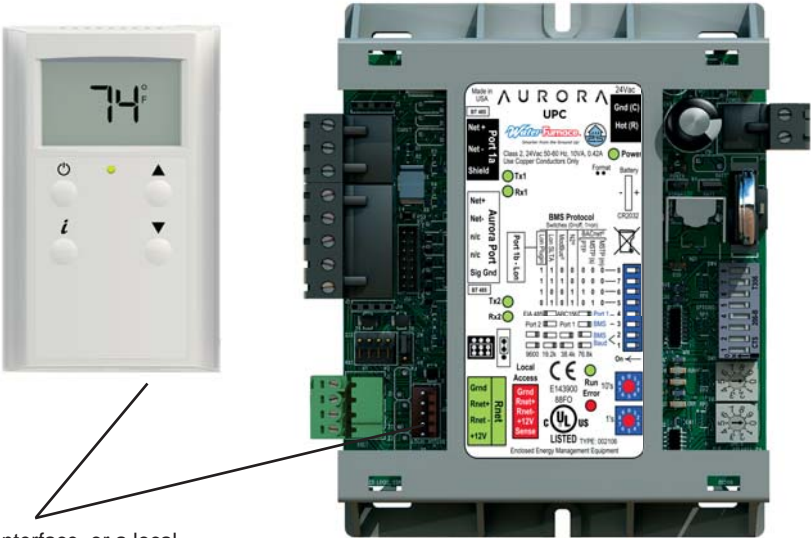
Aurora Touch UPC (ATU)

Utilizing a touch-screen interface, the UPC provides a technician the ability to configure and diagnose equipment at the unit or from any room sensor for added accessibility and simplified troubleshooting. The technician will have full access to equipment status, parameter values, temperature, and humidity sensing as well as access to alarm and trend history. With website-like navigation, the Aurora Touch Interface is easy to use and provides important insight into the system so your building can operate as efficiently as possible. Please note that the screens depicted in the following document show the screens in an "extended view".



Connecting the Aurora Touch Interface

There are two ports that will accept the Aurora Touch UPC (ATU) connection, one is located on the UPC and the other is on the bottom of the ZS zone sensors. Either connection will allow the operator to access and edit the same information within the UPC.

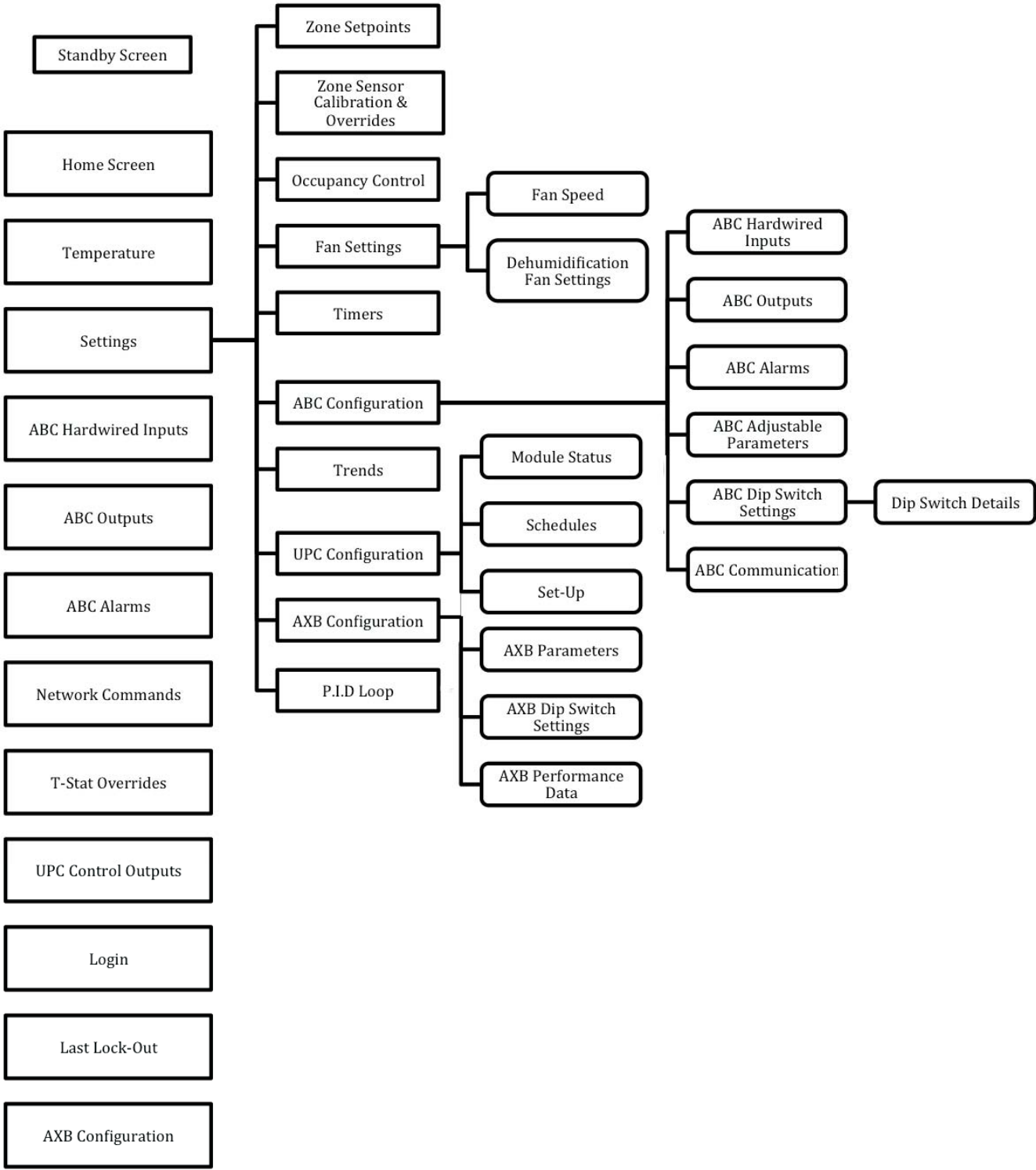


Aurora Touch Interface, or a local laptop can be connected to either the UPC Controller or the ZS zone sensor.

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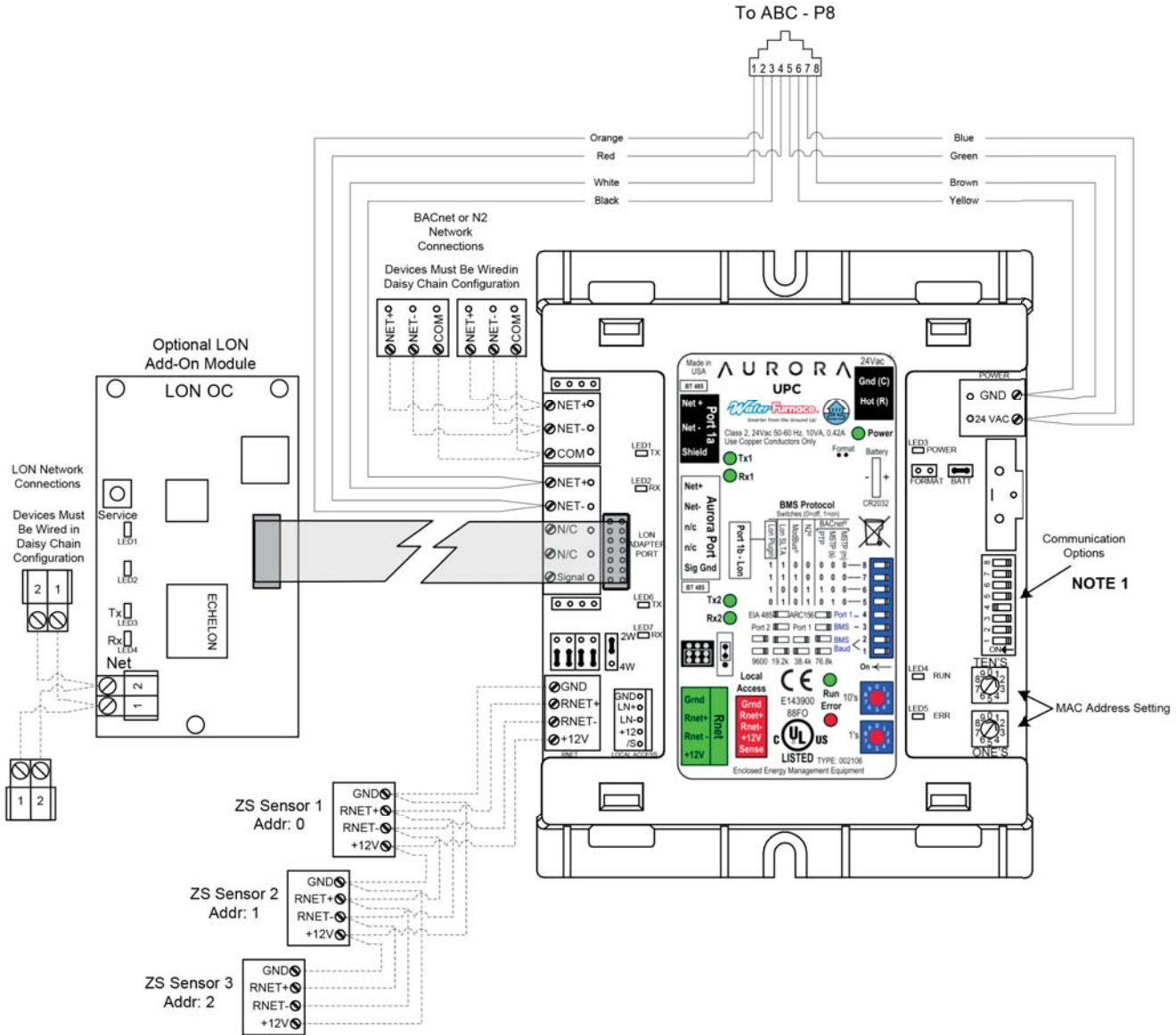
Aurora Touch UPC (ATU) Software



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Wiring Schematic



ZS Sensor Information

Zone Sensors can be wired in daisy chain as shown or in a star or hybrid configuration. Maximum of 5 sensors per UPC. Maximum allowable load 210mA. See the UPC install manual for possible sensor combinations.

DIP Switch Value	Each ZS sensor must have a unique address, but the addresses do not need to be sequential. Use the DIP switches on the back of the ZS sensor to set an address from 0 to 4. (0 is the factory default.) Each DIP switch has the value shown in the figure to the left. Turn on as many DIP switches as you need so that their total value equals the address.
1	
2	
4	
8	

Notes

1. Use DIP Switches 5 – 8 to change communication protocol and DIP switches 1 – 2 to change BACnet baud rate

Legend

Factory Low Voltage Wiring
 Field Low Voltage Wiring
 RJ45 Connector

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Revision Guide

Pages:	Description:	Date:	By:
All	First Published	30 Oct 2014	MA