

# AURORA

*Aurora Universal Protocol Converter (UPC)*

**BACnet Points List For Variable Speed WSHP**

**Software Version 1.03 Utilizing the Aurora UPC Controller**

Aurora UPC BACnet Points List For Variable Speed

# BACnet Points for Variable Speed WSHP

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text
<i>Analog Values</i>								
1	AV	ZoneTempStat	zone_temp_st	R		°F	Displays the zone temperature if sensor is present or if overridden by the BAS.	
2	AV	ZoneTmpAdj	zone_temp_adj	R/W	0	°F	Displays the zone temp adjust value, this is used to calibrate the zone sensor.	
3	AV	ActiveSetpt	active_setpt	R		°F	Displays the set point that is controlling the call for the compressor.	
4	AV	ZoneTempOvrld	zone_temp_ovrd	R/W	0	°F	Allows for the network to override the zone temp sensor reading if BV-55 is set to Active or BAS.	
5	AV	Setpoint	occ_clg_setpt	R/W	76	°F	Displays and sets the occupied cooling set point.	
6	AV	Setpoint	occ_htg_setpt	R/W	70	°F	Displays and sets the occupied heating set point.	
7	AV	Setpoint	unocc_clg_setpt	R/W	85	°F	Displays and sets the unoccupied cooling set point.	
8	AV	Setpoint	unocc_htg_setpt	R/W	60	°F	Displays and sets the unoccupied heating set point.	
9	AV	StandbyCoolSetpt	standby_cool_setpt	R/W	76	°F	Displays and sets the standby cooling set point.	
10	AV	StandbyHeatSetpt	standby_heat_setpt	R/W	68	°F	Displays and sets the standby heating set point.	
11	AV	Setpoint	eff_clg_setpt	R/W		°F	Displays the effective cooling set point.	
12	AV	Setpoint	eff_htg_setpt	R/W		°F	Displays the effective heating set point.	
13	AV	Setpoint	clg_adj_st	R/W		°F	Displays the cooling set point shift value.	
14	AV	Setpoint	htg_adj_st	R/W		°F	Displays the heating set point shift value.	
15	AV	RemSetptSpan	rem_setpt_span	R/W	5	°F	Allows for the network to set the warm/cool adjust control value.	
16	AV	HumidityStat	humidity_st	R		%rh	Displays the humidity sensor reading if sensor is present.	
17	AV	HumidityCmd	humidity_cmd	R/W	0	%rh	Allows for the network to override the humidity input if no sensor is connected.	
18	AV	OccDehumSetpt	occ_dehum_setpt	R/W	53	%	Allows for the network to adjust the occupied dehumidify set point.	
19	AV	UnnoccDehumSetpt	unocc_dehum_setpt	R/W	75	%rh	Allows for the network to adjust the unoccupied dehumidify set point.	
21	AV	CO2stat	co2_st	R		ppm	Displays the space CO <sub>2</sub> reading if sensor is present.	
22	AV	CO2cmd	co2_cmd	R/W	0	ppm	Allows for network override of the space co2 if no sensor is present.	
23	AV	VOCstat	voc_st	R		ppm	Displays the space voc (volatile organic compounds) if sensor is present.	
24	AV	VOCcmd	voc_cmd	R/W	0	ppm	Allows for network override of the space voc if no sensor is connected.	
25	AV	OATstat	oat_st	R		°F	Displays the outside side air temperature if bas is writing to oat_c.	
26	AV	OATcmd	oat_cmd	R/W	0	°F	Allows for network override of the outside side air temperature.	
27	AV	AXBSpareAnalog	axb_spare_analog	R		°F	Displays the value of the spare analog input on the AXB.	
28	AV	LWT	lwt_st	R		°F	Displays the leaving water temperature.	
29	AV	LiqLineTemp	liq_line_temp_st	R		°F	Displays the liquid line temperature.	
30	AV	LAT	lat_st	R		°F	Displays the leaving air temperature	

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text
31	AV	CoaxTemp	coax_temp_st	R		°F	Displays the coax temperature read by the FP1 sensor.	
32	AV	Fp1Setpt	fp1_setpt	R		°F	Displays the FP1 freeze detection limit temperature (coax temp).	
33	AV	ECMpctPWM	ecm_pwm_pct	R		%	Displays the current ECM blower operating percentage.	
34	AV	ActualBlowerSpd	actual_blower_speed_st	R		no units	Displays a value between 1-12 that is directly related to the ECM blower speeds.	
35	AV	ECMOverride	ecm_override	R		no units	Displays the current ECM blower speed if being overridden by maual control.	
36	AV	BlowerOnlyECMSpd	blower_only_ecm_spd	R/W	2	no units	Allows for the network to adjust the fan only ECM speed value, select a value between 1-12.	
37	AV	LoCompECMSpd	lo_comp_ecm_spd	R/W	3	no units	Allows for the network to adjust the low compressor fan speed value, select a value between 1-12.	
38	AV	HiCompECMSpd	hi_comp_ecm_spd	R/W	10	no units	Allows for the network to adjust the high compressor fan speed value, select a value between 1-12.	
39	AV	AuxHtECMSpd	aux_ht_ecm_spd	R/W	11	no units	Allows for the network to adjust the Aux. Heat speed fan value, select a value between 1-12.	
40	AV	ClgCFMOffsetAV	clg_cfm_offset_av	R/W	4	no units	Allows for the network to adjust the blower CFM to improve passive dehumidification.	[1 = HGT CFM = CLG CFM] [2 = - 5% CIG CFM] [3 = -10% CLG CFM] [4 = -15% CLG CFM] [5 = +5% CLG CFM]
41	AV	TempOccTime	temp_occ_time	R		m/sec	Displays the amount of time left in temporary occupancy only while in Temp Occ.	
42	AV	OccManCmdAV	occ_man_cmd_av	R/W	1	no units	Allows for the network to command the occupancy of the unit if BV-50 is set to Active or "AV".	[1 = Occupied] [2 = Unoccupied] [3 = Temp Occ] [4 = Standby]
43	AV	EffOccStat	eff_occ_st	R		no units	Displays the current occupancy state of the unit.	[1 = Occupied] [2 = Unoccupied] [3 = Temp Occ] [4 = Standby] [5 = Occ Sensor]
44	AV	LockoutEnum	lockout_enum	R		no units	Displays the current lock-out alarm value, refer to the alarms table for a description.	
45	AV	LockoutStatReg	lo_stat_reg	R		no units	Do not map to BAS - Internal Use Only	
46	AV	ControlVoltage	control_voltage_st	R		V	Displays the ABC's low voltage control value.	
47	AV	EstLineVoltage	est_line_voltage_st	R		V	Displays the estimated line voltage to the unit, this can be calibrated using point AV-62.	

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text
48	AV	ModeStat	mode_st	R		no units	Displays a value associated with the current operating mode of the unit.	[1 = Standby] [2 = Fan Only] [3 = Cool Speed 1-6] [4 = Cool Speed 7-12] [5 = Not Used] [6 = Heat Speed 1-6] [7 = Heat Speed 7-12] [8 = Emergency Heat] [9 = Auxiliary Heat] [10 = Emergency Shutdown] [11 = Load Shed] [12 = Unit In Lock out] [13 = Test Mode]
49	AV	WaterFlow	water_flow_st	R		gpm	Displays the calculated GPM thru the heat exchanger.	
50	AV	TotalPower	total_power_st	R		W	Displays the total power consumption.	
51	AV	TotalCapacity	total_capacity	R		Btu/hr	Displays the total BTU operating capacity.	
52	AV	SuperHeat	super_heat	R		°F	Displays the calculated super-heat value.	
53	AV	SuctTemp	suct_temp_st	R		°F	Displays the suction temperature.	
54	AV	SuctPress	suct_press_st	R		psi	Displays the suction pressure.	
55	AV	HE/HR	he_hr	R		Btu/hr	Displays the calculated heat of extraction/rejection.	
56	AV	FanPower	fan_power_st	R		W	Displays the calculated fan power consumption.	
57	AV	FanCurrent	fan_current_st	R		A	Displays the measured fan current.	
58	AV	EWT	ewt_st	R		°F	Displays the entering water temperature.	
59	AV	DischgPress	dischg_press_st	R		psi	Displays the discharge pressure of the compressor.	
60	AV	CompPower	comp_power_st	R		W	Displays the compressor power consumption.	
61	AV	Acc1Delay	acc1_delay	R/W	90	seconds	Allows for the network to adjust the time delay of the ACC-1 output.	
62	AV	MeasuredLineVoltage	measured_line_voltage	R/W	230	V	Allows for the network to calibrate the measured line voltage.	
64	AV	SWpartNo	sw_part_no	R		no units	Do not map to BAS - Internal Use Only	
65	AV	ABCfwBETA	abc_fw_beta	R		no units	Do not map to BAS - Internal Use Only	
66	AV	ABCfwRev	abc_fw_rev	R		no units	Do not map to BAS - Internal Use Only	
77	AV	R1Stat	r1_st	R		no units	Do not map to BAS - Internal Use Only	
86	AV	R29Stat	r29_st	R		no units	Do not map to BAS - Internal Use Only	
91	AV	R344Stat	r344_st	R		no units	Do not map to BAS - Internal Use Only	
98	AV	TestMdPwd	test_md_pwd	R/W	0	no units	Do not map to BAS - Internal Use Only	

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text
101	AV	point name	m409_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
103	AV	point name	m417_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
104	AV	point name	m421_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
105	AV	point name	m425_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
106	AV	point name	m429_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
107	AV	point name	m433_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
108	AV	point name	m441_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
109	AV	point name	m445_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
110	AV	point name	m449_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
111	AV	point name	m453_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
112	AV	point name	m488_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
113	AV	point name	m494_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
114	AV	point name	m495_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
115	AV	point name	m496_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
116	AV	point name	m497_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
117	AV	point name	m498_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
118	AV	point name	m500_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
119	AV	point name	m501_cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
122	AV	EER	eer_st	R		no units	Displays the calculated EER value.	
123	AV	AuxCurrent	aux_current_st	R		A	Displays the measured auxiliary heat current.	
124	AV	AuxPower	aux_power_st	R		W	Displays the calculated auxiliary heat power consumption	
125	AV	AirCoilTemp	air_coil_temp_st	R		°F	Displays the air coil temperature (FP2).	
126	AV	ClgSubcooling	clg_subcooling	R		°F	Displays the calculated subcooling while operatingin cooling.	
127	AV	CompStartCurrent	comp_start_current_st	R		A	Do not map to BAS - Internal Use Only	
128	AV	CompCurrent	comp_current_st	R		A	Displays the measured compressor current.	
130	AV	HotWater	hot_wtr_temp_st	R		°F	Displays the hot water tempertaure for units with DHW.	
131	AV	AXBAO1Cmd	axb_ao1_cmd	R/W	0	%	Do not map to BAS - Internal Use Only	
132	AV	HtgSubcooling	hgt_subcooling	R		°F	Displays the calculated subcooling while operatingin heating.	
133	AV	LoopPressure	loop_press_st	R		psi	Displays the measure loop pressure if optional sensor is installed.	
134	AV	SatEvapTemp	sat_evap_temp	R		°F	Displays the calculated saturated evaporator temperature.	
135	AV	TotalCurrent	total_current_st	R		A	Displays the measured total current value.	
136	AV	FilterHours	filter_hours	R		hr	Used to display the number of hours the fan has been operating since the last time the filter alarm was reset.	

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text
137	AV	VSPumpOutput	vs_pump_pct_st	R		%	Do not map to BAS - Internal Use Only	
142	AV	FilterAlarmHrs	filter_alarm_hrs	R/W	1000	hr	Used to set the number of hour that the fan is allowed to run before an alarm is produced to signal that the filter needs changed.	
143	AV	CoOfPerf	co_of_perf	R		no units	Displays the calculated COP value.	
144	AV	MinSP	min_sp_diff	R/W	2	°F	Allows for the network to adjust the minimum difference between heating and cooling set points.	
145	AV	OpMode	op_mode	R/W	1	no units	Allows for the network to set the desired operating mode for unit.	[0 = Off] [1 = Auto] [2 = Heat] [3 = Cool] [4 = Emergency Heat]
146	AV	DischgTemp	dischg_temp_st	R		°F	Displays the compressor discharge temperature.	
147	AV	ActualCompSpd	actual_comp_speed_st	R		no units	Displays the current compressor operating speed (0 - 12).	
148	AV	EntWatTempVS	ewt_vsp_st	R		°F	Displays the entering water temperature measured by the compressor drive.	
149	AV	AmbTemp	amb_temp_st	R		°F	Displays the ambient temperature measured by compressor drive.	
150	AV	ModValvePWM	mod_valve_pwm	R		%	Do not map to BAS - Internal Use Only	
151	AV	OccHumSetpt	occ_hum_setpt	R/W	30	%	Allows for the network to adjust the occupied humidification set point.	
152	AV	UnnocHumSetpt	unocc_hum_setpt	R/W	20	%	Allows for the network to adjust the unoccupied humidification set point.	
153	AV	SuperBoostCmd	superboost_cmd	R		no units	Do not map to BAS - Internal Use Only	
154	AV	SuperBoostStat	superboost_st	R		no units	Do not map to BAS - Internal Use Only	
155	AV	ActiveDemandStat	active_demand_st	R		no units	Do not map to BAS - Internal Use Only	
156	AV	VSPumpMinSpd	vs_pump_min_spd	R/W	50	%	Allows for network to set the minimum variable speed pump operating speed.	
157	AV	VSPumpMaxSpd	vs_pump_max_spd	R/W	100	no units	Allows for network to set the maximum variable speed pump operating speed.	
158	AV	PumpOption	pump_opt	R/W	0	no units	Do not map to BAS - Internal Use Only	
159	AV	FlowMeter	flow_meter	R/W	0	no units	Do not map to BAS - Internal Use Only	
160	AV	BlowerOption	blower_opt	R/W	1	no units	Do not map to BAS - Internal Use Only	
161	AV	DHWSetpt	dhw_setpt	R/W	130	no units	Allows for network to set the hot water setpoint.	
162	AV	EnergyMon	energy_mon	R/W	0	no units	Do not map to BAS - Internal Use Only	
163	AV	EEV1Stat	eev1_st	R		no units	Do not map to BAS - Internal Use Only	
164	AV	EEV2Stat	eev2_st	R		no units	Displays the current EEV position.	
165	AV	ManCompSpd	man_comp_spd	R/W	0	no units	Do not map to BAS - Internal Use Only	
166	AV	ManBlowSpd	man_blow_spd	R/W	13	no units	Do not map to BAS - Internal Use Only	
167	AV	ManVSPumpSpd	man_vs_pump_spd	R/W	0	no units	Do not map to BAS - Internal Use Only	
172	AV	r323cmd	r323cmd	R/W	0	no units	Do not map to BAS - Internal Use Only	
180	AV	r807stat	r807stat	R		no units	Do not map to BAS - Internal Use Only	
181	AV	r819stat	r819stat	R		no units	Do not map to BAS - Internal Use Only	
182	AV	r816stat	r816stat	R		no units	Do not map to BAS - Internal Use Only	

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183	AV	r825stat	r825stat	R		no units	Do not map to BAS - Internal Use Only	
184	AV	r3322stat	r3322stat	R		no units	Do not map to BAS - Internal Use Only	
185	AV	r3323stat	r3323stat	R		no units	Do not map to BAS - Internal Use Only	
186	AV	r3330stat	r3330stat	R		no units	Do not map to BAS - Internal Use Only	
187	AV	r1110stat	r1110stat	R		no units	Do not map to BAS - Internal Use Only	
188	AV	r3904stat	r3904stat	R		no units	Do not map to BAS - Internal Use Only	
189	AV	r3325stat	r3325stat	R		no units	Do not map to BAS - Internal Use Only	
190	AV	r3903stat	r3903stat	R		no units	Do not map to BAS - Internal Use Only	
191	AV	r3906stat	r3906stat	R		no units	Do not map to BAS - Internal Use Only	
192	AV	r3808stat	r3808stat	R		no units	Do not map to BAS - Internal Use Only	
193	AV	CondTemp	cond_temp_st	R		°F	Displays the calculated saturated condenser temperature.	
194	AV	VSPumpPower	vspump_power_st	R		no units	Displays the calculated pump power consumption.	
195	AV	TargBlowerSpd	targ_blower_spd_st	R		no units	Displays the current target blower speed (0 - 12).	
196	AV	TargCompSpd	targ_comp_spd_st	R		no units	Displays the current target compressor speed (0 - 12).	
197	AV	SupplyVolts	supply_volts	R		V	Displays the supply voltage measured by the compressor drive.	
198	AV	LineVolts	line_volts	R		V	Displays the line voltage measured by the compressor drive.	
199	AV	VDCVolts	vdc_volts	R		V	Displays the inverter DC voltage measured by the compressor drive.	
200	AV	InvertTemp	invert_temp_st	R		°F	Displays the measured inverter temperature.	
201	AV	DriveTemp	drive_temp_st	R		°F	Displays the measured compressor drive temperature.	
202	AV	DriveFanPct	drive_fan_pct	R		%	Displays the current compressor drive fan operating percent.	
203	AV	ThermoPowerPct	thermo_power_pct	R		%	Displays the current compressor drive thermo power percent.	
204	AV	VSPumpSpd	vs_pump_spd_st	R		no units	Displays the current variable speed pump speed.	
205	AV	BlwrOffDelaySet	blwr_off_delay_set	R/W	30	seconds	Allows for network to set the blower off delay time.	
206	AV	Fp2Setpt	fp2_setpt	R		°F	Displays the FP2 freeze detection limit temperature (air coil temp).	
207	AV	CompConfigAV	comp_config_av	R/W	0	no units	Allows setting of heat pump size value (For Aurora control configuration only).	
208	AV	CompConfig	comp_config_st	R		no units	Displays current setting value for heat pump size.	
209	AV	EEVstartPos	eev_start_c	R/W	50	%	Allows setting of initial EEV position (For Aurora control configuration only).	
210	AV	FactOperation	fact_operation	R/W	0	no units	Do not map to BAS - Internal Use Only	
211	AV	MinDCVPos	min_dcv_pos_c	R/W	20	%	Allows setting of minimum damper position for demand controlled ventilation.	
212	AV	MaxDCVPos	max_dcv_pos_c	R/W	60	%	Allows setting of maximum damper position for demand controlled ventilation.	
213	AV	LowDCVval	low_dcv_val_c	R/W	600	ppm	Allows setting of control variable value associated with minimum damper position for demand controlled ventilation.	

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214	AV	HighDCVval	high_dcv_val_c	R/W	1200	ppm	Allows setting of control variable value associated with maximum damper position for demand controlled ventilation.		
215	AV	ActualDampPos	actual_damp_pos	R		%	Displays current position for outside air damper for demand controlled ventilation.		
216	AV	ManDampPos	man_damp_pos_c	R/W	0	%	Do not map to BAS - Internal Use Only		
217	AV	CO2HighLimit	co2_voc_high_lim_c	R/W	1500	ppm	Allows setting of control variable value associated with high limit alarm condition.		
900	AV	SensorAlarms	sensor_alarms	R		no units	Do not map to BAS - Internal Use Only		
999	AV	OccManValue	occ_man_value	R		no units	Do not map to BAS - Internal Use Only		
1003	AV	LockoutsEnumNet	lockout_enum_net	R		no units	Do not map to BAS - Internal Use Only		
1004	AV	LATnet	lat_net	R		°F	Do not map to BAS - Internal Use Only		
<b>Binary Values</b>								<b>Inactive = 0</b>	<b>Active = 1</b>
1	BV	ModbusCommAlarm	modbus_comm_alarm	R			Displays the status of the Modbus communication between the ABC and the UPC.	Communication Normal	Communication Lost
2	BV	Acc1Status	acc1_st	R			Displays the status of the ACC-1 output, this output is configured using the ABC dipswitches.	Off	On
3	BV	AlarmHdwStat	alm_rht_hdw_st	R			Displays the status of the ABC's alarm output.	Off	On
4	BV	AlarmResetStat	alarm_reset_st	R			Displays the commanded status of the alarm reset command.	Off	On
5	BV	AlarmResetCmd	alarm_reset_cmd	R/W	Inactive (0)		Allows for the network to command the alarm reset, to clear the alarm command to "ON" then Back to "OFF".	Off	On
6	BV	AuxHeatEnable	aux_heat_enable	R/W	Inactive (0)		Allows for the network to select how the electric heat output 1 is controlled, if set to Aux heat the ABC control will enable and disable the output.	Network EH	Aux Heat
8	BV	SW6Stat	sw_2_6_st	R			Not Used	Do not map	Do not map
9	BV	ClearFaults	clear_faults	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
10	BV	CondensateStat	condensate_st	R			Do not map to BAS - Internal Use Only	Do not map	Do not map
11	BV	SW1Com	sw2_1_cmd	R/W	Active (1)		Used to select the position of SW-2 dip switch 1 which selects the FP1 freeze detection set point.	15°	30°



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Object ID	Object Type	Display Name	Reference Name	Read/Write	Default Value	Units	Description					State Text			
12	BV	SW2Com	sw2_2_cmd	R/W	Active (1)		Used to select the position of SW-2 dip switch 2 which selects the FP2 freeze detection set point.					Not Used		30°	
13	BV	SW3Com	sw2_3_cmd	R/W	Active (1)		Used to select the position of dip switch 3 which sets the default position of the reversing valve.					Cooling		Heating	
14	BV	SW4Com	sw2_4_cmd	R/W	Active (1)		Dip Switch Position	On	Acc1 tracks fan operation	Off	Acc1 tracks compressor operation	Off	Acc1 slow opening water valve	Off	Acc1 operates as humidifier output
15	BV	SW5Com	sw2_5_cmd	R/W	Inactive (0)	On		Off		On					
16	BV	SW6Com	sw2_6_cmd	R/W			Not Used					Do not map		Do not map	
17	BV	SW7Com	sw2_7_cmd	R/W	Active (1)		Used to select the position of dip switch 7 which selects a pulsed or continuous output signal.					Pulsed		Continuous	
18	BV	SW8Com	sw2-8_cmd	R/W			Not Used					Do not map		Do not map	
20	BV	DHenable	dh_enable	R/W	Inactive (0)		Allows for the network to enable/disable dehumidification.					DH Disabled		DH Enabled	
21	BV	DHhardware	dehum_hdw	R			Displays the status of the DH hardware input.					Off		On	
22	BV	DipSwOvrDena	dip_sw_ovrd_ena_cmd	R/W	Inactive (0)		Used to enable the BAS write privileges for dip switch overrides.					Off		On	
23	BV	EH1Status	eh_1_st	R			Displays the status of the electric heat 1 output.					Off		On	
24	BV	EH2Status	eh_2_st	R			Displays the status of the electric heat 2 output.					Off		On	
25	BV	EmgcyShutdnCmd	e_stop_cmd	R/W	Inactive (0)		Allows for the network to issue a emergency shutdown command to the unit.					Normal Operation		Shutdown	
26	BV	EShardware	es_hdw	R			Displays the status of the emergency shutdown hardware input.					Normal		Shutdown	
27	BV	FactoryTestEnable	factory_test_enable	R/W	Inactive (0)		Do not map to BAS - Internal Use Only					Do not map		Do not map	
28	BV	FanOperation	fan_operation	R/W	Active (1)		Allows for the network to select either cycled or continuous operation of the fan.					Cycled		Continuous	
29	BV	FanStatus	fan_st	R			Displays the current status of the fan output.					Off		On	
30	BV	FP1LimStat	fp1_lim_st	R			Displays the current FP1 freeze detection set point.					15°		30°	

# BACnet Points for Variable Speed WSHP cont.

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text	
31	BV	EH1Ovrd	eh1_ovrd_cmd	R/W	Inactive (0)		Allows for network control of electric heat 1 output relay if BV-6 is set to "network".	Off	On
33	BV	Ghardware	g_hdw_fan_prove	R			Displays the status of the "G" hardware input, this is used as a fan proving input.	Off	On
34	BV	HeatCoolCommandStat	heat_cool_st	R			Displays the current operating mode of the unit based on the position of the reversing valve	Heat	Cool
35	BV	HPhardware	high_press_hdw	R			Displays the status of the high pressure hardware input.	Off	On
36	BV	IntExtScheduling	int_ext_scheduling	R			Displays the selected schedule that the UPC is operating on.	Internal	External
37	BV	LoadShedCmd	load_shed_cmd	R/W	Inactive (0)		Allows for the network to enable/disable load shed.	Off	On
38	BV	LockoutStatus	lockout__st	R			Displays the status of the lockout alarm output.	Normal	Lockout
39	BV	LockOutCfgStat	lockout_cfg_st	R			Do not map to BAS - Internal Use Only	Do not map	Do not map
40	BV	LockoutHdwStat	lockout_hdw_st	R			Displays the status of the relay for the ABC's Lockout output.	Normal	Lockout
41	BV	LPhardware	low_press_hdw	R			Displays the status of the low pressure switch hardware input.	Open	Closed
42	BV	LShardware	load_shed_hdw	R			Displays the status of the load shed hardware input.	Normal	Load Shed
49	BV	Ohardware	o_hdw_occ_sensor	R			Displays the status of the "O" hardware input, also used as an occupancy sensor input.	Off	On
50	BV	OccCmdSelect	occ_cmd_select	R/W	Inactive (0)		Allows for network selection of either a "MSV" or "AV" to command the occupancy input.	MSV	AV
51	BV	SW8Stat	sw_2_8_st	R			Displays the status of the SW-2 dip switch 8.	Off	On
52	BV	RevValveStatus	rev_vlv_st	R			Displays the status of the reversing valve output.	Heat	Cool
53	BV	RVSetupStat	rv_setup_st	R			Displays the default position of reversing valve that is set by BV-13.	Cooling	Heating
54	BV	ScheduleSelectCmd	schedule_select_cmd	R/W	Active (1)		Allows for network selection of the internal schedule or external schedule.	Internal	External

# BACnet Points for Variable Speed WSHP cont.

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text	
55	BV	ZoneTempSelector	zone_temp_selector	R/W	Inactive (0)		Allows for network selection of the zone sensor input.	Sensor	BAS
56	BV	SW1TestStat	sw1_test_cfg_st	R			Displays the status of the SW1 switch input.	Off	On
57	BV	SW4Stat	sw_2_4_st	R			Displays the status of the SW2-4 dipswitch, used along with SW2-5 to select the ACC-1 mode operation.	Off	On
58	BV	SW5Stat	sw_2_5_st	R			Displays the status of the SW2-5 dipswitch, used along with SW2-4 to select the ACC-1 mode operation.	Off	On
59	BV	TempOccDis	temp_occ_dis	R/W	Active (1)		Allows for network control to disable temporary occupancy.	Disabled	Enabled
60	BV	TempOccStat	temp_occ_st	R			Displays the status of the temporary occupancy input.	Normal	Temp Occ
61	BV	TestModeEnable	test_mode_enable	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
62	BV	TestModeHDWstat	test_mode_hdw_st	R			Do not map to BAS - Internal Use Only	Do not map	Do not map
63	BV	Whardware	w_hdw_dirty_filter	R			Displays the status of the "W" hardware input, can also used as a dirty filter input.	Off	On
65	BV	Y1hardware	y1_hdw_comp_prove	R			Displays the status of the "Y1" input to the ABC from the UPC.	Off	On
67	BV	Y2hardware	y2_hdw_vlv_end_sw	R			Displays the status of the "Y2" input to the ABC from the UPC.	Off	On
69	BV	m373cmd	m373_cmd	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
70	BV	m374cmd	m374_cmd	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
71	BV	AXBenable	axb_enable	R/W	Active (1)		Do not map to BAS - Internal Use Only	Do not map	Do not map
72	BV	m376cmd	m376_cmd	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
73	BV	m377cmd	m377_cmd	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
74	BV	EH2Ovrd	eh2_ovrd_cmd	R/W	Inactive (0)		Allows for network control of the electric heat 2 output relay.	Off	On

# BACnet Points for Variable Speed WSHP cont.

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text	
75	BV	EH2Mode	eh2_mode	R/W	Inactive (0)		Used to change the way in which the EH2 output from network controlled output to a aux heat output.	Aux_Heat	Network_EH
76	BV	LoadShedStat	loadshed_st	R			Displays the status of the load shed operation.	Normal	Load Shed
77	BV	AddDeviceEnable	add_device_enable	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
78	BV	DirtyFilterAlarm	dirty_filter_alarm	R			Displays the status of the dirty filter alarm logic. Logic is based off of fan run time and is adjustable.	Off	On
79	BV	FilterAlarmReset	filter_alm_reset	R/W	Inactive (0)		Allows for the dirty filter alarm to be reset. This should be completed after filters have been changed or checked.	Off	On
80	BV	OccSensorEnable	occ_sensor_enable	R/W	Inactive (0)		Allows for the Occupancy sensor input to be enabled. Once enabled and sensor is connected, a closed contact will put the control into the occupied mode.	Disabled	Enabled
81	BV	BrineSelection	brine_selection	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
84	BV	DDCenable	ddc_enable	R/W	Active (1)		Do not map to BAS - Internal Use Only	Do not map	Do not map
86	BV	ArchiveNow	archive_now	R/W	Inactive (0)		Used to send the archive now command. Archiving is used to store changes that are made to the software configuration. Archives should be limited.	Yes	No
87	BV	OccManCmdBin	occ_man_cmd_bin	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
88	BV	EmgcyShutdnStat	e_stop_st	R			Displays the status of the emergency shutdown operation.	Normal	Load Shed
89	BV	SuperBoostEnable	superboost_enable	R/W	Inactive (0)		Allows for network to enable or disable cooling SuperBoost mode (SuperBoost is automatically cancelled after being enabled for 24 hours).	Disabled	Enabled
90	BV	DHWEnable	dhw_enable	R/W	Inactive (0)		Allows for network to enable or disable hot water operation.	HW Disabled	HW Enabled

# BACnet Points for Variable Speed WSHP cont.

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text	
91	BV	ManualMode	manual_mode	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
93	BV	ManHeat/Cool	man_heat_cool	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
94	BV	ManAuxHeat	man_aux_heat	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
95	BV	ManVSPump	man_vs_pump	R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
96	BV	ManualStat	manual_stat	R			Do not map to BAS - Internal Use Only	Do not map	Do not map
97	BV	FP2LimStat	fp2_lim_st	R			Displays the current FP2 freeze detection set point.	Not Used	30°
98	BV	DemCtrlVent		R/W	Inactive (0)		Allows Demand Controlled Ventilation to be enabled or disabled.	Disabled	Enabled
99	BV	DCVvariable		R/W	Inactive (0)		Allows selection of the variable to be used for Demand Control Ventilation.	CO2	VOC
100	BV	DCVStatus		R			Displays the current operational status of Demand Controlled Ventilation.	Inactive	Active
101	BV	ManDamp		R/W	Inactive (0)		Do not map to BAS - Internal Use Only	Do not map	Do not map
102	BV	CO2_VOC_Alarm		R			Displays the status of the high CO2 / VOC level alarm logic.	Normal	Alarm
1000	BV	ValidSensor	valid_sensor	R			Do not map to BAS - Internal Use Only	Do not map	Do not map
1001	BV	NotUnoccupied	not_unoccupied	R			Do not map to BAS - Internal Use Only	Do not map	Do not map
1002	BV	FanOccupied	fan_occupied	R			Do not map to BAS - Internal Use Only	Do not map	Do not map
1003	BV	FactTestStat	fact_test_stat	R			Do not map to BAS - Internal Use Only	Do not map	Do not map

# BACnet Points for Variable Speed WSHP cont.

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Object ID	Object Type	Display Name	Reference Name	Read/W rite	Default Value	Units	Description	State Text
<i>Multi State Values</i>								<b>State Value</b>
1	MSV	OccManCmdMSV	occ_man_cmd_msv	R/W	1		Use this point to command unit occupancy, verify that BV-50 is set to inactive (MSV).	[1 = Occupied] [2 = Unoccupied] [3 = Temp Occ] [4 = Standby]
2	MSV	PhaseSelection	phase_selection	R/W	1		Do not map to BAS - Internal Use Only	Do not map   Do not map
7	MSV	ClgCFMOffsetMSV	clg_cfm_offset_msv	R/W	4		Allows for network selection of the cooling cfm reduction value.	[1 = HGT CFM = CLG CFM] [2 = - 5% CIG CFM] [3 = -10% CLG CFM] [4 = -15%CLG CFM] [5 = +5% CLG CFM]
8	MSV	LockoutEnumMSV	lockout_enum_msv	R			Displays a specific alarm value that can be associated with the alarms table.	Refer to the Aurora UPC alarms table
10	MSV	EffectiveOccStat	effective_occ_st	R			Displays the effective occupancy status.	[1 = Occupied] [2 = Unoccupied] [3 = Temp Occ] [4 = Standby] [5 = Occ Sensor]
11	MSV	ModeOperationStat	mode_st_msv	R			Displays the current operating mode of the unit.	[1 = Standby] [2 = Fan Only] [3 = Cool Speed 1-6] [4 = Cool Speed 7-12] [5 = Not Used] [6 = Heat Speed 1-6] [7 = Heat Speed 7 - 12] [8 = Emergency Heat] [9 = Auxiliary Heat] [10 = Emergency Shutdown] [11 = Load Shed] [12 = Unit In Lock Out] [13 = Test Mode]
12	MSV	CompConfigMSV	comp_config_msv	R/W	1		Allows setting of heat pump size value (For Aurora control configuration only).	Intended for internal use only.
13	MSV	PIDselect_c	pid_select_c	R/W	1		Allows selection of the desired temperature control PID in the Aurora control.	[1 = Normal] [2 = Aggressive]

# Modes of Operation for Variable Speed WSHP

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Dual Compressor W2A Modes Of Operation Displayed
1 = Standby
2 = Fan Only
3 = Cooling Stage 1
4 = Cooling Stage 2
5 = Hot Gas Reheat
6 = Heating Stage 1
7 = Heating Stage 2
8 = Emergency Heat
9 = Auxiliary Heat
10 = Emergency Shutdown
11 = Load Shed
12 = ABC A Lock-Out
13 = Test Mode
14 = Economizer Mode
15 = ABC B Lout-Out
16 = Full Cool W/Economizer
17 = Dehumidification Mode
18 = 1/2 Capacity W/Lock-Out
19 = Full Lockout Condition
20 = Clg 1 W/Economizer

# Dipswitch Overrides for Variable Speed WSHP

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<i>Dual Compressor Aurora Base Controller A &amp; B Dip Switch Override Read Only Points</i>					
Switch #	Point Address	Point Name	Brief Descriptions	Current Switch Setting	UPC Default Value
1	BV-69	FP1_lim_st_a	Displays the current freeze detection set point for the coax on ABC A & B, (FP1) 15° or 30°		Active (30°F)
	BV-70	FP1_lim_st_b			
2	N/A	N/A	This switch is not used in the Dual Compressor Software.	N/A	N/A
3	BV-114	rv_setup_st_a	Displays the default position of the reversing valve.		Active (heating)
	BV-115	rv_setup_st_b	This switch is set at the factory, and should not require a change.		
4	BV-119	sw_2_4_st_a	Displays the current position of the SW-4 switch on ABC A and on ABC B.		Active (On)
	BV-120	sw_2_4_st_b			
5	BV-121	sw_2_5_st_a	Displays the current position of the SW-5 switch on ABC A and on ABC B.		Inactive (Off)
	BV-122	sw_2_5_st_b			
6	BV-15	cc_op_cfg_st_a	Units built with two compressors will not support this feature. This switch is set at the factory, do not change.		Inactive (Dual Stage)
	BV-16	cc_op_cfg_st_b			
7	BV-84	Lockout_cfg_st_a	Displays the action of the alarm relay output. {Pulsed or Continuous}		Active (Continuous)
	BV-85	Lockout_cfg_st_b	Must stay incontinuous position on reheat models.		
8	BV-110	reheat_cfg_st_a	Displays either reheat or normal.		Active (Normal)
	BV-111	reheat_cfg_st_b	This switch is set at the factory, do not change.		

## ABC Dip Switch Commandable Override Points

We understand the hassles associated with configuring each unit's controller in a commercial building so we have provided a way to accomplish this thru the Building Automation System or through the ATU interface. The BAS method allows for the control technician to send commands to UPC Controller and set the freeze detection set point or the accessory 1 relay operation through a BAS. The physical dip switch bank that is normally used to configure the unit settings can still be used if desired, but one must make sure that the switches have not already been overridden. A technician can determine if the dip switches have been overridden by the BAS by looking at the yellow LED located on the Aurora Base Controller, if the yellow LED is constantly flashing slow then at least one switch has been overridden. The following procedure must be followed carefully to ensure proper unit configuration. Since we are able to use the BAS to select these settings special care must be taken when doing start-up on the units. The physical switch position can differ from what is set as defaults in the UPC program, so verify and record the actual switch settings before trying to command the points. First thing that needs to be done is to determine what settings are present and what settings need changed. To locate the current switch settings refer to these points for their read only values. Remember that these points represent the current configuration and not necessarily the actual position of the switches, there is a column below that can be used to record the current switch settings.



# Dipswitch Overrides for Variable Speed WSHP

Software Version 1.03 Utilizing the Aurora UPC Controller



Dual Compressor Aurora Base Controller A & B's Dip Switch Override										
Dip Switch	Point Address	Point Name	Brief Descriptions							
1	BV-24	sw2_1_c_a	Selects FP1 freeze detection set point for ABC A and ABC B. {Inactive=15°, Active=30°}							
	BV-25	sw2_1_c_b								
2	BV-26	sw2_2_c_a	Not used for configuration on dual compressor water to air units.							
	BV-27	sw2_2_c_b								
3	BV-28	sw2_3_c_a	Changes the default position of the reversing valve, Do not change.							
	BV-29	sw2_3_c_b								
A B C	4	BV-30	sw2_4_c_a	Dip Switch Position	ON	ACC 1 On w/Fan	Off	Acc 1 On w/Compr	On	Compressor Call Energizes Acc 1 For Slow Opening Water Valve with 90 Second Delay.
	5	BV-32	sw2_5_c_a		ON		Off		Off	
A B C	4	BV-31	sw2_4_c_b	Dip Switch Position	ON	?	Off	?	On	?
	5	BV-33	sw2_5_c_b		ON		Off		Off	
6	BV-34	sw2_6_c_a	Not used for configuration on dual compressor water to air units.							
	BV-35	sw2_6_c_b								
7	BV-36	sw2_7_c_a	Selects continuous or pulsed alarm relay action. {Inactive=Pulsed, Active=Continuous}							
	BV-37	sw2_7_c_b								
8	BV-38	sw2_8_c_a	Selects reheat or non-reheat operation. {Inactive=Reheat, Active=Non-reheat}							
	BV-39	sw2_8_c_b								

## Dip Switch Override Method

Since there are two methods for overriding the Aurora dip switches and they are similar in procedure we will discuss how to set them thru the BAS first. The dip switch override points have to be enabled, this is done by setting BV-44(ABC A) and BV-45(ABC B) to Active, this allows for the commands you send to ABC A and ABC B to pass down into each of the ABC's. Once those are set, locate the points that you want to change the values on and command them to the proper value. Command-able points are listed below for each ABC. Once the switch values have been verified in the dip switch status points, remove the enable from BV-44 and BV-45.

# Alarms for Variable Speed WSHP

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Commercial Alarms Table for the Dual Compressor Aurora with UPC						
Aurora Base Controller with UPC Alarms Table		ABC Red LED Flash Code	Alarm Values Enumerated on AV-80 & AV-81 to the BAS	Alarm Values Enumerated on MSV-6 & MSV-7 to the BAS	Lockout	Reset
ABC & AXB Basic Faults	Normal - No Faults	Off	0	1	-	-
	E1 - Fault-Input	1	1	2	No	Auto
	E2 - Fault-High Pressure	2	2	3	Yes	Hard or Soft
	E3 - Fault-Low Pressure	3	3	4	Yes	Hard or Soft
	E4 - Fault-Freeze Detection FP2	4	4	5	Yes	Hard or Soft
	E5 - Fault-Freeze Detection FP1	5	5	6	Yes	Hard or Soft
	E6 - Fault-Loss Of Charge	6	6	7	Yes	Hard or Soft
	E7 - Fault-Condensate Overflow	7	7	8	Yes	Hard or Soft
	E8 - Fault-Over/Under Voltage	8	8	9	No**	Auto
	E9 - Airflow Monitoring	9	9	10	Future	Future
	E10 - Fault-Compressor Monitoring	10	10	11	Yes	Hard or Soft
	E11 - Fault-FP1 Snsr Error	11	11	12	Yes	Hard or Soft
	E12 - Refrigeration Monitoring	12	12	13	Future	Future
	E13 - Non Critical AXB Sensor Error	13	13	14	Future	Future
	E14 - Critical AXB Sensor Error	14	14	15	Future	Future
	E15 - Hot Water Limit	15	15	16	No	Auto
	E16 - Fault-VarSpdPump	16	16	17	No	Auto
	E30 - Zone Sensor Loss of Comm	N/A	30	18	Yes	Auto
	E18 - Non-CritComErr	18	19	19	No	Auto
E19 - CritComErr	19	20	20	Yes	Auto	



