ExactLogic BACnet Communicating Thermostat
2 stage heat/cool AC unit with water side economizer and dehumidification
EXL01817 Sequence Datasheet

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Operating Sequence

Standard Occupied

During normal occupied operation the display will show the current room temperature. The first press of either right pair of keys will show the current room setpoint. Additional presses will adjust the setpoint up or down by 0.5 degrees. The thermostat keypad will time out after 5 seconds without a key press, and the display will switch back to displaying the room temperature.

The left pair of keys allows for the adjustment of the fan speed. The current mode is shown with the first key press; additional key presses will show the adjustment to the mode. AV-62 is used to select the number of fan speeds, and AV-63 will show what speed the fan is currently set to. Refer to the table below for the values of AV-62 (Fan Mode Status) and AV-63 (Fan Speed Status)

AV-62	Mode
0	AUTO Only
1	AUTO-ON
2	OFF-AUTO-ON
3	OFF-1-2-AUTO
4	OFF-1-2-3-AUTO

AV-63	Fan Speed
0	OFF
1	Fan Speed 1
2	Fan Speed 2
3	Fan Speed 3
4	AUTO
5	ON

Internal/External Thermistor Control

The thermostat control sequence can use the internal thermistor or an external thermistor connected to AI-2. Setting BV-67 to OFF (default) the thermostat will use the internal thermistor. Setting BV-67 to ON the control sequence will use the external thermistor.

The current controlling temperature is located at AV-20. This value will be displayed on the LCD of the thermostat and should be used on any workstation displays.

Control Sequence – Heat / Cool

The occupancy of the thermostat can be controlled by a schedule command at BO-5. When scheduled to be occupied, the thermostat will maintain its occupied setpoint. The deadband is controlled by the cooling/heating offset (default 1 degree).

In cooling mode the sequence will engage the 1-stage compressor when the zone is 0.5 degrees over the cooling setpoint. The 2nd stage will engage when the zone is 1.2 degrees over setpoint. Stage 2 cooling will disengage when the zone temperature is 0.5 degrees above the cooling setpoint. Stage 1 cooling will disengage when the zone temperature is 0.2 degrees below the cooling setpoint.

An alarm will trigger if the discharge air temperature does not fall below a user defined setpoint for stage 1 and stage 2. The alarms will indicate that the compressor(s) are not cooling properly.

In heating mode the sequence will engage the 1-stage heating output when the zone to 0.5 degrees below the heating setpoint. The 2nd stage will engage when the zone is 1.2 degrees below setpoint. Stage 2 heating will disengage when the zone temperature is 0.2 degrees above the heating setpoint. Stage 1 Cooling will disengage when the zone temperature is 0.2 degrees above the Heating Setpoint.

An alarm will trigger if the discharge air temperature does not rise above a user defined setpoint for heating. The alarms will indicate that the heat pump is not heating properly.

Control Sequence – Condenser/Water Valve

The water valve is commanded open the valve enable setpoint (AV-57) is higher than the water temperature (AI-5), or when a dehumidification request to set (BV-15). See the Control Sequence – Dehumidify for further details. Every 24 hrs. a flush command will open water valve for a user defined amount of time, and then close. The flush command can be manually activated or scheduled from a BAS system using BV-52.

The valve command is on AO-1, and may require a 10VDC relay to provide a 24VAC command to the valve.

Control Sequence –Dehumidify

The Humidity signal comes from the internal humidity add-on card. Set AV-31 to a 4 in order to enable the humidity option. The Humidity level is show at AV-22.

The dehumidification sequence is controlled by the water valve (AO-1). When the Dehumidifier Request (BV-15) is ON, the water vale will be commanded open. The Dehumidifier Request is commanded ON when the Space Humidity (AV-22) is higher than the Dehumidifier SP (AV-46). The Dehumidifier Trigger SP (AV-45) and Dehumidifier Reset SP (AV-44) are used to create a deadband. See the point descriptions for more details.

Control Sequence – Fan VFD

The modulating fan speed command is at AO-0. The signal will modulate from 0-10VDC based on the heating and cooling signal. A minimum fan speed setpoint can be set at AV-40.

Standard Unoccupied

During unoccupied operation the thermostat will continue to display the room temperature. When in an unoccupied state pressing one of the right pair of keys will display a message indicating the thermostat is in night mode, preventing the setpoint from being adjusted. To adjust the room setpoint when unoccupied the thermostat must be set to night override.

Control Sequence

When in the unoccupied mode, the room will be controlled by the unoccupied cooling/heating setpoints. The fan and cooling/heating stages will operate the same as the occupied control sequence.

Vacancy

If a room is known to be vacant, vacant setpoints can be used to override the unoccupied setpoints. By setting BV-70, a room will be controlled by the vacant cooling/heating setpoints (AV-64/65).

Night Overrride

Set the night override by pressing one of the left pair of keys. The display will switch to allow the user to set the night override time. Additional presses of the keys will adjust the time up or down by 0.5 hour increments. The night override can be increased up to the override limit set at AV-73, the default is 5 hours. When the thermostat is in night override, the first press of one of the left pair of keys will display the override time remaining. Additional key presses will add/subtract 0.5 hours to the time that was remaining. When the timer reaches zero the thermostat will return to the unoccupied mode.

In the night override mode, the right pair of keys can be used to adjust the room setpoint. The thermostat keypad will time out after 5 seconds without a key press, and the display will switch back to displaying the room temperature.

The thermostat can be set to a night override by writing a value to AV-74 through BACnet. The value can not exceed the night override limit set at AV-73. If the night override time is set higher than the limit, the night override timer will be set to the limit. The night override limit default is 5 hours.

If the thermostat is commanded to the occupied mode while in night override, the override timer will be cleared to zero and the thermostat will enter the occupied mode.

Control Sequence

When the thermostat is in the override mode, the room will be controlled by the occupied cooling/heating setpoints. The fan and cooling/heating stages will operate the same as the occupied control sequence.

Note: There is no fan control in the override mode. The fan will run in the AUTO mode.

Vacancy

If a room is known to be vacant, vacant setpoints can be used to override the unoccupied setpoints. By setting BV-70 to active, a room will be controlled by the vacant cooling/heating setpoints (AV-64/65).

Motion/Humidity Option Card

The Motion/Humidity Option Card can be used for Motion Only, Humidity Only, or Motion/Humidity together. In order to use the Motion Sensor (either stand alone or with Humidity), BV-64 must be set to ACTIVE. The Humidity Sensor can be enabled by setting AV-31 to 4. These settings will automatically provide the required voltage to power the sensors. The motion sensor status will show on BI-1.

When the motion sensor, senses motion, it puts the unit in occupied "Active" Mode by writing to the Scheduled Occupied Command BO-5 at priority array entry 11, this will remain active until it does not see any motion for the entire duration of the time delay (AV-81 Units=seconds), it will then return to an inactive state.

When the internal occupancy sensor is enabled by setting BV-64 to ACTIVE, the occupied mode is controlled only by the occupancy sensor. The optimum start warmup point, BV-41, and optimum start cooldown point, BV-42, will set the unit to the occupied mode and then return to the unoccupied mode until motion is sensed.

The Humidity value is shown on AI-1. The Humidity Sensor will automatically be scaled by setting AV-31 to 4.

Disabling of the Splash, Setup Menu, or Field Service Mode

When the thermostat is installed in a public location there may be times when the setup of the thermostat will need to be disabled to prevent tenants from changing the configuration while still giving them access to change the setpoints and control after hours modes. The following points have been added to allow this:

BV-57 = Setting ACTIVE will disable the "EXACTLOGIC" splash display after key presses
BV-58 = Setting ACTIVE will disable access to the Setup Menu where the Network/MAC/Baud Rate/etc are set
BV-59 = Setting ACTIVE will disable access to the Field Service Mode where Time/Schedule/Setpoints/etc are set

Installation

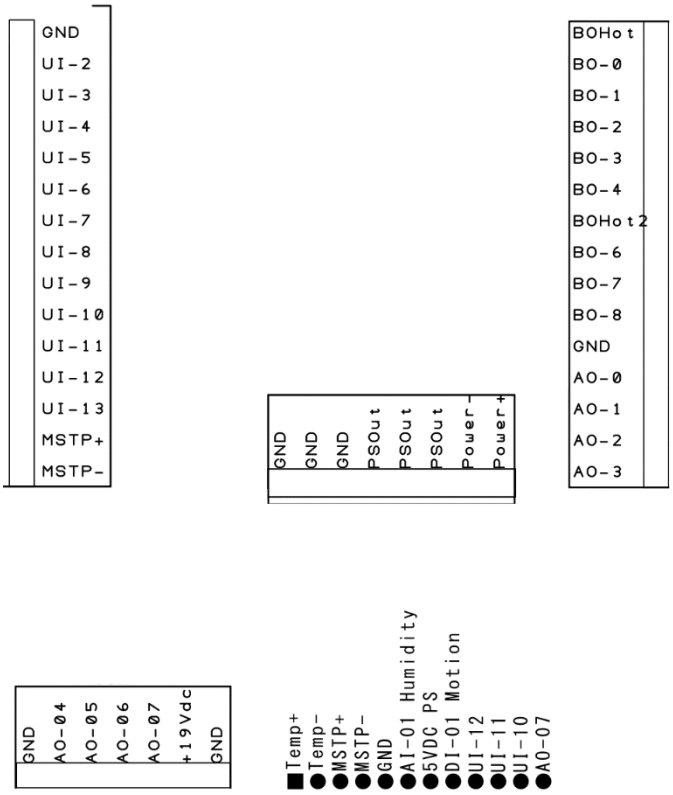

Fig. 4

*Note: Thermostat Common Relay point (BO Hot) usually 24VAC/DC or R

*Note: AI-2 through AI-5 and BI-2 through BI-5 are wired to UI-2 through UI-5. Each universal Input can only be used as an AI or a BI

GND ..... Neutral/Ground
UI-2..... Universal Input 2
UI-3..... Universal Input 3
UI-4..... Universal Input 4
UI-5..... Universal Input 5
UI-6..... Universal Input 6
UI-7..... Universal Input 7
UI-8..... Universal Input 8
UI-9..... Universal Input 9
UI-10 ..... Universal Input 10
UI-11 ..... Universal Input 11
UI-12 ..... Universal Input 12
UI-13 ..... Universal Input 13
MSTP + ... Network Line Positive
MSTP - .....Network Line Negative

BO Hot ..... 24VAC/DC Input for Relays 1-5*
BO-0..... Relay 1 Output, 24VAC/DC
BO-1..... Relay 2 Output, 24VAC/DC
BO-2..... Relay 3 Output, 24VAC/DC
BO-3..... Relay 4 Output, 24VAC/DC
BO-4..... Relay 5 Output, 24VAC/DC
BO Hot 2 ..... 24VAC/DC Input for Relays 7-9*
BO-6..... Relay 7 Output, 24VAC/DC
BO-7..... Relay 8 Output, 24VAC/DC
BO-8..... Relay 9 Output, 24VAC/DC
GND ..... Neutral/Ground
AO-0..... Analog Output 0, 0-10V
AO-1..... Analog Output 1, 0-10V
AO-2..... Analog Output 2, 0-10V
AO-3..... Analog Output 3, 0-10V

GND ..... Neutral/Ground
GND ..... Neutral/Ground
GND ..... Neutral/Ground
PSOut.....24VAC/DC Hot
PSOut.....24VAC/DC Hot
PSOut.....24VAC/DC Hot
Power - ..... Neutral/Ground
Power + ...24VAC/DC Hot

GND ..... Neutral/Ground
AO-04..... Analog Output 4, 0-10V
AO-05..... Analog Output 5, 0-10V
AO-06..... Analog Output 6, 0-10V
AO-07..... Analog Output 7, 0-10V
+19Vdc ..... 19V DC
GND ..... Neutral/Ground

Output Wiring

Output/Label	Heat / Cool Mode
BO0	Fan
BO1	Cooling Stage 1
BO2	Cooling Stage 2
BO3	Heating Stage 1
BO4	Heating Stage 2
AO0	Fan VFD
AO1	Condenser/Water Valve Command

Input Wiring

Input/Label	Description
UI0	Internal Room Temperature
UI1	Internal Humidity
UI2	External Room Temperature
UI3	Discharge Air Temperature
UI4	Safety Status
UI5	Core Water Temperature

Reserved BACnet Points

The following are points reserved by the thermostat for operation.

Analog Inputs

Instance	Object Name	Description	Read/Write	Default
AI-0	Room Temp	Reading of the internal thermistor in counts. 0-1024	R	variable
AI-1	Int. Humidity	Reading from the internal humidity sensor add-on card	R	variable
AI-2	Ext. Room Temp	Optional external room temperature input	R	variable
AI-3	Discharge Air	Reading of the discharge air sensor	R	variable
AI-4	Return Air	Reading of the return air sensor	R	variable
AI-5	Core Water	Reading of the core water sensor	R	variable

Analog Outputs

Instance	Object Name	Description	Read/Write	Default
AO-0	Fan VFD	Modulating fan speed output	R/W	0.0
AO-1	Valve Command	10VDC valve output	R/W	0.0
AO-2	Analog Output 2	Variable 0-14VDC, 150mA output	R/W	0.0

Analog Values

Instance	Object Name	Description	Read/Write	Default
AV-0	Mode of Operation	The mode that the thermostat is currently in. 0 = Heat Mode 1 = Cool Mode 2 = Idle 3 = Afterhours 4 = Unoccupied Idle 5 = Unoccupied Heat Mode 6 = Unoccupied Cool Mode	R	4
AV-1	Analog Value 001			
AV-2	Analog Value 002			
AV-3	Analog Value 003			
AV-4	Current Htg SP	The setpoint that controls heating. If the room temperature goes below this setpoint the thermostat will enter heating mode.	R	80.0˚F
AV-5	Current Clg SP	The setpoint that controls cooling. If the room temperature goes above this setpoint the thermostat will enter cooling mode.	R	60.0 ˚F
AV-6	Heating SP	The setpoint used for heating during occupied mode. This setpoint is calculated by AV-66 (Current SP) – AV-70 (Heating Offset)	R	72.0˚F
AV-7	Cooling SP	The setpoint used for cooling during occupied mode. This setpoint is calculated by AV-66 (Current SP) + AV-69 (Cooling Offset)	R	74.0˚F
AV-8	Heating Signal	Current heating signal as a percent	R	0%
AV-9	Cooling Signal	Current cooling signal as a percent	R	0%
AV-10	Flush Cycle Time Status	Amount of runtime that the condenser/water valve has completed for the current cycle	R	0
AV-11	Flush Cycle Setpoint	Current Cycle Time Limit. Once the runtime reaches this setpoint a flush command is issued	R	0
AV-12	Analog Value 012			
AV-13	Analog Value 013			
AV-14	Analog Value 014			
AV-15	Analog Value 015			
AV-16	Analog Value 016			
AV-17	Analog Value 017			
AV-18	Analog Value 018			
AV-19	Analog Value 019			
AV-20	Room Temp	Selected from either AI-0 or AI-2. BV-67 is used for selection. This is the value displayed on the LCD of the thermostat and should be used to display the temperature on any workstation display.	R	variable
AV-21	Discharge Air Temp	Temperature read on AI-3. This is the value displayed on the LCD of the thermostat and should be used to display the discharge air on any workstation display.	R	variable
AV-22	Room Humidity	Selected from either AI-1 or AI-3. BV-72 is used for selection. This is the value displayed on the LCD of the thermostat and should be used to display the humidity on any workstation display.	R	variable

AV-23	Cooling Stage 2 Attained Temp	The discharge air temperature attained from the second stage of cooling used for proof of operation.	R	variable
AV-24	Heating Attained Temp	The discharge air temperature attained from the heating used for proof of operation.	R	variable
AV-25	Cooling Stage 1 Attained Temp	The discharge air temperature attained from the first stage of cooling used for proof of operation.	R	variable
AV-26	Cooling Deviation	Number of degrees that the room temperature is away from the cooling setpoint	R	variable
AV-27	Heating Deviation	Number of degrees that the room temperature is away from the heating setpoint	R	variable
AV-28	Deviation from SP	Number of degrees that the room temperature is away from the room setpoint	R	variable
AV-29	Zone Scan	Numerical representation of the thermostats mode. 100 = full heat, -100 = full cool	R	0
AV-30	AI-0 Setup	Parameter used to set the input type. 0 = counts 1 = temperature 2 = 4-20mA 3 = 0-5V 4 = 0-10V 5 = pulse	R/W	1
AV-31	AI-1 Setup	See AV-30	R/W	0
AV-32	AI-2 Setup	See AV-30	R/W	0
AV-33	AI-3 Setup	See AV-30	R/W	0
AV-34	AI-4 Setup	See AV-30	R/W	0
AV-35	AI-5 Setup	See AV-30	R/W	0
AV-36	Analog Value 036			
AV-37	Analog Value 037			
AV-38	Analog Value 038			
AV-39	Analog Value 039			
AV-40	Minimum Fan Speed	This is the minimum signal passed to the Fan VFD output	R/W	35%
AV-41	Heating Attained SP	Setpoint use to verify that the heat is operating correctly	R/W	90˚F
AV-42	Cooling Stage 1 Attained SP	Setpoint use to verify that the first stage of cooling is operating correctly	R/W	60˚F
AV-43	Analog Value 043			
AV-44	Dehumidifier Reset SP	Amount the Space Humidity needs to be under the setpoint to trigger the dehumidifier output ACTIVE	R/W	0%
AV-45	Dehumidifier Trigger SP	Amount the Space Humidity needs to be over the setpoint to trigger the dehumidifier output ACTIVE	R/W	2%
AV-46	De-Humidity Setpoint	Setpoint the dehumidifier output will control too	R/W	50%
AV-47	Analog Value 047			
AV-48	Hours of Operation	Runtime of the thermostat, used for the flush command	R	varies
AV-49	Flush Time	The length of the flush command	R/W	120 sec
AV-50	Core Water Lo Alarm SP	The Low Core Water Alarm is triggered if the temperature read on AI-5 falls below this setpoint	R/W	40˚F
AV-51	Core Water Hi Alarm SP	The High Core Water Alarm is triggered if the temperature read on AI-5 rises above this setpoint	R/W	90˚F
AV-52	Analog Value 052			
AV-53	Analog Value 053			
AV-54	Analog Value 054			

AV-55	Analog Value 055			
AV-56	Analog Value 056			
AV -57	Cdr Valve Open Delay	Delay used to allow the condenser valve to open. After the delay expires, the compressor is commanded ON.	R/W	60 sec
AV-58	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	1.6
AV-59	Pseudo Ave Time Base	Factor used to average the room temperature. A small number will allow the room temperature to change faster over time. A large number will cause the room temperature to change slower over time.	R	100
AV-60	Calibration Offset	The calibration offset for the internal thermistor.	R	variable
AV-61	Space Alarm Offset	This offset +/- the Current Cooling/Heating SP is used to determine if the space is too warm/cold, and set an alarm if necessary.	R/W	5.0˚F
AV-62	# of Fan Speeds	Select the number of fan speeds for a multispeed fan. 0 = Auto Only 1 = AUTO - ON 2 = Off - AUTO - ON 3 = Off-1-2-AUTO 4 = Off-1-2-3-AUTO	R/W	0
AV-63	Current Fan Speed	The fan speed the thermostat is currently running. 0 = OFF 1 = Fan Speed 1 2 = Fan Speed 2 3 = Fan Speed 3 4 = AUTO 5 = ON	R	4
AV-64	Vacant Clg SP	Used in Hotel Mode. When a room is known vacant, the setpoint can be set below the unoccupied setpoint.	R/W	85.0˚F
AV-65	Vacant Htg SP	Used in Hotel Mode. When a room is known vacant, the setpoint can be set below the unoccupied setpoint.	R/W	55.0˚F
AV-66	Room Setpoint	The occupied room setpoint	R/W	73.0˚F
AV-67	Occupied SP Hi Limit	The maximum occupied room setpoint allowed.	R/W	85.0˚F
AV-68	Occupied SP Lo Limit	The minimum occupied room setpoint allowed	R/W	55.0˚F
AV-69	Clg Offset	The offset from Room Setpoint used to calculate the Occupied Cooling SP	R/W	1.0˚F
AV-70	Htg Offset	The offset from Room Setpoint used to calculate the Occupied Heating SP	R/W	1.0˚F
AV-71	Unoccupied Clg SP	The cooling setpoint used when the thermostat is unoccupied.	R/W	80.0˚F
AV-72	Unoccupied Htg SP	The heating setpoint used when the thermostat is unoccupied.	R/W	60.0˚F
AV-73	After Hours Limit	The maximum hours the thermostat is allowed to run during afterhours time. Setting this will set the thermostat to occupied operation. (0-99.9 hrs)	R/W	5.0 hrs
AV-74	After Hours Timer	The current amount of afterhours time left.	R	0.0 hrs
AV-75	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	0

AV-76	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	0
AV-77	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	0
AV-78	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	0
AV-79	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	0
AV-80	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	0
AV-81	Motion OFF Delay	The amount of time to delay the ON->OFF transition of the motion sensor occupied command after no motion is detected	R/W	900 sec
AV-82				
AV-83				
AV-84				
AV-100	Analog Value 100	Internal thermistor display descriptor. The present value is automatically transferred. The AV description holds the descriptor to display.	R	variable
AV-101	Analog Value 101	Humidity display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display.	R/W	
AV-102	Analog Value 102	Discharge Air display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-103	Analog Value 103	Cooling Stage 1 display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-104	Analog Value 104	Cooling stage 2 display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-105	Analog Value 105	Water Valve display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-106	Analog Value 106	Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-107	Analog Value 107	Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-108	Analog Value 108	Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-109	Analog Value 109	Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-110	Analog Value 110	Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	
AV-111	Analog Value 111	Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	

AV-112	Analog Value 112	Outside Air Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	

Binary Inputs

Instance	Object Name	Description	Read/Write	Default
BI-0	Binary Input 00		R	
BI-1	Motion	Motion sensor status from the add-on card	R	
BI-2	Binary Input 02		R	
BI-3	Binary Input 03		R	
BI-4	Binary Input 04		R	
BI-5	Binary Input 05		R	

Binary Outputs

Instance	Object Name	Description	Read/Write	Default
BO-0	Fan	Output for Fan Control	R/W	OFF
BO-1	Compressor 1	Output for Cooling Stage 1	R/W	OFF
BO-2	Compressor 2	Output for Cooling Stage 2	R/W	OFF
BO-3	Heating Stage 1	Output for Heating Stage 1	R/W	OFF
BO-4	Heating Stage 2	Output for Heating Stage 2	R/W	OFF
BO-5	Scheduled Occupied	Logical point only. Used for scheduling purposes. INACTIVE is unoccupied.	R/W	OFF

Binary Values

Instance	Object Name	Description	Read/Write	Default
BV-0	Bad Sensor Alarm	Alarm for a bad internal thermistor	R	OFF
BV-1	H/C Mode	Sequence point to show analog heating or cooling. OFF = Cooling ON = Heat	R	OFF
BV-2	Binary Value 002			
BV-3	Binary Value 003			
BV-4	Binary Value 004			
BV-5	Binary Value 005			
BV-6	Binary Value 006			
BV-7	Flush Command	Command to initiate the flushing of the water valve	R	OFF
BV-8	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	OFF
BV-9	Space Alarm Delay	Delay used to prevent a space alarm after receiving an occupied command. The delay is 7200 sec	R	OFF
BV-10	Program Status	Used to determine if the sequence was loaded correctly on a BACnet Restore or power up.	R	OFF
BV-11	Binary Value 011			
BV-12	Water Valve Request	The water valve is requested to open due to low water temperature, dehumidification, or flush	R	OFF
BV-13	Binary Value 013			
BV-14	Discharge Temp Valid	Used to determine if the discharge temperature is good	R	ON

BV-15	Dehumidify	Status of the Dehumidify Request	R	OFF
BV-16	Heating Stage 1 Request	Stage 1 heating is requested.	R	OFF
BV-17	Cooling Stage 1 Request	Stage 1 cooling is requested.	R	OFF
BV-18	Binary Value 018			
BV-19	Binary Value 019			
BV-20	Binary Value 020			
BV-21	Binary Value 021			
BV-22	Too Warm Status	Status of the Too Warm Alarm before checking the Space Alarm Delay	R	OFF
BV-23	Too Cool Status	Status of the Too Warm Alarm before checking the Space Alarm Delay	R	OFF
BV-24	Space To Warm Alarm	The space temperature has been below the Room Set point (AV-66) – Space Alarm Offset (AV-61) for at least 7200 seconds.	R	OFF
BV-25	Space To Cool Alarm	The space temperature has been above the Room Set point (AV-66) + Space Alarm Offset (AV-61) for at least 7200 seconds.	R	OFF
BV-26	Heat Stage 1 Status	The status of the stage 1 heat request before the 180 second anti-short cycle delay.	R	OFF
BV-27	Cool Stage 1 Status	The status of the stage 1 cool request before the 180 second anti-short cycle delay.	R	OFF
BV-28	Cooling Stage 2 Lockout Status	Status point to show if second stage cooling is allowed	R	OFF
BV-29	Cool Stage 2 Status	The status of the stage 2 cool request before the 180 second anti-short cycle delay.	R	OFF
BV-30	Heating Attained Alarm	The discharge air did not reach the setpoint at AV-41 with a heating request	R	OFF
BV-31	Cooling Stage 1 Attained Alarm	The discharge air did not reach the setpoint at AV-42 with a stage 1 cooling request	R	OFF
BV-32	Cooling Stage 2 Attained Alarm	The discharge air did not reach the setpoint at AV-43 with a stage 1 cooling request	R	OFF
BV-33	Core Water Alarm Status	The core water temperature is outside of the setpoint limits	R	OFF
BV-34	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	OFF
BV-35	Core Water Alarm	Latching alarm point for the Core Water Alarm Status	R/W	OFF
BV-36	Core Water Alarm Reset	Reset for the core water alarm	R	OFF
BV-37	Low Core Water Temp	The core water is below the setpoint set at AV-50	R	OFF
BV-38	High Core Water Temp	The core water is above the setpoint set at AV-51	R	OFF
BV-39	Binary Value 039			
BV-40	Occupied Status	The status of this point switches the thermostats occupancy settings. When ON, the thermostat is in Occupied Setpoint Mode or After Hours Mode.	R	OFF
BV-41	Opt. Start Warmup	A Warmup command has been sent to the thermostat. When ON the thermostat will switch to occupied settings.	R/W	OFF

BV-42	Opt. Start Cooldown	A Cooldown command has been sent to the thermostat. When ON the thermostat will switch to occupied settings.	R/W	OFF
BV-43	Occ Set point Mode	The thermostat has been commanded occupied via BO-5, or a Warmup/Cooldown command has been sent via BV-41/BV-42.	R	OFF
BV-44	After Hours Status	The thermostat has been set to afterhours mode. When ON the thermostat will switch to occupied settings.	R	OFF
BV-45	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	OFF
BV-46	Binary Value 046			
BV-47	Binary Value 047			
BV-48	Binary Value 048			
BV-49	Update Descriptors	When ON descriptor changes are sent to the thermostats LCD, this point will auto reset to OFF.	R/W	OFF
BV-50	Binary Value 050			
BV-51	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	OFF
BV-52	Scheduled Flush Command	Manual or BAS scheduling command for flushing the water valve	R/W	OFF
BV-53	Enable 2-Stage Cooling	OFF = 1-Stage of cooling enabled ON = 2-Stages of cooling enabled	R/W	ON
BV-54	Binary Value 054			
BV-55	Binary Value 055			
BV-56	Binary Value 056			
BV-57	Disable Splash	When ACTIVE, the “EXACTLOGIC” splash will not show after key presses	R/W	OFF
BV-58	Disable Setup Menu	When ACTIVE, there will be no access to the Setup Menu where the Network/MAC/Baud Rate is set	R/W	OFF
BV-59	Disable FSM Menu	When ACTIVE, there will be not access to the Field Service Mode where the Time/Schedule/Point Access is set	R/W	OFF
BV-60				
BV-61	Binary Value 061			
BV-62	Binary Value 062			
BV-63	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	OFF
BV-64	Enable Motion	When ACTIVE, the power to the Motion add-on card is set to the proper voltage	R/W	OFF
BV-65	Binary Value 065			
BV-66	Disable Unit	When ON this point will disable and lockout all analog and binary outputs.	R/W	OFF
BV-67	Room Temp Select	When OFF, the internal thermistor is selected for the control sequence. When ON, an external thermistor attached to AI-2 is selected for control of the sequence	R/W	OFF
BV-68	Backlight Off/On	When ON the LCD backlight will remain on	R/W	OFF
BV-69	Fan Op Mode	Controls if the fan will cycle or run continuously. OFF = Cycle, ON = Continuous, BV-40 must also be ON.	R/W	OFF
BV-70	Room Vacant Status	When ON the thermostat will run on Vacant Heating/Cooling setpoints, AV-64/AV-65.	R/W	OFF

BV-71	C/F	Sets the thermostat to display temperatures in Celsius or Fahrenheit. This point is set through the setup menu. ON = F, OFF = C	R	ON
BV-72				
BV-73				
BV-74	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	OFF
BV-100	Binary Value 100	Enable internal thermistor descriptor	R/W	ON
BV-101	Binary Value 101	Enable humidity descriptor	R/W	OFF
BV-102	Binary Value 102	Enable discharge air descriptor	R/W	OFF
BV-103	Binary Value 103	Enable cooling stage 1 descriptor	R/W	OFF
BV-104	Binary Value 104	Enable cooling stage 2 descriptor	R/W	OFF
BV-105	Binary Value 105	Enable water valve descriptor	R/W	OFF
BV-106	Binary Value 106	Enable descriptor	R/W	OFF
BV-107	Binary Value 107	Enable descriptor	R/W	OFF
BV-108	Binary Value 108	Enable descriptor	R/W	OFF
BV-109	Binary Value 109	Enable descriptor	R/W	OFF
BV-110	Binary Value 110	Enable descriptor	R/W	OFF
BV-111	Binary Value 111	Enable descriptor	R/W	OFF
BV-112	Binary Value 112	Enable outside air descriptor	R/W	OFF