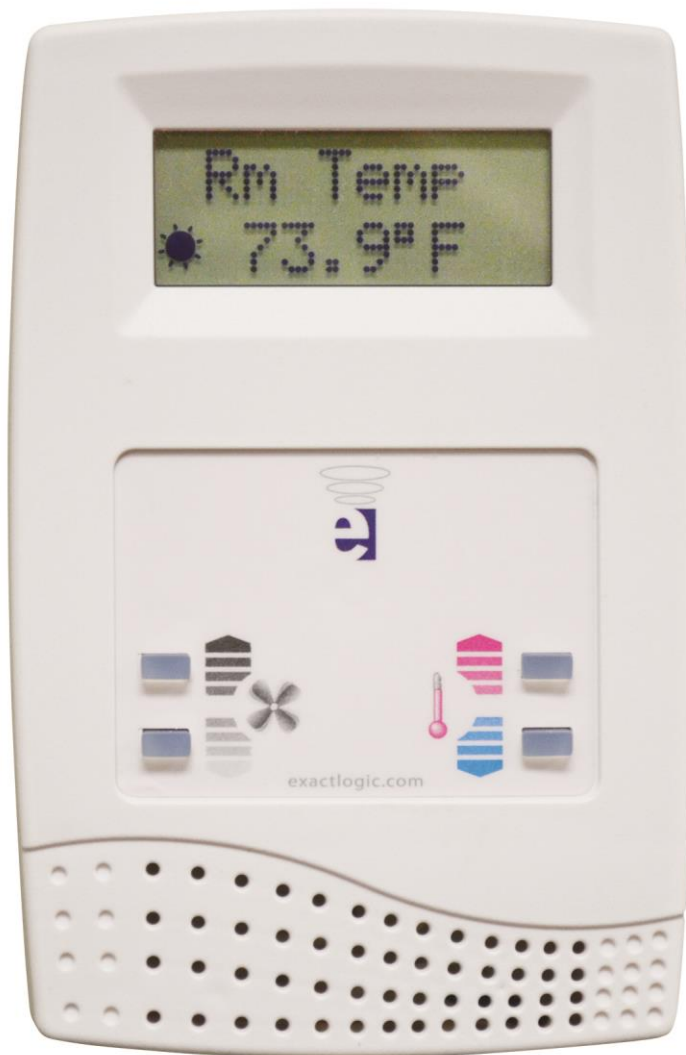# ExactLogic BACnet Communicating Thermostat
EXL01623 Sequence Datasheet

Rm Temp
73.9° F

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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

Fan Speeds

The thermostat is capable of controlling 3 stages of fan speeds. The user can select a constant fan speed or let the thermostat control the increasing or decreasing of the fan speeds. When a constant fan speed is selected, the thermostats will stay in that mode until changed by the user.

When the fan speed is in AUTO, the thermostat will increase or decrease that fan speed depending on the heating or cooling signal. There is an enable setpoint for each fan speed, LO is AV-46, MED is AV-47, HI is AV-48. When the heating or cooling signal is above the fan speed setpoint the corresponding fan speed will turn on. The fan speed will decrease when the heating or cooling signal is 5% below its enable setpoint.

There is a 120 second minimum on timer and 90 second minimum off time short cycle delay on each fan speed.

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.

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Control Sequence – Heat / Cool

There are two operational modes that can be selected via BV-60. When BV-60 is INACTIVE the heating and cooling will be controlled by the space temperature. When BV-60 is ACTIVE the heating and cooling will be controlled by the discharge air temperature (AI-3).

Heating and cooling is achieved by modulating outputs or by staging the digital outputs. The modulating heating and cooling outputs are always on. The desired staging of the digital outputs are selected by BV-61, BV-62, and BV-63. Available selections are 2 stages heat, 2 stages cool, or 1 stage heat and 1 stage cool.

Space Temperature Mode

When occupied, the thermostat will maintain its occupied setpoint. The deadband is controlled by the cooling/heating offset (default 1 degree). Should the room temperature drift below or above the heating and cooling setpoints, the analog heating and cooling outputs will modulate as needed via PI control. The staging of the digital heating and cooling outputs is controlled by enable the setpoints. Stage 1 and 2 heating are enabled by AV-38 and AV-39, stage 1 and 2 cooling are enabled by AV-40 and AV-41. These setpoints are compared to the heating or cooling signal (AV-8 and AV-9) to determine the state of the staged outputs.

Discharge Temperature Mode

In this mode the thermostat will modulate the analog outputs to maintain the discharge air setpoint based on the current fan speed. Once the heating or cooling signal is above its respective stage 1 enable setpoint, the discharge air PI control will begin to modulate the analog outputs. The setpoints to control the discharge air for heating and cooling are AV-49 through AV-54.

The discharge air modulating signal can be limited by using the Heat Max/Min % and the Cool Max/Min %. The points are AV-55 through AV-58. The purpose of these points is to limit the heating and cooling. The Min and Max are defaulted to 0% and 100% respectively.

The staging of the digital outputs is the same as the Space Temperature Mode.

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.

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.

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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 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 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.

Energy Monitoring

Energy Monitoring is enabled and disabled by using BV-52. Two values need to be entered for the Energy Monitoring to work properly the duct area in ft^2 and the measured or rated fan coil input voltage. To convert the ducts area from square inches to square feet divide the square inches by 144.

The air flow is calibrated using AV-77.

The supply temperature, return temperature, and supply air volume are monitored to calculate the heating BTU and cooling BTU demand. The heating demand and cooling demand is totalized in the heating MBH and cooling MBH BACnet points

The fan command status is used to generate the fan kW demand. The fan kW demand and supply voltage are used to generate the totalized kWh BACnet point.

The total BTU's and KWh will roll over to 0 after 10,000 MBH or KWh's have been totalized.

Note: The FCU BTU's will not be totalized if there is no fan status at BV-14. At Lo Fan Speed the unit may not have enough amps to meet the 0.5A setpoint for fan status. In this case the wire pulled through the current sensor needs to be wrapped on or two times to meet the fan status setpoint. In order to use the correct fan amp for the Fan Demand (AV-14), set BV-58 or BV-59 depending on the number of times the wire has been wrapped. The corrected fan amps are found at AV-19.

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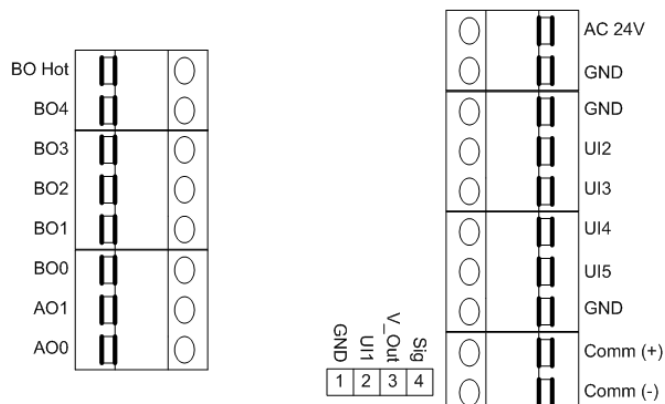
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Installation

Fig. 4

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

AC 24V	24VAC/DC Hot
GND	Neutral/Ground
GND	Neutral/Ground
UI2	Universal Input 2
UI3	Universal Input 3
UI4	Universal Input 4
UI5	Universal Input 5
GND	Neutral/Ground
Comm (+)	Network Positive Line
Comm (-)	Network Negative Line
BO Hot	Com, 24VAC Hot for relays*
BO4	Relay 5 Output, 24VAC/DC
BO3	Relay 4 Output, 24VAC/DC
BO2	Relay 3 Output, 24VAC/DC
BO1	Relay 2 Output, 24VAC/DC
BO0	Relay 1 Output, 24VAC/DC
AO1	Analog Output 1, 0-10V
AO0	Analog Output 0, 0-10V
1	Neutral/Ground
2	Universal Input 1
3	Analog Output 2
4	Reserved

Output Wiring

Output/Label	Heat / Cool Mode
BO0	**Fan Speed 1**
BO1	**Fan Speed 2**
BO2	**Fan Speed 3**
BO3	**Heating Stage 1 or Cooling Stage 1**
BO4	**Heating Stage 2 or Cooling Stage 1 or Cooling Stage 2**
AO0	**Heating 0-10 Vdc 0-100%**
AO1	**Cooling 0-10 Vdc 0-100%**

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Reserved BACnet Points

The following are points reserved by the thermostat for operation.

Analog Inputs

Instance	Object Name	Description	Read/Write	Default
AI-0	Internal Thermistor	Reading of the internal thermistor in counts. 0-1024	R	variable
AI-1	Analog Input 01	Reading of the external input 1 in counts. 0-1024	R	variable
AI-2	Fan Amps	The amount of Amps the fan coil is using	R	variable
AI-3	Discharge Air	Discharge air sensor for sequence control	R	variable
AI-4	Return Air	Return air sensor for sequence control	R	variable
AI-5	FCU Air Velocity	The fan coil air velocity	R	variable

Analog Outputs

Instance	Object Name	Description	Read/Write	Default
AO-0	Heat	0-10V output for control of heating	R/W	0.0
AO-1	Cool	0-10V output for control of cooling	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	60.0°F/16°C
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	80.0°F/27°C
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/22.5°C
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/23.5°C

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AV-8	Heat Signal (%)	Current heating signal as a percent	R	0%
AV-9	Cool Signal (%)	Current cooling signal as a percent	R	0%
AV-10	In/OutTemp Diff	The difference in temperature between the supply and return air temperatures. (+ = heat, - = cool)	R	0°F
AV-11	FCU BTUs	The amount of BTU's currently being used by the fan coil	R	0 BTUs
AV-12	Heating BTUs	The amount of BTU's currently being used by the fan coil for heating	R	0 BTUs
AV-13	Cooling BTUs	The amount of BTU's currently being used by the fan coil for cooling	R	0 BTUs
AV-14	Fan Demand	The amount of Watts currently being used by the fan coil	R	0 W
AV-15	FCU Air Flow	The amount of air currently being moved by the fan coil	R	0 cfm
AV-16	Analog Value 016			
AV-17	Analog Value 017			
AV-18	Analog Value 018			
AV-19	Corrected Fan Amps	Fan Amps corrected for the number of wire wraps through the sensor.	R	0 A
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 SP	Current Discharge Air setpoint	R	65.0°F/18.0°C
AV-22	DAT Lo Fan	Discharge Air setpoint for Lo Fan Speed. Dependent on heating or cooling mode.	R	65.0°F/18.0°C
AV-23	DAT Med Fan	Discharge Air setpoint for Med Fan Speed. Dependent on heating or cooling mode.	R	60.0°F/15.0°C
AV-24	DAT Hi Fan	Discharge Air setpoint for Hi Fan Speed. Dependent on heating or cooling mode.	R	55.0°F/13.0°C
AV-25	Analog Value 025			
AV-26	DAT Kp	The current Kp used for discharge air PI Controller	R	0.0
AV-27	DAT Ki	The current Ki used for discharge air PI Controller	R	0.0
AV-28	Analog Value 028			
AV-29	Analog Value 029			
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	1
AV-31	AI-1 Setup	See AV-30	R	0
AV-32	AI-2 Setup	See AV-30	R	0
AV-33	AI-3 Setup	See AV-30	R	0
AV-34	AI-4 Setup	See AV-30	R	0
AV-35	AI-5 Setup	See AV-30	R	0
AV-36	DAT H/C Kp	Kp used for the discharge air PI Controller when there is positive fan status	R/W	1.0
AV-37	DAT H/C Ki	Ki used for the discharge air PI Controller when there is positive fan status	R/W	1.0

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AV-38	Stage 1 Htg% Enable	The percentage of heating signal required to turn on the stage 1 heating digital output	R/W	10%
AV-39	Stage 2 Htg% Enable	The percentage of heating signal required to turn on the stage 2 heating digital output	R/W	60%
AV-40	Stage 1 Clg% Enable	The percentage of cooling signal required to turn on the stage 1 cooling digital output	R/W	10%
AV-41	Stage 2 Clg% Enable	The percentage of cooling signal required to turn on the stage 2 cooling digital output	R/W	60%
AV-42	AO-0 Max Output	Used to scale the analog output. This is the maximum voltage the AO will output. (i.e. 0-5V valve or damper)	R/W	10V
AV-43	AO-0 Min Output	Used to scale the analog output. This is the minimum voltage the AO will output. (i.e. 2-10V valve or damper)	R/W	0V
AV-44	AO-1 Max Output	Used to scale the analog output. This is the maximum voltage the AO will output. (i.e. 0-5V valve or damper)	R/W	10V
AV-45	AO-1 Min Output	Used to scale the analog output. This is the minimum voltage the AO will output. (i.e. 2-10V valve or damper)	R/W	0V
AV-46	Lo Fan Enable SP	To start low fan speed the heating or cooling signal needs to be high than this setpoint	R/W	10%
AV-47	Med Fan Enable SP	To start medium fan speed the heating or cooling signal needs to be high than this setpoint	R/W	40%
AV-48	Hi Fan Enable SP	To start high fan speed the heating or cooling signal needs to be high than this setpoint	R/W	70%
AV-49	DAT Heat SP, Lo Fan	The discharge air setpoint for low fan speed when in the heating mode	R/W	85.0°F/30.0°C
AV-50	DAT Cool SP, Lo Fan	The discharge air setpoint for low fan speed when in the cooling mode	R/W	65.0°F/18.0°C
AV-51	DAT Heat SP, Med Fan	The discharge air setpoint for medium fan speed when in the heating mode	R/W	90.0°F/32.0°C
AV-52	DAT Cool SP, Med Fan	The discharge air setpoint for medium fan speed when in the cooling mode	R/W	60.0°F/15.0°C
AV-53	DAT Heat SP, Hi Fan	The discharge air setpoint for high fan speed when in the heating mode	R/W	95.0°F/35.0°C
AV-54	DAT Cool SP, Hi Fan	The discharge air setpoint for high fan speed when in the cooling mode	R/W	55.0°F/13.0°C
AV-55	Max Heating %	The maximum heating signal the analog heating output will control too. Useful when a space is over heating	R/W	100%
AV-56	Min Heating %	The minimum heating signal the analog heating output will control too.	R/W	0%
AV -57	Max Cooling %	The maximum cooling signal the analog cooling output will control too. Useful when a space is over cooling	R/W	100%
AV-58	Min Cooling %	The minimum cooling signal the analog cooling output will control too.	R/W	0%
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	R	100

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		time.		
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/2.5°C
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	4
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	Reserved	Reserved for thermostat use only. Do not write to this point.	R	
AV-65	Reserved	Reserved for thermostat use only. Do not write to this point.	R	
AV-66	Room Setpoint	The occupied room setpoint	R/W	73.0°F/23.0°C
AV-67	Occupied Sp Hi Limit	The maximum occupied room setpoint allowed.	R/W	85.0°F/30.0°C
AV-68	Occupied Sp Lo Limit	The minimum occupied room setpoint allowed	R/W	55.0°F/13.0°C
AV-69	Clg Offset	The offset from Room Setpoint used to calculate the Occupied Cooling SP	R/W	1.0°F/0.5°C
AV-70	Htg Offset	The offset from Room Setpoint used to calculate the Occupied Heating SP	R/W	1.0°F/0.5°C
AV-71	Unoccupied Clg Sp	The cooling setpoint used when the thermostat is unoccupied.	R/W	80.0°F/27.0°C
AV-72	Unoccupied Htg SP	The heating setpoint used when the thermostat is unoccupied.	R/W	60.0°F/16.0°C
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	Duct Area	The area of the fan coil duct in square feet (take square inches/144)	R/W	0 ft^2
AV-76	Fan Voltage	The measured or rated voltage of the fan coil	R/W	0 V
AV-77	K Factor	The calibration constant used for the fan coil air flow	R/W	0
AV-78	Heat Total BTUs	The total BTU's used to heat the zone	R	0 BTUs
AV-79	Cool Total BTUs	The total BTU's used to cool the zone	R	0 BTUs
AV-80	Fan Total KWh	The total KW hours used by the fan coil	R	0 KWh
AV-100	Analog Value 100	Internal thermister display descriptor. The present	R	variable

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		value is automatically transferred. The AV description holds the descriptor to display.		
AV-101	Analog Value 101	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	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	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	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	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	Display descriptor. Transfer the value to display to the present value. The AV description holds the descriptor to display	R/W	

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Binary Inputs

Instance	Object Name	Description	Read/Write	Default
BI-0	Binary Input 00		R	
BI-1	Binary Input 01		R	
BI-2	Binary Input 02		R	
BI-3	Binary Input 03		R	
BI-4	Binary Input 04		R	
BI-5	Binary Input 5		R	

Binary Outputs

Instance	Object Name	Description	Read/Write	Default
BO-0	Fan Speed Lo	Digital output for fan speed 1	R/W	OFF
BO-1	Fan Speed Med	Digital output for fan speed 2	R/W	OFF
BO-2	Fan Speed Hi	Digital output for fan speed 3	R/W	OFF
BO-3	Stage 1 H/C	Digital output for stage 1 heat or cool.	R/W	OFF
BO-4	Stage 2 H/C	Digital output for stage 1 cool, or stage 2 heat or cool.	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 Room Sensor	Alarm for a bad internal thermister	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	Bad Discharge Sensor	Alarm for a bad discharge air sensor	R	OFF
BV-6	Binary Value 006			
BV-7	Binary Value 007			
BV-8	Binary Value 008			
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	Binary Value 012			
BV-13	Fan Alarm	ACTIVE when the fan current is below 0.5 A with the fan speed commanded ACTIVE	R	OFF
BV-14	Fan Status	One of the fan speeds is active	R	OFF
BV-15	Lo Fan Request	Request to turn on fan speed 1	R	OFF

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BV-16	Med Fan Request	Request to turn on fan speed 2	R	OFF
BV-17	Hi Fan Request	Request to turn on fan speed 3	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-90) – Space Alarm Offset (AV-82) for at least 7200 seconds.	R	OFF
BV-25	Space To Cool Alarm	The space temperature has been above the Room Set point (AV-90) + Space Alarm Offset (AV-82) for at least 7200 seconds.	R	OFF
BV-26	Heat Stage 1 Status	Status of stage 1 heating request	R	OFF
BV-27	Heat Stage 2 Status	Status of stage 2 heating request	R	OFF
BV-28	Cool Stage 1 Status	Status of stage 1 cooling request	R	OFF
BV-29	Cool Stage 2 Status	Status of stage 2 cooling request	R	OFF
BV-30	Fan Speed in AUTO	Used to determine if the thermostat is set for fan speed AUTO	R	ON
BV-31	User Fan Speed Lo	Used to determine if the user has put the thermostat in low fan speed from the keypad.	R	OFF
BV-32	User Fan Speed Med	Used to determine if the user has put the thermostat in medium fan speed from the keypad.	R	OFF
BV-33	User Fan Speed Hi	Used to determine if the user has put the thermostat in high fan speed from the keypad.	R	OFF
BV-34	Binary Value 034			
BV-35	Binary Value 035			
BV-36	Heat Fan Interlock	Used in discharge air mode to interlock the analog heating output with fan status.	R	OFF
BV-37	Cool Fan Interlock	Used in discharge air mode to interlock the analog cooling output with fan status.	R	OFF
BV-38	DAT Mode Interlock	Used to pass the discharge air modulation signal or the room temperature modulation signal to the analog output.	R	OFF
BV-39	Binary Value 039			
BV-40	Occupied Status	The status of this point switches the thermostats occupancy settings. ON when 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

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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 after hours mode. When ON the thermostat will switch to occupied settings.	R	OFF
BV-45	Reserved	Reserved for thermostat use only. Do not write to this point.	R	
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	Binary Input 051			
BV-52	Energy Monitoring	When ON the energy monitoring is enabled. Demand and energy totalizing will start.	R/W	ON
BV-53	Binary Value 053			
BV-54	Binary Value 054			
BV-55	Binary Value 055			
BV-56	Binary Value 056			
BV-57	Binary Value 057			
BV-58	Binary Value 058			
BV-59	Binary Value 059			
BV-60	Discharge Air Mode	Used to select if the thermostat will control space to setpoint based off discharge air. ON = Discharge Air Mode OFF = Room Temperature Mode	R/W	OFF
BV-61	2 Stg Ht Output Mode	2 stage heating mode for the digital outputs	R/W	OFF
BV-62	2 Stg Cl Output Mode	2 stage cooling mode for the digital outputs	R/W	OFF
BV-63	1 Stg Ht/Cl Output Mode	1 stage heat and 1 stage cool mode for the digital outputs	R/W	OFF
BV-64	Binary Value 064			
BV-65	Binary Value 065			
BV-66	Binary Value 066			
BV-67	Room Temp Select	When OFF, the internal thermistor is selected for the control sequence. When ON, an external thermistor attached to AI-1 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	Binary Value 069			
BV-70	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	ON
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	Binary Value 072			
BV-73	Binary Value 073			
BV-74	Hotel Mode	This point is reserved for internal thermostat use and its value cannot be changed	R	OFF

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BV-100	Binary Value 100	Enable internal thermistor descriptor	R/W	ON
BV-101	Binary Value 101	Enable descriptor	R/W	OFF
BV-102	Binary Value 102	Enable descriptor	R/W	OFF
BV-103	Binary Value 103	Enable descriptor	R/W	OFF
BV-104	Binary Value 104	Enable descriptor	R/W	OFF
BV-105	Binary Value 105	Enable 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 descriptor	R/W	OFF

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