ExactLogic BACnet Communicating Thermostat
EXL01609 Sequence Datasheet
2-stage Heat and Cool

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Operating Sequence

Standard Occupied

Thermostat occupancy can be set from a number of different sources. The Occupied Schedule Command at BO-5, a Warmup Command at BV-41, a Cooldown Command at BV-42, an External Occupancy Sensor at BI-5, the Optional Internal Occupancy Sensor at BI-1, or from the Field Service Mode. The External Occupancy Sensor is enabled with BV-51, and the Internal Occupancy Sensor is enabled at BV-64. See the separate Installation documentation to set the occupancy from the Field Service Mode.

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

Thermostat Temperature Control

The thermostat control sequence can use the internal thermistor, an external thermistor connected to AI-2, or an external network temperature written to AV-10, the average temperature of connected thermistors on AI-2 through AI-5, or a Hi/Lo Temperature Selection as the controlling temperature for the thermostat. Each mode is described below and listed in Table 1 showing which points to set to enable the desired temperature. The 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. If there is no valve in the table for a given point, the value of that point is considered a DON'T CARE in determining the valve of AV-20.

The default mode of the thermostat uses the internal thermistor.

Internal/External Thermistor
This mode is used to select the internal thermistor on AI-0 or the external thermistor on AI-2. The control decision is made by BV-67. BV-63 must be OFF for this mode.

Network Temperature
This mode is used to transfer a temperature from one BACnet device to AV-10 on the thermostat. This mode is intended for occasions where an external thermistor or average temperature can not to wire to the thermostat. The decision for this mode uses BV-62 and BV-63.

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Average Temperature

This mode uses the internal thermistor and up to 4 external thermistors wire to UI-2 through 5 to be averaged together. AV-36 is used to configure the number is external thermistors used in the average calculation. The decision for this mode uses BV-61, BV-62, and BV-63.

Hi/Lo Temperature Select

This mode will allow the highest or lowest temperature, selected from the internal, external, or network temperature to be used as the control temperature. The Hi/Lo decision is made using BV-60. BV-56 is used to select the external thermistor on AI-2 or a network temperature on AV-10 to be used for the Hi/Lo Selection. The internal thermistor on AI-0 is always used in the Hi/Lo Selection.

AV-20 Control Temp	BV-56	BV-67	BV-60	BV-61	BV-62	BV-63
Internal Thermistor (default)		OFF				OFF
External Thermistor		ON				OFF
Network Temperature					OFF	ON
Average Temperature				ON	ON	ON
Hi Temperature Select			ON	OFF	ON	ON
Lo Temperature Select			OFF	OFF	ON	ON
Use Network Temp for Hi/Lo	ON					
Use External Thermistor for Hi/Lo	OFF					

Table 1

Control Sequence – Heat / Cool

For Heat/Cool applications, such as RTU's, Fan Coils, or Heat/Cool type Heat Pumps set BV-72 active. The control sequence is as follows.

When scheduled to be occupied, the thermostat will maintain its occupied setpoint. The deadband is controlled by the cooling/heating offset (default 1 degree). Should the room temperature get 0.5 degrees above or below the current cooling/heating setpoints, the fan will turn on and the cooling or heating will turn on. Second stage cooling/heating turns on after stage one has been on for 5 minutes and the room is 1.2 degrees above setpoint. Second stage cooling/heating will turn off when the room temperature is 0.5 degrees above or below the cooling/heating setpoint. At this point stage one is still engaged. Stage one cooling/heating will turn off when the room temperature is 0.2 degrees below or above the cooling/heating setpoint. See Fig. 1.

When setting the Heating SP (AV-46) and the cooling SP (AV-45) from the network The Current SP will be determined by the midpoint of AV-45 and AV-46. The deadband will be determined from ½ of AV-45 minus AV-46 and applied to the Cooling offset (AV-69) and the Heating offset (AV-70). The Cooling and Heating offsets will be limited to a minimum of 1° F. The Cooling SP will be limited to be 1° F above the Heating SP. The Occupied Max Heating SP (AV-68) and the Occupied Min Cooling SP (AV-67) will limit the effective SP at AV-66. For local SP control set AV-67 to the highest allowed SP and AV-68 to the lowest allowed SP and do not write to AV-45 and AV-46.

Note: All digital outputs have a 120 second (2 min) min. ON (AV-56) and 780 second (13 min) min. OFF (AV-57) anti-short cycle time.
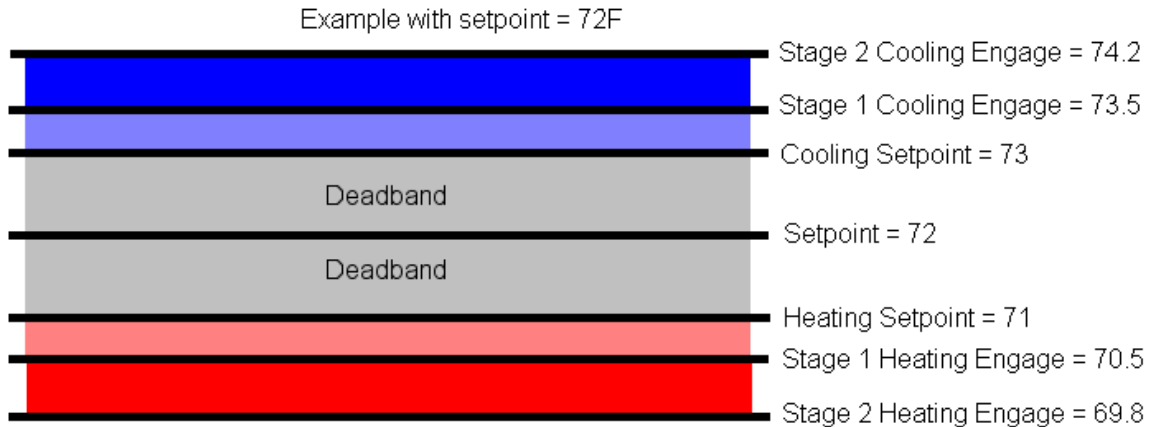
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Fig. 1

Control Sequence – Heat / Cool

The fan in auto mode will engage when the room temperature is 0.5 degrees above or below the cooling/heating setpoint. First stage Cooling or Heating will engage when the space temperature (AV-20) is .5° F Above or Below the Active Cool or Active Heat read only values (AV-03 and AV-04). Second stage Cooling or Heating will engage when the space temperature is 1.2°F Above or Below the Active Cool or Active Heat setpoints after the 2nd stage delay (AV-49).

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.

Night 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 Override

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 can be set to a night override by writing a value to AV-74 through BACnet. The value cannot 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. To disable the night override function set AV-73 to 0.

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.

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Night Override 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.

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:

    AV-44 = Set to 3 will enable the Field Service and Setup Menus
    BV-57 = Is set to on when AV-44 is set to 3
    BV-58 = Is set to on when AV-44 is set to 3

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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
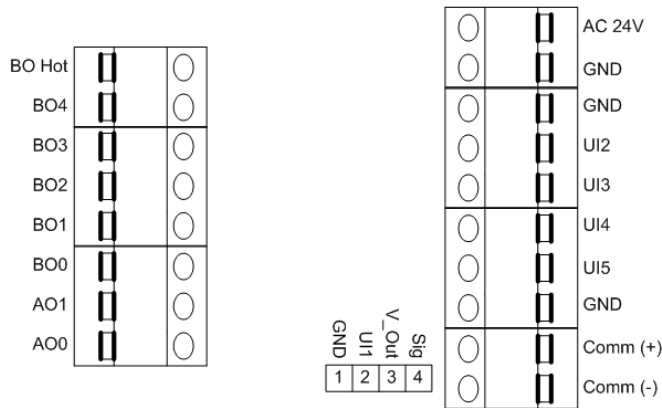
AC 24V..24VAC/DC Hot
GND .... Neutral/Ground
GND .... Neutral/Ground
UI2 .... Universal Input 2
UI3 .... Universal Input 3
UI4 .... Universal Input 4
UI5 .... Universal Input 5
GND .... Neutral/Ground
Comm (+) .... Network Positive Line
Comm (-) ....Network Negative Line
BO Hot .... Com, 24VAC Hot for 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
BO1	Cooling Stage 1
BO2	Cooling Stage 2
BO3	Heating Stage 1
BO4	Heating Stage 2
AO0	
AO1	

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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	IntSpaceTemp	Reading of the internal thermistor in counts. 0-1024	R	variable
AI-1	Humidity	Reading from the Humidity sensor add-on card	R	variable
AI-2	RemoteSpaceTemp	Optional external room temperature input	R	variable
AI-3	ExtSensor2	Optional external room temperature for average	R	variable
AI-4	ExtSensor3	Optional external room temperature for average	R	variable
AI-5	ExtSensor4	Optional external room temperature for average	R	variable

Analog Outputs

Instance	Object Name	Description	Read/Write	Default
AO-0	AO-00	0-10V output for control of heating	R/W	0.0
AO-1	AO-01	0-10V output for control of cooling	R/W	0.0
AO-2	AO-02	Variable 0-14VDC, 150mA output	R/W	0.0

Analog Values

Instance	Object Name	Description	Read/Write	Default
AV-0	ModeOfOperation	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	AV-01			
AV-2	AV-02			
AV-3	AV-03			
AV-4	ActiveHeat	The setpoint that controls heating. If the room temperature goes below this setpoint the thermostat will enter heating mode.	R	60.0°F
AV-5	ActiveCool	The setpoint that controls cooling. If the room temperature goes above this setpoint the thermostat will enter cooling mode.	R	80.0°F
AV-6	OccHtgSP	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	OccClgSP	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	HeatingLoop	Set to 0 / Off, 50 / 1 stage, 100 / 2 stage	R	0

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AV-9	CoolingLoop	Set to 0 / Off, 50 / 1 stage, 100 / 2 stage	R	0
AV-10	NetworkTemperature	Temperature used for control that is written from a different network device	R/W	0˚F
AV-11	CurrentModeSP	If in Heating = ActiveHeat, If in Cooling = ActiveCool	R	72
AV-12	AV-12			
AV-13	AV-13			
AV-14	AV-14			
AV-15	AV-15			
AV-16	AV-16			
AV-17	HiSpaceTemp	The highest temperature determined from AI-0 and AI-2 or AV-10. Use BV-56 to select between AI-2 and AV-10.	R	variable
AV-18	LoSpaceTemp	The lowest temperature determined from AI-0 and AI-2 or AV-10. Use BV-56 to select between AI-2 and AV-10.	R	variable
AV-19	AvgTemp	The average temperature calculated using AI-0 and AI-2 through AI-5. Use AV-36 to configure the number of external sensors used in the average.	R	variable
AV-20	Spaceemp	The temperature used for the control sequence. 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	AV-21			
AV-22	AV-22		R	
AV-23	AV-23		R	
AV-24	AV-24		R	
AV-25	Stage2TrigDB	Calculated Stage 2 Trigger Deadband = (Deadband AV-39) multiplied by 2	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	AV-29			
AV-30	AI-0Setup	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-1Setup	See AV-30	R	0
AV-32	AI-2Setup	See AV-30	R	0
AV-33	AI-3Setup	See AV-30	R	0
AV-34	AI-4Setup	See AV-30	R	0
AV-35	AI-5Setup	See AV-30	R	0
AV-36	Ext Sensors to Average	The number of external sensors connected to AI-2 to AI-5, used for the average temp calculation	R/W	0
AV-37	UnOccMaxHeatingSP	Limits UnOccupied Heating Setpoint	R/W	65° F
AV-38	UnOccMinCoolingSP	Limits UnOccupied Cooling Setpoint	R/W	80° F

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AV-39	DeadBand	Sets heating and cooling deadbands	R/W	.5
AV-40	MinDeadBand	Limits AV-39 to be no less than AV-40	R/W	.5
AV-41	AV-41		R/W	
AV-42	AV-42		R/W	
AV-43	AV-43		R/W	
AV-44	UIMode	Set to 3 (all other values Enable) to Disable User Interface (Field Service and Setup) Backdoor is available – contact ExactLogic	R/W	1
AV-45	OccCoolingSetpoint	Occupied Cooling Setpoint	R/W	74°F
AV-46	OccHeatingSetpoint	Occupied Heating Setpoint	R/W	72°F
AV-47	FanShutOffDelay	Sets the period of time the fan will run after a heating or cooling cycle	R/W	120 sec
AV-48	StageDelay	Sets time delay for 1st stage call	R/W	5 sec
AV-49	2ndStageDelay	Sets time delay for 1st to 2nd stage call	R/W	300 sec
AV-50	AV-50		R/W	
AV-51	AV-51		R/W	
AV-52	AV-52		R/W	
AV-53	AV-53		R/W	
AV-54	AV-54		R/W	
AV-55	AV-55		R/W	
AV-56	AntiCycleMinOn	Anti Short Cycle Min On – All BOs	R/W	120 sec
AV -57	AntiCycleMinOff	Anti Short Cycle Min Off – All BOs	R/W	780 sec
AV-58	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R	1.6
AV-59	AveTimeBase	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	CalibrationOffset	The calibration offset for the internal thermistor.	R	variable
AV-61	SpaceAlarmOffset	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	NumberOfFanSpeeds	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	CurrentFanSpeed	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	This point is reserved for internal thermostat use and its value cannot be changed	R/W	85.0°F
AV-65	Reserved	This point is reserved for internal thermostat use and its value cannot be changed	R/W	65.0°F
AV-66	SpaceSetpoint	The occupied room setpoint	R/W	73.0°F

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AV-67	OccMinCoolingSP	The maximum occupied room setpoint allowed.	R/W	78.0°F
AV-68	OccMaxHeatingSP	The minimum occupied room setpoint allowed	R/W	68.0°F
AV-69	ClgOffset	The offset from Room Setpoint used to calculate the Occupied Cooling SP	R/W	1.0°F
AV-70	HtgOffset	The offset from Room Setpoint used to calculate the Occupied Heating SP	R/W	1.0°F
AV-71	UnOccCoolingSetpoint	The cooling setpoint used when the thermostat is unoccupied.	R/W	80.0°F
AV-72	UnOccHeatingSetpoint	The heating setpoint used when the thermostat is unoccupied.	R/W	60.0°F
AV-73	AfterHoursLimit	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	AfterHoursTimer	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	MotionOFFDelay	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	SPAdjValue	This is the adjustment per stat button push to adjust the space temperature setpoint	R/W	.5
AV-83	AV-83	This point is reserved for internal thermostat use and its value cannot be changed	R	0
AV-84	AV-84		R/W	

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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	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	==Internal humidity 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	

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Binary Inputs

Instance	Object Name	Description	Read/Write	Default
BI-0	BI-00		R	
BI-1	Motion	Motion sensor status from the add-on card	R	
BI-2	BI-02		R	
BI-3	BI-03		R	
BI-4	BI-04		R	
BI-5	OccupiedRelay	Optional occupancy relay input	R	

Binary Outputs

Instance	Object Name	Description	Read/Write	Default
BO-0	Fan	Output for Fan Control	R/W	OFF
BO-1	Cool1	Output for Compressor in Comp/Rev Mode. Output for Cooling Stage 1 in Htg/Clg Mode.	R/W	OFF
BO-2	Cool2	Output for Reversing Valve when in Comp/Rev Mode. Output for Heating Stage 1 when in Htg/Clg Mode.	R/W	OFF
BO-3	Heat1	Output for Cooling Stage 2	R/W	OFF
BO-4	Heat2	Output for Heating Stage 2 or Radiation	R/W	OFF
BO-5	Schedule	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	HeatingCoolingMode	Sequence point to show analog heating or cooling. OFF = Cooling ON = Heat	R	OFF
BV-2	UnoccFanONStatus	Set to Active to Continuously Run Fan While in Unoccupied Mode	R	OFF
BV-3	BV-03			
BV-4	BV-04			
BV-5	HeatEnabled	Heating is allowed by system by BV-38	R	ON
BV-6	BV-06			
BV-7	BV-07			
BV-8	BV-08			
BV-9	SpaceAlarm	Space Alarm, alarm is delayed after receiving an occupied command. The delay is 7200 sec	R	OFF
BV-10	ProgramStatus	Used to determine if the sequence was loaded correctly on a BACnet Restore or power up.	R	OFF
BV-11	BV-11			
BV-12	BV-12			
BV-13	BV-13			
BV-14	BV-14			
BV-15	BV-15			
BV-16	BV-16			
BV-17	BV-17			

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BV-18				
BV-19				
BV-20				
BV-21				
BV-22	TooWarmStatus	Status of the Too Warm Alarm without Delay	R	OFF
BV-23	TooCoolStatus	Status of the Too Cool Alarm without Delay	R	OFF
BV-24	SpaceToWarmAlarm	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	SpaceToCoolAlarm	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	HeatStage1Status	The status of the stage 1 heat request before the anti-short cycle delay.	R	OFF
BV-27	CoolStage1Status	The status of the stage 1 cool request before the anti-short cycle delay.	R	OFF
BV-28	HeatStage2Status	The status of the stage 2 heat request before the anti-short cycle delay.	R	OFF
BV-29	CoolStage2Status	The status of the stage 2 cool request before the anti-short cycle delay.	R	OFF
BV-30	BV-30		R/W	
BV-31	BV-31		R/W	
BV-32	BV-32		R/W	
BV-33	BV-33		R/W	
BV-34	BV-34		R/W	
BV-35	BV-35		R/W	
BV-36	OccFanAutoOn	Controls if the occupied mode Fan is in the Auto (1) or On (0)	R/W	ON
BV-37	UnOccFanAutoOn	Controls if the unoccupied mode Fan is in the Auto (1) or On (0)	R/W	ON
BV-38	HeatingLockout	System has heating locked out	R/W	OFF
BV-39	BV-39		R/W	
BV-40	OccupiedStatus	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	OptStartWarmup	A Warmup command has been sent to the thermostat. When ON the thermostat will switch to occupied settings.	R/W	OFF
BV-42	OptStartCooldown	A Cooldown command has been sent to the thermostat. When ON the thermostat will switch to occupied settings.	R/W	OFF
BV-43	OccMode	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	AfterHoursStatus	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	BV-46		R/W	

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BV-47	BV-47		R/W	
BV-48	BV-48		R	
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	BV-50		R/W	
BV-51	BIOccupancy	ON = BI-5 will be used to indicate occupancy OFF = BI-5 is not used for occupancy	R/W	OFF
BV-52	BV-52		R/W	
BV-53	BV-53		R/W	
BV-54	BV-54		R/W	
BV-55	BV-55		R/W	
BV-56	ExtTempEnable	OFF = External Temperature is from AI-2 ON = External Temperature is from AV-10	R/W	OFF
BV-57	DisableSplash	When ACTIVE, the "EXACTLOGIC" splash will not show after key presses	R/W	OFF
BV-58	DisableSetup	When ACTIVE, there will be no access to the Setup Menu where the Network/MAC/Baud Rate is set	R/W	OFF
BV-59	DisableFSM	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	HiLoSelect	ON = Select the Network Temp, AV-10, for Hi/Lo Mode OFF = Select the External Sensor, AI-2, for HI/Lo Mode	R/W	OFF
BV-61	TempMode1	ON = Select the Average Temp, AV-19, for control OFF = Select the Hi/Lo Mode for control	R/W	OFF
BV-62	TempMode2	ON = Select Average or Hi/Lo Mode OFF = Select Network Temp for control	R/W	OFF
BV-63	TempMode3	ON = Select Average, Hi/Lo, or Average Mode OFF = Selects Internal (AI-0) or External Temp (AI-2) for control	R/W	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	BV-65		R/W	
BV-66	DisableUnit	When ON this point will disable and lockout all analog and binary outputs.	R/W	OFF
BV-67	RoomTempSelect	ON = Select the external thermistor, AI-2, for the control sequence OFF = Select the internal thermistor, AI-0, for the control sequence.	R/W	OFF
BV-68	Backlight	When ON the LCD backlight will remain on	R/W	OFF
BV-69	FanMode	Controls if the fan will cycle or run continuously. OFF = Cycle, ON = Continuous, BV-40 must also be ON.	R/W	OFF
BV-70	BV-70		R/W	
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-72		R/W	

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BV-73	BV-73		R/W	
BV-74	BV-74		R/W	
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 internal humidity descriptor	R/W	OFF
BV-112	Binary Value 112	Enable outside air descriptor	R/W	OFF

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