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ASHRAE's BACnet® Protocol Implementation Conformance Statement (PICS)

Date: January 21, 2020
Vendor Name: Lutron Electronics Co., Inc.
Product Name: myRoom BACnet Integration
Applications Software Version: 2.0
Firmware Revision: 3.3
BACnet Protocol Revision: 4
Vendor ID: 176

Product Description

BACnet IP is embedded in the myRoom processor. There are two types of BACnet devices available in myRoom: subsystem devices and area devices. The subsystem devices are main BACnet devices; typically, one main device per guestroom of the building. The area devices are virtual BACnet devices of the subsystem device, typically one per guestroom of the building. It is normal to have multiple subsystem main devices and area virtual devices in a project.

BACnet Interoperability Building Blocks Supported (Annex K):

K.1.2 BIBB	Data Sharing	ReadProperty-B (DS-RP-B)
K.1.4 BIBB	Data Sharing	ReadPropertyMultiple-B (DS-RPM-B)
K.1.8 BIBB	Data Sharing	WriteProperty-B (DS-WP-B)
K.1.10 BIBB	Data Sharing	WritePropertyMultiple-B (DS-WPM-B)
K.1.12 BIBB	Data Sharing	COV-B (DS-COV-B)
K.5.2 BIBB	Device Management	DynamicDeviceBinding-B (DM-DDB-B)
K.5.4 BIBB	Device Management	DynamicObjectBinding-B (DM-DOB-B)
K.5.6 BIBB	Device Management	DeviceCommunicationControl-B (DM-DCC-B)

BACnet Standardized Device Profile (Annex L):

BACnet Application Specific Controller (B-ASC)

Segmentation Capability:

Segmented requests supported? No. Window Size: n/a
Segmented responses supported? No. Window Size: n/a

Non-Standard Application Services:

Non-standard application services are not supported.

Limitations:

Certain BACnet objects and values that are not supported by the myRoom system may show up in the BACnet terminal. Those should not be used. Only the BACnet objects and values mentioned in this document should be used.

Job Name:	Model Numbers:	
Job Number:		

Standard Object Types Supported:

Device

1. Dynamically creatable using BACnet CreateObject service? No.
2. Dynamically deletable using BACnet DeleteObject service? No.
3. List of optional properties supported: Active_COV_Subscriptions, Description, Location, Profile_Name.
4. List of all properties that are writable where not otherwise required by this standard: None.
5. List of proprietary properties: None.
6. List of any property value range restrictions: None.

Analog Value

1. Dynamically creatable using BACnet CreateObject service? No.
2. Dynamically deletable using BACnet DeleteObject service? No.
3. List of optional properties supported: COV_Increment (See Table for objects that support this property).
4. List of all properties that are writable where not otherwise required by this standard: None.
5. List of proprietary properties: None.
6. List of any property value range restrictions: See Table.

Binary Value

1. Dynamically creatable using BACnet CreateObject service? No.
2. Dynamically deletable using BACnet DeleteObject service? No.
3. List of optional properties supported: Active_Text, Inactive_Text.
4. List of all properties that are writable where not otherwise required by this standard: None.
5. List of proprietary properties: None.
6. List of any property value range restrictions: See Table.

Multi-State Value

1. Dynamically creatable using BACnet CreateObject service? No.
2. Dynamically deletable using BACnet DeleteObject service? No.
3. List of optional properties supported: State_Text.
4. List of all properties that are writable where not otherwise required by this standard: None.
5. List of proprietary properties: None.
6. List of any property value range restrictions: See Table.

Data Link Layer Options:

Other: These devices are virtual devices and are represented by a six octet address equal to the 48-bit device instance of the virtual device.

Device Address Binding:

Is static device binding supported? No.

Networking Options:

BACnet/IP Annex J — non-BBMD functionality; the myRoom processor is able to register as a foreign device. The myRoom processor is able to initiate original-broadcast-NPDU.

Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

- ANSI X3.4.

BACnet Routing:

The myRoom processor is a BACnet router. All of the virtual area devices are routed through the main subsystem device.

Job Name:	Model Numbers:	
Job Number:		

Object Name	Type	Instance	Read	Write	COV	Units	Min PV	Max PV	Inactive Text (0)	Active Text (1)	State Text (Multi-State)
{AreaName} {Instance}	DEVICE	{Base} + {System} + 1	X	—	—	—	—	—	—	—	—
	Notes: The Area Name is the logical name that typically corresponds to a physical location in a building. The Instance is the same as the unique Device ID assigned to each area.										
Lighting Level	AV	2	X	X	X	%	0	100	—	—	—
	Notes: The intensity level of all lighting fixtures in the area. The lighting level will be an analog value between 0% and 100%. If the lighting fixtures in the area are at different light levels, this value will be set to the level of the highest intensity in that area. Does not include RF zones.										
Lighting State	BV	3	X	X	X	—	0	1	Off	On	—
	Notes: The lighting state will be ON if any of the lighting fixtures in the area are in the On state; if all lighting fixtures are off, the lighting state will be set to OFF.										
Lighting Scene	MSV	4	X	X	X	—	1	Number of scenes defined for this area	—	—	{SceneName}
	Notes: The lighting preset to which the lighting fixtures in that area are currently set. If the value is set to 1, the Off Scene will be selected, which will turn all lights to OFF. All other scenes are defined within the Lutron system configuration software. If lights are currently not set to a valid lighting scene, then the value will be set to an unknown preset level.										
Occupancy State	MSV	8	X	—	X	—	1	4	—	—	1 = Unoccupied 2 = Occupied 4 = Unknown
	Notes: A read-only property that indicates the occupancy of physical sensors in a guestroom area. Occupied means that at least one sensor in the area is indicating Occupancy. Unoccupied means that all of the sensors in the area are indicating Unoccupied. Unknown means that not all of the sensors in the area have reported their status. The myRoom system uses Guest Presence Detection (GPD) to determine the overall occupancy of the guest room and reports this via a state variable. See the myRoom main device BACnet PIC statement (P/N 3691088 at www.lutron.com) for details.										
Number of Lamp Failures	AV	15	X	—	X	—	0	none	—	—	—
	Notes: For all digitally-controlled EcoSystem or DALI® fluorescent ballasts and LED drivers controlled by a DIN power module, the number of ballasts with lamp failures in the area will be displayed. If the value is 0, there are no lamp failures for the area.										
Number of Devices Not Responding	AV	16	X	—	X	—	0	none	—	—	—
	Notes: For any QS device, EcoSystem or DALI® digital fluorescent ballast or LED drivers controlled by a DIN power module, the number of devices that are programmed into the system but are not responding will be displayed. If the value is 0, there are no device failures for the area.										
Total Lighting Power	AV	18	X	—	X	watts	0	none	—	—	—
	Notes: A calculated value that indicates the total instantaneous power consumption for all of the lighting loads in the area.										
Maximum Lighting Power	AV	19	X	—	X	watts	0	none	—	—	—
	Notes: The maximum connected lighting load of the area. This value is the maximum value that Total Power can achieve. Maximum Power minus Total Power equals the power being saved. Typically, this value does not change.										

AV = Analog Value, BV = Binary Value, MSV = Multi-State Value
{AreaName} is a text string defined in the Lutron myRoom system configuration software
{Instance} is a number defined in the Lutron myRoom system configuration software that is equal to the {Base} number + {System} number +1
{Base} is a 22-bit value set in the Lutron myRoom system configuration software (default 1760000)
{System} is an 8-bit value set in the Lutron myRoom system configuration software (0 to 127)
{SceneName} is a text string of the name of each scene that is defined in the Lutron myRoom system configuration software
PV = Present Value

Job Name:

Job Number:

Model Numbers:

Object Name	Type	Instance	Read	Write	COV	Units	Min PV	Max PV	Inactive Text (0)	Active Text (1)	State Text (Multi-State)
Number of Wireless Input Device Failures	AV	23	X	—	X	—	none	—	—	—	—
	Notes: If a wireless input (e.g., occupancy sensor) that is connected to the system is no longer communicating with the Lutron system, the device output will be greater than 0. The value will be equal to the number of failures in the area. This could be because of battery failure, the device being out of range of the QSM, or device failure. If the value equals 0, all wireless inputs in the area are reporting properly.										
{ZoneName} Level	AV	1000 to 1099	X	X	X	%	0	100	—	—	—
	Notes: The light level intensity of a specific zone of lighting within an area. The light level will be an analog value between 0% and 100%. There can be multiple lighting zones defined within each area. Each lighting fixture in the area will be assigned to one, and only one, lighting zone. Each will have a unique instance ID from 1000 to 1999. RF zone controls are not included.										
{ShadeGroupName} Level	AV	2000 to 2999	X	X	X	%	0	100	—	—	—
	Notes: The shade level of a specific shade group of Lutron Sivoia QS shades within an area. The shade level will be an analog value between 0% and 100%. 100% equals fully open; 0% equals fully closed. There can be multiple shade groups within each area; each group will have a unique instance ID from 2000 to 2999.										
{ShadeGroupName} Preset	MSV	3000 to 3999	X	X	X	—	1	34	—	—	{PresetName}
	Notes: Displays to which shade preset the shade motors of each shade group in an area are currently set. The values correspond to: 1 = Open; 2–30 = User programmable presets; 31 = Closed; 32–33 = Not used 34 = Undefined (Shade levels do not match any presets)										
{3-WireMotorZone Name}	MSV	5000 to 5099	X	X	X	—	1	3	—	—	1 = Stop 2 = Open 3 = Close
	Notes: Displays the current state of a 3-wire motor output within a specific area. If the value is set to 1, the output will be in the Stopped state (both relays open). If the value is set to 2, the output will be Opening (open relay active). If the value is set to 3, the output will be Closing (close relay active).										
{HVACZoneName} Temperature Celsius	AV	7100	X	X	X	Degrees Celsius	0	100	—	—	—
	Notes: The temperature currently measured in the HVAC zone of this area. Temperature caps at the limit of the range, in degrees Celsius. This value will be read-only if the equipment is connected over the thermostat's modbus link. This value will be write-only if the equipment is connected over BACnet. The thermostat in that case will not provide zone temperature. The equipment **needs to** provide that.										
{HVACZoneName} Temperature Fahrenheit	AV	7103	X	X	X	Degrees Fahrenheit	32	212	—	—	—
	Notes: The temperature currently measured in the HVAC zone of this area. Temperature caps at the limit of the range, in degrees Fahrenheit. This value will be read-only if the equipment is connected over the thermostat's modbus link. This value will be write-only if the equipment is connected over BACnet. The thermostat in that case will not provide zone temperature. The equipment **needs to** provide that.										
{HVACZoneName} Operating Mode	MSV	7106	X	X	X	—	1	8	—	—	1 = Off/Protect 4 = Auto 256 = Unknown
	Notes: The operating mode currently commanded in the HVAC zone. This is the mode in which the user wants their HVAC system to run. See **Operating State** for actual reported stage information.										

Mixed is a read-only state.
AV = Analog Value, BV = Binary Value, MSV = Multi-State Value
fc = foot candles
{3-WireMotorZoneName} is a text string defined in the Lutron system configuration software
{PartitionWallName} is a text string defined in the Lutron system configuration software
{HVACZoneName} is a text string defined in the Lutron system configuration software. Only one HVAC zone per Area Virtual Device is supported.
{ZoneName} is a text string defined in the Lutron system configuration software
{ShadeGroupName} is a text string defined in the Lutron system configuration software
{PresetName} is a text string defined in the Lutron system configuration software
PV = Present Value

Job Name:

Job Number:

Model Numbers:

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Object Name	Type	Instance	Read	Write	COV	Units	Min PV	Max PV	Inactive Text (0)	Active Text (1)	State Text (Multi-State)
{HVACZoneName} Operating State	MSV	7107	X	X	X	—	1	10	—	—	1 = None, Heat Last 2 = Heat 1 3 = Heat 1+2 4 = Heat 1+2+3 5 = Heat 3 6 = None, Cool Last 7 = Cool 1 8 = Cool 1+2 9 = Off 10 = Emergency Heat 11 = Dry 256 = Unknown
	Notes: The stage information currently reported for the HVAC zone and its unit. See **Operating Mode** for commanded mode. This value will be read-only if the equipment is connected over the thermostat's modbus link. This value will be write-only if the equipment is connected over BACnet. This value needs to be reported to get energy reports in myRoom Vue.										
{HVACZoneName} Fan Mode	MSV	7108	X	X	X	—	1	8	—	—	1 = Auto 4 = No Fan 5 = High 6 = Medium 7 = Low 256 = Unknown
	Notes: The fan operating mode currently commanded in the HVAC zone. See **Fan State** for actual reported stage information.										
{HVACZoneName} Fan State	MSV	7109	X	X	X	—	1	5	—	—	1 = Unknown 2 = Off 3 = High/On 4 = Medium 5 = Low 256 = Unknown
	Notes: The speed information currently reported for the HVAC fan zone and its fan unit. See **Fan Mode** for commanded mode. This value will be read-only if the equipment is connected over the thermostat's modbus link. This value will be write-only if the equipment is connected over BACnet. This value needs to be reported to get energy reports in myRoom Vue.										
{HVACZoneName} HVAC Fault Status	MSV	7111	X	X	X	—	1	3	—	—	1 = Unknown 2 = Generic Fault(s) 3 = No Fault
	Notes: If you receive a fault, please work with the HVAC vendor to understand the fault within the HVAC system.										
{HVACZoneName} HVAC Power	AV	7113	X	—	X	watts	0	none	—	—	—
	Notes: A read-only, calculated value which indicates the instantaneous power consumption of this HVAC zone in watts.										
{HVACZoneName} Single Setpoint Celsius	AV	7114	X	X	X	Degrees Celsius	0	100	—	—	—
{HVACZoneName} Single Setpoint Fahrenheit	AV	7115	X	X	X	Degrees Fahrenheit	32	212	—	—	—
{HVACZoneName} Negative Drift Celsius	AV	7116	X	X	X	Degrees Celsius	0	8	—	—	—
{HVACZoneName} Positive Drift Celsius	AV	7117	X	X	X	Degrees Celsius	0	8	—	—	—

AV = Analog Value, BV = Binary Value, MSV = Multi-State Value
{HVACZoneName} is a text string defined in the Lutron myRoom system configuration software. Only one HVAC zone per Area Virtual Device is supported.
{KeypadName} is a text string defined in the Lutron myRoom system configuration software
PV = Present Value

Job Name:

Job Number:

Model Numbers:

Object Name	Type	Instance	Read	Write	COV	Units	Min PV	Max PV	Inactive Text (0)	Active Text (1)	State Text (Multi-State)
{HVACZoneName} Negative Drift Fahrenheit	AV	7118	X	X	X	Degrees Fahrenheit	0	15	—	—	—
{HVACZoneName} Positive Drift Fahrenheit	AV	7119	X	X	X	Degrees Fahrenheit	0	15	—	—	—
{Temperature SensorName} Temperature Celsius	AV	7300 to 7399	X	X	X	Degrees Celsius	-17	121	—	—	—
	Notes: This is the optional supply air temperature sensor that can be wired to the FCU controller for monitoring the supply air temperature. This is not the temperature sensor on the thermostat.										
{Temperature SensorName} Temperature Fahrenheit	AV	7400 to 7499	X	X	X	Degrees Fahrenheit	2	250	—	—	—
	Notes: This is the optional supply air temperature sensor that can be wired to the FCU controller for monitoring the supply air temperature. This is not the temperature sensor on the thermostat.										
{KeypadName} State	BV	8000 to 8999	X	X	X	—	0	1	Disabled	Enabled	—
	Notes: When set to Enabled, the selected keypad will work as programmed. When set to Disabled, the selected keypad will have no effect on the system.										

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{HVACZoneName} is a text string defined in the Lutron myRoom system configuration software. Only one HVAC zone per Area Virtual Device is supported.
{KeypadName} is a text string defined in the Lutron myRoom system configuration software
PV = Present Value

Job Name:

Job Number:

Model Numbers: