



Wireless 900 MHz Gateway - BACnet Protocol Implementation Conformance Statement

Application Note

Wireless_Gateway_BACnet_PICS

rev. 07/11/18

BACnet Protocol Implementation Conformance Statement - Appendix A (Normative)

Date: May 23, 2018

Vendor Name: Building Automation Products, Inc.

Product Name: 900MHz BACnet Gateway/Receiver

Product Model Number: GTW900

Application Software Version: 3.2.0.7 BACnet Version: 0.8.5 BACnet Protocol Revision: 12

Product Description

The BAPI 900MHz Gateway receives the data from one or more sensor devices up to 275 feet away, and provides the data to the BAS via multiple communication options (TCP/IP, JSON, BACnet IP). The Gateway supports up to 50 sensor devices. Sensor devices can be configured remotely.

The Gateway can expose sensor data in either a hierarchical or flat device layout. In the hierarchical device layout, each wireless sensor is exposed on the BACnet network as a virtual BACnet device. The Gateway behaves as a router between the BACnet network and the virtual network of wireless sensor devices which represents the 900MHz wireless network. In the flat device layout, all wireless sensor data is exposed as objects of the single Gateway device on the BACnet network.

The Gateway supports up to 128 COV subscriptions from up to 16 different BACnet clients. The Gateway supports BBMD capability for up to 128 BDT entries and accepts foreign device registration for up to 128 FDT entries. The BDT is accessed and updated using the Read-Broadcast-Distribution-Table and Write-Broadcast-Distribution-Table BVLL messages.

BACnet Standardized Device Profile (Annex L):

- BACnet Operator Workstation (B-OWS)
- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Display (B-OD)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)

List all BACnet Interoperability Building Blocks Supported (Annex K):

- Data Sharing-ReadProperty-B (DS-RP-B)
- Data Sharing-ReadPropertyMultiple-B (DS-RPM-B)
- Data Sharing-WriteProperty-B (DS-WP-B)
- Data Sharing-WritePropertyMultiple-B (DS-WPM-B)
- Data Sharing-COV-B (DS-COV-B)
- Device Management-Dynamic Device Binding-B (DM-DDB-B)
- Device Management-Dynamic Object Binding-B (DM-DOB-B)
- Device Management-DeviceCommunicationControl-B (DM-DCC-B)
- Device Management-ReinitializeDevice-B (DM-RD-B)

Segmentation Capability:

- Able to transmit segmented messages Window Size _____
- Able to receive segmented messages Window Size _____



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Standard Object Types Supported:

Object Type	Optional Properties Supported	Writable Properties
Device	Description Local_Time Local_Date UTC_Offset Daylight_Savings_Status Active_COV_Subscriptions Serial_Number	APDU_Timeout (10 - 65535) Number_Of_APDU_Retries (0 - 255)
Analog Input ¹	Reliability COV_Increment	Present_Value ³ Out_Of_Service Reliability ³ COV_Increment
Binary Input ^{1, 2}	Reliability Inactive_Text Active_Text	Present_Value ³ Out_Of_Service Polarity Reliability ³

¹ Object Type supported only when using the flat device layout.

² Object Type supported only for Quantum Slim and Quantum Room sensor device models.

³ Writable only when Out_Of_Service is TRUE.

Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) _____
- MS/TP master (Clause 9), baud rate(s):
- MS/TP slave (Clause 9), baud rate(s):
- Point-To-Point, EIA 232 (Clause 10), baud rate(s):
- Point-To-Point, modem, (Clause 10), baud rate(s):
- LonTalk, (Clause 11), medium: _____
- BACnet/ZigBee (ANNEX O)
- Other:

Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) Yes No



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Networking Options:

- Router, Clause 6 - Routes between BACnet/IP and virtual network of wireless sensor devices according to Annex H.1,2
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
 - Does the BBMD support registrations by Foreign Devices? ■ Yes □ No
 - Does the BBMD support network address translation? □ Yes ■ No

Network Security Options:

- Non-secure Device - is capable of operating without BACnet Network Security
- Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)
 - Multiple Application-Specific Keys:
 - Supports encryption (NS-ED BIBB)
 - Key Server (NS-KS BIBB)

Character Sets Supported:

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

- ISO 10646 (UTF-8) □ IBM™/Microsoft™ DBCS □ ISO 8859-1
- ISO 10646 (UCS-2) □ ISO 10646 (UCS-4) □ JIS X 0208

If this product is a communication Gateway, describe the types of non-BACnet equipment/networks(s) that the Gateway supports:

The Gateway communicates to wireless sensor devices via 900MHz RF. The sensor devices measure environment data such as temperature and humidity and transmit the data to the Gateway up to 275 feet away. The Gateway sends a confirmation signal to the sensor upon successful reception of data. The sensors are capable of storing all data in memory until a successful reception signal is received from the Gateway so that no data is lost during a communication interruption. Transmissions can also be triggered by a temperature change with a user-adjustable threshold. The 900 MHz signal is "frequency agile" for maximum reliability.