



# BACnet Object List for 900 MHz Wireless Sensors

Application Note

BACnet\_Object\_List\_for\_Wireless\_Sensors

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## Communication Overview

BACnet objects for sensor devices on the BAPI 900 MHz wireless Gateway can be exposed in one of two different layouts, hierarchical or flat. The hierarchical device layout exposes multiple devices on the BACnet network, one for each sensor device. The flat device layout exposes only a single device on the BACnet network.

In the hierarchical device layout, the wireless Gateway itself is exposed as a BACnet device and behaves as a router to a virtual network of virtual BACnet devices corresponding to each sensor device. The BACnet objects for each sensor device type are defined in the BACnet Objects List tables below.

In the flat device layout, the wireless Gateway is the only device exposed on the BACnet and contains BACnet objects corresponding to all sensor devices. The object instances of these BACnet objects, as defined in the BACnet Object List tables below, are prepended with the configured device ID of the sensor device. For example, if a sensor device is configured for a device ID of 1234 and the object list defines an Analog Input Object with an object instance of 2, that object would be exposed as Analog Input 12342 on the BACnet network.

## BACnet Objects List

### Food Probe (WFP900):

| <u>Object ID</u> | <u>Object Type</u> | <u>Object Instance</u> ..... | <u>Object Name</u> ..... | <u>Description</u>                       |
|------------------|--------------------|------------------------------|--------------------------|--|
| AI 0             | Analog Input.....  | 0* .....                     | Temperature.....         | Temperature in °C or °F                  |
| AI 4             | Analog Input.....  | 4* .....                     | Battery .....            | Battery voltage level in volts           |
| AI 5             | Analog Input.....  | 5* .....                     | Signal.....              | Received wireless signal strength in dBm |

\* For the flat device layout, the device ID of the sensor is prepended to the object instance.

### BAPI-Box (WT900-BB, WT900-LL-BB, WTH900-BB, WTH900-LL-BB):

| <u>Object ID</u> | <u>Object Type</u> | <u>Object Instance</u> ..... | <u>Object Name</u> ..... | <u>Description</u>                       |
|------------------|--------------------|------------------------------|--------------------------|--|
| AI 0             | Analog Input.....  | 0* .....                     | Temperature.....         | Temperature in °C or °F                  |
| AI 1             | Analog Input.....  | 1* .....                     | Humidity .....           | (Optional) Relative humidity in %RH      |
| AI 2             | Analog Input.....  | 2* .....                     | Barometric Pressure ...  | Barometric Pressure in kPa               |
| AI 3             | Analog Input.....  | 3* .....                     | Light Level .....        | (Optional) Light level in lx.            |
| AI 4             | Analog Input.....  | 4* .....                     | Battery .....            | Battery voltage level in volts           |
| AI 5             | Analog Input.....  | 5* .....                     | Signal.....              | Received wireless signal strength in dBm |

\* For the flat device layout, the device ID of the sensor is prepended to the object instance.

(Optional) = These objects are not applicable for all device models.

### Quantum Slim (WT900-QSL, WTH900-QSL):

| <u>Object ID</u> | <u>Object Type</u> | <u>Object Instance</u> ..... | <u>Object Name</u> ..... | <u>Description</u>                       |
|------------------|--------------------|------------------------------|--------------------------|--|
| AI 0             | Analog Input.....  | 0* .....                     | Temperature.....         | Temperature in °C or °F                  |
| AI 1             | Analog Input.....  | 1* .....                     | Humidity .....           | (Optional) Relative humidity in %RH      |
| AI 4             | Analog Input.....  | 4* .....                     | Battery .....            | Battery voltage level in volts           |
| AI 5             | Analog Input.....  | 5* .....                     | Signal.....              | Received wireless signal strength in dBm |
| BI 0             | Binary Input.....  | 0* .....                     | Reed Switch.....         | Status of reed switch contact terminal   |

\* For the flat device layout, the device ID of the sensor is prepended to the object instance.

(Optional) = These objects are not applicable for all device models.

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## BACnet Objects List continued...

### Quantum Room (WT900-Q, WTH900-Q):

| <u>Object ID</u> | <u>Object Type</u> | <u>Object Instance</u> ..... | <u>Object Name</u> ..... | <u>Description</u>                       |
|------------------|--------------------|------------------------------|--------------------------|--|
| AI 0             | Analog Input.....  | 0* .....                     | Temperature.....         | Temperature in °C or °F                  |
| AI 1             | Analog Input.....  | 1* .....                     | Humidity .....           | (Optional) Relative humidity in %RH      |
| AI 2             | Analog Input.....  | 2* .....                     | Setpoint.....            | Temperature setpoint**                   |
| AI 4             | Analog Input.....  | 4* .....                     | Battery .....            | Battery voltage level in volts           |
| AI 5             | Analog Input.....  | 5* .....                     | Signal.....              | Received wireless signal strength in dBm |
| BI 0             | Binary Input.....  | 0* .....                     | Override .....           | Occupant override**                      |

\* For the flat device layout, the device ID of the sensor is prepended to the object instance.

\*\* These objects are always available, but are not applicable for all device model configurations.

(Optional) = These objects are not applicable for all device models.

### Analog Input Module (WAI900-4A):

| <u>Object ID</u> | <u>Object Type</u> | <u>Object Instance</u> ..... | <u>Object Name</u> ..... | <u>Description</u>                       |
|------------------|--------------------|------------------------------|--------------------------|--|
| AI 0             | Analog Input.....  | 0* .....                     | Input 1 .....            | User selectable analog input             |
| AI 1             | Analog Input.....  | 1* .....                     | Input 2.....             | User selectable analog input             |
| AI 2             | Analog Input.....  | 2* .....                     | Input 3.....             | User selectable analog input             |
| AI 3             | Analog Input.....  | 3* .....                     | Input 4.....             | User selectable analog input             |
| AI 5             | Analog Input.....  | 5* .....                     | Signal.....              | Received wireless signal strength in dBm |

\* For the flat device layout, the device ID of the sensor is prepended to the object instance