Overview and Identification

The BAPI-Stat "Quantum Slim" Wireless Temperature Transmitter is designed to monitor temperature inside refrigerator and freezer cases. The unit mounts on the outside of freezer units and can be mounted either inside or outside of refrigerator units. It is available with an internal or an external sensor.

The external sensor's ribbon cable can easily fit between the door seal or through hole with FEP cable without affecting appliance efficiency. The temperature is then transmitted to the receiver with a measurement range of -40 to 185°F (-40 to 85°C). The unit has an estimated battery life of 5 years with the default transmit rate of once every 5 minutes.

The transmitted temperature is picked up by a Receiver/Gateway and supplied directly to the BAS via multiple communication options (TCP/IP, JSON, BACnet IP). The unit is capable of storing all data in memory until it receives a successful reception signal from the Gateway, so that no data is lost during a communication interruption. Each sensor has customizable transmission rate and transmission power for optimum battery life and reliability. Additional transmissions can be triggered by a temperature change with a user-adjustable threshold. The system uses "smart logic" to find and secure a clean frequency channel rather than "frequency hopping"
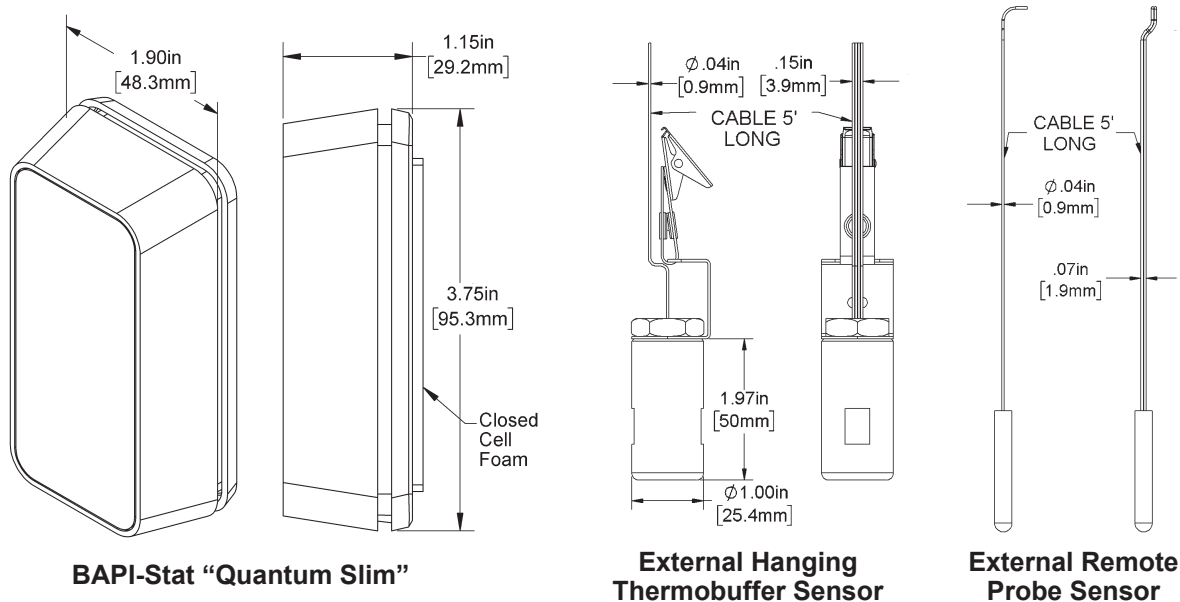

BAPI-Stat "Quantum Slim"　　**External Hanging Thermobuffer Sensor**　　**External Remote Probe Sensor**

Fig. 1: BAPI-Stat "Quantum Slim" Room Transmitter and Hanging Bracket and Remote Sensors

Associated Gateway/Receiver

The Gateway receives the data from transmitters up to 275 feet away, and provides the data to the BAS via multiple communication options (TCP/IP, JSON, BACnet IP). The Gateway also sends a confirmation signal to each transmitter upon a successful reception of data, allowing the transmitter to release the data that it has stored in memory so that no data is lost during a signal interruption. Operation of the Gateway is described in the Gateway instruction sheet (39021_RCV_900_BACnet.pdf)
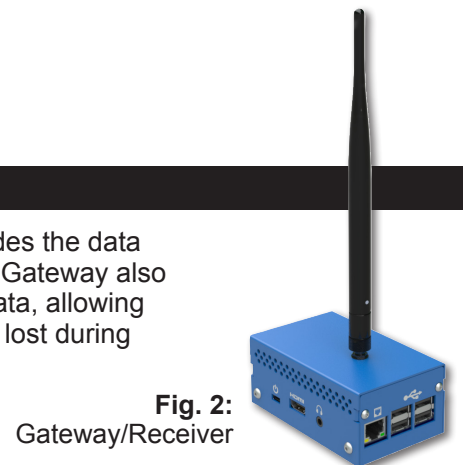
Fig. 2: Gateway/Receiver

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Building Automation Products, Inc., 750 North Royal Avenue, Gays Mills, WI 54631 USA
Tel:+1-608-735-4800 • Fax+1-608-735-4804 • E-mail:sales@bapihvac.com • Web:www.bapihvac.com

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Drywall Mounting

1. Place the base plate against the wall where you want to mount the sensor and mark the two mounting holes.

2. Drill two 3/16" holes in the center of each marked mounting hole. Insert a drywall anchor into each hole.

3. Secure the base to the drywall anchors using the #6 x 1 inch mounting screws provided.

4. Attach Cover by latching it to the top of the base, rotating the cover down and snapping it into place. Secure the cover by backing out the lock-down screws using a 1/16" Allen wrench until they are flush with the bottom of the cover.

5. For units with an internal sensor the mounting process is complete.

6. For remote sensors, string the wire through the freezer door and place the sensor in the best location to measure the required temperature.

7. Mount the External Probe using a Flexible Probe Bracket (Fig. 4) or use the clip or screw hole on the Hanging Bracket Sensor (Fig. 5)
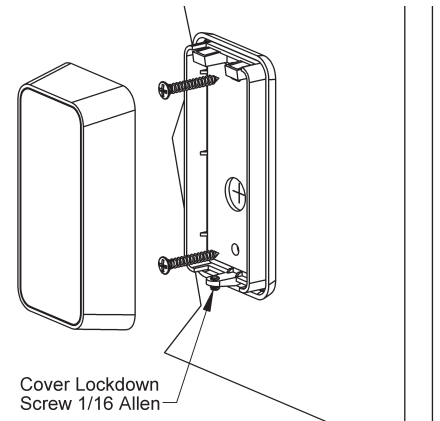
Cover Lockdown Screw 1/16 Allen

Fig. 3: BAPI-Stat "Quantum Slim" Mounting

Fig. 5: External Hanging Bracket Sensor Mounting
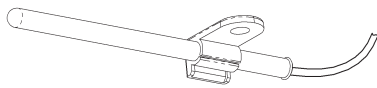
Fig. 4: External Probe Mounting with a Flexible Probe Bracket (BA/FPB)
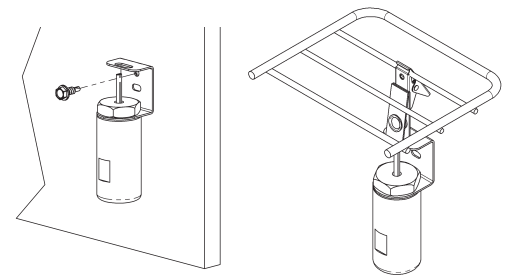
Initial Activation

1. **Cover Removal:** Remove the cover from the base plate by turning in the cover lockdown screw with a 1/16" Allen wrench (as described in the Mounting Section) until the cover can be removed (Fig 6).

2. **Battery Tab Insulator Removal for Battery Power Units:** If the unit is ordered with battery power, it will come with two pre-installed batteries. To activate the unit, find the battery tab insulators and pull them out (Fig. 7). The unit will begin transmitting at approximately 5 minute intervals.

3. **Applying Power to Wired Units:** If the unit is ordered with wired power, it will have a power terminal block near the top center of the unit. To activate the unit, apply 9 to 30 VDC (50 mA max) or 15 to 28 VAC (50 mA max) (Fig. 9). The unit will begin transmitting at approximately 5 minute intervals after power is applied.

4. **Cover Replacement:** Attach Cover by latching it to the top of the base, rotating the cover down and snapping it into place. Secure the cover by backing out the lock-down screws using a 1/16" Allen wrench until they are flush with the bottom of the cover.

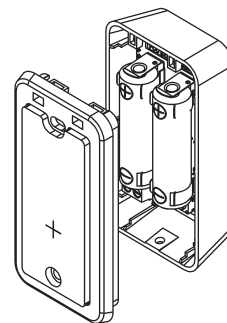**Fig. 6:** Cover removed from base plate on battery power unit
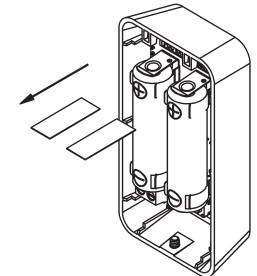
Fig. 7: Battery insulator tab removal

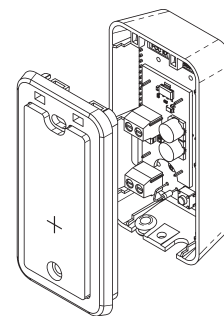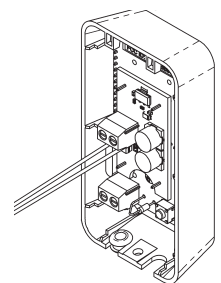**Fig. 8:** Cover removed from base plate on battery power unit

Fig. 9: Power applied to terminal block

Specifications subject to change without notice.

Battery Replacement

1. **Cover Removal:** Remove the cover from the base plate by turning in the cover lockdown screw with a 1/16" Allen wrench (as described in the Mounting Section) until the cover can be removed (Fig 6).

2. **Battery Replacement:** Remove the batteries from their holders and discard (Fig. 10). Replace with new batteries in the correct orientation (Fig. 11).

3. **Cover Replacement:** Attach Cover by latching it to the top of the base, rotating the cover down and snapping it into place. Secure the cover by backing out the lock-down screws using a 1/16" Allen wrench until they are flush with the bottom of the cover.
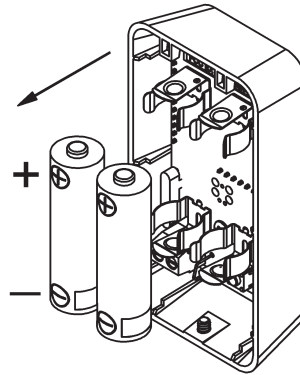
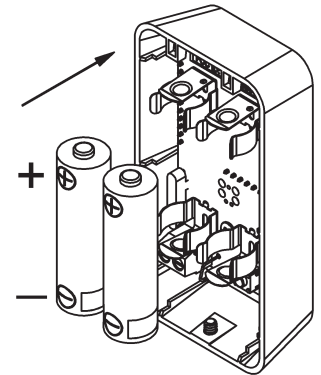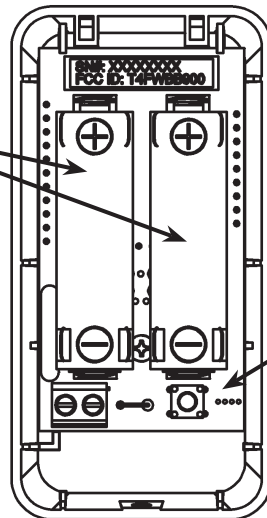**Fig. 10:** Battery removal

Fig. 11: Battery replacement

Operation

Install the provided batteries. It will begin transmitting when power is applied.

Note: The unit is factory set to transmit once every 5 minutes.

The transmission rate can be changed via the receiver/gateway network interface (as described in the gateway instruction sheet (39021_RCV_900_BACnet.pdf).

Pressing the "Ping/Train" button on the circuit board will force a transmission.

Fig. 12: BAPI-Stat "Quantum Slim" Circuit Board for Battery Power Units

The unit is powered by 9 to 30 VDC (50 mA max) or 15 to 28 VAC (50 mA max). It will begin transmitting when power is applied.

Note: The unit is factory set to transmit once every 5 minutes.

The transmission rate can be changed via the receiver/gateway network interface (as described in the gateway instruction sheet (39021_RCV_900_BACnet.pdf).
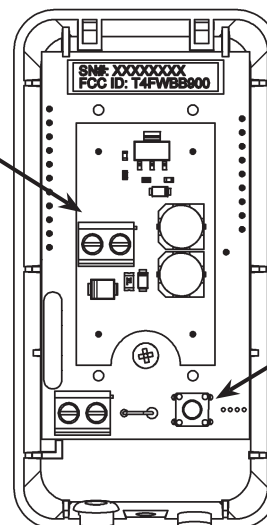
Pressing the "Ping/Train" button on the circuit board will force a transmission.

Fig. 13: BAPI-Stat "Quantum Slim" Circuit Board for Wired Power Units

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Wireless Sensor Reset

Pressing the "Ping/Training" button on a wireless sensor for 15 seconds will reset the sensor to the original factory default settings (which are accessed through the associated Gateway receiver). This reset procedure can be used to re-establish communication between the sensor and the Gateway if communication is lost due to mismatched addresses. The address of the sensor will be reset to the default: 42415049. This default address can then be entered for the Gateway (as described in the Gateway instructions document "39021_RCV_900_BACnet.pdf") to re-establish communication with the sensor. Once communication is established, the address of the Gateway and the sensor can be returned to the previous address to re-establish communication with the other sensors on the network (as described in the Gateway instructions document "39021_RCV_900_BACnet.pdf").

Besides reseting the wireless address, the reset procedure will also return the sensor to these default values:

Channel = 1, 3 • Transmit power = 0 dBm • Reported intervals = 300 seconds • Sample Interval = 300 seconds • AES key = not affected by the reset procedure • Battery warning Voltage = 2.5 • All offsets = 0

Diagnostics

Possible Problems:	Possible Solutions:
Temperature value is not being received properly by the Gateway	Verify that the controller's software is configured properly.
	Make sure the transmitters are within range of the receiver/gateway.
	Verify proper power and termination of the receiver/gateway as shown in the Gateway/ Receiver instructions document "39021_RCV_900_BACnet.pdf" available on the BAPI website or by contacting BAPI.
	Check that the receiver/gateway's yellow LED to the left of the Ethernet cable jack is illuminated and that the green LED to the right is blinking indicating a good Ethernet network connection and network activity.
Sensor is not communicating with the Gateway	Perform the "Wireless Sensor Reset" procedure as described above and in the Gateway instructions document "39021_RCV_900_BACnet.pdf" available on the BAPI website or by contacting BAPI.

FCC Wireless Certification and Interference Statement

Wireless BAPI-Stat "Quantum Slim" Room Transmitter (QSL900) - FCC ID: T4FQSL900

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in ac-cordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio / TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.

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