



BAPI-Slim™ Wireless Temperature Transmitter

Installation and Operating Instructions

28936_ins_WFC

rev. 08/27/12

Identification and Overview

The BAPI-Slim Wireless Temperature Transmitter is designed to monitor temperature inside refrigerator and freezer cases. The BAPI-Slim mounts on the outside of freezer units and can be mounted either inside or outside of refrigerator units. The unit is available with an internal sensor or an RJ11 jack 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 at 30-second intervals to the receiver with a remote probe measurement range of -40 to 185°F (-40 to 85°C).

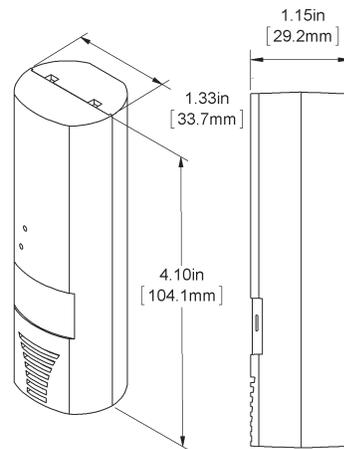


Fig. 1: BAPI-Slim Wireless Temperature Transmitter (Battery Operated)

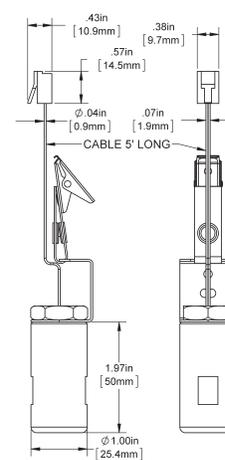


Fig. 2: External Hanging Bracket Sensor

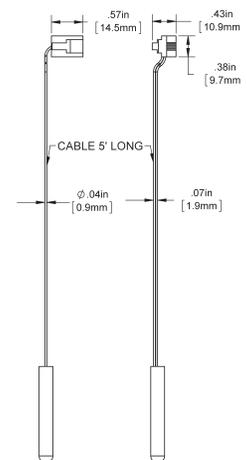


Fig. 3: External Probe Sensor

Specifications

Supply Power: One 3.6 VDC Lithium Thionyl Chloride Battery

Activation: Starts to transmit when battery is installed (or battery tab removed) and training button pushed

Training: A button on the inside of the case. (Pushed with paper clip through a pin hole in case)

LED: Transmit LED Inside Cover (Visible through the lower pin hole in the case.)

Battery: 4 Year Replaceable, 1/2 AA, (3.6 VDC)

Battery Ambient: -67° to 185°F (-55° to 85°C)

Sensor: Thermistor, 10K-2

Internal: Located at Bottom of Case

External: RJ11 Jack

2" SS Sensor w/ Ribbon Cable or FEP Cable

2" Thermobuffer w/ Ribbon Cable or FEP Cable

Measurement Range: -40 to 185°F (-40 to 85°C)

Accuracy: ±1.0°F (±0.55°C) from -40 to 185°F (-40° to 85°C)

Environmental Operation:

Stainless Steel Probe: -40 to 185°F (-40 to 85°C)

Electronics: -22 to 122°F (-30 to 50°C)

Humidity: 0 to 95% RH Non-condensing

Case Material: ABS Plastic

Ext. Probe Material: 304 Stainless Steel (SS)

Transmitter Mounting:

Keyhole Screw Mounts (Screws not included)

Double-Sided Mounting Tape (Included)

Sensor Mounting:

Remote Probe: Plastic Holder (BA/FPB)

Thermobuffer: Hanging Rack Clip (Included)

Radio Frequency: 418 MHz @ 1mW

Transmitter Interval: Selectable between 10 sec and 10 minutes in 5 second intervals (30 seconds default)

Antenna: Spiral Type Built into Case

Transmission Range:

Up to 100 Ft Open Air (418 MHz @ 1mW)

Up to 1,000 Ft Open Air with Repeater (900MHz @ 100mW)

Warranty: 2 Years from Date of Manufacture

Agency:

RoHS

Industry Canada (IC:9067A-SM061025)

Flammability: UL 94 V-O

FCC Approval: FCC ID# T4FSM061025 (418MHz Only)

FCC Compliance

Compliance: This device complies with Part 15 Subpart B of the FCC rules Operation is subject to the following conditions.

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency Interference Statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15, Subpart B, of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause interference to radio communications.

Specifications subject to change without notice.



Mounting

There are two ways to mount the wireless transmitter. One uses a keyhole screw mount and the other uses double stick mounting tape. Both techniques can be used together if desired.

TRANSMITTER MOUNTING WITH TAPE

1. Remove the battery tab by pulling the tab straight out to start the transmitter (Fig. 4). The battery will last about 4 years before replacement is required.
2. Peel off one side of the mounting tape and apply the mounting tape to the back (Fig. 5).
3. Select a location you would like monitored or within reach of the remote sensor. Any orientation is acceptable although vertical will enhance the transmitter distance.
4. Peel off the mounting tape, position the sensor and firmly push it into place.
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. 6) or use the clip or screw hole on the Hanging Bracket Sensor (Fig. 7)

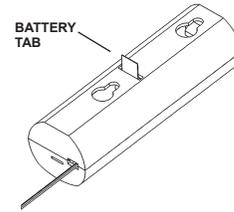


Fig. 4: Transmitter Activation & Battery Tab Removal

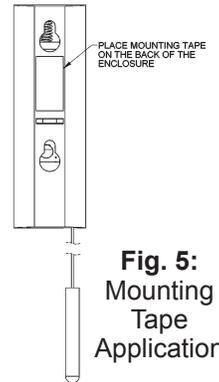


Fig. 5: Mounting Tape Application

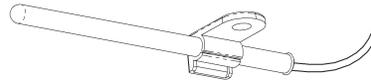


Fig. 6: External Probe Mounting with a Flexible Probe Bracket (BA/FPB)

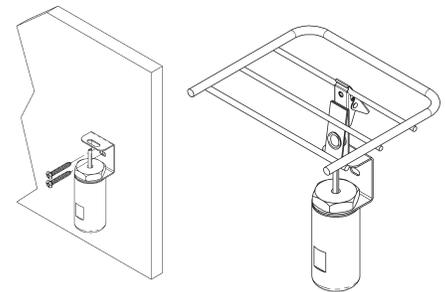


Fig. 7: External Hanging Bracket Sensor Mounting

TRANSMITTER MOUNTING WITH SCREWS

1. Remove the battery tab to start the transmitter (Fig. 4). The battery will last about 4 years before replacement is required.
2. Remove the back plate by inserting a small thin screwdriver in the bottom slot and pushing gently. Then swing the cover up and off (Fig. 8).
3. Select a location within reach of the remote sensor. Any orientation is acceptable although vertical mount will enhance the transmitter distance.
4. Mark the mounting holes by using the transmitter backplate as a template (Fig. 9). Drill holes and use hardware appropriate for the application (hardware not included).
5. For units with an internal sensor, the mounting process is complete. Place the transmitter over the back plate by hooking at the top of the back plate and swinging down until it snaps into place (Fig. 10).
6. For remote sensors, string the wire through the freezer door and place the sensor in the best location to measure the required temperature. Sensor removal from the transmitter may be necessary. See Fig. 11.
7. Mount the External Probe using a Flexible Probe Bracket (Fig. 6) or use the clip or screw hole on the Hanging Bracket Sensor (Fig. 7). Reconnect the remote sensor if necessary (Fig. 11)
8. Place the transmitter over the back plate by hooking the transmitter at the top of the back plate and swinging down until it snaps into place. Be sure the remote sensor wire is lined up with the bottom slot (Fig. 10).

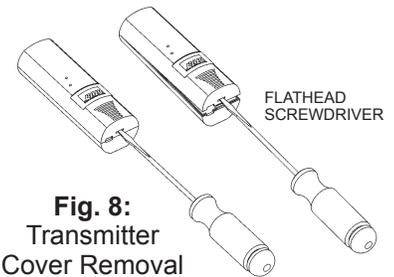


Fig. 8: Transmitter Cover Removal

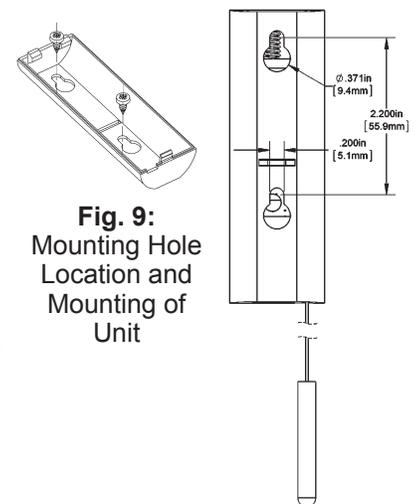
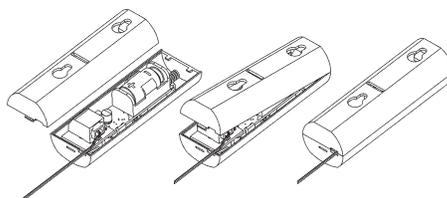


Fig. 9: Mounting Hole Location and Mounting of Unit

Fig. 10: Cover Replacement



Specifications subject to change without notice.



Remote Sensor Connection

If the transmitter has an internal sensor then there is no external wiring. If a remote sensor is used, then it is terminated using an RJ11 connector inside the transmitter case.

Remote Sensor Connection

1. Remove the back plate by inserting a small thin screwdriver in the bottom slot and pushing gently. Then swing the cover up and off (Fig. 8).
2. An RJ11 connector is located at the bottom of the board. Insert the sensor RJ11 plug (tab down) into the connector until it is fully seated (Fig. 11).
3. Place the transmitter over the base plate by hooking the transmitter at the top of the back plate and swing down. Be sure the remote sensor wire is lined up in the bottom slot and swing the cover down until it snaps into place (Fig. 10).

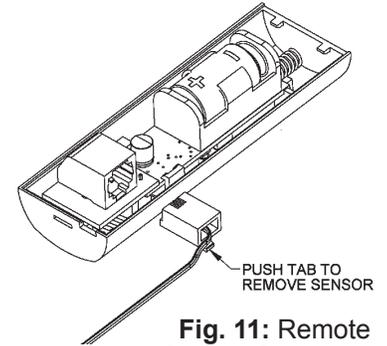


Fig. 11: Remote Sensor Connection

Battery Replacement

New transmitter installations are powered by a pre-installed battery. To activate the unit, find the battery tab insulator in the back of the unit, pull it out and discard the tab (Fig. 4) and push the training button (Fig. 14). The transmitter will start to transmit approximately every 30 seconds.

Battery Replacement

1. Replacement requires the removal of the back plate by inserting a small thin screw driver in the bottom slot and gently push then swing the cover up and off (Fig. 8).
2. Remove the old battery and install a new battery (BA/BAT-5AA-HIT) so that the negative faces up toward the antenna (Fig. 12). Push the training button (Fig. 14) and the transmitter will start to transmit approximately every 30 seconds. The transmission LED (Fig. 13) will flash once for each transmission.
3. Place the transmitter over the base plate by hooking the transmitter at the top of the back plate and swing down. Be sure the remote sensor wire, if used, is lined up in the bottom through slot and swing the cover down until it snaps into place (Fig. 10).

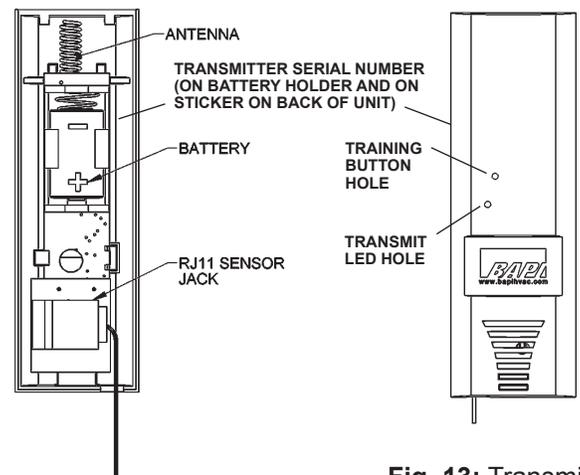


Fig. 12: Transmitter Internal Components

Fig. 13: Transmit LED & Training Button

Setup and Commissioning

As soon as the batteries are installed (or the insulating battery tab is removed) and the training button is pressed, the transmitter will start to transmit the temperature using the serial # code shown on the battery holder (Fig. 12). A small transmit LED on the circuit board flashes once for each transmission. This happens at 30 second intervals. This LED is visible through the lower hole on the front cover (Fig. 13).

When using a receiver with one or more Analog Output Modules, the transmitter will have to be trained to an individual Analog Output Module on the receiver. To do this, push and hold the Service Button on the Analog Output Module you wish to train. Then push and release the Training Button on the transmitter with a paper clip through the top faceplate hole (Fig. 14). The Analog Output Module LED will light up, indicating a successful training process. The LED on the Analog Output Module will then flash with each received transmission, approximately every 30 seconds.

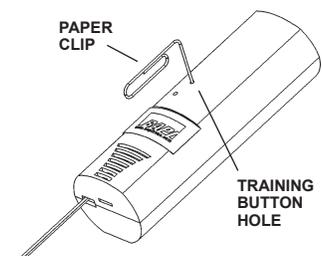


Fig. 14: Accessing the Training Button through the Front Cover

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Diagnosics

Possible Problems:

The unit is suspected of not transmitting

Unit is not talking to the analog output module

Sensor reads low

Battery may be low

Possible Solutions:

- Verify that the Transmit LED (Fig. 13) on the transmitter flashes at 30 second intervals. If the LED is not flashing, press the Training Button (Fig. 14) and recheck if the transmit LED is flashing.

- If this is a 900MHz system (has a repeater), then be sure the repeater is within range of the transmitter and within range of the receiver.

- Re-train the analog output module as described in the "Setup and Commissioning" section.

- Remove the sensor from the case by unplugging the RJ11 plug. Measure the resistance of the two center terminals and compare this resistance to the resistance found on the resistance/temperature chart for the 10K-2 thermistor on the BAPI web site. If the measured resistance is different from the temperature table by more than 5%, call BAPI technical support. Find BAPI's web site at www.bapihvac.com; click on the button labeled Sensor Specs on the left of the screen and then click on the 10K-2 Thermistor sensor.

- Check the battery voltage to see that it is 2.6 volts or greater. If it is less than 2.6 volts, replace the battery. The batteries should last for 4 years.

Related Products

<u>Part Number</u>	<u>Description</u>
BA/RCV418-WAM-x-EZ	Wireless 418MHz Wireless Asset Monitoring (WAM) Receiver
BA/RCV418-EZ	418MHz Wireless Receiver for Analog Output Modules
BA/RCV900-EA-EZ	900MHz Wireless Receiver for Analog Output Modules (requires a repeater)
BA/RPT49-EA-EZ.....	418 MHz to 900MHz Repeater
BA/VOM-10-x-EZ.....	0 to 10V Voltage Output Module
BA/COM-x-EZ.....	4 to 20mA Current Output Module
BA/ROM-10x-EZ.....	Resistance Output Module, 10K-2 Thermistor Output
BA/BAT-5AA-HIT	Replacement Battery, ½ AA, 3.6V

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