

Termination

BAPI recommends using twisted pair of at least 22AWG and sealant filled connectors for all wire connections. Larger gauge wire may be required for long runs. All wiring must comply with the National Electric Code (NEC) and local codes.

Do NOT run this device's wiring in the same conduit as AC power wiring. BAPI's tests show that fluctuating and inaccurate signal levels are possible when AC power wiring is present in the same conduit as the signal lines.



BAPI recommends wiring the product with power disconnected. Proper supply voltage, polarity, and wiring connections are important to a successful installation. Not observing these recommendations may damage the product and will void the warranty.

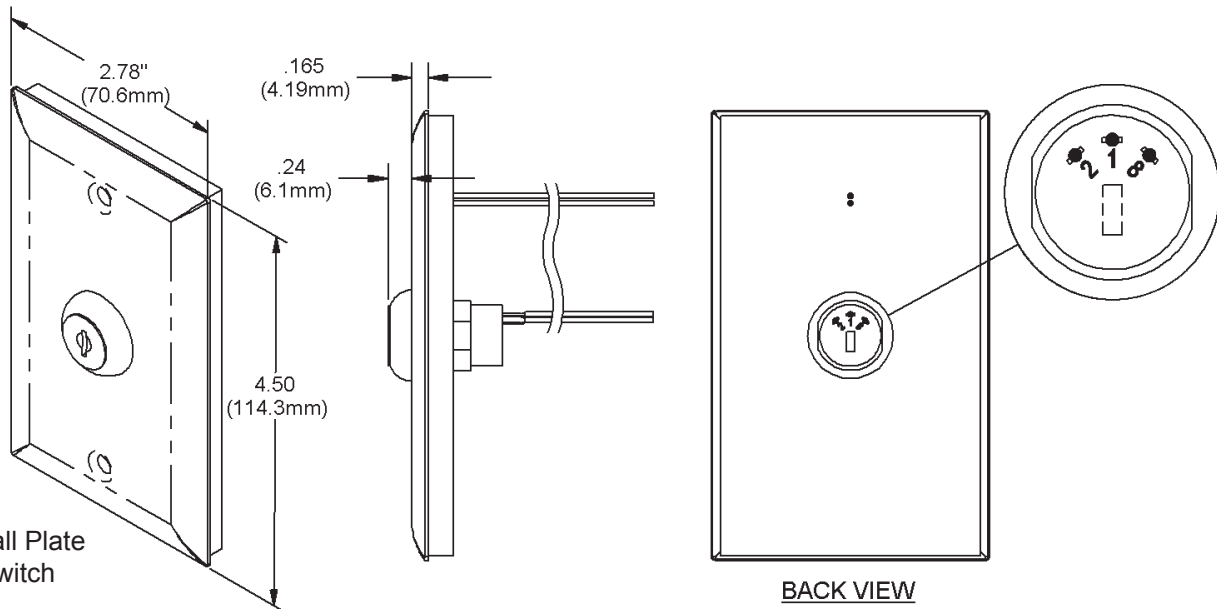


Fig. 1: Wall Plate with Keyswitch

Temperature Sensor Termination:

Terminate the sensor wires to your controller wires using BAPI sealant filled connectors. The wallplate's foamback insulates the temperature sensor from the wall temperature and/or conduit drafts.

Table 1: Temperature Sensor Lead Wire Colors

Thermistors		Thermistors		Platinum RTDs - 2 Wire		Nickel RTD	
1.8KΩ	Orange/Red	10K-3Ω	Yellow/Red	100Ω	Red/Red	1KΩ	Green/Green
2.2KΩ	Brown/White	10K-3(11K)Ω	Yellow/Blue	1KΩ	Orange/Orange	Silicon RTD	
3KΩ	Yellow/Black	20KΩ	White/White	Platinum RTDs - 3 Wire		2KΩ	Brown/Blue
3.25KΩ	Brown/Green	47KΩ	Yellow/Orange	100Ω	Red/Red/Black	Semiconductors	
3.3KΩ	Yellow/Brown	50KΩ	White/Blue	1KΩ	Orange/Orange/Black	LM334	Red/Black
10K-2Ω	Yellow/Yellow	100KΩ	Yellow/White			AD592	Red/Black
						AD592-10K	Red/Black/White

Keyswitch Termination:

The keyswitch has normally open and normally closed contacts. The switch closes with a 45° clockwise turn. The key will spring return to the open position. The switch is terminated with three white wires. The switch contacts are indicated on the back of the switch. The keyswitch is for NEC Class 2 circuits only, 4 amps maximum.

Table 2	
Key Switch Contacts	
Common	Pin 1
Normally Open	Pin 2
Normally Closed	Pin 8

*All Thermistors 20KΩ and smaller are CE compliant.

Specifications subject to change without notice.

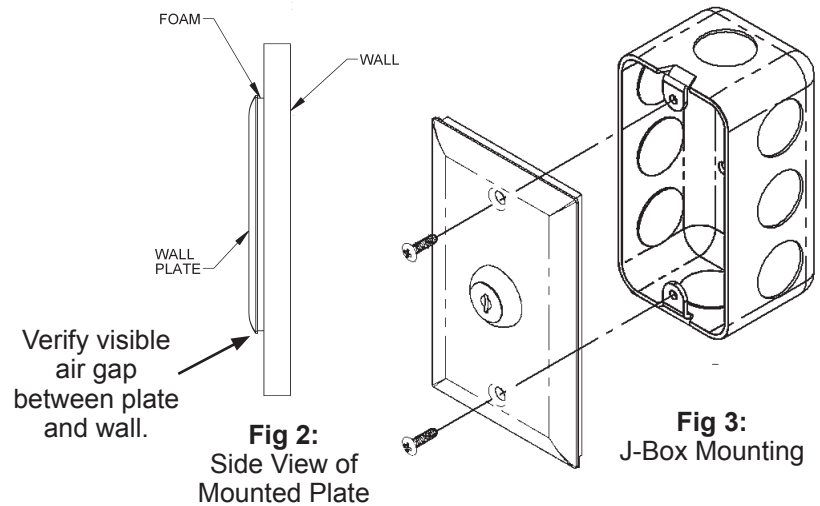
Mounting

Ensure the plate does not touch the wall when it is mounted as this will lead to slower response rates when the environment changes.

Mounting hardware is provided for both junction box and drywall installation.

Junction Box

1. Pull the wire through the wall and out of the junction box, leaving about 6" free.
2. Terminate the unit according to the guidelines in **Termination** on page 1.
3. Secure the plate to the box using the #6-32 x 1/2" mounting screws provided or with security screws which are sold separately. (Call BAPI or visit the Accessories section of our website for security screw ordering.)
4. Tighten screws until the foam gasket on the back plate is compressed about 50%. Ensure the plate doesn't touch the wall (Fig 2).



Note: Louvered wall plates require a mounting adapter bracket for J-Box mounting. The bracket is not shown in the diagram above but is included with any louvered wall plates ordered from BAPI.

Drywall Mounting

1. Place the plate against the wall where you want to mount the sensor and mark out 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. Cut hole between the mounting holes that clears the apparatus mounted on plate. Pull the wire through the wall hole cut in step 2, leaving about 6" free.
4. Terminate the unit according to the guidelines in **Termination** on page 1.
5. Secure the plate to the drywall anchors using the #6 x 1" mounting screws provided. Tighten screws until the foam gasket on the back plate is compressed about 50%. Ensure the plate doesn't touch the wall.

Note: In any wall-mount application, the wall temperature and the temperature of the air within the wall cavity can cause erroneous readings. The mixing of room air and air from within the wall cavity can lead to condensation, erroneous readings and premature failure of the sensor. To prevent these conditions, seal the conduit leading to the junction box or fill the box with insulation.

Diagnostics

Possible Problems:

Controller reports inaccurate temperature

Possible Solutions:

- Confirm that the input is set up correctly in the controller software.
- Check wiring for proper termination and verify that the wires are not electrically shorted or open
- Disconnect the controller wires from the sensor. Measure the temperature sensor's resistance with an ohm-meter. Verify the sensor's output is correct (see note below). If the measured resistance is different from the temperature table by more than 5%, call BAPI technical support. To view the appropriate temperature table on the BAPI website, go to <http://www.bapihvac.com>. Click on "Resource Library" and "Sensor Specs", then on the table needed.
- Disconnect the controller wires from the keyswitch. Without turning the key, verify the resistance from pin 1 to pin 8 is 1Ω or less. While turning the keyswitch, verify the resistance from pin 1 to pin 2 is 1Ω or less.

Keyswitch is not working correctly

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