

Overview and Identification

The Low Profile “Button” Wall Sensor is ideal for locations where aesthetics are as important as the temperature measurement. The inconspicuous sensor mounts easily by pushing through a 1/2” hole and secured with a peel off tape strip. The only visible portion is a flush 7/8” dot on the wall.

The Low Profile Wall Sensor is available in multiple thermistor or RTD sensors as shown in the specifications. Other sensor types are available on request.

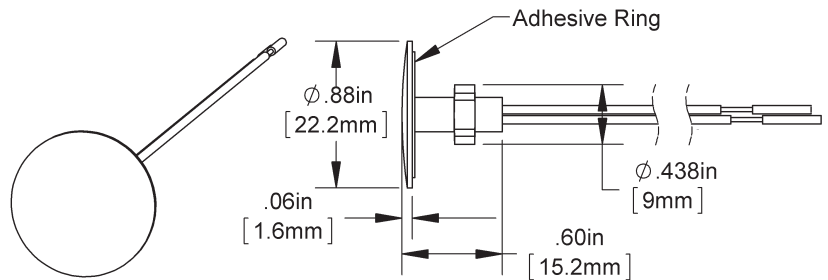


Fig 1: Low Profile “Button” Sensor Dimensions

Operation/Application

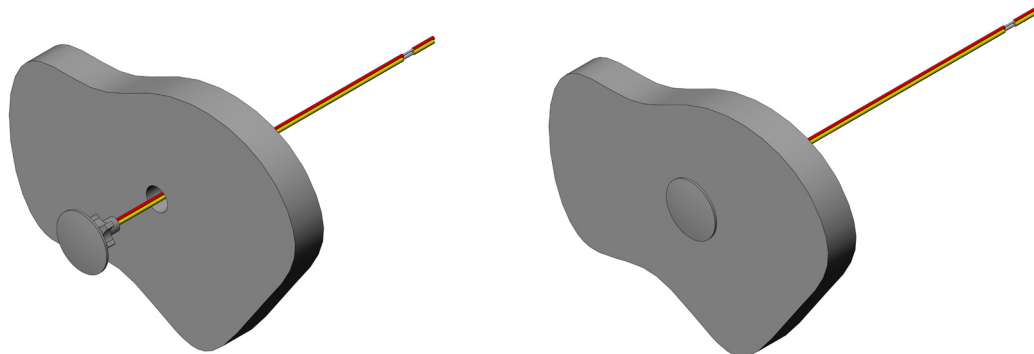
This sensor is suspended in a round button size enclosure shell so that room air can surround the sensing element for a fast and accurate temperature reading. The sensor is isolated from the mass wall temperature with internal insulators. The unit can be painted. The unit should not be covered with any material such as wall paper.

Customer Provided Tools and Materials

Requires a 1/2” drill bit and wire splice connectors. Crimp on sealant filled connectors recommended for protection from in wall moisture. (BA/SFC1000-100)

Mounting and Wire Termination

1. Select a location with a flat surface on an interior wall approximately 5' (1.5m) off the floor.
2. Drill a 1/2” hole where you want the sensor mounted.
3. Pull your zone wire through the hole and terminate the sensor using a flying lead connector (crimp or wire nut). A crimp-on sealant filled connector is recommended for protection from in wall moisture, (BA/SFC1000-100).
4. Test the sensor at the controller to be sure of your connections and sensor operation.
Note: Once installed the sensor is difficult to remove and may damage the wall.
5. Be sure the wall interior is insulated behind the sensor. In-wall drafts can affect the temperature reading.
6. Clean the wall surface from any dust or filings to make a clean mounting surface.
7. Remove the peel off strip from the mounting tape on the back of the sensor rim and push the sensor firmly into the 1/2” hole until the double stick tape adheres firmly to the wall.



Specifications subject to change without notice.



BA/*-LP, Low Profile "Button" Wall Sensor

Installation and Operating Instructions

23961_ins_LP

rev. 07/15/20

Maintenance

Clean any debris out from around the center sensor. It is important that air space is all around the inner sensor. Painting is OK as long as excess paint does not build up between the sensor and the mounting shell. Wall paper should not cover the sensor. Either cut out around the mounting shell or pull the sensor out of the wall and remount after the wall papering is completed.

Diagnostic

Possible Problems:

Controller reports incorrect temperature

Possible Solutions:

- Confirm the input is set up correctly in the front end software.
- Verify that the wires are not physically shorted.
- Check wiring for proper termination.
- Verify the "Sensor" output is correct.
- Determine if the sensor is exposed to an external H/C source.
 - Over Base board heat.
 - Under a supply air diffuser.
 - Extreme back wall draft temperatures.
- Fill wall cavity with Fiberglass, or Polyester fill.

Specifications

Sensor Passive
 Thermistor NTC, 2 wire
 RTD PTC, 2 or 3 wire

Thermistor Thermal resistor
 Temp. Output Resistance
 Accuracy (Std) $\pm 0.36^{\circ}\text{F}$, ($\pm 0.2^{\circ}\text{C}$)
 Accuracy (High) $\pm 0.18^{\circ}\text{F}$, ($\pm 0.1^{\circ}\text{C}$),
 [XP] option
 Stability $< 0.036^{\circ}\text{F}/\text{Year}$, ($< 0.02^{\circ}\text{C}/\text{Year}$)
 Heat dissipation 2.7 mW/ $^{\circ}\text{C}$
 Temp. Drift $< 0.02^{\circ}\text{C}$ per year
 Probe range -40° to 221°F (-40° to 105°C)

RTD Resistance Temperature Device
 Platinum (PT)..... 100Ω or $1\text{K}\Omega$ @ 0°C , 385 curve,
 Platinum (PT)..... $1\text{K}\Omega$ @ 0°C , 375 curve
 PT Accuracy (Std).. 0.12% @Ref, or $\pm 0.55^{\circ}\text{F}$, ($\pm 0.3^{\circ}\text{C}$)
 PT Accuracy (Hi) ... 0.06% @Ref, or $\pm 0.277^{\circ}\text{F}$, ($\pm 0.15^{\circ}\text{C}$),
 [A] option
 PT Stability $\pm 0.25^{\circ}\text{F}$, ($\pm 0.14^{\circ}\text{C}$)
 PT Self Heating 0.4 $^{\circ}\text{C}/\text{mW}$ @ 0°C
 PT Probe range -40° to 221°F , (-40 to 105°C)
 Nickel (Ni) 1000Ω @ 70°F , JCI curve
 Ni Probe range -40° to 221°F (-40 to 105°C)

Sensitivity
 Thermistor ...Non-linear
 Go to bapihvac.com "Sensor Specs"
 RTD (PT) $3.85\Omega/^{\circ}\text{C}$ for $1\text{K}\Omega$ RTD
 $3.75\Omega/^{\circ}\text{C}$ for $1\text{K}\Omega$ RTD
 $0.385\Omega/^{\circ}\text{C}$ for 100Ω RTD
 Nickel (Ni) $2.95\Omega/^{\circ}\text{F}$ for the JCI RTD

Lead wire: 2 or 3 conductor, 22 AWG stranded wire

Wire Insulation: Etched Teflon, Plenum rated

Wiring: Two 22 AWG wires (non-polar)

Mounting: 1/2" hole, push in plastic sheath with peel off tape strip.

Dimensions: Plastic Sheath
 Insertion..... 1.0" depth, into a 7/16" hole
 Sleeve..... 0.438" Diameter
 Bezel..... 0.875" Diameter

Encl. Type: Round Flush Sensor Sheath

Enclosure Ratings: NEMA 1

Encl. Material: Plastic, UL94

Environmental Operating Range

Unit with Etched Teflon Wire:

-40 to 185°F (-40 to 85°C)

Unit with Plenum-Rated Wire:

-4 to 167°F (-20 to 75°C)

0 to 100% RH, Non-condensing

Agency

RoHS, CE* (Thermistor's <10K Ω)

PT= DIN43760, IEC Pub 751-1983,

JIS C1604-1989

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