

Overview and Identification

The Extreme Temperature Remote Sensor in a BAPI-Box Crossover Enclosure are designed for use in applications from -200°C to 600°C. They are packaged to handle vibration, moisture, and wide temperature ranges. The probe is made of Stainless Steel with multiple cable lengths. The RTDs are available in 1KΩ 385 curve with different extreme temperature ranges as shown in the specifications.

The BAPI-Box Crossover enclosure has a hinged cover for easy termination and comes with an IP10 rating (or IP44 rating with a pierceable knockout plug installed in the open port).

This instruction sheet is specific to Extreme Temperature Remote Sensors with the BAPI-Box Crossover Enclosure. For all other extreme temperature units, please refer to instruction sheet "8612_ins_RTD_EXTRM.pdf" which is available on the BAPI website or by contacting BAPI.

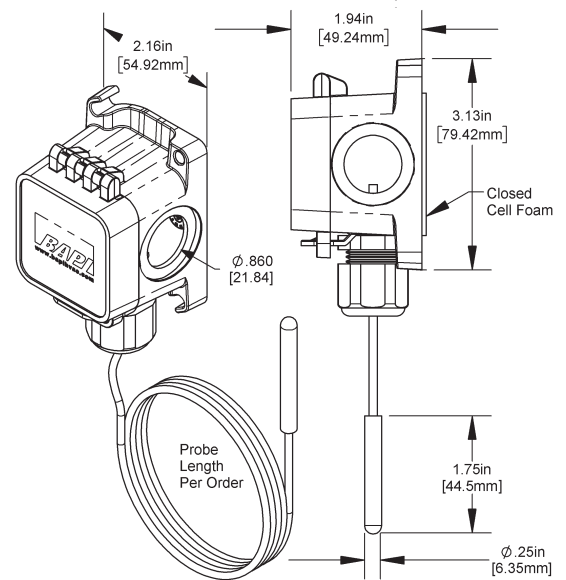
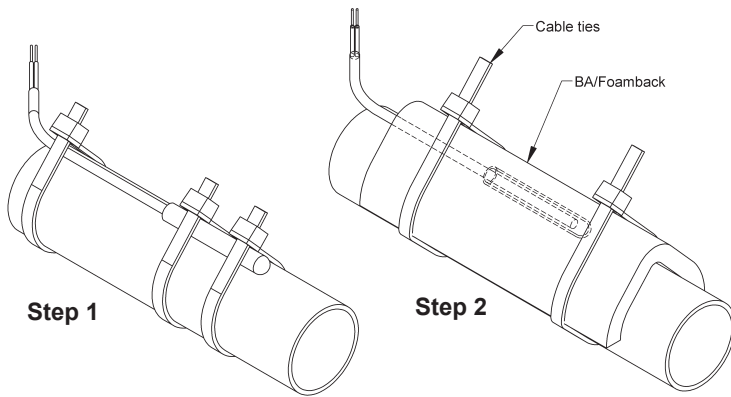


Fig. 1: Extreme Temp Remote Sensor with a BAPI-Box Crossover Enclosure

Mounting the Probe



MOUNTING THE PROBE TO A PIPE

Step 1:

Secure Sensor To Have Good Contact With Bare Pipe

Step 2: Insulate Over The Sensor. Insulation should be installed a minimum of 4 pipe diameters on each side of the strap-on sensor. Example: 1/2" pipe x 4 = 2". Insulation should be 2" on each side of the sensor wrapped all the way around the pipe.

Fig 2: Remote Probe Strapping to Pipes

USING THE BREAK-OFF TAB OF AN FPB

A break-off tab on BAPI's Flexible Probe Bracket (BA/FPB) may be used to mount the remote probes. The BA/FPB is made out of tough UL94V Nylon and limits heat/cold conduction to the probe from the surface.

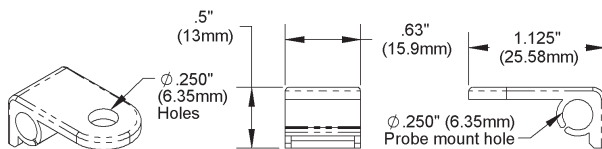


Fig 3: Break-off Tab of a Flexible Probe Bracket (BA/FPB)

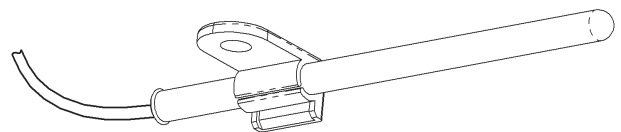


Fig 4: Probe mounted using the break-Off tab from a BAPI Flexible Probe Bracket (BA/FPB)

Specifications subject to change without notice.

Mounting the Enclosure

Mount the BAPI-Box Crossover enclosure to the surface using BAPI recommended #8 screws through a minimum of two opposing mounting tabs. A 1/8" inch pilot screw hole makes mounting easier through the tabs. Use the enclosure tabs to mark the pilot hole locations.

A pierceable knockout plug is available for the open port in the BAPI-Box Crossover enclosure. The plug increases the enclosure rating from IP10 to IP44.

Notes:

Use caulk or Teflon tape for your conduit entries to maintain the appropriate IP or NEMA rating for your application. Conduit entry for outdoor or wet applications should be from the bottom of the enclosure.

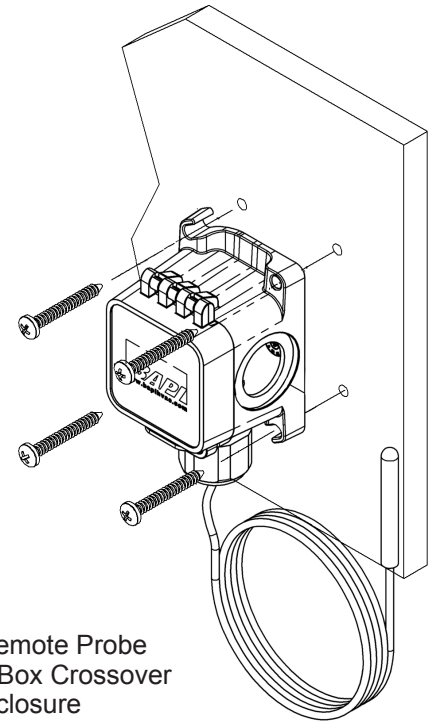


Fig 5: Remote Probe with BAPI-Box Crossover Enclosure

Wiring & 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 high or low voltage AC power wiring. BAPI's tests show that inaccurate signal levels are possible when AC power wiring is present in the same conduit as the sensor wires.

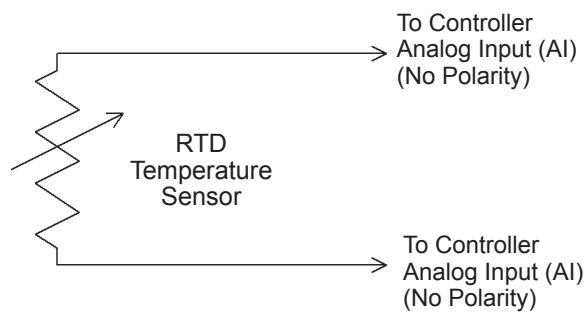


Fig. 6: Termination of units without an optional Terminal Strip

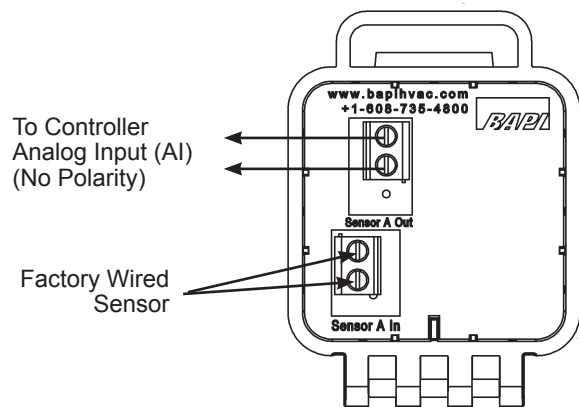


Fig. 7: Termination of units with an optional Terminal Strip

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Diagnositics

Possible Problems:

Controller reports higher or lower than actual temperature

Possible Solutions:

- Confirm the input is set up correctly in the front end software
- Check wiring for proper termination & continuity. (shorted or open)
- Measure the physical temperature at the temperature sensor's location using an accurate temperature standard. Disconnect the temperature sensor wires and measure the temperature sensor's resistance across the sensor output pins with an ohmmeter. Compare the temperature sensor's resistance to the 1K Platinum RTD sensor table on the BAPI website. If the measured resistance is different from the temperature table by more than 5%, call BAPI technical support. Find BAPI's website at www.bapihvac.com; click on "Resource Library" and "Sensor Specs" then click on the 1K Platinum RTD Sensor.

Specifications

RTD Sensor: Resistance Temperature Device

Platinum (Pt) 1K Ω @0°C, 385 curve,
Pt Accuracy (std) 0.12% @Ref, or $\pm 0.55^\circ\text{F}$, ($\pm 0.3^\circ\text{C}$)
Pt Stability $\pm 0.25^\circ\text{F}$, ($\pm 0.14^\circ\text{C}$)
Pt Self Heating .. 0.4 °C/mW @0°C

RTD Probe Temperature Range:

1K Ω [1] -328 to 32°F, (-200 to 0°C)
1K Ω [2] 77 to 500°F, (25 to 260°C)
1K Ω [3] 77 to 1,112°F, (25 to 600°C)

Sensitivity: 3.85 Ω /°C for 1K Ω RTD - Approximate @ 32°F (0°C)

Lead wire: 22awg stranded

Wire Insulation: Plenum rated

1K Ω [1] PTFE, -328 to 32°F, (-200 to 0°C)
1K Ω [2] PTFE, 77 to 500°F, (25 to 260°C)
1K Ω [3] Fiberglass, 77 to 1,112°F, (25 to 600°C)

Probe: Rigid, 304 Stainless Steel, 0.25" OD

Remote Probe Length: 1.75" w/ customer cable length

BAPI-Box Crossover Enclosure Ratings:

IP10, NEMA 1
IP44 with knockout plug installed in the open port

BAPI-Box Crossover Enclosure Material: UV-resistant polycarbonate & nylon, UL94V-0

Enclosure Operating Range:

-40°F to 185°F, (-40° to 85°C)
0 to 100% RH, Non-condensing

Agency:

RoHS, CE
PT= DIN43760, IEC Pub 751-1983,
JIS C1604-1989

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