

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 of NEC class 1, NEC class 2, NEC class 3 or with wiring used to supply highly inductive loads such as motors, contactors and relays.

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. If you are experiencing any of these difficulties, please contact your BAPI representative



BAPI does not recommend wiring the sensor with power applied as accidental arcing may damage the product and will void the warranty

| Wire color | Purpose | Note |
|------------|--------------------|--|
| Yellow | Temperature Sensor | Factory connection, no customer connection allowed |
| Yellow | Temperature Sensor | Factory connection, no customer connection allowed |
| Blue | Humidity Sensor | Factory connection, no customer connection allowed |
| Blue | Humidity Sensor | Factory connection, no customer connection allowed |
| Green | Voltage output | 0-10VDC To Analog Input of Controller |
| Black | GND (Common) | 0-10VDC output, Ground |
| Red | Power | 15 to 24 VDC |

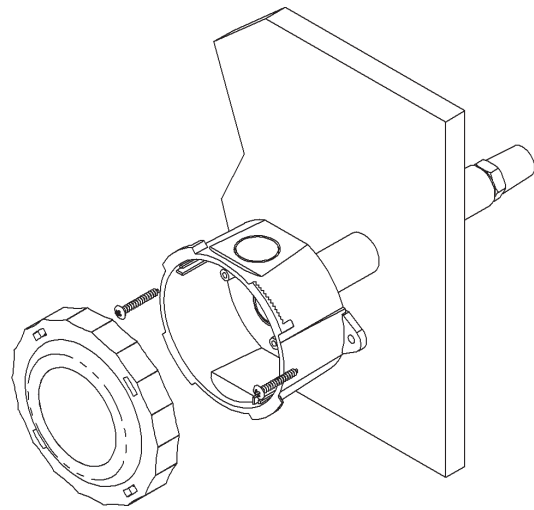
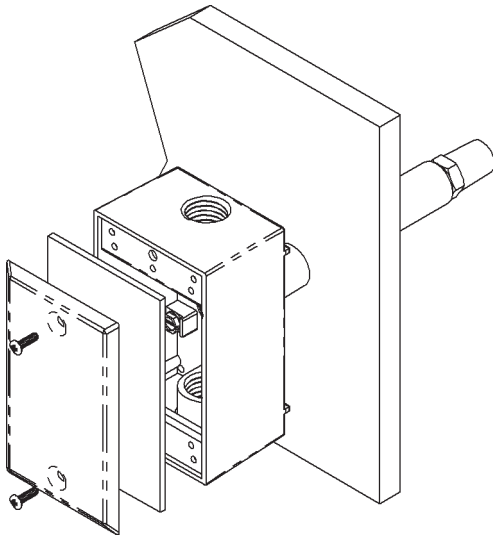
Fig. 1
Humidity Transmitter



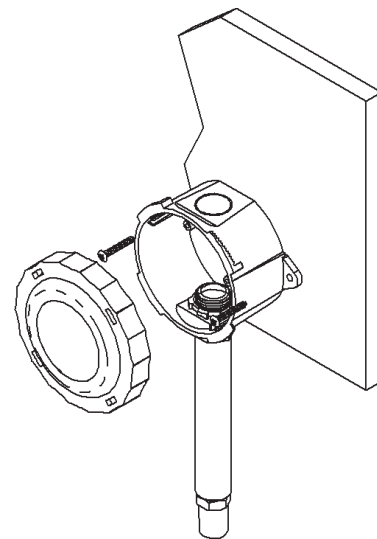
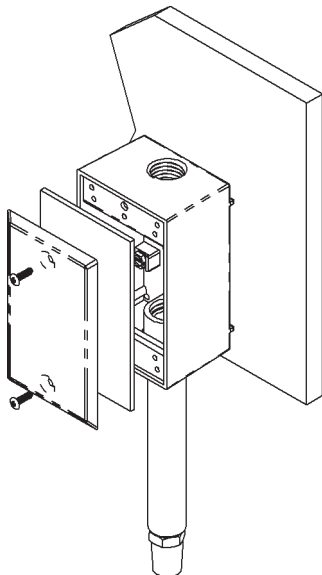
BAPI's 2% and 3%, humidity transmitters **ARE** polarity sensitive as well as reverse polarity protected. All **BA/H210**, and **BA/H310** transmitters must be powered with a 15 to 24 Volt DC supply.

Filter Care

A 60 micron sintered bronze filter protects the humidity sensor from various airborne particles that might reduce the sensor's accuracy. Depending on the sensor's location and environment, this filter may need periodic cleaning. To do this, gently unscrew the filter from the probe. Rinse the filter under warm water until clean. Warm soapy water may be used if necessary. Gently replace the filter by screwing it back into the probe. The filter should screw all the way into the probe, or at the most have only one or two threads showing. Hand tighten only, if you over tighten you may break the probe. If a replacement filter or replacement probe is needed, call **BAPI** for more information.

Installation Notes**Fig. 2 Duct Humidity/Weatherproof****Fig. 3 Duct Humidity/IP66 Rated**

Duct Humidity/Weatherproof, Figure 2 and Duct Humidity/IP66 Rated, Figure 3: Drill a 1 inch hole for the probe in the duct and use two number 8 sheet metal screws to attach the sensor to the duct. Center the probe in its mounting hole. Be sure that the foam seals the hole, do not over tighten the screws.

**Fig. 4 Outside Humidity/Weatherproof****Fig. 5 Outside Humidity/IP66 Rated**

Outside Humidity/Weatherproof, Figure 4 and Outside Humidity/IP66 Rated, Figure 5: Do not mount in direct sunlight. Mount with the sensor probe pointed down. Drill a hole large enough for your sensor cable through your mounting surface. Mount the unit to the surface with a wiring knock out centered over the wiring hole. Pull the wiring into the unit and terminate using sealant filled connectors. Best practice is to caulk the wiring hole after the wiring is installed. Be sure that the foam on the back of the unit makes a good weather tight seal.



0 TO 10V Duct and Outside Air Humidity Sensors

Termination and Troubleshooting

9504_ins_hum_duct_out_10V

rev. 8/20/04

Troubleshooting

Possible Problems:

Unit will not operate

Humidity reading is maximum 10V or 100%

Humidity reading is minimum 0V or 0%

Humidity reading in software appears to be off more than specified accuracy

Possible Solutions:

- Check power supply/controller voltage supply
- Disconnect sensor and check power wires for proper power to the sensor

- Make sure the sensor is installed properly, and is not shorted

- Verify that the humidity sensor is installed
- **QUICK CHECK:** Short the humidity sensor connections with a wire. Does the reading change? If so, the sensor may be faulty, if not contact *BAPI* technical support

- Check all software parameters
- If available, check the sensor against a calibrated control such as a hygrometer
- Use the 0 to 10V signal formula to calculate the output
- Determine if the sensor is exposed to an external source different from the measured environment

Humidity Formula

| Output | Humidity Formula |
|-------------|------------------|
| 0 to 10 VDC | %RH = $V/0.10$ |