

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.

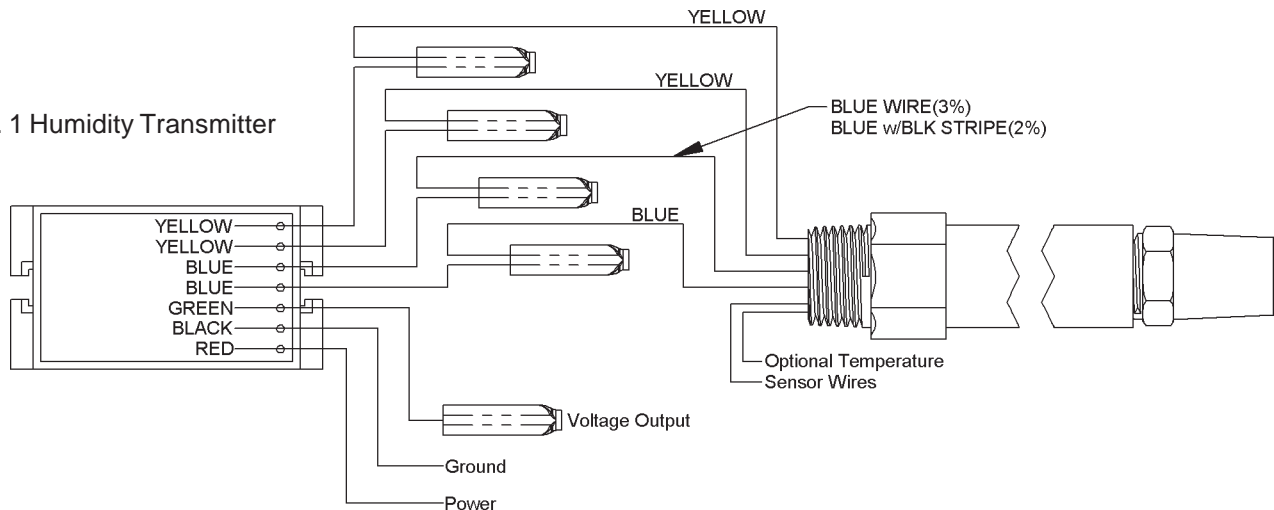
BAPI's tests show that fluctuating and inaccurate signal levels are possible when AC power wiring is present in the same conduit as the signal lines. If you are experiencing any of these difficulties, please contact your BAPI representative



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

Humidity Transmitter Table		
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 to +10VDC, To Analog Input of Controller
Black	GND (Common)	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 B/H310 transmitters must be powered with a +15VDC to +24VDC supply.

Filter Care

A sintered 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 a replacement filter or replacement probe is needed, call **BAPI** for more information.

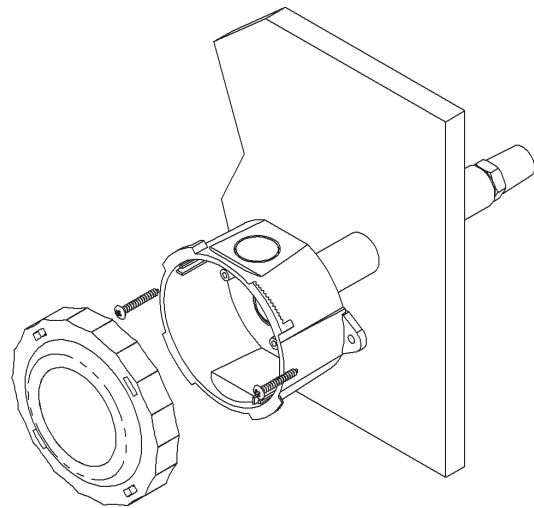
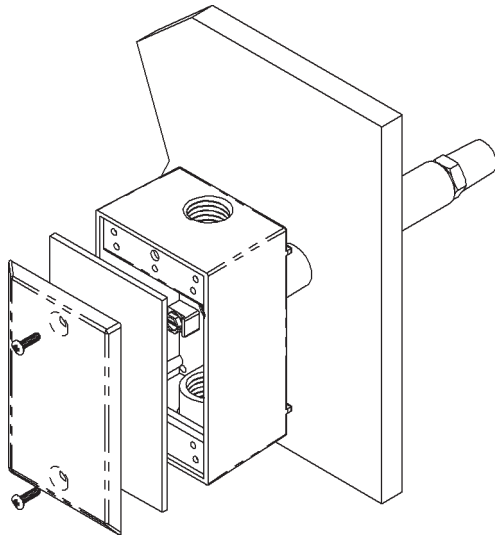
Installation Notes

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.

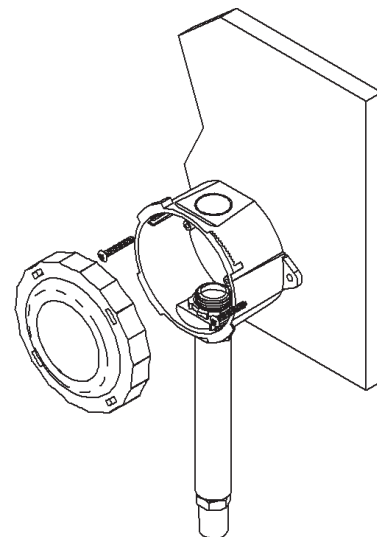
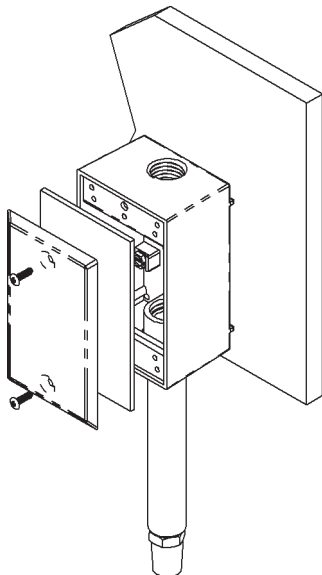


Fig. 4 Outside Humidity/Weatherproof

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/Outside Air Humidity w/Temp. Sensors

Termination and Troubleshooting

14324 ins_hum_temp_duct_out_10

rev. 6/15/05

Troubleshooting - Humidity

Possible Problems:

Unit will not operate

Humidity reading is maximum 10V or 100%

Humidity reading is minimum 0V or 0%

Humidity reading in controller's software appears to be off more than the specified accuracy

Possible Solutions:

- Check power supply/controller voltage supply for +15VDC to +24VDC

- Disconnect humidity transmitter power wires, check the wire coming from the power supply for +15VDC to +24VDC

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

- **QUICK CHECK:** Open one of the blue wire connections. Does the reading change? If so, the sensor may be faulty. If not, contact BAPI technical support.

- Verify that the humidity sensor is installed

- **QUICK CHECK:** Short the two blue wire connections with a short piece of 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

- Measure the humidity transmitter's output. Using the humidity formula, calculate the output. If it is different from the software reading, contact BAPI technical support.

- Determine if the sensor is exposed to an external source different from the measured environment

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

Additional Temperature Sensor

Optional Temperature Sensor Lead Wire Colors					
<u>Thermistor</u>		2KΩ	Brown/Brown		
3K	Yellow/Black	2K-2	Brown/Orange		
10K-2	Yellow/Yellow	<u>Platinum RTD</u>			
10K-3	Yellow/Red		<u>Single Point</u>	<u>Single Point</u>	
10K3(11K)	Yellow/Blue		<u>Two Wire</u>	<u>Three Wire</u>	
20K	White/White	100Ω	Red/Red	Red/Red/Black	
100K	Yellow/White	1KΩ	Orange/Orange	Orange/Orange/Black	



Troubleshooting - Temperature

Possible Problems:

Controller reports higher than actual temperature

Possible Solutions:

- Confirm the input is set up correctly in the controller's software
- Verify that the sensor wires are not physically shorted or open
- Check wiring for proper termination
- Verify the "Sensor" output is correct (See note below)

Controller reports lower than actual temperature

- Confirm the input is set up correctly in the controller's software
- Verify that the sensor wires are not physically open or shorted
- Check wiring for proper termination
- Verify the "Sensor" output is correct (See note below)

Note: Measure the temperature at the temperature sensor's location using an accurate temperature standard. Disconnect the temperature sensor wires and measure the temperature sensor's resistance with an ohmmeter. Compare the temperature sensor's resistance to the appropriate temperature sensor table on the BAPI web site. If the measured resistance is different from the temperature table by more than 5% call BAPI technical support. BAPI's web site is found at www.bapivac.com; click on the button labeled SENSORS on the left of the screen and then click on the type of sensor you have.