ACCSY-IN-68A
18-HE60D80-1

INSTALLER'S GUIDE

Customer Property — Contains wiring, service, and operation information. Please retain.

Library	Service Literature
Product Section	Unitary
Product	Unitary Accessory
Model	T'stat, Panels, Timers, Relays
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Models: BAYENTH004AA

Used With: TC,YC,WC*036 thru 300

Comparative Enthalpy Kit

General Instructions

This accessory kit is used to provide maximum occupant comfort by maximizing the use of the economizer based on the outdoor and the indoor air conditions. By utilizing a humidity sensor and a temperature sensor in both the return air stream and the outdoor air stream, the Unitary Control Processor (UCP) will be able to establish which conditions are best suited for maintaining the zone temperature, i.e. indoor conditions or outdoor conditions.

Inspection

Check the packaging and contents for damage. Check for concealed damage before storing. Report any damage immediately to the transportation company, and make any appropriate claims. Replace damaged parts only with authorized parts.

Parts List

- 2 - Humidity sensors
- 1 - Thermistor sensor
- 1 - Wiring harness for outdoor air humidity sensor
- * 1 - Wiring harness for return air humidity sensor
- 1 - wiring harness for return air temperature sensor
- 4 - Screws 6-32 x 3/4"
- 2 - wire ties
- * 1 - 1/4" Grommet

* - Parts used with Downflow Economizer only.

Installation for Downflow Economizers

1. Turn off all power to the unit.

⚠WARNING: Failure to turn "OFF" all power to the unit before installing this kit could result in personal injury or death.

2. Remove the Hood/End Panel from the Economizer.

3. Using two of the screws provided in the Kit, install the outdoor humidity sensor on the economizer control box as shown in Figure 1, "Reversed" view.

Wiring the Outside Air Humidity Sensor

1. Using the (two wire) wiring harness provided in the Kit, connect wire #140 to the (+) terminal on the sensor and wire #139 to the (-) terminal on the sensor.

Note: This Control is polarity sensitive; If it is cross-wired the humidity sensor will not function.

2. Route the wires from the sensor through the grommet located on the side of the economizer control box. The wires pass over the outside of the sheet metal cross member. See Figure 1, "Reversed" View.

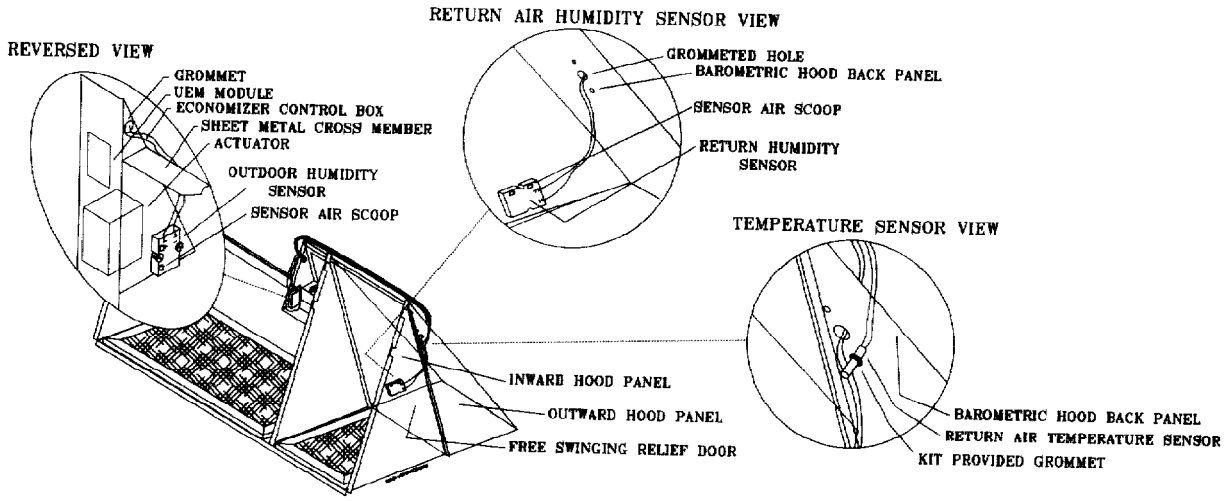
3. Secure the wiring to the existing wires with wire ties to prevent damage from the outdoor air damper operation.

4. Connect wire #140 to the J10 (+) terminal on the UEM module and connect wire #139 to the J9 (-) terminal on the UEM module. Refer to the unit's wiring diagram for the "OHS" wiring connections.

Return Air Humidity Sensor Installation

1. Remove the free swinging barometric relief door or the outward side panel of the hood. Refer to Figure 1.

Figure 1 - Downflow Economizer



2. Mount the return air humidity sensor using two of the pre-drilled holes on the inward side panel of the hood and two of the screws provided in the kit.

3. Using the (two wire) wiring harness provided in the Kit, connect wire #138A to the (+) terminal on the sensor and wire #137A to the (-) terminal on the sensor.

Note: This Control is polarity sensitive; If it is cross-wired the humidity sensor will not function.

4. Route the wiring from the sensor through the plastic grommeted hole, in the back panel of the barometric hood, up through the grommet located on the side of the economizer control box. Refer to Figure 1, "Return Air Humidity Sensor" View.

5. Connect wire #137A to the J7 (-) terminal on the UEM module and connect wire #138A to the J8 (+) terminal on the UEM module. Refer to the unit's wiring diagram for the "RHS" wiring connections.

6. Secure the wiring to the existing wires with wire ties to prevent damage from the outdoor air damper operation.

Return Air Temperature Sensor Installation

1. Insert the kit provided rubber grommet into the lower pre-punched hole located in the back panel of the barometric hood. Refer to Figure 1, "Temperature Sensor" View.

2. Insert the temperature sensor into the hole from the back of the panel approximately ½ inch into the air chamber. The wires will extend out the back toward the filters and coil. Refer to Figure 1, "Temperature Sensor" View.

3. Using the wire harness with the ¼ inch terminals and polarized plug provided in the kit, plug the polarized plug onto the UEM terminal marked "J3".

4. Route the wires from the economizer control box through the grommet, located on the side, to the temperature sensor.

5. Connect the appropriate ¼ inch terminal to the temperature sensor. Refer to the unit's wiring diagram for the "RAS" wiring connections.

6. Secure the wiring to the existing wires with wire ties to prevent damage from the outdoor air damper operation.

Check all of the wires to insure they are secure and free from any moving dampers. Remove any debris and tools from inside the unit.

Replace all of the panels and restore power to the unit.

Horizontal Economizer Installation

1. Turn off all power to the unit.

⚠ WARNING: Failure to turn "OFF" all power to the unit before installing this kit could result in personal injury or death.

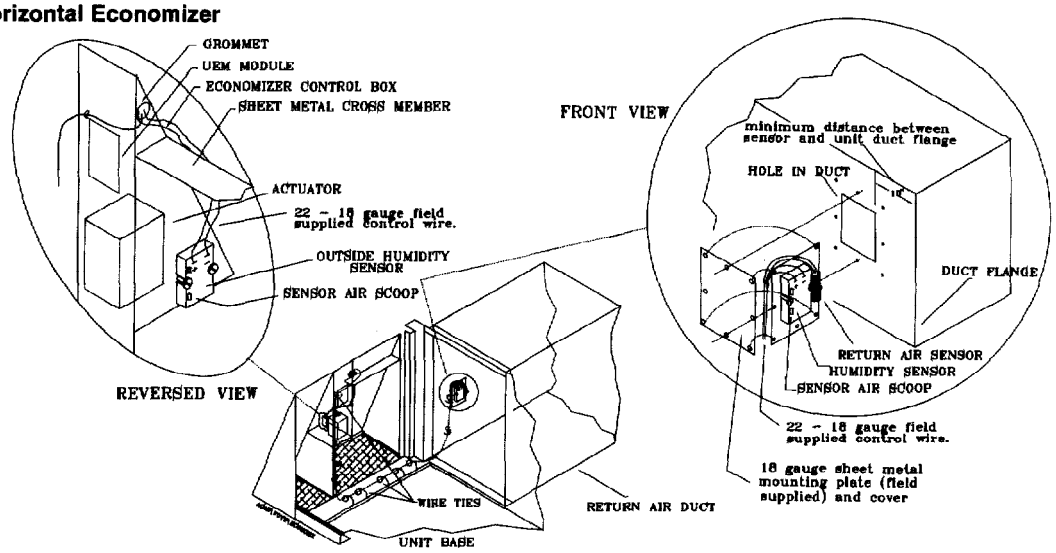
2. Remove the Hood/End Panel from the Economizer.

3. Using two of the screws provided in the Kit, install the outdoor humidity sensor on the economizer control box as shown in Figure 2, "Reversed" view.

Wiring the Outside Air Sensor

1. Using the (two wire) wiring harness provided in the Kit, connect wire #140 to the (+) terminal on the sensor and wire #139 to the (-) terminal on the sensor.

Figure 2 - Horizontal Economizer



Note: This Control is polarity sensitive; If it is cross-wired the humidity sensor will not function.

2. Route the wires from the sensor through the grommet located on the side of the economizer control box. The wires pass over the outside of the sheet metal cross member. See Figure 2, "Reversed" View.

3. Secure the wiring to the existing wires with wire ties to prevent damage from the Outdoor Air Damper operation.

4. Connect wire #140 to the J10 (+) terminal on the UEM module and connect wire #139 to the J9 (-) terminal on the UEM module. Refer to the unit's wiring diagram for the "OHS" wiring connections.

Return Air Humidity and Temperature Sensor Installation

For future access, Install the Humidity Sensor (RHS) and the Temperature Sensor (RAS) in the return duct as follows:

1. Cut an opening in the duct large enough to clear the sensors, approximately 3¾"W X 4¼"H.

2. Mount the sensors on a mounting plate larger than the duct opening, approximately 5¾"W X 6¼"H. Refer to Figure 2, "Front" View. Locate the air scoops on the humidity sensor toward the airflow as shown in Figure 2. Before securing the sensor with screws, place a wire tie around the screw on the right side of the sensor (Do not tighten the wire tie).

Note: Depending on the type and thickness of the insulation in the return duct, a field supplied extension bracket for the sensors may be required.

3. Using the wire tie that was installed around the mounting screw for the humidity sensor, secure the return air thermistor to the mounting plate. The probe should be inserted from the top side of the wire tie loop with the smooth end of the probe facing the bottom of the duct and the wires at the top. Tighten the wire tie around the sensor to hold it in place.

Wiring the Return Air Humidity and Temperature Sensor

Note: Four conductor control wire and ¼ inch male and female insulated connectors are recommended and field supplied.

1. Using two wires, connect one wire to the (+) terminal on the sensor and the second wire to the (-) terminal on the sensor.

Note: The Humidity Sensor is polarity sensitive; If it is cross-wired the humidity sensor will not function.

2. Connect the remaining two wires to the temperature sensor using ¼" insulated terminals.

3. Route the wires from the sensors, down to the bottom of the duct and through the opening at the unit base between the corner post and the base pan flange as shown in Figure 2.

4. Continue routing the wires along the channel toward the filter access opening, then up through the grommet on the side of the economizer control box.

5. Use wire ties to secure the wires to the unit base channel and the existing wire harness to prevent contact with the outdoor and return air dampers.

6. Connect the wires from the (+) terminal on the humidity sensor to the J8 (+) terminal on the UEM

module and connect the wire from the (-) terminal on the sensor to the J7 (-) terminal on the UEM module. Refer to the unit's wiring diagram for the "RHS" wiring connections.

7. Using the wire harness with the 1/4 inch terminals and polarized plug, provided in the kit, connect the appropriate 1/4 inch terminal to the temperature sensor wires routed from the return duct. Refer to the unit's wiring diagram for the "RAS" wiring connections.

8. Plug the polarized plug onto the UEM "J3" terminal.

9. Attach and properly seal the mounting plate over the opening in the duct. Insure that the air scoops on the humidity sensor are toward the airflow as shown in Figure 2.

10. Check all the wires to insure they are secure and free from any moving dampers. Remove any debris and tools from inside the unit.

11. Replace all panels and restore power to the unit.

Switch Settings

One of four reference enthalpy control settings can be field selected by setting the DIP switches located on the UEM module. The switches are set from the factory for "D" conditions.

Optional Reference Enthalpy Economizer Switch Settings

("OFF" is toward the edge of the board)
("ON" is toward the center of the board)

Switch 1	Switch 2	Selected Enthalpy	Standard Setting
ON	ON	28 BTU/LBM AIR	A
ON	OFF	25 BTU/LBM AIR	B
OFF	ON	22 BTU/LBM AIR	C (DEFAULT)
OFF	OFF	19 BTU/LBM AIR	D (FACTORY)

Note: If the switches or sensors in the circuit fail, the reference enthalpy defaults to setting "C".

AKB/PM5/I.P.