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# ECONOMIZERS

507314-01
04/2021
Supersedes 03/2014

## ENTHALPY SENSOR KIT

**INSTALLATION INSTRUCTIONS FOR ENTHALPY SENSOR KIT (603364-29; 11G21) USED WITH HIGH PERFORMANCE ECONOMIZERS ON ZG/ZC/ZH 036, 048, 060, 072 & QG/QC/QZ, 036, 042, 048, 060 AND TAA UNITS**

## Shipping and Packing List

**Package 1 of 1 contains:**

1 - Temperature & humidity sens

1- Wiring harness (used for differential sensing only)

1- Bag assembly containing:

2-#10-16 X 5/8" SDST screws

Check packaging for shipping damage. Contact the last carrier immediately if any shipping damage is found.

## ⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer or equivalent, service agency, or the gas supplier

## Application

Sensors provide input to determine free cooling suitability. The enthalpy sensor provided in this kit senses both sensible temperature and humidity. See table 1- for usage.

Refer to economizer installation instructions.

***Note -*** *Differential sensor applications must use the same two sensors.*

**TABLE 1**

| Sensors | Dampers modulate to maintain 55°F mixed air (R1) when: |
|---|---|
| Single OA Enthalpy Not approved for CA Title 24 | OA temperature and humidity (A7) is lower than free cooling setpoint. |
| Differential Enthalpy - 1 in OA & 1 in RA Not approved for CA Title 24 | OA temperature and humidity (A7) is lower than RA temperature and humidity (A62). |

## ⚠ CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

## ZG/ZC/ZH - Single Enthalpy

***Note -*** *Install the return air sensor before installing optional power exhaust dampers and gravity exhaust dampers. If gravity exhaust, power exhaust, or hoods are already installed, remove from unit.*

1 - Disconnect all power to unit.

2 - Remove filter access panel and return air access panel. If hood is already installed, remove hood. See figure 1.

3 - Set the DIP switch on kit sensor to appropriate "OA" setting as indicated on sensor.

4 - Replace existing RT26 OA sensor with new A7 sensor from this kit. See figure 2 for sensor location.

5 - On A6 economizer control, remove orange wires going to terminals marked "OAT" and reconnect them to free terminals marked "SBUS". Discard harness provided in kit. See figure 4.

6 - Follow economizer installation instruction for setup.

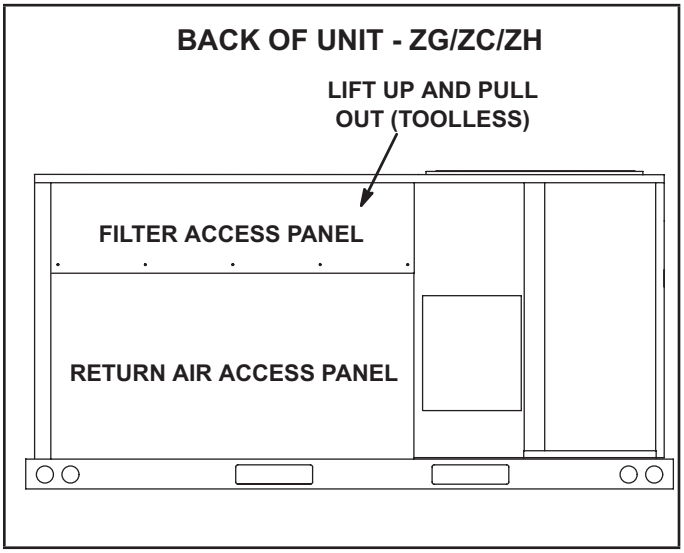


**FIGURE 1**



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## ZG/ZC/ZH - Differential Enthalpy

***Note -*** *Install the return air sensor before installing optional power exhaust dampers and gravity exhaust dampers. If gravity exhaust, power exhaust, or hoods are already installed, remove from unit.*

1 - Disconnect all power to unit.

2 - Remove filter access and return air access panel. If hood is already installed, remove hood.

3 - Set the DIP switch on one kit sensor to “OA” setting and the second kit sensor to “RA” setting as indicated on the sensor.

4 - Replace existing RT26 OA sensor with new A7 kit sensor set to “OA”. See figure 2 for sensor location.

5 - On A6 economizer control, remove orange wires going to terminals marked “OAT” and reconnect them to free terminals marked “SBUS”. See figure 4.

6 - Install new sensor from second kit as A62 RA sensorin the return air with screws provided. Be sure not to obstruct the damper movement and not to damage wires.

7 - Connect harness from EITHER kit between the A62 RA sensor and free “S-BUS” terminals on the A6 economizer control. Be sure to route wires away form moving parts. Discard second harness.

8 - Follow economizer installation instruction for setup

**A7 OUTDOOR AIR ENTHALPY SENSOR**
**ZG/ZC/ZH UNITS**

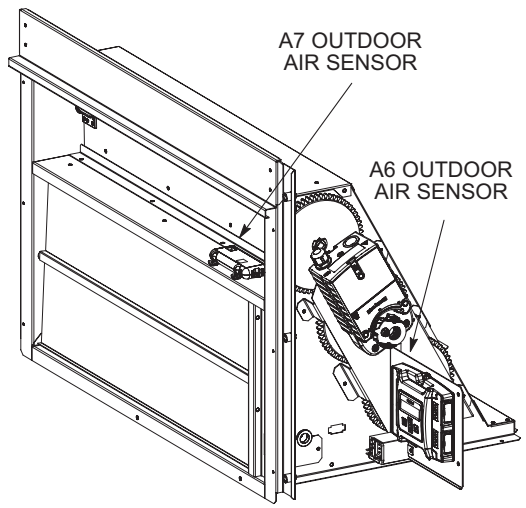


**FIGURE 2**

## QG/QC/QH - Single Enthalpy

***Note -*** *Differential Enthalpy not available on Q-series units.*

***Note -*** *Install the return air sensor before installing optional power exhaust damper and gravity exhaust damper. If Gravity exhaust, power exhaust or hoods are already installed, remove from unit.*

1 - Disconnect all power to unit.

2 - Remove blower access panel. If hood is already installed, remove hood.

3 - Set the DIP switch on kit sensor to appropriate “OA” setting as indicated on the sensor.

4 - Replace the outdoor air sensor with the sensor provided in this kit. See figure 3 for sensor install location.

5 - On the economizer controller, remove wires going to terminals marked “OAT” and reconnect them to free terminals marked “SBUS”. Discard harness provided in kit. See figure 4.

6 - Follow economizer installation instructions for setup.

**SINGLE ENTHALPY SENSOR**
**QG/QC/QH UNITS**

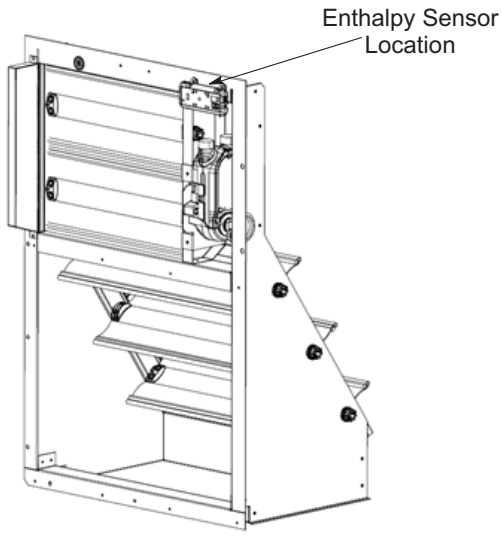


**FIGURE 3**

## TAA - Single Enthalpy

1 - Disconnect all power to unit.

2 - Set the DIP switch on kit sensor to appropriate “OA“ setting as indicated on sensor.

3 - Replace existing RT26 OA sensor, if applicable, and replace with new A7 sensor from this kit. See figure 5 for sensor location.

4 - Remove economizer control access panel. See figure 5.

5 - On A6 economizer control, remove orange wires going to terminals marked “OAT” and reconnect them to free terminals marked “SBUS”. Discard harness provided in kit. See figure 4.

6 - Follow economizer installation instruction for setup

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## TAA - Differential Enthalpy

1 - Disconnect all power to unit.

2 - Set the DIP switch on one kit sensor to “OA” setting and the second kit sensor to “RA” setting as indicated on the sensor.

3 - Replace existing RT26 OA sensor with new A7 kit sensor set to “OA”. See figure 5 for sensor location.

4 - Remove economizer control access panel. See figure 5.

5 - On A6 economizer control, remove orange wires going to terminals marked “OAT” and reconnect them to free terminals marked “SBUS”. See figure 5.

6 - Install new sensor from second kit as A62 RA sensor in the return air with screws provided. Be sure not to obstruct the damper movement and not to damage wires.

7 - Connect harness from EITHER kit between the A62 RA sensor and free “S-BUS” terminals on the A6 economizer control. Be sure to route wires away form moving parts. Discard second harness.

8 - Follow economizer installation instruction for setup.

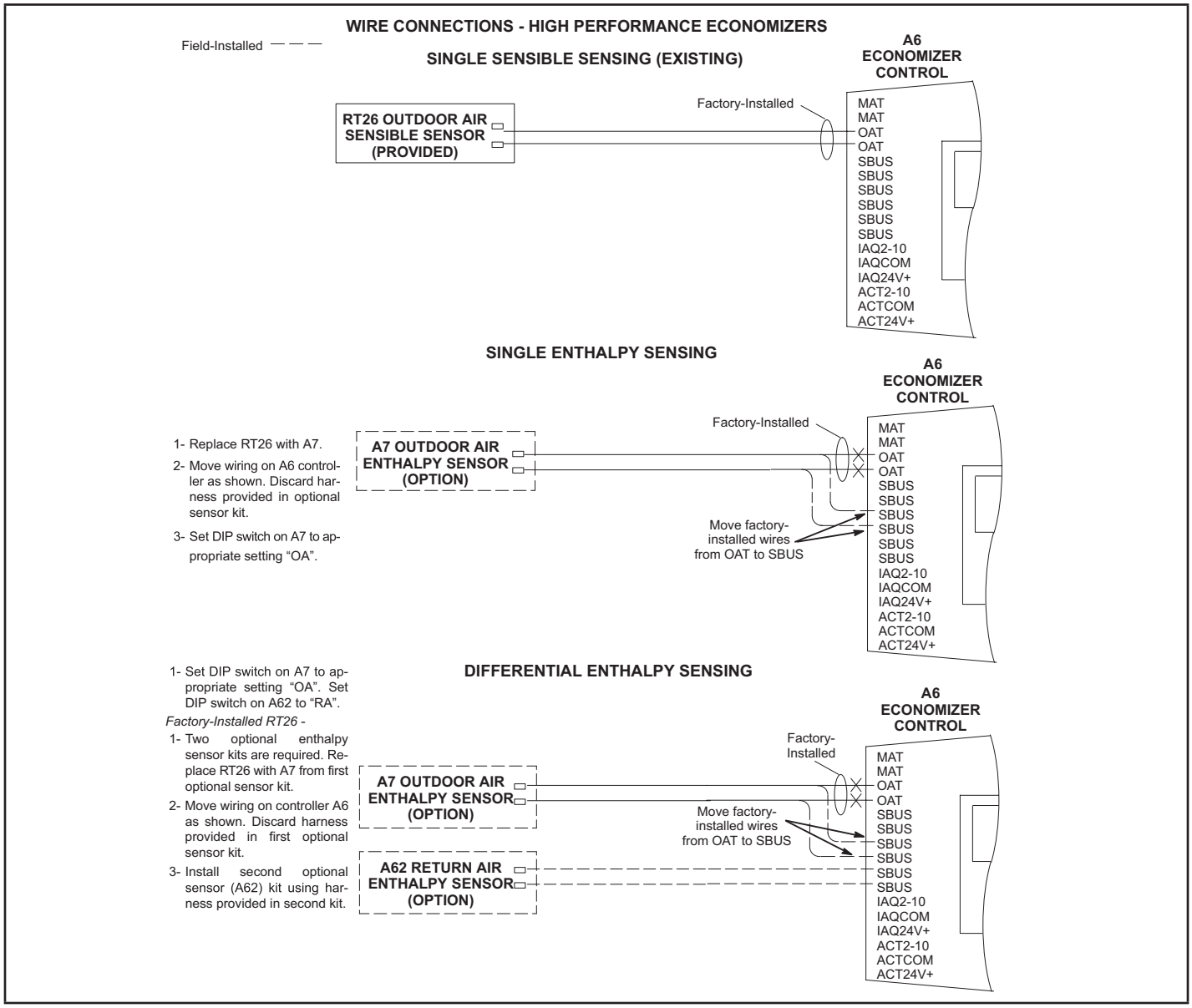


**Figure 4**

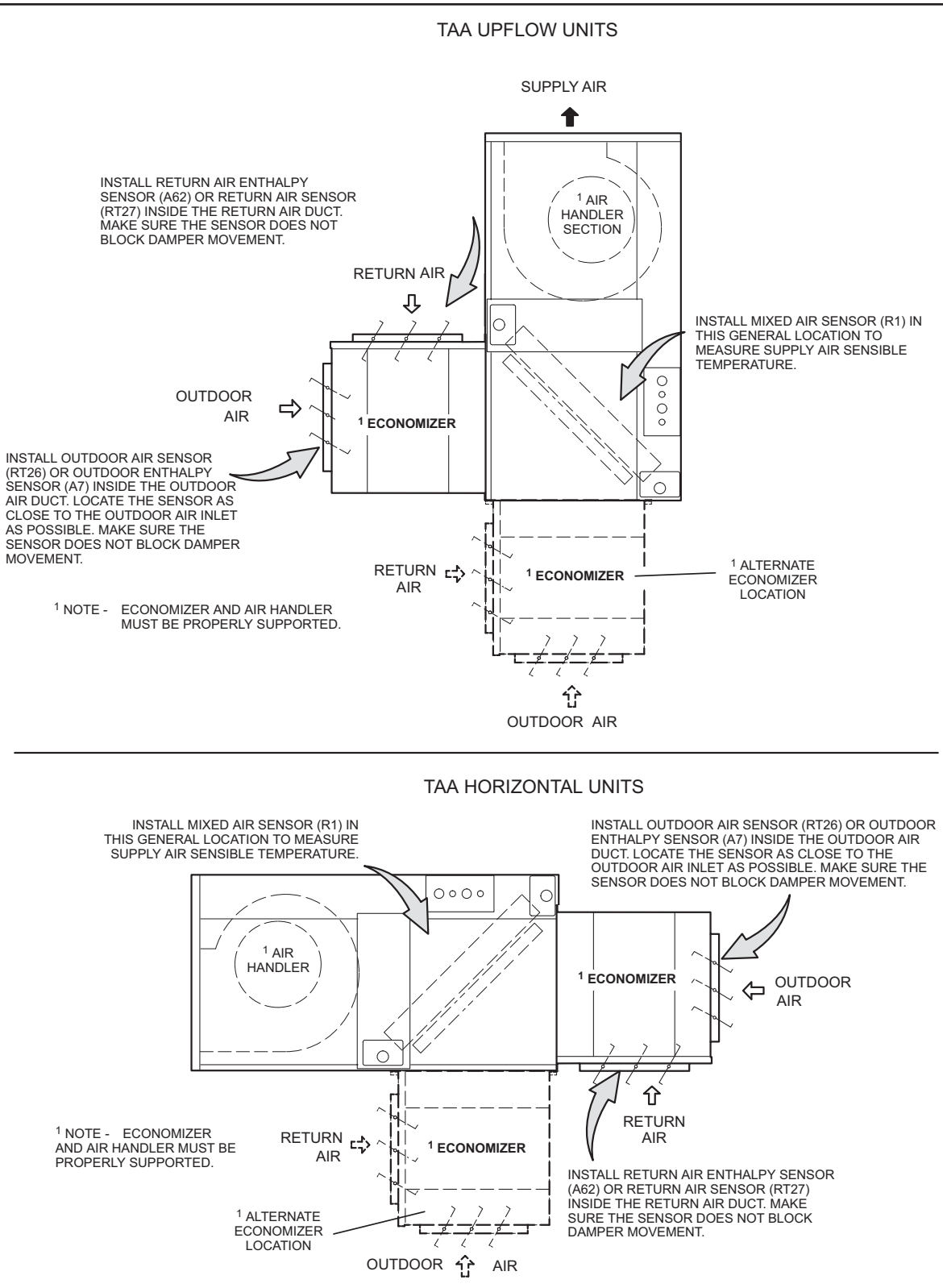
TAA UPFLOW UNITS
SUPPLY AIR
INSTALL RETURN AIR ENTHALPY SENSOR (A62) OR RETURN AIR SENSOR (RT27) INSIDE THE RETURN AIR DUCT. MAKE SURE THE SENSOR DOES NOT BLOCK DAMPER MOVEMENT.
1 AIR HANDLER SECTION
RETURN AIR
INSTALL MIXED AIR SENSOR (R1) IN THIS GENERAL LOCATION TO MEASURE SUPPLY AIR SENSIBLE TEMPERATURE.
OUTDOOR AIR
1 ECONOMIZER
INSTALL OUTDOOR AIR SENSOR (RT26) OR OUTDOOR ENTHALPY SENSOR (A7) INSIDE THE OUTDOOR AIR DUCT. LOCATE THE SENSOR AS CLOSE TO THE OUTDOOR AIR INLET AS POSSIBLE. MAKE SURE THE SENSOR DOES NOT BLOCK DAMPER MOVEMENT.
RETURN AIR
1 ECONOMIZER
1 ALTERNATE ECONOMIZER LOCATION
1 NOTE - ECONOMIZER AND AIR HANDLER MUST BE PROPERLY SUPPORTED.
OUTDOOR AIR
TAA HORIZONTAL UNITS
INSTALL MIXED AIR SENSOR (R1) IN THIS GENERAL LOCATION TO MEASURE SUPPLY AIR SENSIBLE TEMPERATURE.
INSTALL OUTDOOR AIR SENSOR (RT26) OR OUTDOOR ENTHALPY SENSOR (A7) INSIDE THE OUTDOOR AIR DUCT. LOCATE THE SENSOR AS CLOSE TO THE OUTDOOR AIR INLET AS POSSIBLE. MAKE SURE THE SENSOR DOES NOT BLOCK DAMPER MOVEMENT.
1 AIR HANDLER
1 ECONOMIZER
OUTDOOR AIR
RETURN AIR
1 NOTE - ECONOMIZER AND AIR HANDLER MUST BE PROPERLY SUPPORTED.
RETURN AIR
1 ECONOMIZER
INSTALL RETURN AIR ENTHALPY SENSOR (A62) OR RETURN AIR SENSOR (RT27) INSIDE THE RETURN AIR DUCT. MAKE SURE THE SENSOR DOES NOT BLOCK DAMPER MOVEMENT.
1 ALTERNATE ECONOMIZER LOCATION
OUTDOOR AIR

**Figure 5**