

ULTRA-ZONE[®]

Forced Air Zone Controls

SUBMITTAL SHEET

Model OAS

(OUTSIDE Air Sensor)

The "OAS" Outside Air Sensor allows precise real time monitoring of the OutsideAir temperature on your Zoned HVAC system. The **Optional** "OAS" wires directly into the **BMPlus series, UZC4 series or UT3000** control panels allowing the Control System to monitor the outside air temperature. Using the adjustable potentiometer on the Control Panel or the LCD menu, the installer can set the desired outdoor temperature changeover setting, to engage supplemental or backup heating systems.

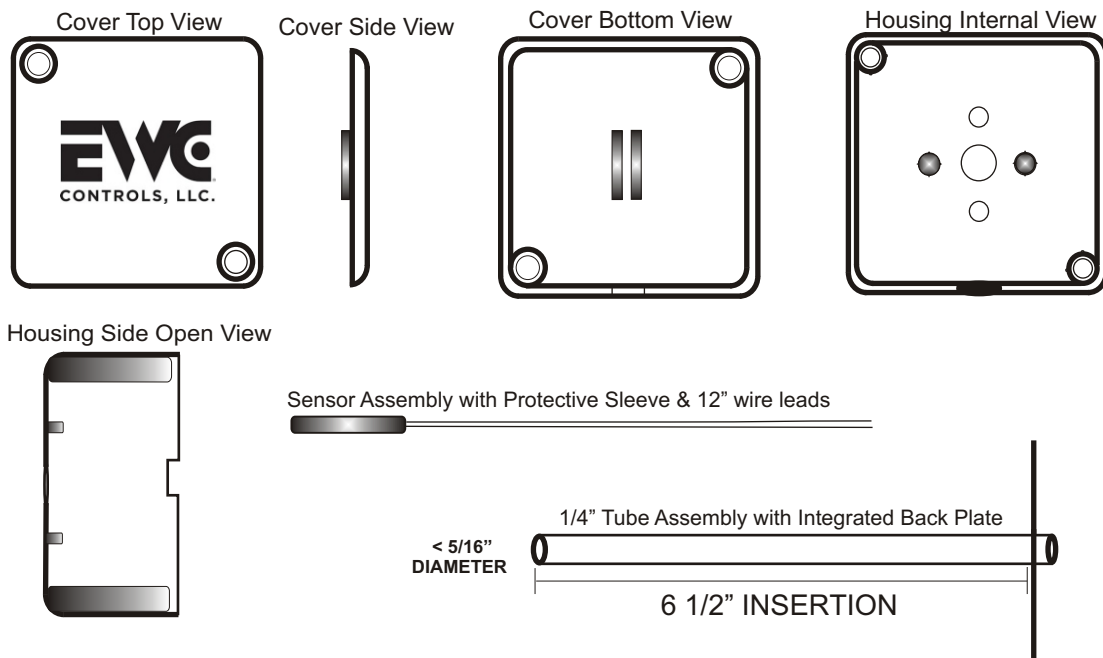
The OAS comes standard with the HK2000 Economizer System. Refer to the HK2000 Technical Bulletins for the specific Outside Air Features & Functions provided, with that product.

The OAS is a versatile device because it can be mounted on an outside wall or an outside air duct. See Pages 2, 3 & 4. Make sure the OAS is mounted completely outside of the house. Avoid direct sunlight. Do not mount the OAS low to the ground where snow can cover it. Do not mount the OAS close to exhaust vents of any type. **Use a dedicated 2 conductor 18AWG solid copper jacketed thermostat cable to connect the OAS to the Zone Control System, Economizer or the Smart Humidistat.** Avoid running cable in close proximity to line voltage circuits, or inside a conduit with other circuits. Avoid wire runs in excess of 100 ft.

The Sensor wiring is not polarity sensitive. OAS equipped panels have a designated terminal block for the OAS. Be sure to enable the OAS Dip switch. Now dial in the Outside Air Changeover setting you desire. Dual fuel Heat Pumps and Multi-Stage Heating systems can be controlled without the need for bulky mechanical outside air thermostats or expensive dual fuel kits.

To test an OAS disconnect the wire leads from the control panel and remove it from the duct. At room temperature (75F.) the ohm reading on an OAS will be approximately 10.5K ohms (10,500 ohms). Or leave the OAS where it is and place a separate temperature probe of known accuracy in the same location as the OAS and measure the OAS resistance against the table provided on page 4. You should measure a value within 5% of the table value and the separate temperature probe reading.

MAJOR PARTS INCLUDED IN THE "OAS" OUTSIDE AIR SENSOR ASSEMBLY



SUBMITTAL FORM

SUBMITTED BY: _____
 JOB: _____
 ARCHITECT: _____
 ENGINEER: _____
 CONTRACTOR: _____
 LOCATION: _____



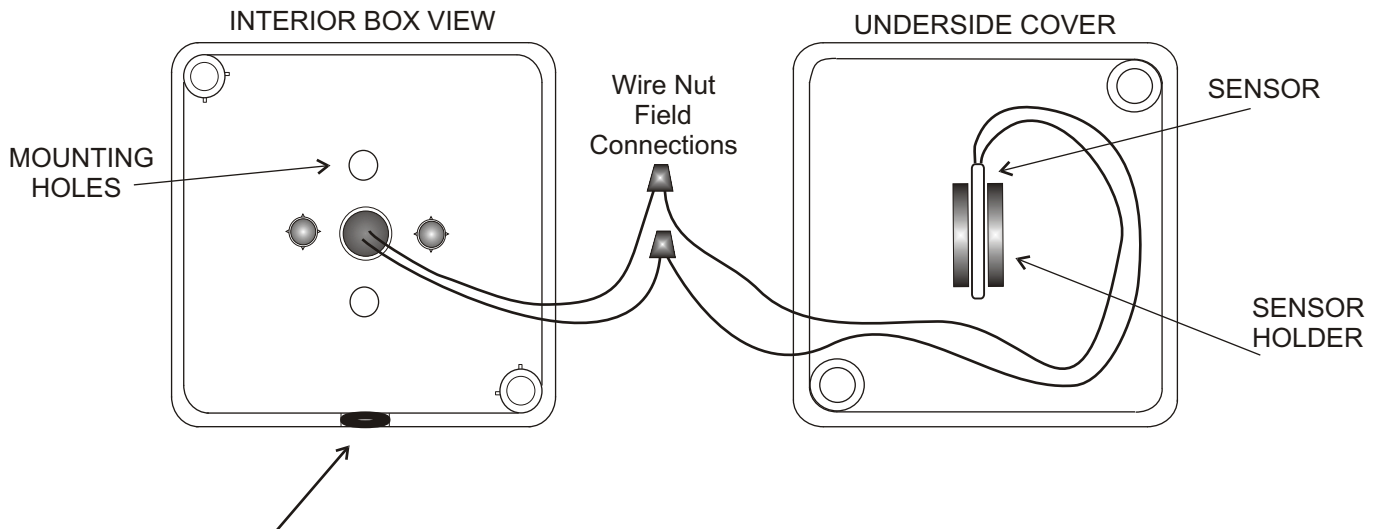
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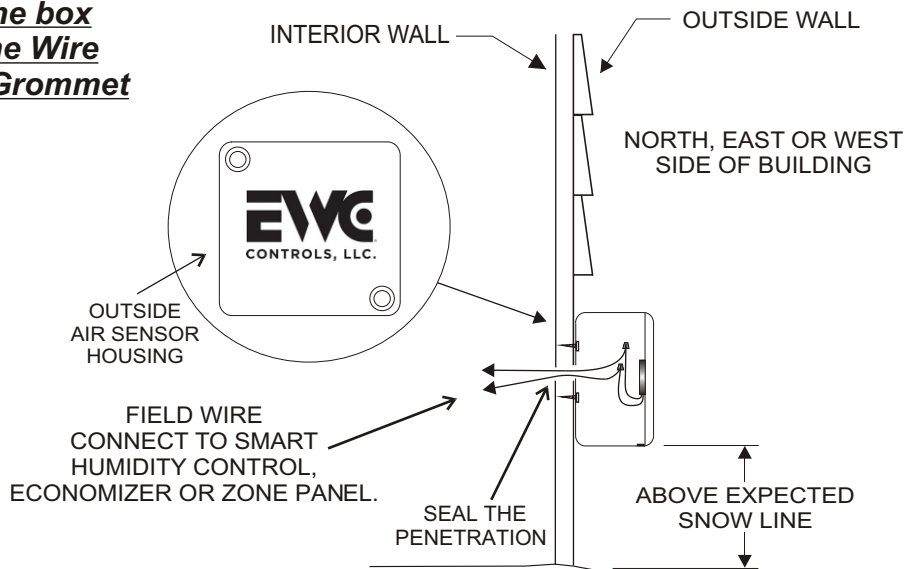
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Choose a suitable location to mount the OAS. The OAS can be configured to mount on an outside air duct or an outside wall. **If mounting on a wall**, simply fasten the box to the outside wall using two 1/4" hex head self-tapping screws and the provided wall anchors. The box should cover the hole penetration made in the wall. Now route 2x18AWG field cable through the center hole and into the box. Press the sensor into the brackets on the underside of the front cover. Use the provided wire nuts to connect to the SAS sensor wires. Place the cover back on and secure it. Connect the #18AWG field wires to the correct terminals on your Ultra-Zone control panel. The 1/4" bracketed tube is not used in this configuration. See Page 3 for duct mounting configuration.



NOTE: Orient the box housing with the Wire Entrance hole/Grommet facing down!



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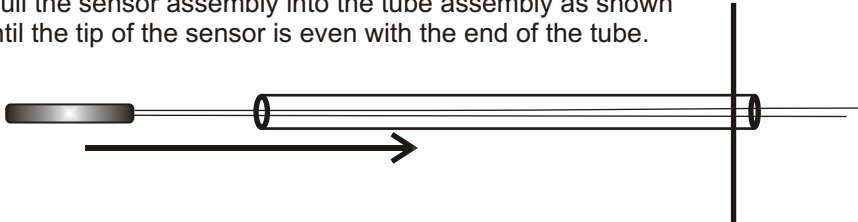
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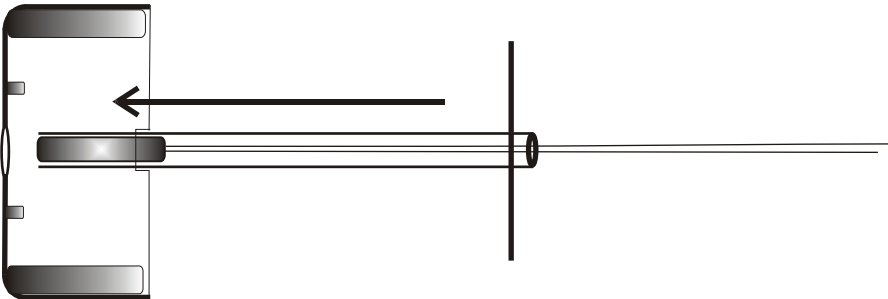
Model OAS (OUTSIDE Air Sensor)

Choose a suitable location to mount the OAS. The OAS can be configured to mount on an outside air duct or an outside wall. **If mounting on a duct**, make sure there are no critical components behind the duct and drill a 5/16" hole into the duct. Assemble the components as shown below to allow the sensor to sense outside air moving through the duct. Now fasten the box to the duct using two 1/4" hex head self tapping screws. Route 2x18AWG field cable through the wire entrance grommet and into the box. Use the provided wire nuts to connect to the OAS sensor wires. Place the cover back on and secure it. Connect the #18AWG field wires to the correct terminals on your Ultra-Zone control panel. **NOTE:** Choose your sensor location and configuration carefully. Sensing Outside Air Temperature in a duct can lead to inaccurate readings if the air is not actually moving through the duct.

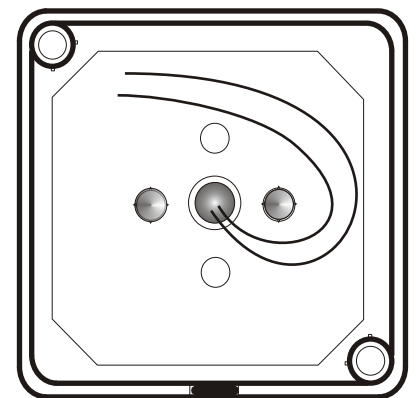
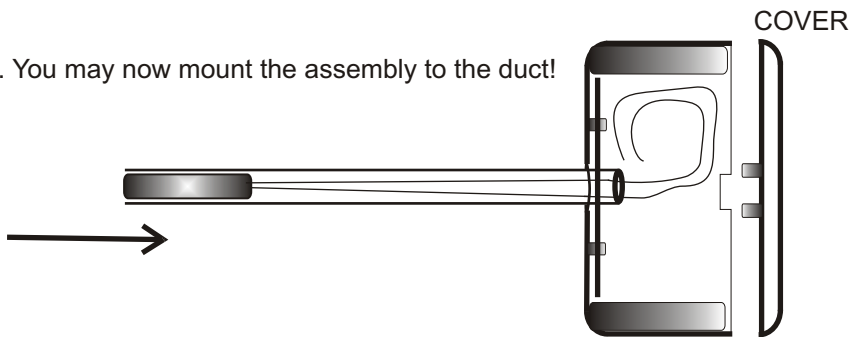
1. Pull the sensor assembly into the tube assembly as shown until the tip of the sensor is even with the end of the tube.



2. Slide the tube assembly through the center hole of the box all the way and press the bracket down onto the alignment posts.



3. You may now mount the assembly to the duct!



INSIDE VIEW AFTER ASSEMBLY

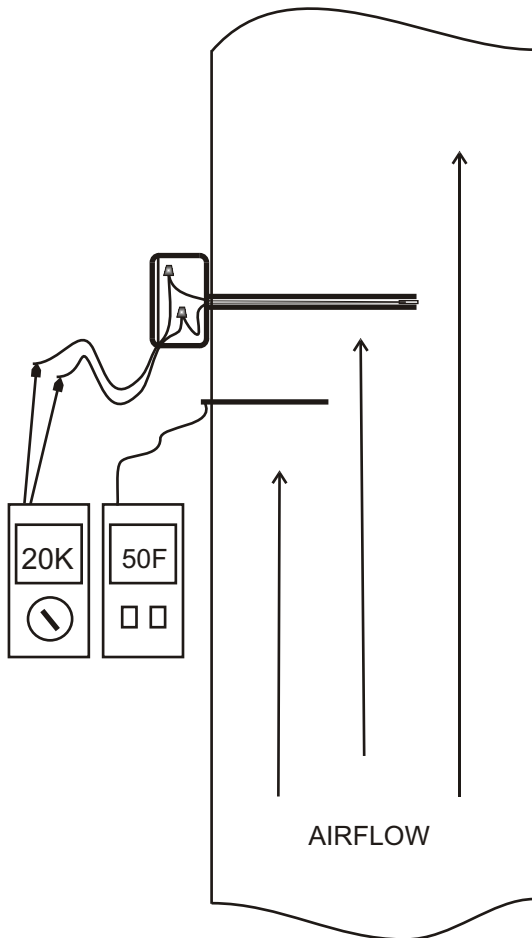
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The “OAS” is constructed of UV stabilized Poly Carbonate Plastic with seamless aluminum tubing frame and a highly accurate thermistor with 24AWG 12” leads. The unique construction provides a thermal barrier between the temperature probe and the duct work allowing accurate air temperature measurements.

To test an OAS, disconnect the wire leads from the control panel and remove it from the duct. At room temperature (75F.) The ohm reading on an OAS will be approximately 10.5K ohms (10,500 ohms). Or leave the OAS where it is and place a separate temperature probe of known accuracy in the same location as the OAS and measure the OAS resistance against the table provided below. You should measure a value within 5% of the table value and the separate probe reading.



| TEMPERATURE (F) | OHMS k | VOLTSdc |
|-----------------|--------|---------|
| -5 | 100.18 | 4.76 |
| 0 | 85.34 | 4.68 |
| 5 | 72.91 | 4.59 |
| 10 | 62.46 | 4.51 |
| 15 | 53.66 | 4.42 |
| 20 | 46.22 | 4.33 |
| 25 | 39.92 | 4.21 |
| 30 | 34.36 | 4.10 |
| 35 | 29.49 | 3.98 |
| 40 | 26.68 | 3.88 |
| 45 | 23.01 | 3.77 |
| 50 | 19.90 | 3.63 |
| 55 | 17.25 | 3.48 |
| 60 | 15.00 | 3.33 |
| 65 | 13.68 | 3.23 |
| 70 | 11.94 | 3.07 |
| 75 | 10.44 | 2.91 |
| 80 | 9.16 | 2.75 |
| 85 | 8.40 | 2.64 |
| 90 | 7.40 | 2.48 |
| 95 | 6.53 | 2.32 |
| 100 | 5.77 | 2.21 |

