ULTRA-ZONE®
Forced Air Zone Controls

SUBMITTAL SHEET

Model SAS
(Supply/Return Air Sensor)

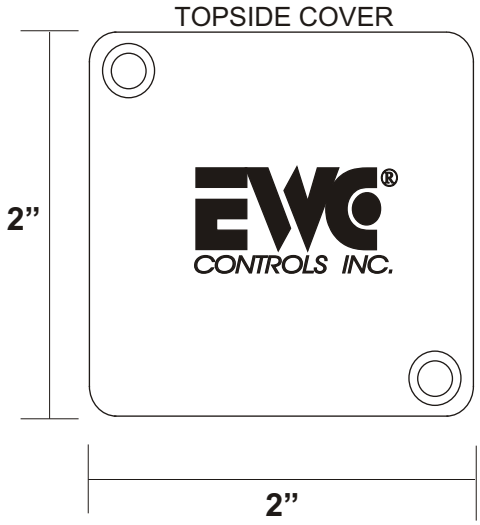
The "**SAS"** Supply Air Sensor allows precise real time monitoring of the Supply Air temperature on your Zoned HVAC system. The SAS wires directly into the **BMPlus, NCM300, EWC-300, UZC4 and UT3000 series** control panels and senses the supply air temperature in both heating and cooling modes. Using the adjustable potentiometers or LCD menu on the control panel, the installer can set the desired temperature limit set points on most EWC zoned HVAC systems. This will protect the HVAC equipment from excessive temperature rise or fall during heating and cooling operations.

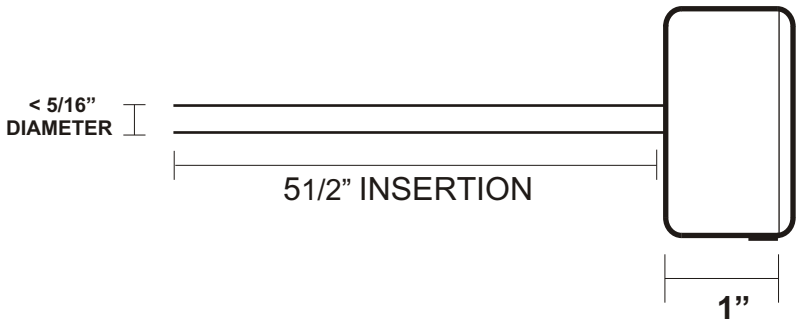
EWC recommends mounting the SAS in the supply air plenum, approximately 6 - 12 inches downstream of the Heat Exchanger or DX coil. Upstream of the Electric strip heating elements in heat pump applications. It should also be installed upstream of any Bypass duct connection. Some EWC Control panels have dual high limit potentiometers which allows mounting the SAS in the discharge plenum, regardless of the DX coil and/or heat exchanger or strip heat configuration.

Make sure you enable the SAS Dip switch on some panels. Now adjust the Heating and Cooling limit set points or Under/Over temperature Off-set values for your particular application on the Ultra Zone Control panel and enjoy real time monitoring of the HVAC supply air temperature in heating and cooling modes.

The Sensor wiring is not polarity sensitive. SAS equipped panels have a designated terminal block for the SAS. ***To test an SAS, measure the DC voltage at the SAS terminals on the Zone panel. Compare your voltage reading to the Table on page 2.*** You can also disconnect the SAS wire leads from the control panel and measure the sensor's resistance. At room temperature (75F.) the ohm reading on a SAS will be approximately 10.5K ohms (10,500 ohms). You can also leave the SAS in the duct and insert a separate temperature probe of known accuracy in the same location as the SAS and measure the SAS resistance against the table provided on page 2. You should measure a value within 5% of the table value and the SAS probe.

The SAS can also be used as a Return Air sensor on the HK2000 Economy Control System and the UZC4 Zone Control system. When being used to monitor return air, EWC recommends mounting the RAS in the return plenum, downstream from the bypass damper between the bypass and the air handler. This is done to ensure the air being sensed is a proper mix of bypassed air and return air. Refer to the HK2000 and the UZC4 Technical Bulletins for the specific Return Air Features & Functions provided, when the SAS is used as a Return Air Sensor.





The "SAS" box is constructed of UV stabilized poly carbonate plastic with a seamless aluminum tube & plate assembly. The vastly improved thermistor is vacuum potted into a separate stainless steel sleeve, which is then inserted into the tube, creating the temperature probe assembly. Vacuum potting prevents moisture from penetrating and affecting the thermistor. The unique construction provides a thermal barrier between the temperature probe and the duct work allowing precise air temperature measurements.

SUBMITTAL FORM
SUBMITTED BY:
JOB:
ARCHITECT:
ENGINEER:
CONTRACTOR:
LOCATION:

Excellence Without Compromise
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P/N 090377A0072 REV. F 02-12-15

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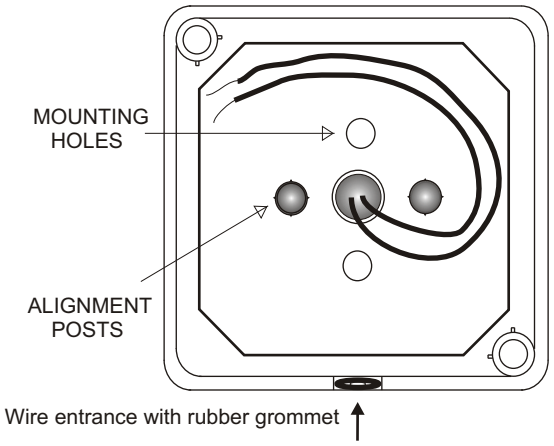
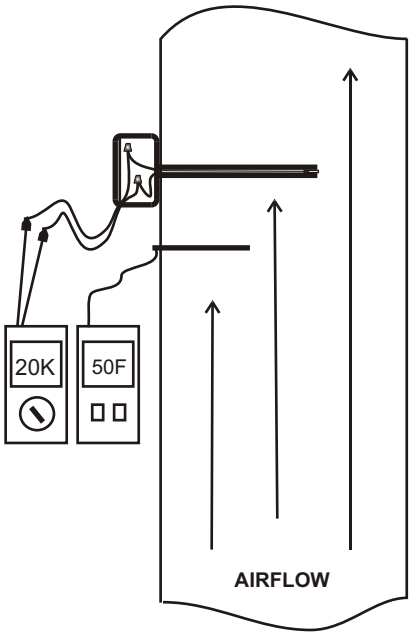
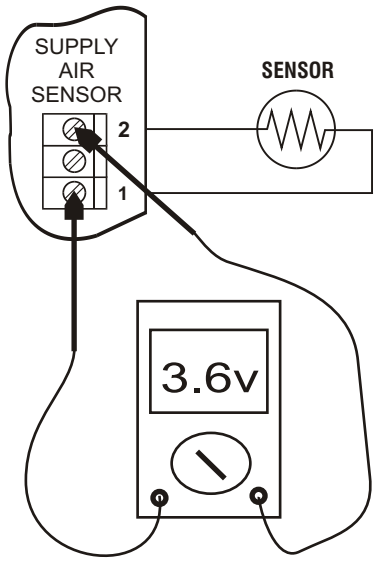
Choose a suitable location to mount the SAS. Make sure there are no critical components behind the duct and drill a 5/16” hole into the duct. Remove the front cover on the SAS to expose the box interior. Insert the SAS probe into the 5/16” hole you drilled into the duct. Now fasten the box to the duct using two 1/4” hex head screws. Route 2x18AWG field wire through the grommet and into the box. Use the provided wire nuts to connect to the SAS sensor wires. Place the cover back on and secure it. Connect both #18AWG field wires to the correct terminals on your Ultra-Zone control panel, to achieve real time monitoring of the Supply or Return Air temperature.



Mount box with wire entrance at the bottom





TEMPERATURE (F)	OHMS k	VOLTSdc	TEMPERATURE (F)	OHMS k	VOLTS dc	TEMPERATURE (F)	OHMS k	VOLTS dc
30	34.36	4.10	85	8.40	2.64	140	2.48	1.24
35	29.49	3.98	90	7.40	2.48	145	2.23	1.14
40	26.68	3.90	95	6.53	2.32	150	2.01	1.05
45	23.01	3.77	100	5.77	2.21	155	1.87	1.0
50	19.90	3.63	105	5.11	2.02	160	1.69	0.92
55	17.25	3.48	110	4.72	1.93	165	1.53	0.84
60	15.00	3.33	115	4.20	1.79	170	1.38	0.77
65	13.68	3.23	120	3.74	1.66	175	1.29	0.73
70	11.94	3.07	125	3.34	1.54	180	1.17	0.67
75	10.44	2.91	130	3.09	1.46	185	1.07	0.62
80	9.16	2.75	135	2.77	1.35	190	0.97	0.57

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