

# ULTRA-ZONE®

Forced Air Zone Controls

## SUBMITTAL SHEET

Model SAS  
(Supply/Return Air Sensor)

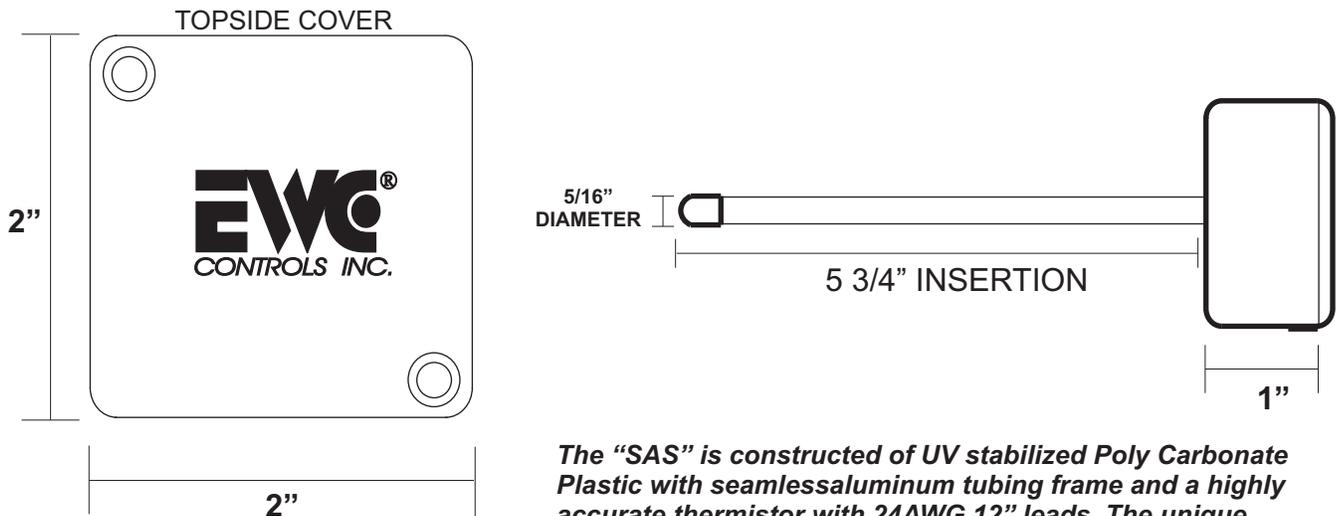
The "SAS" Supply Air Sensor allows precise real time monitoring of the Supply Air temperature on your Zoned HVAC system. The SAS wires directly into the **BMPlus, NCM300, EWC-300 or UZC series** control panels and senses the supply air temperature in both heating and cooling modes. Using the adjustable potentiometers 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 frozen coils, excessive sweating, or short cycling the furnace/heat pump on high limit or pressure.

EWC recommends mounting the SAS in the supply air plenum, approximately 12 -18 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.

Be sure to remove the factory supplied resistor on the Supply Air Sensor terminal block of the Ultra Zone panel, and connect the field wiring to those terminals instead. On some panels, make sure you enable the SAS Dip switch. Now dial in the Heating and Cooling limit set points 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, disconnect the wire leads from the control panel and remove it from the duct. At room temperature (75F.) the ohm reading on a SAS will be approximately 10.5K ohms (10,500 ohms). Or 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 separate temperature 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" 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 precise air temperature measurements.**



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### SUBMITTAL FORM

SUBMITTED BY: \_\_\_\_\_  
JOB: \_\_\_\_\_  
ARCHITECT: \_\_\_\_\_  
ENGINEER: \_\_\_\_\_  
CONTRACTOR: \_\_\_\_\_  
LOCATION: \_\_\_\_\_

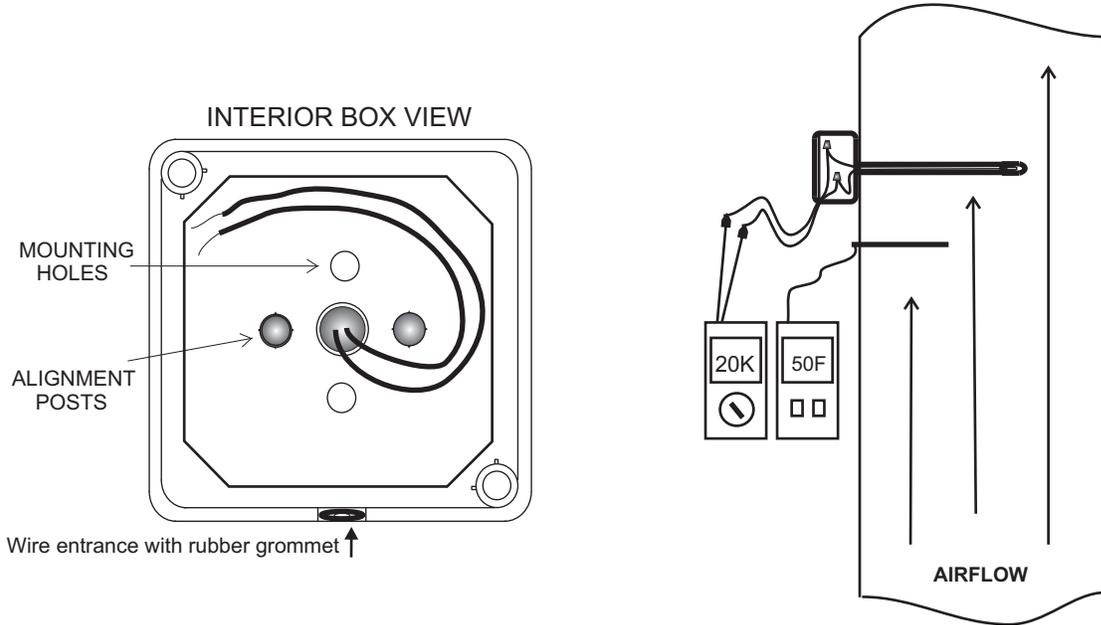
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Choose a suitable location to mount the SAS. Make sure there are no critical components behind the duct and drill a 3/8" hole into the duct. Remove the front cover on the SAS to expose the box interior. Insert the SAS probe into the 3/8" hole you drilled into the duct. Now fasten the box to the duct using the two 1/4" hex head self-tapping screws provided. 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.



TEMPERATURE (F)	RESISTANCE/OHMS	TEMPERATURE (F)	RESISTANCE/OHMS	TEMPERATURE (F)	RESISTANCE/OHMS
30	34562	85	8249	140	2487
35	30000	90	7333	145	2252
40	26104	95	6530	150	2042
45	22767	100	5826	155	1855
50	19903	105	5208	160	1687
55	17438	110	4663	165	1536
60	15313	115	4182	170	1401
65	13475	120	3757	175	1279
70	11884	125	3381	180	1169
75	10501	130	3047	185	1070
80	9298	135	2751	190	981



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