

Installation Instructions

**Outdoor Air
Temperature Sensor**

**AST008
1125-1**

NOTE: Read the entire instruction manual before starting this installation.

SAFETY CONSIDERATIONS

Read and follow manufacturer instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage thermostat sensor. It is important to recognize safety information. Understand the signal words DANGER, WARNING, and CAUTION. DANGER identifies the most serious hazards which will result in severe personal injury or death. WARNING signifies hazards which could result in personal injury or death. CAUTION is used to identify unsafe practices which could result in minor personal injury or product and property damage.

INTRODUCTION

The Outdoor Air Temperature Sensor is a 10K based thermistor, which can be used as an accessory for select model thermostats and zoning systems. This sensor provides outdoor air temperature information for the control system, as well as an indication of outdoor temperature for the homeowner. The AST008 sensor can also be used as a remote indoor sensor. This sensor is improved for easier installation and wiring hook-up.

INSTALLATION

PROCEDURE 1 – MOUNTING SENSOR TO THE OUTSIDE WALL

The traditional mounting location has been on the outside wall. The only recommended wall for mounting is the North side of the building. The effects of the sun warming the other 3 walls (i.e. East, South and West) can produce unacceptable temperature errors under the right conditions. If the North wall is used (as recommended), the mounting height can be from near ground level, all the way up into the eave. It is always best to mount the sensor at least 2 to 3 feet above the grade level. The sensor should be mounted inside an ordinary or weatherproof outlet box. (See Fig. 1)

Advantages: This is the most accurate way of reading outdoor temperature.

Disadvantages: This application requires dedicated wire between the sensor location and the indoor termination point.

IF THIS PROCEDURE IS SELECTED:

Select the exact mounting location and route a 2 conductor interconnecting wire (through the building) between the indoor termination point and the outdoor sensor. The termination point will be 2 terminals "OD" at the thermostat. (The 2 terminals "ID" will be used for the Indoor sensor). It is acceptable to splice the wires to complete this connection. However, allow sufficient extra wire for excess on each end to complete the connection. Solid thermostat or stranded, 22 AWG (or heavier wire) may be used. Use the supplied wire nuts to attach the sensor to the interconnecting wire. The wire nut connection should be located within the outlet box or within the outside wall (check your local codes). (See Fig1 and 2)

- 1) Drill a suitable hole in the building wall at the selected location.
- 2) Remove rear knockout from the electrical box, route wire through box, and attach to wall. Insert sensor in outlet box and make connections with supplied wire nuts.

NOTE: Sensor polarity is not important, avoid sensor from touching inside edge of outlet box.

- 3) Seal wire entrance through the wall.
- 4) Attach cover to box.

NOTE: Any moisture entering the box will not harm the sensor.

- 5) Connect other end as shown in Fig. 2

TESTING COMPLETED WIRING

When properly connected, the sensor will display the outdoor temperature in the upper left hand corner of the display in the Main Screen. **NOTE:** The outdoor and/or indoor sensor must be selected in the thermostat configuration before thermostat will display the appropriate temperatures.

Table 1 – Temperature / Ohm Relationship (Degrees F/ Ω)

TEMP F°	OHMS	TEMP F°	OHMS	TEMP F°	OHMS	TEMP F°	OHMS
0	85,378	33	31,738	66	13,138	99	5,961
1	82,710	34	30,855	67	12,811	100	5,827
2	80,135	35	30,000	68	12,493	101	5,697
3	77,649	36	29,171	69	12,184	102	5,570
4	75,249	37	28,367	70	11,883	103	5,446
5	72,931	38	27,589	71	11,591	104	5,326
6	70,693	39	26,834	72	11,307	105	5,208
7	68,531	40	26,103	73	11,031	106	5,094
8	66,442	41	25,394	74	10,762	107	4,982
9	64,475	42	24,706	75	10,501	108	4,873
10	62,475	43	24,039	76	10,247	109	4,767
11	60,592	44	23,393	77	10,000	110	4,663
12	58,771	45	22,766	78	9,760	111	4,562
13	57,012	46	22,158	79	9,526	112	4,464
14	55,311	47	21,568	80	9,298	113	4,368
15	53,667	48	20,996	81	9,077	114	4,274
16	52,077	49	20,441	82	8,862	115	4,183
17	50,540	50	19,902	83	8,651	116	4,094
18	49,054	51	19,379	84	8,448	117	4,007
19	47,616	52	18,872	85	8,250	118	3,922
20	46,225	53	18,379	86	8,056	119	3,839
21	44,880	54	17,902	87	7,868	120	3,758
22	43,578	55	17,438	88	7,685	121	3,679
23	42,318	56	16,987	89	7,507	122	3,602
24	41,099	57	16,550	90	7,333	123	3,527
25	39,920	58	16,125	91	7,164	124	3,453
26	38,778	59	15,713	92	7,000	125	3,382
27	37,672	60	15,312	93	6,839	126	3,312
28	36,602	61	14,923	94	6,683	127	3,243
29	35,566	62	14,545	95	6,531	128	3,177
30	34,563	63	14,178	96	6,383	129	3,112
31	33,591	64	13,822	97	6,238	130	3,048
32	32,650	65	13,475	98	6,098		

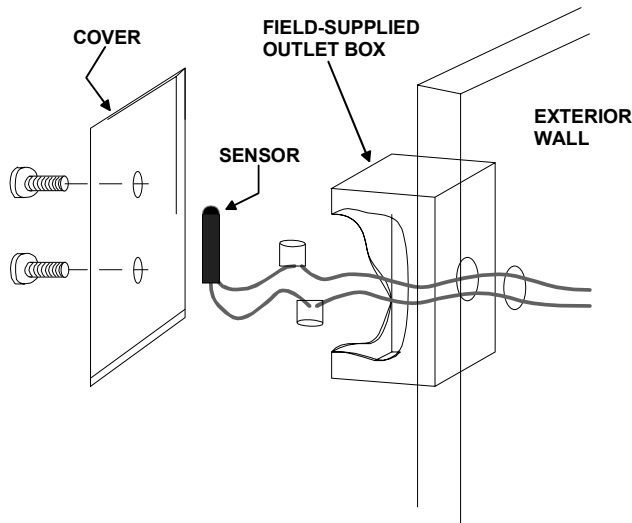


Fig. 1 - Mounting Sensor to Outside Wall

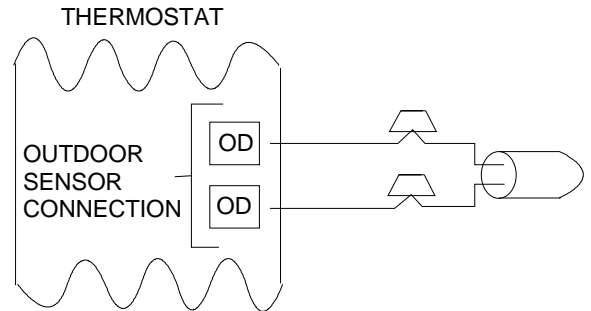


Fig. 2 - Thermostat Direct Connection