



Climate Control Solutions  
Bard Manufacturing Company, Inc.  
Bryan, Ohio 43506

# INSTALLATION INSTRUCTIONS

## Remote Outdoor Air Temperature Sensor

### Bard Part #8403-061

## SAFETY CONSIDERATIONS

Carefully read and follow entire instructions before starting the installation. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage the controller sensor.

## INTRODUCTION

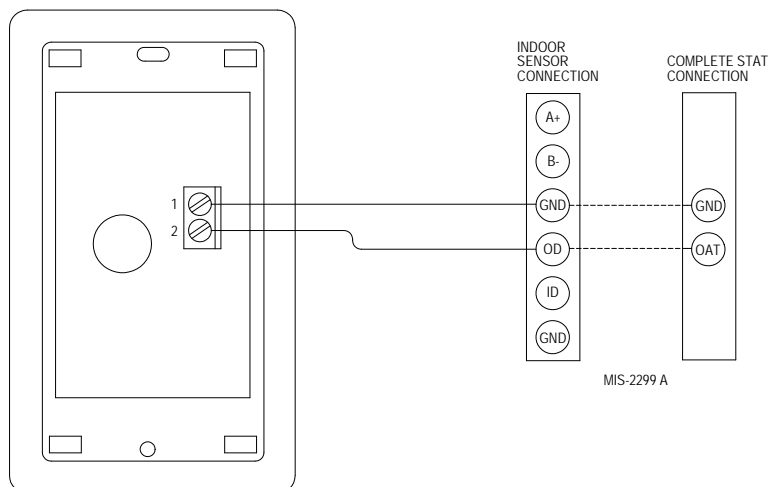
The 8403-061 Remote Temperature Sensor is a 10k-ohm Type II thermistor, which can be used as an accessory for use with Bard 8403-060 controller system or the Bard CompleteStat controller series. This sensor provides outdoor air temperature information for the controller system, as well as an indication of outdoor temperature for the user.

## INSTALLATION

### GENERAL REQUIREMENTS:

1. Shielded twisted pair, 22 AWG (or heavier) should be used to avoid possible interference from other electrical systems. Use the supplied wire nuts to attach the sensor leads to the interconnecting wire. The wire nuts should be located within the outlet box or within the wall cavity. The shield (drain) should be connected to 24V Common (C) on the controller end.
2. The sensor comes with a suitable enclosure, which is to protect the sensor from physical damage. The sensor itself is weather-tight and suitable for outdoor locations.
3. The recommended wall or side of the building for mounting is the North side. The effects of sun warming the other 3 sides of the building can produce unacceptable temperature errors under the right conditions. If the North side of the building is used as recommended, the mounting height can be from near ground level all the way up to the eave. It is always best to mount the sensor at least 2 to 3 feet above ground level. If the North side is not available, it can be mounted under a wall-mounted unit.
4. Select the exact mounting location and route a 2-conductor interconnecting wire between the outdoor sensor and the 8403-060 controller location inside the building.
5. Use field-supplied wire nuts to connect the sensor leads to the interconnecting wiring. See Figure 1 for 8403-060 connection and Figure 2 for CompleteStat connections.
6. The termination point at the controller will be GND and OD terminals at the right side of the controller subbase. Sensor polarity is not important.

**FIGURE 1 – 8403-060**



### Testing Completed Wiring

When the 8403-061 sensor is properly connected, the 8403-060 controller will automatically display the outdoor temperature in the upper left-hand corner of the display in the Main Screen.

See Table 1 for Temperature/Ohm relationship of the sensor.

**TEMPERATURE / OHM RELATIONSHIP****Table 1  
Degrees F/ $\Omega$** 

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		