

Multiple Outdoor Sensor for Heating Controls

Product Instructions

Applications

The Multiple Outdoor Sensor for Heating Controls is an optional outdoor sensor module which allows up to four Basic or Advanced Heating Controls to share one outdoor sensor enclosure.

Features

The Multiple Outdoor Sensor module includes three 10k Ω thermistors which provide an accurate measurement of outdoor temperature. Each sensor has two terminals for wiring. The module is attached inside the outdoor sensor enclosure included with the control, and allows for four separate sensors to be combined into a single enclosure mounted on the exterior of the building.

Specifications

Packaged weight:

0.13lb. (60g)

Dimensions:

2-1/8" H x 9/16" W x 9/16" D

Operating Range:

-60 to 140°F (-50 to 60°C)

Sensor:

NTC thermistor, 10k Ω @ 77°F
(25°C +/- 0.2°C), β =3892

Installation

The Multiple Outdoor Sensor module is designed to mount in the Outdoor Sensor enclosure (provided with Basic and Advanced Heating Controls) as shown in the diagram.

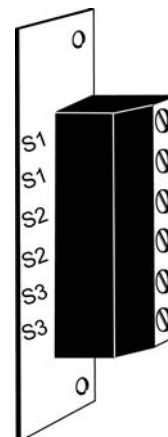
Remove the screw from the center of the Outdoor Sensor and pull the front cover off the enclosure.

The Multiple Outdoor Sensor module is mounted into the Outdoor Sensor enclosure. Using the two screws provided, fasten the module in the top right hand corner of the Outdoor Sensor enclosure as indicated at right.

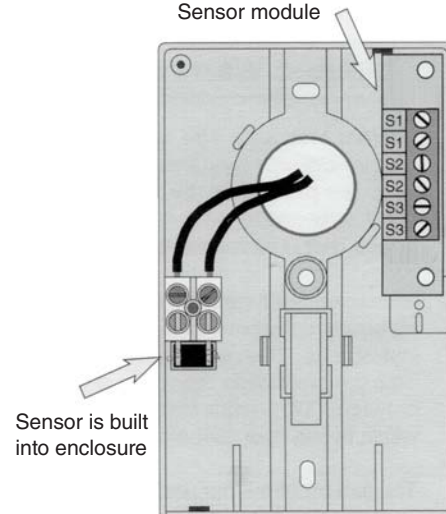
Connect two conductor 18 AWG or similar wire between the terminals S1 and S1 and the outdoor sensor terminals on one Heating Control. Do not run the wires parallel to telephone or power cables. If the sensor wires are located in an area with strong sources of electromagnetic interference, shielded cable or twisted pair should be used or the wires can be run in a grounded metal conduit. If using shielded cable, the shield wire should be connected to the *Com* terminal on the control and not to earth ground.

Follow the sensor testing instructions below and connect the wires to the control.

Repeat the above steps for the second (S2 and S2) and third (S3 and S3) sensors.



Mounting location for Multiple Outdoor Sensor module



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Testing

A good quality test meter capable of measuring up to 5,000 k Ω (1k Ω = 1000 Ω) is required to measure the sensor resistance. In addition to this, the actual temperature must be measured with either a good quality digital thermometer, or if one is not available, a second sensor may be placed alongside the one to be tested and the readings compared.

First measure the temperature using the thermometer and then measure the resistance of the sensor at the control. The wires from the sensor must not be connected to the control while the test is being performed. Using the chart below, estimate the temperature measured by the sensor. The sensor and the thermometer readings should be close. If the test meter reads a very high resistance, there may be a broken wire, a poor wiring connection, or a defective sensor. If the resistance is very low, the wiring may be shorted, there may be moisture in the sensor, or the sensor may be defective. To test for a defective sensor, measure the resistance directly at the sensor location with the wires disconnected.

Do not apply voltage to a sensor at any time as damage to the sensor may result.

Temperature			Resistance			Temperature			Resistance			Temperature			Resistance			Temperature			Resistance		
°F	°C		°F	°C	Ω	°F	°C		°F	°C	Ω	°F	°C		°F	°C	Ω	°F	°C		°F	°C	Ω
-50	-46	490,813	20	-7	46,218	90	32	7,334	160	71	1,689	-45	-43	405,710	25	-4	39,913	95	35	6,532	165	74	1,538
-40	-40	336,606	30	-1	34,558	100	38	5,828	170	77	1,403	-35	-37	280,279	35	2	29,996	105	41	5,210	175	79	1,281
-30	-34	234,196	40	4	26,099	110	43	4,665	180	82	1,172	-25	-32	196,358	45	7	22,763	115	46	4,184	185	85	1,073
-20	-29	165,180	50	10	19,900	120	49	3,760	190	88	983	-15	-26	139,402	55	13	17,436	125	52	3,383	195	91	903
-10	-23	118,018	60	16	15,311	130	54	3,050	200	93	829	-5	-21	100,221	65	18	13,474	135	57	2,754	205	96	763
0	-18	85,362	70	21	11,883	140	60	2,490	210	99	703	5	-15	72,918	75	24	10,501	145	63	2,255	215	102	648
10	-12	62,465	80	27	9,299	150	66	2,045	220	104	598	15	-9	53,658	85	29	8,250	155	68	1,857	225	107	553