Indoor Sensor for Heating Controls
Product Instructions

Applications

The Indoor Sensor for Heating Controls is an optional room feedback sensor for both the Basic Heating and Advanced Heating Controls.

Features

The Indoor Sensor includes a 10kΩ thermistor which provides accurate measurement of indoor temperature. The sensor can be mounted directly on a wall using two #6 - 1" screws. The small size of the sensor makes it visually appealing and less noticeable on the wall.

Specifications

Packaged weight:
0.16lb. (72g)
Dimensions:
2-7/8" H x 2-7/8" W x 13/16" D
Approvals:
CSA NRTL/C
Operating Range:
-60 to 140°F (-50 to 60°C)
Sensor:
NTC thermistor, 10kΩ @ 77°F (25°C +/- 0.2°C), β=3892

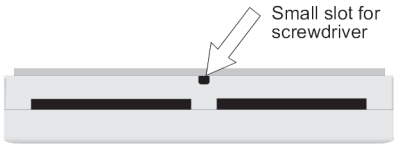
Installation

Note: The temperature sensor (thermistor) is built into the sensor enclosure.

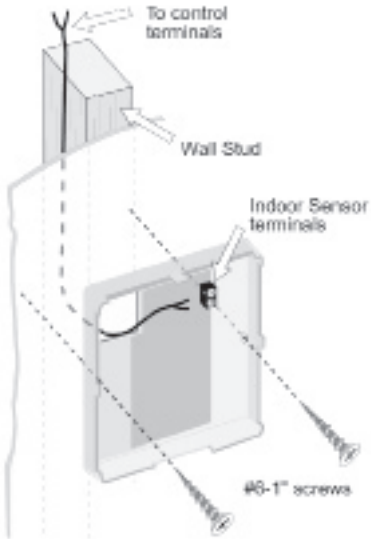
To remove the Indoor Sensor front cover, place a small screwdriver or similar object into the small hole located in the top of the sensor enclosure. Push the screwdriver against the plastic flap and pull the top of the front cover so that it pivots around the bottom edge of the mounting base.

The Indoor Sensor should be installed on an interior wall of the desired zone to be controlled. Do not mount the sensor in a location that may be affected by localized heat sources or cold drafts. It may be necessary to install a draft barrier and/or insulation behind the enclosure in order to prevent air from blowing through the wiring hole and affecting the sensor reading.

For surface mounting, attach the Indoor Sensor directly to the wall using two #6 - 1" screws. The screws are inserted through the mounting holes and must be securely fastened to the wall. If possible, at least one of the screws should enter a wall stud.



Top view of Indoor Sensor



Run two conductor 18 AWG or similar wire between the Indoor Sensor and the terminals on the Heating Control. Insert the wires through the hole provided in the back of the sensor enclosure and connect them to the indoor sensor terminal block. Do not run the wires parallel to telephone or power lines. If the indoor sensor wires are located in an area with strong sources of electromagnetic noise, shielded cable or twisted pair should be used or the wires can be run in a grounded metal conduit. If using shielded cable, one end of the shield wire should be connected to the Com-Sen terminals on the control and the other end should remain free. The shield must not be connected to earth ground. Follow the sensor

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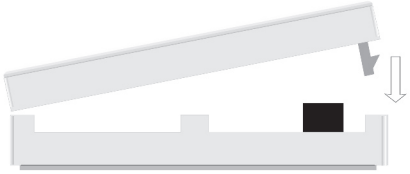
testing instructions below and connect the wires to the control.

The Indoor Sensor front cover is installed by aligning the hinges on the bottom of the front cover with the bottom of the sensor mounting base. The front cover is then pivoted around the bottom hinge



and pushed against the mounting base until it firmly snaps into place.

Testing

A good quality test meter capable of measuring up to 5,000 kΩ (1kΩ = 1000Ω) 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

Temperature		Resistance	Temperature		Resistance	Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω	°F	°C	Ω	°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