



This manual covers the following models:

- **R250S** (Requires a Wired Sensor Capable Thermostat)

**Congratulations on purchasing a PRO1 Wired Sensor.**

This remote sensor was designed to the highest reliability and ease of use standards. Thank you for choosing Pro1.



**Caution:**

**Equipment damage hazard**

Do not operate the cooling system if the outdoor temperature is below 50° F (10° C) to prevent possible compressor damage.

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**Need Help?**

For assistance with this product please visit <http://www.pro1iaq.com> or call Pro1 Customer Care toll-free at 888-Pro1iaq (776-1427) during normal business hours (Mon-Fri 9 AM - 6 PM Eastern)

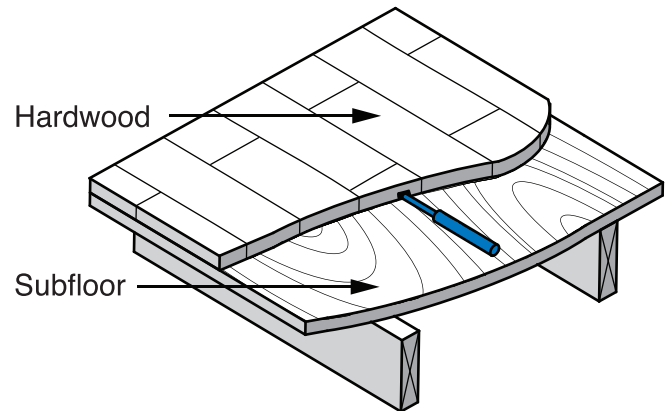
Una versión española de este manual puede ser descargada en [www.pro1iaq.com](http://www.pro1iaq.com)

## Installing the R250S as a Floor Sensor

Before wiring, the R250S needs to be installed. The stainless steel housing allows this sensor to be placed into concrete, thin-set, and grout. The following five examples demonstrate the proper way to install a R250S as a floor sensor in conventional floor construction.

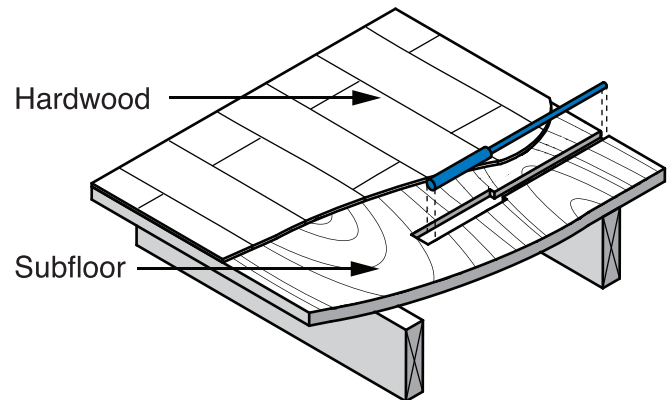
### Thick Covering - Greater Than 3/8" (10mm)

If the thick floor covering is installed directly to the subfloor, a 1/8" (4mm) wide by 1/16" (2mm) deep groove should be cut into the **back of the floor cover** to allow for the R250S wire. Position the sensor in such a place that the wire can reach the location of its junction box. The groove for where the sensor will be placed should be 1/4" (8mm) wide by 1/4" (8mm) deep by 1 3/4" (45mm) long. For accurate temperature reading, the sensor should be located exactly between heating elements.



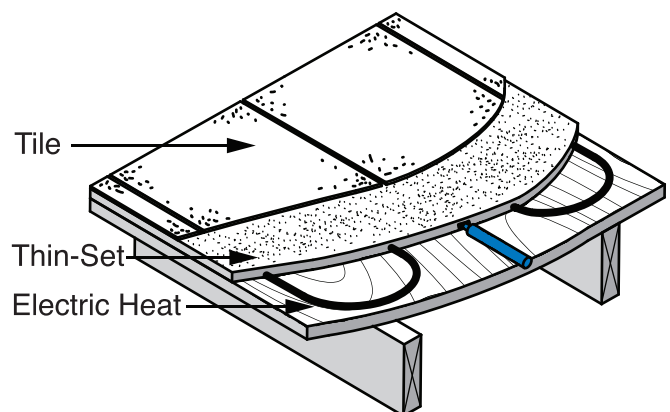
### Thin Covering - Less Than 3/8" (10mm)

If the thin floor covering is installed directly to the subfloor, a 1/8" (4mm) wide by 1/16" (2mm) deep groove should be cut into the **surface of the subfloor** to allow for the R250S wire. Position the sensor in such a place that the wire can reach the location of its junction box. The groove for where the sensor will be placed should be 1/4" (8mm) deep by 1 3/4" (45mm) long. For accurate temperature reading the sensor should be located exactly between the heating elements.



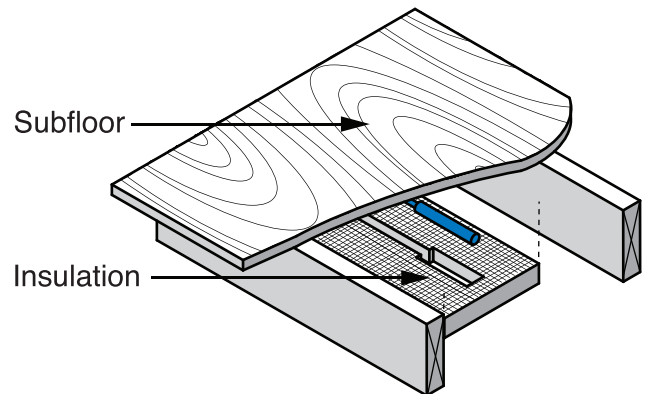
### Thin-Set or Thin-Pour

If the floor covering is installed over the thin-set or thin-pour material of sufficient depth, the R250S sensor can be placed into **either material** and then covered by the floor covering. Position the sensor in such a place that the wire can reach the location of its junction box. For accurate temperature reading, the sensor should be located exactly between the heating elements.



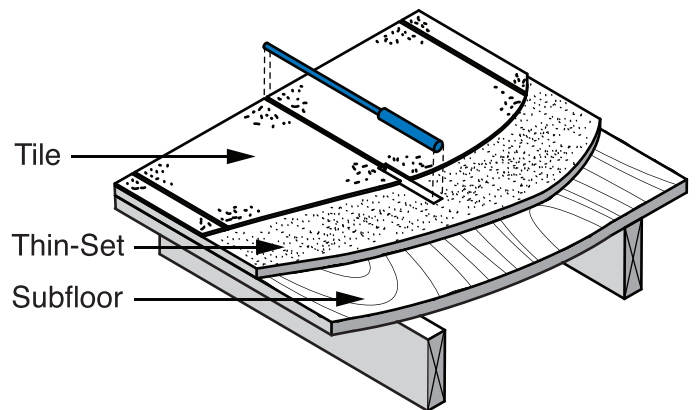
## Installing to the bottom of the subfloor

If installing the R250S sensor to the **bottom of the subfloor**, cut a piece of 1" (25mm) thick insulation into a 6" (150mm) by 6" (150mm) square. A 1/4" (8mm) wide by 1/4" (8mm) deep by 1 3/4" (45mm) long groove should be cut into the insulation to allow for the sensor. Position the sensor in such a place that the wire can reach the location of its junction box. Use a preferred and effective method to fasten the insulation to the subfloor.



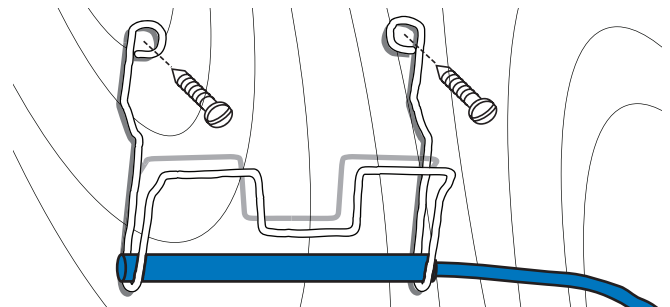
## Tile Flooring

The R250S sensor can be installed into **existing tile with adequate grout lines**. Select a location for the sensor that is exactly between the heating elements and in a low traffic area. Position the sensor in such a place that the wire can reach the location of its junction box. Remove enough of the grout line to place the sensor and wire in the floor. Then re-fill the area.



## Installing the R250S as an Outdoor Sensor

The R250S can also be used as an Outdoor Temperature Sensor. Included in the package is a metal wall mount and 2 screws. Securely screw the mount with the R250S into a shaded area.



## Wiring the R250S

The R250S is packaged with 6' of 1.8mm cable. If you need more length, 24 AWG or larger wire can be joined onto the two wires from the sensor. The splices need to be properly joined and protected in an accessible junction box.

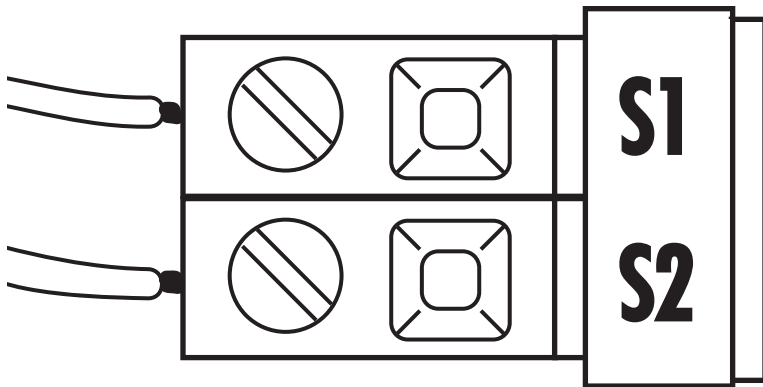


### Warning:

**Do NOT** run the wires parallel to telephone or power cables. If there is a strong source of electromagnetic interference near the location of the sensor wires, a twisted pair or a protected cable should be used. The wires can also be run in a grounded metal conduit.

## Connecting to a Wired Sensor Capable Thermostat

After installation connect the R250S to the S terminal blocks on the Wired Sensor Capable Thermostat. Loosen the terminal block screws. Insert wires, then retighten terminal block screws.



R250S Remote Sensor



**NOTE:** Refer to your Wired Sensor Capable Thermostat manual for setup.

## Specifications

### R250S Wired Sensor

Temperature range ..... -4°F to 140°F (-20°C to 60°C)  
Temperature accuracy .....  $\pm 1^\circ\text{F}$   
Transmission ..... Constant Resistance

## 100K Thermistor Output Table

°F	°C	Ohms	°F	°C	Ohms	°F	°C	Ohms
-39	-39.44	5152	25	-3.89	491.1	89	31.67	71.59
-37	-38.33	4752	27	-2.78	459.6	91	32.78	67.80
-35	-37.22	4385	29	-1.67	430.4	93	33.89	64.24
-33	-36.11	4049	31	-0.56	403.2	95	35.00	60.89
-31	-35.00	3740	33	0.56	377.9	97	36.11	57.72
-29	-33.89	3456	35	1.67	354.3	99	37.22	54.75
-27	-32.78	3196	37	2.78	332.3	101	38.33	51.94
-25	-31.67	2956	39	3.89	311.8	103	39.44	49.29
-23	-30.56	2736	41	5.00	292.6	105	40.56	46.79
-21	-29.44	2534	43	6.11	274.8	107	41.67	44.43
-19	-28.33	2347	45	7.22	258.1	109	42.78	42.20
-17	-27.22	2176	47	8.33	242.6	111	43.89	40.10
-15	-26.11	2018	49	9.44	228.0	113	45.00	38.11
-13	-25.00	1872	51	10.56	214.5	115	46.11	36.24
-11	-23.89	1738	53	11.67	201.8	117	47.22	34.46
-9	-22.78	1614	55	12.78	189.9	119	48.33	32.79
-7	-21.67	1499	57	13.89	178.8	121	49.44	31.20
-5	-20.56	1394	59	15.00	168.4	123	50.56	29.70
-3	-19.44	1296	61	16.11	158.7	125	51.67	28.28
-1	-18.33	1206	63	17.22	149.6	127	52.78	26.94
1	-17.22	1122	65	18.33	141.0	129	53.89	25.66
3	-16.11	1045	67	19.44	133.0	131	55.00	24.46
5	-15.00	973.6	69	20.56	125.5	133	56.11	23.31
7	-13.89	907.4	71	21.67	118.5	135	57.22	22.23
9	-12.78	846.1	73	22.78	111.9	137	58.33	21.20
11	-11.67	789.3	75	23.89	105.7	139	59.44	20.23
13	-10.56	736.6	77	25.00	100.00	141	60.56	19.31
15	-9.44	687.8	79	26.11	94.39	143	61.67	18.43
17	-8.33	642.4	81	27.22	89.25	145	62.78	17.60
19	-7.22	600.3	83	28.33	84.42	147	63.89	16.81
21	-6.11	561.2	85	29.44	79.88	149	65.00	16.06
23	-5.00	524.8	87	30.56	75.61			

## Contact Us Information

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### Pro1 IAQ Inc.

1111 S. Glenstone  
Suite 2-100  
Springfield, MO 65804

**Toll-free:** 1-888-Pro1iaq (776-1427)

**Toll Number (Outside the USA):** 330-821-3600

**Web:** <http://www.pro1iaq.com>

**Hours of Operation:** Monday - Friday 9 AM - 6 PM Eastern

### Warranty Registration:

Your new Pro1 wired sensor has a 5 year limited warranty. You must register your warranty within 60 days of installation. You can register your new sensor in 2 ways.

① Go to [www.pro1iaq.com](http://www.pro1iaq.com), select warranty registration and fill out a short registration form.

- or -

② Complete the form below and mail it to the address shown.

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### Pro1 IAQ Warranty Registration:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Zip: \_\_\_\_\_

Thermostat Model: \_\_\_\_\_

Date Installed: \_\_\_\_\_

**Complete form and mail to:**

### Pro1 IAQ Inc.

1111 S. Glenstone  
Suite 2-100  
Springfield, MO 65804