User Guide

Viega Outdoor Sensor

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Viega products are designed to be installed by licensed and trained plumbing, mechanical, and electrical professionals who are familiar with Viega products and their installation. **Installation by non-professionals may void Viega LLC's warranty.**

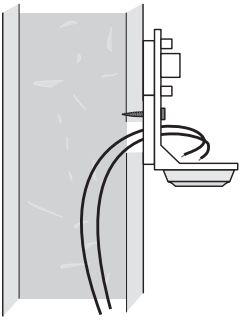
Description

The Viega Outdoor Sensor includes a 10 kΩ thermistor which provides an accurate measurement of the outdoor temperature. The Outdoor Sensor is protected by a UV resistant PVC plastic enclosure rated to NEMA type 2. This sensor will work with all Viega heating controls requiring an Outdoor Sensor (Hydronic Mixing Block, Basic Heating Control, and the Advanced Snow Melt Control).

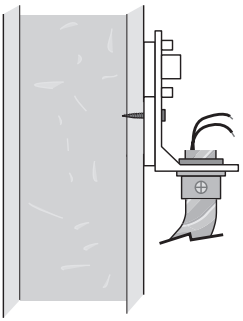
Installation

Mounting the Sensor

1. Remove the cover by sliding up away from base.
2. If wiring through the back, remove the knock-out in the sensor base. Attach the base to a wall, soffit, or electrical box. Only mount with the conduit facing down as other orientations may promote water ingress.
   - In order to prevent heat transmitted through the wall from affecting the sensor reading, it may be necessary to install an insulating barrier behind the enclosure.
   - Mount the outdoor sensor in a suitable location that is indicative of the heat load on the building. Considerations include: no direct solar exposure, high enough to prevent tampering or snow buildup, and away from other heat sources and exhausts.



Sensor with wiring from back

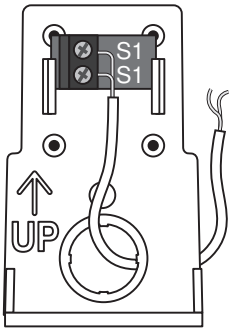


Sensor with wiring from bottom

Wiring and Testing the Sensor

1. Connect 18 AWG or similar wire to the two terminals provided in the enclosure and run the wires to the 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 (EMI), 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.
2. Follow the sensor testing instruction on the right and connect the wires to the control.
3. Replace the front cover of the sensor enclosure.

Maximum wire length from control to sensor is 500 ft.



Wires from outdoor sensor to control terminals

Sensor is built into the enclosure

Sensor Testing

A quality test meter capable of measuring up to 5 MΩ is required to measure the sensor resistance. In addition to this, the actual temperature must be measured with a quality digital thermometer, or if a thermometer is not available, a second sensor can be placed alongside the one to be tested and the readings compared.

1. Measure the temperature using the digital 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 performed.
2. Using the resistance chart, estimate the temperature measured by the sensor. The sensor and thermometer readings should be close.
3. 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.
4. To test for a defective sensor, measure the resistance directly at the sensor location.

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

Resistance Table

Temperature °F	Temperature °C	Resistance Ω	Temperature °F	Temperature °C	Resistance Ω	Temperature °F	Temperature °C	Resistance Ω
-50	-46	490,813	20	-7	46,218	90	32	7,334
-45	-43	405,710	25	-4	39,913	95	35	6,532
-40	-40	336,606	30	-1	34,558	100	38	5,828
-35	-37	280,279	35	2	29,996	105	41	5,210
-30	-34	234,196	40	4	26,099	110	43	4,665
-25	-32	196,358	45	7	22,763	115	46	4,184
-20	-29	165,180	50	10	19,900	120	49	3,760
-15	-26	139,402	55	13	17,436	125	52	3,383
-10	-23	118,018	60	16	15,311	130	54	3,050
-5	-21	100,221	65	18	13,474	135	57	2,754
0	-18	85,362	70	21	11,883	140	60	2,490
5	-15	72,918	75	24	10,501	145	63	2,255
10	-12	62,465	80	27	9,299	150	66	2,045
15	-9	53,658	85	29	8,250	155	68	1,857

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