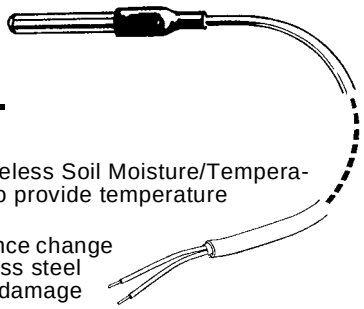
Multi-Purpose Temperature Probe

For the Wireless Soil Moisture/Temperature Station (6361)



6470

VANTAGE PRO

The Multi-Purpose Temperature Probe is for use with the Vantage Pro Wireless Soil Moisture/Temperature Station. The probe is designed to measure soil temperature in order to provide temperature compensation for the WATERMARK soil moisture sensor.

The sensor is a precision platinum wire thermistor which produces a resistance change proportional to temperature. It is epoxy-encapsulated in a 316 alloy stainless steel body with vinyl strain relief. The 22 AWG direct burial cable is resistant to damage from pests, moisture or UV.

To ensure accurate readings when measuring outdoor air temperature, the Multi-Purpose Temperature Probe should be shielded from direct sunlight and other sources of reflected or radiated heat. We recommend the use of the Radiation Shield (#7714) for this purpose.

The WATERMARK soil moisture sensor is a product of the Irrometer Company, Inc.

Specifications

General

Sensor Type (see Charts)	Platinum wire thermistor
Time Constant	
In Still Air	100 seconds
In Liquid	28 seconds
Attached Cable Length	15' (4.6 m)
Cable Type	22 AWG direct burial cable, wires stripped and tinned
Recommended Maximum Cable Length (see Note 1)	
24 AWG Shielded Cable	800' (242 m)
22 AWG Shielded Cable	1,200' (260 m)
Housing Material	316 alloy stainless steel housing with vinyl strain relief
Housing Dimensions	0.312" diameter x 2.5" long (8 mm diameter x 64 mm long)
Weight	4.5 oz. (128 g)

Console Data (as displayed on Vantage Pro consoles)

Resolution and Units	1°F or 1°C (user-selectable) Historical Data and Alarms: 1°F or 1°C (user-selectable)
Range	-40° to +150°F (-40° to +65°C)
Sensor Accuracy	±1°F (±0.5°C) up to 110°F (43°C), ±2°F (±1°C) over 110°F (43°C)
Update Interval	62.5 to 75 seconds
Current Data	Instant Reading (user adjustable)
Alarms	High and Low Thresholds from Instant Reading

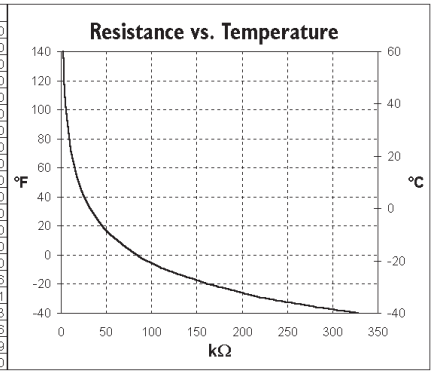
Input/Output Connections

Black	Common
White	Temperature (variable resistance to common)

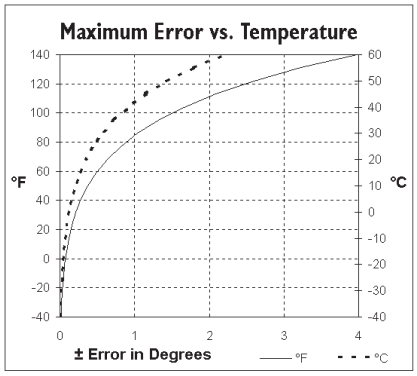
Charts

The chart and graph on the left show the resistance of the sensor. The chart on the right shows the cable-induced error of an uncalibrated sensor using 100' (30 m) of cable.

°F	°C	kΩ
-40	-40	328.400
-31	-35	237.700
-22	-30	173.900
-13	-25	128.500
-4	-20	95.890
5	-15	72.230
14	-10	54.890
23	-5	42.070
32	0	32.510
41	5	25.310
50	10	19.860
59	15	15.690
68	20	12.490
77	25	10.000
86	30	8.060
95	35	6.536
104	40	5.331
113	45	4.373
122	50	3.606
131	55	2.989
140	60	2.490



Sensor Resistenace Readings



Cable-Induced Temperature Error

Notes

1. There is no absolute maximum cable length. Increasing the cable length above the recommended maximum length causes an increased measurement error at a rate of approximately +0.24°F (+0.13°C) per 100' (30 m) of 22 AWG cable.

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