Multi-Purpose Temperature Probe
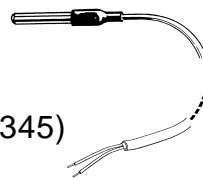
For the Wireless Leaf & Soil Moisture/Temperature Station (# 6345)

6470

The Multi-Purpose Temperature Probe is for use with the Vantage Pro2 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.

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)

Note: 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.

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)

Sensor Output

Resolution and Units . . . . 1°F or 1°C (user-selectable)
                                                 Historical Graph 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) typical

Update Interval . . . . 62.5 to 75 seconds

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 un-calibrated 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
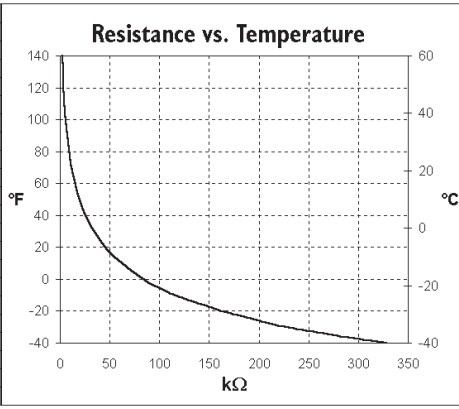
Sensor Resistance Readings
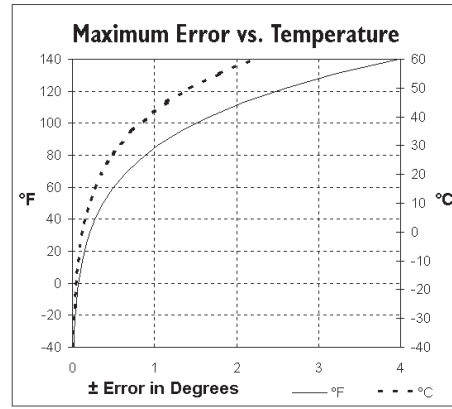
Cable-Induced Temperature Error

Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
6470	5.50" x 4.50" x 1.50" (140 mm x 115 mm x 38 mm)	6.0 oz. (.2 kg)	011698 00241 2