External Temperature Sensor

The External Temperature Sensor is used to measure temperatures in general conditions. It is well-suited for air, water, or soil temperature measurements, and it may be used anywhere a reliable, low-cost temperature sensor is required. The sensor is epoxy-encapsulated in a vinyl cap. The External Temperature Sensor uses a precision platinum wire thermistor as a sensor. The thermistor produces a resistance change proportional to temperature.

To ensure accurate readings when measuring outdoor air temperature, the External Temperature Sensor should be shielded from direct sunlight and other sources of reflected or radiated heat. We recommend the use of a Davis Radiation Shield (# 7714) or its equivalent for this purpose.

General

Sensor Type . . . . Platinum wire thermistor
Time Constant
    In Still Air. . . . . 240 seconds
    In Liquid. . . . . 20 seconds
Attached Cable Length . . . . 25' (7.6 m)

Note: There is no absolute maximum cable length. Increasing the cable length above 300' (90 m) causes an increased measurement error at a rate of approximately +0.06°F (+0.03°C) per 100' (30 m) at 136°F (60°C) and +0.012°F (+0.006°C) per 100' (30 m) at 77°F (25°C).

Cable Type . . . . 4-conductor, 26 AWG
Connector . . . . Modular connector (RJ-11)
Recommended Maximum Cable Length (see Note 1 below)300' (90 m) from Sensor to SIM
Housing Material . . . . Black Vinyl
Housing Dimensions . . . . 0.25" diameter x 1.25" long (6.5 mm diameter x 32 mm long)
Weight . . . . 4.5 oz. (128 g)

Console Data

Note: (These specifications apply to sensor output as converted by Davis Instruments weather station consoles.)

Range . . . . -50° to 140°F (-45° to 60°C)
Accuracy (see Note 2). . . . . ±1°F (±0.5°C) (typical)
Resolution. . . . . 1.0° or 0.1°F or 1.0° or 0.1°C Celsius is converted from Fahrenheit and rounded to the nearest 0.1° or 1°C
Sample and Display Update Interval . . . . 16 seconds (max)

WeatherLink® Data

Note: (These specifications apply to sensor output as logged and displayed by the WeatherLink.)

Temperature . . . . Average over archive interval
High and Low Temperature . . . . Maximum and minimum values during archive interval

Input/Output Connections

Black & Red . . . . Common
Green & Yellow . . . . Temperature (variable resistance to common); 10KOhm, nominal

Note: The chart and graph on the left show the resistance of the sensor. The graph on the right shows the maximum error of an uncalibrated sensor.

°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

Resistance vs. Temperature

Maximum Error vs. Temperature
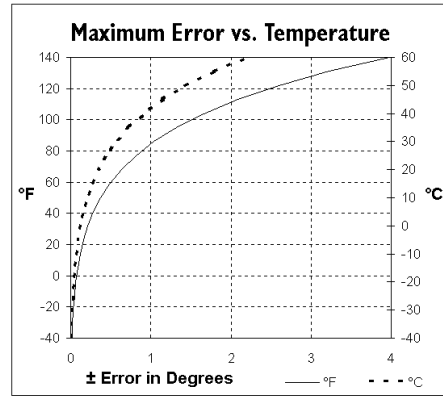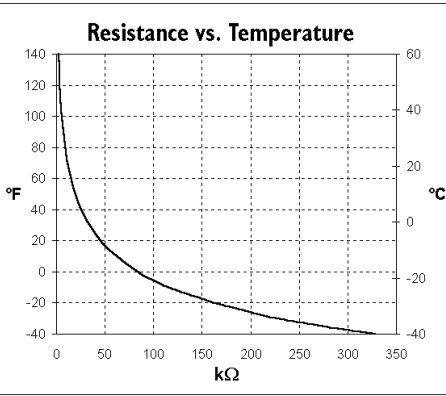
Installation Options (Air Temperature)

Sensor

Sensor (Inside Radiation Shield)
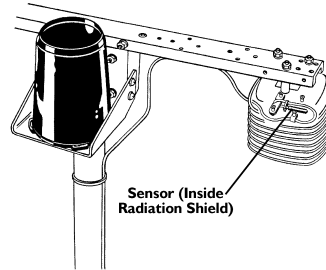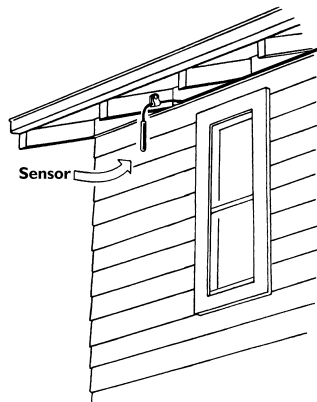
Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
7817	2.75" x 2.75" x 1.50" (70 mm x 70 mm x 39 mm)	5.0 oz. (0.15 kg)	011698 78170 6