Anemometer

For Monitor and Wizard Stations

The anemometer includes both wind speed and wind direction sensors. Rugged components stand up to hurricane-force winds, yet are sensitive to a light breeze. Includes sealed stainless-steel bearings for long life. The range and accuracy specifications have been verified in wind-tunnel tests. Digital filtering, with time constant as specified below, is applied to wind direction measurements.

General

Sensor Type
    Wind Speed . . . . Solid state magnetic sensor
    Wind Direction . . . . Wind vane and potentiometer
Attached Cable Length . . . . 40' (12 m)

Note: Cable lengths longer than 140' (42 m) between sensors and console may artificially limit wind speed readings. That is, beyond that length, maximum recordable wind speed decreases as cable length increases. For example, with a length of 140' (42 m), the maximum recordable speed exceeds 175 mph. At 240' (72 m), however, the maximum recordable speed drops to less than 140 mph. Below that upper limit, however, the anemometer's accuracy is not affected.

Cable Type . . . . 4-conductor, 26 AWG
Connector . . . . Modular connector (RJ-11)
Recommended Maximum Cable Length . . . . 140' (42 m) Sensor to Console
Material
    Wind Vane and Control Head. . . . . UV-resistant ABS
    Wind Cups. . . . . Polycarbonate
    Anemometer Arm. . . . . Black-anodized aluminum
Dimensions . . . . 18.5" long x 7.5" high x 4.75" wide (470 mm x 191 mm x 121 mm)
Weight . . . . 2 lbs. 15 oz. (1.332 kg)

Console Data

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

Range
    Wind Speed (large wind cups) (See Note 1). . . . . . . 1 to 200 mph, 1 to 173 knots, 0.5 to 89 m/s, 1 to 322 km/h
    Wind Direction . . . . 0° to 360° or 16 compass points
    Wind Run. . . . . 0 to 1999.9 miles (1999.9 km)
Accuracy
    Wind Speed . . . . ±2 mph (2 kts, 3 km/h, 1 m/s) or ±5%, whichever is greater
    Wind Direction . . . . ±7°
    Wind Run. . . . . ±5%
Resolution
    Wind Speed . . . . 1 mph (1 knot, 0.1 m/s, 1 km/hr)
    Wind Direction . . . . 1° (0° to 355°), 22.5° between compass points
    Wind Run. . . . . 0.1 m (0.1 km)
Measurement Timing
    Wind Speed Sample Period . . . . 2.25 seconds
    Wind Speed Sample and Display Interval. . . . . 2.25 seconds (Monitor & Wizard)
    Wind Direction Sample Interval . . . . 1 second (Monitor & Wizard)
    Wind Direction Filter Time Constant (typical) . . . . . . 8 seconds (Monitor & Wizard)
    Wind Direction Display Update Interval . . . . 2 seconds (Monitor & Wizard)

WeatherLink® Data

Wind Speed . . . . Average during archive interval

High Wind Speed . . . . Maximum during archive interval

Wind Direction. . . . . Dominant wind direction during archive interval

Input/Output Connections

Black. . . . . Wind speed contact closure to ground

Red . . . . Ground

Green . . . . Wind direction pot wiper (20KΩ potentiometer)

Yellow . . . . Pot supply voltage

Sensor Output

Wind Speed . . . . 1600 rev/hr = 1 mph
$V = P(2.25/T)$
V = speed in mph
P = no. of pulses per sample period
T = sample period in seconds

Wind Direction. . . . . Variable resistance 0 - 20KΩ; 10KΩ = south, 180°

Installation Options
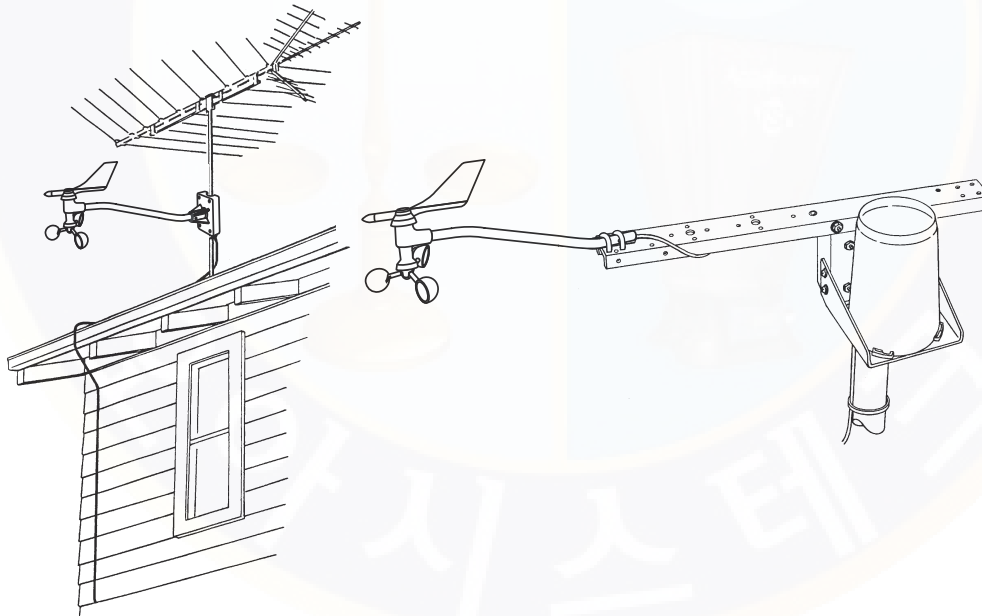
Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
7911	17.50" x 5.75" x 2.50" (445 mm x 146 mm x 64 mm)	1.7 lbs. (.7 kg)	011698 79110 1