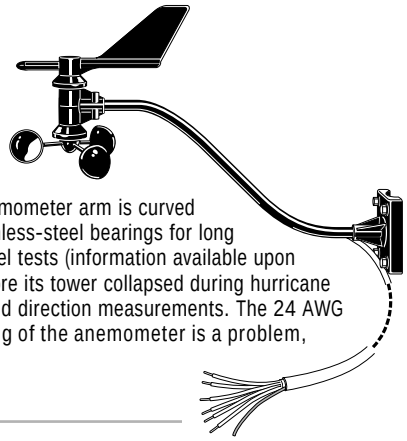
ANEMOMETER, **Industrial**



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. Anemometer arm is curved upward to provide cleaner airflow over anemometer control head. Includes sealed stainless-steel bearings for long life. The range and accuracy specifications of this unit have been verified in wind-tunnel tests (information available upon request). A model 7911 Anemometer reported wind speeds of 175 miles per hour before its tower collapsed during hurricane Andrew, 1992. Digital filtering, with time constant as specified below, is applied to wind direction measurements. The 24 AWG shielded cable protects against Electro-magnetic Interference (EMI). In areas where icing of the anemometer is a problem, use Anemometer Drip Rings to deflect water from the joint between moving parts.

SPECIFICATIONS

General

Sensor Type

Wind Speed . . . . . Wind cups and magnetic switch

Wind Direction . . . . . Wind vane and potentiometer

Attached Cable Length . . . . . 16' (5 m)

Cable Type . . . . . 4-conductor, 24 AWG shielded cable with UV-resistant jacket, wires stripped and tinned

Recommended Maximum Cable Length . . . . . 250' (75 m) from Sensor to SIM + 250' (75 m) from SIM to Console

Material

Wind Vane and Control Head . . . . . UV-resistant ABS

Wind Cups . . . . . Polycarbonate

Anemometer Arm . . . . . Black-anodized aluminum

Dimensions . . . . . 21.5" long x 10.5" high x 4.75" wide (546 mm x 267 mm x 121 mm)

Weight . . . . . 1 lb. 10 oz. (0.737 kg)

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

Range

Wind Speed . . . . . 2 to 175 mph (2 to 150 knots, 0.9 to 78 m/s, 4 to 280 km/hr)

Wind Direction . . . . . 0° to 360° or 16 compass points

Wind Run . . . . . 0 to 1999.9 miles (0 to 1999.9 km)

Accuracy

Wind Speed . . . . . ±5%

Wind Direction . . . . . ±7°

Wind Run . . . . . ±5%

Resolution

Wind Speed . . . . . 1 mph (1 knot, 0.1 m/s, 1 km/hr)

Wind Direction . . . . . 1° (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), 3 seconds (GroWeather & EnviroMonitors)

Wind Direction Sample Interval . . . . . 1 second (Monitor & Wizard), 1.5 seconds (GroWeather & EnviroMonitors)

Wind Direction Filter Time Constant (typical) . . . . . 8 seconds (Monitor & Wizard), 6-9 seconds (GroWeather & EnviroMonitors)

Wind Direction Display Update Interval . . . . . 2 seconds (Monitor & Wizard), 1 second (GroWeather & EnviroMonitors)

Wind Run Sample and Display Interval . . . . . 3 seconds (GroWeather & Energy EnviroMonitor)

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

Wind Speed . . . . . Average during archive interval

High Wind Speed . . . . . Maximum during archive interval

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

Wind Run . . . . . Sum over archive interval (GroWeatherLink & Energy WeatherLink)

Input/Output Connections

White . . . . . Wind speed contact closure to ground

Green . . . . . Wind direction pot wiper (360° = 20 kOhm)

Red . . . . . Pot supply voltage

Black . . . . . Ground

Bare . . . . . Shield Ground

Davis Instruments 3465 Diablo Ave., Hayward, CA 94545-2778
(510) 732-9229 • FAX (510) 732-9188 • sales@davisnet.com • www.davisnet.com

DS7914-00 (Rev. C, 4/2/03)

NOTES

1. On Monitor and Wizard stations, 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. On GroWeather, Energy and Health EnviroMonitor stations, the maximum recordable wind speed is 175 mph regardless of cable length.

INSTALLATION OPTIONS