



Sonic Anemometer

The Sonic Anemometer is designed to measure wind-related conditions without moving parts. Pairs of electro-acoustic transducers in the anemometer send sonic pulses back and forth, and measure the time it takes for the pulse to travel from one to the other. This time is affected by the movement of the air, which allows the anemometer to calculate wind speed and direction, calibrated by temperature measurements. The sonic anemometer has its own solar panel, so requires no external power. It can be used with an EnviroMonitor[®] Node to add wind data to an EnviroMonitor system, as well as a replacement anemometer to your Davis weather station. Installed in a Sensor Transmitter, it can be used to include additional wind stations in your existing system when reporting to a WeatherLink Live[™].

General

| | |
|-----------------------------|---------------------------------|
| Operating Temperature..... | +5°F to +131°F (-15°C to +55°C) |
| Sensor Type | Ultrasonic sensor |
| Attached Cable Length | 40' (12 m) |
| Cable Type | 4-conductor, 26 AWG |
| Connector | Modular connector (RJ-11) |
| Maximum Cable Length..... | 250' (76 m) |

Note: Maximum displayable wind speed decreases as cable increases.

| | |
|--|-------------------------------|
| Material | |
| Control Head..... | Polyacetal |
| Anemometer Arm | Clear-anodized aluminum |
| Dimensions (length x width x height) | 15.0" x 2.4" (380 mm x 60 mm) |
| Weight | 7 oz. (200 g) |

Sensor Output

Wind Direction

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|--------------------------|--|
| Display Resolution | 16 points (22.5°) on compass rose, 1° in numeric display |
| Accuracy | ±2 degrees at wind speeds ≥ 7 mph (6 kts, 110 km/h, 3 m/s) ±4 degrees at wind speeds < 7 mph (6 kts, 110 km/h, 3 m/s) |

Wind Speed

| | |
|----------------------------|---|
| Resolution and Units | Measured in 1 mph. Other units are converted from mph and rounded to nearest 1 km/h, 0.1 m/s, or 1 knot |
| Range | 0 to 89 mph, 0 to 78 knots, 0 to 40 m/s, 0 to 144 km/h |
| Accuracy | ±2 mph (2 kts, 3 km/h, 1 m/s) or ±4%, whichever is greater |
| Maximum Cable Length | 250' (76 m). Maximum wind speed reading decreases as length of cable increases. |

Input/Output Connections

| | |
|--------------------------------------|---|
| Black..... | Wind speed open drain to ground |
| Red..... | Ground |
| Green | Wind direction pot wiper (20KΩ potentiometer) |
| Yellow..... | Pot supply voltage |
| Wind Speed Translation Formula | $V = P(2.25/T)$ ($V = \text{speed in mph}$, $P = \text{no. of pulses per sample period}$ $T = \text{sample period in seconds}$) |
| Wind Direction Translation | Variable resistance 0 - 20KΩ; 10KΩ = south, 180° |

Package Dimensions

| Product # | Package Dimensions (Length x Width x Height) | Package Weight | UPC Codes |
|-----------|--|------------------|--------------|
| 6415 | 16.5" x 4.5 x 5.5" (419 mm x 114 mm x 140 mm) | 2.0 lbs. (.9 kg) | 011698013913 |