

Application

Environmental Monitoring – Measuring Wind Direction with a Weathervane

Weathervanes are one of the oldest weather-measuring devices and are commonly used in weather stations throughout the world to measure and monitor wind direction. Getting an accurate reading of wind direction has many applications including aviation, meteorology, industry, research and even construction.

Many modern weathervanes use a Hall Effect sensor which generates a signal voltage range which directly correlates to wind direction from 0 to 360 degrees.

A monitoring device must sense the output voltage and determine the relative wind direction.



Solution

With a WiSI wireless network, wind direction from a weathervane can easily and unobtrusively be monitored and converted to relative wind direction from 0 to 360 degrees. The relative wind direction can be transmitted to and effectively monitored at a central location.

Because the weathervane requires power, the WiSI's onboard 5V sensor power supply can be used to provide power to the weathervane without the need for an external sensor power source. The WiSI-SP node, which has an integrated solar panel and energy storage, is an effective solution. No external power needs to be provided so installing weathervanes at remote or difficult locations is simplified.

With one WiSI, wind speed, wind direction, and rainfall data can be collected with inputs to spare, providing a total weather monitoring solution.

OTHER APPLICATIONS FOR WIND DATA COLLECTION:

- Weather Station/Forecasts
- Aviation and Oil Rig Landing & Takeoff Conditions
- Tunnel Safety
- Bridge Safety
- Harbor Safety
- Ship Navigation and Safety
- Wind Turbine Control & Efficiency
- Wind Park/Turbine Site Evaluation
- Chemical & Nuclear Dispersion

WiSI SIGNALS USED:

- Analog Input, 0 – 5V
- 5V Sensor Supply

RELATED APPLICATION NOTES:

- Measuring Wind Speed with an Anemometer
- Measuring Rainfall with a Tipping Bucket Rain Gauge

