

Montgomery County Gude Dr. Weather Station

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Meteorological Data

- Wind Speed
- Wind Direction
- Temperature
- Relative Humidity
- Precipitation

Meteorological Data Collection

- CR300 Data logger from Campbell Scientific
- Data are sampled every 5 seconds
- 5-second samples are turned into 15-minute and hourly averages
- Web display is updated every 15 minutes
- Data are collected via cellular telephone
- All equipment are powered by a solar panel and 12 volt battery
- If the solar power is low, the battery will last about 10 days

Tripod tower and weather resistant box





Weather equipment

- RM Young
- Wind Monitor AQ
- Meets all EPA requirements

YOUNG
Model 05305 Wind Monitor-AQ

The Wind Monitor-AQ is a high resolution wind sensor designed specifically for air quality applications. It combines simple, corrosion-resistant construction with low threshold, fast response and excellent fidelity.

The Wind Monitor-AQ meets the requirements of the following regulatory agencies:

U.S. Environmental Protection Agency – Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD).

U.S. Nuclear Regulatory Agency – NRC Regulatory Guide 1.23 Meteorological Programs in Support of Nuclear Power Plants

American Nuclear Society – Standard for Determining Meteorological Information at Power Plants

Wind speed is sensed by a lightweight, carbon fiber thermoclastic (CFT), helioid propeller. Propeller rotation produces an AC sine wave voltage signal with frequency directly proportional to wind speed. Slip rings and brushes are not used.

The wind direction sensor is a lightweight vane with performance characteristics that assure excellent fidelity in fluctuating wind conditions. Vane position is sensed by a precision potentiometer. Output is a DC voltage directly proportional to vane angle.

The instrument body is UV stabilized plastic with stainless steel and anodized aluminum fittings. Precision grade, stainless steel ball bearings are used throughout. Transparent protection and cable terminations are located in a convenient junction box. The instrument mounts on standard 1 inch pipe.

The Wind Monitor-AQ is available with two additional output signal options. Model 05305V offers calibrated voltage outputs, convenient for use with many dataloggers. Model 05305L provides a calibrated 4-20 mA current signal for each channel, useful in high noise areas or for long cables (up to several kilometers). Signal conditioning electronics are integrated into the sensor junction box.



Specifications

Range:
Wind speed: 0-50 mph (0-12 m/s)
Accuracy: 307 (max) for 305 electrical (27 ocean)

Accuracy:
Wind speed: ±0.2 mph (0.4 m/s) at 14.4 m/s (3.2 mph)
Wind direction: ±1 degree

Threshold:
Propeller: 0.3 mph (0.5 m/s)
Vane: 0.05 mph (0.1 m/s) at 10" in span (25 cm)

Dynamic Response:
Frequency: 0.5 Hz (max) (0.5% accuracy) 20 Hz (0.5% accuracy)
Vane: 1.0 Hz (max) (0.5% accuracy) 10 Hz (0.5% accuracy)
Sampling rate: 0.45
Corresponding wind speed: 4.3 m/s (9.7 mph)
Wind direction: 0.5 degree

Signal Output:
Wind speed: magnetically induced AC voltage, 3 pulses per revolution, 1300 rpm (PM) = 0.82 volts (2.0 mV/rpm)
Direction: maximum voltage 1.0V (maximum possible)
Precision: ±0.05% accuracy (0.025% accuracy)
Linearity: ±0.1% non-linearity

Power Requirement:
Power: 100-240 VAC maximum

Dimensions:
Overall length: 38 cm (15.0 in)
Junction length: 31 cm (12.2 in)
Propeller: 31 cm (12.2 in) diameter
Mounting: 31 cm (12.2 in) diameter (standard 1 inch pipe)

Weight:
Sensor weight: 0.7 kg (1.5 lbs)
Shipping weight: 2.3 kg (5 lbs)

*Wind Monitor-AQ is available with 2000 series with AC/DC converter enclosure. Electrical drawings are available with report 25-1494 General Purpose Instrumentation.

MODEL 05305V Voltage outputs

Power Requirement:
8-24 VDC 15 mA @ 12 VDC

Operating Temperature:
-20 to 50 °C

Output Signals:
WS: 0 to 5 VDC (0 to 21 m/s)
WD: 0 to 360 (0 to 360°)

MODEL 05305L 4-20 mA outputs

Power Requirement:
8-24 VDC 15 mA max

Operating Temperature:
-20 to 50 °C

Output Signals:
4-20 mA (0 to 21 m/s)

Ordering Information

WIND MONITOR-AQ	05305
WIND MONITOR-AQ VOLTAGE OUTPUTS	05305V
WIND MONITOR-AQ 4-20mA OUTPUTS	05305L

MODEL

Ordering Information

Ordering Information

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Ordering Information

Temperature and humidity

- Temperature and humidity sensor
- Meets all EPA requirements

HMP60-L: Temperature and Relative Humidity Probe Page 1 of 6

HMP60-L
Temperature and Relative Humidity Probe

All supersensitive 8 to Relative Humidity Sensors / HMP60-L



Accurate, Rugged
Ideal for long-term, unattended applications



Overview

The HMP60, manufactured by Veinor, meets the current requirements for the following EPA...

Rain Gauge

- Rain gauge
- Meets all EPA requirements

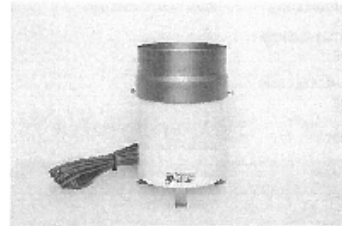
6" Collector Rain Gauge - Tipping Bucket Rain Gauges - Products

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6" Collector Rain Gauge

The Texas Electronic, Inc. TR-525 Rainfall Sensor with 6" diameter funnel and remote tipping bucket with optional float switch and float actuator. The Rain Gauge is a precision, protected for impacting precipitation. Through an opening at the top of the sensor, rain water is directed into a funnel into a mechanical device, called a tipping bucket. As water is collected, the tipping bucket fills to a point that it tips over, causing a momentary change of weight to momentarily measure rainfall accumulation. This action empties the bucket in preparation for additional measurement. Water discharged by the tipping bucket passes out of the rain gauge with no need for emptying. The TR-525 is a rugged and reliable rain gauge that offers a high accuracy rainfall total.



Download additional images for your application



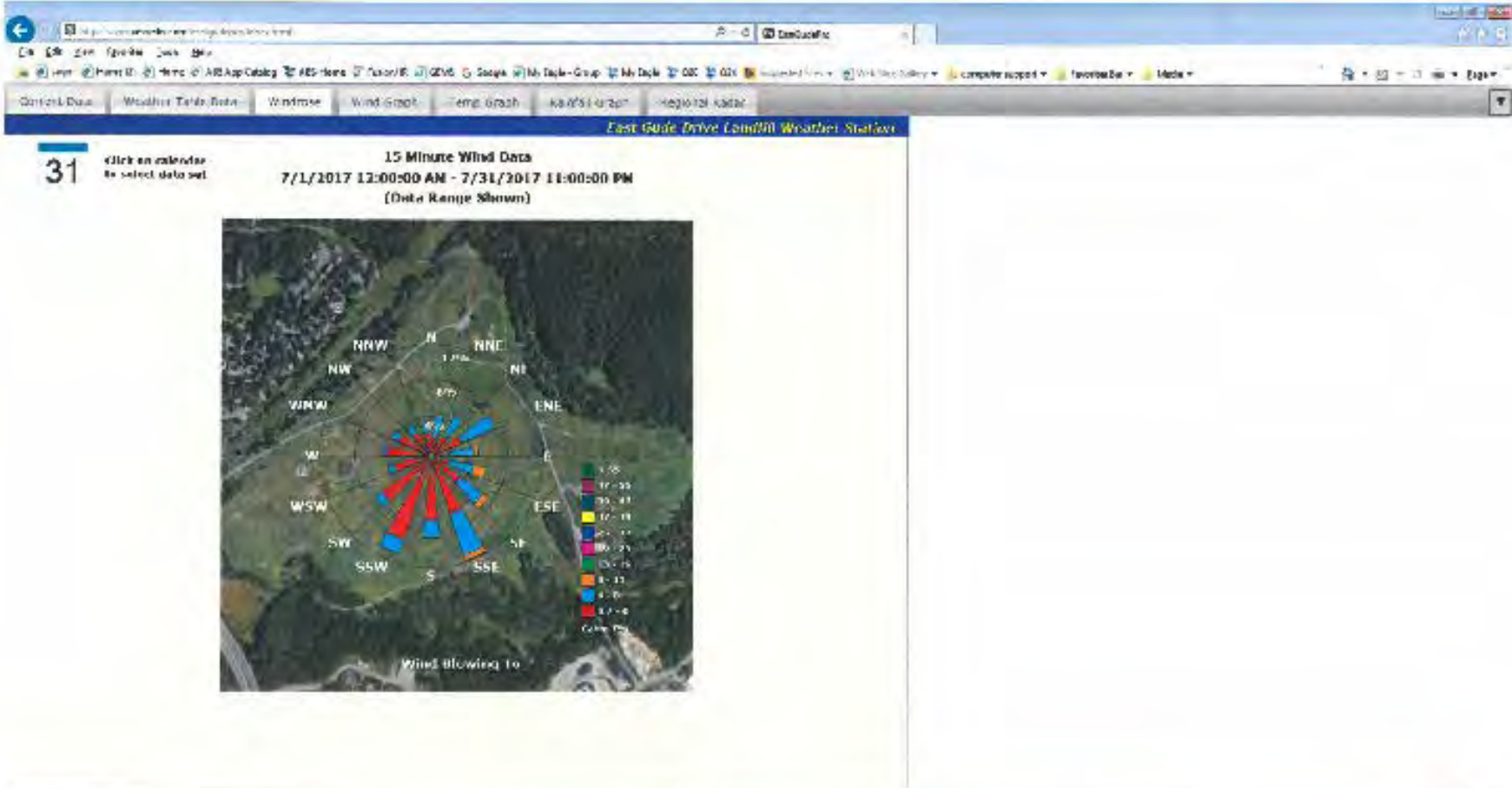
Gude Dr. Weather Station Web Site

- <http://www.aeswebs.com/eastgude/index.html>

Weather Station Site



July Wind Rose



August Wind Rose

