

The Wind Monitor is a high performance wind speed and direction sensor manufactured by R.M. Young Company and designed specifically for air quality measurements. It combines simplicity and lightweight corrosion resistant construction with a low threshold, fast response, and excellent fidelity.

The wind speed sensor is a four blade helicoid propeller. Propeller rotation produces a sinewave voltage output where frequency is directly proportional to wind speed. Slip rings and brushes are not used.

The wind direction sensor is a lightweight vane with sufficiently high damping ratio and low aspect ratio to ensure excellent fidelity in rapidly fluctuating winds. Vane position is sensed by a precision conductive plastic potentiometer. With a known excitation voltage applied to the potentiometer, the output signal is directly proportional to azimuth.

The instrument is made of UV stabilised plastic with stainless steel and anodised aluminium fittings. All bearings are precision grade stainless steel. A Unidata's micro-power interface circuit, housed in a junction box on the mounting post, converts the sinewave to a 5V signal and potentiometer output to a calibrated 2.50 V signal, suitable for connection to the regular data logger.

An 8 core cable (Model 6600F) can be used to connect the instrument to the logger. The instrument mounts on standard 1 inch pipe.



Specifications

Wind Speed

Range:	0 to 60m/s (130mph)
Gust survival:	100m/s (220mph)
Accuracy:	Speed ± 0.2 m/s (0.4mph)
Threshold:	Propeller 1.0m/s (2.2mph)
Output signal:	8 or 16 bit counter channel 3 pulses per revolution (0.098 m/s per Hz)

Wind Direction

Range:	360° mechanical, 355° electrical (5°C open)
Accuracy:	$\pm 3^\circ$
Threshold:	Vane – 0.5m/s (1.0mph) at 10° displacement 0.7m/s (1.6mph) at 5° displacement
Output signal:	1 analog channel. 0 to 2.50V calibrated 0° to 359°
Power:	5VDC from logger
Mounting:	Standard 1 inch (25mm) pipe
Size (HxL):	38cm x 65cm, propeller 20cm
Weight:	0.7kg

Sensor Interface

Operating Temp.:	-20°C to 60°C
Output signals:	0-2.50VDC full scale (direction) 5.00V square wave
Power:	5VDC (4mA from logger) Cable (optional)
Type:	8 core (Model 6600F)
Length:	30m (max.)

Line Driver (optional)

The two channel line driver converts wind speed and wind direction to separate 4-20mA signals.

Operating Temp.:	-20°C to 60°C
Output signals:	4-20mA full scale
Power:	12-30VDC