

12102

Technical Specifications

WIND SPEED	
Range	0 to 50 m/s (112 mph) Gust Survival to 60 m/s (134 mph)
Sensor	3 Cup Anemometer (100cm per revolution), 17cm Diameter Cup Wheel Assembly, 63mm Diameter Hemispherical Cups
Dynamic Response	2.3m (7.5 ft) cup wheel distance constant
Threshold Sensitivity	0.5 m/s (1.0 mph) tach-generator
Transducer Excitation Requirement	Anemometer generator is self-powered
Transducer Output	Analog DC voltage from tach-generator. 1800 rpm (2400 mV) = 28.6 m/s (63.9 mph)
GENERAL	
Operating Temperature	-50 to +50°C (-58 to +120°F)



03002-L WIND SENTRY SET

Product Description

The 03002, measures wind speed and direction with a three-cup anemometer and a wind vane mounted on a small crossarm. It interfaces directly with your MUNRO data loggers, so no signal conditioning is required.

Benefits and Features:

- Compatible with most of our data loggers
- Designed for continuous, long-term, unattended operation in adverse conditions
- Small size, simplicity, & rugged construction provide a quality instrument for a modest price
- Ideal for wind profile studies

Detailed Description:

The 03002 uses a cup wheel assembly to measure wind speed. Rotation of the cup wheel produces an ac sine wave that is directly proportional to wind speed. The frequency of the ac signal is measured by a data logger pulse count channel, then converted to engineering units (mph, m/s, knots). Our version uses shielded bearings, which lowers the anemometer's threshold. Wind direction is sensed by a potentiometer. With the precision excitation voltage from the data logger applied to the potentiometer element, the output signal is an analog voltage that is directly proportional to the azimuth angle of the wind direction.



- Compatible with the LLAC4 4-channel Low-Level AC-Conversion Module, which increases the number of anemometers one data logger can measure
- Our version uses shielded bearings, which lowers the anemometer's starting threshold
- Compatible with the CWS900-series interfaces, allowing it to be used in a wireless sensor network.

Technical Specifications

Applications	General (Rain with light snow. Little or no riming or blowing sand. No salt spray)
Sensor	3-cup anemometer and vane
Measurement Description	Wind speed and direction
Operating Temperature Range	-50° to +50°C (assuming non-riming conditions)
Height	32 cm (12.6 in.)
Crossarm Length	40 cm (15.7 in.) between instruments (center-to-center)
Mounting Diameter	34 mm (1.34 in.); mounts on standard 1-in. IPS pipe
WIND SPEED (ANEMOMETER)	
Range	0 to 50 m/s (0 to 112 mph)
Gust Survival	60 m/s (134 mph)
Sensor	12-cm diameter cup wheel assembly, 40-mm diameter hemispherical cups
Accuracy	±0.5 m/s (1.1 mph)
Turning Factor	75 cm (2.5 ft)
Distance Constant	2.3 m (7.5 ft) 63% recovery
Starting Threshold	0.5 m/s (1.1 mph)
Transducer	Stationary coil (1300 ohm nominal resistance)
Transducer Output	AC sine-wave signal induced by rotating magnet on cup wheel shaft 100mV peak-to-peak at 60 rpm (6 V peak-to-peak at 3600 rpm)
Output Frequency	1 cycle per cup wheel revolution (0.75 m/s per Hz)
Cup Wheel Diameter	12 cm (4.7 in.)
Weight	113 g (4 oz)
WIND DIRECTION (VANE)	
Mechanical Range	360°
Electrical Range	352° (8° open)
Settling Time	20 ms
Sensor	Balanced vane; 16 cm turning radius
Accuracy	±5°
Damping Ratio	0.2
Delay Distance	0.5 m (1.6 ft) 50% recovery
Starting Threshold	0.8 m/s (1.8 mph) with 10° displacement 1.8 m/s (4 mph) with 5° displacement
Transducer	Precision conductive plastic potentiometer (10 kohm resistance) 1.0% linearity Life expectancy is 50 million revolutions. Rated 1 W at 40°C, 0 W at 125°C.
Transducer Excitation	Requires regulated dc voltage. (15 Vdc maximum)
Transducer Output	Analog dc voltage proportional to wind direction angle with regulated excitation voltage supplied by the data logger
Vane Length	22 cm (8.7 in.)
Weight	170 g (6 oz)