



SENSORS
MODEL 200-05103 / 200-05305
Wind Sensor

General Description

The Model 200-05103 and Model 200-05305 Professional Wind Sensors provide reliable information about wind speed and wind direction even in harsh environments. Simplicity and lightweight corrosion resistant construction were principal design considerations. Slip rings and brushes have been eliminated, resulting in improved reliability with lower cost. Modern thermoplastic materials improve resistance to corrosion from sea-air environments and from atmospheric pollutants.

The instrument mounts on standard 1 inch pipe, outside diameter 34 mm (1.34 in.). An orientation ring is supplied for maintaining wind direction orientation when the instrument is removed for maintenance.

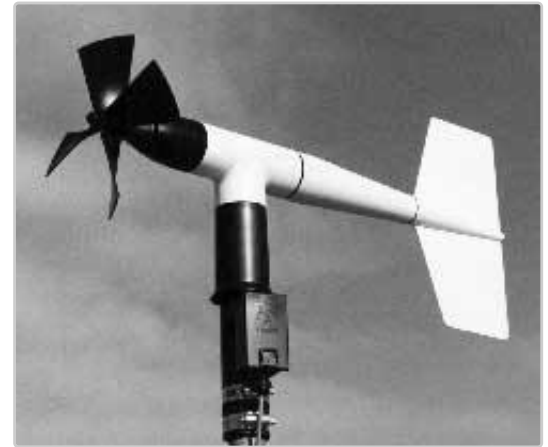
The Model 200-05103 General Purpose Wind Sensor can be used with indicators, recorders, data loggers, or personal computers to fulfill a wide range of wind measuring or complete weather station requirements. Its sensitivity satisfies general purpose requirements for wind monitoring.

The Model 200-05305 Air Quality Wind Sensor has added sensitivity for tracking lower wind movement. This sensor meets most U.S. Government Agency guidelines for wind monitoring.

These wind sensors are used in HydroLynx packaged weather stations and standalone installations for flood warning networks, fire weather monitoring programs, agricultural mesonets, air quality compliance monitoring, and environmental research stations. Wind data is critical for weather forecasting models, evapotranspiration calculations, pollutant dispersion modeling, and wildfire behavior prediction.

Both models interface with HydroLynx 50386 and 50388 series data transmitters through analog input channels. The AC sine wave output from the wind speed transducer is converted to engineering units (mph, m/s, or knots) by the transmitter's on-board processing. Wind direction is measured via a precision potentiometer providing a 0-5 Vdc output proportional to azimuth angle. The transmitter can compute and report average wind speed, peak gust, gust direction, and vector-averaged wind direction at programmable intervals.

The elimination of slip rings and brushes — common wear points in conventional wind instruments — significantly extends the service life of these sensors. The four-blade helicoid propeller design and thermoplastic construction resist icing, UV degradation, and corrosion, making these sensors well-suited for long-term deployment at exposed remote sites.



Specifications

Wind Speed	
Sensor	4-blade helicoid propeller
200-05103	Polypropylene, 18 cm diameter
200-05305	Carbon fiber thermoplastic, 20 cm diameter
Transducer	Centrally mounted stationary coil
200-05103	3K-ohm nominal dc resistance
200-05305	4K-ohm nominal dc resistance
Transducer output	AC sine wave signal induced by rotating magnet
200-05103	70 mV p-p at 60 rpm, 14 V p-p at 12000 rpm
200-05305	

	100 mV p-p at 60 rpm, 20 V p-p at 12000 rpm
Range	
200-05103	0-60 m/s (130 mph), gust survival 80 m/s (180 mph)
200-05305	0-40 m/s (90 mph), gust survival 45 m/s (100 mph)
Threshold sensitivity	*
200-05103	1.0 m/s (2.2 mph)
200-05305	0.4 m/s (0.9 mph)
Distance constant (for 63% recovery)	*
200-05103	2.7 m (8.9')
200-05305	2.7 m (8.9')
Wind Direction (Azimuth)	
Sensor	Balanced vane
200-05103	38 cm (15 in.) turning radius
200-05305	48.3 cm (19 in.) turning radius
Transducer	Precision conductive plastic potentiometer,
Transducer excitation requirement	Regulated dc voltage,
Transducer output	Analog dc voltage proportional to azimuth angle
Range	360° mechanical, 355° electrical (5° open)
Threshold sensitivity	* at 10° displacement
200-05103	1.0 m/s (2.2 mph)
200-05305	0.5 m/s (1.0 mph)
200-05103	1.5 m/s (3.4 mph)
200-05305	0.7 m/s (1.6 mph)
200-05103	1.3 m (4.3 ft.)
200-05305	1.2 m (3.9 ft.)
200-05103	0.25
200-05305	0.45
OVERALL	
Mounting	Standard 1 in. pipe (1.34 in. O.D.)
Size	
200-05103	14.6 in. H x 21.7 in. L x 2 in. body diameter
200-05305	15 in. H x 25.6 in. L x 2 in. body diameter
Weight/shipping	
200-05103	12 lbs.
200-05305	11 lbs.
* Nominal values - determined in accordance with ASTM standard procedures.	

Ordering Information

200-05103	General Purpose Wind Sensor
200-05305	Air Quality Wind Sensor
200-C	Sensor Cable, per foot