

## MODEL 200-05103 Wind Sensor MODEL 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.

### 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 on propeller shaft  
 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, 10K-ohm resistance ( $\pm 10\%$ ), 0.25% linearity, life expectancy 50 million revolutions, rated 1 watt at 40 °C, 0 watts at 125 °C

Transducer excitation requirement: Regulated dc voltage, 15 Vdc max  
 Transducer output: ..... Analog dc voltage proportional to azimuth angle with regulated excitation voltage applied across potentiometer

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

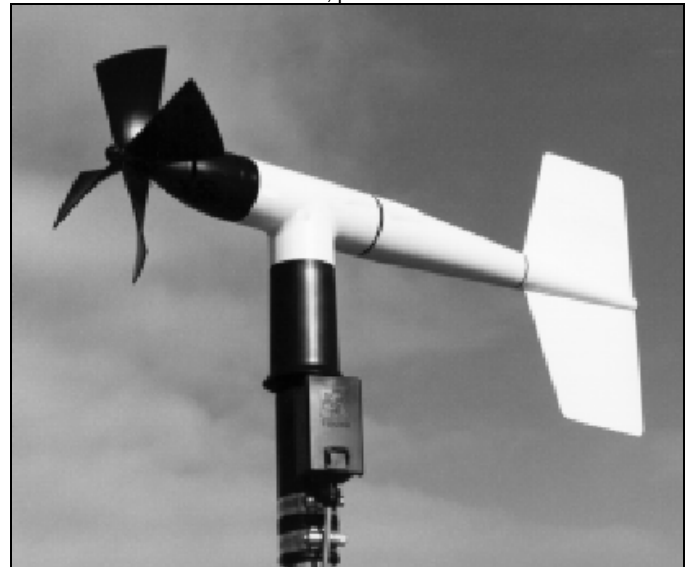
#### OVERALL

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 (37 x 55 x 5 cm)  
 200-05305: ..... 15 in. H x 25.6 in. L x 2 in. body diameter (38 x 65 x 5 cm)  
 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



Model 200-05103 General Purpose Wind Sensor