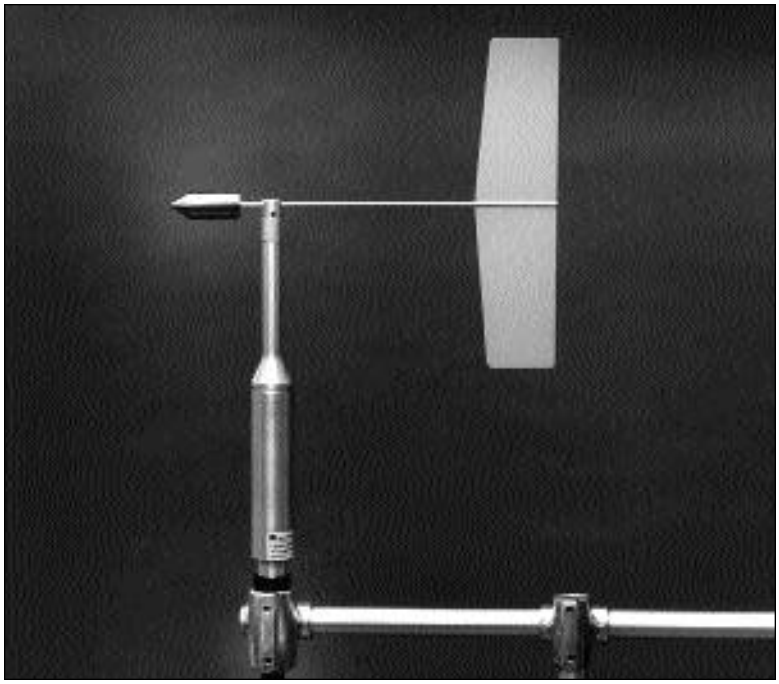
Wind Direction Sensor

020C

The Model 020C Wind Direction Sensor provides azimuth data for use in micrometeorological measurements related to operational studies and research. This sensor is especially useful when a low starting threshold, a high damping ratio or a short delay distance is required. (For example, in making Paquill determinations or for use with sigma computers, both a high damping ratio and a short delay distance are mandatory performance criteria.)

The 020C Wind Direction Sensor is presently employed in continuous service in environments ranging from Antarctic cold to arid desert regions.



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Features

- Low starting threshold
- Single potentiometer for either 360° or 540° applications
- Low profile to minimize "sensor turbulence"
- High damping ratio
- Short delay distance
- Orientation lock
- Quick-disconnect connector
- Internal heater for long bearing life
- AutoMet® compatible

Operation

The lightweight, airfoil vane is directly coupled to a single precision potentiometer. The built-in electronics module provides a voltage source for the potentiometer and amplifies the output signal for transmission over long cable lengths. Typically, the voltage output is applied to the 540° Wind Direction Translator Module for conversion to analog voltage/current output signals. An optional 360° translator module is also available. The voltage output signal from the 020C may be used directly with other types of signal processors. Met One Instruments has taken steps to make the 020C functionally more reliable than any other sensor of its kind:

- Inclusion of internal heater (AC only) which provides positive clean aspiration through the bearings, thereby greatly increasing bearing life.
- Built-in electrical field surge protection, which greatly reduces problems associated with static fields, near-miss lightning hits and poor grounding systems.
- An optional external de-icing heater sleeve may be supplied.

Construction

The airfoil shaped polyurethane vane assembly is easily installed or replaced without requiring recalibration. All sensor components are made of selected stainless steel and heavily anodized aluminum components.

All major electronic components are field-replaceable without requiring recalibration.

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Specifications

Performance Characteristics

Azimuth:	Electrical	0 - 357°
	Mechanical	0 - 360°
	0 - 540° with appropriate translator	
Threshold:	0.5 mph	
Linearity:	±1/2% of full scale	
Accuracy:	±3°	
Damping Ratio:	Standard 0.6 (Foam Tail)	
	Optional 0.25 (Metal Tail)	
Delay Distance:	Less than 3 ft (91 cm)	
Temperature Range:	-50°C to +65°C	

Electrical Characteristics

Power Requirements:	12 VDC at 10 mA, 12 VDC at 350 mA for heater
Output Signal Selectable:	a. 0 - 5 V for 0 - 360° (or 540°)
	b. 0 - 2.5 V for 0 - 360° (or 540°)
Special Range:	0 - 1.0 V for 0 - 360° (or 540°)
Output Impedance:	100 ohms maximum

Physical Characteristics

Weight:	1.5 lbs (0.68 kg)
Finish:	Clear anodized aluminum
Mounting:	PN 191 Crossarm (Contains orientation lock)

Ordering Information

Cable:	PN 1957-xx (xx = length in feet)