

010C Wind Speed Sensor 020 Wind Direction Sensor

Both wind speed and wind direction sensors are used in environments ranging from Antarctic cold to arid desert heat. The 010C and 020 sensors meet U.S. EPA and NRC performance specifications for critical regulatory, research or scientific measurement applications.

The 010C Wind Speed Sensor provides accurate and detailed information on horizontal wind speed. The lightweight three-cup anemometer is used in virtually all applications where fast response and low starting threshold(s) are of paramount importance.

The Model 020 Wind Direction Sensor provides high-accuracy azimuth data for micrometeorological measurements in operational studies and research. Featuring a lightweight aerodynamic vane directly coupled to a solid-state Hall Effect encoder, the sensor delivers a highly responsive analog voltage output proportional to wind direction. It is engineered for applications requiring a low starting threshold, minimal delay distance, and long-term reliability in rugged environments.

Reliability

The 010C and 020 are made of stainless steel and anodized aluminum components and are functionally more reliable than any other sensors of their kind:

- Built-in electrical field surge protection greatly reduces problems associated with static fields, near-miss lightning hits and poor grounding systems.
- An internal DC heater provides a small rise in internal temperature and positive pressure that reduces moisture, extending bearing life.
- Optional, external de-icing heater sleeve for applications where freezing rain, ice and low wind speeds may be encountered.



020 Wind Direction Sensor



010C Wind Speed Sensor

Features

- Low starting threshold
- Internal heater for long bearing life
- High damping ratio
- Low profile to minimize “sensor turbulence”
- Short delay distance
- Quick-disconnect connector
- Ingress Protection Level 65 (IP65)
- Field-replaceable electronic components

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Performance Characteristics

- Maximum Operating Range: 0-135 mph (0-60m/s)
- Starting Speed: 0.5 mph (0.22 m/s)
- Calibrated Range: 0-112 mph (0-50 m/s)
- Accuracy: $\pm 1\%$ or 0.15 mph (0.07 m/s)
- Resolution: <0.1 mph
- Temperature Range: -50°C to $+65^{\circ}\text{C}$ (-58°F to $+149^{\circ}\text{F}$)
- Distance Constant: less than 5 ft (1.5 m) of flow (meets EPA specifications)

Electrical Characteristics

- Power Requirements: 12 VDC at 10 mA, 12 VDC at 350 mA for internal heater
- Output Signal: 11 volt (pulse frequency equivalent to speed)
- Output Impedance: 100 Ω maximum

Physical Characteristics

- Weight: 1.5 lbs (0.68 kg)
- Finish: Clear anodized aluminum; Lexan cup assembly

Cable & Mounting

- Cable assembly: PN 1953; specific length in feet or meters (standard lengths of 5m, 15m, or 30m)
- Mounting: PN 191-1 Crossarm Assembly

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Performance Characteristics

- Azimuth: Electrical 0° - 357° Mechanical 0° - 360°
- Threshold: 0.5 mph (0.22 m/s)
- Linearity: $\pm 1/2\%$ of full scale
- Resolution: $<0.1^{\circ}$
- Vane Specifications (Damping Ratio):
 - Standard Vane (Aluminum): 0.25
 - Magnesium Vane: 0.4 (meets EPA Specifications)
- Delay Distance: less than 3 ft (91 cm)
- Temperature Range: -50°C to $+65^{\circ}\text{C}$ (-58°F to $+149^{\circ}\text{F}$)

Electrical Characteristics

- Input Power: 10-18VDC, 50mA typical, 70mA max
- Heater Power: 12 VDC, 350mA
- Output Signal:
 - a. 0-5VDC for 0- 360° (Default Setting)
 - b. 0-2.5 VDC for 0- 360° (User Selectable)
- Load Impedance: 50K Ohms without significant loss of signal

Physical Characteristics

- Weight: 1.1 lbs (0.5 kg)
- Finish: Clear anodized aluminum

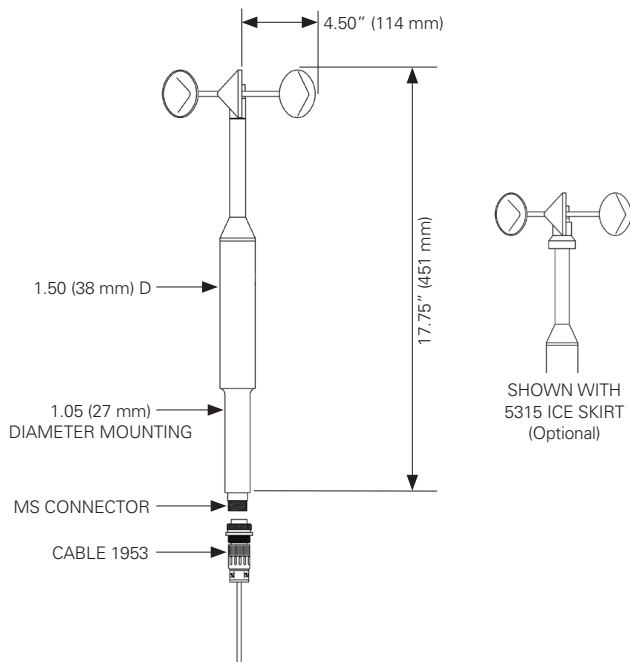
Cable & Mounting

- Cable assembly: PN 1957; specific length in feet or meters (standard lengths of 5m, 15m, or 30m)
- Mounting: PN 191-1 Crossarm Assembly

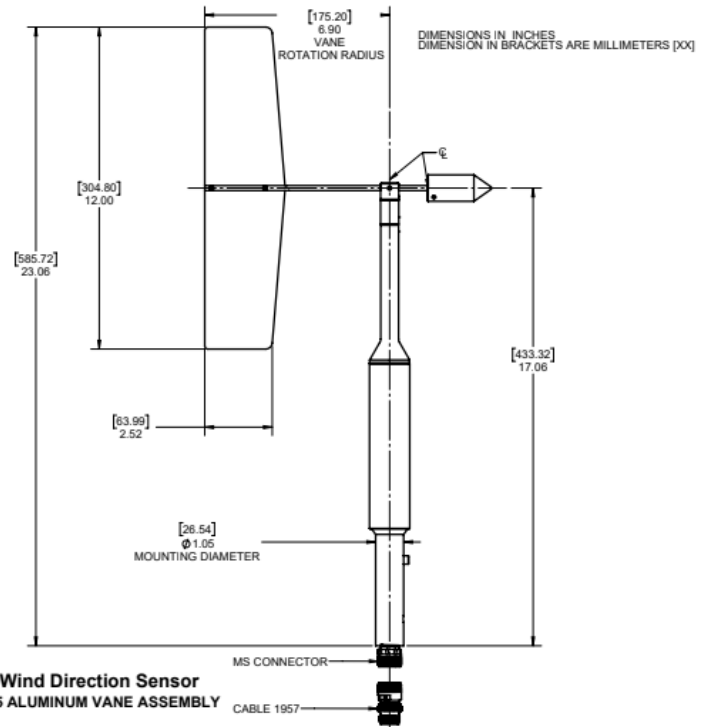
Specifications are subject to change at any time.

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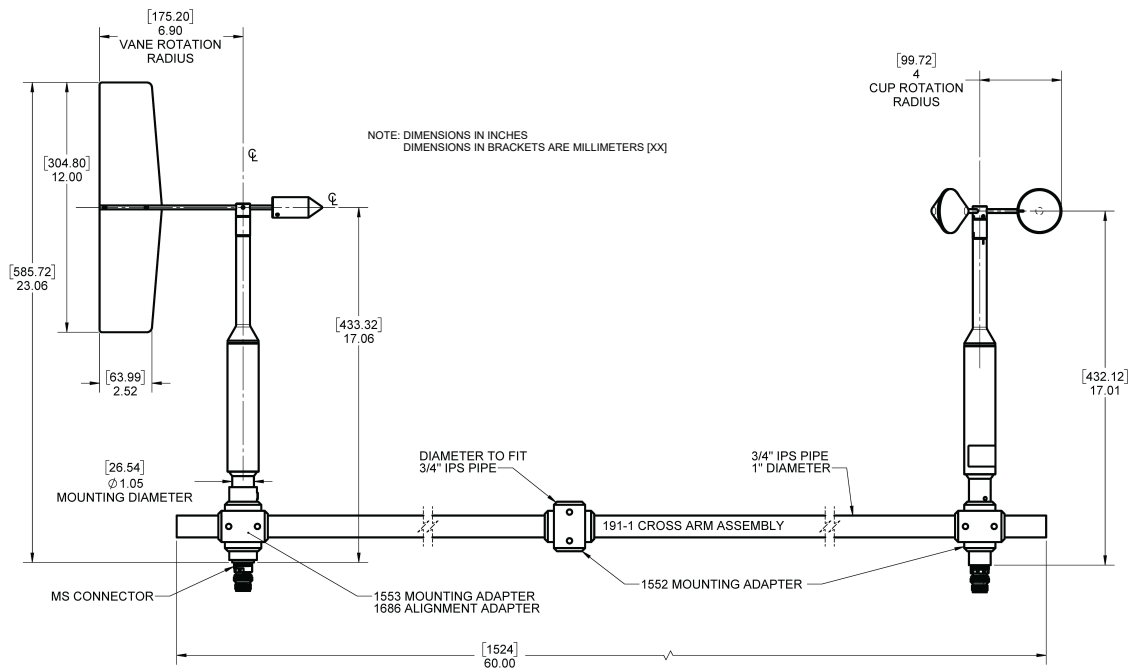
Technical Drawings



010C Wind Speed Sensor



020 Wind Direction Sensor



191-1 Mounting Arm & 010C-020

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