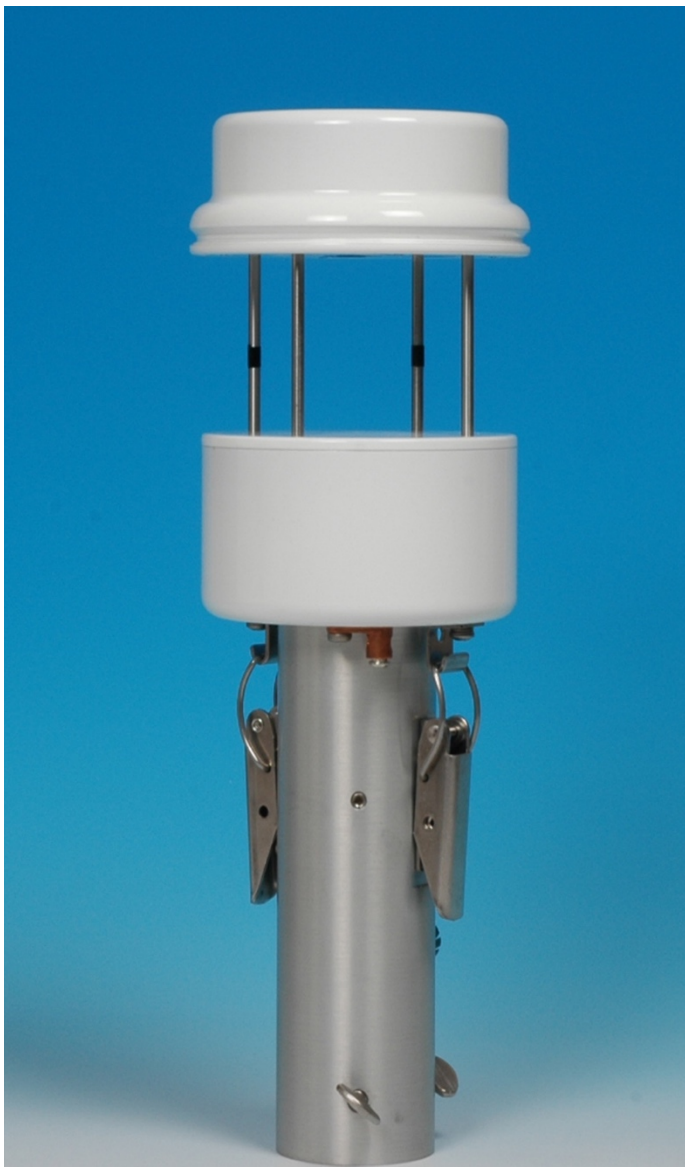
Met One Instruments, Inc.

S2 SONIC ANEMOMETER

Features:

- **No Moving Parts**
- **No Periodic Maintenance**
- **Digital and Analog Outputs**
- **Automatic North Alignment**
- **Ice-Free Operation (Optional)**
- **Two Year Warranty**
- **Field configurable**

Met One Instruments' S2 sonic anemometer (P/N 102779) is designed for ambient wind sensing in harsh environment industrial applications as a direct replacement for conventional mechanical propeller and cup anemometers, both in terms of performance and cost. It requires no periodic maintenance or calibration.



The S2 operates on the principle of the measurement of the speed of sound in air. All electronics utilize the latest solid-state surface mount technology, conserving power, size, and weight, with a power consumption of less than 0.5W for the unheated version.

The S2 measures only 4 inches in diameter and 8 inches high, and the body is slender and aerodynamic to assure that minimum turbulence is introduced into the measured air stream. Measurement interference is further reduced by the transducers being located out of the measurement air stream. This also serves to increase the reliability and longevity of the sensor as dust, debris, snow, rain, etc., will not impact directly on the transducers.

Standard digital outputs are RS-232C, RS-485 and SDI-12 which are easily interfaced to any of Climatronics' or other commonly available data acquisition systems. A variety of standard analog outputs are also available. With the flux-gate compass, the wind direction output is automatically referenced to magnetic north.

The small size and surface area of this anemometer allows it to be kept ice free even at relatively low power levels. The heated version of this anemometer, P/N 102729, includes the heating elements, which are factory-installed. The heater control box, P/N 102626, is ordered separately.

The S2 is now totally field configurable through a very user friendly, software interface, which is accessed through the serial port.

This sensor is ideal for applications requiring high reliability, NO maintenance, ruggedness, ice-free operation or portability.

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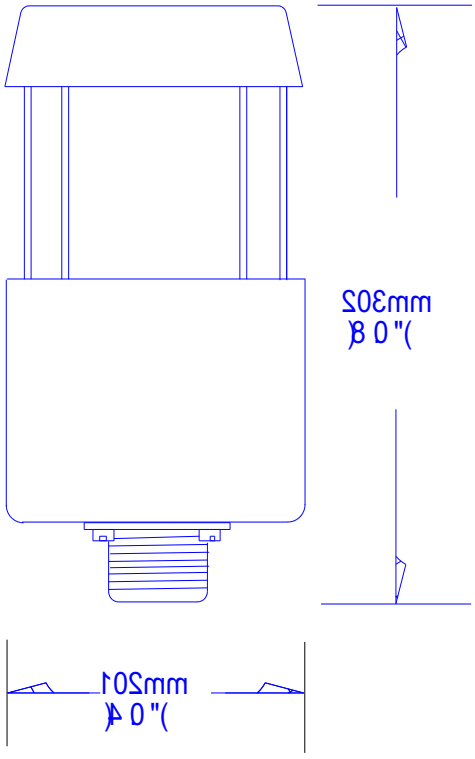
SPECIFICATIONS

PERFORMANCE **P/N 102779 or 102729**

Wind Speed	
Range	0 to 70 m/s (0 to 157 mph)
Sustainability	Max 85 m/s
Accuracy *	±0.5 m/s (1.1 mph) or 5%
Threshold	0.5 m/s
Resolution	0.1
Repeatability	±0.2 m/s (0.45 mph) or 5%
Response Time	1 second
Wind Direction	
Range	0 to 360°
Accuracy *	±5° (Including compass error of ±2°)
Threshold	0.5 m/s
Resolution	±1.0°
Response Time	1 second
ELECTRICAL	
Measurement Format	Two orthogonal axes, North/South and East/West
Measurement Rate	2 Hz each axis**
Operating Frequency	40 KHz
Signal Output	DIGITAL: RS-232C, 100 ft. @ 9600 BPS & 50 ft., RS-485, 4000 ft. @ 9600 BPS and SDI-12, 200 ft. @ 1200 BPS ANALOG: 0 -1, 0-2.5, 0-5 or 1-5 VDC
Power Requirements	Sensor: 9 - 36 VDC @ 35mA nominal, option dependent Heater**115 VAC/60 Hz, 100W
Mean Time Between Failures (MTBF)	80,000 hours
ENVIRONMENTAL	
Temperature	-40° to 60°C (-40° to 140°F)
Humidity	0 to 100%
PHYSICAL	
Weight	1.00 kg (2.2 lbs.)
Size	203.2 mm (8.0 in) high by 101.6 mm (4.0 in) dia
Mounting	P/N 102779 = 102778 mount P/N 102729 = 102286 mount to ¾ in IPS (1.05" or 26mm OD) vertical pipe stub.
SHIPPING	
Weight	1.36 kg (3.0 lbs.)
Volume	0.012 m^3 (0.44 ft^3)

** This accuracy is maintained when the sensor is within ± 10 degrees of vertical*

*** WMO Compliant Gust Reporting is achieved through a 3 second rolling data average*



Options Configuration Guide

Contact the factory for options configuration for P/N 102729 heated version

Base Part Number	102779		
Std. Digital Outputs	RS-232C, RS-422/485 and SDI-12		
Analog Output Options			
	None	A0	
	0 – 1 Volt	A1	
	0 – 5 Volt	A2	
	0 - 2.5 Volt	A3	
	1 - 5 Volt	A4	
Compass Option	None	C0	
	11709	C1	
Digital Output Options	Standard		D0
	485 Tracker		D1
	NMEA		D2

Typical Complete Part Number: 102779-A0-C0-D0

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