

# WSO100 *Ultrasonic Wind and Weather Station*

Maretron's outdoor weather station measures wind speed and direction, air temperature, barometric pressure, and relative humidity. The wind measurement is performed using ultrasonic sensors, which means there are no moving parts to wear out or to get caught in the rigging.

The WSO100 accurately measures wind speed and direction even when tilted, making it ideally suited for heeled sailboats or powerboats operating in pitching and rolling seaways.

When used with Maretron displays (DSM150, DSM250, N2KView®), you can view apparent wind speed and direction, humidity, air temperature, barometric pressure (with graphs to see trends), wind chill factor, heat index, and dew point. If you add speed through water (DST110), GPS (GPS200) and compass (SSC200), you can view true vessel referenced wind speed and direction as well as ground referenced speed and direction.



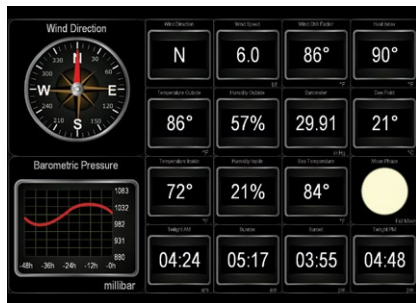
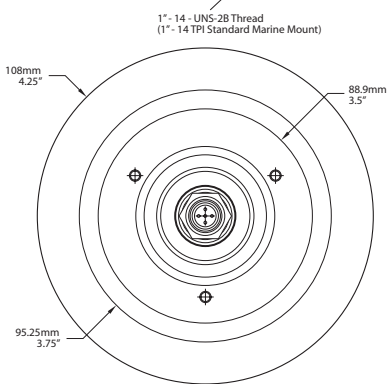
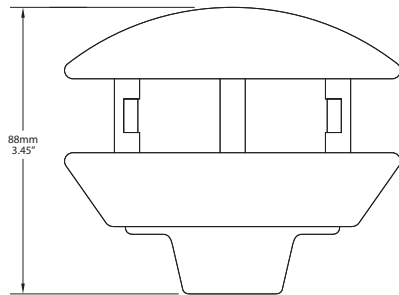
The WSO100 provides these functions:

- Apparent Wind Speed
- Apparent Wind Direction
- Atmospheric Pressure
- Air Temperature
- Relative Humidity

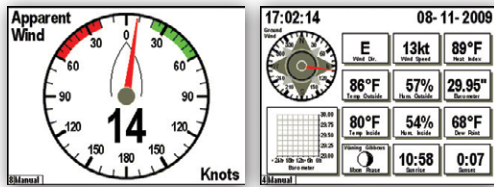
## **Products**

PART NUMBER	DESCRIPTION
WSO100-01	Ultrasonic Wind/Weather Station





N2KView Environment Screen



DSM150 & DSM250 Screen Shots

**Specifications**

Parameter	Value	Comment
Wind Speed Range	0.5 to 99.5 knots (1 to 185 kph)	
Wind Speed Resolution	0.1 knot (0.19 kph)	
Wind Speed Accuracy	± 5% or 1 knot (1.9 kph)	Tilt 0° (operates to 30° tilt)
Wind Direction Accuracy	± 5°	Tilt 0° (operates to 30° tilt)
Temperature Range	-25° to 55° C	
Temperature Resolution	0.1°F (0.06°C)	
Temperature Accuracy	±1.8°F (1°C)	
Relative Humidity Range	0-99% RH	
Relative Humidity Resolution	1% RH	
Relative Humidity Accuracy	± 4% RH ± 5% RH	0% to 80% RH 80% to 99% RH
Barometric Pressure Range	26 to 32" Hg (880 to 1080 mb)	
Barometric Pressure Resolution	0.03" Hg (1 mb)	
Barometric Pressure Accuracy	±0.1" Hg (±3.4 mb)	

**Certifications**

Standard	Comment
NMEA 2000® Standard	Level A
Maritime Navigation and Radio Communication Equipment & Systems	IEC 61162-3
Maritime Navigation and Radio Communication Equipment & Systems	IEC 60945
FCC and CE mark	Electromagnetic Compatibility

**NMEA 2000® Parameter Group Numbers (PGNs)**

Description	PGN #	PGN Name	Default Rate
Periodic Data PGNs	130306	Wind Data	10 Times/Second
	130310	Environmental Parameters	10 Times/Second
	130311	Environmental Parameters	2 Times/Second
Response to Requested PGNs	126464	PGN List (Transmit and Receive)	N/A
	126996	Product Information	N/A
	126998	Configuration Information	N/A
	Protocol PGNs	059392	ISO Acknowledge
	059904	ISO Request	N/A
	060416	ISO Transport Protocol, Connection Management	N/A
	060160	ISO Transport Protocol, Data Transfer	N/A
	060928	ISO Address Claim	N/A
	065240	ISO Address Command	N/A
	126208	NMEA Complex Request/Command/Ack.	N/A
Maretron Proprietary PGNs	126720	Configuration	N/A

**Electrical**

Parameter	Value	Comment
Operating Voltage	9 to 16 Volts	DC Voltage
Power Consumption	<150mA	Average Current Drain
Load Equivalence Number (LEN)	3	NMEA 2000® Spec. (1LEN = 50 mA)
Reverse Battery Protection	Yes	Indefinitely
Load Dump Protection	Yes	Energy Rated per SAE J1113

**Mechanical**

Parameter	Value	Comment
Size	4.25" Dia. x 3.45" Tall (108mm Dia. x 88mm Tall)	Including Mounting Bracket
Weight	10 oz. (283g)	Including Mounting Bracket
Mounting	Pole	Fits 1"-14 TPI Standard Marine Mount

**Environmental**

Parameter	Value
IEC 60945 Classification	Exposed
Degree of Protection	IP67
Operating Temperature	-25°C to 55°C
Storage Temperature	-40°C to 70°C
Relative Humidity	93%RH @40° per IEC60945-8.2
Vibration	2-13.2Hz @ ±1mm, 13.2-100Hz @ 7m/s² per IEC 60945-8.7
Rain and Spray	12.5mm Nozzle @ 100liters/min from 3m for 30min per IEC 60945-8.8
Solar Radiation	Ultraviolet B, A, Visible, and Infrared per IEC 60945-8.10
Corrosion (Salt Mist)	4 times 7days @ 40°C, 95%RH after 2 hour Salt Spray Per IEC 60945-8.12
Electromagnetic Emission	Conducted and Radiated Emission per IEC 60945-9
Electromagnetic Immunity	Conducted, Radiated, Supply, and ESD per IEC 60945-10
Safety Precautions	Dangerous Voltage, Electromagnetic Radio Frequency per IEC 60945-12

