



## WeatherStation® Multisensor – Ultrasonic Instruments for Dynamic Platforms

A Compact, Rugged Instrument for  
Reliable Data Collection and Navigation

### 200WX-IPX7 Multisensor

Rapid changes in weather and sea conditions make monitoring of both meteorological and oceanographic parameters a critical part of ensuring safety, while also maintaining operational efficiency. The 200WX-IPX7 is the leading weather multisensor in the USV and autonomous vehicle markets with over one million hours of reliable data collection each year.

Reliable environmental monitoring is critical for offshore missions. The suite of sensors contained in the compact housing of the 200WX-IPX7 is an attractive feature for installations where space is limited, such as on buoys, USVs, and ASVs.

AIRMAR partners with many autonomous vehicle and buoy manufacturers helping them to meet the operational challenges of the harsh ocean environment.



The WeatherStation WX Series products offer a truly best-in-class solution at a price better than other weather monitoring system on the market today, enabling individuals and professionals to make informed decisions based on real-time site-specific weather information.

### Applications:

- Autonomous and unmanned surface vehicles
- Buoys and platforms
- Workboats
- Harbors and marinas



#### Ultrasonic Wind Measurement

Dynamic True and Apparent wind speed and direction with no moving parts



#### Barometric Pressure

Accurate atmospheric pressure measurement



#### Air Temperature

Accuracy of  $\pm 1.1^{\circ}\text{C}$  at  $20^{\circ}\text{C}$



#### 10 Hz GPS

Position, COG,SOG, time stamping



#### 3-Axis Accelerometer

For pitch and roll



#### 3-Axis Compass

With dynamic stabilization and better than 1° accuracy

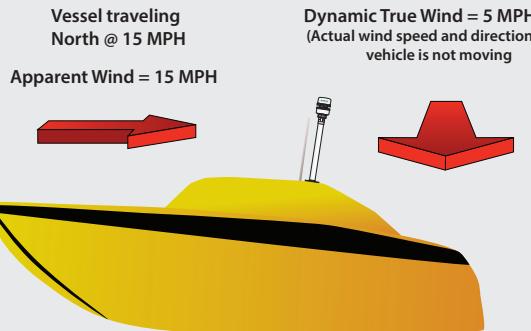


#### 3-Axis Rate Gyro

For rate-of-turn data

# Understanding Dynamic True and Apparent Wind

Virtually all anemometers report wind speed and direction. Airmar's WeatherStation Instruments are unique because they calculate both dynamic true and apparent wind speed and direction. When the WeatherStation instrument is mounted on a moving (dynamic) platform, the apparent wind is the wind felt on your hand if you held it out while moving. Dynamic true wind is the wind relative to North but also corrected for the speed and direction of the vessel. WeatherStation WX instruments integrate a GPS and 3-Axis compass, which allows for the calculation of the dynamic true wind speed and direction based upon the apparent wind, speed of the vehicle, and vehicle heading. Dynamic True wind measurement can be critical for any application where the platform is moving.



Airmar's WX Series products are the only all-in-one unit to offer dynamic true and apparent wind speeds without additional sensors.

## SPECIFICATIONS

### Wind Speed

**Range:** 0-40 m/s  
**Accuracy:** 2 knots RMS @ 20 knots  
**Resolution:** 0.1 m/s  
**Units:** m/s  
**Calculations:** User configurable damping

### Wind Direction

**Range:** 0° to 359.9°  
**Accuracy:** 2.5° RMS @ 20 knots  
**Resolution:** 0.1°  
**Calculations:** User configurable damping

### Air Temperature

**Range:** -40° to 80°C  
**Accuracy:** ±1.1°C @ 20°C  
**Resolution:** 0.1  
**Units:** °C

### Barometric Pressure

**Range:** 300 to 1100 hPa  
**Accuracy:** ±1 hPa @ 25°C  
**Resolution:** 0.1 hPa

### Three Axis Compass

**Range:** 0 to 359.9°  
**Accuracy:** 1° static heading accuracy; 2° dynamic heading accuracy  
**Resolution:** 0.1°

### Pitch & Roll

**Measurement Type:** MEMS  
**Range:** 60°  
**Accuracy:** ±1° in range of ±30°  
**Resolution:** 0.1°  
**Units:** Degrees

**GPS Position Accuracy:** 2.5 m (8') CEP

**Operating Temperature Range:** -25°C to 55°C

### Operating Voltage

**Supply Voltage:** 9 VDC to 40 VDC  
**Supply Current (@ 12 VDC):** <75 mA (<0.9 W)  
**NMEA 2000® Load Equivalency Number (LEN):** 2

**Weight:** 300 grams (0.8 lb)

**Mounting-thread Size, Base M39:** Adapter on cable is standard 1"-14 UNS (3/4" NPT optional)

**Certifications and Standards:** CE, IPX7, RoHS, IEC61000-4-2, IEC60945, IEC60950\_1C, IEC60950\_22A, EN55022, EN55024, EN14982

## COMMUNICATIONS

**Hardware Interfaces:** Serial RS232, Serial RS422, CAN

**Data Protocols:** Serial – NMEA 0183, CAN – NMEA 2000

**Serial Data Transmission Code:** ASCII

**Serial Output Rate:** 1 Hz typical. User selectable. 10 Hz max recommended

## PART NUMBERS

**200WX:** 44-848-1-01, NMEA 0183 (RS422) and NMEA 2000® (CAN bus)

**200WX:** 44-849-1-01, NMEA 0183 (RS232) and NMEA 2000® (CAN bus)

Cables sold separately unless otherwise specified



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