



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°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

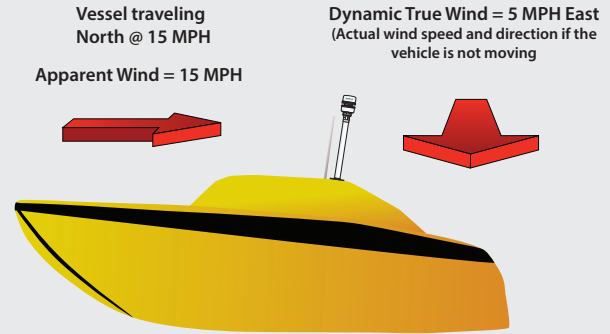


3-Axis Rate Gyro

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: 5% @ 10 m/s (@4 angles)
Resolution: 0.1 m/s
Units: m/s
Calculations: User configurable damping

Wind Direction

Range: 0° to 359.9°
Accuracy: ±3° @ 10 m/s
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: ±0.5 hPa @ 25°C (or better)
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: 50°
Accuracy: ±1° in range of ±30°
Resolution: 0.1°
Units: Degrees

GPS Position Accuracy: 3 m (10') 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

Available Hardware Interfaces: Serial RS232, Serial RS422, CAN

Available Protocols: NMEA 0183, NMEA 2000

Serial Data Transmission Code: ASCII

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

PART NUMBERS

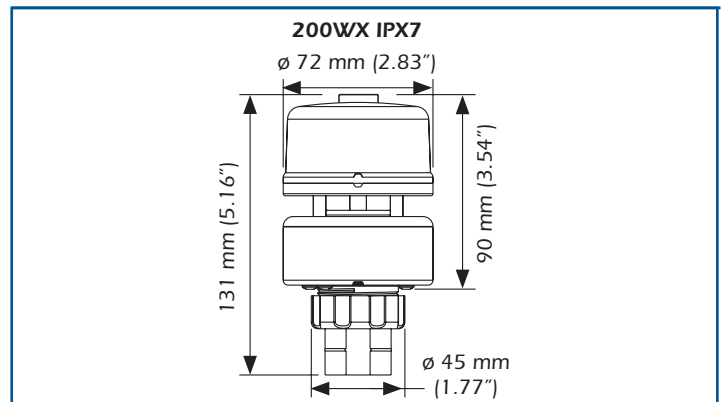
200WX: 44-848-1-01, NMEA 0183 (RS422) and NMEA 2000® (CAN bus)

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

* Cables sold separately

RH = Relative Humidity

DIMENSIONS



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