



WeatherStation® Multisensor – Ultrasonic Instruments for Dynamic Platforms

A Compact, Rugged Instrument
for Informed Decision-Making

200WX Multisensor

The WeatherStation 200WX is the best choice for mobile, land-based, weather-monitoring applications. Sensor-rich, in a durable, rugged, compact housing that is IPX6-rated, the 200WX is ideal for dynamic platforms such as agricultural tractors, weather-chasing vehicles and military vehicles.

Knowing the Dynamic True wind speed and direction is important and often mission-critical. The 200WX calculates the Dynamic True wind speed and direction based upon the Apparent wind speed of the vehicle, and vehicle heading. Its internal 10 Hz GPS and three-axis compass provide heading, position, speed-over-ground, and course-over-ground functionality that are necessary for Dynamic True wind data processing on a moving vehicle.

The 3D compass with dynamic stabilization provided by a three-axis rate gyro enhances compass accuracy in heavy pitch

and roll conditions. The 200WX maintains dynamic compass performance in hilly and mountainous terrain—common in military situations.

Applications:

- Mobile weather vehicles
- Agricultural vehicle system integration
 - Tractors and Sprayers
- Construction site awareness
- Autonomous vehicle navigation and data collection
- Commercial Vehicles
 - Trucks, Trains, and Buses



Ultrasonic Wind Measurement

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



Barometric Pressure

Accurate atmospheric pressure measurement



Air Temperature

With calculated heat index and wind chill



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

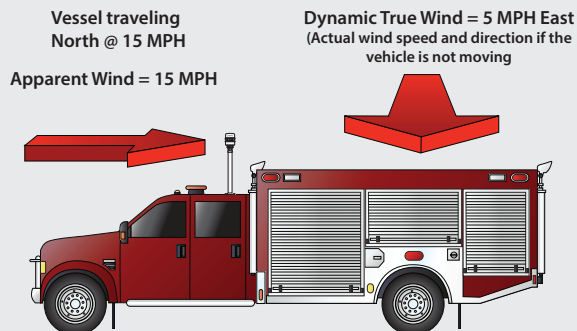


Relative Humidity (optional)

Field serviceable RH sensor with calculated dew point

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

Relative Humidity (optional)

Range: 0-100% RH
Accuracy: ±5% RH @ 0 to 90% RH @ 20°C
Resolution: 0.1% RH

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 (0.7 lb)

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

Certifications and Standards: CE, IPX6 (IPX4 with optional Relative Humidity sensor), 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: 44-835-1-01, NMEA 0183 (RS422) and NMEA2000® (CAN Bus)

200WX: 44-837-1-01, RH, NMEA 0183 (RS422) and NMEA2000® (CAN Bus)

200WX: 44-846-1-01, NMEA 0183 (RS232) and NMEA2000® (CAN Bus)

200WX: 44-847-1-01, RH, NMEA 0183 (RS232) and NMEA2000® (CAN Bus)

* Cables sold separately

RH = Relative Humidity



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DIMENSIONS

