

NEW

MOBILE AND  
STATIONARY PLATFORMS

300WX  
SERIES



## Weather Data at Your Fingertips 300WX WeatherStation Instrument Family and CAST™ App

Airmar's ultrasonic 300WX WeatherStation® instruments deliver accurate, reliable weather data from a rugged, compact, maintenance-free design with no moving parts. These all-in-one multisensors can measure up to seven different parameters plus calculated values and deliver that data on protocols used by marine and land-based systems.

Airmar's best-in-class WeatherStation instruments take sensing to the next level with the measurement of SOG/COG, pitch & roll, rate-of-turn, and position. The integrated 3-axis compass and GNSS enable the unique measurement of dynamic true wind speed and direction from mobile platforms.

### New Features of the 300WX WeatherStation Instruments:

- New communication protocols – J1939, ISOBUS
- Wireless connectivity via Bluetooth to Airmar's CAST app for viewing instrument data, system configurations and firmware updates
- Automatic baud rate detection on J1939 (250kbps/500kbps)
- Improved power efficiency control via sensor configurations



#### 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 when RH module is installed



#### Relative Humidity (optional)

Field serviceable RH sensor with calculated dew point



#### GNSS-Enabled

Position, COG, SOG, time stamping



#### 3-Axis Compass

With dynamic stabilization and better than 1° accuracy



#### 3-Axis Rate Gyro

For rate-of-turn data



#### 3-Axis Accelerometer

For pitch and roll



#### Wireless Communication to CAST App

For viewing instrument data, configuring sensors and protocols, performing software upgrades

### 300WX Multisensor

The WeatherStation 300WX is the best choice for mobile, or stationary, weather-monitoring applications. Sensor-rich, in a durable, rugged, compact housing that is IPX6-rated, the 300WX is ideal for dynamic platforms such as agricultural tractors, weather-chasing vehicles and military vehicles.

### 300WX-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 300WX-IPX7 is the leading weather multisensor in the USV and autonomous vehicle markets with over one million hours of reliable data collection each year.

### 300WXH Multisensor

The 300WXH is Airmar's recommended model for weather-monitoring in ice-prone areas. Designed with an efficient, thermostatically controlled heating system, it operates effectively in extremely cold climates.

### Applications:

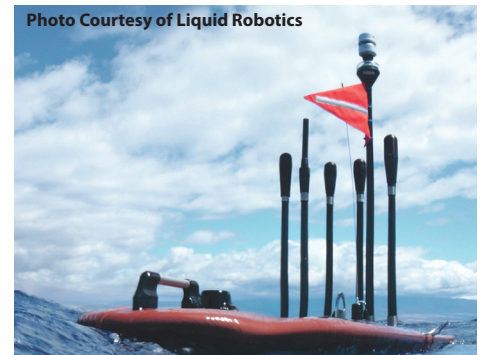
- Mobile weather vehicles
- Agricultural vehicle system integration
- Construction site awareness
- Autonomous vehicle navigation and data collection
- Chemical and fertilizer sprayer monitoring

### Applications:

- Autonomous and unmanned surface vehicles
- Buoys and offshore platforms
- Workboats/commercial fishing vessels
- Harbors and marinas

### Applications:

- Offshore Platforms
- High Altitude Stations



## 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 – only offered in 300WX

**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

#### GNSS Position Accuracy: 3 m (10') CEP ‡

#### Operating Temperature Range 300WX and 300WX-IPX7: -25°C to 55°C

**Operating Temperature Range 300WXH heater:** -40°C to 55°C (-40 to 131°F) Heater cycles on when sensor reaches 1°C

#### Operating Voltage 300WX and 300WX-IPX7:

**Supply Voltage:** 9 VDC to 40 VDC  
**Supply Current (@ 12 VDC):** <55 mA (<0.66 W)  
**NMEA 2000® Load Equivalency Number (LEN):** 2

#### Operating Voltage 300WXH:

**Supply Voltage:** 12-24 VDC  
**Supply Current (@ 24 VDC):** <28 mA (<0.67 W)  
**Heater Supply Current (@ 24 VDC):** <2.5 A (<60 W)

**Weight 300WX and 300WX-IPX7:** 300 grams (0.7 lb)

**Weight 300WXH:** 350 grams (0.8 lb)

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

**Certifications and Standards 300WX:** CE, IPX6 (†IPX4 with optional Relative Humidity sensor), RoHS, IEC61000-4-2, IEC60945, IEC60950\_1C, IEC60950\_22A, EN55022, EN55024, EN14982

**Certifications and Standards 300WX-IPX7:** CE, IPX7, RoHS, IEC61000-4-2, IEC60945, IEC60950\_1C, IEC60950\_22A, EN55022, EN55024, EN14982

**Certifications and Standards 300WXH:** CE, IPX6, RoHS, IEC61000-4-2, IEC60945, IEC60950\_1C, IEC60950\_22A, EN55022, EN55024, EN14982

† **Note:** When the heater is ON, air temperature and wind chill functions are disabled. Relative Humidity (RH) not available on heater models  
Heater requires 24VDC

\* Cables sold separately  
RH = Relative Humidity

‡ GNSS-Enabled for connectivity to global GPS constellations. Accuracy rating based on WAAS-Enabled GPS.

**300WX**  
Stationary and  
Mobile Applications



**300WX-IPX7**  
Stationary and Mobile  
Marine Applications



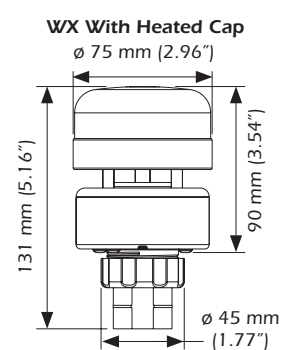
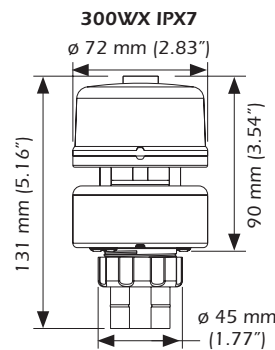
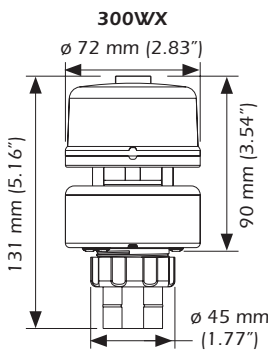
**300WXH**  
Harsh Weather  
Applications



	300WX	300WX-IPX7	300WXH
Apparent wind speed and angle	✓	✓	✓
Dynamic True wind speed and direction*	✓	✓	✓
Barometric pressure	✓	✓	✓
Air temperature	✓	✓	✓
GNSS-Enabled (Position, COG, SOG)	✓	✓	✓
Three-axis accelerometer for pitch & roll	✓	✓	✓
Three-axis solid-state compass with dynamic stabilization: Better than 1° static compass accuracy Best-in-class 2° dynamic compass accuracy	✓	✓	✓
Three-axis rate gyros provide rate-of-turn data	✓	✓	✓
Heated cap			✓†
Relative humidity (field-serviceable ) Calculated dew point Calculated heat index	✓ Optional		
Weatherproof rating	IPX6**	IPX7	IPX6
Operating voltage	9-40 VDC	9-40 VDC	12-24 VDC
Wireless connectivity to CAST app	✓	✓	✓
Automatic Baud Rate Detection (250kbps/500kbps)	✓	✓	✓
Output options include: Hardware Interfaces: Serial RS232, Serial RS422, CAN Protocols: NMEA 0183, NMEA 2000®, ISOBUS, J1939 Serial Data Transmission Code: ASCII	✓	✓	✓ (0183 only)

\* **Dynamic True wind speed and direction** is important and often mission-critical. The 300WX calculates the dynamic true wind speed and direction based upon the apparent wind (the wind you would feel on your hand if you held it out while moving), speed of the vehicle, and vehicle heading.

\*\* Rating stated is without optional RH sensor installed.





# CAST™ —The App That Maximizes Your Airmar Products

The Airmar CAST™ App connects directly from iOS and Android™ Smart devices to Airmar's Bluetooth® enabled 300WX WeatherStation instruments. Airmar CAST connects using Bluetooth Low Energy to your Airmar product and makes configuration simple with intuitive menus and guided calibration. View data from the WeatherStation in digital or graphical format, quickly turn on or off data sentences, configure sensor parameters, software updates and more.



**CAST™**  
The innovative App for allowing users to calibrate, configure and view sensor data to evaluate and improve performance!



Note: Actual screen appearance and data availability may vary depending on the model of Airmar product it is connected to.

## Data Logging – Convenient data logging solution for your 300WX WeatherStation

Every SmartFlex CES Module has built-in wifi and ethernet, for connectivity to the internet and Cloud based services. With the 300WX connected, custom values logs or entire bus logs can be sent to the cloud, where key personnel can be aware of current conditions as well as past network traffic and events. SmartFlex also provides the capability to push SMS/Email messages to personnel based on custom criteria. In addition, each SmartFlex module has two USB 2.0 access points to place storage devices of any size.

### Values Logging

- Pick any value on the 300WX or any connected device
- Custom set the time interval to log
- Optional trigger/event condition to trigger logging (such as high wind events)



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300WX\_Family\_Ag\_rB 04/11/24

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