

# NMEA & AIRMAR®

Partnering to Deliver Complete NMEA 2000® Smart™ Sensor Solutions



## AIRMAR'S SMART™ SENSOR PRODUCTS INCLUDE:

- Depth, speed, and temperature
- Depth and temperature or depth only
- Speed and temperature
- Temperature only
- Weather instruments
- GPS antennas
- Heading sensors

**PLUG.  
PLAY.  
PERFORM.**

 **AIRMAR®**  
TECHNOLOGY CORPORATION

*Sensing Technology*



**BEST-IN-CLASS SENSING SOLUTIONS.**

# About AIRMAR

Airmar Technology Corporation is a world leader in the design and manufacture of sensing technology for marine and industrial applications. The Company's product line includes advanced ultrasonic transducers, flow sensors, WeatherStation® Instruments, and electronic compasses used for a wide variety of applications including fishing, navigation, meteorology, survey, level measurement, process control, and proximity sensing. Established in 1982, Airmar's headquarters are located in Milford, New Hampshire, with distribution offices in Lake City, South Carolina, and Saint Malo, France.

## Innovation

Airmar's team of scientists, multidisciplinary engineers, designers, and technicians lead the company in research and development. Outstanding personnel, coupled with our cutting-edge manufacturing facility featuring acoustic test tanks and state-of-the-art testing equipment, allows us to develop and test new technologies quickly, accurately, and cost effectively.

## Quality

Airmar gives constant attention to producing the highest quality products. We begin with the best materials from qualified vendors. Then we closely monitor the manufacturing process using Lean Manufacturing practices, followed by precise final testing. Our commitment to quality is reflected in our ISO 9001 certification.

## Customer Satisfaction

Customer satisfaction and product quality are the responsibility of every Airmar employee. These are achieved through creative research, design integrity, consistent workmanship, adherence to specifications, process monitoring, and continuous improvement.



Visit the Company's web site at [www.airmar.com](http://www.airmar.com).

### Headquarters

#### **Airmar Technology Corporation**

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Milford, NH 03055 U.S.A.  
Tel: 603-673-9570

### Distributors

#### **Airmar EMEA**

9, Bis Rue des Grands Jardins,  
ZI Sud  
35400 Saint-Malo, France

#### **Gemeco Marine Accessories**

1141 South Ron McNair Boulevard  
Lake City, SC 29560

# AIRMAR & NMEA

## AIRMAR and the NMEA: Delivering NMEA 2000® Smart™ Sensor Solutions

Airmar has been a long time, integral partner with the National Marine Electronics Association (NMEA), both in providing sensor solutions and aiding in the development of NMEA standards. With over 15 certified sensors providing depth, speed, temperature, weather, heading and GPS data, our sensors provide reliable, accurate information for navigational needs. Airmar continues to focus on the development of innovative sensor solutions.

All of Airmar's Smart™ Sensor options feature embedded micro-electronics that process the applicable information which can then be displayed on any NMEA 0183 or NMEA 2000 instrument, chart plotter, radar or PC. The NMEA's plug and play functionality simplifies installation, eases system expansion, provides excellent performance, and offers amazing affordability. Our sensors include unique features such as auto heading calibration, best-in-class dynamic heading accuracy, tilted elements for correcting hull deadrise, and patented signal speed processing. The PB200 WeatherStation® Instrument contains seven internal sensors in one compact housing, and is the only available unit that can output true wind speed and direction from one device. The weather instruments, heading and GPS sensors can output both NMEA0183 and NMEA2000.

### National Marine Electronics Association

"Airmar has been a strong supporter of NMEA standards and overall advancement of the association over the years. Because of the company's dedication and contributions made to the marine electronics industry, we honored Airmar's Chief Executive Officer, Steve Boucher, with an NMEA Lifetime Achievement Award in 2007."



**Bruce Angus**  
*Interim Executive Director*



## **GH2183** (Heading Sensor With GPS)

- GPS and heading combined into one housing
- WAAS GPS provides latitude, longitude, COG, SOG, time and date, and magnetic variation
- Three-axis solid-state compass
- 1° static and 2° best-in-class dynamic heading accuracy
- Three-axis accelerometer provides pitch and roll
- Three-axis rate gyro provides rate-of-turn data
- IPX6 waterproof enclosure
- UV resistant plastic housing
- Outputs NMEA 0183 and/or NMEA 2000

## **HT200** (Temperature Sensor)

- High-Precision Temperature
- $\pm 0.3^{\circ}\text{C}$  ( $\pm 0.17^{\circ}\text{F}$ ) accuracy
- Retractable sensor insert fits P17, B17 and SS577 housings
- These low-profile housings are nearly flush and minimize drag with only 5 mm ( $3/16"$ ) extending outside the hull

## **P39** (Transom-Mount)

- Depth, speed, and temperature
- Plastic housing and kick-up bracket
- Accommodates transom angles between 2° and 20°
- Recessed waterflow channel protects paddlewheel

## **DT800** (Tilted Element™)

- Depth and temperature
- Fixed 12° tilted version for 8° to 15° hull deadrise
- Fixed 20° tilted version for 16° to 24° hull deadrise
- 235 kHz frequency prevents mutual interference with other onboard fishfinder transducers
- 100 Watts, 12° beamwidth
- 0.45 m (1.4') shallow-water depth accuracy
- 180 m (590') maximum depth sounding
- Retractable sensor insert fits P617V, P17, and B17 housings
- Available in low-profile, countersunk, or beveled-edge housings
- NMEA 0183 version available

## **ST850** (Smart™ Sensor)

- Speed and temperature
- Speed Range: 2 to 45 knots (2 to 52 MPH)
- Self closing valve assembly reduces waterflow when insert is removed for cleaning
- Retractable sensor insert fits P17, B17 and SS577 housings
- These low-profile housings are nearly flush and minimize drag with only 5 mm ( $3/16"$ ) extending outside the hull
- ST800 version also available for P120 and B120 housings
- NMEA 0183 version available



## PB200 (WeatherStation™ Instrument)

- True and apparent wind speed and direction
- Barometric pressure
- Air and wind chill temperature
- Internal WAAS / EGNOS GPS
- Three-axis solid-state compass
- 1° static and 2° dynamic compass accuracy
- Three-axis accelerometer provides pitch and roll
- Yaw rate gyro
- No moving parts
- UV resistant plastic housing
- Outputs NMEA 0183 and/or NMEA 2000



## NMEA 2000® (Cables & Connectors)

- Micro-Tees
- Power-Tee—8 m (26')
- Termination Resistors—Male and female
- Field Attachable Connectors—Male and female
- Single-Ended Cordsets—6 m (20')
- Double-Ended Cordsets—1 and 6 m (3' and 20')



## H2183 (Heading Sensor)

- Three-axis solid-state compass
- 1° static and 2° best-in-class dynamic heading accuracy
- Three-axis accelerometer provides pitch and roll
- Three-axis rate gyro provides rate-of-turn data
- Default 10 Hz update rate for heading (HDG)
- IPX6 waterproof enclosure
- Unique bracket design mounts to any location in the bulkhead
- Outputs NMEA 0183 or NMEA 2000



## DST800L (Smart™ Sensor)

- Depth, speed, and temperature
- 235 kHz frequency prevents mutual interference with other onboard fishfinder transducers
- 100 Watts, 10° x 44° beamwidth
- Accommodates hull deadrise up to 22°
- Retractable sensor insert fits B122 housing
- Mounting options include low-profile or with a High-Performance Fairing
- NMEA 0183 version available



## P79 (In-Hull)

- Depth only
- 235 kHz frequency prevents mutual interference with other onboard fishfinder transducers
- Adjusts to hull deadrise angles from 2° to 22°
- Recommended for solid fiberglass hulls
- No hull protrusions
- Plastic transducer housing

\*Sensor installations in this diagram are a representation only and do not depict recommended locations.

# Product Table

The table below lists Airmar's Certified Smart Sensor products and the NMEA 2000 Supported Transmitted Parameter Group Numbers (PGNs) that correspond with each.

NMEA 2000® Supported PGNs	Certified Smart Sensors										
	PB200 Ultrasonic WeatherStation Instrument	GH2183 Heading Sensor with GPS	G2183 GPS Sensor	H2183 Heading Sensor	DST800, DST800L Thru-Hull TRIDUCER® Multisensor	DT800, DT800L Thru-Hull Tilted Element™ Transducer	HT200 High-Precision Temperature Sensor	P79 Adjustable In-Hull Transducer	ST800, ST850 Thru-Hull, Speed & Temperature Sensor	P39 Transom-Mount TRIDUCER® Multisensor	B122 Thru-Hull Long-Stem Transducer
59392—ISO Acknowledgement	●	●	●	●	●	●	●	●	●	●	●
060928—ISO Address Claim	●	●	●	●	●	●	●	●	●	●	●
126208—Acknowledge Group Function	●	●	●	●	●	●	●	●	●	●	●
126464—Transmit PGN List	●	●	●	●	●	●	●	●	●	●	●
126464—Received PGN List	●	●	●	●	●	●	●	●	●	●	●
126992—System Time	●	●	●	●	●	●	●	●	●	●	●
126996—Product Information	●	●	●	●	●	●	●	●	●	●	●
126998—Configuration Information	●	●	●	●	●	●	●	●	●	●	●
127250—Vessel Heading	●	●	●	●	●	●	●	●	●	●	●
127251—Rate of Turn	●	●	●	●	●	●	●	●	●	●	●
127257—Attitude	●	●	●	●	●	●	●	●	●	●	●
127258—Magnetic Variation	●	●	●	●	●	●	●	●	●	●	●
128259—Speed Water Reference	●	●	●	●	●	●	●	●	●	●	●
128267—Water Depth with Offset	●	●	●	●	●	●	●	●	●	●	●
128275—Distance Log	●	●	●	●	●	●	●	●	●	●	●
129025—Position and Rapid Update	●	●	●	●	●	●	●	●	●	●	●
129026—COG and SOG, Rapid Update	●	●	●	●	●	●	●	●	●	●	●
129029—GNSS Position Data	●	●	●	●	●	●	●	●	●	●	●
129033—Time and Date	●	●	●	●	●	●	●	●	●	●	●
129044—Datum	●	●	●	●	●	●	●	●	●	●	●
129538—GNSS Control Status	●	●	●	●	●	●	●	●	●	●	●
129539—GNSS DOPs	●	●	●	●	●	●	●	●	●	●	●
129540—GNSS Sats in View	●	●	●	●	●	●	●	●	●	●	●
129541—GPS Almanac Data	●	●	●	●	●	●	●	●	●	●	●
130306—Wind Data	●	●	●	●	●	●	●	●	●	●	●
130310—Environmental Parameters	●	●	●	●	●	●	●	●	●	●	●
130311—Environmental Parameters	●	●	●	●	●	●	●	●	●	●	●
130312—Environmental Parameters	●	●	●	●	●	●	●	●	●	●	●
130323—Meteorological Station Data	●	●	●	●	●	●	●	●	●	●	●

Please Note: Proprietary commands not listed.

