

# Amphenol Sensors

Connecting your world through  
Sensor Innovations

## Marine Sensor Solutions

Amphenol Sensors is a leading innovator in sensor technologies and measurement solutions. Offering the most diverse sensor portfolio of standard and customized products for the world's most demanding regulatory and industry-driven applications, Amphenol creates value by providing critical information for real-time decisions.

Amphenol Sensors is your best source for Marine sensors, offering superior technology in applications ranging from commercial and recreational fishing, oceanography, military and defense, and unmanned vehicles.

Consider us your global partner for all of your Marine sensor needs. We deliver innovative solutions and high-performing products with the finest customer support—bringing the best results to you and your customers.





# Amphenol Sensors

## Marine Sensor Solutions

- Temperature   ● Pressure   ● Position   ● Level   ● Speed   ● Acoustics
- Ultrasonic Transducers   ● WeatherStations®   ● Diesel Flow Meters   ● Flow
- Hydrophones   ● Electronics & Systems   ● Vibration   ● Shock   ● Force

### Commercial fishing

- Hydrophones
- M3-5-6 Receiver
- SDS Processor
- SCALA System
- Spread Sensors
- Trawl explorer
- TE/TS Sensor
- Catch, bottom contact sensor
- Depth
- Pitch & Roll
- Battery
- Position
- Height in Door Sensor w/ trawl explorer option
- Height in Net Sensors w/ trawl explorer
- Height in Seiners w/ trawl explorer option
- Temperature
- Diesel Flow Meter



### Sport Fishing & Recreational Marine

- Diverse selection of Chirp ready ultrasonic transducers designed to fit various vessel types and sizes.
- Precision navigating speed sensors.
- Top tier temperature sensors.
- Best in industry depth sensors.
- Award-winning SmartBoat® modules/data loggers.
- WeatherStations® - range of ultrasonic weather instruments.
- Diesel Flow Meter





### **Oceanography / Survey / Unmanned vessels / Diving.**

- Acoustic Communications Transducers.
- Forward looking Transducers.
- Single-Beam Transducers.
- Split-Beam Transducers.
- Synthetic Aperture Sonar (SAS) Transducer.
- Sub Bottom Profile Transducer.
- Hydrophones (Towed array and Test and Measurements).
- Vector sensors (for UUVs and Towed array sonar).
- Underwater accelerometers.
- Sonar Projectors.
- Sonobuoy (Platform).
- Listening stations (Platform).
- Scuba Safety Sounder.
- Seismic sensors.
- SCUBA Depth and Air supply Tank pressure.
- Air Flow and Control.
- Gas level.
- WeatherStations® - range of ultrasonic weather instruments.



### **Maritime Testing.**

- Pressure.
- Vibration.
- Force.
- Underwater blast.
- Thermistors.

### **Boat performance.**

- Position sensors.
- Current sensor.
- Gear Tooth Speed Sensors.
- Temperature Sensors.
- Thermistors.
- Pressure sensors.
- Tank level.
- Linear Position Sensors.
- Diesel Flow Meter





## Award-winning smartboat® modules/data loggers

- Universal NMEA 2000 device with browser based SMARTFLEX™ software that makes setup and customization easy.
- All data accessible on vessel's MFD.

## Award-winning smartboat® modules/data loggers

- Only solution with:
- NMEA 2000, nmea 0183, j1939, and j1587 support
- Fully customizable sensor-based alerts appear on MFD or via cloud notification
- Available with ethernet bridging today, supporting NMEA and onenet
- Advanced logging features with option to "replay" saved logs



## Weatherstations® - range of ultrasonic weather instruments

- Comprehensive weather data for marine mobile or stationary installation
- Sensors for apparent & dynamic true wind speed & direction, barometric pressure, relative humidity, air, temperature, gps position, speed over ground, course over ground.
- IPX7 rating, weather stations compatible with various communication protocols

## Oceanography / Survey / Unmanned vessels / Diving

### Acoustic Communications Transducers

- Standard products that are also fully scalable to meet your desired frequency range, bandwidths, and beamwidths.
- 100% Duty Cycle
- 6000M Versions Available
- Source level up to Cavitation

### Forward looking Transducers

- Custom configurations and apertures
- Wide bandwidth
- High Element Count
- Conformable for curved solutions

### Single-Beam Transducers

- Wide range of standard products
- Multiple Frequency Options
- Hull, Face or over-side mounting
- Custom options available



### Split-Beam Transducers

- Multiple standard products available
- Frequency ranges from 20 kHz to 260 kHz
- Shallow and 6000M versions
- Custom configurations available

### Synthetic Aperture Sonar (SAS) Transducer

- Custom configurations and apertures
- Wide bandwidth
- High Element Count
- Conformable for curved solutions

## Sub Bottom Profile Transducer

- Piezoflex Piezoelectric Polymer (PVDF)
- Ideal for receive applications
- Lightweight and flexible
- Customizable



## Hydrophones (Towed array and Test and Measurements)

- Underwater microphones for acoustic measurements
- Continuous underwater exposure in sea water or fresh water environments, down to 680 meters/2230 feet, 1000 PSI
- Small, versatile, self-amplified, shielded
- Calibration, surveillance, biological studies, ship noise studies, ordinance monitoring

## Vector sensors (for UUVs and Towed array sonar)

- 3 accelerometers, 1 omni-directional hydrophone, pitch and roll, heading sensors.
- Can provide a bearing to the target.
- Harbor and inlet security, military surveillance, towed arrays, stationary arrays, underwater monitoring.
- Stations, sonobuoys, marine wildlife monitoring, oil & gas exploration.

## Underwater accelerometers

- Designed to be used virtually anywhere under continuous submersion.
- Highly resistant to galvanic corrosions with titanium or stainless steel cases.
- Hermetic seal for continuous exposure to 650 PSI of water pressure.



## Sonar Projectors

- Tonpilz transducers, • single element, • segmented ring transducers, • bender bar projectors, • cymbal transducers.

## Sonobuoy (Platform)

- Piezoceramics, higher-level assemblies, hydrophones.

## Listening stations (Platform)

- Vector sensors, • underwater accelerometers.

## Scuba Safety Sounder

Currently manufacture safety sounders for firemen for "man-down" alarms. Can be extended to divers.

## Seismic sensors

- low-level vibration, • high output sensitivity, • low noise floor,
- Perimeter and road surveillance, • mine safety, • earthquake detection, • structural analysis.

## SCUBA Depth and Air supply Tank pressure

- Media Isolated Stainless Steel Pressure Sensors and Barometric depth sensors.

## Air Flow and Control

- Precision Pressure measurement
- Digital and Analog High Resolution sensing
- Ideal for Pressurized cabins, Airflow, Barometric depth and Weather monitoring.





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## Gas level

•Off-shore drilling, underwater telecommunications, and recreational activities correct concentration of constituents in the breathing gas mixture.



## Maritime Testing

### Pressure

•Waterproof tested cables - ipc-voltage output or constant voltage cvld, electrical isolation, corrosion resistant, up to 100psi.

### Vibration

•Sensitivity from 10mv/g up to 100mv/g - measurement ranges from 50 g pk to 500 g pk.



### Force

•Propulsion testing, torque, strain, shock, load.

### Underwater Blast

•Measurement ranges up 10,000psi, sensitivity down to 0.1mv/psi for specific configurations.

### Thermistors

•Glass-sealed radial (ultra stable, fastip probe),  
•glass-encapsulated chip, •epoxy interchangeable tolerance.



## Boat Performance

### Position Sensors

- Ready for outboard steering, throttle, fin & stabilisers angle feedback
- Through-shaft, end-of-shaft 2-piece and arc/off-axis configurations
- Non-contact inductive and hall-effect Technologies
- Accurate absolute output at high speeds (rotor position)
- Reliable in harsh environments

### Current Sensors

- For e-boat battery management systems
- Based on open-loop hall-effect or coreless tmr technology.
- Busbar, integrated busbar, flanged or wire mount
- Simple or redundant analog ratiometric output
- Measured values of up to  $\pm 4,000a$



### Gear Tooth Speed Sensors

- Fast and near zero speed sensing capable
- Compact and rugged for marine applications
- Resistant to humidity and high vibrations
- ESD protection
- Custom cable or connector interface

### Temperature Sensors

•Temperature probes •general fluid temperature• oil temperature  
•stainless steel sensor for outboard  
Engine applications •exhaust gas recycle temperature (egr),  
cylinder head (cht) •fuel temperature  
Sensor (fts)• noise immune ring terminal •water detection -  
battery packs •battery temp



### Thermistors

•leadless chip,• glass-sealed radial, •glass-encapsulated chip,  
•epoxy interchangeable



### Pressure sensors

•Precision Pressure measurement in Airflow , •Airspeed , •Altitude and Barometric pressure , and pressurized cabin control



### Pressure sensors

•Surface mount pressure sensors  
Level sensors Fuel tanks, grey water, black water, fresh water



### Level sensors

Fuel tanks, grey water, black water, fresh water.



### Linear Position Sensors

•magnetostrictive non-contact rugged sensors for steering and trim tab control available in multiple mounting styles and signal outputs.



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resources*

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