

Amphenol Sensors

Sensor Innovations

Military Applications

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.

For Military Applications, Amphenol Sensors provides advanced engineering design and product offerings to solve diverse challenges across today's sophisticated military technologies and rugged applications. We provide sensor solutions for military aircraft, ground systems, vehicles, missiles, munitions, soldier-worn systems, unmanned systems, underwater naval applications, and space.



Amphenol Sensors

Military Sensor Solutions

- Temperature
- Pressure
- Gas
- Vibration
- Position
- Level
- Shock & G
- Force
- Acoustics
- Weatherstations®
- Ultrasonic Transducers & Arrays

Soldier-Worn Systems

- Temperature Sensors
- Pressure Sensors
- Gas Detection Sensors
- Weatherstations



Military Aircraft

- Gas Detection Sensors
- Pressure Sensors
- Vibration Sensors
- Ultrasonic Level Sensors
- Position Sensors

Naval

- Vibration Sensors
- Pressure Sensors
- Microphones
- Gas Detection Sensors
- Position Sensors
- Weatherstations
- Synthetic Aperture Sonar Transducers (SAS)
- Acoustic Communications Transducers (ACOMMs)
- Forward Lookers and SideScans Transducers



Ground Vehicles

- Pressure Sensors
- Gas Detection Sensors
- Position Sensors
- Shock Sensors
- Ultrasonic Level & Concentration Sensors
- Vibration Sensors
- Weatherstations

Missiles • Munitions • Torpedoes

- Temperature Sensors
- Pressure Sensors
- Shock and Vibration Sensors
- Vibration Sensors
- Position Sensors



Space

- Temperature Sensors
- Pressure Sensors
- Force Sensors
- Microphones
- Shock Sensors
- Vibration Sensors
- Gas Detection Sensors
- Position Sensors

NAVAL

Vibration Sensors

Application: underwater acoustics, ordnance monitoring

- Ultra low-noise internal amplifier
- Encapsulated in polyurethane



Application: underwater vibration monitoring

- High pressure rating • High sensitivity
- Wide frequency range
- Ground isolated to eliminate ground loops

Applications: towed arrays, sonobuoys, deep ocean

- Incorporates low-noise preamplifier with calibration circuit
- Electrostatically shielded and molded in polyurethane

Applications: underwater unmanned vehicles (UUV), towed arrays, ACOMM

- 4-channel combination: orthogonal axis accelerometers and omnidirectional hydro phone
- Improved signal-to-noise ratio

Pressure Sensors

Application: measurement of dynamic pressure due to turbulent water flow or cavitation

- Integral waterproof cable hydro-tested during production
- Acceleration compensated
- Ground isolated integral waterproof cable hydro-tested during production
- Acceleration compensated • Ground isolated



Position Sensors

Applications: rudder control, launch tube control, anchor control, periscope control

- Rugged design • Reliable position feedback

Gas Detection Sensors

Application: fuel leakage

- 0 to 100% LEL
- Approved EX-d • Mechanical robust

Application: detection of toxic gases

- Detectable gases: VOCs, CO₂, CO, NO₂, NH₃
- Custom & robust packaging options

Custom Transducers and Arrays

Application: Mine Detection, Harbor Security, Acoustic Communications

- Proven Defense contract history
- Custom designed transducers to fit any application
- High bandwidth complex arrays



WeatherStations®

Application: Mobile and stationary platforms (custom colors available)

- Hyper-local weather
- True wind speed and direction
- GPS, heading, air temp, barometric pressure and relative humidity
- Rugged, compact, maintenance-free weather sensors (IPX7)



GROUND VEHICLES

Pressure Sensors

Applications: engine fuel and air filter, transmission fluid, air blast measurement, blast pressure measurement, unmanned ground vehicles/drones

- High accuracy
- Harsh media compatibility



Gas Detection Sensors

Application: fuel leakage

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Application: detection of toxic gases

- Detectable gases: VOCs, CO₂, CO, NO₂, NH₃
- Custom & robust packaging options

Ultrasonic Level & Concentration Sensors

Applications: fuel, coolant, hydraulic fluid, DEF SCR systems

- Continuous monitoring • High accuracy
- Robust, non-contact sensing

Applications: wheel speed, engine speed and position

- Variable reluctance, active hall effect or magneto resistive sensors
- Zero speed, large air gap capability



GROUND VEHICLES (cont.)

Position Sensors

Application: multi-turn steering wheel angle

- Patented through-hole solution
- Long life for harsh environments



Vibration Sensors

Application: Health and Usage Monitoring Systems (HUMS)

- Rugged • Reliable • Durable
- Condition-based maintenance of vibrating / rotating parts
- Vehicle dynamics
- NVH
- Shock measurement due to blast



Position Sensors

Applications: door control, armoured hatch control, suspension control, protective shield control, outrigger control, steering control

- Rugged design • Reliable position feedback



WeatherStations®

Application: Mobile and stationary platforms (custom colors available)

- Hyper-local weather
- True wind speed and direction
- GPS, heading, air temp, barometric pressure and relative humidity
- Rugged, compact, maintenance-free weather sensors (IPX7)



MILITARY AIRCRAFT

Gas Detection Sensors

Application: fuel leakage

- 0 to 100% LEL
- Approved EX-d
- Mechanical robust



Application: detection of toxic gases

- Detectable gases: VOCs, CO₂, CO, NO₂, NH₃
- Custom & robust packaging options

Ultra Low Pressure Sensors

Applications: test/simulation, unmanned aerial vehicles (UAV)

- Dual Wind Speed and Altitude Measurement
- High Stability and Repeatability • Compact Package



Application: general military grade and barometric pressure

- Calibrated -40C to +125C • High stability and repeatability
- Digital and amplified outputs



Vibration Sensors

Application: Health and Usage Monitoring Systems (HUMS)

- Rugged • Reliable • Durable
- Condition-based maintenance of vibrating / rotating parts



Ultrasonic Level Sensors

Applications: fuel, coolant, hydraulic fluid, DEF SCR systems

- Continuous monitoring • High accuracy
- Robust, non-contact sensing



Applications: helicopter landing gear and fuel systems

- Absolute, gauge and sealed gauge
- From 3 psi to 7500 psi • High accuracy

VC Flight Test Accelerometers

Applications: flutter testing, vibration and g loading during maneuvers

- From 2 g's to 200 g's



6DoF Accelerometers and Rate Measurement

Applications: aircraft, helicopter, and missile flight testing

- Acceleration from 2 g's to 500 g's
- Angular rage from 100 to 18,000 degrees per second



Position Sensors

Application: automated positioning

- Rugged design • Reliable position feedback



MISSILES • MUNITIONS • TORPEDOES

Temperature Sensors

Applications: torpedo guidance and tracking

- High accuracy • Proven reliability
- Various temperature and resistance values



Pressure Sensors

Applications: torpedoes, Air blast measurement, Underwater blast pressure measurement

- Calibrated -55C to +200C
- Robust and rugged
- Long-term stability



Gas Detection Sensors

Application: fuel leakage

- 0 to 100% LEL • Approved EX-d
- Mechanically robust



Shock and Vibration Sensors

Applications: fuzing and alarming

- Accelerometers
- Rugged • Reliable • Durable



Position Sensors

Application: accurate positioning

- Rugged design, reliable position feedback



SPACE

Temperature Sensors

Application: atomic clock

- Long-term stability • Proven reliability
- All definitions and test methods per MIL-PRF-23648



Pressure Sensors

Application: satellite propulsion

- Robust and rugged • Long-term stability
- High repeatability • High accuracy



Vibration Sensors

Application: vibration and shock testing of spacecraft before launch and during flight

- Hermetic and low outgassing accelerometers
- Force limited vibration testing sensors
- Shock accelerometers for explosive bolts and stage separation



High Temperature Accelerometers

Application: rocket motor testing

- Continuous vibration measurement up to 760C



Cryogenic Accelerometers

Application: cryogenic fuel system testing

- Vibration measurement capability down to -269C



Pressure Sensors

Application: combustion instability measurement

- Dynamic pressure measurement capability down to -240C for cryogenic fuel system testing
- Dynamic pressure measurement capability up to 760C for combustion instability measurement



Microphones

Application: acoustic stress testing of spacecraft before launch

- From 16 dB to 174 dB



Position Sensors

Application: unfolding control

- Rugged design, reliable position feedback



Gas Detection Sensors

Application: fuel leakage

- 0 to 100% LEL
- Approved EX-d
- Mechanical robust



Application: detection of toxic gases

- Detectable gases: VOCs, CO₂, CO, NO₂, NH₃
- Custom & robust packaging options

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SOLDIER-WORN SYSTEMS

Temperature Sensors

Applications: various

- High accuracy
- Proven reliability
- Various temperature and resistance values



Pressure Sensors

Application: blast gauge

- High stability
- Miniature size
- Low power requirements
- Board-mounted



Gas Detection Sensors

Application: detection of toxic gases

- Detectable gases: VOCs, CO, NO₂, NH₃
- Custom & robust packaging options



WeatherStations®

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Sensors**

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