


# Aircraft Sensors and Systems

## Overview

AMETEK produces a broad range of systems and components which measure every type of aircraft fluid: fuel, engine oil, hydraulic fluid, potable water, lavatory waste, and oxygen.

## Systems

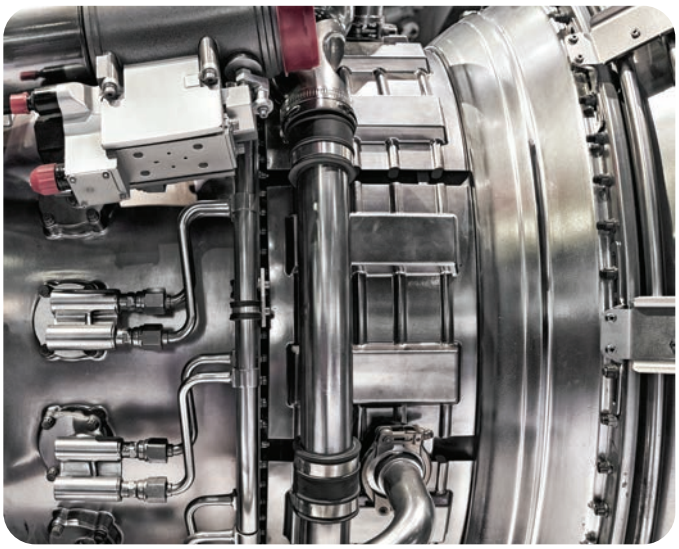
AMETEK supplies complete systems for sensing and control of fluid quantity, level, temperature, and pressure. Our systems include sensors, digital signal conditioners, selective loading control units, fuel management units, transient suppressors, displays and wire harnesses. We assume complete system responsibility including system optimization, safety assessment, tank studies, and integration support. In-house FAA DERs and DMIRs facilitate certification.

## Intrinsic Safety

AMETEK sensors and systems can help meet today's upgraded expectations for fuel system safety. AMETEK sensors operate at intrinsically safe levels of voltage, current and stored energy, facilitating compliance with FAA SFAR 88 and AC25.981-1C. Our transient suppressor units protect in-tank wiring and components such as fuel probes, densitometers and level switches.

## Fluid Quantity Probes

AMETEK offers several probe technologies, allowing us to select the one best suited for a given application. AMETEK developed active probes to eliminate the calibration and maintenance problems of traditional gauging systems. Active probes are capacitance level sensors with built-in signal conditioning electronics. An insulated version is ideally suited for conductive fluids such as phosphate-ester hydraulic fluid and potable water. For high temperature applications, a resistance probe using a float and magnetic reed switches is preferred. Both probe types have these advantages:



- Robust signals are not affected by stray capacitance or poor insulation
- Outer shell is grounded, so the probe is self- shielding against EMI and not affected by nearby metallic structure
- Shielded cable is usually not required
- Intrinsically safe – current, energy, and voltage are limited
- MTBF >100,000 to >300,000 hours
- LRUs are interchangeable without calibration
- Probe design facilitates BIT for fault detection and isolation

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## Applications

- **Fuel:** Quantity sensors, level switches, densitometers, pressure and temperature sensors, signal conditioners, refuel panels, wire harnesses, flowmeters, transient suppressor units, fuel management units
- **Engine Oil:** Quantity sensors, level switches, reservoirs
- **Hydraulic Fluid:** Quantity sensors, signal conditioners, reservoirs, pressure and temperature sensors
- **Potable Water:** Quantity sensors, signal conditioners, service panels
- **Lavatory Waste:** Level switches, quantity sensors
- **Oxygen:** Quantity sensors, signal conditioners

## Level Switches

AMETEK float switches are typically used for low and high fuel level detection. Many aircraft waste systems employ our unique electronic sensor which can distinguish between a true fluid level and a conductive coating on the sensor face.

## Value-Added Assemblies

AMETEK Aerospace can integrate several functions into a single sensor combine sensors and other components into complete reservoir assemblies.

SFMS
SENSORS AND FLUID MANAGEMENT SYSTEMS

AMETEK®

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