

# Inventechs Technology Highlights Aerospace Parts Distribution Supporting Aircraft Maintenance Safety

Industry insights show how precision sensors and certified aerospace parts distribution support aircraft reliability and maintenance operations.



## LVDT Sensors

*Precision Linear Position & Force Measurement*

### ➤ Single-Channel LVDT Sensors

Measures linear displacement via a movable core in a coil, outputting an electrical signal proportional to position.

### ➤ Multi-Channel LVDT Sensors

Redundant coil channels in one housing for fly-by-wire aircraft, ensuring reliability with independent armatures.

### ➤ LVDT Force Sensor

Converts compression/tension into voltage via precision springs and LVDTs, ideal for aviation load measurement.

### ➤ DC/DC LVDT Custom Sensors

Sensata's rugged, application-specific LVDTs with remote signal conditioning for harsh environments.



The global aviation industry continues to expand, leading to greater demand for reliable aircraft maintenance infrastructure and certified aerospace components. Airlines and maintenance organizations rely heavily on trusted distribution networks that ensure aircraft parts remain available for routine servicing, system upgrades, and critical repairs.

Aircraft operate in highly demanding environments where components must perform consistently under vibration, temperature fluctuations, hydraulic pressure, and continuous mechanical motion. Because of these conditions, aviation engineers depend on accurate monitoring technologies and certified components that support safe aircraft operation over long service cycles.

One of the key technologies supporting aircraft system monitoring is the [LVDT sensor](#), also known as a Linear Variable Differential Transformer sensor. LVDT sensors are widely used across aerospace engineering to measure linear displacement in mechanical systems that require high accuracy.

In aircraft applications, LVDT sensors are commonly integrated into landing gear systems, hydraulic actuators, and flight control assemblies. These sensors monitor the movement of mechanical components and provide precise position data to onboard control systems. Because LVDT sensors operate using electromagnetic principles and do not rely on internal mechanical contact, they can function reliably even in high vibration environments common in aviation systems.

In addition to linear motion sensing, aircraft also require monitoring technologies capable of measuring rotational movement. Rotary Variable Differential Transformer sensors, often referred to as RVDT sensors, perform this function by measuring angular displacement within rotating mechanical components.

These sensors are commonly integrated into aircraft steering assemblies, control surfaces, and landing gear steering mechanisms where accurate rotational position monitoring is required. Together, LVDT and RVDT sensors provide critical motion feedback that helps aircraft control systems maintain stability during taxiing, landing, and other operational procedures.

Reliable distribution networks are equally important in supporting the aviation sector. Airlines, aircraft manufacturers, and maintenance repair organizations depend on aerospace distributors that supply certified aircraft components and support ongoing maintenance programs.

Companies that operate as [aircraft landing gear aerospace parts](#) help ensure that critical aircraft systems remain operational by providing timely access to essential components.

Aircraft landing gear assemblies represent one of the most structurally demanding systems within an aircraft. During landing, these systems must absorb significant mechanical loads while maintaining precise movement and alignment. Access to reliable landing gear components and monitoring technologies helps maintenance teams maintain aircraft safety and structural performance.

Industry specialists also point to the growing adoption of predictive maintenance strategies within aviation. Modern aircraft increasingly rely on sensor data to monitor component performance in real time. By analyzing data collected from displacement sensors, pressure sensors, and other monitoring devices, maintenance teams can detect early signs of mechanical wear before they lead to system failures.

Predictive maintenance helps airlines reduce unexpected aircraft downtime, improve fleet efficiency, and maintain high aviation safety standards.

As aviation technology continues to evolve, experts expect precision sensor technologies and reliable aerospace parts distribution networks to remain essential for supporting modern aircraft systems. These technologies allow aviation operators to maintain reliable performance while adapting to the growing demands of global air transportation.

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