

The Premier Choice

- Comprehensive, low risk solutions
- Over 75 years of proven aerospace systems experience
- Single-source solution for design, development, testing, and production
- Industry leadership in systems integration



Complete Solutions for Unmanned Aircraft



Comprehensive Solutions for Unmanned Aircraft Systems

Today's demanding defense environment requires operational readiness in GPS denied, environmentally extreme and more covert theaters. Environments requiring proven-technology solutions from an innovative supplier. As a world leader in Aerospace systems, Honeywell presents an unrivaled range of flight-proven propulsion, guidance, navigation, and control technologies for Unmanned Aircraft Systems.

Propulsion

Honeywell Aerospace is a leading provider of propulsion to the military and commercial aerospace industry. Our technology leadership for unmanned aircraft systems has allowed us to deliver trendsetting propulsion solutions.

TPE 331-10 Engine

Powers the General Atomics Predator pushing the UAV to an airspeed of over 260 knots and altitudes of 50,000 feet.

F124 Engine

Powers the Boeing X-45A Unmanned Combat Air Vehicle.

Small Heavy Fuel Engine (SHFE)

Honeywell's SHFE delivers 700 SHP while weighing only 160 lb, a power to weight ratio of greater than 4.4. The SHFE could power new generation vertical takeoff and turboprop-powered UAS.

Guidance and Navigation

Honeywell's guidance and navigation solutions are flight-proven to deliver highly reliable and accurate performance.

Air Data

- Our precision, high performance air data solutions use flight-proven solid-state silicon pressure sensor technology to achieve exceptional long-term stability (+/- 0.015% full scale over 20 years) and reliability in a small (<42 cubic inches), lightweight (<1.8 lbs.) package.

Radar Altimeter

- Honeywell's altimeter family includes all-weather, high performance and low detectability systems (receiver/transmitter and antennas) in state-of-the-art single card implementations. Current UAS applications include Hunter, Eagle Eye and Firescout.

Anti-Jam Solutions

- Our Interference Suppression Technology experience provides us with an unmatched ability to provide appliqué or integrated Anti-Jam (AJ) solutions to our customers.
- Multiple Antenna options available
- Small "SWAP" (size, weight, and Power) AJ appliqué available for small to moderate value platforms.
- As a service to our partners, Honeywell provides a turn-key NAVWAR analysis and product recommendation program whereby engineers conduct navigation performance and sensitivity analysis of platforms under jamming/interference conditions. We can then perform identification of Jamming/Signal requirements and recommendation of GPS Navigation solution(s) within trade space.

INS/GPS Integrated Guidance, Navigation and Control

- Honeywell INS products for UAS provide users with precise and independent inertial position information for navigation, targeting and attitude reference.
- Our Adaptive Configurable Embedded INS/GPS (H-764 ACE) products are featured on platforms such as the General Atomics Predator B Reaper and Warrior UAS.

Inertial Measurement Units (IMU)

- We offer an unmatched range of both ring laser gyro (RLG) and micro electro-mechanical sensor (MEMS) based Inertial Measurement Units (IMU) for integration into Inertial Navigation Systems such as used in the Shadow Tactical UAS.
- Our latest generation of MEMS IMUs offer significantly smaller volume, lower power consumption and the ability to operate after gun shock and extended storage. Our IMU's are featured on platforms such as the Honeywell Micro Air Vehicle (MAV).

Deeply Integrated INS/GPS Anti-Jam

- Honeywell offers the IGS 200, an INS/GPS system that weighs less than 1 pound. This is the first gun-hard deeply integrated INS/GPS guidance and navigation unit.

Precision Sensors

- Honeywell has provided sensing solutions for over 50 years, continuously delivering products with the lowest cost of ownership. As a leading manufacturer of sensors worldwide, we offer a variety of sensors for guided weapon applications including inertial sensors such as Gyros and Accelerometers, and roll rate sensors for missiles. Honeywell's magnetic sensors offer inertial navigation for heading and direction and precision pressure transducers provide accuracy and stability in air data measurements.

Actuation Systems

- Our Electro-Mechanical Actuation Systems achieve high frequency responses and rates providing the responsiveness and performance unmanned systems require.

Lighting

Honeywell's Aircraft Lighting Products offer the best solution for high reliability designs that exceed both customer and regulatory requirements. By employing the use of solid state technology, we provide leading-edge solutions that are specifically engineered to meet the toughest design challenges for the most extreme operating environments.

- Solutions can include:
 - Navigation, anti-collision, formation, remote operation, refueling, etc. in both single (visible) and dual-mode (IR/Covert) packages.
- Products are be designed to be retractable or to fit within the existing airfoil to avoid altering the air stream and increasing drag.
- We ensure product designs maximize the benefits of reliability, maintainability, aircraft integration, specification/certification compliance, and cost.

Wheels and Brakes

Honeywell has successfully designed, developed, tested and installed an electric braking system on an unmanned aircraft platform. This effort resulted in a cost effective and technically superior product which provided:

- Component level fault detection
- Improved dispatch reliability
- Elimination of hydraulic fluid and associated fire/environmental issues
- On-wing software reprogramming

Communications and Navigation

As unmanned vehicles are integrated into the civil airspace, the need for communication, navigation and aircraft health monitoring will become a necessity. Honeywell provides commercial and military TCAS, ADS-B, Communications Management and Aircraft Monitoring and Recording products adaptable to remotely or automatically flown aircraft.

Environmental Control System (ECS)

Honeywell supplies off-the-shelf components and highly customized environmental control system products to multiple UAV platforms including Predator, Global Hawk and X47.

- ECS Equipment includes:
 - Air cycle cooling complete systems
 - Air to air and air to fluid heat exchangers
 - Cold plates
 - Fans
 - Liquid loop pumps and reservoirs
 - Compartment pressurization systems
 - Cryogenic coolers

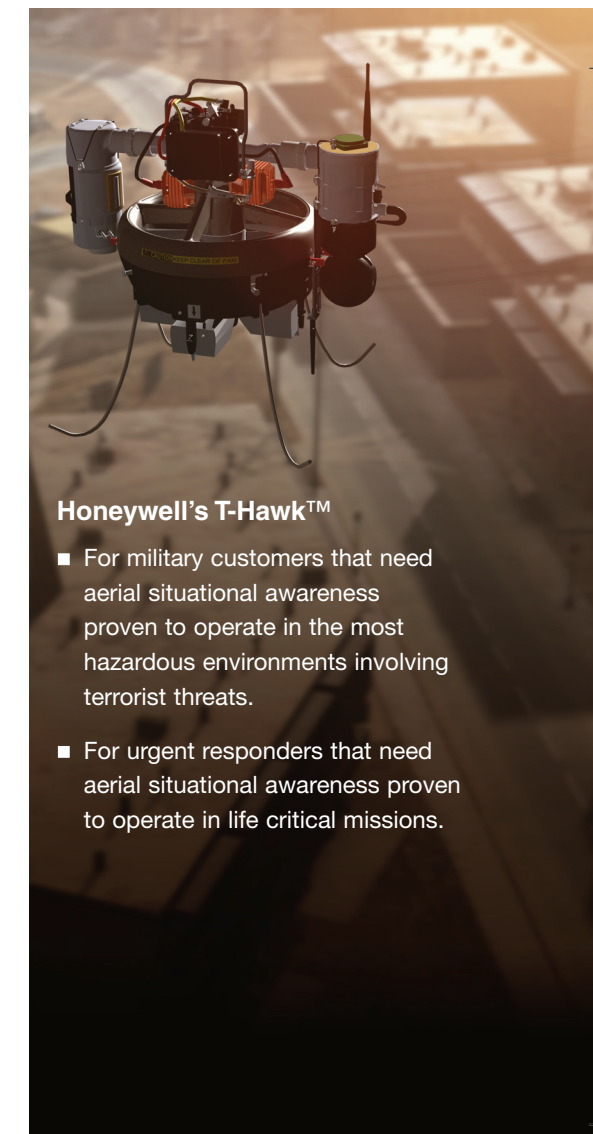
Vehicle Management Systems

Honeywell's Vehicle Management Systems for fixed wing and rotary wing aircraft include:

- Flight Controls
- Flight Directors
- Autopilots
- Stability Augmentation Systems
- These systems can be integrated as part of another host processing platform (as done on the Honeywell Micro Air Vehicle) or provided as dedicated units.

Zing® HUMS, Test and Ware: Vibration Monitoring, Trending and Analysis

- Easily installed on-board systems.
- Monitors, records, and reports aircraft component and operational parameters. These data identify excessive vibration and the early stages of component degradation.
- Advises the appropriate maintenance actions based on evidence-of-need.
- Honeywell's Vibration Monitoring System II function is used on the Northrop Grumman Firescout VTUAV



Honeywell's T-Hawk™

- For military customers that need aerial situational awareness proven to operate in the most hazardous environments involving terrorist threats.
- For urgent responders that need aerial situational awareness proven to operate in life critical missions.