

# ENGINEERING THE FUTURE OF FLIGHT TODAY



**Honeywell**





# HONEYWELL IS BUILT ON ENGINEERING

We can tailor  
**CUSTOM SOLUTIONS**



**IN-DEPTH AEROSPACE EXPERIENCE** allows us to work with customers in the design and development of products to meet specified requirements



We offer **COMPONENT DESIGN EXPERTISE** and products for the most complex systems



Honeywell can deliver **ELECTRICAL & MECHANICAL DESIGNS QUICKLY**, for build-to-print, new, re-design and testing purposes



With multiple technology offerings, **HONEYWELL IS AN INNOVATION PARTNER** and can be a design partner



As a **VERTICALLY INTEGRATED PARTNER** and AS9100D approved manufacturer, Honeywell has strategic engineering and manufacturing centers world wide



We maintain relevant approvals: **ISO, AS, QS, FAA, JAA** and more along with certifications **MIL-STD-810, DO-160, MIL-PRF-8805**

# AAM SOLUTIONS



## MOTORS

- Linear and rotary position sensors
- Pressure sensors and switches
- Speed sensors
- Thermostats

## GUIDANCE & NAVIGATION

- Board-mount pressure sensors
- Sealed switches
- Proximity switches
- Sector potentiometers

## AEROSTRUCTURES

- Linear and rotary position sensors
- Position sensor assemblies
- Proximity sensors
- Sealed switches

## ELECTRIFICATION

- Battery safety aerosol sensors
- Battery safety pressure sensors
- Current sensors
- Thermal sensors

## DOORS

- Position sensor assemblies
- Proximity sensors
- Sealed switches

## MOUNTS AND LATCHES

- Sealed switches
- Proximity switches

## FLIGHT CONTROLS SURFACE

- Linear and rotary position sensors
- Sector potentiometers
- Proximity sensors
- Sealed switches

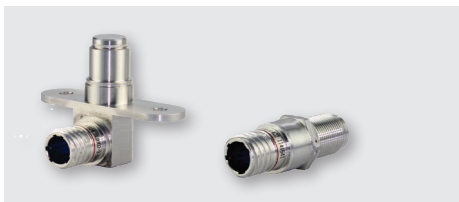
## LANDING GEAR, WHEELS AND BRAKES

- Linear and rotary position sensors
- Position sensor assemblies
- Proximity sensors
- Sealed switches





## PROXIMITY SENSORS



### HAPS & GAPS Series

**General Aerospace Proximity Sensors (GAPS)** and **Harsh Aerospace Proximity Sensors (HAPS)**, incorporate Honeywell's patented Internal Health Monitoring functionality. Configurable, non-contact, hermetically sealed devices designed to sense the presence or absence of a target in aircraft applications.

#### Key Specifications

- Industry-leading indirect lightning and dielectric ruggedness
- Environmentally rugged: Fully hermetic packages
- Internal Health Monitoring Capability: Optional third output state to indicate the health of the sensor (whether it is healthy or failed)

#### Applications

- GAPS: landing gear, hydraulics, doors, primary surface, rear stabilizer, gen actuator, ground vehicles, airframe, rotary actuator, evacuation slides, cargo storage, turbine speed
- HAPS: TRAS, valves, engine, actuators, nacelles, canopies



### FW Series

Designed to meet demanding temperature, vibration, shock, and EMI/EMP interference specifications.

#### Key Specifications

- One- and two-piece sensors
- ECKO and Hall-effect technologies
- Shielded and un-shielded sensing face options
- Approvals: FM Class 1, Division 2, Groups A, B, C, D or MIL-STD-810B

## BOARD-MOUNT PRESSURE SENSORS



### TruStability™ Series

Provides higher performance, accuracy, reliability and value. Wide choice of ports, package types, outputs and pressure ranges.

#### Key Specifications

- Extensive portfolio (>100K configs)
- Amplified: RSC, HSC, SCC & DPR
- Unamplified: TSC & NSC
- Analogue & digital (I<sup>2</sup>C/SPI)

## AEROSPACE LINEAR VARIABLE DIFFERENTIAL TRANSFORMER



### LVDTs

Provides extensive resolution linear position solutions designed for use in harsh environments. An ideal product to be used on next-generation aircraft that require expedited design cycle time from an experienced, stable supplier with an extensive aerospace product install base.

#### Key Specifications

- Certified (DO-160), configurable platform approach
- Single-channel, dual-channel and dual-tandem offerings
- Rig point position eliminates need to shim during installation
- Enhanced reliability: Improved mean time between failure (MTBF)



## CURRENT SENSORS



### CSNV700 Series

Advanced flux gate current sensors that use Honeywell's patented technology. Non-intrusive and electrically isolated from the monitored circuit.

#### Key Specifications

- Designed to enable precise battery state measurement for improved user experience
- CAN communication is transmitted using international road vehicle standard ISO 11898



### CSHV Series

Active open loop current sensors using Hall-effect sensing and patented Honeywell technology. Rated for a primary current range of  $\pm 100$  A to  $\pm 1500$  A dc.

#### Key Specifications

- Non-intrusive and electrically isolated from the monitored circuit
- AEC-Q100 qualified to meet higher quality and reliability
- Optimized magnetic circuit allows for excellent performance in diverse magnetic environments

## BATTERY SAFETY AEROSOL SENSORS



### BAS Series

Automotive-grade aerosol sensors that use the principle of light scattering to detect and report thermal runaway events in lithium-ion battery packs. Detects the presence and concentration of aerosols such as smoke, liquid and debris that are early indicators of a thermal runaway event in an enclosed lithium-ion battery pack.

#### Key Specifications

- Aerosol threshold value of  $5000 \mu\text{g}/\text{m}^3$  allows early detection of thermal runaway events
- May be customized to best meet application needs
- Two operating modes: ECO and continuous

## BATTERY SAFETY PRESSURE SENSORS



### BPS Series

Automotive-grade pressure sensors designed to detect and report thermal runaway events in lithium-ion battery packs. Uses a combination of MEMS (Micro-Electromechanical System) and ASIC (Application-Specific Integrated Circuit) technologies to detect pressure changes in the battery packs of electric vehicles & energy storage systems (ESS).

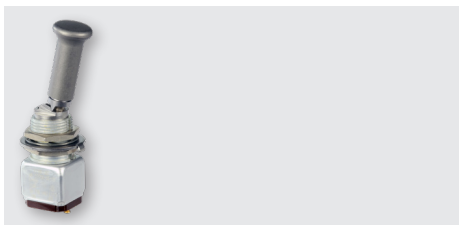
#### Key Specifications

- Measures from 50 kPa to 300 kPa absolute pressure
- May be customized to best meet application needs
- Two operating modes: ECO and continuous
- Incorporates integrated circuits that are AEC-Q100 qualified to meet higher qualify and reliability requirements





## MICRO SWITCH SEALED TOGGLE SWITCHES

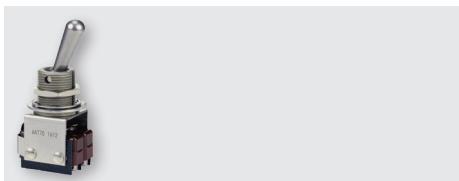


### TW Series

Military qualified to MIL-83731 specifications for sealed and unsealed toggle switches.

#### Key Specifications

- 1- & 2- pole options; 2- & 3-position, maintained & momentary action
- Wide temperature range: -65 °C to 71 °C [-85 °F to 160 °F]
- 1/4 in and 15/32 in bushing diameters
- Terminations: screw, solder and IWTS
- (Integrated Wire Termination System)



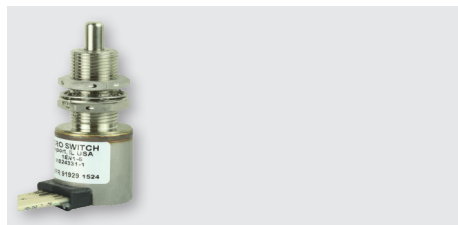
### AT Series

Provides a compact multi-pole toggle switch. Available as a 1-, 2-, 3-, 4-, 6-, 8-, or 10-pole design with a metal toggle lever, metal bushing, and metal housing.

#### Key Specifications

- Available as MIL-PRF-8805
- 2- or 3-position, momentary and maintained action
- Choice of 1/4- or 15/32-inch bushings; silver or gold contacts

## MICRO SWITCH SEALED SWITCHES

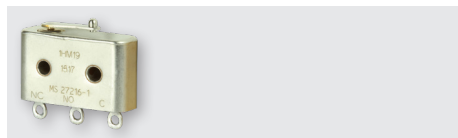


### EN Series

Bushing mount designed, manufactured, and qualified to MIL-PRF-8805 standards. Deliver consistent and reliable operation in harsh environments on critical applications.

#### Key Specifications

- Highly configurable
- Circuitry options from 1PST to 6PDT
- Rugged stainless steel housing
- All-metal drive train

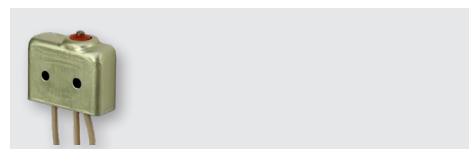


### HM Series

Hermetically sealed. Ideal where a symbol 5 seal is required for stringent applications including a wide range of temperatures from -184 °C to 260 °C [-300 °F to 500 °F].

#### Key Specifications

- Sealed: MIL-PRF-8805, symbol 5 hermetic
- Stainless steel
- Solder, lead wire termination
- Silver, gold, bifurcated gold contacts



### SE/XE Series

SE Series is designed for demanding applications where water and/or particulate contaminant is present along with the potential for a wide range of temperatures. Miniature XE Series is similar to the SE Series except smaller in package size.

#### Key Specifications

- Sealed: MIL-PRF-8805, symbol 3
- Operating temperature range: -53 °C to 105 °C [-65 °F to 221 °F]
- Solder, lead wire termination
- Silver, gold, bifurcated gold contacts

## POSITION SENSOR ASSEMBLIES



### Custom Assemblies

Honeywell position sensor assemblies fly on a multitude of commercial and military aircraft, and have become the standard when high integrity and reliability are critical. Always custom-configured by Honeywell in cooperation with customers to help optimize system function, these transmitters are designed for high-lift system applications including flap and slat instrumentation, along with rudder and stabilizer monitoring.

## Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is customer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

## FOR MORE INFORMATION

Honeywell Sensing and Safety Technologies services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, visit [sps.honeywell.com/ast](https://sps.honeywell.com/ast) or call:

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