



Sensata
Technologies

AEROSPACE PRODUCTS OVERVIEW



ABOUT SENSATA TECHNOLOGIES

Sensata Technologies is a global industrial technology company striving to create a cleaner, more efficient, electrified and connected world. Through our broad portfolio of sensors, electrical protection components and sensor-rich solutions which create valuable business insights, we help our customers address increasingly complex engineering and operating performance requirements.

For more than 100 years, Sensata has provided a wide range of customized, sensor-rich solutions, including controllers and software, that help customers solve difficult challenges in the automotive, aircraft, industrial, heavy vehicle, off-road, HVAC and marine industries. With more than 21,000 employees and operations in 13 countries, Sensata's solutions improve safety, efficiency, and comfort for millions of people every day.

OUR AEROSPACE PRODUCT SOLUTIONS

Get the best solution to your mission-critical sensing challenges in aerospace applications with Sensata's energy storage systems, pilot controls, high voltage management, electrical protection, pressure, position, and temperature product portfolio.

The synergy of leading brands and years of proven expertise in extremely demanding markets allow us to provide you with the highest level of quality, service, technical expertise and worldwide support to improve safety, efficiency and comfort in your flight control, landing gear, power distribution, engine monitoring, environmental control applications, and your most daunting electrification challenges you are facing.

PRODUCT LINES

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ADVANCED AIR MOBILITY & ELECTRIFICATION ECOSYSTEMS

Sensata is uniquely positioned to offer a range of solutions for battery electric and hydrogen fuel cell aircraft powering the advanced air mobility revolution.

OUR BRANDS

Dynapower*
Gigavac
Lithium balance
Sendyne
Spear

APPLICATIONS

- Energy storage systems
- Pilot controls
- High voltage management
- Charging Infrastructure
- Battery management system
- Pressure



*acquisition pending approval

PRESSURE SENSORS

Sensata sells more pressure sensors than any other company worldwide. Decades of experience mean that Sensata can develop and manufacture application-specific products in-house, reducing costs to the customer and ensuring strict adherence to quality and qualification standards. Sensata is pushing the limits for next generation aerospace pressure sensors which will incorporate wireless connectivity, complex electronics and edge computing, as well as higher temperature capability for harsh environment sensing applications.

APPLICATIONS

- Hydraulic Flight Control
- Engine Control
- Cabin Air and Climate Control
- Bleed Air
- Tire Pressure Monitoring
- Landing and Brake Systems
- Waste water and Galley Systems
- Space and Satellite
- And more...

AGILE MODULAR PRESSURE SENSOR

FEATURES

- Fully hermetic, welded design for environmental protection, high reliability
- Qualification to RTCA DO 160, MIL STD 810
- EMC, EMI, Lightning protected
- Single, multi channel options

ADVANTAGES

Quick to market

- Commonality will allow for short development time for each new iteration

Superior Value Pricing

- Lower total cost of ownership

Short Lead Times

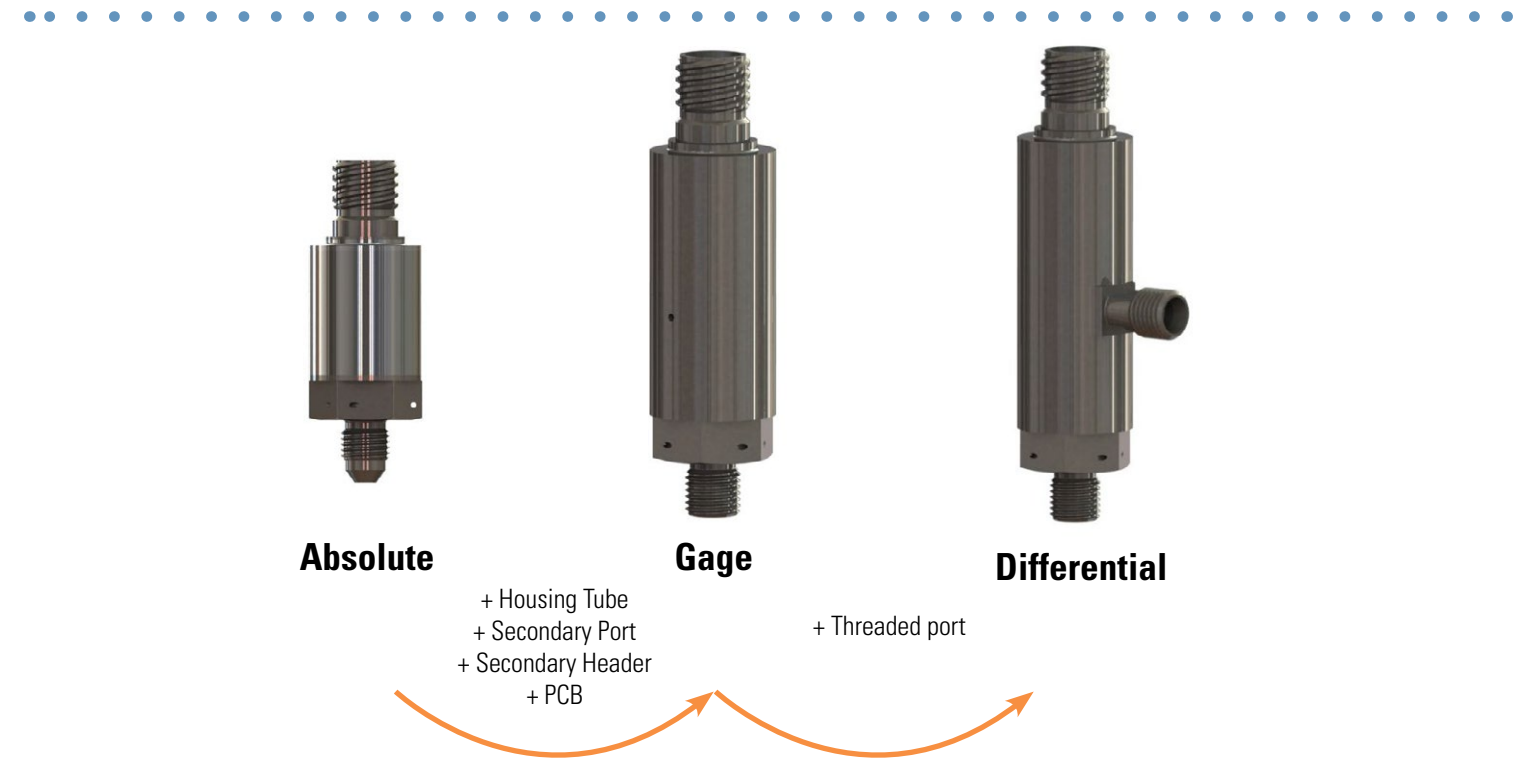
- Core components in stock and continuous line of manufacturing allow for quick delivery

Quality

- Leverages learnings from high volume automotive production lines and zero defect methodologies
- Dedicated technicians and QA staff

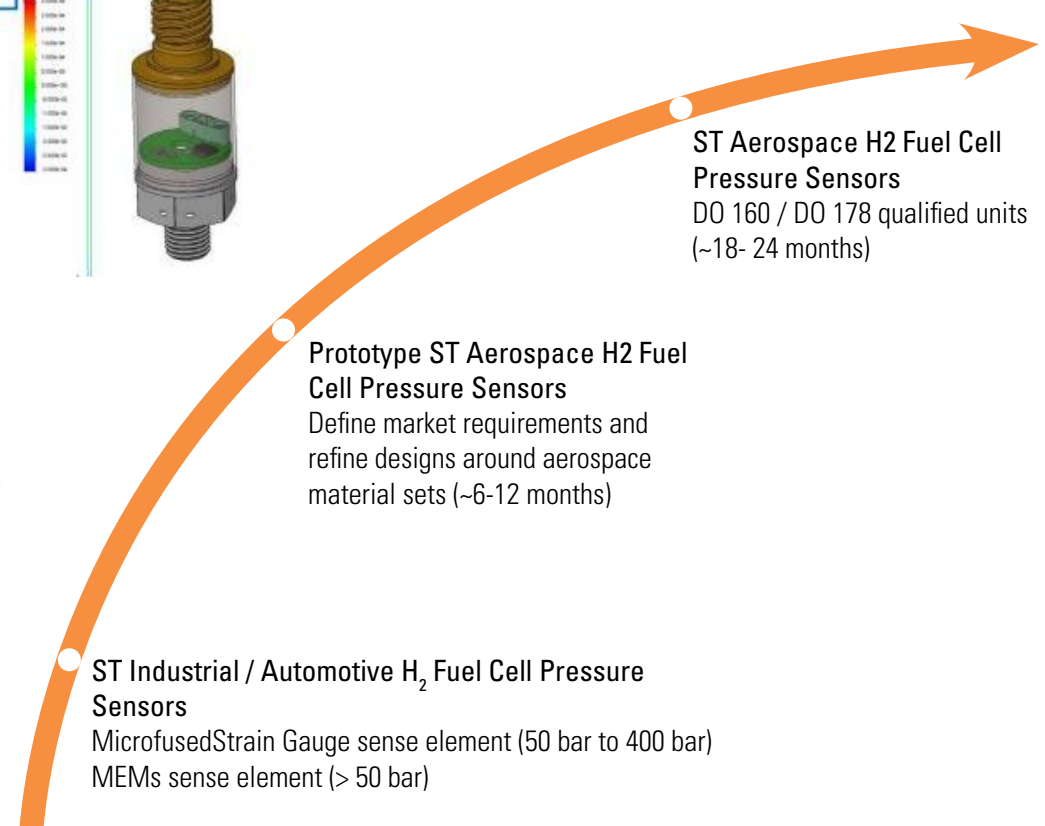
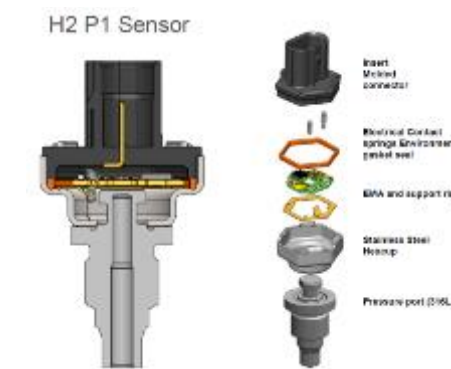
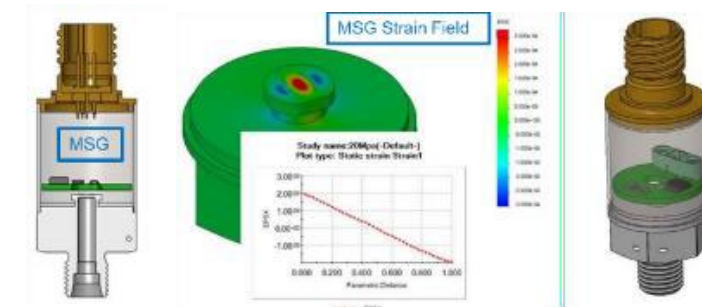
Three electronics packages:

Unamplified	10mV/V
Amplified Voltage	0.5V, 0.10V
Amplified Current	4.20mA



HYDROGEN PRESSURE SENSORS

Sensata continues to expand our position as a world leader in pressure sensors by launching solutions for Hydrogen Fuel Cell drivetrains



For more information on these and other products visit sensata.com

POSITION SENSORS

The Kavlico brand is the Global leader in the Aerospace LVDT market through excellence in technology innovation, service, and product reliability. Kavlico brand RVDTs specialize in harsh environment rotary position sensing and have been qualified for many high vibration pressurized applications.

OUR BRANDS

BEI Kimco

BEI Sensors

Kavlico

APPLICATIONS

- Flight Control Actuators
- Engine Valve Controls
- Landing Gear Feedback
- Cockpit Controls
- Environmental Controls

For more information on these and other products visit sensata.com

linear variable differential transformers



Over 1 million LVDTs are installed in aircraft worldwide. Sensata LVDTs have market leading MTBF. The design is inherently more reliable because of the design principle: non-contacting mutual induction which provides friction-free motion and nearly infinite resolution.

Sensata designs and manufactures single and multi-channel devices as well as DC/DC and industrial LVDTs.

rotary variable differential transformers



An industry standard for light weight, robust position measurement in aviation applications. Typically capable of +/- 80 degrees of rotation, designs with integral gear heads are also available for applications where higher angular displacements or multiple revolutions are required.

RVDTs are also available in single and multi-channel as well as DC/DC configurations.

Typical Product Specifications	LVDTs	RVDTs
Range	0.010 to 20.0"	+/- 80 degrees
Linearity	+/- 0.25% F.S.	
Accuracy	+/- 1.0% F.S. (-65 to 450F)	+/- 1.0% F.S. (-65 to 250F)
MTBF	700,000 hours	500,000 hours
Temperature	-65 to 450F*	-65 to 350F
Redundancy	1 to 4 channels	
Environmental	MIL-STD-810 or DO-160	
Gear Ratios		Up to 4000:1

*NEW high temperature LVDT development for 600 to 1000 degrees F

force transducers



LVDT-based force transducers provide force feedback through a precise measurement of spring deflection. The Sensata design provides the highest accuracy and greatest stability with temperature over time of any force sensor in aerospace application, and the rugged design makes them ideal for the most extreme environments.

NEW development of strain gauge force sensors also being tested for new applications to provide haptic feedback and other force sensing application using innovative MEMs technology from Sensata.

Typical Product Specifications

Operating Loads	+/- 10 to 750 lbf
Limit Load	+/- 200 to 3000 lbf
Ultimate Load	+/- 300 to 4500 lbf
Spring Rate	2000 to 20k lbf/in.
Excitation	8+/-2VRMS, 1.5 to 3kHz or 28+/-2VRMS, 400Hz
Sensitivity	.000100 to .004500 V/V/lbf
Accuracy	+/-0.5 to 1.5% F.S.

potentiometers, Hall effect & encoders



The experience in design and product qualification of the Sensata Aerospace organization has allowed the adaptation of traditionally industrial speed and position sensing products to many Aerospace and Defense applications including cabin air pressurization, flight controls, and guidance applications. QPL Standard Products:

- MIL-PRF-12934
- MIL-PRF 29023

cockpit controls



These custom designed devices can incorporate our RVDT sensors, motors, and switches within one packaged control. Kavlico cockpit controls meet customer and market demand for small envelope, minimum weight, and high reliability. Our experience includes:

- Speed Brake / Variable Air Brake Handle
- Landing Gear Control Lever (LGCL)
- Steering Control Wheel (Tiller)
- Flap Level Selector (FLS)
- Flight Spoiler Control Lever (FSCL)
- NEW Throttle Quadrant Assembly (TQA)

motors & voice coil actuators



With the adoption of electro-mechanical actuation in aerospace and defense, motors have become increasingly important in actuation and motion control systems including applications such as targeting, scanning controls, and fin actuation. Motors and magnetic products:

- Brushless DC
- Special Motors (designed to embed in application)
- Linear & Rotary Voice Coil Actuators

AFTERMARKET CAPABILITY

Fully Certified FAA 145 Repair Station in Thousand Oaks, CA and committed to full customer support including troubleshooting, repair, spares, and AOG service.

SWITCHES & THERMOSTATS

KLIXON hermetic miniature and sub-miniature snap-action switches are ideal for extremely harsh and demanding environments as found in aircraft, military, aerospace, and aircraft engines applications.

OUR BRANDS

Klixon

APPLICATIONS

- Landing Systems
- Environmental Control Systems
- Engine Systems (Pressure and Temperature)
- Actuator and Valve Controls
- Cockpit Controls
- Space and Satellite Systems

For more information on these and other products visit sensata.com

SWITCHES

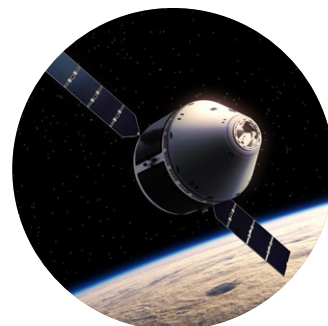
hermetic pressure

6PS SERIES



6PS Series precision pressure switches are snap-acting, all-welded devices with hermetically sealed switch contacts. They were developed for applications in aerospace and electronics where high reliability and/or resistance to severe environments is required.

- Actuation range of 45 to 600 PSIA
- High vibration resistance
- Corrosion resistant: 300 series stainless steel construction for all environment and media exposed parts
- 8000 psi minimum burst pressure
- Available in wide range of standard and custom configurations
- Typical applications include APU and Aircraft Engine Oil Systems



hermetic position

AT Switch Packages



AT Basic Switch



KX Switch Package



- Available per MIL-PRF-8805, Enclosure Symbol 5
- Hermetically sealed with dry nitrogen gas backfill
- Small, lightweight axis-symmetric design
- Proven snap-action switching, reliable performance and long life
- Excellent shock and vibration resistance
- Switching up to 4 amps at 30VDC
- Optimal for low level circuits
- Temperature range between -275°F and +450°F
- Single and multiple pole designs available
- Various mounting configurations for custom applications
- Wide range of side plate designs for narrow width applications
- PMA Approvals for various commercial aircraft
- Customer approvals for space and military applications

THERMOSTATS

hermetic thermostats

11041 (M24236/1) Thermostat



Tiny Stats



Thermostat Probes



M2 Narrow Differential Thermostat



Utilizing a bimetal, snap acting disc as the thermal sensing element, KLIXON precision thermostats feature exceptionally high reliability and long life. Standard configurations, probe style packages, or custom packaging can meet most design requirements. Thermostats shown to the right are qualified to MIL-PRF-24236, NASA S-311-P641 and UL/CSA certified.

YOUR TRUSTED PARTNER

Your trusted partner for design, development, and manufacturing of sensors and controls.

CIRCUIT BREAKERS

50+ years of serving mission critical power distribution and switching applications in Aerospace and Defense coupled with sensing innovation and operational excellence.

OUR BRANDS

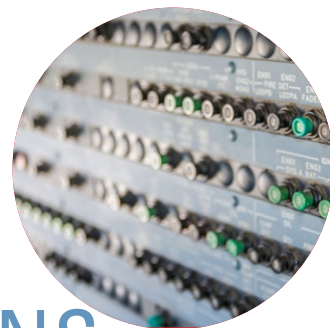
Klixon



SEGMENTS

- Commercial
- Defense
- Business Jet
- Rotorcraft
- Ground Defense Vehicles

Klixon



APPLICATIONS

- Primary & Secondary Power Distribution
- Electrical Panels
- Galley Equipment
- Cockpit Circuit Breaker Panels

For more information on these and other products visit sensata.com

CIRCUIT BREAKERS.....

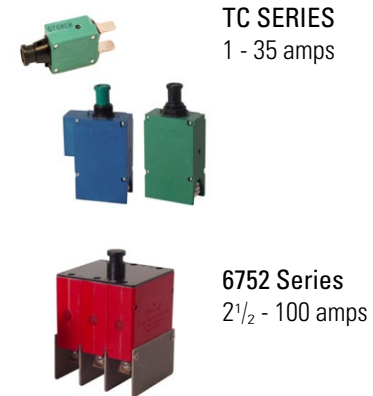
performance features

- Low voltage drop
- High vibration resistance
- 100% Calibrated and tested
- Miniature size for minimal weight
- High short circuit interrupting capacity
- Thermal response analogous to heat up rate of wire
- Coordinated ratings for improved system reliability

advantages & options

- Auxiliary switch circuits
- Alternate length pushbuttons
- English or metric thread sizes
- Dual safety, "Fusible link", for redundant protection in hard fault conditions
- Temperature compensation to offset effects of ambient temperature allowing use of smaller gauge wire

featured products



Family	Approval	Rating (amps)	Approx. Maj. Dim. (in) L x W x H	Approx. WT (g)
2TC	MS3320, EN2995-004 & -005	1 – 30	75 x .56 x 1.2	25.0
2TC49	MS5809/1	2.5 – 15	1.21 x .75 x .56	25.0
3TC	MS14105, MS14105L, & MS25244	5 – 35	1.10 x .75 x 1.2	36.0
5TC	EN3361-005 & -006	20 – 70	1.65 x .77 x 1.92	52 (std.) 75 (aux.)
6TC	MS14154, MS14154L, MS14154V, EN2996-004 & -005	2 – 25	.75 x 1.78 x 1.2	65.0
9TC	MS14153	1, 15 – 35	1.10 x 2.35 x 1.2	110.0
15TC	EN3662-005 & -006	20 – 50	1.3 x 2.15 x 2.1	130 (std.) 140 (aux.)
6752-12	MS24571	2.5 – 50	2.2 x .75 x 3.3	91.0
6752-100	MS25361 & MS25361V	50 – 100	2.2 x .75 x 3.3	113
6752-305		2.5 – 90	2.2 x 2.25 x 3.3	292.0

All manual trip / indicating devices; only shows high volume options – many others available

SOLUTIONS ENGINEERED TO PERFORM

Sensata prides itself on designing and manufacturing solutions for the most demanding, mission critical applications.

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