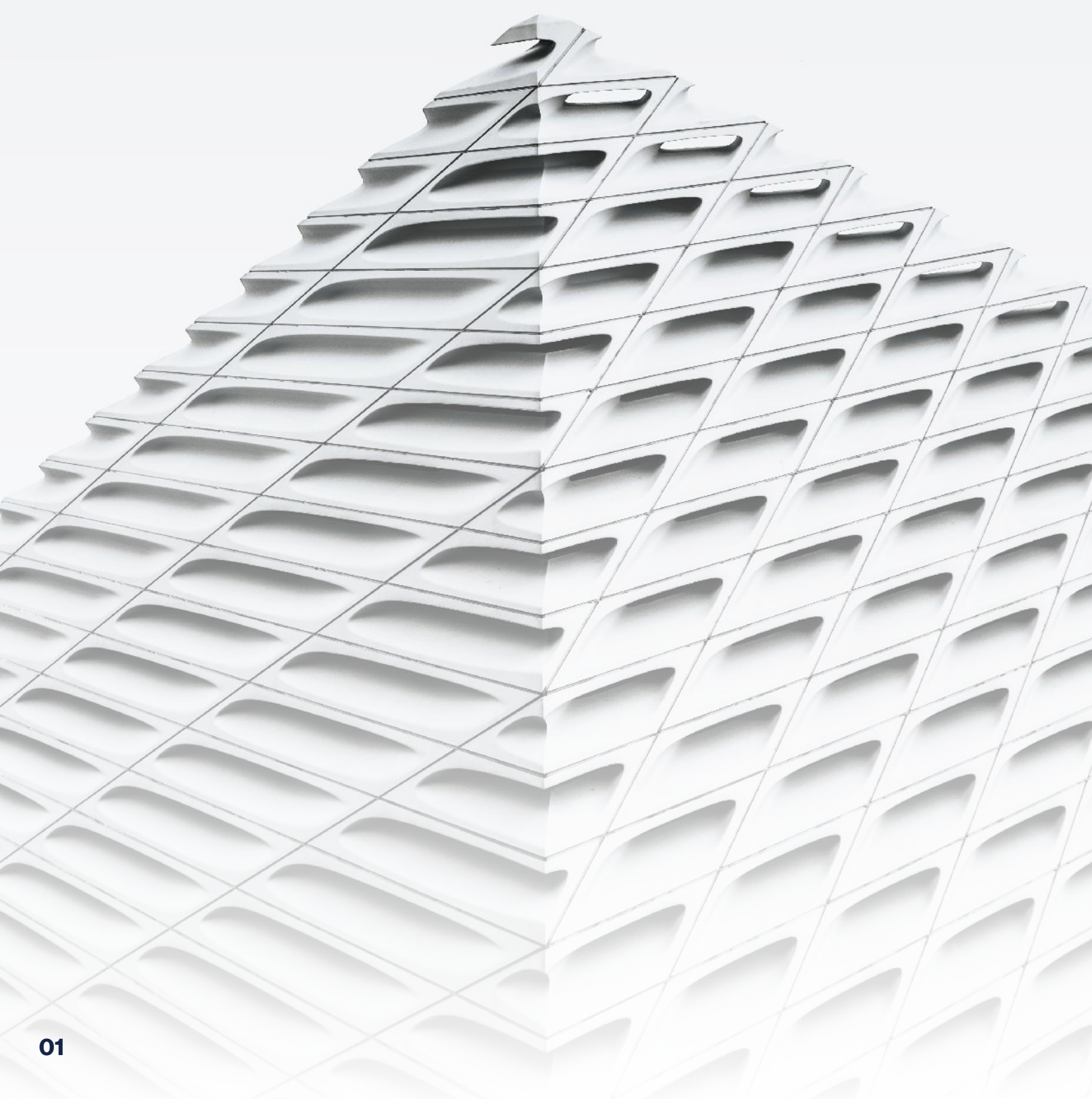




IVENTECHS

AEROSPACE PRODUCTS OVERVIEW



About INVENTECHS

Inventechs Technology is a specialized engineering company that is a premier provider of engineering services and distributor of high-tech electronic and electrical components. With a strategic focus on Aerospace & Defense, EV / Automotive, Renewable Energy, and General Industrial sectors, the company has established itself as a trusted partner in the region.

As the official business partner and authorized distributor for Sensata Technologies and Rogers Corporation across GCC countries and the MENA region, Inventechs delivers cutting-edge technological solutions to meet diverse industry requirements.

Mission

To shape the industry's future by delivering unprecedented value through high-performance technology and innovative engineering solutions. We are committed to powering our customers' success, fostering strong vendor partnerships, and expanding our market leadership while enabling sustainable economic growth through infrastructure and industrial advancement.

Our dedication to excellence drives us to provide reliable, cutting-edge products and solutions that consistently exceed end-users' expectations and contribute to technological progress across our regions.

Vision

The global leader in advanced Sensing and Rotary Electrical Transmission Technologies, pioneering solutions for Electric Vehicles & Automotive, Aerospace & defense, Renewable Energy, and Industrial Applications.



Our Aerospace Product Solutions

Elevate your aerospace operations with our comprehensive suite of mission-critical sensing solutions. From advanced energy storage systems and precise pilot controls to sophisticated high-voltage management and environmental monitoring, our integrated product portfolio delivers unmatched performance. Drawing on our heritage of excellence and portfolio of industry-leading brands, we provide exceptional quality, technical expertise, and worldwide support. Our solutions optimize flight control systems, landing gear mechanisms, power distribution networks, and engine monitoring platforms—ensuring enhanced safety, efficiency, and reliability in every aspect of aircraft operation. Whether you're advancing traditional systems or tackling next-generation electrification challenges, our proven capabilities ensure your success.

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ADVANCED AIR MOBILITY & ELECTRIFICATION ECOSYSTEMS

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

Applications

- Energy storage systems
- Pilot controls
- High voltage management
- Charging/ power conversation systems
- Battery management systems
- Pressure sensing (battery cooling & environmental controls system)
- Electric propulsion units



INCEPTORS & COCKPIT CONTROLS

Kavlico inceptors and cockpit controls are underpinned by our industry leading RVDTs. This enables the smallest, lightest weight inceptor solution.

Throttle Quadrant Assemblies



Sensata's throttle quadrant assemblies offer a premium look and feel for pilots, featuring

- Individual thrust levers wrapped in sumptuous leather for each engine
- Two highly precise, reliable Sensata RVDTs per lever complete with protective anti-backlash gearing
- Thoughtfully designed pilot-feel clutch mechanisms for proper feedback
- Stylized light panels with detached dimming modules
- Independent sliding Foreign Object Debris covers to protect assembly from spills
- Autothrottle disconnect switches to safely disengage as desired
- Maintenance free performance

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)

Inceptors

Advanced air mobility requires lightweight, highly reliable pilot controls. As the world leader in high-volume, multi-axis inceptors, Sensata combines our micro-RVDTs with a modular design concept to offer the lightest passive inceptors, ensuring customers achieve the lowest total cost of ownership.

Key Features:

- The compact envelope easily integrates into aircraft structures, supporting single-axis to four-axis control.
- The weight-optimized design with a dual load path results in three-axis designs weighing less than 3.175 kilograms (7 pounds).
- Safe operation is ensured through redundant load paths and jam-resistant features in all axes, both at the sensor and mechanism levels.
- Signal output is available in either analog or ARINC429 digital formats.
- RVDT Sensors provide precise, high-reliability, non-contact position sensing and fault tolerance.
- Redundant sensors typically have three channels, with an option to upgrade to quad redundant sensors if desired



Benefits:

Customizable Grip Design:

- Allows control over ergonomics and button layout.

Customizable Range of Motion:

- Offers up to 50 degrees total (± 25 degrees from center) for all axes.
- Independent axis travel adjustment to meet specific requirements.

Force, Centering, and Damping:

- Dual-Redundant Centering Mechanism
- Customizable Spring Force
- Pre-Tensioned Breakout Force
- Sensata-Designed Viscous Damper

Pilot Input Forces:

- Designed for up to 200 lbs limit loads, surpassing FAR and EASA requirements.
- Available in left-hand or right-hand configurations.
- Designed to meet RTCA/DO-160, MIL-STD-810E, environmental, electrical, and EMI/RFI requirements.

RVDT Performance and Electrical Characteristics:

- Excitation Voltage/Frequency: 6Vrms $\pm 10\%$, 1800-2200 Hz
- Current: 20mA Max
- Input Impedance: Min. 300 ohms
- Output Impedance: Max. 1000 ohms



SENSATA ELECTRIFIED FLIGHT HIGH VOLTAGE COMPONENTS

Our Electrified Flight high voltage components deliver the highest levels of safety and accuracy across 800 volt direct current battery and power distribution systems, electric propulsion units and e-motors, as well as charging infrastructure

Energy Storage Systems

Our Spear Power Systems division designs and integrates custom lithium energy storage systems rated up to 1250 volts DC. Our designs are cell agnostic, and we have a battery management system that is approved to Design Assurance Level B (DO-178C DAL B). We optimize for power and energy density to meet challenging customer requirements for mission critical applications.



Features:

- AS9100 Quality/Business System
- Cell chemistries: NMC, NCA, LFP, LTO
- Liquid, air, passive, or immersion cooling
- Proven cell propagation methods
- Off-the-shelf BMS solutions
- Master/slave redundancy and safety
- Radiation hardened Micro options
- Built-in safety interlock
- Isolation monitoring built into BMS
- Robust SOC and SOH algorithms
- Patent pending Flame Arrestor technology

Sensata ElectrifiedFlight Pyrofuse Switch (SELF-PS)

Protecting against very high short circuits inside power distribution boxes with low inductance and in e-motors with high inductance is critical to safe operation of electric aircraft. Sensata Electrified Flight pyrofuse provides an active safety with an external trigger that allows disconnect to occur in less than 1 millisecond.

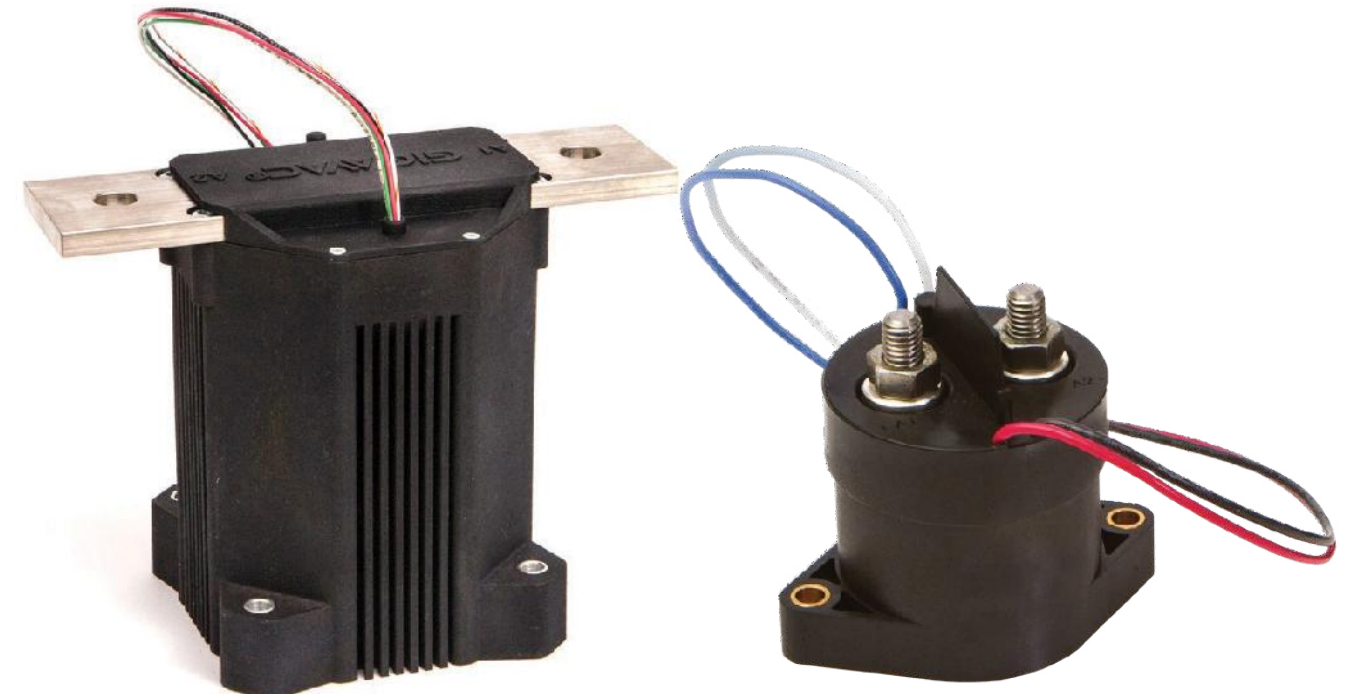


Breaking Capability	
Max breaking capacity	500V/20KA @14uH 1000V/16KA @16uH
Min breaking capacity	0A
Action time	< 1ms
IR at 1000V@RT after break	50MΩ for at least 10sec
Current Profile	
Driving	1200A/18s + 500A continuous
DC charging	(750A/5min 600A/10min 500A/15min)+ 350A/30min + 150A/90min

Sensata Electrified Flight Contactors

Battery-electric and hydrogen-powered aircraft rely on high-voltage power systems, typically rated at 800 volts DC. Charging systems are moving towards fast charging, with voltages reaching up to 1500 volts DC.

Sensata Electrified Flight contactors offer solutions for both on-aircraft applications and ground-based charging systems. Our flight contactors have successfully completed environmental tests in accordance with DO-160 requirements. For ground system contactors, we leverage industry certifications from our GIGAVAC products. All our contactors are fully compliant with AS9100 standards



SELF-CM1000

SELF-C350

Product Line	Rated Voltage (VDC)	Continuous Current Carry (A)	Weight (kg / [lbs])	Application
SELF-C350	800	350	0.38 / [0.84]	Lightest weight for 800VDC
SELF-CL350	800	350	0.5 / [1.1]	Latching for 800VDC
SELF-CH20	1000	350	0.44 / [0.98]	High capacity, extended voltage
SELF-CH22	1000	300	0.44 / [0.98]	High capacity, extended voltage
SELF-CH600	900	600	0.475 / [1.05]	High capacity, extended voltage
SELF-CBG400	1500	400	0.91 / [2.0]	Bi-directional, glass-sealed
SELF-CBG500	1500	500	0.91 / [2.0]	Bi-directional, glass-sealed
SELF-CP80	1500	80	0.14 / [0.3]	Pre-charge circuits
SELF-CM1000	1500	1000	4.17 / [9.2]	Bi-directional, MW e-motor systems
SELF-CM800	1500	800	3.0 / [6.6]	Bi-directional, MW e-motor systems

SENSATA ELECTRIFIED FLIGHT COMPONENTS

Our Electrified Flight high voltage components deliver the highest levels of safety and accuracy across 800 volt direct current battery and power distribution systems, electric propulsion units and e-motors, as well as charging infrastructure



Isolation Monitoring Devices

Sensata's Electrified Flight Isolation Monitoring Devices ensure safety in high-voltage systems for electric and hydrogen-powered aircrafts. It constantly monitors insulation resistance, detects faults early, and alerts to prevent harm or equipment damage.



Faulty Connectors
Breakdown of the mating parts or physical barriers



Actions of Personnel
Physical engagement with sensitive areas



Vehicle Crash
Unexpected contact that breaches the various protection systems



Corrosion or Contamination
Gradual deterioration of metals or a state containing unwanted / dangerous substances

High Performance Standard



SELF-IMD100

- Isolation resistance uncertainty $\pm 5\%$
- CAN2.0B interface (250 or 500 kbit/s)
- Measures/reports voltage and capacitance for each battery terminal to the chassis
- Calculates/reports energy stored by the total capacitance between battery and chassis

Next Generation IMD Adds



SELF-IMD200

- Estimate of isolation without high voltage connected
- Faster first estimate at startup (@ 2 sec)
- Dedicated digital signal outputs for fault, warning, fault condition / HW error

SELF-EDP Electric Drive Position sensor



The adoption of electric motors (e-motors) in UAM/AAM/EVTOL electric vehicles (EVs) demands precise, low-profile position sensing for efficient axial flux e-motors. Sensata Electrified Flight Drive Position sensors offer several aerospace advantages:

- True power-on sensor with superior contactless, magnet-free design for optimal motor efficiency.
- Electrical accuracy $\leq \pm 1^\circ$ over the lifespan at nominal tolerance conditions.
- Independently powered and grounded dual channels with integrated signal processing, eliminating the need for heavy sub-systems.
- Immunity to stray magnetic fields, no external shielding required.
- Environmentally robust solution enhancing system longevity and quality.
- Lightweight, low-profile, and flexible packaging adaptable to custom parameters like pole-pair count, motor diameters, connectors, mounting for Axial and Radial Flux E-Motors and optional air cavity temperature sensors.



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

Three electronics packages:	
Unamplified	10mV/V
Amplified Voltage	0.5V, 0.10V
Amplified Current	4.20mA

Agile Modular Pressure Sensor

Our latest offering, the AMP (Agile Modular Pressure) series, builds upon this legacy by providing an off-the-shelf solution for any pressure application. This versatile series is designed to meet the specific needs of commercial, civil, and military applications.

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

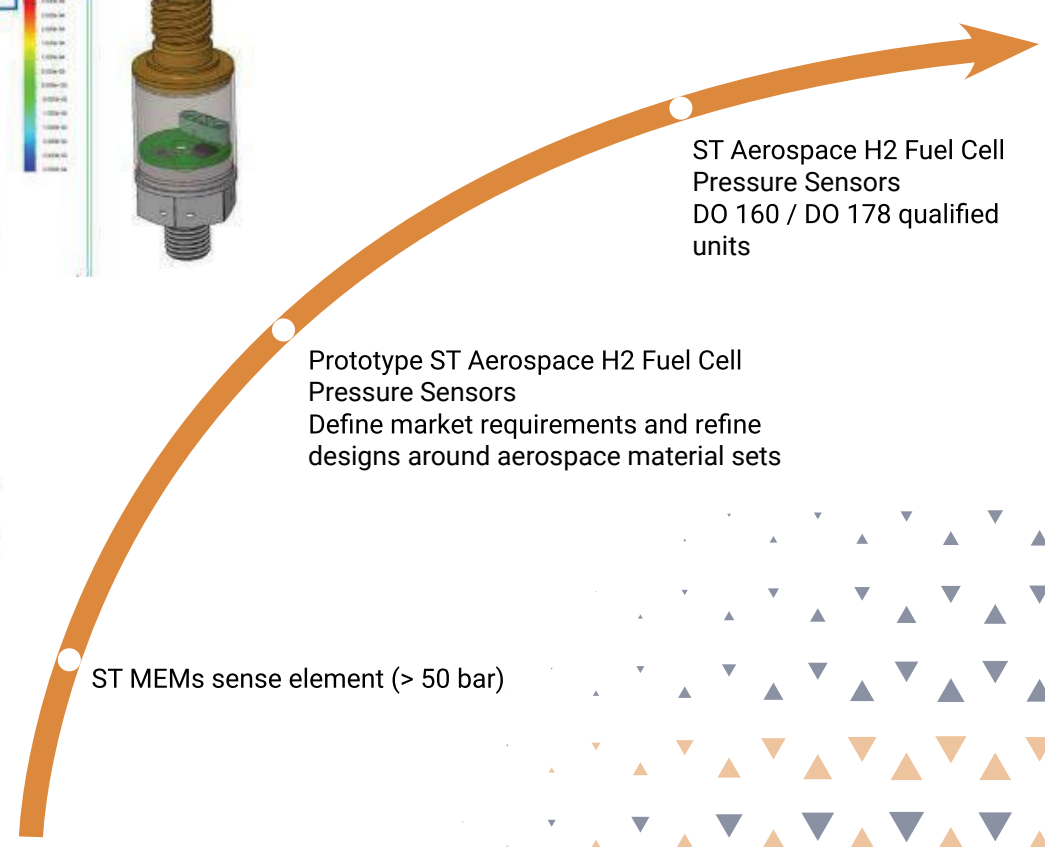
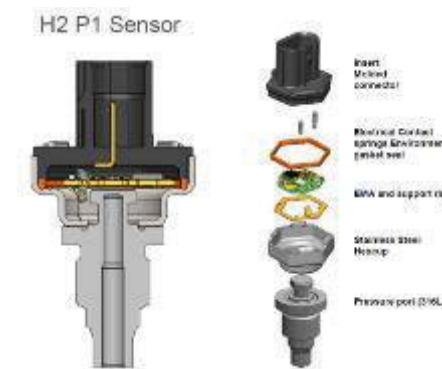
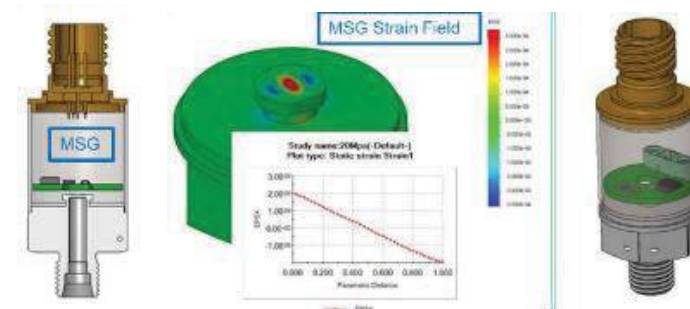
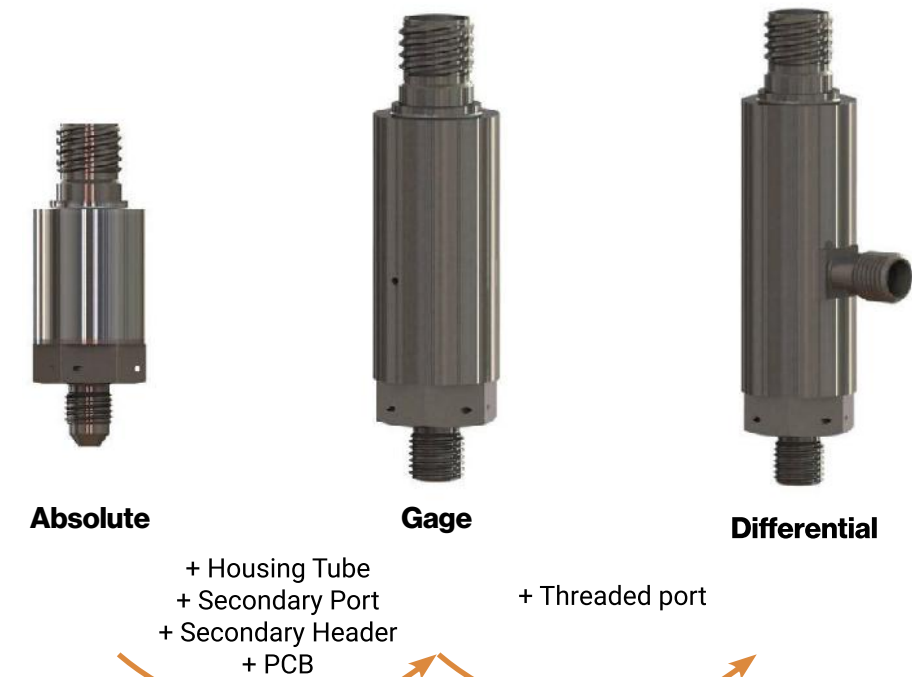
- Quick to market
 - Commonality will allow for short development time for each new iteration
- Superior Value Pricing
 - Lower total cost of ownership
- Short Lead Times
 - Core components in stock and continuous line of manufacturing allow for quick delivery

Quality

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

Hydrogen Pressure Sensors

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



POSITION SENSORS

Sensata's 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.

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.

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

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.

Force Transducers



LVDT-based force transducers provide force feedback through precise measurement of spring deflection. The Sensata design offers the highest accuracy and greatest temperature stability over time among force sensors in aerospace applications, making them ideal for the most extreme environments.

Furthermore, Sensata is actively developing strain gauge force sensors, incorporating innovative MEMS technology, to explore new applications for haptic feedback and other force sensing applications.

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.

Repair, Rotable & Exchange Program

Sensata's Thousand Oaks facility offers a wide variety of repairs and exchange options for LVDT, RVDT, pressure transducers, and cockpit controls.

Our team works to ensure you have an airworthy article through the Repair & Exchange program. We provide product inspections, testing, major and minor repairs, and overhaul of KAVLICO brand LVDT, RVDTs, Force Transducers, cockpit controls, and pressure transducers.

Depending on the failure mode, Sensata offers minor and major repairs in order to lower life cycle maintenance. Rotable pools and exchanges are available.

Repair Time

Product	Minor Repairs	Major Repairs
Force Transducers	10 Days	15 Days
LVDTs (Single Channel)	10 Days	15 Days
LVDTs (Multi Channel)	15 Days	21 Days

*Repair time is dependant on receipt of approval

Certifications

- Cage Code:22863
- FAA Air Agency Certificate: KV7R686N
- EASA Certificate: EASA. 145.6395
- ASA 9100:2016 Registration: JISQ9100-2016
- Aero Exchange Participant
- ILS Participant

SWITCHES & THERMOSTATS

Sensata's Klixon branded 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.

Applications

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

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 ENGINEERING SOLUTIONS PROVIDER

Your trusted engineering solutions provider for design, development, and manufacturing of sensors and controls.



CIRCUIT BREAKERS

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



Segments

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

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

Applications

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

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

SOLUTIONS ENGINEERED TO PERFORM

Solutions for the most demanding, mission critical applications.

Featured Products



TC SERIES
1 - 35 amps

6752 Series
2 1/2 - 100 amps

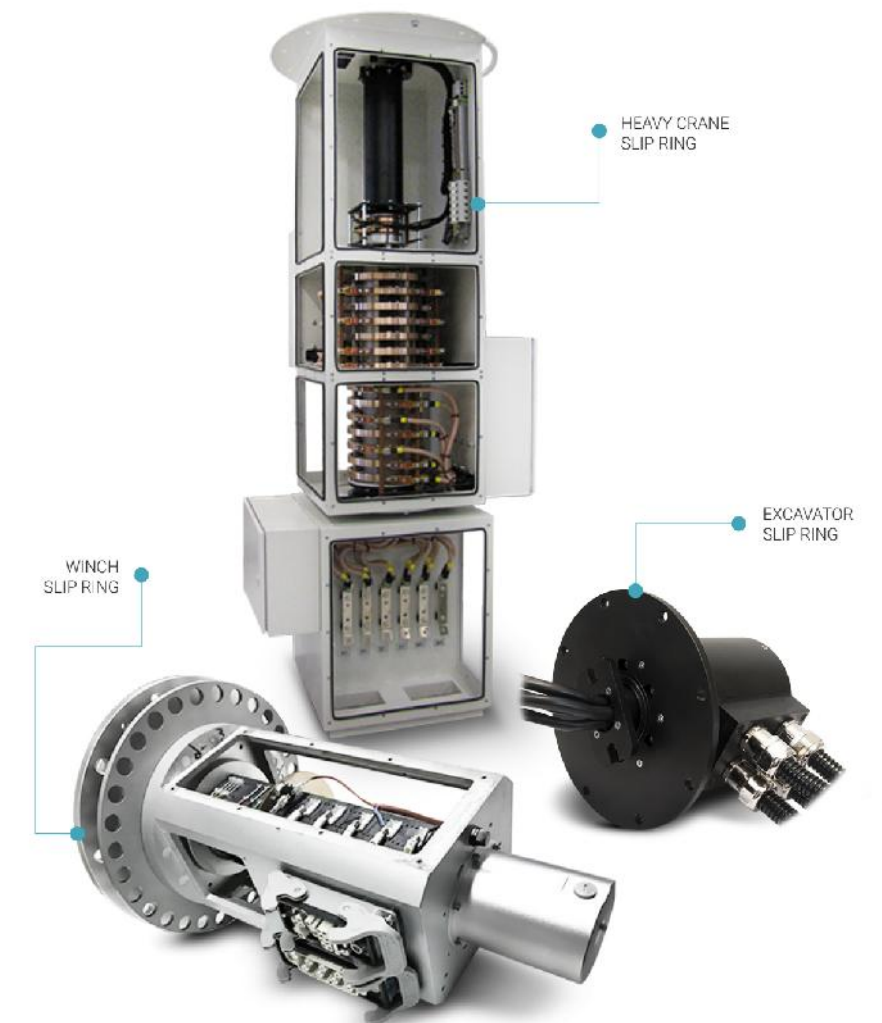
Family	Approval	Rating (amps)	Approx. Maj. Dim.(in) L x W x H	Approx. WT (g)
2TC	MS3320 , EN2995-004 & -005	1 – 30	75 x .56 x 1.2	25.0
2TC49	MS5809/1	2.5 – 15	1.21 x .75 x .56	25.0
3TC	MS14105, MS14105L, & MS25244	5 – 35	1.10 x .75 x 1.2	36.0
5TC	EN3361-005 & -006	20 – 70	1.65 x .77 x 1.92	52 (std.)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

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

Motion Control “Slip Rings” Solutions

Technical Features

- Protection Grade IP68
- Explosion-Proof Exd II
- Operating Circuits up to 500
- Operating Current up to 4200 A
- Operating Voltage up to 10.000 V
- Operating RPM up to 20 million rpm
- Vibration shock acceleration 18000 g
- Long lifespan more than 20 million turns
- Advance Light weight customized solutions
- Operating Temperature range -60°C ~ +250°C
- Different transmission media such as Electric, Signals, Gas, Liquid
- Signal USB 3.0, 10 Gigabit, Ethernet, HDMI, SDI BUS Signal and Serial signal
- Operating conditions 20.000 meters above sea level, and 10.000 meters under the sea level



Applications:

- Weather Radars
- Internal Navigation
- Simulation Turntable
- Aircraft Infrared Lidar
- Gimbal Photoelectric Pod
- MIL-Grade Rotating Turret
- MIL-Grade Test Equipment
- Marine and General Cranes
- MIL-Grade Launch Systems
- Jamming Electronic Systems
- Aircraft, Marine, and MIL-Grade Vehicles Radar Antenna



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