

PRODUCTS

MEMS Sensors & Sensing Elements



LOW POWER | ROBUST DESIGN | HIGH PERFORMANCE

SMALL SENSORS MAKE A BIG DIFFERENCE. FOR A SAFER, MORE ENJOYABLE WORLD.

Accelerometers



VTI is the global market leader in low-g acceleration sensors for automotive applications. The extensive accelerometer product range includes high performance analog and digital accelerometers for both safety critical automotive and industrial applications.

VTI accelerometers are based on the company's proprietary 3D MEMS technology and offer a number of excellent product features for the most demanding applications. The sensing element and the measuring ASIC are assembled in a dual-in-line or dual-in-flat-line plastic package with pins for the surface mount and re-flow soldering. They are environmentally protected with silicone gel, resulting in excellent performance and reliability in humid environments and at temperature cycling. In addition, the robust sensing element design with over damped frequency response enables excellent performance even in harsh and vibrating environments.

Series	No. of axes	Range	Supply voltage	Temperature range	Sensitivity	Signal bandwidth	Output type	Typical applications
SCA3100	3	±2g ±6g	3.3V	-40 ... +125 °C	900LSB/g 650LSB/g	45Hz	Digital/SPI	Automotive safety critical applications IMU Industrial applications
SCA2100	2	±2g	3.3V	-40 ... +125 °C	900LSB/g	45Hz	Digital/SPI	
SCA800	1	±2g	3.3V	-40 ... +125 °C	900LSB/g	50Hz	Digital/SPI	
SCA1000	2	±1.7g ±4g	5V	-40 ... +125 °C	1.2V/g 0.55V/g	50Hz 115Hz	Analog/Digital	
SCA100T	2	±12g	5V	-40 ... +125 °C	0.17V/g	400Hz	Analog/Digital	Automotive security applications Motion activation Inclination sensing
SCA600	1	±0.5..±1.7g	5V	-40 ... +125 °C	1.333..4V/g	18..50Hz	Analog	
SCA3060	3	±2g	3.3V	-40 ... +105 °C	1000LSB/g	9/35Hz	Digital/SPI, I ² C	
CMA3000	3	±2 or ±8g	1.7-3.6V	-40 ... +85 °C	D01: 56 LSB/g A01: Vdd/6 V/g	80Hz 120Hz	Digital/ SPI, I ² C Analog	Consumer electronics Activity monitoring Speed and distance measurement

Inclinometers



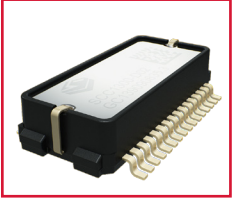
VTI inclination sensors are an optimum choice for high accuracy leveling and inclination measurement instruments. The highest accuracy is available with the SCA103T series which uses a differential measurement principle to compensate for all common mode error and noise effects.

With the best shock durability available on the MEMS market, VTI inclinometers provide trouble-free measurements in moving machines, vehicles, airplanes, construction machines and handheld devices.

Series	No. of axes	Range	Supply voltage	Temperature range	Sensitivity	Signal bandwidth	Output type	Typical applications
SCA100T	2	±30°,±0.5g ±90°,±1g	5V	-40 ... +125 °C	4V/g 2V/g	18Hz	Analog/ Digital	Levelling instruments Moving machines Rotating lasers Construction levels
SCA103T	1	±15°,±0.26g ±30°,±0.5g	5V	-40 ... +125 °C	16V/g 8V/g	18Hz	Analog/ Digital	
SCA61T	1	±30°,±0.5g ±90°,±1g	5V	-40 ... +125 °C	4V/g 2V/g	18Hz	Analog/ Digital	
SCA830	1	±90°, ±1g	3.3V	-40 ... +125 °C	32000 LSB/g	6.25Hz	Digital/SPI	

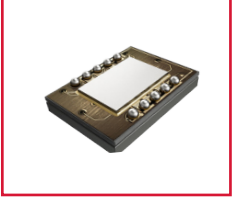
VTI's product range also includes inclination modules and sub-assemblies. For more information, visit www.vtitechnologies.com

Gyroscopes



VTI develops and manufactures gyroscope components for both industrial and consumer electronics applications. Angular rate sensors are based on VTI's proven 3D MEMS technology and highly integrated electronics.

Industrial gyros offer a performance level that typically has been available only for expensive module products. The sensing elements and measuring circuitry are assembled into a pre-molded plastic dual-in-line (DIL) package, protected with silicon gel and covered with a stainless steel lid. All products are RoHS compatible and suitable for lead-free reflow soldering.



Consumer gyros are extremely small thanks to the wafer level package. The patented simplified low current consuming phase-shift readout electronics and wafer level quadrature signal design enable excellent stability in real life environments.

Series	No. of axes	Range	Supply voltage	Temperature range	Sensitivity	Signal bandwidth	Output type	Typical applications
SCC1300	1-axis gyro, 3-axis accelerometer	$\pm 100^\circ/\text{s}, \pm 2.0\text{g}$	5V analog 3.3V digital	-40 ... +125 °C	50LSB/(°/s), 1800LSB/g	50Hz, 45Hz	Digital/SPI	Platform stabilization Motion analysis and control Guidance and navigation systems
		$\pm 300^\circ/\text{s}, \pm 6.0\text{g}$			18LSB/(°/s), 650LSB/g			
SCR1100	1-axis gyro	$\pm 100^\circ/\text{s}$ $\pm 300^\circ/\text{s}$	5V analog 3.3V digital	-40 ... +125 °C	50LSB/(°/s) 18LSB/(°/s)	50Hz	Digital/SPI	
CMR3000	3-axis gyro	$\pm 2000^\circ/\text{s}$	2.5-3.6V	-40 ... +85 °C	1.33LSB/(°/s)	80Hz	Digital/ I ² C, SPI	Consumer electronics Gaming input devices Computer peripherals Remote controllers Mobile phones

Pressure Sensing Elements



VTI SCB10H capacitive absolute pressure sensing elements have been designed for applications that require a small size and ultra low power consumption. VTI's SCB10H pressure sensing elements are ideal for implantable medical devices thanks to their inherent accuracy, reliability, small size and enabled low power consumption.

The SCB10H pressure sensing element allows the possibility for volume OEM customers to integrate pressure measurement functions in an optimal way into their products.

Parameter	Unit	B012	B080	B250	Typical applications
Measuring range	kPa	30-120	100-800	100-2500	Medical devices
Capacitance at min. pressure	pF	7.8	7.5	7.3	Flow meters
Capacitance at max. pressure	pF	11.8	13.4	13.9	Barometers
Capacitance dynamics	pF	4.0	5.9	6.6	Altimeters
Sensitivity	fF/kPa	55 (@100 kPa)	6.2 (@350 kPa)	1.3 (@100 kPa) 6.5 (@2500 kPa)	

MEMS PIONEER FOR OVER 20 YEARS

VTI Technologies designs and manufactures silicon-based capacitive sensors for the measurement of acceleration, pressure, inclination, shock, vibration, and angular rate. All sensors are based on the company's proprietary 3D MEMS technology.

- ISO14001, ISO9001, TS16949
- Headquartered in Finland
- Worldwide sales and distributor network.