

MEMS inertial sensors

First Sensor features a highly innovative technology platform for manufacturing high-precision inertial sensors for geoengineering, condition monitoring or navigation applications. The MEMS sensors allow for flexible customization to fit your individual application requirements.

Inclinometers and accelerometers

Our capacitive inclinometers and accelerometers are based on single crystal silicon sensor elements and utilize state-of-the-art micromachining technology to achieve large signal-to noise ratios and excellent stability over temperature. Therefore, they are able to detect extremely small changes in inclination or acceleration. Due to high aspect ratio microstructures (HARMS) the sensors feature ultra-low cross axis sensitivities. Further, the patented highly flexible AIM (Air gap Insulated Microstructures) technology minimizes parasitic capacitances.



Parameter	Inclinometer			Accelerometer		
	SI-11.S1C-30	SI-11.P3C-30	Unit	SA-13.S1C-8	SA-14.S1C-15	Unit
Measurement range	±30	±30	°	±8	±15	g
Resolution at 10 Hz	< 0,0015	< 0,0040	°	< 65	< 95	μg
Scale factor (repeatability)	±35	±50	ppm	±35	±35	ppm
Scale factor (temperature coefficient)	±50	±50	ppm/K	±50	±50	ppm/K
Bias (repeatability)	±0,0030	±0,0045	°	±260	±470	μg
Bias (temperature coefficient)	±0,0025	±0,0030	°/K	±105	±175	μg/K
Noise density	< 0,0004	< 0,0015	°/√Hz	< 20	< 30	μg/√Hz
Measuring frequency	400	800	Hz	400	400	Hz
Digital interface	SPI	SPI/I ² C		SPI	SPI	
Operating temperature	-40 ... 85	-40 ... 120	°C	-40 ... 85	-40 ... 85	°C