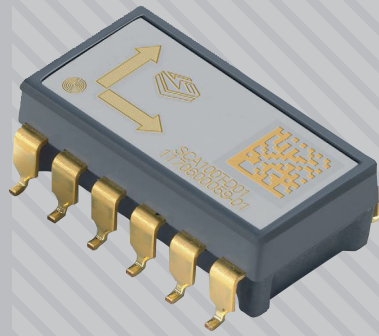
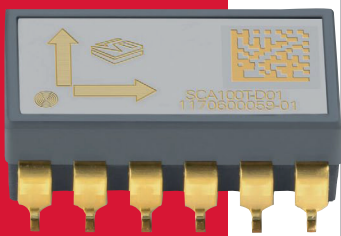


# SCA100T

Analog High Performance  
2-axis Inclinometer



ROBUST DESIGN | HIGH PERFORMANCE

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

**VTI**   
TECHNOLOGIES

# SCA100T

## Analog High Performance 2-axis Inclinometer

### Key features

- Size 11.31 x 5.08 x 15.58 mm (w x h x l)
- 5 V supply voltage
- $\pm 30^\circ$  &  $\pm 90^\circ$  inclination measurement ranges
- $14 \mu\text{g}/\sqrt{\text{Hz}}$  noise density
- $0.0025^\circ$  resolution (10 Hz BW, analog output)
- Offset temperature dependency (-25...85°C)  $\pm 0.008^\circ/\text{C}$
- Digital SPI temperature output
- Wide operating temperature range -40 °C ...+125 °C
- RoHS compliant
- Excellent stability over temperature and time
- Robust design, high shock durability (20000g)
- Sensing element controlled over damped frequency response

### Applications

- Platform leveling and stabilization
- 360 ° vertical orientation measurement
- Moving machines operating in tough environments
- Leveling instruments
- Construction levels



## SCA100T PERFORMANCE CHARACTERISTICS

Parameter	Condition	SCA100T-D01	SCA100T-D02	Units
Measuring range	Nominal	$\pm 30$ $\pm 0.5$	$\pm 90$ $\pm 1.0$	$^\circ$ g
Frequency response	-3dB LP	8-28	8-28	Hz
Offset (output at 0g)	Ratiometric output	Vdd/2	Vdd/2	V
Offset calibration error	Nominal	$\pm 0.11$	$\pm 0.23$	$^\circ$
Offset digital output		1024	1024	LSB
Sensitivity	between 0...1 $^\circ$	4 70	2 35	V/g mV/ $^\circ$
Sensitivity calibration error		$\pm 0.5$	$\pm 0.5$	%
Sensitivity digital output		1638	819	LSB / g
Offset temperature dependency	-25 ... 85 °C (typical) -40 ... 125 °C (max)	$\pm 0.008$ $\pm 0.86$	$\pm 0.008$ $\pm 0.86$	$^\circ/\text{C}$ $^\circ$
Sensitivity temperature dependency	-25 ... 85 °C (typical) -40 ... 125 °C (max)	$\pm 0.014$ -2.5...+1	$\pm 0.014$ -2.5...+1	%/°C %
Typical non-linearity	Measurement range	$\pm 0.11$	$\pm 0.57$	$^\circ$
Digital output resolution	between 0...1 $^\circ$	11 0.035	11 0.07	Bits $^\circ$ / LSB
Output noise density	From DC ... 100Hz	0.0008	0.0008	$^\circ$ / $\sqrt{\text{Hz}}$
Analog output resolution	Bandwidth 10Hz	0.0025	0.0025	$^\circ$
Ratiometric error	Vdd = 4.75...5.25V	$\pm 1$	$\pm 1$	%
Cross-axis sensitivity	Max.	4	4	%

For more detailed information, please check SCA100T Datasheet available at [www.vtitechnologies.com](http://www.vtitechnologies.com)