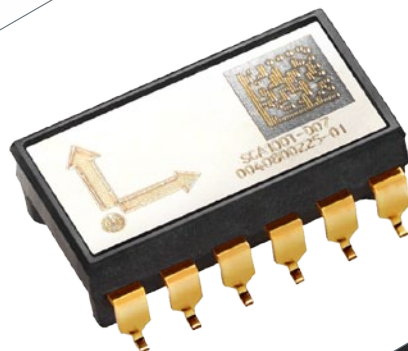


SCA100T

Analog High Performance
2-axis Inclinometer



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° resolution (10 Hz BW, analog output)
- Offset temperature dependency ($-25\ldots 85^\circ\text{C}$) $\pm 0.008^\circ/\text{C}$
- Digital SPI temperature output
- Wide operating temperature range $-40^\circ\text{C} \ldots +125^\circ\text{C}$
- RoHS compliant
- Excellent stability over temperature and time
- Robust design, high shock durability (20000g)
- Mechanically controlled frequency response (-3dB 18Hz)

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	± 30	± 90	$^\circ$
		± 0.5	± 1.0	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	± 0.11	± 0.23	$^\circ$
Offset digital output		1024	1024	LSB
Sensitivity	Between 0...1 $^\circ$	4	2	V/g
		70	35	mV/ $^\circ$
Sensitivity calibration error		± 0.5	± 0.5	%
Sensitivity digital output		1638	819	LSB/g
Offset temperature dependency	-25 ... 85 $^\circ\text{C}$ (typical)	± 0.008	± 0.008	$^\circ/\text{C}$
	-40 ... 125 $^\circ\text{C}$ (max)	± 0.86	± 0.86	$^\circ$
Sensitivity temperature dependency	-25 ... 85 $^\circ\text{C}$ (typical)	± 0.014	± 0.014	$^\circ/\text{C}$
	-40 ... 125 $^\circ\text{C}$ (max)	-2.5...+1	-2.5...+1	%
Typical non-linearity	Measurement range	± 0.11	± 0.57	$^\circ$
Digital output resolution	Between 0...1 $^\circ$	11	11	Bits
		0.035	0.07	$^\circ/\text{LSB}$
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	± 1	± 1	%
Cross-axis sensitivity	Max.	4	4	%