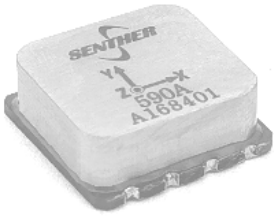
590C

Embedded Tri-axial Accelerometer

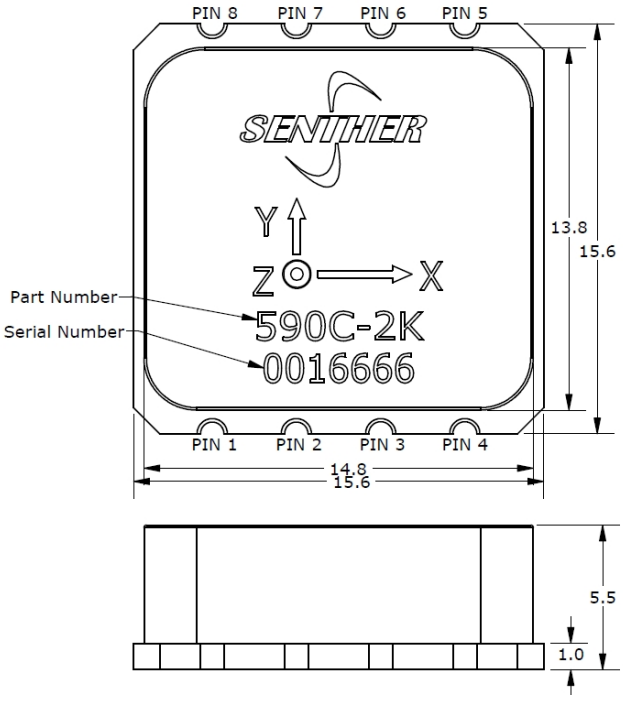


Features

- High resolution
- Excellent long-term stability
- Wide frequency response
- Ultra-Low noise: 8μg/√Hz @1kHz
- Linearity ±1% up to 2000g range
- Low power consumption: <1mA per axial
- Wide acceleration range
- Small package 15.6 × 15.6 × 5.5(mm)
- Reflow solderable

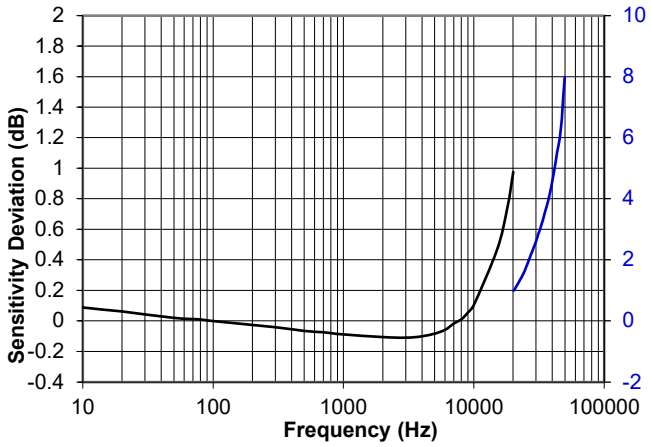
Application

- Condition monitoring
- Shock/impact data logger
- Bear/Gearbox embedded
- Machine vibration monitoring
- General test and measurement

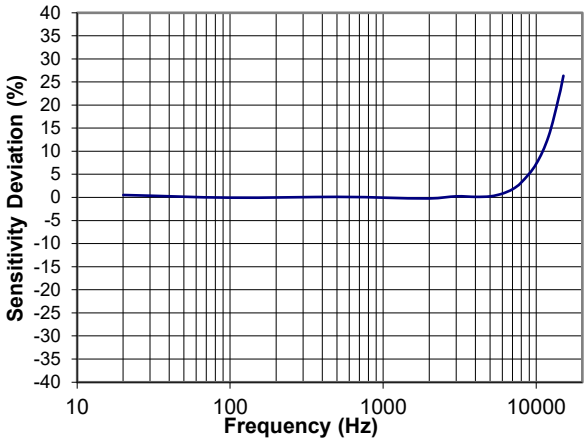


Description

The 590C is a miniature, high performance tri-axial vibration sensor especially designed for embedded condition monitoring. With the lasted piezo-electrical (PE) technology incorporated in the sensor, 590C vibration sensors provide superior signal-to-noise ratio and frequency response than the other technology devices. The shear PE structure delivers the super stable output, ultra-low noise density over an extended frequency range, which is optimized for industrial machine monitoring. 590C can be configured into a data logger with few additional components. All series products have stable and repeatable sensitivity output which is immune to external shocks up to 5000g. 590C offer diversity mounting configuration for embedded applications. With wide range of voltage excitation from 3 to 5.5 Vdc, 590C enable wireless sensing and plug-in product design.



Z axial Typical Frequency Response



X/Y axial Typical Frequency Response

Specification

All values are typical at +24°C (+75°F), 5Vdc and 100 Hz unless otherwise stated.

Performance

Measurement Range	±20	±50	±100	±500	±2000	g
Sensitivity ±10%	100	40	20	4	1	mV/g
Frequency Range, ±10%	5-10000	2-10000	2-10000	2-10000	2-10000	Hz
Frequency Range, ±3dB	2.5-15000	1-15000	1-15000	1-15000	1-15000	Hz
Resonant Frequency	>35	>35	>35	>35	>35	kHz
Transverse Sensitivity	<8	<8	<8	<8	<8	%
Temperature Response, -40 to +125°C	±10	±10	±10	±10	±10	%
Broadband Resolution	0.001	0.001	0.005	0.005	0.025	Equiv. g RMS
Non-Linearity	±1	±1	±1	±1	±1	%
Warm-up Time (Within 5% of final bias)	<0.5	<0.5	<0.5	<0.5	<0.5	Second
Shock Limit	±5000	±5000	±5000	±5000	±5000	g pk

Environmental

Operation Temperature	-40-125	°C

Electrical

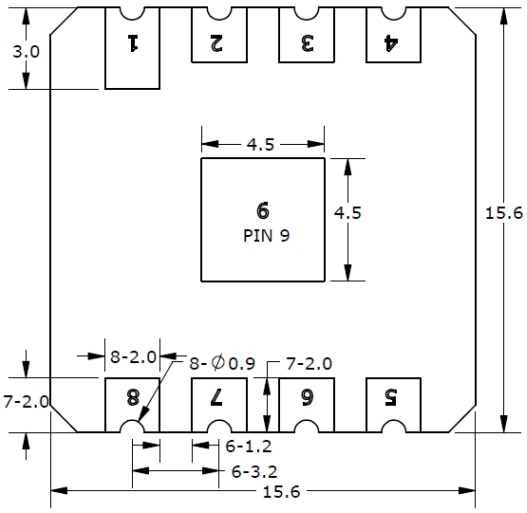
Supply Voltage	3-5.5	Vdc
Bias Voltage (ZMO)	VCC/2	Vdc
Full Scale Output Voltage	±2.0	V
Output Impedance	<100	Ω
Total Supply Current	<3	mA
Insulation Resistance (@50Vdc)	>100	MΩ
Electrical Connection	SMD	

Physical

Weight	4.3	gm
Sensing Element	Ceramic/Shear	
Housing Material	Stainless Steel	
Sealing	Epoxy Sealed	

Remark: All sensors would be serialized and calibrated. Look up the calibration data by S/N from our web site. Or Senther can print the data for >500units demand. Please contact your local sales representative for support.

Pin Function descriptions:



Pin No.	Mnemonic	Description
PIN 1	Vcc	3V to 5.5V Supply Voltage
PIN 2	GND	Power Ground
PIN 3	GND	Power Ground
PIN 4	GND	Power Ground
PIN 5	Vout (Z Axis)	Voltage Output
PIN 6	Vout (Y Axis)	Voltage Output
PIN 7	Vout (X Axis)	Voltage Output
PIN 8	GND	Power Ground
PIN 9	GND	Bottom Pad for Solder Reinforce
/	Cover	Cover be connected to Power Ground

Ordering information

590	**C**	**-**	**500**
Model	Optional output feature	-	Range
590	C=Integrated convertor	-	20=20g 50=50g 100=100g