

Fully Signal Conditioned

Description

The SMI Model SM-7130 series is a calibrated, amplified silicon capacitive accelerometer. Based on a very stable silicon capacitive sensor element and an ASIC signal processing chip, it provides high performance at a low price.

Housed in a rugged plastic enclosure with an integrated shielded cable and connector, this accelerometer is shipped ready to plug-in and use in a wide variety of applications.

The price and performance of the SM-7130 make it ideal for use both in fixed test and instrumentation applications where low cost is important. It is particularly useful as an OEM component in a variety of products.



Features

- Built-in amplifier for 2V full scale output
- Built-in drive electronics
- Small size
- Rugged enclosure and connector
- Calibrated
- High-shock resistance—2,000g minimum
- DC stable
- Low cost

Applications

- Shock testing
- Event recorders
- Crash and test sleds
- Motion detection
- Medical monitoring
- Industrial vibration
- Earthquake monitoring
- Geophysical applications
- Automotive development
- Elevators and transportation systems
- OEM and consumer products

Characteristics

Test conditions: Vcc=10 Vdc @ 25° C, unless otherwise specified.

Parameter	Full-Scale Range					Units
	±2	±10	±50	±100	±300	g
Frequency Response ¹ (typ)	0-300	0-500	0-800	0-2000	0-2000	Hz
Parameter	All Ranges					Units
	Min		Typ	Max		
Zero Acceleration Output ²	2.425		2.500	2.575		Volts
Full Scale Output Span ²	±0.975		±1.0	±1.025		Volts
Accuracy ^{3, 4}			0.5	1.5		±%FS
Transverse Sensitivity			1.0	3.0		±%FS
TC Offset (0-50° C)			2.0	5.0		±%FS
TC Span (0-50° C)			2.0	5.0		±%FS
Resolution			0.1			%FS
Signal to Noise Ratio			80			dB
Supply Voltage (Vcc)	9.0			20.0		Volts
Current Consumption			6.0	8.0		mA
Temperature Range (operating)	-20			+85		°C
Temperature Range (storage)	-40			+100		°C
Shock Resistance	>2000g					
Output Load	>10 kΩ, <1000 pF					
Cable Length ^{5, 6}	50 cm					
Weight	6 grams (not including cable)					

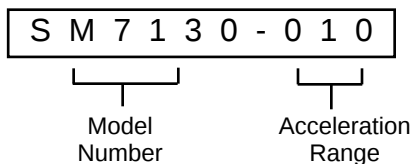
Notes

- 1) Frequency response is defined as the frequency range over which the device output is within ±3 dB of the DC value.
- 2) Output: Vout (+) (pin 2) 1.5 to 3.5 volts for -FS to + FS; 2.5V @ 0g.
- 3) Includes linearity, hysteresis and repeatability.
- 4) Linearity is specified BFSL (best fit straight line).
- 5) Unassembled mating connector available.
- 6) To use an alternative connector, use the following color code for electrical connections: Pin 1-Green; Pin 2-Blue; Pin 3-White; Pin 4-Black; Pin 5-Red; Pin 6- Orange.

Ordering Information

Acceleration range

- 002: ± 2g
- 010: ± 10g
- 050: ± 50g
- 100: ± 100g
- 300: ± 300g



Special configurations and tri-axial mounting block are available. Contact Silicon Microstructures for more information.

Figure 1: Electrical Schematic

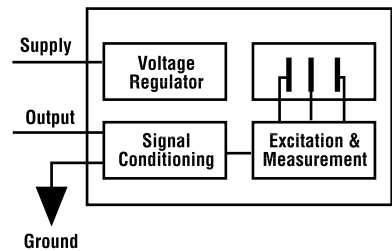
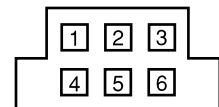


Figure 2: Device Pinout

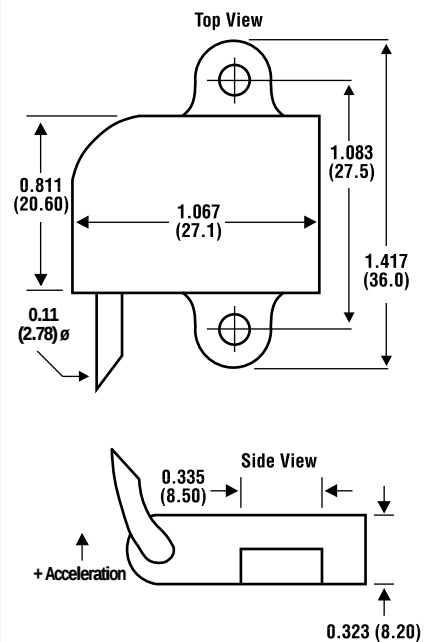


Pin Identification

- 1) NC
- 2) V out (+)
- 3) NC
- 4) Shield
- 5) Ground
- 6) Vcc

NOTE: Connector view shown above represents the view looking into the connector.

Figure 3: Installation Drawing



Note: Dimensions in inches (millimeters)



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Additional Products

- Low Range Pressure Transducers
- Surface Mount Pressure Sensors
- OEM Pressure Transducers
- Custom Designed Products