

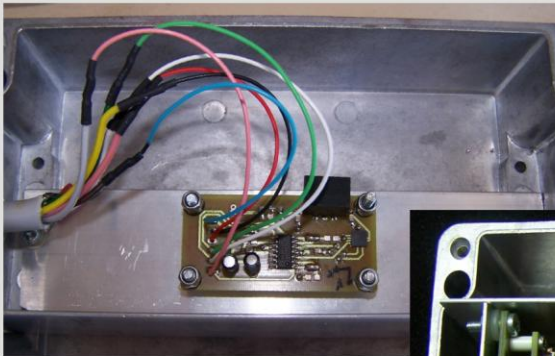


# SM500-SM1500: Strong Motion Acceleration MEMS sensors

- 3 axis accelerometers
- Low power consumption
- Surface mount installation
- MEMS technology
- Wide Input Voltage Range
- Wide Bandwidth DC-1500 Hz
- Output Range +/-3g linear
- Wide Dynamic Range 117dB
- Noise Level  $0.3\mu g_{rms}/\sqrt{Hz}$
- Operation Range: -20 +70°C



The SM550 and SM1500 are two MEMS type, three-component acceleration equivalent output sensor. Both have wide frequency response. Model SM1500 has a response from DC to 1500Hz, while the SM550 model has a response from 0.5 to 550Hz  
Output Range is +/-3g for the horizontal axes, and +/-2g for the vertical axes  
Sensitivity is 1.2V/g for the Sm1500, and 0.3V/g for the SM550 model.



The default cable length between the sensor and the digitizer is approximately 2 meters but it can be extended up to 50 meters.

The sensors are surface mounted, over a provided special base, giving the ability for leveling.

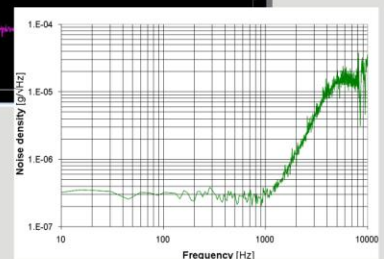
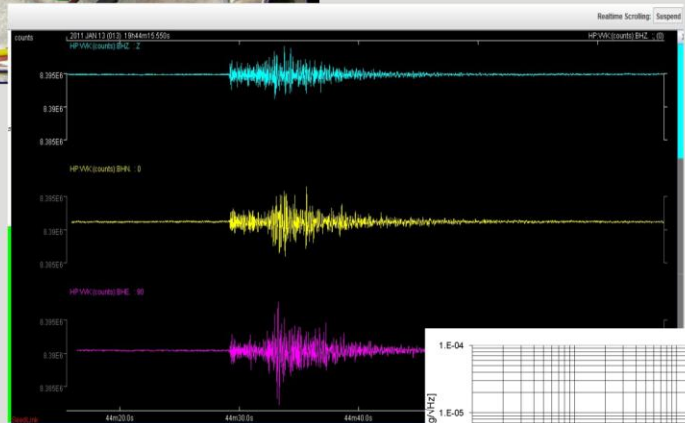


The SM1500 sensor operates from a bipolar power supply that can range from +/-6V to +/-15V with a typical power consumption of 33mA @6Vdc

The SM550 sensor operates from a unipolar power supply that can range from +/-9V to +/-20V with a typical power consumption of 16mA@9V

## APPLICATIONS:

- Structural Monitoring Applications
- Earthquake monitoring
- Geophysics
- Homeland and Border Security
- Vibrations Monitoring
- Tilt and Inclination monitoring
- Shock measurements





# Instrument Characteristics

<b>GENERAL</b>	<b>SM1500</b>	<b>SM550</b>
<b>Number of channels</b>	3	3
<b>Orientation</b>	Vertical, North-South, East-West	Vertical, North-South, East-West
<b>Sensor cable length</b>	2 meters (up to 50 meters optional)	2 meters (up to 50 meters optional)
<b>Power</b>	+/-6V to +/-15V 390mW	+/-9V to +/-20V 288mW
<b>Max output voltage</b>	+/-3.6Vpp	+/-0.9Vpp
<b>Bias Level</b>	0V +/-100mV	1.6V +/-100mV
<b>FEATURES</b>		
<b>Scale Factor</b>	+/-3g Horizontal +/-2g Vertical	+/-3g Horizontal +/-2g Vertical
<b>Sensitivity</b>	+/-3g	+/-3g
<b>Electronic output noise</b>	0.3ugrms/(Hz) <sup>-2</sup>	150ugrms/(Hz) <sup>-2</sup> Horizontal 300ugrms/(Hz) <sup>-2</sup> Vertical
<b>Bandwidth</b>	DC-1500Hz	0.5-550Hz Vertical 0.5-1600Hz Horizontal
<b>Dynamic Range</b>	117dB	62dB
<b>Nonlinearity</b>	<1% max	<1% max
<b>PHYSICAL</b>		
<b>Size</b>	160 X 100 mm	160 X 100 mm
<b>Weight</b>	600g	600g
<b>PROTECTION</b>		
<b>Overvoltage protection</b>	All pins are protected, all input signals are protected	All pins are protected, all input signals are protected
<b>ENVIRONMENT</b>		
<b>Temperature range</b>	-40 to +85oC	-40 to +85oC
<b>Humidity</b>	100%, IP67 enclosure	100%, IP67 enclosure