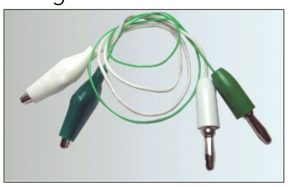
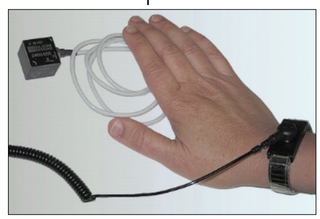
SDI MODELS

All Silicon Designs accelerometers respond to the Earth's gravity and should show approximately 1G of input when stationary and laid flat. It's possible to use this capability to do a static calibration of the device. The following instructions pertain to calibrations performed in DIFFERENTIAL mode.

For this example, we will be using a Silicon Designs 2260-025, however these instructions will work for all Silicon Designs packaged modules. A triaxial module would repeat the process below for each axis. Calibration of SDI's surface mount accelerometers is possible in a similar manner by using SDI's EBL or EBJ Analog Test Kits.

RECOMMENDED EQUIPMENT

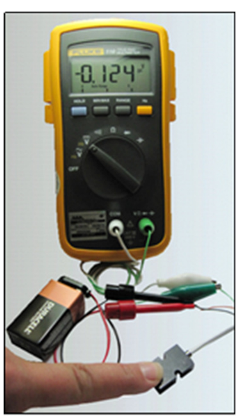
Voltmeter or Other Signal Measuring Device	Signal Connectors	Power Supply & Connectors	Accelerometer module and ESD precautions
			

HOW TO CALIBRATE

Connect your accelerometer wiring according to the instructions in the Quick Start Guide. In this example we are using a 9 Volt DC battery, which falls within the +8 to +32 Volt DC range supported by the 2260.

Place the module in the +1G position (lid up) and check the output voltage (Figure A).

Place the module in the -1G position (lid down) and check the output voltage (Figure B).

<table>
<tr><td rowspan="3">Figure A
</td><td rowspan="3">Figure B
</td><td>Calculate the 0G Bias
½ x (+1G reading + -1G reading)
This 2260 measures ½ x (.199 + -.124) = .0375</td></tr>
<tr><td>Calculate the Scale Factor
½ x ([+1G reading] - [-1G reading])
This 2260 measures ½ x (.199 - -.124) = .1615</td></tr>
<tr><td>Calculate the Sensitivity
(absolute value of +1G reading) +
(absolute value of -1G reading) x $\frac{1000}{2}$ = mV/G
In this example, the readings were .199 and -.124.
This 2260 measures |.199| + |-.124| x $\frac{1000}{2}$ = 161.5mV/G</td></tr>
</table>

The math for figuring out approximate sensitivity without the above data is simple. Take the accelerometer's output span, for example in SDI's differential ±4V output it would be 4V, and convert to mV, in this case 4000 mV. Divide that mV number by your sensor's g range, in this example 25g, so 4000/25 = 160mV, which equals 160 mV per 1G of acceleration.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE