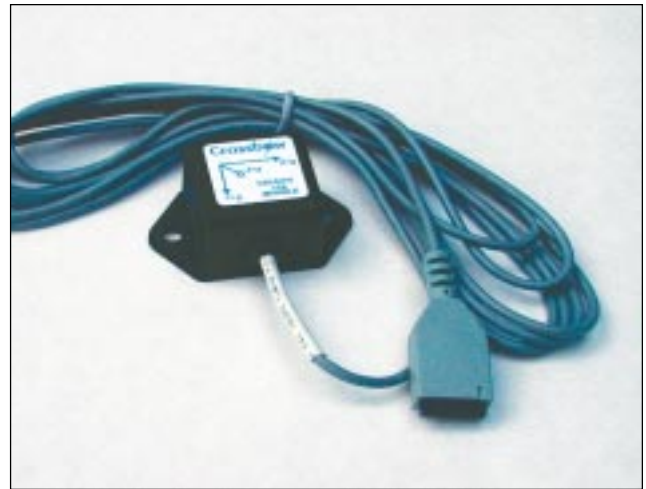


Accelerometers

GENERAL PURPOSE, M SERIES

- ▼ High Performance, 1-Axis and 3-Axis Accelerometers
- ▼ Small, Low-Cost
- ▼ Reliable Packaging with Screw-Down Mounting
- ▼ Factory Calibrated

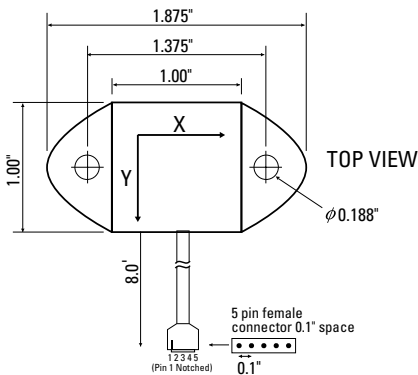
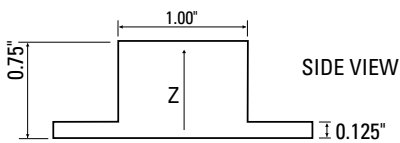


Applications

- ▼
- ▼
- ▼

Figure 1 Here Instead?

P1 NYLON PACKAGE



M SERIES

The M Series single and 3-axis accelerometers are general purpose, linear acceleration and/or vibration sensors available in ranges of ± 4 g and ± 25 g. Frequent applications are vibration analysis, automotive testing, instrumentation, and equipment monitoring. The M Series sensing element is a silicon micro-machined capacitive beam that is extremely small in die area and rugged. The capacitive beam is held in force balance for full scale non-linearity of less than 0.2%. The M Series accelerometers offer wide dynamic range, have excellent frequency response, operate on a single +5 VDC power supply, and are easy to interface to standard data acquisition systems. By specifying the -R option, an unregulated 8-30 V power supply can be used.

The CXL04M3 and other M Series sensors provide a direct high-level analog voltage output. The output requires no external signal conditioning electronics, and may be directly interfaced to an A/D or other data acquisition hardware. A typical application of the CXL04M3 is shown in Figure 1. The module should be securely attached using screws or adhesive. The M series accelerometers are available in two package options; the standard nylon package and high temperature aluminum casing (specified by -AL option). See drawing P1 and A1 for package dimensions.

Compared to traditional piezoelectric and piezoresistive accelerometer technologies, the CXL silicon micro-machined sensors offer equivalent performance at a significantly lower cost.

Model	CXL04M3 Triaxial	CXL04M1 CXL04M1Z Single Axis	CXL25M3 Triaxial	CXL25M1 CXL25M1Z Single Axis	Remarks
Span (g)	± 4	± 4	± 25	± 25	± 5%
Sensitivity (mV/g)	500	500	80	80	± 5%
Bandwidth (Hz)	DC-100	DC-100	DC-100	DC-100	± 5%
Noise (mg rms)	5	5	50	50	Typical
Noise Density (µg/Hz ^{1/2})	500	500	5000	5000	
Zero g Output (Volts)	+ 2.5 ± 0.1	+ 2.5 ± 0.1	+ 2.5 ± 0.1	+ 2.5 ± 0.1	@ +25 °C
Zero g Drift (mV)	± 60	± 60	± 60	± 60	0°C to 70°C
(g)	± 0.12	± 0.12	± 0.75	± 0.75	0°C to 70°C
(mV)	± 100	± 100	± 145	± 145	-40°C to +85°C
(g)	± 0.2	± 0.2	± 1.8	± 1.8	-40°C to +85°C
Span Output (Volts)	± 2.0 ± 0.1	± 2.0 ± 0.1	± 2.0 ± 0.1	± 2.0 ± 0.1	@ +25 °C
Nonlinearity (% FS)	± 0.2	± 0.2	± 0.2	± 0.2	Typical
Alignment error (deg)	± 2	± 2	± 2	± 2	Typical
Transverse Sensitivity (% FS)	± 3.5	± 3.5	± 3.5	± 3.5	Typical
Temperature Range (°C)	-40 to +85	-40 to +85	-40 to +85	-40 to +85	
Shock (g)	1000	1000	2000	2000	1 ms half sine
Output Loading	> 10 kΩ, < 1 nF	> 10 kΩ, < 1 nF	> 10 kΩ, < 1 nF	> 10 kΩ, < 1 nF	Max
Supply Voltage (Volts)	+ 5 ± 0.25	+ 5 ± 0.25	+ 5 ± 0.25	+ 5 ± 0.25	
Supply Voltage -R option (Volts)	+8 – 30	+8 – 30	+8 – 30	+8 – 30	Unregulated
Supply Current (mA)	24	8	24	8	Typical

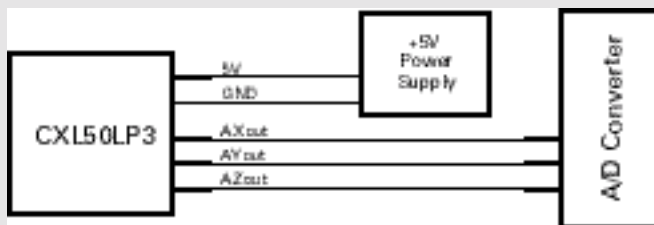
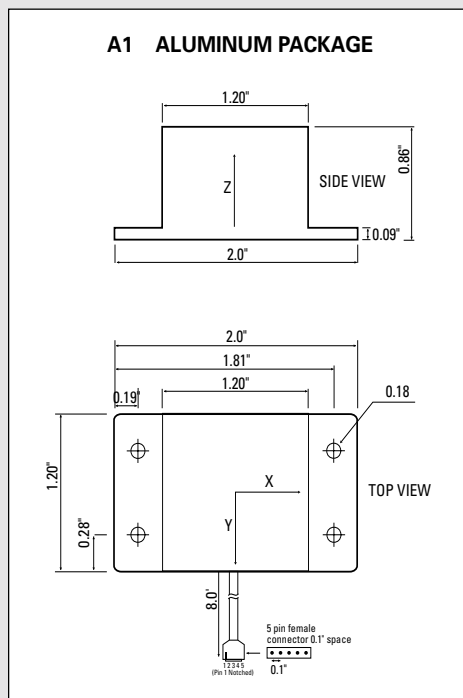


Figure 1



Ordering Information

Model	Axes	Span (g)	Sensitivity (mV/g)	Noise (mg rms)
CXL04M1	X	±4	500	5
CXLO4M1Z	Z	±4	500	5
CXLO4M3	TRI	±4	500	5
CXL25M1	X	±25	80	50
CXL25M1Z	Z	±25	80	50
CXL25M3	TRI	±25	80	50

OPTIONS

- R Voltage Regulator, 8 – 30 VDC input
- AL High Temperature Casing

If ordering options, please specify model name followed by the regulator option (-R) and then the package option (-AL), e.g. CXL04M1-R-AL