

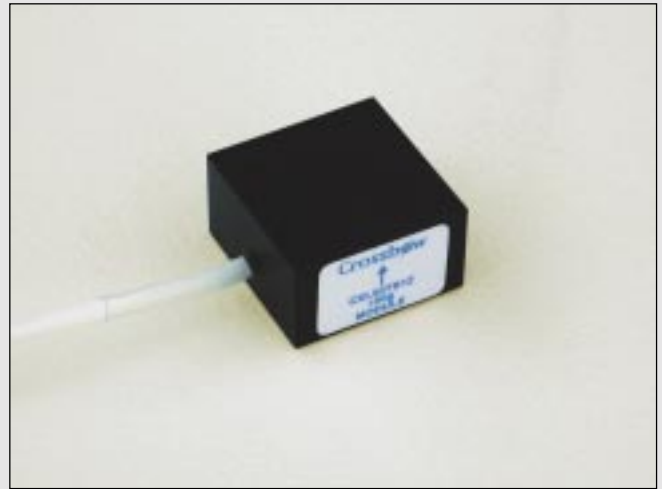
Accelerometers

INSTRUMENTATION, TB SERIES

- ▼ Unamplified, Temperature Compensated Bridge Output
- ▼ DC Response, Wide Bandwidth
- ▼ Low Noise
- ▼ Durable, Competitively Priced

Applications

- ▼ Automotive Testing
- ▼ Industrial Vibration Monitoring



TB Series

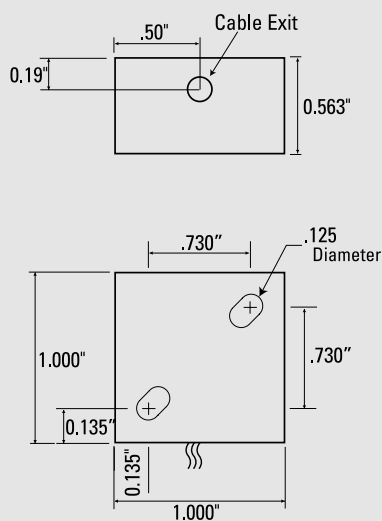
The TB Series Instrumentation Accelerometers are designed specifically for automotive test applications and industrial vibration monitoring. The TB Series features an unamplified bridge output that is ideal for high accuracy applications that require high sensitivity and low noise. When compared to other piezo-resistive accelerometers, the TB offers superior performance at a competitive price.

The sensing element of the TB Series consists of a micro-machined silicon mass suspended by multiple beams from a silicon frame. Piezoresistors located in the beams change their resistance as the motion of the suspended mass changes the strain in the beams. Each sealed element is signal-conditioned, precisely aligned in a mounting block, and potted with an industrial strength cable. Every unit is thoroughly tested before it leaves the factory.

Each sensor is shipped with a calibration sheet stating the zero acceleration output and sensitivity. Additional calibration information, such as frequency sweep, or temperature drift can also be included.

The module may be securely attached using screws or an adhesive. The output requires no signal conditioning and is easy to interface to standard data acquisition systems.

Please visit our website, www.xbow.com, or contact us directly for additional application information on this product.



Cavity Side Down

Specifications	Min	Typical	Max
Performance			
Input Range (g)			
CXL50TB1Z		± 50	
CXL100TB1Z		± 100	
Sensitivity (mV/g)			
CXL50TB1Z		10 ± 3	
CXL100TB1Z		5 ± 3	
Transverse Sensitivity (% Span)		± 1	± 4
Zero Acceleration Output (± mV)		100	
Non-Linearity (% Span)		± 0.2	± 1.0
Noise (µV, rms)			
CXL50TB1Z		± 20	
CXL100TB1Z		± 10	
Bandwidth (± 5% linearity) (Hz)		1000	
Environment			
Operating Temperature Range (°C)	- 40		+ 85
Compensated Temperature Range (°C)	0		50
Temperature Coefficient – Span (% Span)		± 2	
Temperature Coefficient – Zero (% Span)		± 2	
Shock/Acceleration Limit (g)			2000
Electrical			
Supply Voltage (Volts)	8	± 10	± 12
Supply Current (mA)	3		
Output Resistance (Ω)		1000	
Physical			
Size	0.563" x 1.00" x 1.00 (1.43 cm x 2.54 cm x 2.54 cm)		
Weight	1.52 oz (43 gm)		



Notes

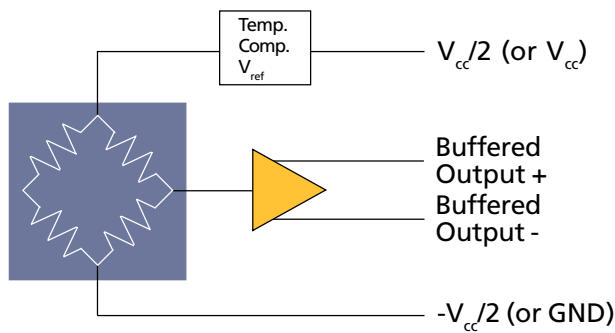
Sensitivity is ratiometric to supply over the min/max supply voltage range.

Non-linearity is the deviation from a best fit straight line at full scale. Transverse sensitivity is error measured in the primary axis output created by forces induced in the orthogonal axis. Transverse sensitivity error is primarily due to the effects of misalignment. Zero g drift is specified as the typical change in 0 g level from its initial value at +25°C to its worst case value at Tmin or Tmax.

Specifications subject to change without notice

Color	Function
Red	+ Excitation
Black	- Excitation
White	- Signal Output
Green	+ Signal Output

Pin Diagram



Block Diagram

Ordering Information

Model	Description	Span (g)	Sensitivity (mV/g)	Noise (µV, rms)	Bandwidth (Hz)
CXL50TB1Z	Z-axis Piezoresistive Accelerometer	± 50	10 ± 3	20	DC-1000
CXL100TB1Z	Z-axis Piezoresistive Accelerometer	± 100	5 ± 3	10	DC-1000