

*Acceleration, Velocity, Displacement.*

*RS232 interface.*

# VIBRATION

**Model : VB-8100**

*ISO-9001, CE, IEC1010*



**Lutron**

**LUTRON ELECTRONIC**

*The Art of Measurement*

**economic type**  
**Acceleration, Velocity, Displacement.**  
**VIBRATION**  
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**FEATURES**

- Applications for industrial vibration monitoring : All industrial machinery vibrates. The level of vibration is a useful guide to machine condition. Poor balance, misalignment & looseness of the structure will cause the vibration level increase, it is a sure sign that the maintenance is needed.
- Frequency range 10 Hz - 1 kHz, sensitivity relative meet ISO 2954.
- Professional vibration meter supply with vibration sensor & magnetic base, full set.
- Metric & Imperial display unit
- Acceleration, Velocity, Displacement measurement.
- RMS, Max hold, Peak value measurement.
- Max. Hold reset button, Zero button.
- Wide frequency range.
- Data hold button to freeze the desired reading.
- Memory function to record maximum and minimum reading with recall.
- Separate vibration probe with magnetic base, easy operation.
- LCD with green light backlight, easy reading.
- Can default auto power off or manual power off.
- Data hold, record max. and min. reading.
- Microcomputer circuit, high accuracy.
- Power by UM3/AA ( 1.5 V ) x 6 batteries or DC 9V adapter.
- RS232/USB PC COMPUTER interface.

**Electrical Specification**

Circuit	Custom one-chip of microprocessor LSI circuit.		
Display	LCD size : 52 mm x 38 mm LCD with green backlight ( ON/OFF ).		
Measurement	Velocity, Acceleration, Displacement		
Function	Acceleration, Velocity : RMS, Peak, Max Hold. Displacement : p-p ( peak-peak ), Max Hold p-p.		
Unit	Measurement	Metric	Imperial
	Accel	m/s <sup>2</sup> , g	ft/s <sup>2</sup> ,
	Velocity	mm/s, cm/s	inch/s
	Displacement	mm	inch
Frequency range	10 Hz to 1 KHz * Sensitivity relative during the frequency range meet ISO 2954 Refer to table 1, page 21		
Circuit	Exclusive microcomputer circuit.		
Peak Measurement	Acceleration, Velocity : To measure and update the peak value. Displacement : To measure and update the peak to peak ( p-p ) value.		
Max Hold Measurement	Acceleration, Velocity : To measure and update the max. peak value. Displacement : To measure and update the max. peak to peak ( p-p ) value.		
Zero Button	Under Acceleration ( RMS ) measurement, sensor motionless , press two Buttons ( 3-5, 3-6, Fig. 1 ) >3 seconds.		
Max. Hold Reset Button	Under Max. hold measurement, press two Buttons ( 3-5, 3-6, Fig. 1 ) >3 seconds.		

Advanced setting	* Set clock time ( Year/Month/Date, Hour/Minute/ Second ) * Auto power OFF management * Set beep Sound ON/OFF * Set sampling time
Data Hold	Freeze the display reading. * Only available for the RMS function.
Memory Recall	Maximum & Minimum value. * Only available for the RMS function.
Data Output	RS 232/USB PC computer interface. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug. * Connect the optional USB cable USB-01 will get the USB plug.
Sampling Time of Display	Approx. 1 second.
Operating Temperature and Humidity	0 to 50 °C. Less than 85% R.H.
Power Supply	* Alkaline or heavy duty DC 1.5 V battery ( UM3, AA ) x 6 PCs, or equivalent. * DC 9V adapter input. ( AC/DC power adapter is optional ).
Power Current	Normal operation ( w/o SD card save data and LCD Backlight is OFF ) : Approx. DC 15 mA. When SD card save the data and LCD Backlight is OFF ) : Approx. DC 36 mA.
Weight	Meter : 360 g/ 0.79 LB. Probe with cable and magnetic base : 99 g/0.22 LB
Dimension	Meter : 182 x 73 x 47.5 mm Vibration sensor probe: Round 16 mm Dia. x 37 mm. Cable length : 1.2 meter.
Accessories Included	* Instruction manual..... 1 PC * Hard carrying case( CA-06 )..... 1 PC * Vibration sensor with cable..... 1 PC * Magnetic base..... 1 PC
Optional Accessories	AC to DC 9V adapter.

**Electrical Specifications ( 23±5 °C )**

**Acceleration ( RMS, Peak, Max Hold )**

Unit	m/s <sup>2</sup>
Range	0.5 to 199.9 m/s <sup>2</sup>
Resolution	0.1 m/s <sup>2</sup>
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 m/S <sup>2</sup> ( 160 Hz )

Unit	g @ 1 g = 9.8 m/s <sup>2</sup>
Range	0.05 to 20.39 G
Resolution	0.01 G
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 m/S <sup>2</sup> ( 160 Hz )

Unit	ft/s <sup>2</sup>
Range	2 to 656 ft/s <sup>2</sup>
Resolution	1 ft/s <sup>2</sup>
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 m/S <sup>2</sup> ( 160 Hz )

**Remark :**

RMS : To measure the true RMS value.  
 Peak : To measure and update the peak value.  
 Max. Hold : To measure and update the max. peak value.

**Velocity ( RMS, Peak, Max Hold )**

Unit	mm/s
Range	0.5 to 199.9 mm/s
Resolution	0.1 mm/s
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 mm/s ( 160 Hz )

Unit	cm/s
Range	0.05 to 19.99 cm/s
Resolution	0.01 cm/s
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 mm/s ( 160 Hz )

Unit	inch/s
Range	0.02 to 7.87 inch/s
Resolution	0.01 inch/s
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	50 mm/s ( 160 Hz )

**Remark :**

RMS : To measure the true RMS value.  
 Peak : To measure and update the peak value.  
 Max. Hold : To measure and update the max. peak value.

**Displacement ( p-p, Max Hold p-p )**

Unit	mm
Range	1.999 mm
Resolution	0.001 mm
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	0.141 mm ( 160 Hz )

Unit	inch
Range	0.078 inch
Resolution	0.001 inch
Accuracy	±( 5 % + 5 d ) reading @ 160 Hz, 80 Hz, 23 ± 5 °C
Calibration Point	0.141 mm ( 160 Hz )

**Remark :**

p-p :  
 To measure the Peak to Peak value.  
 Max. Hold p-p :  
 To measure and update the max. Peak to Peak value.

\* Spec. tested under the environment RF Field Strength less than 3 V/M & frequency less than the 30 MHz only.