

**3 in 1**

# **VIBRATION/TACHOMETER**

**Model : VT-8204**

**ISO-9001, CE, IEC1010**



- \* Separate professional vibration sensor.
- \* Vibration meter
  - Acceleration :  
200 m/s<sup>2</sup>, RMS, PEAK,  
Max. Hold., g, ft/s<sup>2</sup>.
  - Velocity :  
200 mm/s, RMS, PEAK,  
Max. Hold, cm/s, inch/s.
  - Displacement ( p-p ) :  
2 mm, Max. Hold.
- \* Tachometer ( photo ) :  
5 to 100,000 RPM.
- Tachometer ( contact ) :  
5 to 19,000 RPM.
- Tachometer ( surface speed ) :  
m/min., ft/min., inch/min.
- \* Laser photo tachometer.
- \* Data logger.
- \* Data hold, Record (max., min.).
- \* RS-232 computer interface.
- \* DC 1.5V ( UM-3, AA ) x 4 PCs.
- \* Patented.



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# VIBRATION METER

Model : VT-8204

## 1. FEATURES

### ***Vibration function :***

- \* 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.
- \* Acceleration range : 200 m/s<sup>2</sup>.
- \* Velocity range : 200 mm/s.
- \* Displacement ( p-p ) range : 2 mm.
- \* Metric and imperial display unit .
- \* RMS measurement for Acceleration and Velocity.
- \* Peak to peak measurement for Displacement.
- \* Peak function for Acceleration and Velocity.
- \* Max. hold function for Acceleration ( peak ), Velocity ( peak ) and Displacement ( peak to peak ).
- \* Frequency range 10 Hz - 1 kHz, sensitivity relative meet ISO 2954.
- \* Zero function, executed by front buttons.
- \* Data logger function with flexible sampling time selection, can save max. 1000-point data into the memory circuit.
- \* Data hold button to freeze the desired reading.
- \* Memory function to record maximum and minimum reading of RMS value ( Acc., Vel. ) or Displacement ( p-p ).
- \* Auto shut off saves battery life.
- \* Professional vibration meter supply with separate vibration sensor & magnetic base, full set.

### ***Tachometer ( photo, contact ) function :***

- \* Laser light detecting source, long measuring range up to 1.5 meters, it is useful in the RPM measurement application where the machine would be a risk to the operator or close access is difficult or not possible.
- \* The best Tachometer in the world. 2 in 1, one instrument combine Photo Tachometer & Contact Tachometer.
- \* Wide measuring range from 0.5 to 100,000 RPM, 0.1 RPM resolution for the measured value < 1000 RPM.
- \* Microprocessor based circuit, crystal time base, high precision with 0.05% accuracy.
- \* Memory with recall function, the last value, max., value, min. value will be stored into the memory automatically.
- \* Patent patented.

### ***General function :***

- \* Super large LCD display.
- \* No contact infrared temperature measurement via optional IR temp. probe.
- \* RS 232 computer interface.
- \* Optional data acquisition software and data logger software.
- \* Microcomputer circuit, high performance.
- \* Built-in low battery indicator.
- \* Heavy duty & compact housing case.
- \* Complete set with the hard carrying case.

## 2. SPECIFICATIONS

### ***2-1 Vibration function***

Velocity range	0.5 to 199.9 mm/s	
	0.05 to 19.99 cm/s	
	0.02 to 7.87 in/s	
Acceleration range	0.5 to 199.9 m/s^2	
	0.05 to 20.39 g	
	2 to 656 ft/s^2	
Displacement ( p-p )	0.005 to 1.999 mm	
	0.002 to 0.078 inch	
* p-p : Peak to Peak		
Frequency range	10 Hz to 1 KHz	
	* Sensitivity relative during the frequency range meet ISO 2954	
	Refer to table 1, page 28.	
Function	Velocity	RMS, Peak, Max. hold (peak).
	Acceleration	RMS, Peak, Max. hold (peak).
	Displacement	p-p, Max. hold (p-p).
	* Peak : To measure the peak value. * p-p : Peak to peak value. * Max. hold : To hold the max. peak or p-p value.	
Accuracy	± ( 5 % + 2 d ) reading , 160 Hz, 80 Hz. * 23 ± 5 °C	
Data hold	Freeze the desired reading.	

\* Appearance and specifications listed in this brochure are subject to change without notice.

Calibration point	Velocity	50 mm/s ( 160 Hz )
	Acceleration	50 m/s <sup>2</sup> ( 160 Hz )
	Displacement ( p-p )	0.05 mm ( 160 Hz )
Memory	Maximum & Minimum value. <i>* Memory function are only available for RMS ( Acc., Vel. ) and Displacement ( p-p ).</i>	
Sampling time	Approx. 1 second.	
Data logger	Data logger function with flexible sampling time selection, can save max. 1000-point data into the memory circuit.	
Sampling Time of Data Logger	Manual	Push the data logger button once will save the data one time.
	Auto	1, 2, 10, 30, 60, 600, 1800, 3600 seconds.
Sampling time	Approx. 1 second.	
Power off	Auto shut off, saves battery life, or manual off by push button.	

### ***2-2 Tachometer ( photo, contact ) function***

Range	Photo Tachometer : 10 to 99,999 RPM	
	Contact Tachometer : 0.5 to 19,999 RPM	
	Surface Speed ( m/min. ) : 0.05 to 1,999.9 m/min.	
	Surface Speed ( ft/min. ) : 0.2 to 6,560 ft/min.	
Accuracy	± ( 0.05 % + 1 digit ).	
Resolution	0.1 RPM	< 1,000 RPM
	1 RPM	≥ 1,000 RPM
	0.01 m/min.	< 100 m/min.
	0.1 m/min.	≥ 100 m/min.
	0.1 ft/min.	< 1000 ft/min.
	1 ft/min.	≥ 1,000 ft/min.
Time base	Quartz crystal	
Sampling Time	Photo Tachometer - 1 sec. ( ≥ 60 RPM ). Contact Tachometer - 1 sec. ( ≥ 6 RPM ).	
Photo Tachometer detecting distance	50 - 1,500 mm typically. <i>* Spec. of detecting distance are that under the size of reflecting tape is 10 mm square &amp; the measuring RPM value is 1,800 RPM. The max. &amp; min. detecting distance may change under different environment, different reflecting tape or the measuring RPM beyond 1800 RPM.</i>	
Laser light source	<i>* Photo Tach.</i> <i>* Less than 1 mW.</i> <i>* Class 2 laser diode. Red. Wave length is 645 nm approximately.</i>	
Memory	Last value, Max. value, Min. value.	

### ***2-3 General function***

Display	45 mm x 48 mm LCD size.	
Circuit	Exclusive microcomputer circuit.	
Data output	RS 232 serial output.	
Operating temperature	0 to 50 °C ( 32 to 122 °F ).	
Operating humidity	Less than 80% RH.	
Power supply	1.5 V battery x 4 PCs UM-3, AA, R6 Alkaline or heavy duty type,	
Power consumption	Vibration	Approx. 10.5 mA
	Tachometer	Approx. 21 mA
Weight	Meter	397 g/0.87 LB
	Probe with magnetic base	110 g/0.24 LB
Dimension	Meter : 46.8 x 75.5 x 188 mm ( 1.8 x 3.0 x 7.4 inch ). Vibration sensor probe: Round 18 mm Dia. x 40 mm.	
Accessories included	Instruction manual..... 1 PC. Vibration sensor ( VB-82 )..... 1 PC. Magnetic base..... 1 PC. Reflecting tape marks (600 mm)..... 1 PC. RPM cone rubber..... 1 PC. RPM funnel rubber..... 1 PC. Carrying Case..... 1 PC.	
Optional accessories	<i>* Data Acquisition software,</i> ..... SW-U801-WIN <i>* Data Logger software, SW-DL2005</i> <i>* RS232 cable.....</i> UPCB-02 <i>* USB cable.....</i> USB-01 <i>* IR Temp. probe.....</i> IR-962	