










Specifications

Model	SmartVibro VM-4424H	SmartVibro VM-3024H	SmartVibro VM-7024H
Sensor type	Piezoelectric Type	Electro-dynamic Type	Piezo-resistive Type
Type	High-end	High-end	High-end
Frequency range	5 Hz to 10 kHz (acceleration) 10 Hz to 1k Hz (velocity)* 10 Hz to 150 Hz (displacement)* 1 kHz to 10 kHz (bearing) 3 Hz to 1 kHz (H function) <small>* Maximum frequency of velocity and displacement is restricted by acceleration limit 450 m/s².</small>	10 Hz to 1 kHz (acceleration, velocity, displacement)	0.3 Hz to 100 Hz (acceleration) 3 Hz to 100 Hz (velocity, displacement)* <small>* Maximum frequency of velocity and displacement is restricted by acceleration limit 20 m/s².</small>
Full scale	acceleration, velocity, displacement : 6 range, automatic switching bearing : 6 range, automatic switching H function : 6 range, automatic switching	acceleration : 6 range, automatic switching velocity : 6 range, automatic switching displacement : 6 range, automatic switching	acceleration : 6 range, automatic switching acceleration : 6 range, automatic switching acceleration : 6 range, automatic switching
Maximum measurable range	acceleration, H function : 300 m/s ² (RMS, EQP, PEAK) velocity : 1000 mm/s (RMS, EQP, PEAK) displacement : 10 mmp-p (EQP, PEAK)	acceleration : 100 m/s ² (RMS, EQP, PEAK) velocity : 200 mm/s (RMS, EQP, PEAK) displacement : 1000 μmp-p (EQP, PEAK)	acceleration : 20 m/s ² (RMS, EQP, PEAK) velocity : 100 mm/s (RMS, EQP, PEAK) displacement : 10 mmp-p (EQP, PEAK)
Sampling frequency	51.2 kHz	20.48 kHz	4096 kHz
Indication	PEAK : acceleration, velocity, displacement EQP : acceleration, velocity, displacement RMS : acceleration, velocity	PEAK : acceleration, velocity, displacement EQP : acceleration, velocity, displacement RMS : acceleration, velocity	PEAK : acceleration, velocity, displacement EQP : acceleration, velocity, displacement RMS : acceleration, velocity
Frequency response	±5 % (10 Hz to 5 kHz) +30 % / -50 % (5 Hz to 10 Hz, 5 kHz to 10 kHz)	±5 % (20 Hz to 500 Hz) +5 % / -15 % (10 Hz to 20 Hz, 500 Hz to 1 kHz)	±5 % (0.3 Hz to 100 Hz)
Accuracy	Sensitivity error	±5 % (for full scale value at 1 kHz)	±5 % (for full scale value at 16 Hz)
	Range changeover error	±2 % (1 kHz standard)	±2 % (16Hz standard)
Linearity	±1 % (for full scale value at 1 kHz)	±0.5 % (for full scale value at 80 Hz)	±1.5 % (for full scale value at 16 Hz)
Output	AC OUT : 0 to ±1 V (load10 kΩ or higher) DC OUT : 0 to +1 V (load10 kΩ or higher)	AC OUT : 0 to ±1 V (load10 kΩ or higher) DC OUT : 0 to +1 V (load10 kΩ or higher)	AC OUT : 0 to ±1 V (load10 kΩ or higher) DC OUT : 0 to +1 V (load10 kΩ or higher)
Language	Japanese, English (switching)	Japanese, English (switching)	Japanese, English (switching)
Power supply	battery : AA×2pcs. (continuous approx. 20hours)	battery : AA×2pcs. (continuous approx. 20hours)	battery : AA×2pcs. (continuous approx. 20hours)
Size/Mass of body unit	74 (W) × 32.5 (D) × 148 (H) mm approx.230 g (including battery)	74 (W) × 32.5 (D) × 148 (H) mm approx.230 g (including battery)	74 (W) × 32.5 (D) × 148 (H) mm approx.230 g (including battery)
Size/Mass of pickup	Piezoelectric accelerometer φ19×42 (L) mm 40 g (pickup) φ6×195 (L) mm 70 g (probe) *including screw part	Electrodynamic velocity pickup φ25.8×50 (L) mm 140 g (pickup) φ8×50 (L) mm 20 g (probe)	Piezo-resistive accelerometer 45 (W) × 45 (D) × 45 (H) mm 200 g (pickup)
FFT analysis	Δf : 25Hz, 12.5Hz, 6.25Hz	—	Δf : 1Hz, 0.5Hz, 0.25Hz
Memory	SD card waveform data acquisition saving time: 0.1Sec./0.2 Sec./0.5 Sec./1 Sec. sampling frequency: 51.2 kHz	—	SD Card waveform data acquisition saving time : 1Sec./ 2 Sec./5 Sec./10 Sec. sampling frequency: 10.24 kHz
Option	<ul style="list-style-type: none"> small size strong magnet [for flat surface] MH-202R (φ24×10.5 mm)  	<ul style="list-style-type: none"> small size strong magnet [for spherical surface] MH-203R (φ24×20 mm)  	<ul style="list-style-type: none"> magnet MB-PB 
	<ul style="list-style-type: none"> long cable LC4 (4 m)  	<ul style="list-style-type: none"> extension cable CE-3024-3 (3 m) CE-3024-6 (6 m) CE-3024-10 (10 m)  	<ul style="list-style-type: none"> long cable CE-7000 (10 m) 
	<ul style="list-style-type: none"> rubber jacket PC-3024  	<ul style="list-style-type: none"> AC adapter PS-3024-3  	<ul style="list-style-type: none"> carrying case C-3024 



Accurate and Easy Operation

SmartVibro

[VM-4424H, VM-3024H, VM-7024H]



VM-3024H

IMV CORPORATION

Head Office

tel +81 6 6471 3155
web <https://www.imv.co.jp/e>

*The specifications and design are subject to change without notice.

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- 1 Low-price and high-functionally
- 2 Simultaneous measurement of acceleration, velocity and displacement
- 3 FFT analysis
- 4 Waveform data is saved into SD card

IMV CORPORATION

Easy operation and simultaneous measurement of acceleration, velocity and displacement

Compact and multi-functional portable vibrometer in low price! Acceleration, velocity and displacement indicated simultaneously on LCD touch screen. It's very useful for the measurement of turbine, power generator, blower, pump or compressor. In addition to routine maintenance use, it can be used in shipping inspection or vibration investigation of electric appliances.

Operation Procedure

① Power ON
Press an orange button on left side of the body

② Push a pickup against measurement spot

③ Measurement
Press a function button (L)
When you press the button again, it stops the measurement.

④ Confirm data
Confirm data on LCD Screen

⑤ Judgment OK/NG
Comparison with past data
(Caution when the value has significantly changed)

Three usable pickups • • • suitable for various measurement scenes

VP-4316
Piezoelectric type for wide frequency range [most suitable vibrometer] VM-4424H

VP-3024
Electro-dynamic type for small amplitude displacement [most suitable vibrometer] VM-3024H

VP-7000L
Piezo-resistive type for low frequency vibration [most suitable vibrometer] VM-7024H

Convenient multi-functions add to the standard model

High-end Model (VM-4424H / VM-3024H / VM-7024H)

1. FFT analysis*

For further investigation of cause of vibration, SmartVibro is possible to perform frequency analysis by the minimum condition setting.

2. SD card data saving

Waveform data is saved into SD card as CSV format (Maximum 50 seconds*)

* In case of VM-7024H

3. For low frequency vibration (VM-7024)

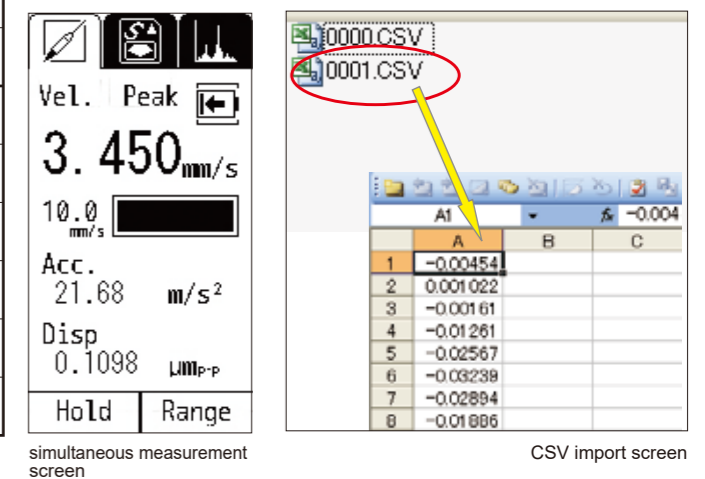
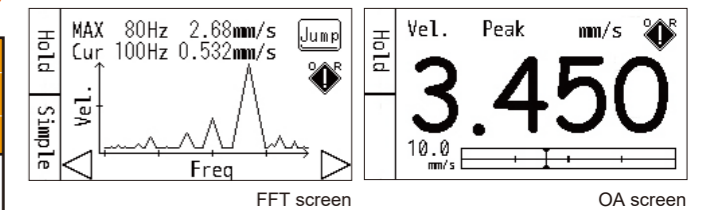
In case of measurement of low frequency under 1Hz. (Ground vibration or small displacement of machine tool.)

*What is FFT analysis?

FFT analysis is to extract frequency components from vibration waveform.
By comparing frequency distribution, the cause investigation becomes possible.

SmartVibro function table

Sensor Type	Piezoelectric Type	Electro-dynamic Type	Piezo-resistive Type	
Model	VM-4424H	VM-3024H	VM-7024H	
	high-end	high-end	high-end	
usability	Simultaneous measurement	○	○	○
	Waveform data storage	○	○	○
	FFT analysis	○	○	○
	Motor, Blower, Pump	○	○	○
object	Turbine		○	
	Generator		○	
	Mixer, Centrifuge			○
	Crane, Bridge			○
	Floor, Ground			○



Applications

Maintenance of rotating machineries as motors, blowers etc.

Vibration condition check of pipe

Measurements of small displacement of machine tools

HIGH END