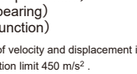
Specifications

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) * Maximum frequency of velocity and displacement is restricted by acceleration limit 450 m/s² .	10 Hz to 1 kHz (acceleration, velocity, displacement)	0.3 Hz to 100 Hz (acceleration) 3 Hz to 100 Hz (velocity, displacement)* * Maximum frequency of velocity and displacement is restricted by acceleration limit 20 m/s² .
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 mesurable range	acceleration, H function : 300 m/s²(RMS,EQP,PEAK) velocity : 1000 mm/s (RMS, EQP, PEAK) displacement :10 mmp-p (EQP, PEAK)	acceleration : 100 m/s²(RMS,EQP,PEAK) velocity : 200 mm/s (RMS, EQP, PEAK) displacement : 1000 μmp-p (EQP,PEAK)	acceleration : 20 m/s²(RMS, EQP, PEAK) velocity : 100 mm/s (RMS, EQP, PEAK) displacement : 10 mmp-p (EQP, PEAK)
Sampling frequency	51.2 kHz	20.48 kHz	4,096 Hz
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 80 Hz)	±5 %(for full scale value at 16 Hz)
Accuracy — Range changeover error	±2 % (1 kHz standard)	±2 % (80 Hz standard)	±2 %(16Hz standard)
Accuracy — 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 : 10Hz, 5Hz , 2.5Hz	Δf : 1Hz , 0.5Hz , 0.25Hz
Memory	SD card waveform data acquision 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	SD Card waveform data acquisition Saving time : 5Sec./10Sec./25 Sec./50 Sec. sampling frequency: 2,048 Hz
Option	• small size strong magnet 【for flat surface】 MH-202R (φ24×10.5 mm) 	• small size strong magnet 【for spherical surface】 MH-203R (φ24×20 mm) 	•magnet MB-PB 
	• long cable LC4 (4 m) 	•extension cable CE-3024-3 (3 m) CE-3024-6 (6 m) CE-3024-10 (10 m) 	•long cable CE-7000 (10 m) 
	• rubber jacket PC-3024 	•AC adapter PS-3024-3	•carrying case C-3024

IMV CORPORATION

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

2021.04
Cat No. 2104④SV_EN

Accurate and Easy Operation

SmartVibro

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

VM-3024H

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

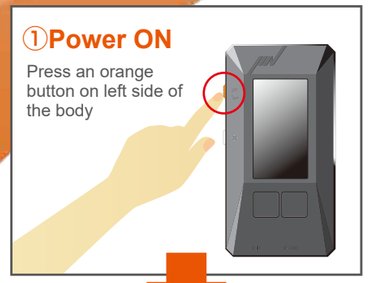
Easy operation and simultaneous measurement of acceleration, velocity and displacement

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.

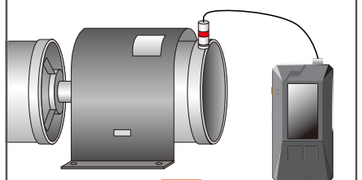
Operation Procedure

①Power ON

Press an orange button on left side of the body

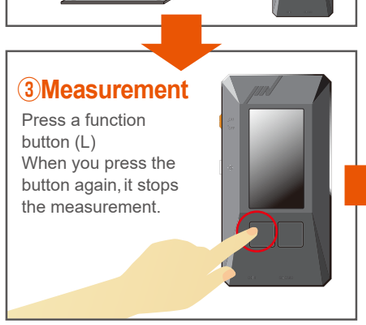


②Push a pickup against measurement spot



③Measurement

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

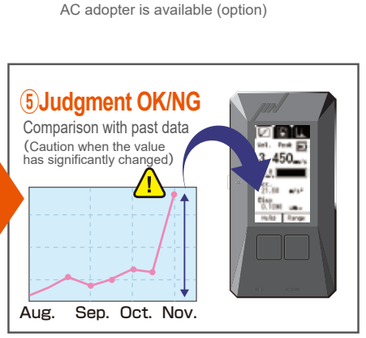


④Confirm data

Confirm data on LCD Screen

⑤Judgment 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)

HIGH END

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

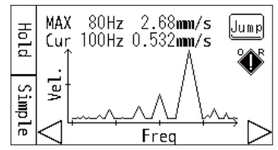
3. For low frequency vibration (VM-7024)

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

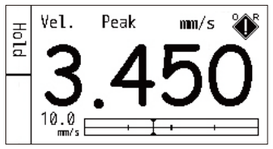
***What is FFT analysis?**
FFT analysis is to extract frequency components from vibration waveform.
By comparing frequency distribution, the cause investigation becomes possible.

SmartVibro function table

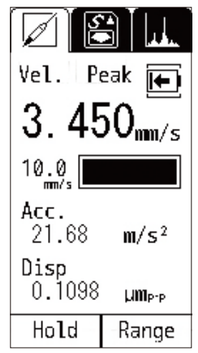
	Sensor Type	Piezoelectric Type	Electro-dynamic Type	Piezo-resistiveType
	Model	VM-4424H	VM-3024H	VM-7024H
		high-end	high-end	high-end
usability	Simultaneous measurement	○	○	○
usability	Waveform data storage	○	○	○
usability	FFT analysis	○	○	○
object	Motor, Blower, Pump	○	○	
object	Turbine		○	
object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



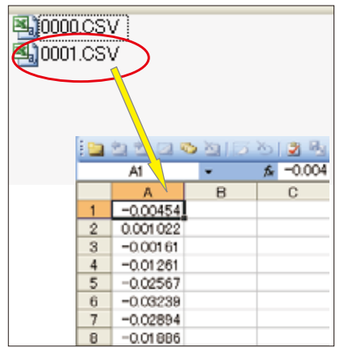
FFT screen



OA screen



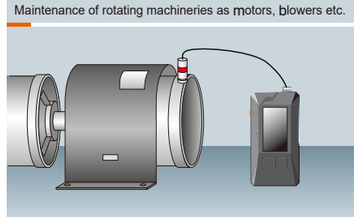
simultaneous measurement screen



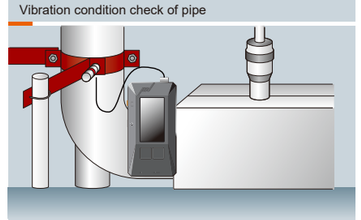
CSV import screen

Applications

Maintenance of rotating machineries as motors, blowers etc.



Vibration condition check of pipe



Measurements of small displacement of machine tools