Disclaimer
The manufacturer assumes no responsibility for any consequences resulting from the use or misuse of this product. Product specifications and manual content are subject to change without prior notice.

Part Number: 7603191
GTIN: 6298043998260

MarMonix®

MVB 600

Vibration meter

Instruction Manual

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Introduction

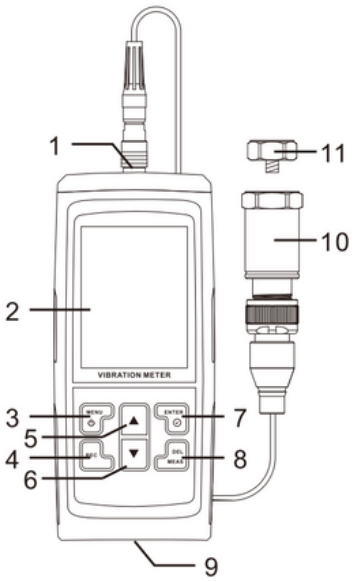
Marmonix MVB 600 operates on the piezoelectric effect of artificially polarized ceramics, making it suitable for standard vibration measurement of mechanical equipment, particularly rotating and reciprocating machinery. It measures vibration acceleration, velocity, displacement, frequency, and temperature, and is widely applied in machinery manufacturing, electrical metallurgy, and general aerospace industries.

Features

1. Measures vibration acceleration, velocity, displacement, frequency, and temperature.
2. Equipped with a TFT large display screen.
3. Automatically switches between high- and low-speed circuit modes.
4. Displays maximum, minimum, and average values.
5. Line chart visually depicts vibration level variations.
6. Supports data recording in both automatic and manual modes.
7. Provides data storage, review, and deletion functions.
8. Adjustable sampling interval for flexible operation.
9. Customizable automatic shutdown time.
10. Measurement unit selection available.
11. Machine level selection function integrated.
12. Built-in self-calibration capability.
13. Bilingual interface options: Chinese and English.
14. Adjustable screen brightness setting.
15. Low power warning function included.
16. Certified in accordance with ISO standards.
17. Supports USB charging.
18. PC software connectivity for data management.
19. Exports CSV and BMP files compatible with Windows; also functions as a small-capacity USB storage device for other file formats.

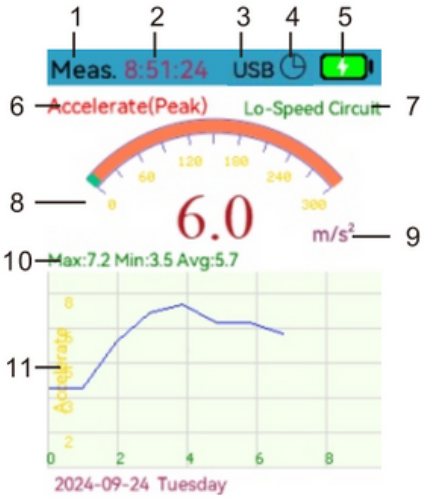
Diagram of the product

(1) A Schematic Diagram



1. **Host–sensor** interface
2. **LCD display**
3. **MENU button:** Menu / Power control
4. **REC button:** Recording function
5. ▲ **button:** Up / Decrease selection
6. ▼ **button:** Down / Increase selection
7. **ENTER button:** Confirmation function
8. **DEL/MEAS button:** Delete / Measurement function
9. **USB interface**
10. **Sensor**
11. **Magnetic base**

(2) Description of the symbols on the display unit



1. **Status:** Ready/Measurement; press DEL/MEAS to enter measurement state; Pre-measurement data remains unchanged.
2. **RTC Corner:** Time/Temperature.
3. **USB Connection:** Successful link.
4. **Auto Shutdown:** Enabled.
5. **Battery Level:** Power indicator.
6. **Measurement Mode:** Acceleration, velocity, displacement, frequency, and temperature.
7. **Circuit/Amplitude:** Acceleration, velocity, and displacement auto-switch between high/low-speed circuits; frequency shows amplitude.
8. **Current Measurement Value**.
9. **Unit:** Changes with selected mode.
10. **Value Summary:** Maximum, minimum, and average.
11. **Line Chart:** Displays measurement data.

Technical Specifications

	Range	Accuracy	Note
Accelerate	0.1m/s²~300m/s²	±1.5%±2digits	In the frequency range of 20Hz~8KHz
		±3%±2digits	In the frequency range of 8KHz~12KHz
Velocity	1mm/s~850mm/s	±1.5%±2digits	In the frequency range of 20Hz~1KHz
Distance	1um~3300um	±1.5%±2digits	In the frequency range of 20Hz~1KHz
Frequency	30Hz~14KHz	±1%±2digits	Acceleration must be greater than 3m/s²
Temperature	-10~60℃(14~140℉)	±5% or ±1.5℃, whichever is greater.	
Vibration acquisition	Piezoelectric ceramic accelerometer (shear type)		
Storage space	8MB (Store approximately 397,000 data points)		
Power supply	2000mAh 3.7V lithium battery		
Low battery indicator	4-level battery level indicator, automatic shutdown when voltage is below 3.3V		

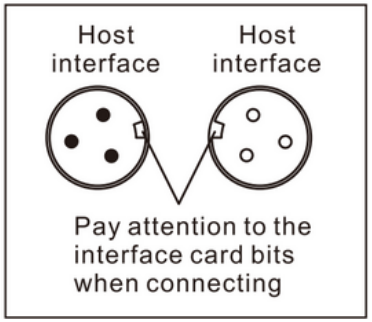
Note:

1. Velocity, displacement, and frequency are interrelated.
2. Do not operate the instrument for extended periods in environments below 0 °C or above 70 °C, as this may damage the battery.
3. Charging time: 4–5 hours; Charger specification: 5V, 2A.

Operation Instructions

(1) Preparation for Measurement

- Connect the host unit and sensor, then install the magnetic base.
- Check battery level before measurement; if the device cannot power on or battery is low, switch off or recharge promptly.



(2) Power On/Off

- **Turn On:** From shutdown state, short-press the MENU button to power on and enter the measurement interface.
- **Manual Shutdown:** From power-on state, long-press the MENU button to turn off.

(3) Menu Function Operation

After startup, short-press the MENU button to enter the menu. Use the navigation buttons to select the desired item, then press ENTER to access the setting. Use the navigation buttons again to adjust, then press ENTER to save and return to the menu (or press MENU to exit without saving).

- **RecMode:** Data Logging Settings

Used for long-term logging (more than 200 points). In the measurement interface, short-press the DEL/MEAS button to enter measurement, then short-press REC to begin recording. Data is stored according to the sampling interval while the [REC] icon flashes. The file is saved automatically upon exiting the interface.

- **File**: To view Recorded Data and Images, Select a file, then short-press the DEL/MEAS button to delete the record or image.

a. **View Recorded Data**: Files in .csv format contain measurement results. Short-press ENTER to open the data list; within the list, short-press ENTER again to display the line chart.

b. View Pictures: Files in .bmp format are screenshots. Viewing images requires connecting the device to a computer. Resolution: 240 × 320 dpi.

Note:

Screenshot Operation: Press REC and DEL/MEAS simultaneously in any interface until the file name appears, confirming successful capture.

Save Time: Screenshot saving is affected by storage capacity and image size; Screenshot saving may take up to 30 seconds depending on file size and available storage, during which the interface may appear unresponsive.

Viewing Screenshots: After connecting to a computer, open My Computer (or This PC) to access the new USB drive for stored images

- **Sampling:** Sampling interval adjustable from 1–9 seconds.
- **Shutdown:** Configurable at 00, 10, 20, 30, 40, 50, 60 minutes; 00 disables auto shutdown.
- **VibrUnit:**

1. **Acceleration Units:** m/s², g, ft/s²

Conversion: 1 m/s² = 0.1019716213 g = 3.280839895 ft/s²

2. Velocity Units: mm/s, cm/s, in/s

Conversion: m/s = 100 cm/s = 0.03937008 in/s

3. Displacement Units: μm, mm, mil

Conversion: 1 m = 1000 mm = 0.03937008 mil

4. **Temperature Units:** °C, °F, K

Conversion: x°C = (1.8x + 32) °F = (x + 273.15) K

- **MachLV:** Machine Grade

I: Small (P < 15 kW)

II: Medium (15 kW < P ≤ 75 kW)

III: Large, hard base (P > 75 kW)

IV: Large, soft base (P > 75 kW)

- **RtcCorner:** Displays date and temperature at the top-left of the interface.
- **Calibrate:** The device is factory-calibrated; recalibration is unnecessary unless zero drift occurs (zero drift is the gradual output change of an instrument in the absence of input). The zero-drift calibration procedures are as follows:

a. With a Vibration Calibration Tester:

- **P0 Calibration:** Under vibration-free conditions, short-press ENTER to start calibration until [Pass 33.3%] appears.
- **P1 Calibration**: Adjust the vibration table output as indicated, then short-press ENTER.

- **P2 Calibration**: Connect P1 to enable automatic downward calibration; no further action is needed. Calibration completes at 100% success, and the interface returns to measurement mode.

Note: If calibration exceeds the maximum vibration signal, the display shows [Over].

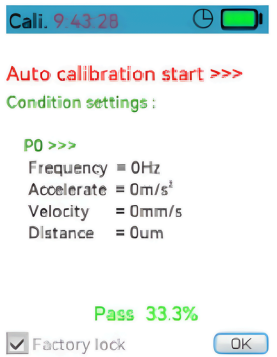
b. Without a Vibration Calibration Tester: In vibration-free conditions, enter P0 calibration. When [Pass 33.3%] appears, calibration is complete. Short-press the MENU button to exit.

Additional Guidance: Regular calibration ensures measurement accuracy and reliability, particularly when the instrument is used in demanding industrial environments. Performing calibration at defined intervals helps maintain compliance with ISO standards and guarantees consistent diagnostic results. In vibration-free conditions, enter P0 calibration. When [Pass 33.3%] appears, calibration is complete. Short-press the MENU button to exit.

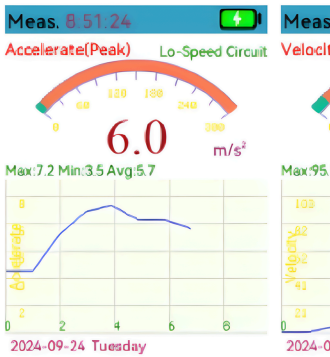
- **Reset:** Restores factory settings if incorrect operations or configurations occur.
- **Language:** Supports English and Chinese options.
- **Backlight:** Adjustable display brightness, configurable from 1%–100%.

(4) Measurement

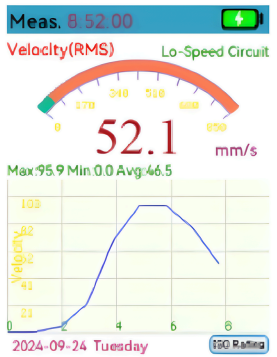
1. After startup, short-press the DEL/MEAS button to enter measurement mode. Press the navigation button to switch between measurement interfaces: Acceleration (Peak), Velocity (RMS), Displacement (P-P), Frequency, and Temperature.
2. Allow the measurement to stabilize, then position the sensor to obtain accurate readings. To save results, short-press the REC button to record.
3. The measurement interface shows maximum, minimum, and average values, with the unit displayed according to the menu setting. The instrument automatically switches between high- and low-speed measurement circuits.
4. Velocity (RMS) Interface: Short-press ENTER to display the ISO rating (Good, Normal, Unsatisfactory, Unacceptable). This evaluation must be used in conjunction with the machine's power grade.
5. Frequency Interface: Short-press ENTER to display the frequency spectrum. During measurement, amplitude lines dynamically fluctuate to represent vibration intensity.



Calibration success

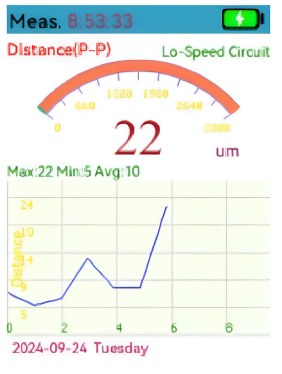


Accelerate

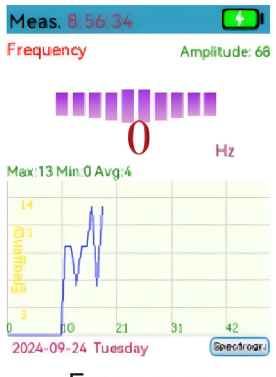


Velocity

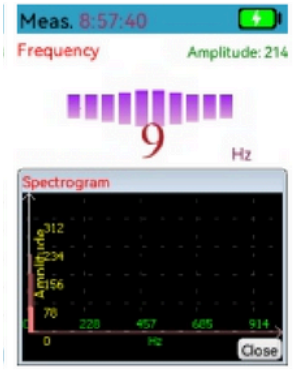
ISO Rating



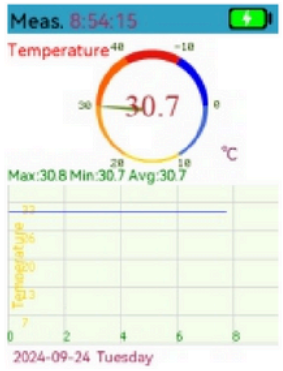
Distance



Frequency



Frequency spectrum



Temperature

Comparison table for vibration intensity

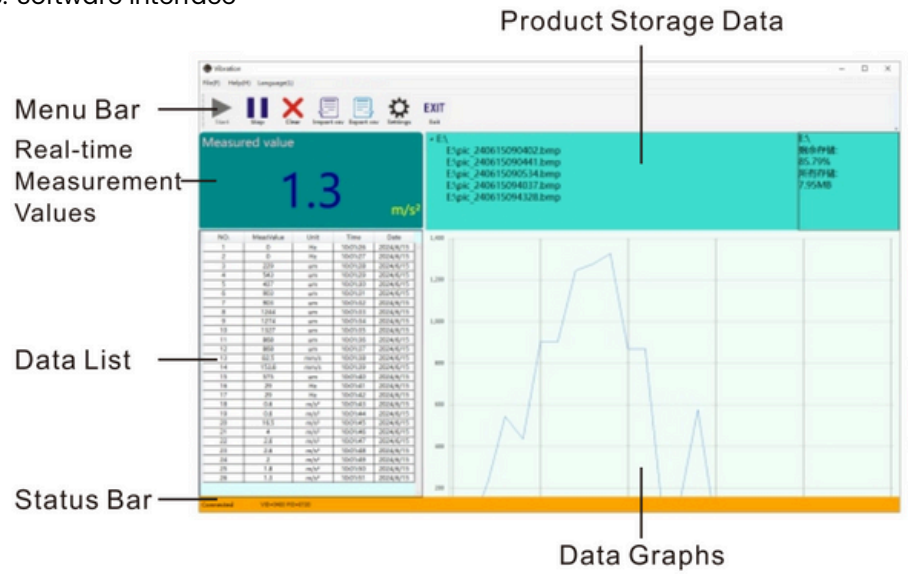
Vibration intensity (ISO 10816-1)					
Machinery		Class I small machine	Class II medium machine	Class III large hard base	Class IV large soft base
Vibration velocity Vrms	mm/s				
	0.28				
	0.45				
	0.71		Good		
	1.12				
	1.80				
	2.80		Satisfactory		
	4.50				
	7.10		Unsatisfactory		
	11.20				
	18.00				
	28.00		Unacceptable		
	45.90				

Attention

1. Do not operate or charge this product in environments containing flammable or explosive gases.
2. Do not allow the product to contact dangerous voltages to prevent risk of injury or fatal shock.
3. Protect the instrument from strong impacts, high temperatures, and water immersion.
4. Charge the device periodically if unused for extended periods.
5. Do not disassemble the instrument or attempt to modify internal components.
6. Avoid corrosive agents such as alcohol or diluted solutions on the housing, especially the screen; clean gently with a damp cloth.
7. Exercise caution when operating the instrument near rotating machinery.

PC Software

1. Download Software
2. Open your browser and go to marmonix.co. On the homepage, search for the product “MVB 600”. Open the product page to find the installation package for the software. Click the Download tab, then download the ZIP file. After the download is complete, double-click “setup_Vibration.exe” to begin the installation.
3. Software Interface



Note:

(1) Real-time measurement data, including mode and unit, remain synchronized with the instrument.

(2) In the PC software, Settings → Sampling Interval applies only during real-time measurement when connected to the computer and does not affect the instrument’s internal sampling interval.