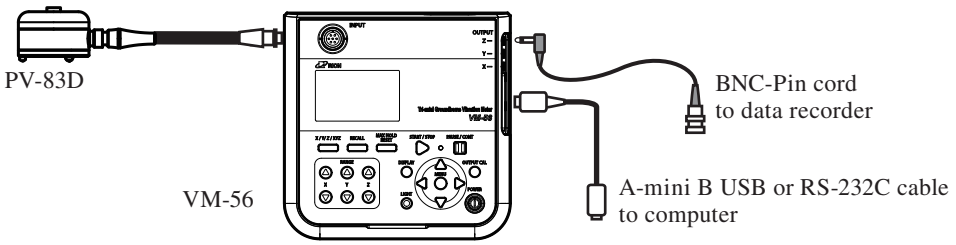
# Tri-axial Groundborne Vibration Meter VM-56
# Simple Operation Guide

## 1. Measurement Preparations

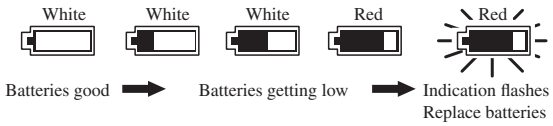
### Preparation for measuring equipment

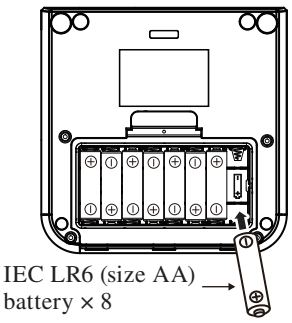
Connection of VM-56 and PV-83D and data recorder / other device.




### (1) Check battery insertion and voltage (when perfoming battery-powered measurement)

Check battery insertion and voltage IEC LR6, size AA batteries are inserted.
Check the battery capacity indicator on the display.



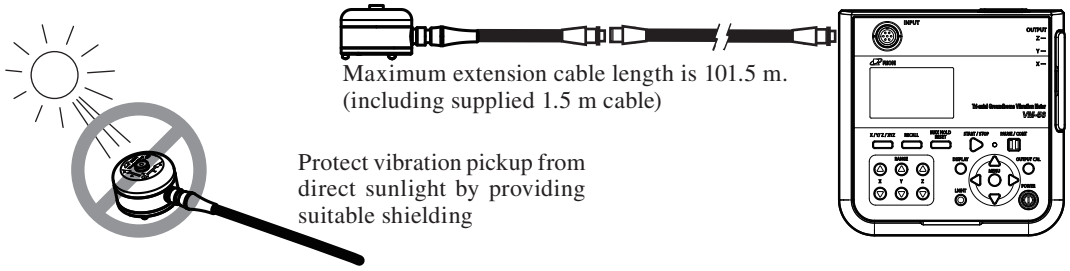




| Battery type / Operating temperature | Alkaline batteries | Nickel metal-hydride batteries |
|---|---|---|
| +23°C | Approx. 24 hours | Approx. 24 hours |

Operating condition: The PV-83D is connected to the VM-56, Eco setting is ON, Inst. store interval is OFF, Calculation interval is 30 sec (Battery life varies depending on the setting of this unit.)

### (2) Vibration Pickup placement precautions

Avoid direct sunlight and drastic temperature changes.




Place the accelerometer on solid ground. If only soft ground is available, you should compact the installation location by stomping or take other suitable measures, such as attaching the DIN plate (VP-54D) so that the sensor weight becomes about 2.5 kg.

| Note |
| --- |
| It is necessary to install a DIN plate to comply with the DIN standard. When attaching to the wall, use L-bracket plate. |

## 2. Measurement Procedure

### Power on/off

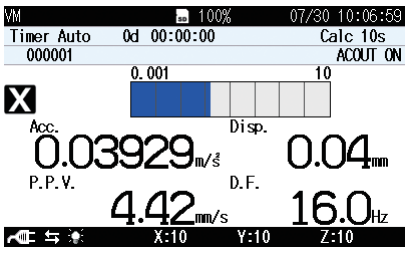
Hold down the POWER key until the power-on screen appears (at least 2 seconds).

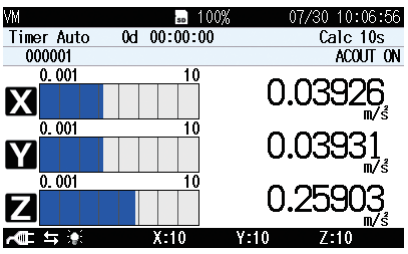
Hold down the POWER key until the unit is turned off (several seconds).

### Mesurement screen

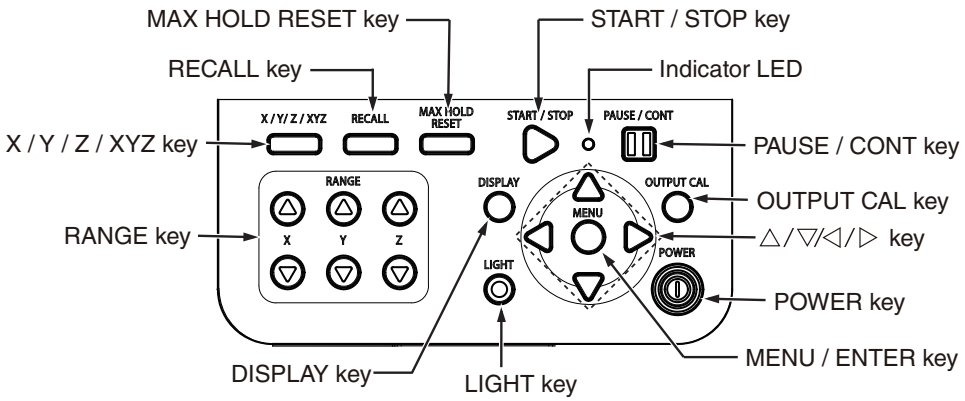
When the measurement screen is displayed, pressing the X/Y/Z/XYZ key changes the channel display as shown below.

If the indication Over/Under appears during measurement, press the Range key to change to a suitable measurement range.



## Operation key names




| | |
|---|---|
| RANGE keys : | Select range |
| X / Y / Z / XYZ key : | Cycle display through X / Y / Z / XYZ |
| RECALL key : | Select Recall |
| MAX HOLD RESET key : | Reset max hold value |
| START / STOP key : | Start / stop processing |
| Indicator LED : | lights / flashes the operation and state of the unit |
| PAUSE / CONT key : | Pause / continue |
| OUTPUT CAL key : | Calibrate external equipment |
| △/▽/◁/▷keys : | Change menu item setting |
| POWER key : | Turn power on / off |
| MENU / ENTER key : | Select menu / enter |
| LIGHT key : | Turn backlight on / off |
| DISPLAY key : | Select display |

### Store setting

On this unit, PPV, VDV, and other values are calculated at one time. The calculation results are saved on an SD card.

In the store menu, three store modes “Manual”, “Auto”, and “Timer Auto” can be selected.

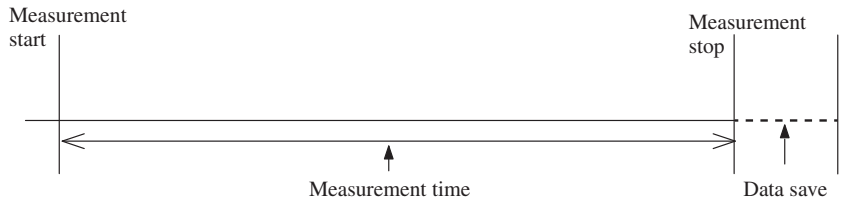
When the measurement screen is displayed, pressing the MENU/ENTER key brings up the menu list screen as shown on the right. Select [Store Mode] and press the MENU/ENTER △/▽key. The store mode setting screen appears.

Use the keys to select the store mode (Manual, Auto, Timer Auto) and press the MENU/ENTER key.



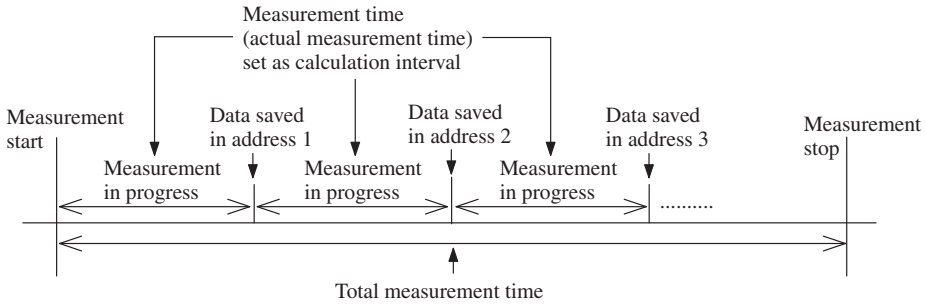
## (1) Manual mode

This mode allows calculation during a preset “Measurement Time.” Instantaneous values are not saved. ”Masurement finished” is displayed after measurement is completed. To save, select “Save data” and push “MENU” key.



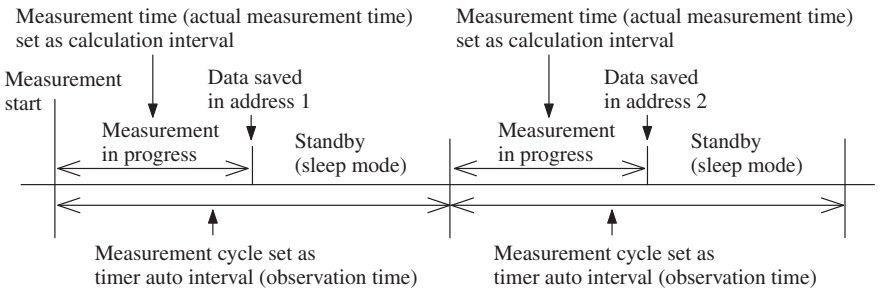

## (2) Auto mode

Calculation is performed at calculation intervals during a preset “Total Measurement Time.” At the same time, instantaneous values are saved every second.




## (3) Timer Auto mode

With this mode, you can set the measurement start time and the measurement end time to perform measurement between these times. By setting a “Timer Auto Interval,” you can perform, for example, a 10-minute measurement every hour. At the same time, instantaneous values can be saved every second.



### Evaluation values available for measurement in each store mode

| Store modes | 3 modes (Manual, Auto, Timer Auto), Data format: CSV |
|---|---|
| Manual | Measurement results stored with measurement start time in one memory address Date stored in internal memory or on SD card (Internal memory: max, 1000 tri-axial data sets, SD card: dependent on card capacity)<br>Processing value store: Various types of processing results for each calculation cycle<br>Evaluation values: PPV, D.F., KBFmax, Acc., MTVV, VDV, C.F.,<br>DISP., PVS, OVER / UNDER information |
| Auto | Continuous storing of various types of processing results for each calculation cycle Data stored on SD card Store modes: Instantaneous store, calculation store, level trigger store<br>· Instantaneous store: Acc.rms data stored every 100 ms<br>· Calculation store: Processing results for each calculation cycle<br>Evaluation values: PPV, D.F., KBFT, Acc., MTVV, VDV, C.F.,<br>DISP., PVS, OVER / UNDER information<br>· Calculation cycle: 1 s to 24 h<br>. With KBFT only, the calculation result for a fixed 30-second interval is stored. |
| Timer Auto | Various calculated values are continuously recorded for each store cycle at the set measurement start / stop time.<br>Sleep function (power save mode until measurement start) available<br>Data stored on SD card Store modes: Instantaneous store, Calculation store<br>· Instantaneous store: Acc.data stored every 100 ms<br>· Calculation store: Processing results for each calculation cycle<br>· Calculation cycle: 1 s to 24 h |

## 3. Waveform Recording

Using the optional Waveform Recording Program VX-56WR, WAVE files can be saved on SD memory card along with other files.

With the Waveform Analysis Software for Groundborne Vibration AS-70GV, display and analysis of waveforms and other graphs is possible.

# 4. Card capacity and store time

## (1) Using Auto store

Only Inst. store interval set

| | | SD memory card capacity | | |
|---|---|---|---|---|
| Inst. store interval | | 512 MB | 2 GB | 32 GB |
| | 100 ms | Approx. 155 hours | Approx. 606 hours | Approx. 9708 hours |

Only Calculation store interval set

| | SD memory card capacity | | |
|---|---|---|---|
| Data sets | 512 MB | 2 GB | 32 GB |
| | Approx. 8000 sets | Approx. 30000 sets | Approx. 50000 sets |

Number of bytes per header file

About 1 kB per file

## (2) When performing waveform recording

Using Auto store, Inst. store interval 100 ms, measurement channel XYZ

| | | SD memory card capacity | | |
|---|---|---|---|---|
| Bit length | | 512 MB | 2 GB | 32 GB |
| | 16 bit | Approx. 8 hours | Approx. 32 hours | Approx. 698 hours |
| | 24 bit | Approx. 5 hours | Approx. 22 hours | Approx. 394 hours |

The duration of recording with 24 bit becomes shorter than that with 16 bit because the data volume of 24 bit is about 1.5 times more.