

## Specifications

Specification	
Detection	One(1) direction
Frequency range	10Hz~1000Hz (±3dB), 13Hz~800Hz (±0.5dB)
Acceleration range	0.18 ~110 m/s <sup>2</sup> rms (Max Acc.±16g)
Velocity range	0.18 ~280 mm/s rms
Sensitivity error	±2% (@159Hz10m/s <sup>2</sup> calibration)
Linearity	±2% (@159Hz10m/s <sup>2</sup> calibration)
Velocity judge	Based on ISO 10816-3 4-color judge (LED color)
Operating temp.	-10℃~+60℃ (non condensing and freezing)
Dimension	φ34mm×210mm max
Weight	Approx. 250 g (without batteries)
Battery	Type AAA x3 batteries
Calculated battery life	Alkaline cell approx. 30hrs (back-light on)
	approx. 20hrs (back-light off)
	Eneloop Pro approx. 20hrs (back-light on)
	approx. 10hrs (back-light off)
Battery alarm	Low Battery alarm at 3.3V, operation stop at 2.8V

## LCD Display

Display area	8 lines x2 column
Character size	width 3.12mm height 5.01mm
Color	Character color : black / Back color ; yellow green
Back light	Yes (Change over with the POWER switch)
Display character	Alphanumeric, escape

※Specification will be subjected to change without notice.

## ISO Vibration Severity

Judge Method	Display 4-stage full-colored LED			
Judge Timing	Display color when press the JUDGE button			
Velocity RMS -Bound-	Group 2		Group 1	
0.71 mm/s	A	A	A	A
1.4	B	B	B	
2.3				
2.8	C	B	B	B
3.5				
4.5	D	C	C	C
7.1				
11.0	D	D	D	D
Condition of Mounting Base	rigid	flexible	rigid	flexible
iPM-100 V Mode	V I	V II	V III	V IV

Group ; Group 1 Huge Machine output 300kW~50MW  
Group 2 Middle Machine output 15kW~300kW

## Trouble shoot

Power switch does not work	Batteries are OK ? / A direction of battery case is correct ? →Please refer to the arrow (⇒) Insert in correct direction.
Displayed the <b>Low-Battery</b>	A capacity of batteries is decreased. →Please change it to new batteries.
Displayed <b>Error</b> during operation	This error will be occurred when a detection probe is apart from the target. → Please retry the measurement again.
The value is not stable in results	This case will happen when the vibration signal has a shock wave. → Please ask your specialist and try precise measure.
Value is not similar to another device	A sensitivity error seemed to be happened. →Please refer to the maker and recommend calibration.

### <Conditions of Free Repair>

- This warranty is effective only domestic in Japan.
- If the device require repairment at when the device is used in normal operation described in this instruction manual and within warranty periods, please ask for the dealer to repair.
- The followings are not included in this free repair program,-
  - mis-usage, disassemble, modify and after self-repairment
  - A fire, an earthquake, a flood, a thunderbolt, gas harm, damage from salt breeze or other natural calamities in heaven and earth, trouble by the pollution and the damage.
  - Warranty has not the detail informations of the purchase date, user name, and or when the warranty words are renewed.
- Warranty is not issued again. Please keep this warranty with care.

Note: We promise free repair for a warranty in the cause of the condition during the period when we stated it clearly. Therefore, in the case of ignorance, please refer to us for the repair the term of a guarantee later because it is not a thing limiting the legal rights of the user by this warranty.

## Warranty

### For Dealer

Please pass this sheet to User when you sold this device after stamped your dealer name, and sell date in the below blank.

### For User

This sheet will promise the repair with free of charge under the conditions which is described in this warranty. Please ask for the repair if it is happened in the respect of manufacturer's faults.

※ An information of Users will be handled securely and will only be used for the commodity transportation.

Product Name	Pen-Type Vibration Meter iPM-100		
Warranty Period	Within 1(one) year after purchased		
Date of Purchase	/year	/month	/day
Dealer	Name / Address		Signature
	Tel ( )		
User	Address		
	Name		
	Tel ( )		

**For Pediorical Calibration** ; The Manufacturer recommend its calibration within one or two years after purchased. Please contact to dealer.

**Manufacturer** : Fine Techno Corporation 15-1-1108, Ukima 1-chome, Kita-ku, Tokyo 115-0051 Japan URL : <http://www.new-ftc.com>

## Pen Type Vibration Meter iPM-100

# Instruction Manual

「with Warranty」



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## Safety precautions

The precautions described below are intended to prevent danger or injury to the user and other personnel through safe, correct use of the product. Use the product only after carefully reading and fully understanding these instructions.

<b>Warning!</b>	Handling the product without observing the instructions that accompany a "Warning" symbol may result in serious injury or death.
<b>Caution</b>	Handling the product without observing the instructions that accompany a "Caution" symbol may result in serious injury or properly damage.
<b>Inhibited</b>	It is the "inhibition" contents that you must not do.
<b>Follow</b>	It is the content that you should follow by all means.

**Warning!**

	<ul style="list-style-type: none"> <li>● <b>Keep it out of reach of infants.</b> → An infant may drink it by mistake.</li> <li>● <b>Do not throw a used battery into flames.</b> → There is a risk of explosion and injure yourself.</li> </ul>
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**Caution**

	<ul style="list-style-type: none"> <li>● <b>Observe instructions and measure correctly.</b> → Misunderstandings may cause mismeasurement.</li> <li>● <b>When first measurement, follow your specialist.</b> → Be care for rolled up in the reel.</li> </ul>
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## Handling, storage and clean up

### ■ Handling



- **Do not disassemble.**
  - It may cause a malfunction.
  - It will not be subject to warranty provision.
- **Do not drop.**
  - It may cause a malfunction.
- **Do not measure the rotating part while attaching the strap.**
  - There is a danger of getting caught in the rotating part and causing serious injury.



- **Do not put in the back pocket of trousers.**
  - There is a danger of breakage and injury.
- **Since it is not waterproof, do not use it in places with high humidity or water, in the rain.**
  - It may cause a malfunction.

### ■ Storage



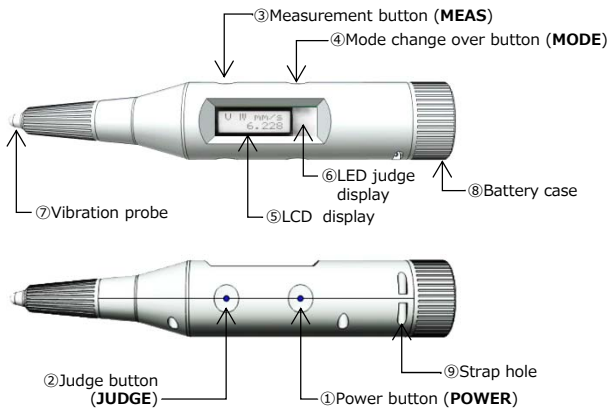
- **Since it is not waterproof, do not store it in places with high humidity.**
  - It may cause a malfunction.
- **When not using for a long time, remove the battery from the body and keep it.**
  - Failure to do so could result in battery leakage.

### ■ Clean up



- **Do not use alcohol, hot water, thinner or benzine.**
  - Wipe the dirt on the main unit with a soft cloth.

## Name of parts



- 1 Power button (POWER)
- 2 Judge button (JUDGE)

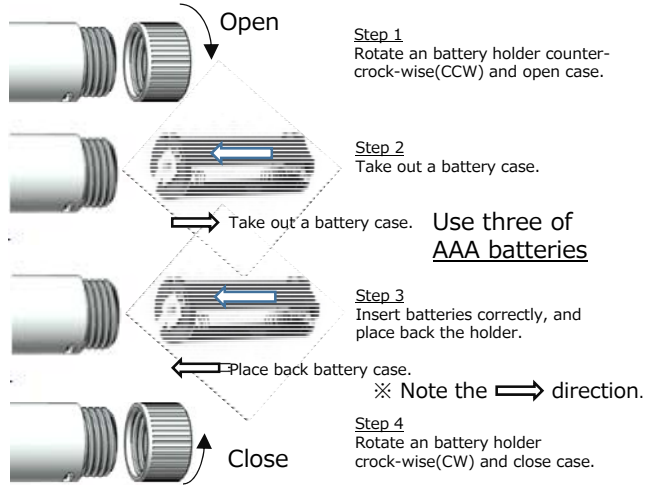
Power on/off and back-light on/off button. At Velocity mode, judge a ISO severity(6) and change over the ACC and Velocity Best5 FFT. Measure start button, a result will display on 5 LCD display

- 3 Measure button (MEAS)
- 4 Mode change button (MODE)
- 5 LCD display
- 6 Battery case

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右端をこの線にそろえて台折り

## How to change the batteries



**Step 1**  
Rotate an battery holder counter-clock-wise(CCW) and open case.

**Step 2**  
Take out a battery case.

**Step 3**  
Insert batteries correctly, and place back the holder.

**Step 4**  
Rotate an battery holder clock-wise(CW) and close case.

Use three of AAA batteries

※ Note the ⇄ direction.

## Power on/off and back light on/off



Press **POWER** switch for more than 1 second to turn on the power. It will appear a software version and the LED lights (Red, Green, Blue) will on in order, to confirm a correct operation.

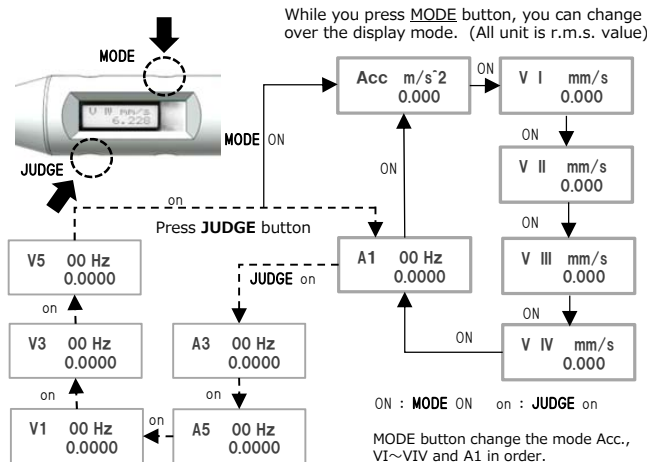
iPM Ver 1.0.X

You can change the backlight by pressing lightly on the switch.

Power OFF shut down

Press **POWER** switch for more than 1 second to turn off the power.

## Acceleration, Velocity and FFT mode change over



While you press **MODE** button, you can change over the display mode. (All unit is r.m.s. value)

At A1, while pressing **JUDGE** button, LCD display change A1,A2...V1,V2...V5 in order. Back to Acc. display, press **MODE** button.

ON : MODE ON on : JUDGE on

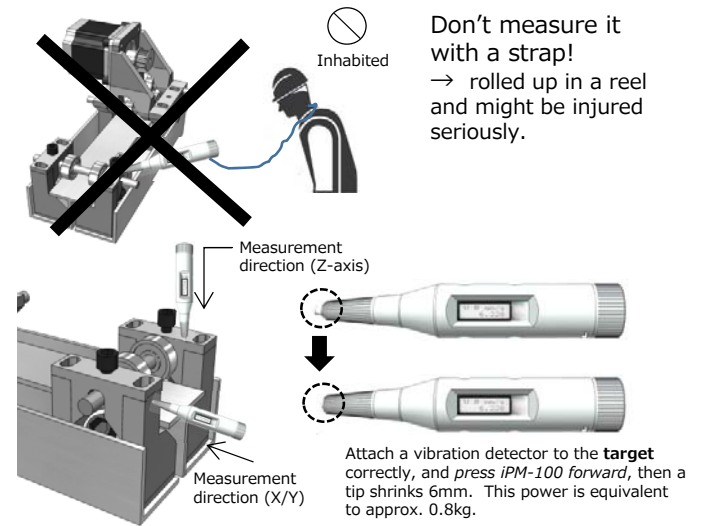
MODE button change the mode Acc., VI~VIV and A1 in order.

When it is A1, you can switch the best 5 data of acceleration and velocity FFT with the **JUDGE** button.

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## Vibration measurement



Don't measure it with a strap!  
→ rolled up in a reel and might be injured seriously.

Inhabited

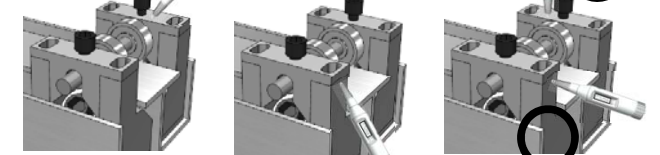
Measurement direction (Z-axis)

Measurement direction (X/Y)

Attach a vibration detector to the **target** correctly, and press **iPM-100** forward, then tip shrinks 6mm. This power is equivalent to approx. 0.8kg.

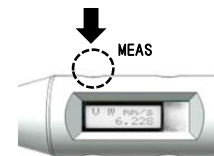
## Measure a vibration correctly!

Measuring direction is not match with detection axis.



Measuring direction is not match with detection axis.

Measuring direction is match with detection axis.



Attach a vibration detector to the target correctly, and press iPM-100 forward, then a tip shrinks 6mm. Keep hold to attach then press MEAS button. Measurement is done within 1 second.

When vibration includes shock waves, the value does not stable. Consult with your vibration specialist.

## ISO severity judgement at VI ~VIV

When the mode is selected as V I to V IV with the **MODE** button, after the measurement is completed, press the **JUDGE** button, the judged LED color will light up depending on the mode and ISO standards.

\* **JUDGE** button is used for FFT BEST 5 switching in addition to judgment.

The lighting color of the LED is 4 colors.  
Blue : is classified as A, meaning is good  
Green : is classified as B, meaning is possible  
Orange : is classified as C, meaning is warning  
Red : is classified as D, meaning is danger  
→ Make a note of measured values and judgment results and use them for simple diagnosis.

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