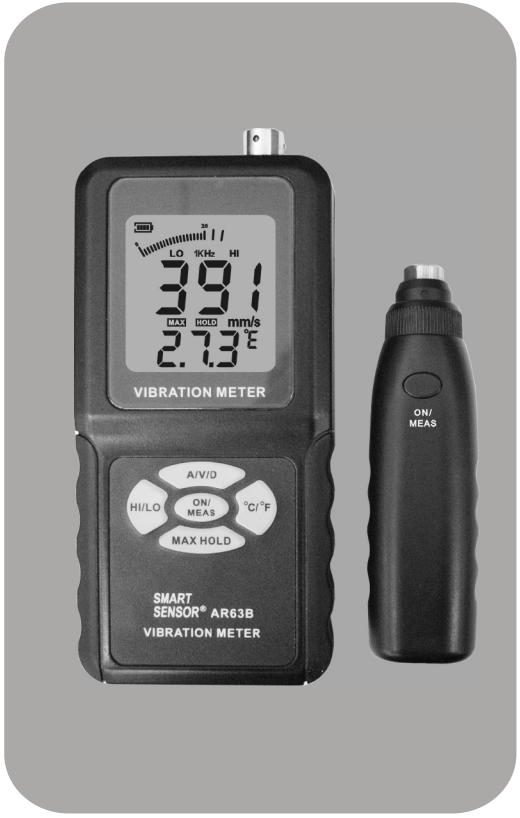
SMART SENSOR®

Model：AR63B

Detached probe type vibration meter

User manual



Foreword:

- Thank you for you purchase our company's Detached probe type vibration meter
- This manual provides relative information on how to use the unit and warnings in operation.
- To make the best use of this product's functions, read this manual thoroughly before use. Please keep this manual for quick reference.
- Please make some simple test measurement to ensure proper performance of the unit.

Attentions

⚠ Warning
When making measurements on exposed rotating parts or power train parts of machinery, proceed with utmost care to prevent accidents due to getting caught in the machinery.

Statement

a. We reserve the rights of upgrading and amending the design of the product as well as the manual updating, and the product is subject to change without any further notification.
b. Dispose of battery should be in accordance with local laws and regulations.

IntelliSafe CE

3.Other items

Maintenance and warranty

Maintenance:

1). Replacement and upkeep of battery:
a. After power on, if an icon  appears on the LCD, you need to replace the battery immediately, for details please refer figures and contents on page 9 of this manual.
b. Remove the battery from the unit if it is not required for extended periods of time in order to avoid damage to the battery compartment and the erosion resulting from a battery leakage.
2. Do not store or use the unit in following circumstances:
a. Splashes of water or high levels of dust.
b. Air of high salt or sulphur content.
c. Air mixed with other gases or contents.
d. High temperature or humidity (above50℃, 90%,) or direct sunlight.
3. Do not disassemble the unit or attempt any internal alterations.
4. Never use alcohol or diluents to clean the housing for doing that will especially erode the LCD surface; just clean the unit lightly as needed with little clean water.

Warranty

1). About relative warranties please read warranty card.
2). We disclaim any liability due to: client's transportation damages; incorrect use or operation; manipulation, alterations or repair attempts; without warranty card, invoice.

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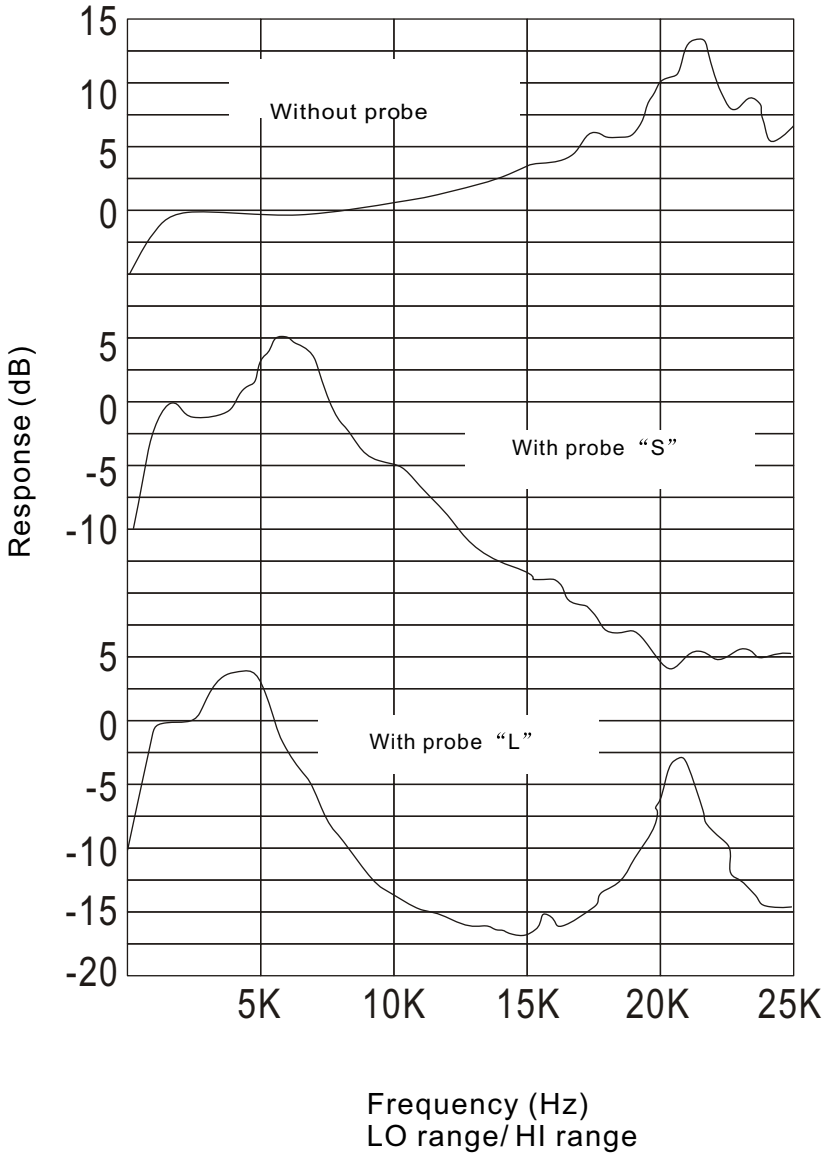
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1.Before use

Checking

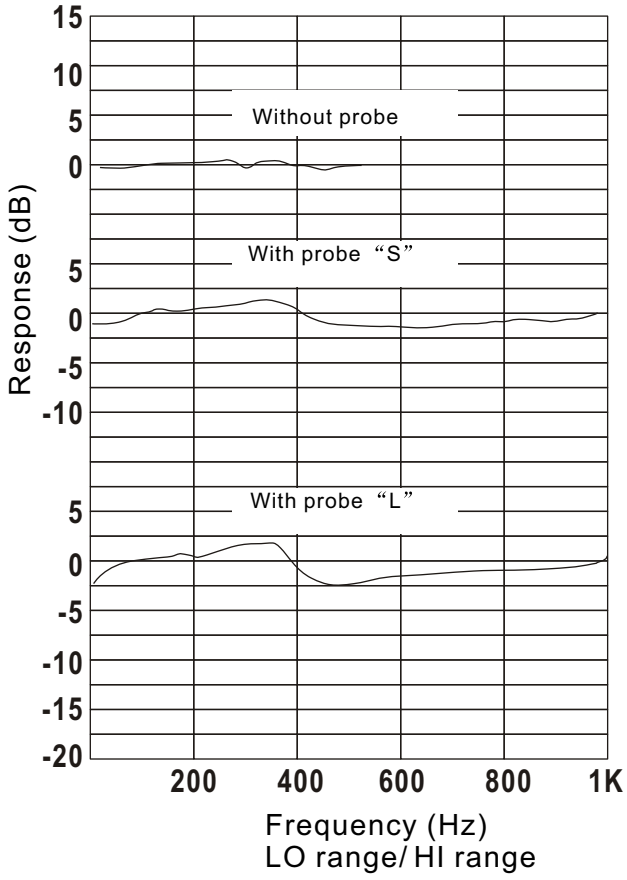
Carefully unpack your kit and ensure that you have the following items. In case that any item is missing or if you find any mismatch or damage, promptly contact your dealer.

- Main unit 1PCS
- Handle sub- unit 1PCS
- 9V Battery 1PCS
- English Instruction Manual 1PCS
- Warranty Card 1PCS
- Detector probe attachments “L” 1PCS
- Detector probe attachments “S” 1PCS
- Magnetic probe 1PCS
- Aluminum Box 1PCS



Contact resonance in acceleration measurement

(Measured with FFT Signal analyzer)



Introduction

This product adopts piezoelectric effect of artificial polarized ceramic for design. it is suitable for monitoring of all kinds of vibrating mechanical facility, specially the vibration measurement of rotating and reciprocating machinery. The unit can measure acceleration, velocity and displacement, which is widely used in mechanical manufacture, electric power metallurgy and general aviation etc. Field.

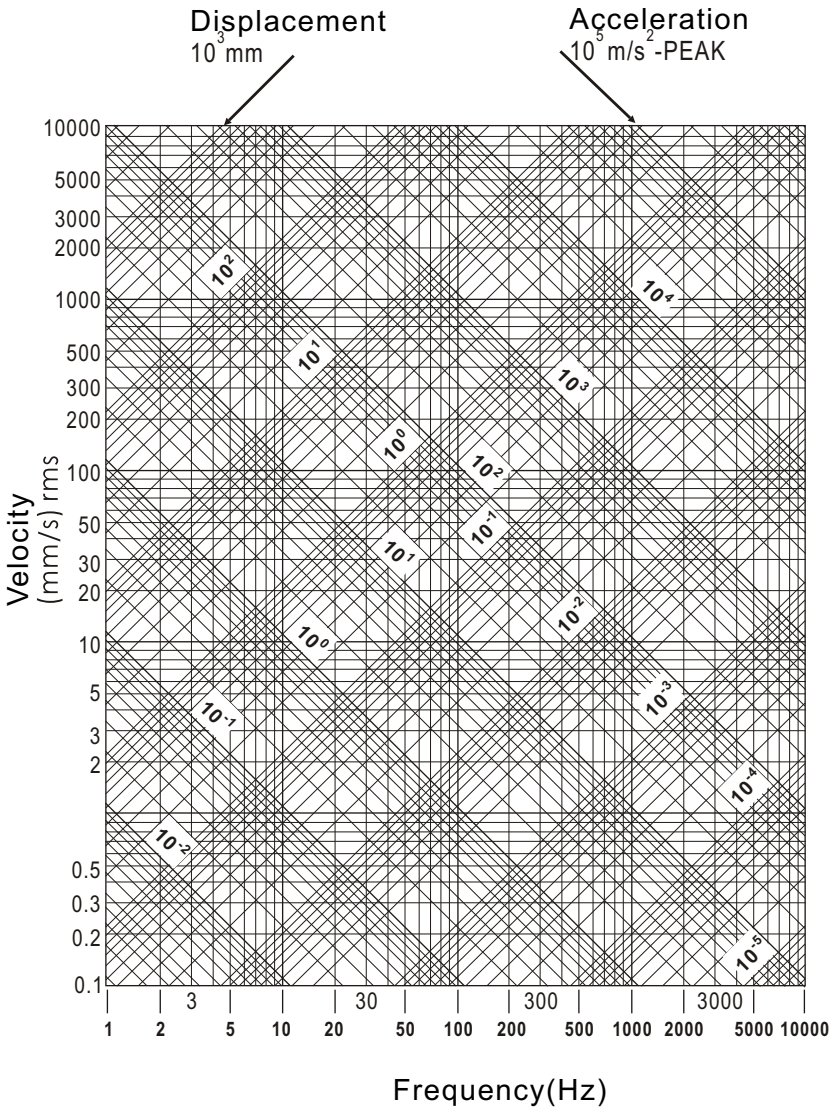
Features

- LCD display measurement result and conditions directly
- Measures acceleration (m/s^2 peak), velocity (mm/s ms), and displacement (mm p-p)
- Selective vibration characteristic
- Uses hi- sense of vibration sensor, measuring accurately
- Equipped two probes (S and L) to adapt the different measurement requirement
- Provides a magnetic probe to fit the condition uneasy hold on by hand
- Low battery indication
- Auto turn off function
- LCD back light function
- Maximum value hold function
- Temperature unit C° /F° selection

Specifications

Technical parameter	Technical specification
Vibration pickup	Piezoelectric ceramic accelerometer (shear-type)
Measurement range of acceleration	0.1~199.9m/s^2 peak
Measurement range of velocity	0.1~199.9mm/s rms
Measurement range of displacement	0.001~1.999mm p-p Velocity and displacement range is limited by acceleration199.9m/s^2
Measurement accuracy	±5%±2digits
Measurement frequency range of acceleration	10Hz～1KHz (LO)　1KHz～15KHz (HI)
Measurement frequency range of velocity	10Hz～1KHz (LO)
Measurement frequency range of displacement	10Hz～1KHz (LO)
Displays update cycle	1 seconds
LCD display	3 1/2 digits display
Single output	AC output 2 V peak (display full scale) Load impedance 10K Ω or more earphones can be connected
Power supply	9V battery
Stand-by current	≤15 μ A
Operating current	≤25mA
Battery life	20 H continuous use
Auto power-off function	Turns off automatically after 60 seconds
LCD backlight function	7 seconds
Operating temperature range	0~40℃
Operating humidity range	30~90%RH
Low battery indication	6.4V±0.2V
Dimensions	70x30x150mm
Weight	137g (not including battery)
Temperature range	-10℃~80℃
Temperature accuracy	±2℃

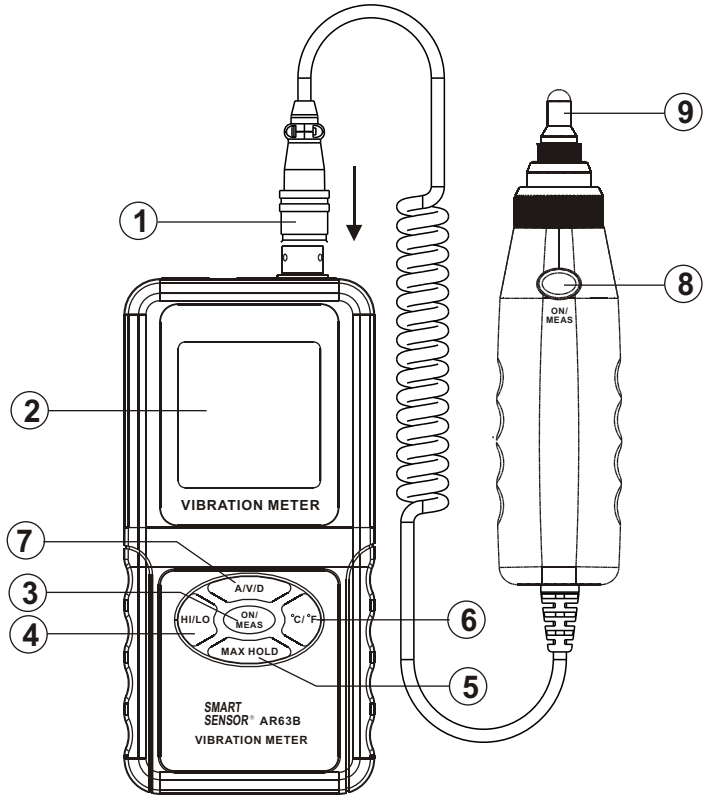
Vibration conversion chart:



Caution:

- Probe “S” is apply to measure high/ low frequency range vibration.
- Probe “L” is only for low frequency measure, when measure acceleration, if the frequency is over 1 kHz, please change Probe “S” for measurement.
- When measurement mode from acceleration in high frequency mode to velocity or displacement mode, the unit will change to low frequency automatically.
- Auto power- off for 1 minute.
- LCD backlight will auto- off if there is no further operation in 7 seconds.

Diagram of the unit



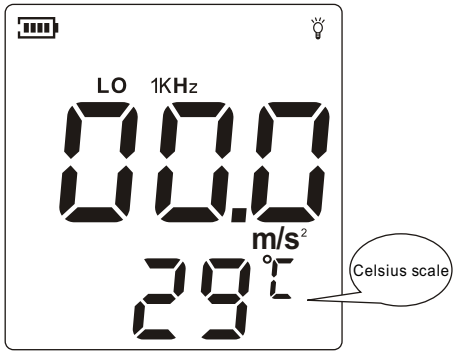
Instruction of main parts:

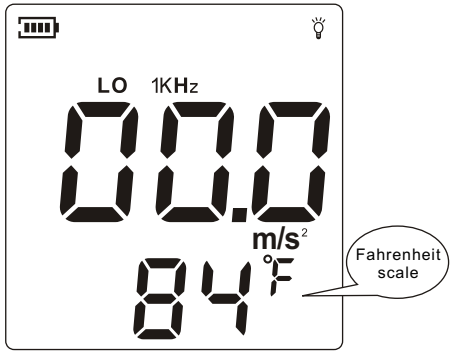
1.sub- unit handle connector (with directionality)
2.LCD display.
3. (ON/MEAS) ON/Off / measure button, press for turn on. In measuring procedure, press for measuring, release for hold the reading.
4. (HI/LO) Frequency character selection bottom. (for acceleration)
5. (MAX HOLD) Maximum value locks botton.
6. (°C/°F) Temperature unit interchange botton.
7. (A/V/D) Measuring mode (Acceleration/ Velocity/ Displacement) select bottom.
8.Sub- unit handle on/off/ measure button, press for turn on. In measuring procedure, press for measuring, release for hold the reading.
9.Detector head (Selective between probe head attachments “S” / “L” and Magnetic probe.

Note:
Above key function descriptions just are simple introduction, for details please read operation instructions part in this manual.

Temperature unit change

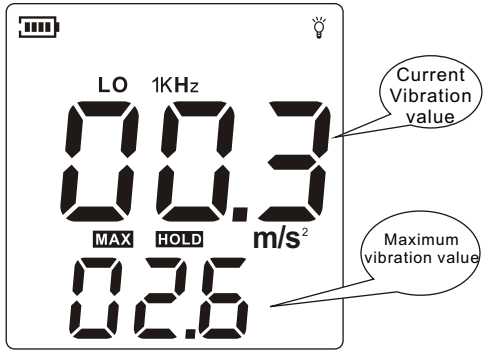
In operation, press “ (°C/°F) ” to select “ °C ” Celsius scale and “ °F ” Fahrenheit scale., show as below:





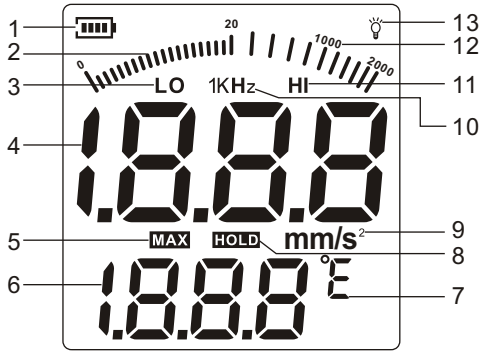
Maximum value measurement

After turn on, press " MAX HOLD " to enter maximum value mode. In maximum value measuring status, the current vibration data and the maximum value will display on LCD display.
Show as below:



When press " MAX HOLD " key again, the maximum measure status will cancelled, and change to temperature display status.

LCD display



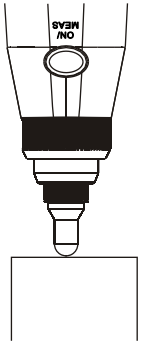
1). : Battery mark shows current residual battery power. Has following 5 grades:
- : battery is sufficient
- : battery is comparative sufficient
- : battery is nearly deficient
- : battery is nearly exhausted, need to have a replacement.
- : battery in exhausted completely.

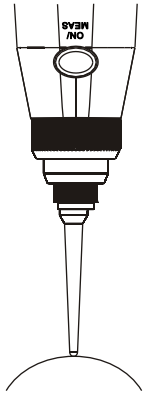
2). Dynamic bar graph display measuring value.
3). **LO** : low frequency symbol. (10Hz~ 1Hz)
4). Measured value display.
5). **MAX** : Take the maximum value.
6). Temperature and maximum value display.
7). : Temperature unit display, " " for the Celsius scale, " " for the Fahrenheit scale.
8). **HOLD** : Value hold
9). **mm/s²** : When measuring acceleration, LCD will display acceleration unit "m/s²"
When measuring velocity, LCD will display velocity unit "mm/s"
When measuring displacement, LCD will display displacement unit "mm"
10). **1KHz** : 1kHz indication.
11). **HI** : High frequency symbol. (1kHz~ 15kHz)
12) .The symbol of the range of the measuring value.
13) . : Backlight icon, the back light will be active for 7 seconds upon the button operations.

2. Operation instructions:

This vibration meter is designed to fit the different measurement requirements as follows.

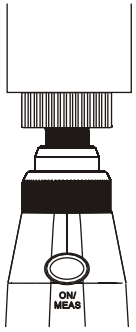
A. With Detector probe S: It provides good response and reproducibility over a wide range. As the following figure.

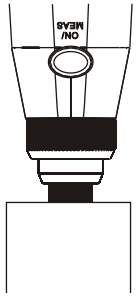




B. With Detector head L: Suitable for narrow object or special objects to obtain quick response as the following at figure.

C. With Magnetic probe: Suitable for measurement in cases where flat Ferric object to the stable measurement. as the following figure.

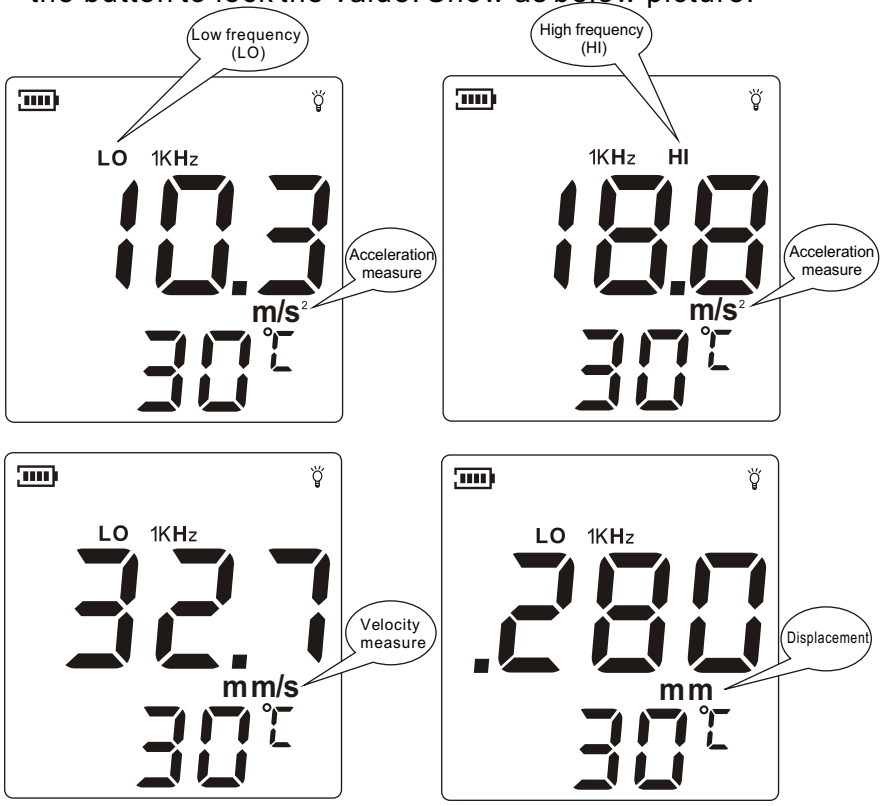




D. Without probe tip: In this condition, best high- range response is achieved (10Hz to 15kHz), but planar contact with the measurement object is required as the following picture.

Measurement

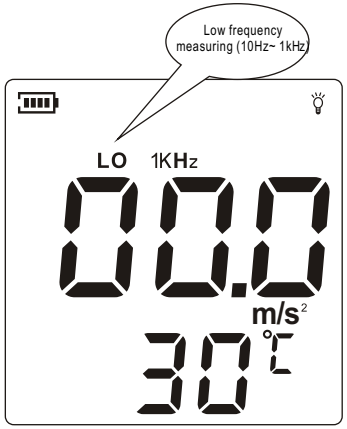
Depending on the material physical value and vibratory source's vibration frequency, select the corresponding measurement mode (Acceleration/ Velocity/ Displacement) and frequency (HI/ LO), holding press the main unit or sub- unit handle's " ON/ MEAS " button, press the handle sensor head against the surface with 500g~ 1kg vertical force, the measuring value will be shown on LCD display, release the button to lock the value. Show as below picture:

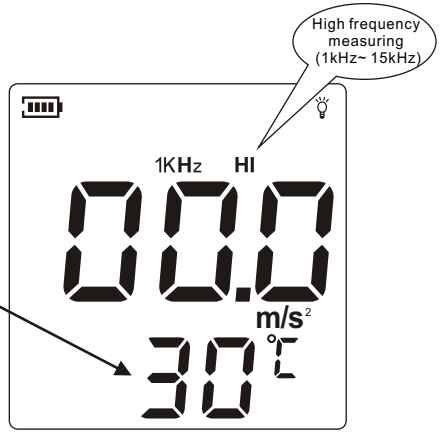


When press " ON/ MEAS " key again, the current locking value will be cancelled, a new measurement will be preformed.

Hi/ Lo frequency selection

Hi frequency “HI” is only for acceleration measure mode.
Press “ HI/LO ” key to select the high frequency measure or low frequency measure.
As following picture:



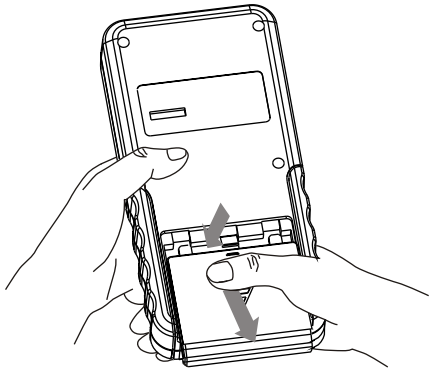


The enviroument temperature indication

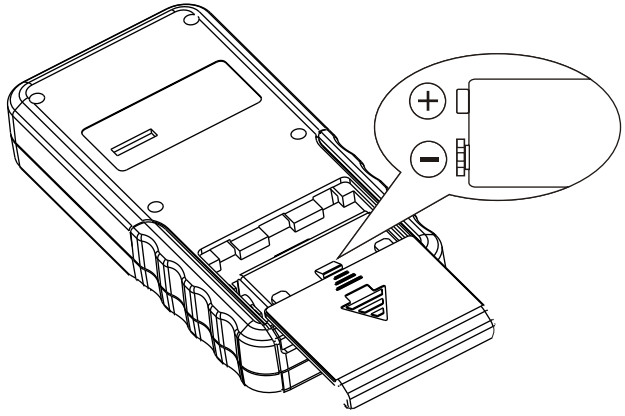
Caution:
High frequency measuring is only for acceleration measure mode.

Battery installment

a. Grip tightly the unit body with your left hand; hold down the battery door with your right hand thumb to open it according to the arrow referring direction, as shown in following figure:

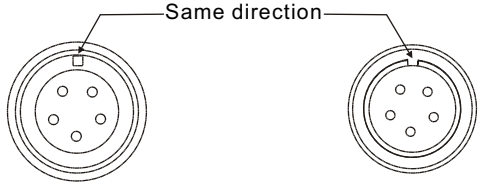


b. Insert the 9V battery into battery compartment, note the battery polarity, and then close the battery door, as shown in following figure:



Handle sub- unit installment

➢ Attention to the directionality of the socket.

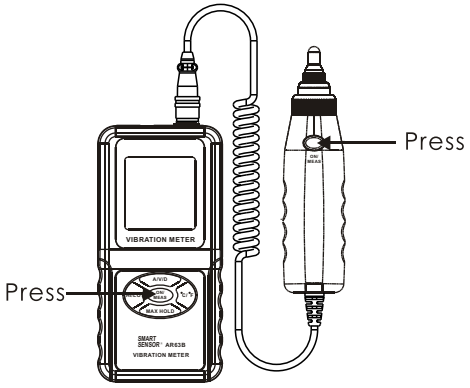


Main unit plug Sub- unit handle plug

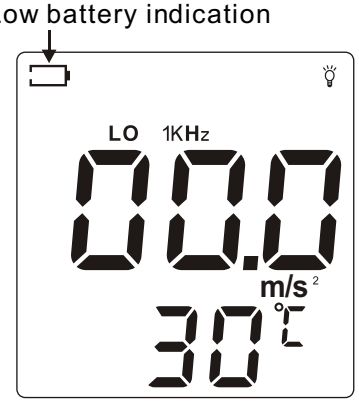
➢ Plug in/ out method:
Before use, plug in the sub-unit handle to mean unit's socket the same direction, there a lock sound to ensure the plug is locking.
When plug out, the user must push the metal upwards to release the lock status and pull out.

Turn on the unit and check-up battery

➢ Press the ON/MEAS on the main unit or on the handle sub-unit key to turn on, as shown in following figure:

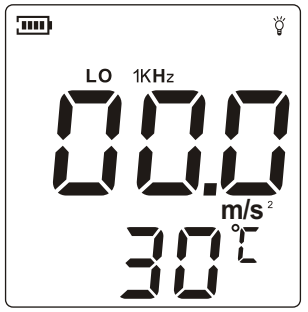


➢ After the entire screen displays for 1 second, the default state is acceleration mode, if on the LCD displays the symbol or , please promptly replace the battery, as shown in following figure:



Selecting measurement mode

➢ Press "A/V/D" to select the measuring mode, the default status is accelerometer measure "m/s²", as following picture:



➢ Press the "A/V/D" key one times to selecting speed measuring mode " mm/s ", as following picture.



➢ Press the key one more times to selecting displacement mode "mm", as following picture.

