LIST OF PRODUCTS

- ✶ Digital Multimeter
- ✶ Digital AC & AC/DC Clampmeter
- ✶ AC Clamp Adaptor
- ✶ AC/DC Current Adaptor
- ✶ Thermo Anemometer
- ✶ Thermo Hygrometer
- ✶ Distance Meter
- ✶ Digital Lux Meter
- ✶ Network Cable Tester
- ✶ Power Factor Regulator
- ✶ Earth Resistance Tester
- ✶ Digital Panel Meters
- ✶ DC Power Supplies
- ✶ High Voltage Detector
- ✶ Calibrators
- ✶ Gas Analysers
- ✶ Frequency Counter
- ✶ Function Generator
- ✶ Phasing Sticks
- ✶ Battery Tester
- ✶ Waterproof Pen Testers
- ✶ Solar Power Meter
- ✶ EMF Detector
- ✶ Wood, Paper & Grain Moisture Meter
- ✶ Transistorised Electronic Analog & Digital Insulation Resistance Testers(upto 10 KV)
- ✶ Digital Sound Level Meter & Sound Level Calibrator
- ✶ Digital contact & Non-contact Type Tachometer
- ✶ Digital Non-contact (infrared) Thermometer
- ✶ Maximum Demand Controller/Digital Power Meter
- ✶ Digital Hand Held Temperature Indicators

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KUSAM-MECO®

AN ISO 9001:2008 COMPANY

DIGITAL VIBRATION METER

MODEL - KM 63A

OPERATION MANUAL

KUSAM-MECO®

DIGITAL VIBRATION METER MODEL - KM 63A

KUSAM-MECO®

TABLE OF CONTENTS

I. BEFORE USE :

A. Check-Up :

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.

- ✪ Vibration meter 1 PCS
- ✪ Handle sub-unit 1 PCS
- ✪ 9V battery 1 PCS
- ✪ User manual 1 PCS
- ✪ Detector probe attachments ”L” 1 PCS
- ✪ Detector probe attachments ”S” 1 PCS
- ✪ Magnetic probe 1 PCS
- ✪ Aluminum box 1 PCS

B. 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 field etc.

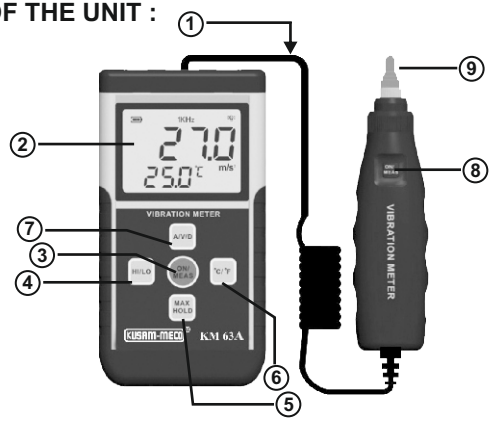
II. FEATURES :

- ✪ LCD displays 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 to measure accurately.
- ✪ Equipped with two probes (S and L) to adapt the different measurement requirement.
- ✪ Provides a magnetic probe to be used in conditions where it is uneasy hold to the meter by hand.
- ✪ Low battery indication.
- ✪ Auto power off function.
- ✪ LCD back light function.
- ✪ Maximum value hold function.
- ✪ Temperature unit ºC / ºF selection.

III. 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	0.001~1.999mm p-p
of displacement	Velocity and displacement range is limited by acceleration 199.9m/s^2
Measurement accuracy	± (5% + 2 digits)
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)
Temperature range	-10ºC~80ºC
Temperature accuracy	± 2ºC
Display update cycle	1 second
LCD display	3 1/2 digits display
Single output	AC output 2V peak (display full scale), Load impedance 10KΩ or more. Earphones can be connected
Power supply	9V battery
Stand-by current	≤ 15μA
Operating current	≤ 25mA
Battery life	Approx. 20H continuous use
Auto power-off function	Turns off automatically after 60 seconds
LCD backlight function	7 seconds
Operating temperature range	0~40ºC
Operating humidity range	30~90%RH
Low battery indication	6.4V ± 0.2V
Dimensions	70 x 30 x 150mm
Weight	Approx. 137g (not including battery)

IV. DIAGRAM OF THE UNIT :

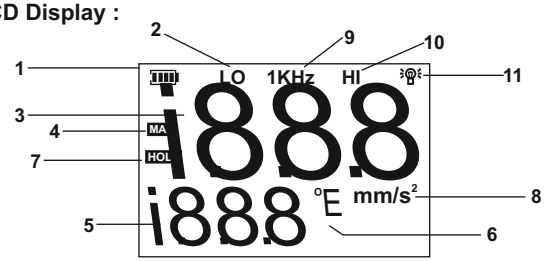


A. Instruction of main parts :

1. Sub-unit handle connector (with directionality).
2. LCD screen.
3. [ON/ MEAS] ON/ Off / measure button, press to turn on the meter. In measurement mode, press for reading, release to hold the reading.
4. [HI/LO] Frequency character selection button. (for acceleration)
5. [MAX HOLD] Maximum value hold button.
6. [°C/ °F] Temperature unit interchange button.
7. [A/V/D] Measurement mode (Acceleration/ Velocity/ Displacement) select button.
8. Sub-unit handle on/off/measure button, press to turn on the meter. In measurement mode, press for measurement, release to 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.

B. 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 is exhausted completely.
2. **LO :** Low frequency symbol. (10Hz~1kHz)
3. Measured value display.
4. **MAX** : Take the maximum value.
5. Temperature and maximum value display.
6. °E: Temperature unit display, "ºC" for the Celsius scale, "ºF" for the Fahrenheit scale.
7. **HOLD** : Value hold.
8. **mm/s² :** When measuring acceleration, LCD will display acceleration unit "m/s²".
   When measuring velocity, LCD will display velocity unit "mm/s²".
   When measuring displacement, LCD will display displacement unit "mm".
9. **1KHz :** 1KHz indication.
10. **HI :** High frequency symbol. (1kHz~15kHz)
11. : Backlight icon, the back light will be active for 7 seconds.

V. OPERATING INSTRUCTIONS :

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

1. **With Detector probe S :** It provides good response and reproducibility over a wide range.

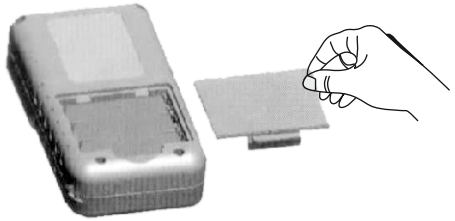
2. **With Detector head L :** Suitable for narrow object or special objects to obtain quick response.

3. **With Magnetic probe :** Suitable for measurement in cases where flat Ferric object to the stable measurement.

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

A. Battery installment :

1. 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 :



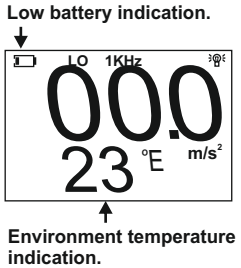
2. Insert the 9V battery into battery compartment, note the battery polarity, and then close the battery door.

B. Handle sub-unit installment :

Please pay attention to the directionality of the USB socket.

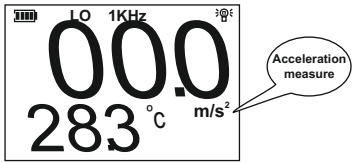
C. TURN ON THE UNIT AND CHECK-UP BATTERY :

1. Press the [ON/MEAS] to turn on the main unit or (ON/MEAS) on the handle sub-unit key to turn on.
2. After the entire screen displays for 1 second, the default state is acceleration mode. If the LCD displays the symbol [▮] or [▯], (as shown in following figure) please promptly replace the battery.

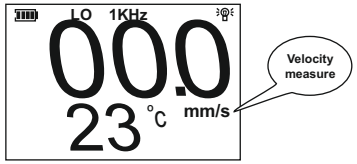


D. SELECTING MEASUREMENT MODE :

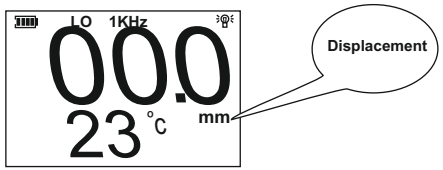
1. Press "[A/V/D]" to select the measuring mode, the default status is accelerometer measurement "m/s^2", as following picture :



2. Press the "A/V/D" key one time to select speed measuring mode "mm/s", as shown in the following picture.

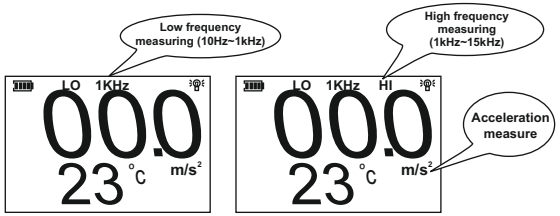


3. Press the "A/V/D" key one more time to selecting displacement mode "mm", as shown in the following picture.



E. Hi/ Lo frequency selection :

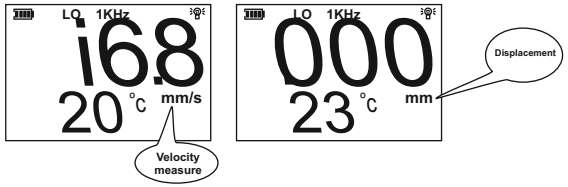
Hi frequency "HI" is only for acceleration measure mode. Press "HI/LO" key to select the high frequency measurement mode or low frequency measurement mode.



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

F. 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 pressed 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. As shown below picture :



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

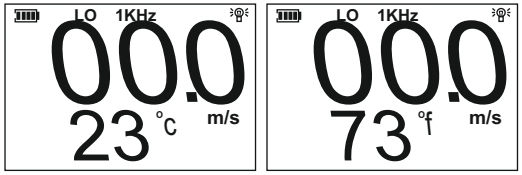
G. Maximum value measurement :

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 :

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

H. Temperature unit change :

During operation, press " °C/ °F " to select "°C" Celsius scale or "°F" Fahrenheit scale., as shown below :



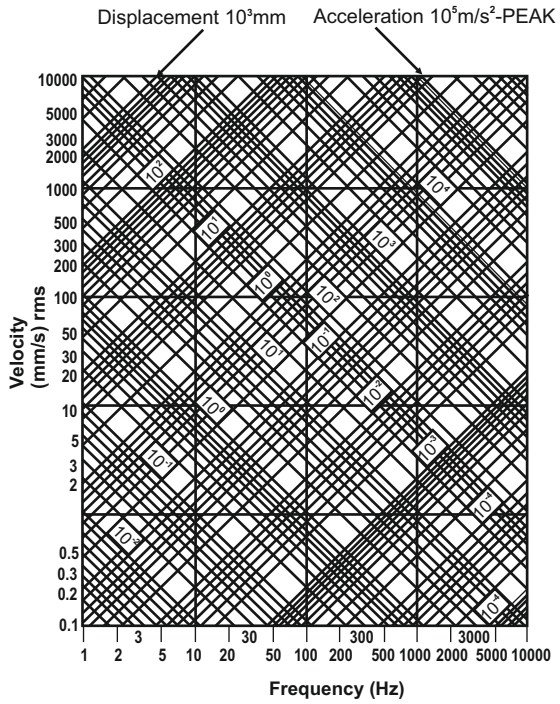
Celsius scale Fahrenheit scale

Caution :

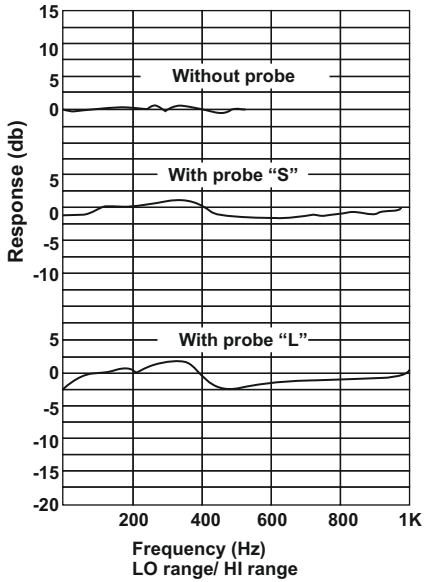
1. Probe "S" is apply to measure high/low frequency range vibration.
2. Probe "L" is only for low frequency measure, when measuring acceleration, if the frequency is over 1kHz, please change to Probe "S" for measurement.

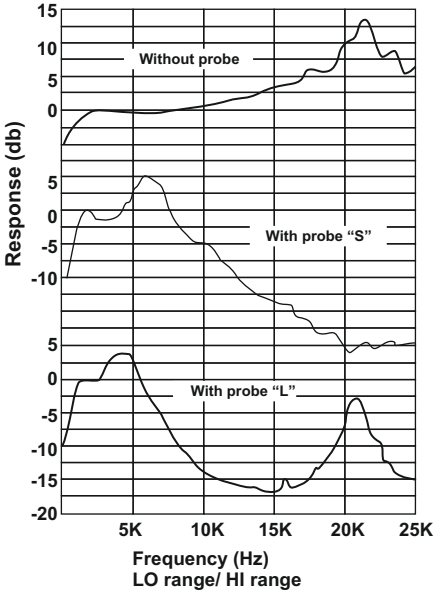
3. When switching measurement mode from acceleration in high frequency mode to velocity or displacement mode, the unit will change to low frequency automatically.
4. Auto power-off for 1 minute.
5. LCD backlight will auto-off if there is no further operation in 7 seconds.

I. Vibration conversion chart :



J. Contact resonance in acceleration measurement :
(Measured with FFT Signal analyzer)





VI. MAINTENANCE :

A. Replacement and upkeep of battery :

1. 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.
2. Remove the battery from the unit if it is not required for extended period of time in order to avoid damage to the battery compartment and the erosion resulting from a battery leakage.

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MUMBAI

TEST CERTIFICATE

DIGITAL VIBRATION METER

This Test Certificate warrantees that the product has been inspected and tested in accordance with the published specifications.

The instrument has been calibrated by using equipment which has already been calibrated to standards traceable to national standards.

MODEL NO. **KM 63A**

SERIAL NO. _____

DATE: _____

ISO 9001
REGISTERED

QC
KUSAM-MECO
PASS

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WARRANTY

Each “KUSAM-MECO” product is warranted to be free from defects in material and workmanship under normal use & service. The warranty period is one year (12 months) and begins from the date of despatch of goods. In case any defect occurs in functioning of the instrument, under proper use, within the warranty period, the same will be rectified by us free of charges, provided the to and fro freight charges are borne by you.

This warranty extends only to the original buyer or end-user customer of a “KUSAM-MECO” authorized dealer.

This warranty does not apply for damaged Ic’s, fuses, burnt PCB's, disposable batteries, carrying case, sensor, damaged cable or to any product which in “KUSAM-MECO’s” opinion, has been misused, altered, neglected, contaminated or damaged by accident or abnormal conditions of operation or handling.

“KUSAM-MECO” authorized dealer shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of “KUSAM-MECO”.

“KUSAM-MECO’s” warranty obligation is limited, at option, free of charge repair, or replacement of a defective product which is returned to a “KUSAM-MECO” authorized service center within the warranty period.

THIS WARRANTY IS BUYER’S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. “KUSAM-MECO” SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE WHATSOEVER.

All transaction are subject to Mumbai Jurisdiction.