Benetech GM63A

Benetech GM63A Vibration Meter User Manual

Model: GM63A

1. Introduction

The Benetech GM63A Vibration Meter utilizes the piezoelectric effect of artificially polarized ceramics for its design. This instrument is engineered for monitoring various vibrating mechanical facilities, particularly for measuring vibration in rotating and reciprocating machinery. It is capable of measuring acceleration, velocity, and displacement, making it a valuable tool in mechanical manufacturing, electric power, metallurgy, and general aviation industries.

Key Features:

- Compact and portable design for easy measurement.
- Visual display of measurement values and states.
- Measures acceleration, velocity, and displacement.
- Selectable vibration frequency ranges (Hi-Low).
- High-sensitivity probe for accurate readings.
- Includes long and short probe heads for diverse measurement situations.
- Equipped with an AC signal output interface.
- Low power indication for timely battery replacement.
- Automatic power-off function to conserve battery life.
- LCD backlight for visibility in various lighting conditions.

The Benetech GM63A Vibration Meter is shown alongside its durable, silver and black carrying case, highlighting its portability and protection.

2. Setup

2.1 Unpacking and Inspection

Upon receiving your Benetech GM63A Vibration Meter, carefully unpack all components and inspect them for any

signs of damage. Ensure all items listed in the packing contents are present.

The Benetech GM63A Vibration Meter, its user manual, and accessories are neatly organized within the foam-lined compartments of the open carrying case, ready for use.

2.2 Battery Installation

1. Locate the battery compartment on the rear of the device.
2. Slide the battery compartment cover downwards to open it.
3. Insert a new 9V Alkaline battery, ensuring correct polarity (+/-).
4. Close the battery compartment cover securely.

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 second
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 Alkaline battery
Static current	≤20 μ A
Operating current	≤25mA
Battery life	20 hours continuous use
Auto power-off	Turns off automatically in 60 seconds
LCD backlight	7 seconds
Operating temperature range	0~40℃
Operating humidity range	30~90%RH
Low battery indication	6.9V±0.2V
Dimensions	67x30x183mm
Weight	182g (including battery)

The rear of the vibration meter displays the battery compartment cover and a label indicating the functions of the buttons and display elements, including 'MEAS/ON' button, 'LO/HI' frequency selection, 'A/V/D' mode selection, and AC output.

2.3 Probe Attachment

The meter comes with both long and short probe heads. Select the appropriate probe head for your measurement application and securely screw it onto the sensor at the top of the device.

3. Operating Instructions

3.1 Powering On/Off

- To power on the device, press the **"MEAS/ON"** button.
- The meter features an automatic power-off function, turning off after approximately 60 seconds of inactivity to conserve battery.

3.2 Selecting Measurement Mode

Press the **"A/V/D"** button to cycle through the measurement modes: Acceleration (m/s²), Velocity (mm/s), and Displacement (mm). The selected mode will be indicated on the LCD display.

3.3 Frequency Selection

Use the **"LO/HI"** button to switch between low and high frequency measurement ranges. Refer to the specifications for detailed frequency ranges for each mode.

3.4 Taking Measurements

1. Ensure the correct probe is attached and the desired measurement mode (A/V/D) and frequency range (LO/HI) are selected.
2. Firmly press the probe tip against the surface of the object to be measured.
3. The measurement value will be displayed on the LCD.
4. For stable and precise readings, ensure consistent contact pressure and placement.

3.5 AC Signal Output

The device includes an AC signal output interface (2V peak, display full scale). This allows connection to external devices such as oscilloscopes or data recorders for further analysis. The load impedance should be 10KΩ or more, or earphones can be connected.

4. Maintenance

4.1 Battery Replacement

When the low battery indicator appears on the LCD, replace the 9V Alkaline battery as described in the "Battery Installation" section (2.2). Prompt replacement ensures accurate readings and continuous operation.

4.2 Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents, as these may damage the casing or display. Keep the probe tip clean for optimal performance.

4.3 Storage

When not in use for extended periods, remove the battery to prevent leakage. Store the meter in its protective carrying case in a cool, dry environment, away from direct sunlight and extreme temperatures.

5. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Battery is dead or incorrectly installed.	Check battery polarity or replace with a new 9V Alkaline battery.
Inaccurate or unstable readings.	Loose probe connection, incorrect frequency/mode selection, or improper contact with object.	Ensure probe is securely attached. Verify correct mode and frequency. Apply firm, consistent pressure to the object.
Low battery indicator displayed.	Battery power is low.	Replace the 9V Alkaline battery immediately.
No AC signal output.	Cable issue or external device problem.	Check the connection cable. Ensure the external device is functioning correctly and has appropriate input impedance.

6. Specifications

The following table provides detailed technical specifications for the Benetech GM63A Vibration Meter:

This table details the technical parameters including vibration pickup type, measurement ranges for acceleration, velocity, and displacement, accuracy, frequency ranges, display update cycle, LCD display type, single output, power supply, static current, operating current, battery life, auto power-off, LCD backlight, operating temperature and humidity ranges, low battery indication, dimensions, and weight.

General Specifications:

- **Brand:** Benetech (Manufacturer), MeterTo (Seller)
- **Model:** GM63A
- **Power Source:** 9V Alkaline Battery
- **Item Weight:** Approximately 3.3 Pounds (shipping weight)
- **Device Weight:** 182g (including battery)
- **Dimensions:** 67 x 30 x 183 mm (Meter only)
- **GTIN/UPC:** 732140077412
- **ASIN:** B074Z89SMG

7. Warranty and Support

7.1 Warranty Information

Specific warranty details for the Benetech GM63A Vibration Meter may vary. Please refer to the warranty card included with your product or contact the seller, MeterTo, or the manufacturer, Benetech, for comprehensive warranty terms and conditions.

7.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or service inquiries, please contact the seller (MeterTo) or the manufacturer (Benetech) directly. Contact information can typically be found on their official websites or on the product packaging.