



MODEL: GT633B

Instruction Manual of Vibration Meter



Version: GT633B-EN-00

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I. Introduction

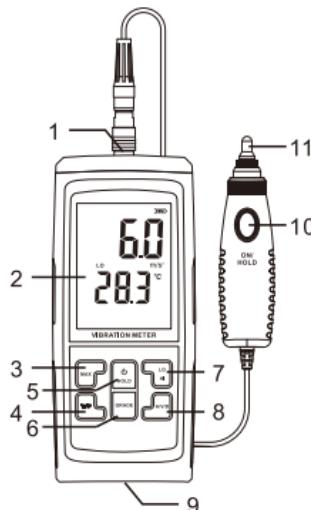
This product is based on piezoelectric effect of artificially polarized ceramics. It is suitable for conventional vibration measurement of mechanical equipment, especially for rotating and reciprocating machinery. It can measure vibration accelerate, velocity, distance and temperature, and is widely used in fields like machinery manufacturing, electric metallurgy and general aerospace.

II. Features

1. Measurement of vibration Accelerate, Velocity, Distance and Temperature
2. Measurement acceleration High/low frequency selection
3. Machine level selection feature included
4. Maximum mode
5. Data HOLD
6. LCD backlight (steady on)
7. Automatic/manual shutdown
8. Temperature unit selection
9. Measurement unit selection
10. Lithium battery power, USB charging

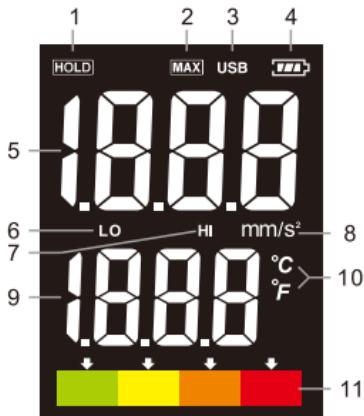
III. Part Names

1. Host-Sensor interface
2. LCD display
3. MAX button: Enter Maximum mode button
4. °C/°F button: Temperature unit switch button
5. ⏴ /HOLD button: Power on/off and Data hold button
6. GRADE button: Machine grade switch button
7. LO/HI button: Acceleration high/low frequency measurement switch button
8. A/V/D button: Measurement mode selection button
9. USB interface
10. ON/HOLD button: Power on/off and Data hold button
11. Probe (The probe can be changed according to measurement requirements)



IV. LCD display

1. HOLD: Data HOLD
2. MAX: Maximum mode on
3. USB: The charging data cable is connected successfully
4. Battery level
5. Accelerate/ Velocity/ Distance values
6. LO: Enter the high frequency measurement of acceleration
7. HI: Enter the low frequency measurement of acceleration
8. Measurement unit: Accelerate [m/s²], Velocity [mm/s], Distance [mm]
9. Temperature value
10. Temperature Unit
11. Machine level indication (Velocity mode display)



V. Technical Specifications

	Range	Accuracy	Note
Accelerate	0.1~199.9m/s ² peak		In the frequency range of 10Hz~1KHz (LO), 1KHz~3KHz (HI)
Velocity	0.1~199.9mm/s rms	±5%±2digits	In the frequency range of 10Hz~1KHz (LO)
Distance	0.001~1.999mm p-p		In the frequency range of 10Hz~1KHz (LO)
Operating temperature	0~40°C (32~104°F)		±1.5°C(±2.7°F)
Operating humidity	30~90%RH		
Vibration pickup	Piezoelectric ceramic accelerometer (shear-type)		
Displays update cycle	About 0.5 seconds		
Power	1000mAh 3.7V lithium battery		
Stand-by current	≤15µA		
Operating current	≤25mA		
Battery life	20H continuous use		

- * Velocity and displacement range is limited by acceleration 199.9m/s².
- * Accelerate can be used in 3KHz~15KHz frequency band, with large error.
- * Charger: 5V 1A or 5V 2A.

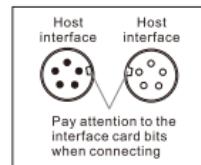
VI. Operation instructions

1. Preparation for measurement

- (1) Connect the host and sensor.
- (2) Select Probe tip

- A. With tip probe S: It provides good response and value over a wide range.
- B. With probe tip L: Suitable for narrow object or special objects to obtain quick response.
- C. With Magnetic probe: Suitable for measurement in cases where flat ferric object to the stable measurement, such as elevators.
- D. Without probe tip: Suitable for measure the surface of flat objects to obtain stable data.

- (3) Check the battery charge before starting the measurement, and turn off the device or charge it in time if it cannot be turned on or the battery is low.



With tip probe S



With probe tip L



With Magnetic probe



Without probe tip

2. Power on/off

- (1) Power on: Shutdown state, short press /HOLD button to turn on, and enter the measurement interface.(short press ON/HOLD button on the sensor to turn on)
- (2) Shutdown: After startup, long press /HOLD button to shut down on any interface. (long press ON/HOLD button on the sensor to turn off)

(3) Automatic shutdown: After short press \textcircled{P} /HOLD button to turn on, there is no button operation, and it will automatically shut down after about 1 minute.
Or insufficient power, in order to protect the battery, about 10 seconds after startup automatically shut down.

(4) Cancel automatic shutdown: Shutdown state, long press \textcircled{P} /HOLD button to LCD display [no] to turn on.



Cancel automatic shutdown

3. Maximum mode

(1) After startup, press MAX button, LCD display [MAX], enter the maximum mode. Press MAX button again, return to the real-time measurement interface (LCD does not display [MAX]).

(2) Maximum mode: Display the maximum vibration value after entering the maximum mode, until the larger value is updated.

4. Data HOLD

(1) After startup, press \textcircled{P} /HOLD button to display [HOLD] lock value on LCD. Press \textcircled{P} /HOLD button again to release value (LCD does not display [HOLD]).

(2) Or press the ON/HOLD button of the sensor to lock the value, and press again to release value.

5. Accelerate high/low frequency measurement

(1) When measuring accelerate, short press the LO/HI button , LCD display [HI], indicating entering the high-frequency measurement mode. Then press the LO/HI button, LCD display [LO], indicating entering the low-frequency measurement mode.

(2) High frequency: 1KHz~15KHz, low frequency: 10Hz~1KHz.

(3) When measuring velocity and distance, this button is invalid.

6. Temperature unit

After startup, press the $^{\circ}\text{C}/^{\circ}\text{F}$ button to switch between $^{\circ}\text{C}$ and $^{\circ}\text{F}$.



Maximum mode



Data HOLD



Accelerate low frequency($^{\circ}\text{C}$)



Accelerate high frequency($^{\circ}\text{F}$)

7. Machine grade

- (1) When measuring velocity, short press GRADE button to switch machine grade, LCD display [n+ machine grade number] for a short time, and then return vibration value display;
- (2) Machine grade n1: Small (P<15KW)
Machine grade n2: Medium (15KW<P<=75KW)
Machine grade n3: Large hard base (P>75KW)
Machine grade n4: Large soft base (P>75KW)
- (3) When measuring accelerate and distance, this button is invalid.

8. Measurement mode selection

- (1) After startup, short press the A/V/D button and switch successively: Accelerate - Velocity - Distance.
- (2) Accelerate: LCD display unit [m/s²], Velocity: LCD display unit [mm/s], Distance: LCD display unit [mm].
- (3) When switching to the velocity mode, the LCD will briefly display [n+ machine grade number], and then display the velocity value.

9. Charging function

This product is powered by lithium battery and can be charged via USB interface. During the charging process, the LCD dynamically displays the number of battery cells, and the LCD displays the [USB] icon, which will not automatically shut down. After being fully charged, the number of battery cells is no longer dynamically displayed, and the [USB] icon will still be displayed. At this time, if there is no button operation, and it will automatically shut down after about 1 minute.

10. Measure

Connect the host and sensor, hold the sensor, align the probe towards the object to be measured, and then you can conduct the measurement.



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.



Velocity



Machine grade n1
(Velocity)

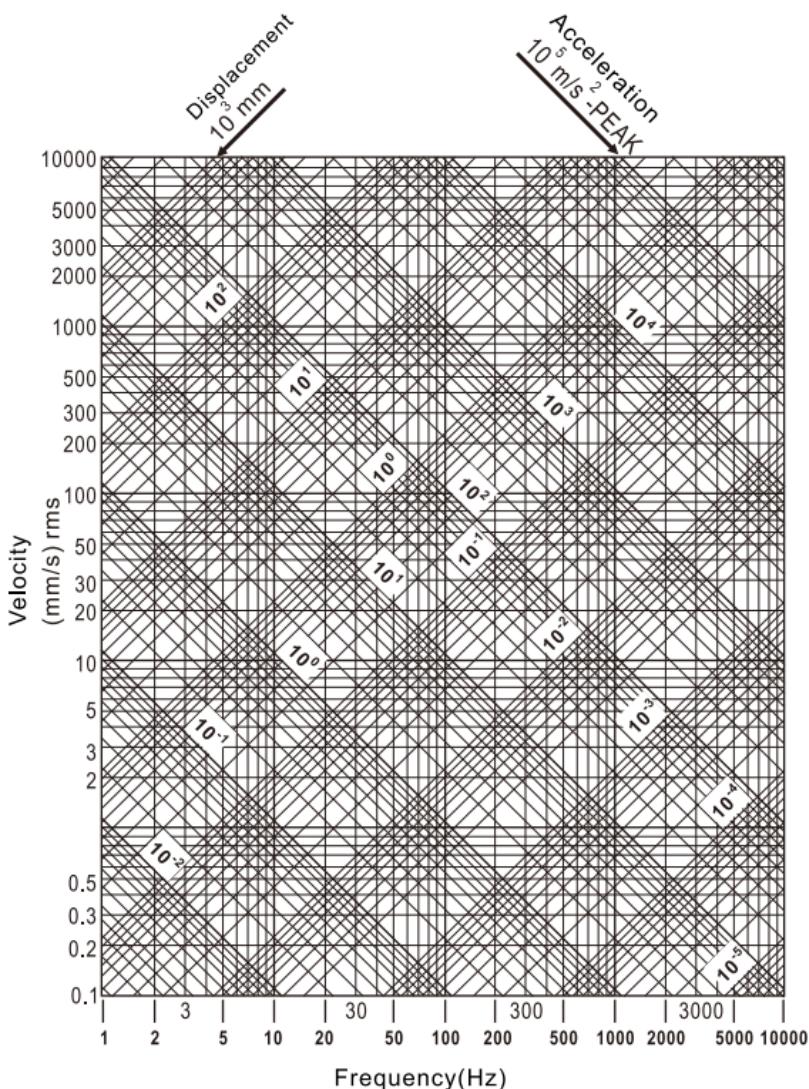


Distance



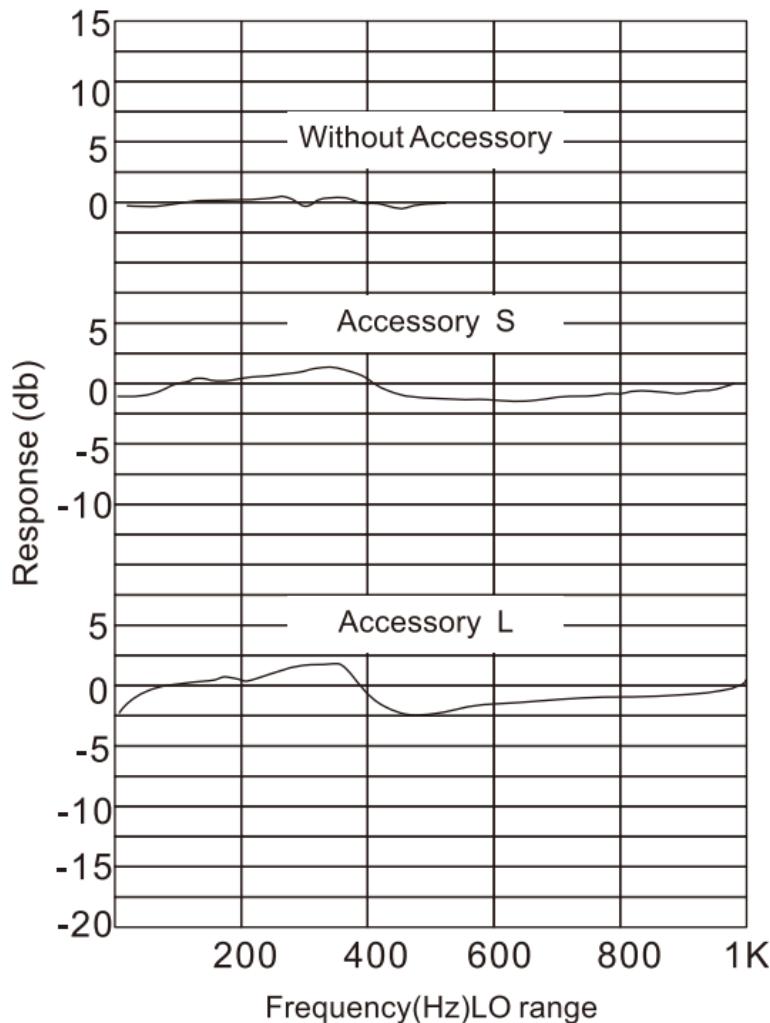
Charging

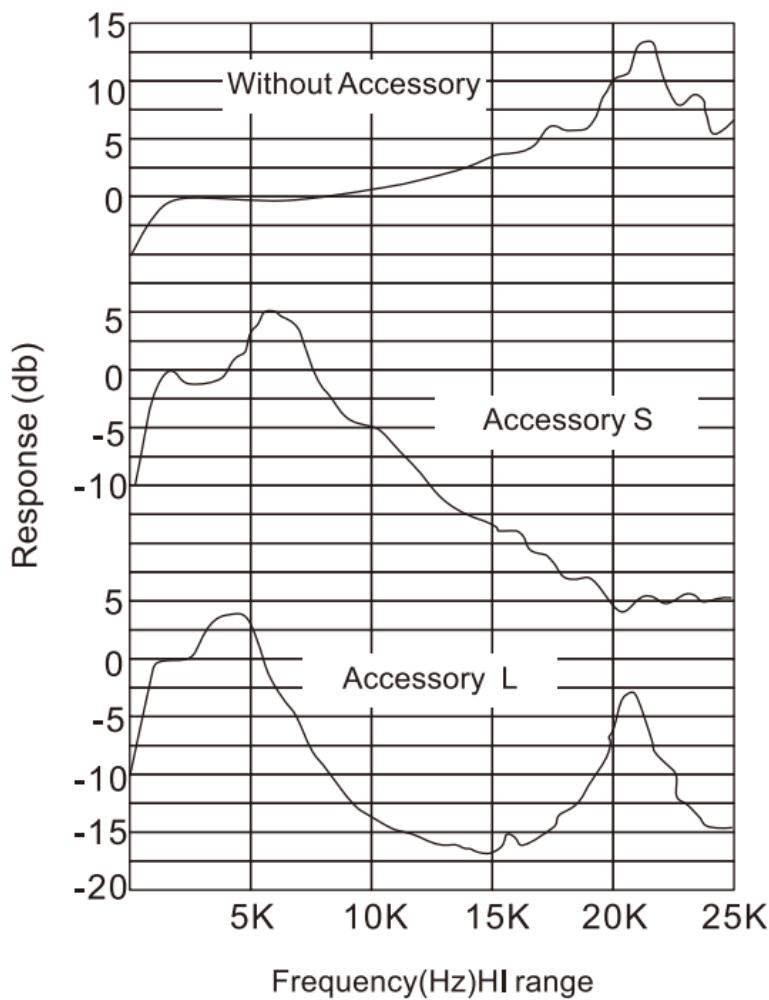
VII. Vibration conversion chart



VIII. Contact resonance in acceleration measurement

Measured with FFT Signal analyzer





IX. Comparison table for vibration intensity

Vibration intensity (ISO 10816-1)					
Machinery	Class I small machine	Class II medium machine	Class III large hard base	Class IV large soft base	
Vibration velocity V _{rms}	mm/s				
	0.28				
	0.45				
	0.71		Good		
	1.12				
	1.80				
	2.80		Satisfactory		
	4.50				
	7.10		Unsatisfactory		
	11.20				
	18.00				
	28.00		Unacceptable		
	45.90				

X. Attention

1. Do not use this product or charge it in an environment with flammable or explosive gases;
2. Do not use this product to come into contact with dangerous voltages to avoid causing injury or death;
3. Avoid strong impacts, high temperatures, and immersion in water;
4. Charge regularly when not in use for a long time;
5. Do not disassemble this machine or attempt to change the internal components;
6. Alcohol, diluted solutions, etc. have a corrosive effect on the case, especially the screen, so clean the case with a little water gently;
7. Operate the product cautiously near rotating equipment;

Specific Declarations:

Our company shall hold no any responsibility resulting from using output from this product as an direct or indirect evidence.

We reserves the right to modify product design and specification without notice.

