

# VIBRATION ANALYSER

## VA-2C

### *Instruction manual*



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*Vibration Isolation Technology made in Switzerland*



## **Thank you...**

...for your purchase of the **VA-2C vibration measurement device**. This unit has been designed specifically with performance and ease of use in mind. As with all TableStable products, this system is made to the highest quality standards using precision electronics and mechanical components which should give you many years of trouble free use. Please read this instruction manual carefully before use to ensure you get the best out of your new unit.

## **Safety Instructions**

The system may only be plugged into a socket with separate ground. Do not disconnect this ground, either at the socket, or by using an ungrounded extension cable.

Connect the system only into a socket, which is max. 10 A fused.

Before switching on this apparatus make sure that it is connected to the correct mains voltage.

Do not remove any cover or allow any metal objects to enter any openings in the unit.

Disconnect from mains before removing any covers. Refer servicing to qualified personnel.

Do not use in potentially explosive surroundings.

If you suspect the system to be in any way unsafe, unplug and prevent any possible accidental usage. Contact your nearest service centre.

## **Notes on Equipment Safety**

The Vibration Analyser VA-2 has been designed, manufactured and tested to conform to the safety regulations for measurement and control equipment DIN EN 61010-1 (IEC 1010-1) and satisfies the relevant requirements of EEC Directive 73/23. The system conforms to EEC Directive 89/336 (electro-magnetic compatibility). The operator should read the enclosed manual which contains important warnings and information.

## **Cleaning the outside**

Use neutral detergents. Cleaning with solvents will damage the outside surface of the system. DO NOT use cleaning materials that contain ammonia.

DO NOT use isopropyl alcohol to remove dirt from the control panel. It may crack the panel.

DO NOT use flammable substances or any type of spray to clean the system.

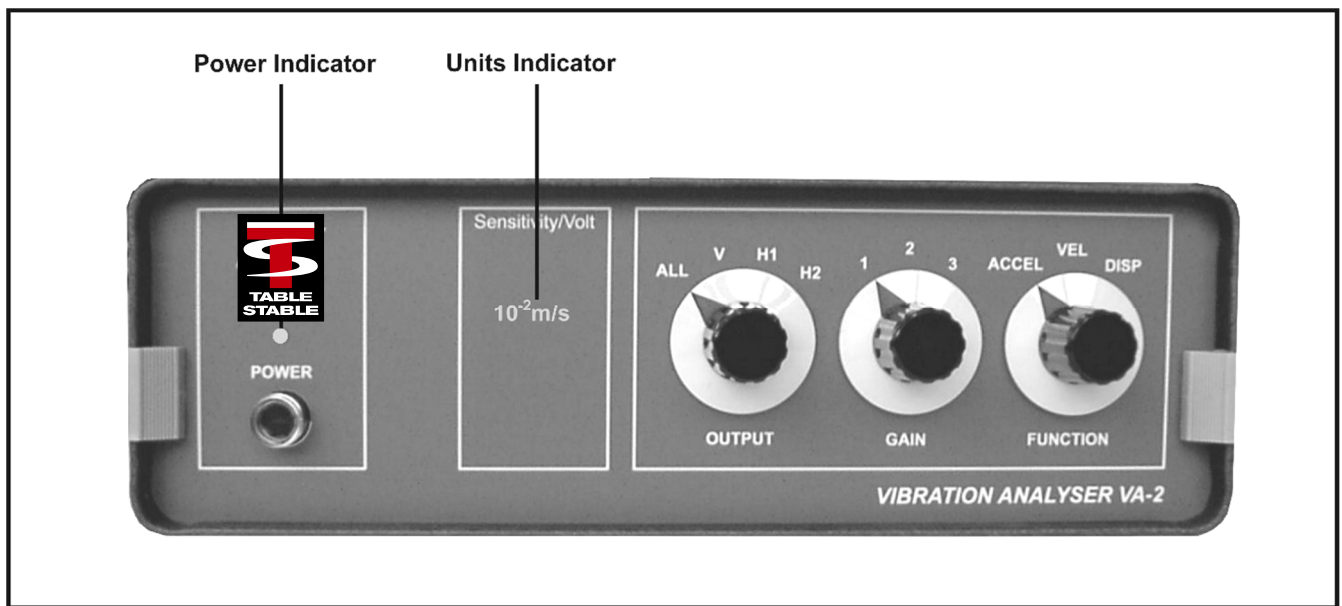


**DELICAD MEASUREMENT HEAD, DO NOT DROP**

## General

The vibration analysis system VA-2C is a system with remote measurement head allowing easy measurement of acceleration, velocity or displacement in three orthogonal directions. Each axis may be separately read out, and in addition a multiplexed output allows simultaneous display of all three axes on an oscilloscope. This latter feature is very useful for identifying vibration modes-frequency, direction and amplitude can all be inferred from the display.

## Operating Instructions



**Make sure that the measurement head is sitting properly on the surface to be measured!**  
**The head must be used with the label uppermost facing up**

### Multiplex 3-Axis Display

Plug in the measurement head and switch on power.  
Attach an oscilloscope to the rear panel socket marked **output**.

- Set output knob to "ALL"
- Set oscilloscope to: 200mV sensitivity  
DC coupled  
free run  
20ms time base

Adjust the input offset on the oscilloscope until 3 traces separated by 0.5V are displayed. The orientation of the three displayed axes is indicated on the measurement head.



- Set required *Function* and *Gain*

**Example:** Function: VEL  
Gain: 3

will measure velocity, with a sensitivity of  $1V = 10^{-4}$  m/s as indicated on the front panel.

### ***Single Axis Display***

- Set Axis Knob to “V, H1, or H2”

Each measurement axis may be observed independently for example for use with a spectrum analyser. The measurement direction is as indicated on the measurement head.

### ***Individual display of all 3 axes***

Two further BNC outputs are provided for H1 and H2 alone. The function and gain for these axes are identical to those on the main output. By setting the axis knob to V all three axes may be observed individually.

**Sensitivity/Volt**

<b>Gain</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Accerelation</b>	1m/s <sup>2</sup>	0.1m/s <sup>2</sup>	0.01m/s <sup>2</sup>
<b>Velocity</b>	0.01 m/s	0.001 m/s	0.0001 m/s
<b>Displacement</b>	100 µm	10 µm	1 µm



## Specifications VA-2C

### Control Unit

*Frequency Range:* 2-1000 Hz

*Measurement Range:* Acceleration  $10^{-5} - 5 \text{ m/s}^2$   
Velocity  $10^{-7} - 5 \times 10^{-2} \text{ m/s}$   
Displacement 1nm - 0.5 mm

*Accuracy:*  $\pm 5\%$  on all ranges. The control unit **MUST** be used with the corresponding measurement head!

*Power requirements:* 100-240 VAC  $\pm 10\%$ , 50-60Hz, 8VA

*Size:* 215x230x75mm

*Weight:* 1.4kg

### Measurement Head

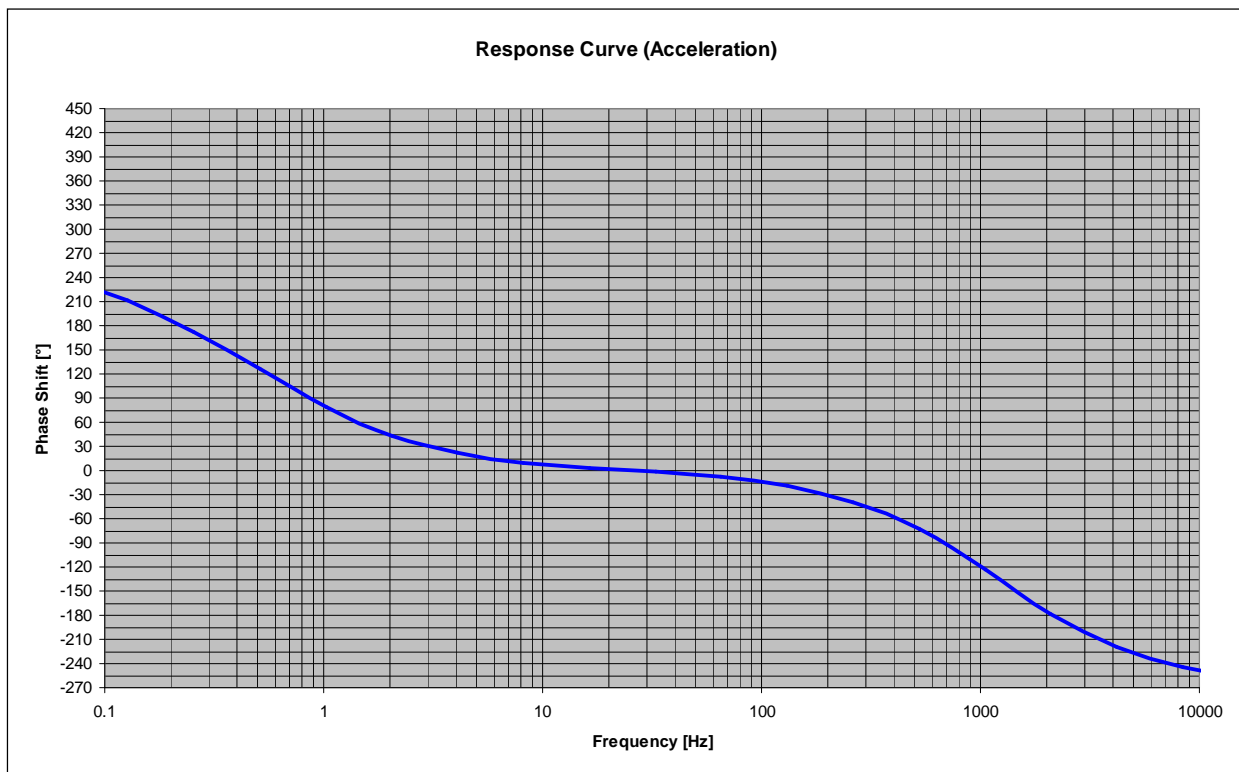
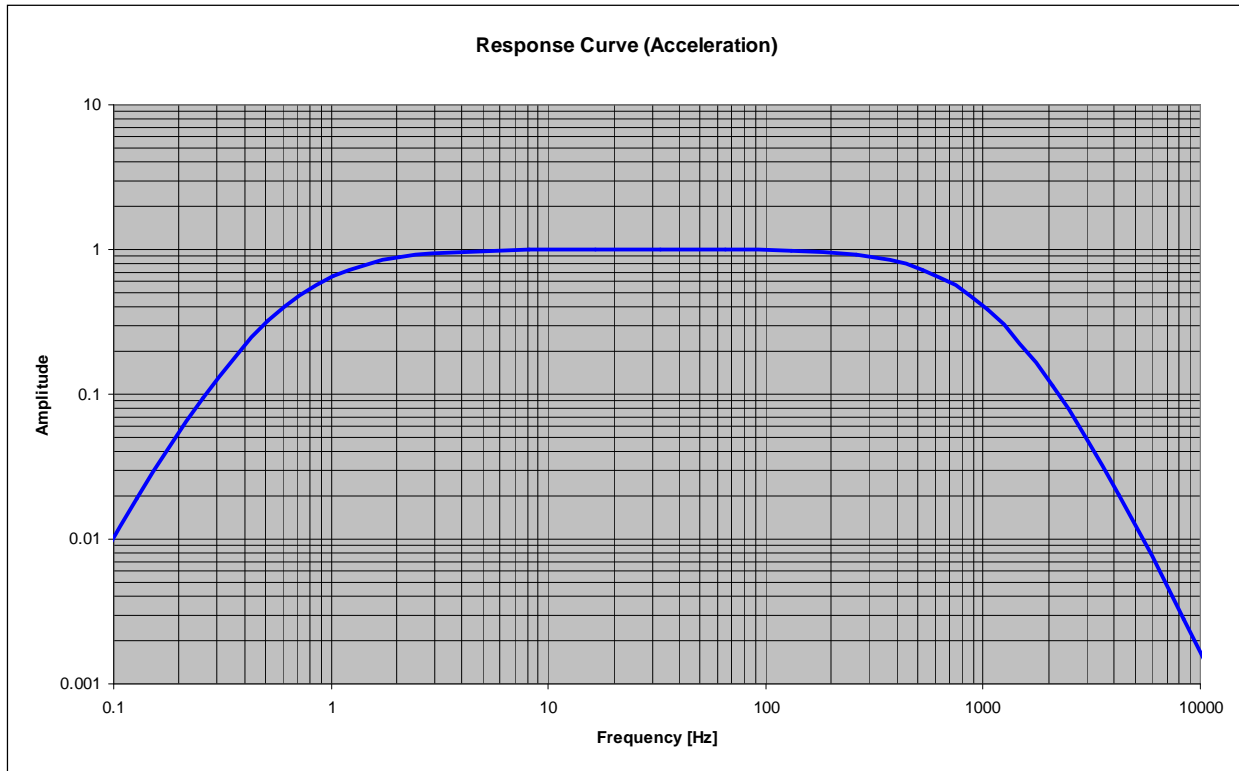
*Size:* 54x54x49mm

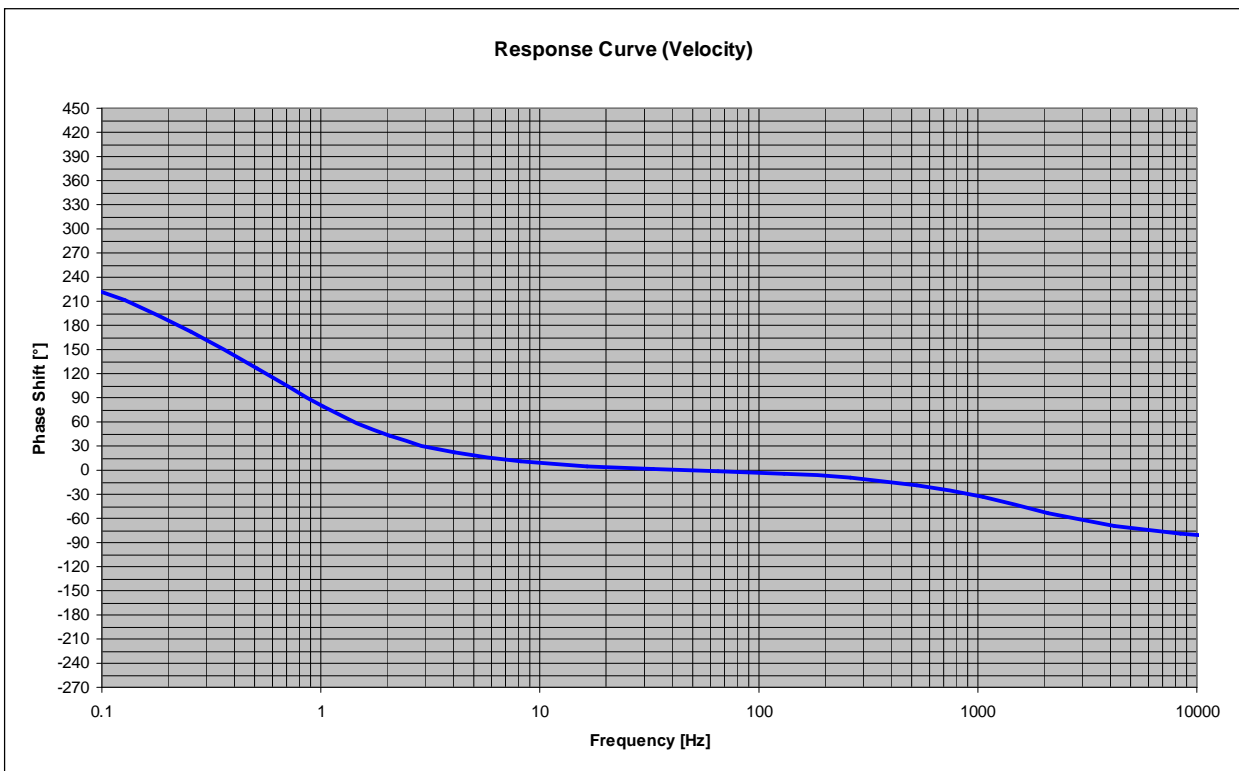
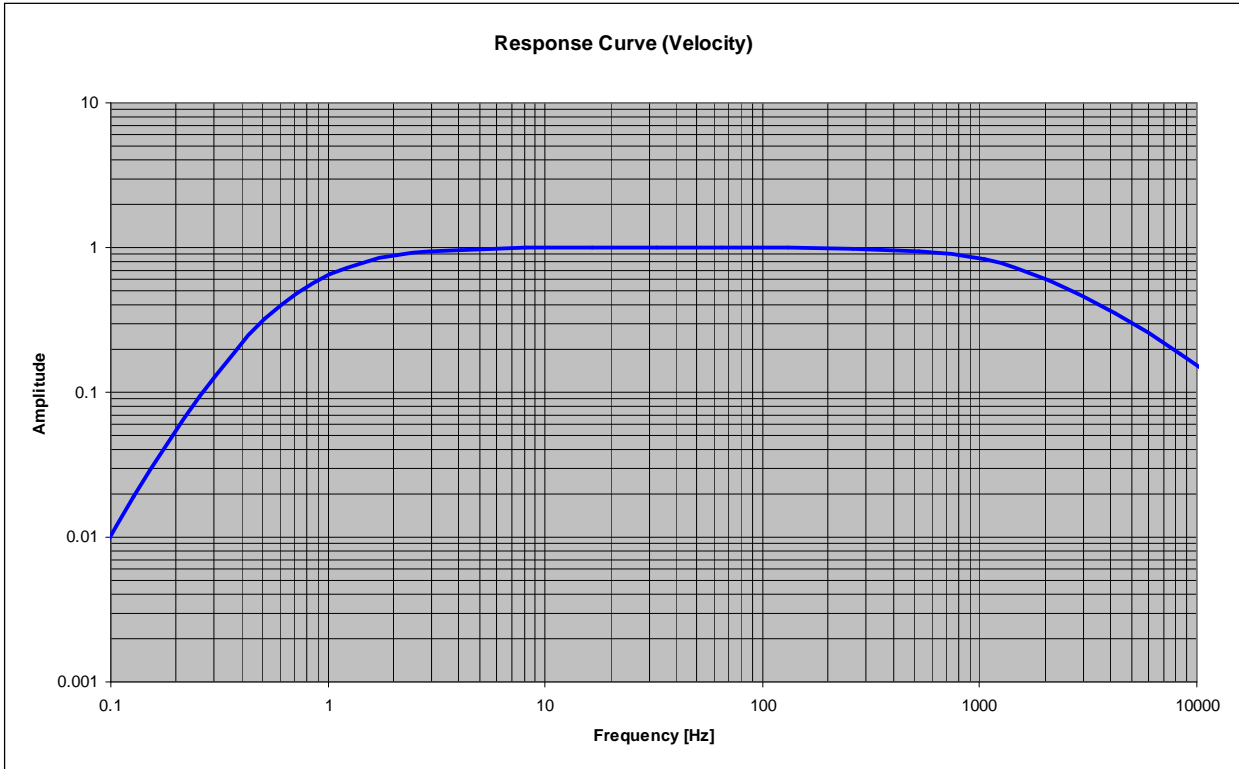
*Weight:* 490g

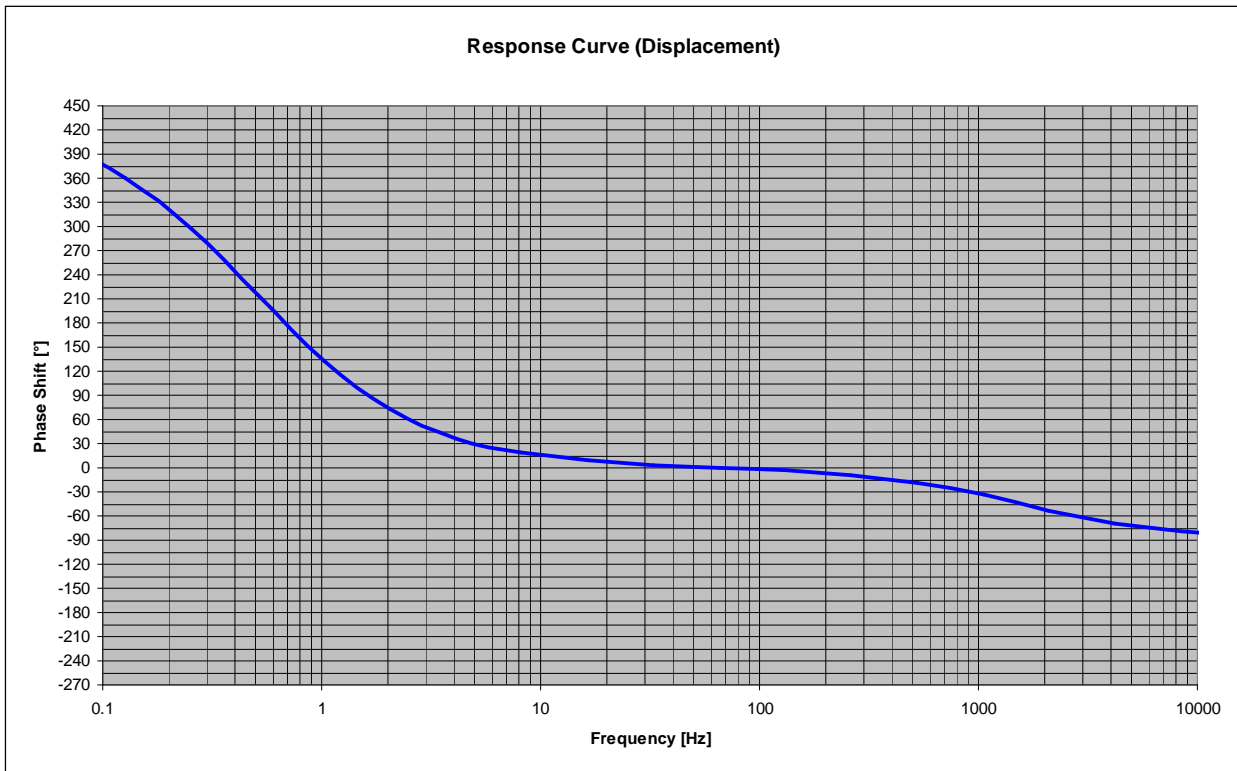
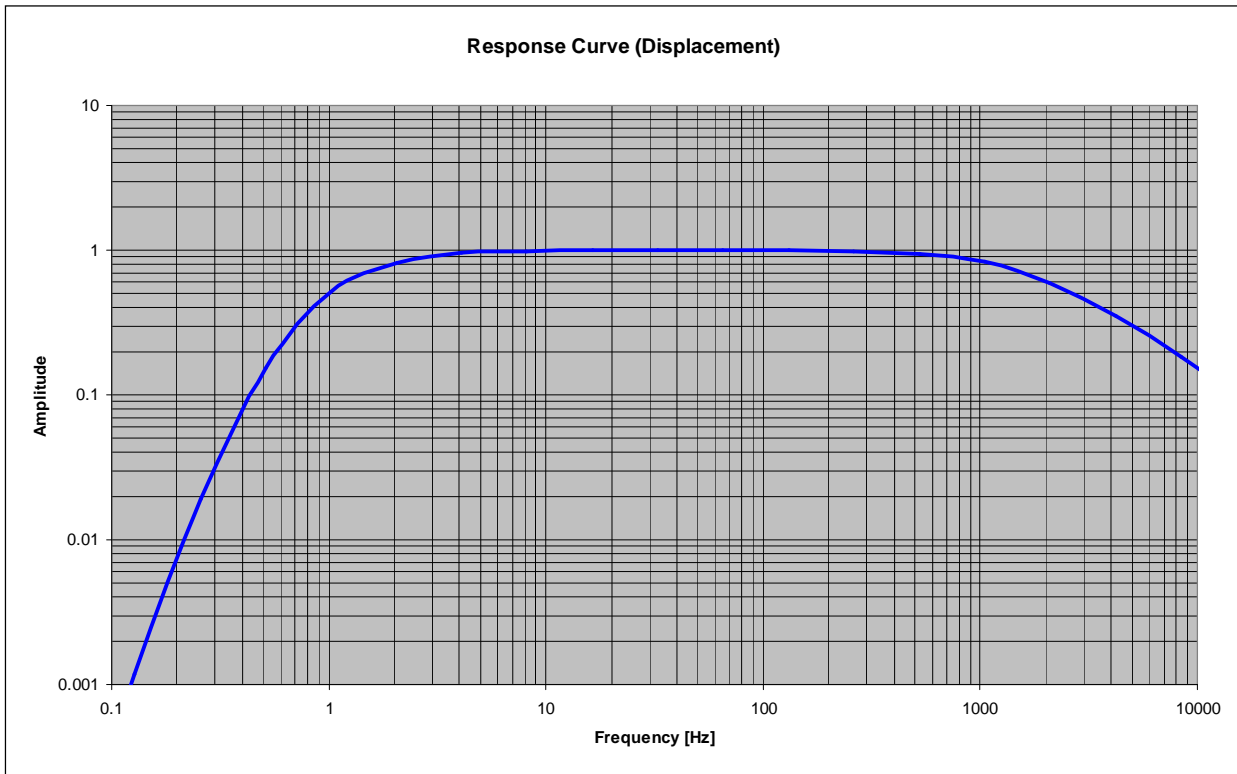
**Note:** The lower limit of the sensitivities quoted above apply at all frequencies for acceleration and velocity, and above 20 Hz for displacement. Below 20 Hz for displacement the noise increases from about 0.01  $\mu\text{m}$  at 20 Hz to about 0.1  $\mu\text{m}$  at 2 Hz.



## Frequency response












## Service Order

If you suspect that a fault has developed in your isolation system, please fill in the service order form and send by fax/email to the address below. Our service department will contact you by return. If it proves to be necessary to return the system for repair, you will be issued with an **RMA number** which should then appear on all shipping documents. You also can download the service order sheet from our website: [www.tablestable.com](http://www.tablestable.com)

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## Sales Offices

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