VIBRATION ANALYSER
VA-2C

Instruction manual

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Vibration Isolation Technology made in Switzerland

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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.

DELICATE MEASUREMENT HEAD, DO NOT DROP

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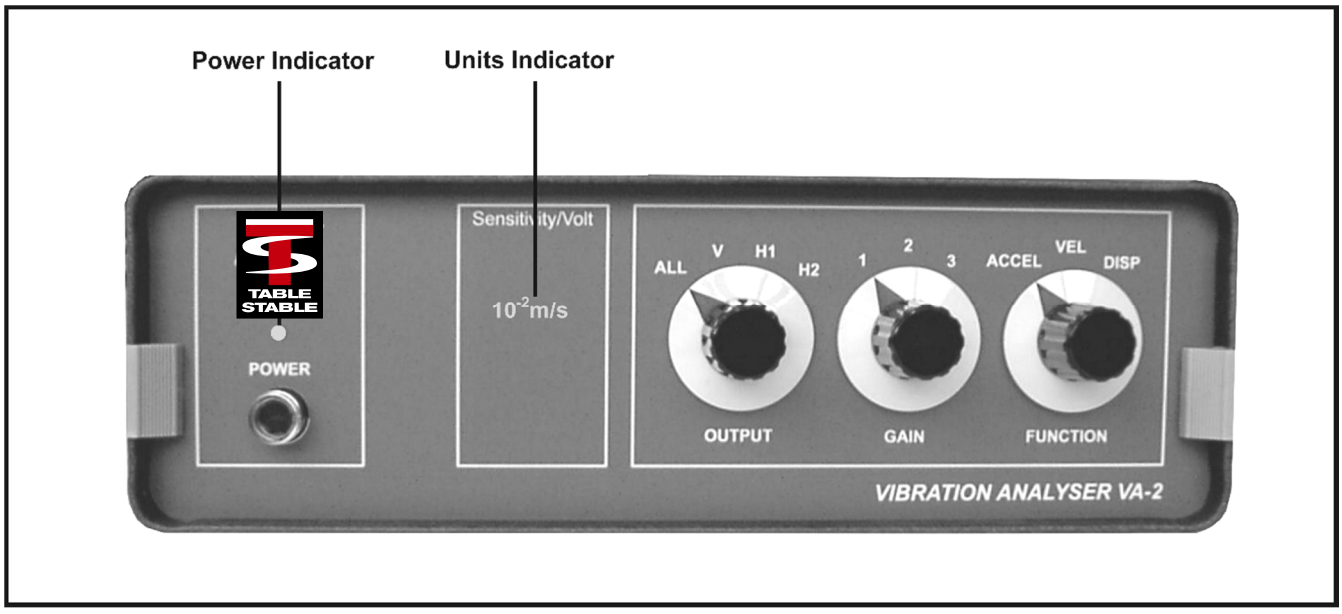
General

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

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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

Gain	1	2	3
Accerelation	1m/s^2	0.1m/s^2	0.01m/s^2
Velocity	0.01 m/s	0.001 m/s	0.0001 m/s
Displacement	100 µm	10 µm	1 µm

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Specifications VA-2C

Control Unit

Frequency Range:	2-1000 Hz	
Measurement Range:	Acceleration	10^{-5} – 5 m/s^2
	Velocity	10^{-7} – 5x10^{-2} m/s
	Displacement	1nm - 0.5 mm
Accuracy:	±5% on all ranges. The control unit MUST be used with the corresponding measurement head!	
Power requirements:	100-240 VAC ±10%, 50-60Hz, 8VA	
Size:	215×230×75mm	
Weight:	1.4kg	
Safety class:	1	
Protection class:	IP20	
Temperature range:	5 – 40°C 41 – 104°F	
Relative humidity:	10 – 90% (5° – 30°C / 41°– 86°F) 10 – 60% (30° – 40°C / 86°– 104°F)	
Application:	Indoor	
Altitude:	up to 2000m (6500ft)	

Measurement Head

Size:	54×54×56mm (L×D×H)
Weight:	440g

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 µm at 20 Hz to about 0.1 µm at 2 Hz.

Technical details of the data, design and illustrations provided in this manual are subject to change without notice.

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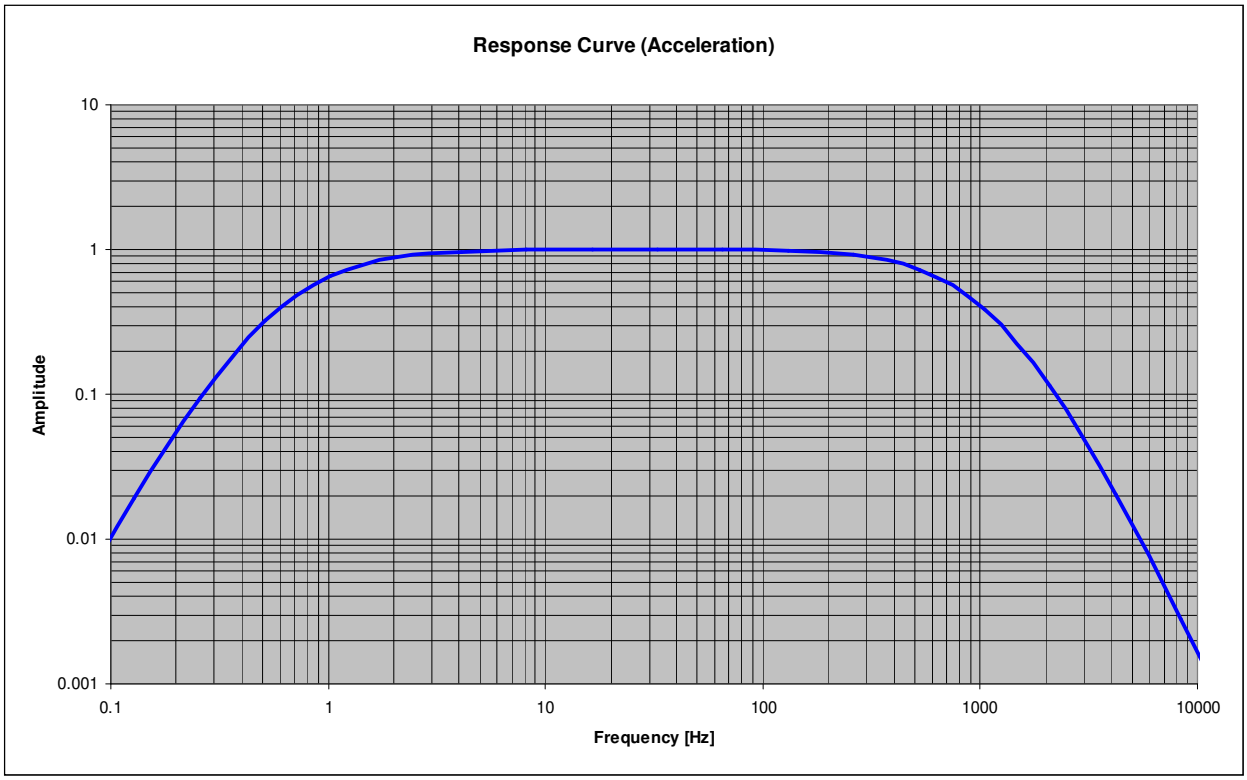
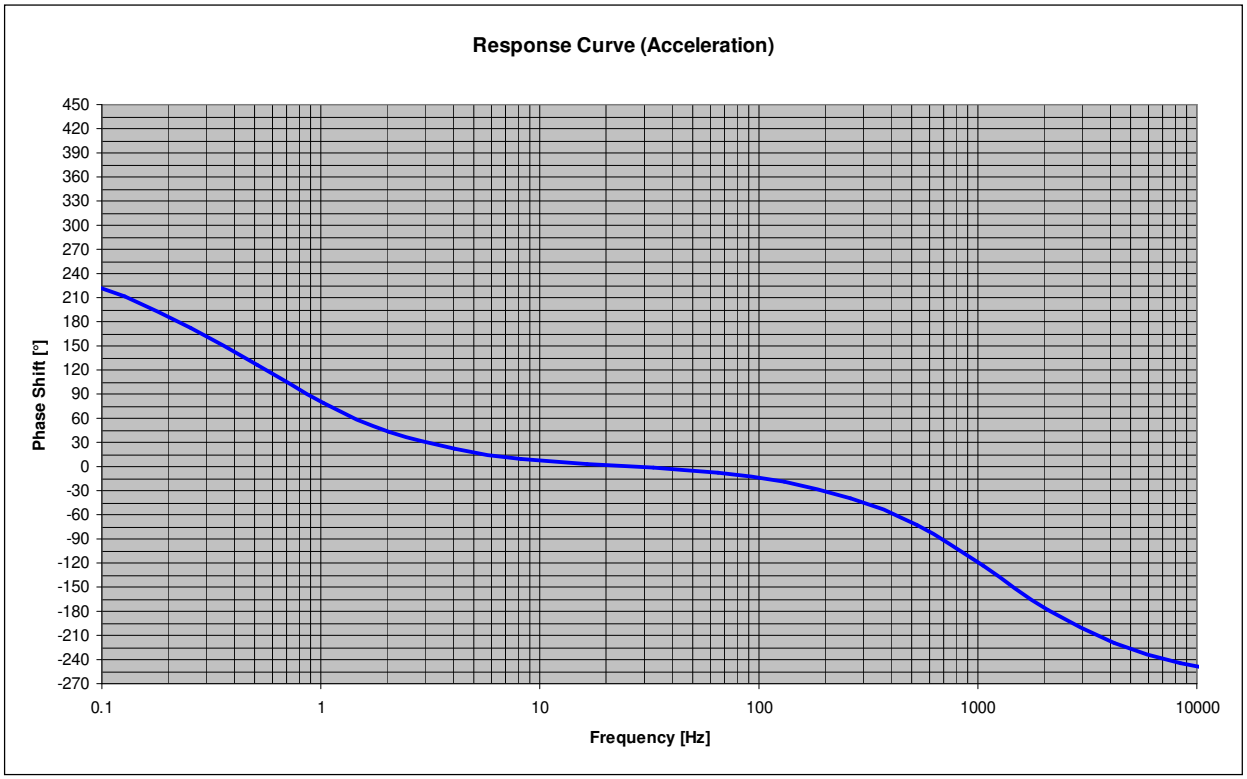
Frequency response





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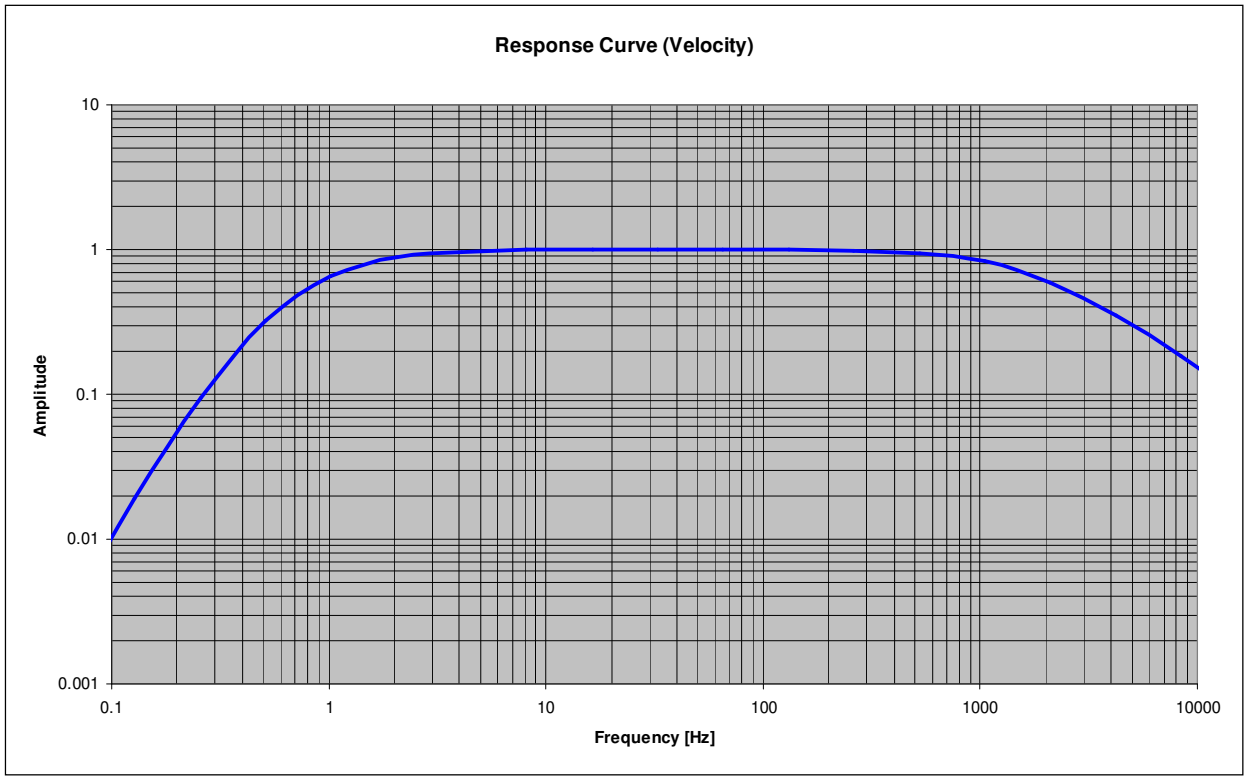

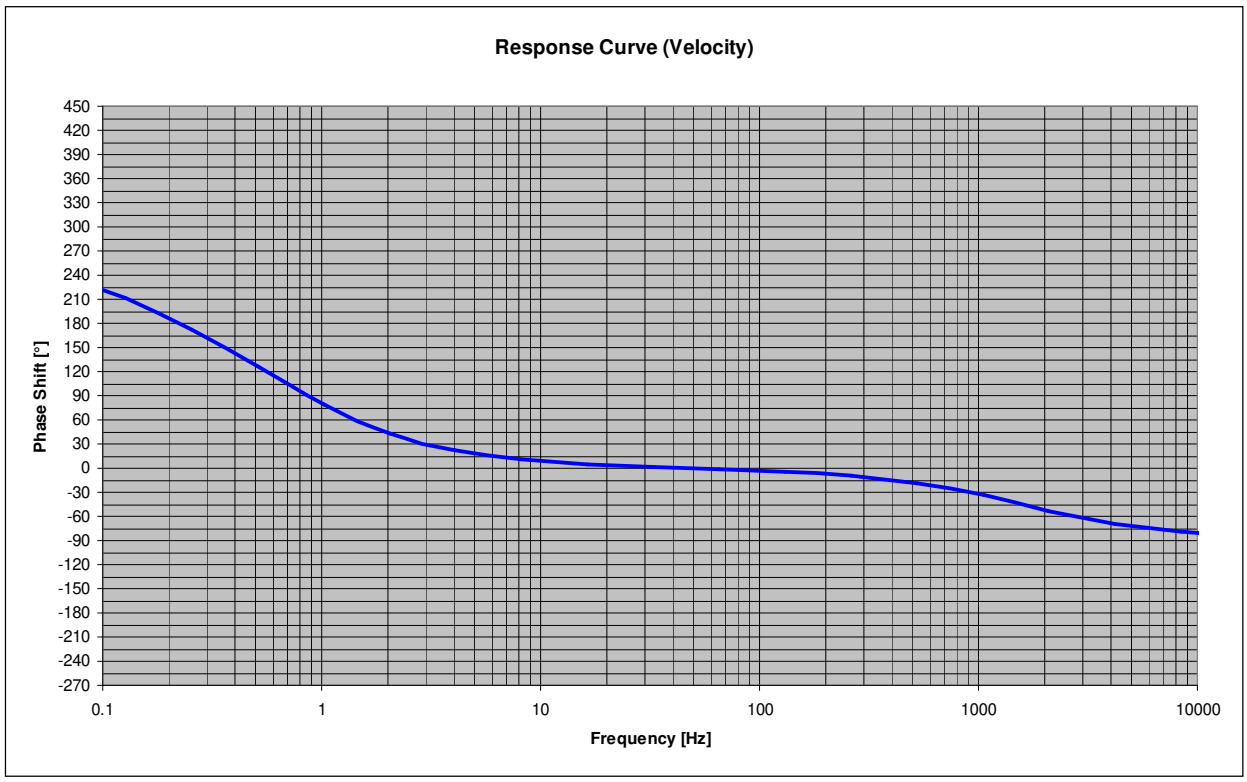

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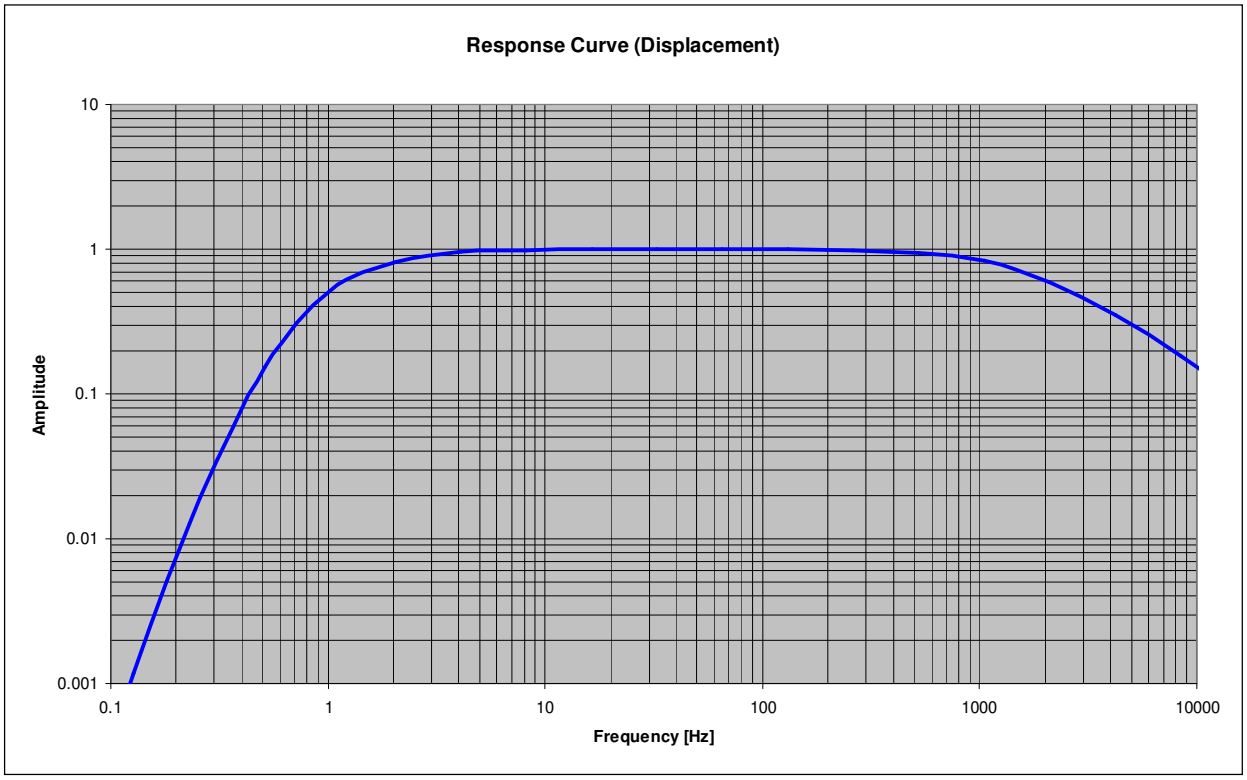

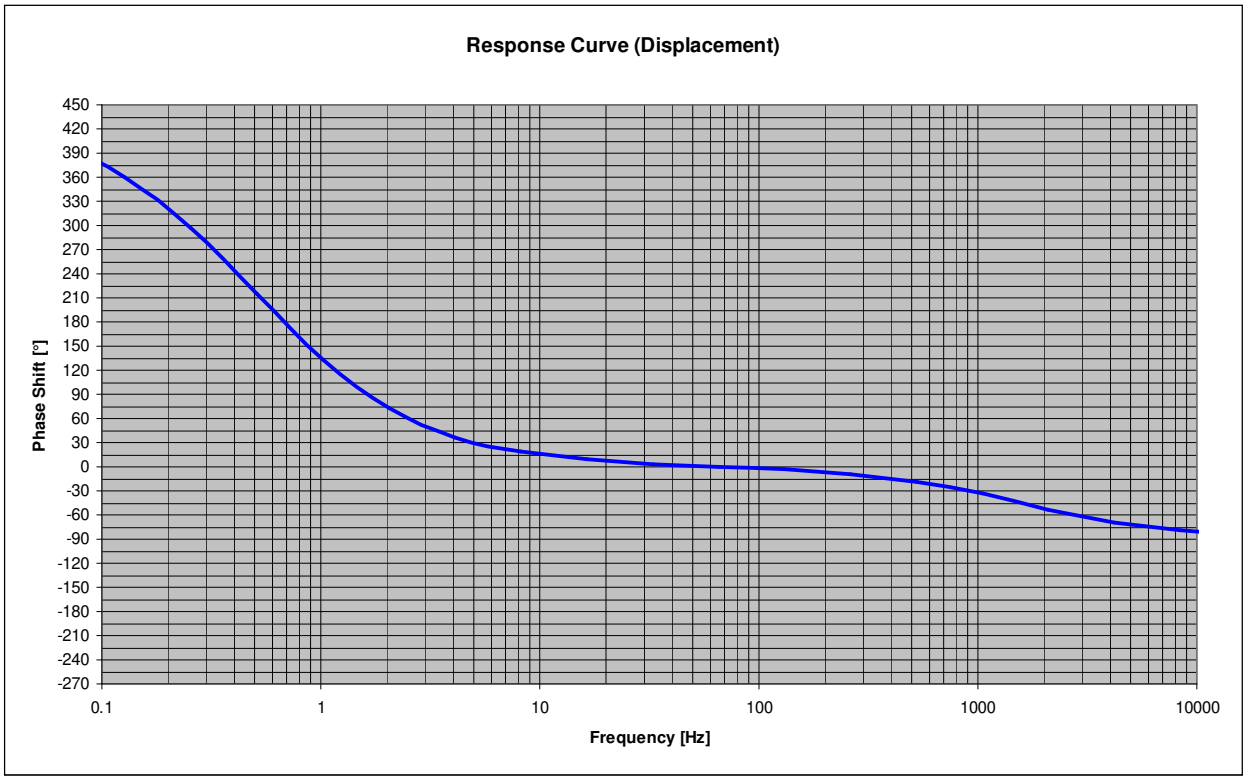

Service Order

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

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