

# Building Vibration Kit

HD2070.BV

**Delta OHM**

Member of GHM GROUP

## ○ SIMPLE TO OPERATE

Complete kit, ready to use

## ○ FULLY ACCORDING TO REGULATIONS

ISO 2631-2:2003 & UNI 9614:2017 compliant

## ○ ECONOMICAL SOLUTION

Very cost effective

## ○ PORTABLE & RUGGED

Complete kit in carrying case

## Measuring the effect of vibration annoyance on the human body

The evaluation of human exposure to **whole-body vibration in buildings** with respect to the comfort and annoyance of the occupants has to respond to specific ISO regulations.

The sources of these vibrations are many and varied. It can be an effect of machines that are installed in the building but it can also be vibration that is being generated by something from outside: demolishing of a nearby construction, nearby railroad effects, nearby highway (construction), building activities.

The **evaluation of the annoyance** is carried out on the basis of the frequency weighted acceleration value  $a_w$ , (t) appropriately acquired by the instrumentation and treated to obtain the  $V_{sor}$  descriptor to be compared with a series of limit values expressed in  $mm/s^2$  and dependent on the destinations of use of buildings and from the reference period (day / night). When the values or levels of the vibrations under examination exceed the limits, the vibrations can be considered objectively disturbing for the exposed subject

**HD2070.BV** is the perfect solution for the application: The kit contains the necessary instrument and measuring cell, complete with all you need to measure the vibration effects.



## Main Applications

Road and railway traffic  
Industrial activities and machinery  
Operation, road and construction site  
Explosions

## General Specifications

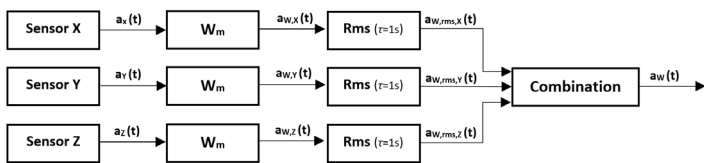
Types of vibration sources:	road and railway traffic, industrial activities and machinery operation, road and construction site activities, explosions, various types of human activities that generate vibrations
Reference standards	UNI 9614:2017 ISO 8041-1:2017 ISO 2631-2:2003 NS 8176.E

### Limits $V_{sor}$

Environments for residential use	daytime: 7.2 mm/s <sup>2</sup> night time: 3.6 mm/s <sup>2</sup>
Workplaces	14 mm/s <sup>2</sup>
Hospitals	2 mm/s <sup>2</sup>
Kindergartens and rest homes	3.6 mm/s <sup>2</sup>
Schools	5.4 mm/s <sup>2</sup>

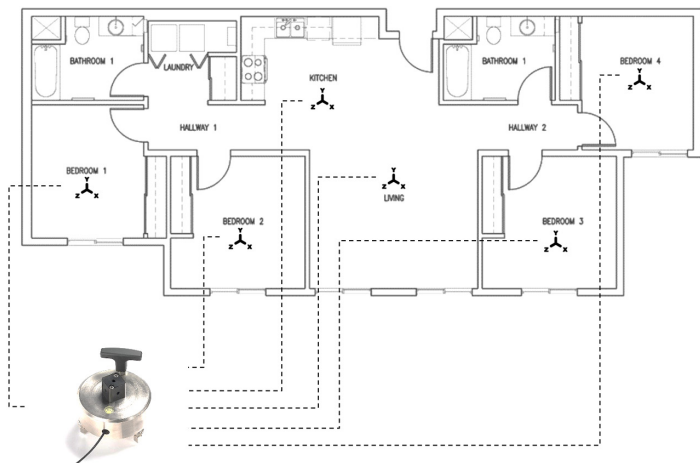
## Acquisition principle

Signal processing of HD2070 vibrometers in accordance with ISO 8041



## Accelerometer Positioning

Example of a typical positioning of the triaxial sensor on floors or surfaces of rooms used for habitable use.



HD2030AC5 - Floor positioning adaptor

## Technical Specifications HD2070

Reference standards	ISO 8041-1:2017
Frequency weightings	$W_m$ independent for each acquisition channel, conforming to ISO 2631-2:2003
Band-Pass filtering	$F_m$ 0.8 Hz-100 Hz
Parameters	$a(t)$ , $a_x(t)$ , $a_y(t)$ , $a_z(t)$ , $a_{b_{ij}}(t)$ , $a_{w_{ij}}(t)$ , $a_{w_{rmsj}}(t)$ , $a_{w_{max}}(t)$

### ACCELEROMETER

Type	tri-axial
Sensing element	MEMS
Nominal sensitivity	1 V/ms <sup>2</sup>
Frequency response	0.2 Hz- 400Hz
Sampling frequency	8 KHz
Resolution	25 bit
Typical Noise	< 1mm/s <sup>2</sup>
Storage	SD card up to 8Gb

## HD2070.BV kit includes:

**HD2070.K1** 3-channel vibration analyzer kit for IEPE accelerometers - data logging functions with 8 MB memory and SD card – recording of vocal comments associated to the measurements – RS232 and USB interface. It includes manufacturer calibration of the measurement chain with calibration report according to ISO 8041-1.

**HDBV-1000** IEPE tri-axial high sensitivity accelerometer

**HD2030CAB3M-5M** Cable for connection of tri-axial accelerometers with 4pin M5 connector. Length 5 m.

**HD2030AC5** Floor positioning adaptor according to ISO 5348 with spirit level and adjustable feet to allow a perfect isostatic support. Protected accelerometer mounting.

### Firmware Options

**HD2070.O1** 'Spectral analysis' - real time, octave and third-octave filters compliant with IEC 61260

**HD2070.O2** 'Statistical analysis' - probability distribution in 1dB classes. Percentile levels from  $L_1$  to  $L_{99}$

**HD2070.O3** 'Digital signal recording' on all channels in parallel with acceleration profiles and frequency spectra

### Accessories

**HD2060** Portable calibrator for vibrating chains according to ISO 8041-1. Frequency: 1000 rad/s (160Hz) or 100 rad/s (16Hz) Amplitude: 10m/s<sup>2</sup> o 1m/s<sup>2</sup>

**Delta OHM**

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In order to ensure the quality of our instruments, we are constantly re-evaluating our products. Improvements can imply changes in specification; we advise you to always check our website for the newest version of our documentation.

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