

**VMSet-12**

The VMSet-12 comes in a handy case and provides you with everything you need for the measurement of human whole-body vibration acc. to ISO 2631:1997 and directive 2002/44/EC.

Vibrations in all three axes can be measured simultaneously. The complete solution offers more than small handheld units:

- The program guides you through the measurement reliably, with clear indications and graphics.
- Measured values as well as an assessment (red / yellow / green) are already indicated during the measurement.

The equipment shown depends on the respective VMSet-12

- Each measurement is automatically transferred to the data storage with time stamp and can be completed with your own remarks.
- A calculation sheet for combining different activities to one person-related daily vibration exposure is integrated.
- The Pro version additionally offers frequency analysis of both, weighted and unweighted vibration signal. Thus, components responsible for the exceedance are detected easily and time for development is reduced considerably.

Equipment	VMSet-12-01
	1 Measuring point
<b>Hardware</b>	
Sensor for Vibration Measurement	<b>1x Piezoelectric accelerometer with integrated cable</b> - Sensitivity: 100 mV/g, linear frequency range: 0.5 .. 3000 Hz - Operating temperature: -50 .. 70 °C - 3m cable to 3x BNC
USB Box for Digitization	<b>2x InnoBeamer LX2</b> - Inputs: 2x analog for vibration sensor(s), 1x digital for photoelectric reflex switch - Signal frequency: 0.1 .. 3200 Hz - Supply current: < 500 mA with supply of all sensors - no mains adapter required - Operating temperature: -20 .. 50 °C, weight: 350 gr. - Accessories: Synchronisation cable and 1m USB cable
<b>Software Licenses</b>	
Globale Option Free Replay	✓
InnoMeter HVM 2631 Pro	✓
Number of	3 x

DB VMSet 12

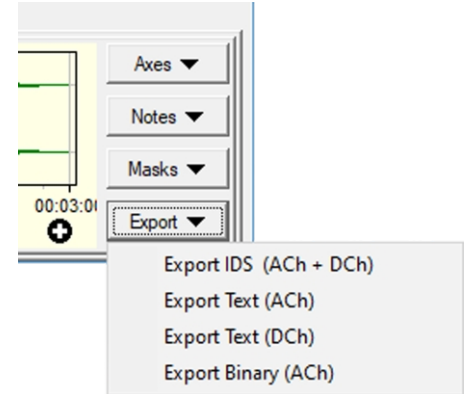
Changes without prior notice • Edition May 2022



Global Options - InnoMaster Replay

IDS2ASC and IDS2BIN - Export functions

If you want to analyze the raw data with your own software, we recommend to use the option IDS2ASC or IDS2BIN. The original InnomicDataStream (IDS) format for the InnoMaster Replay not only contains the raw data, but also many other pieces of information, for instance the wall clock time valid during the measurement, your notes etc. By means of the option IDS2ASC, the InnoMaster Replay extracts the pure measurement data and saves it in ASCII text format. Now the data can be indicated with an arbitrary text editor or it can be further processed with your own software. In contrast, the option IDS2BIN exports the measurement data in binary format, which allows more compact files than in text format.



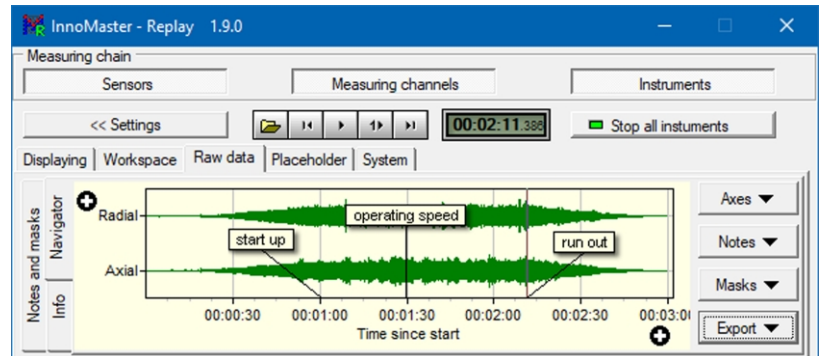
FRep - Free Replay

The complete off-line analysis of the InnoMaster Replay is available for you without extra charge if the same InnoBeamers are connected to the PC at both times, during measurement and off-line analysis. By means of Free Replay, that is not necessary. You can send the files with the raw data, the recipient downloads the free VibroMatrix software and can analyse the raw data. That is how you achieve an excellent team work between the field measurement staff and analysis team in your home company.

Free Replay means: Arbitrarily many persons at arbitrary locations at arbitrary times can replay and analyse the recorded raw data with the InnoMaster Replay.

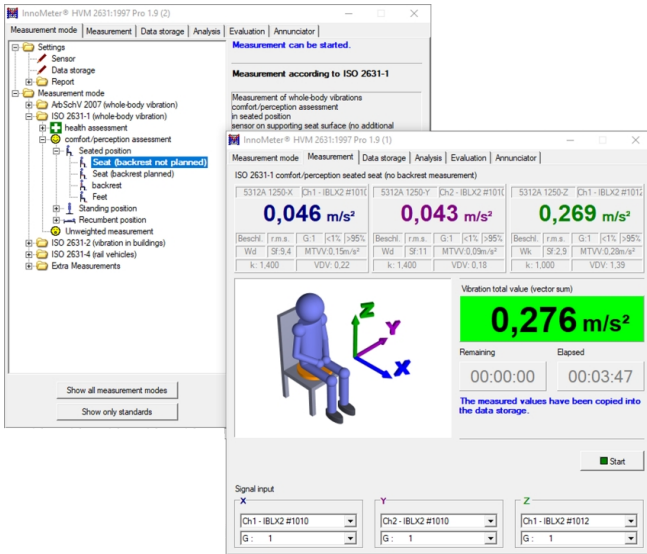
Without the need to invest a single cent for measurement equipment. Thus, you multiply the advantages of VibroMatrix.

For analysis, the instruments which were licensed during data recording are available.

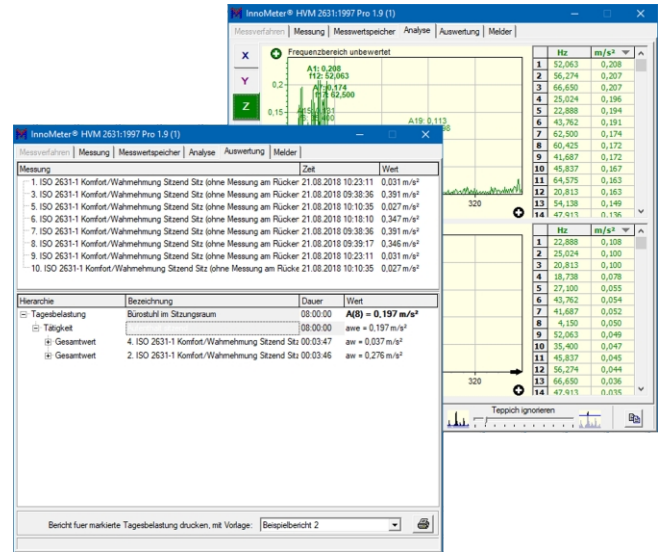


SoftwareModule - InnoMeter 2631 Pro® 1.9

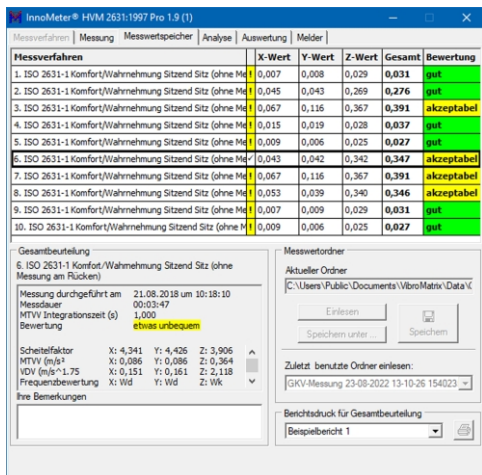
Measurements according to EN ISO 2631:2001 and directive 2002/44/EG



Clear selection and implementation of the measurement procedure



Integrated frequency analysis and daily load calculator



Automatic storage of the measurement data

Application

The InnoMeter HVM 2631 was developed for the measurement of whole-body vibrations according to EN ISO 2631:1997 and directive 2002/44/EC.

If strong vibrations are transmitted to human beings, a decreased performance and even diseases might develop. For this reason, divers guidelines stipulate measurements acc. to EN ISO 2631, which assesses the vibration impact on human beings.

Furthermore, the InnoMeter HVM 2631 is applied for an objective vibration assessment with regard to comfort aspects.

For a measurement conforming to standards, a sensor is positioned between person and seat. The signals are transferred to the measurement software in realtime.

Properties

Compared to usual hand-held instruments, the InnoMeter HVM 2631 possesses a user guide. The user is guided through the measurement from the choice of measurement mode to the evaluation of measurement's results. Graphical drawings for sensor positioning ease multiaxial measurement and ensure a correct application of the standard.

Acc. to the standard, the InnoMeter 2631 is designed for three channels. The required measurands and weighting filters are integrated. By simply choosing the measurement mode, parameters are adjusted automatically acc. to the standard.

The following calculations are integrated as well so that single measurements are clearly evaluated with traffic light colors even while measuring.

Measurements can be saved, exported and read into again. In the calculation sheet, several measurements can simply be combined to a daily vibration exposure by drag & drop. The powerful report-function enables you to generate reports at the push of a button.

The Pro-Version additionally includes frequency analysis for both, the unweighted vibration signal and the signal weighted acc. to considerations concerning occupational health. This way, responsible components are quickly detected and vibration causes are eliminated purposefully.

Technical Data      Software Module - InnoMeter HVM 2631:1997®

	InnoMeter HVM 2631:1997 Pro®	InnoMeter HVM 2631:1997®
<b>Signal Processing</b>		
Filter	W <sub>n</sub> , W <sub>c</sub> , W <sub>d</sub> , W <sub>j</sub> , W <sub>k</sub> und W <sub>m</sub> filter acc. to the standard	
Measurand, Unit	Vibration acceleration in m/s <sup>2</sup>	
Characteristic value	Simultaneous (!) measurement of Interval rms value, crest factor, maximum rms (MTVV), vibration dose value (VDV)	
Measurement duration	Adjustable 1 s .. 1 day	
<b>Graphical Presentation</b>		
Numeric Display	5 digits: 0.0001 .. 99999	
Refresh	1.. 4 times per second *	
Status Indicators	Sensor, measuring channel, measurand, parameter, gain, underload, overload	
<b>Data Acquisition, Storage and Presentation</b>		
Measurement Modes	<ul style="list-style-type: none"> <li>- Whole-body vibration acc. to ISO 2631-1 (except for kinetosis assessment and rolling motion)</li> <li>- Vibration in buildings acc. to ISO 2631-2</li> <li>- Rail vehicles acc. to ISO2631-4</li> </ul>	
Measurement	<ul style="list-style-type: none"> <li>- User guide, indication of the selected measurement mode, help for the sensor positioning</li> <li>- Indication of vibration total value as well as elapsed and remaining measurement duration</li> <li>- For all axes: Indication of interval rms value, crest factor, MTVV</li> </ul>	
Data Storage	<ul style="list-style-type: none"> <li>- Saving up to 100000 measurements</li> <li>- Indication of measurement mode, selected parameters as well as a verbally expressed assessment (good, acceptable, bad)</li> <li>- Integrated calculation and indication of the admissible exposure duration</li> <li>- Indication of detailed data for the marked measurement</li> <li>- For each measurement, remarks can be noted</li> <li>- Save and reload measured values in CSV format</li> <li>- Printing a report about the measurement, individual report examples can be configured</li> </ul>	
Calculator for Daily Vibration Exposure A(8)	<ul style="list-style-type: none"> <li>- Several A(8) calculations possible at the same time</li> <li>- Export of the calculation into text file possible or print as a configurable report</li> <li>- Arbitrarily many exposure segments possible per A(8) calculation</li> <li>- Arbitrary name and duration of the exposure segments</li> <li>- Evaluation acceleration of the exposure segment calculated and indicated automatically</li> <li>- Arbitrarily many measurements can be included for each exposure segment</li> </ul>	
Vibration Analysis	<ul style="list-style-type: none"> <li>- Separate analysis for each measurement</li> <li>- Analysis already carried out while measuring</li> <li>- Analysis for each measurement is saved</li> <li>- Frequency resolution 1 Hz</li> <li>- Automatic amplitude recognition</li> <li>- Zooming and scaling</li> </ul>	
<b>Event Annunciators</b>		
Display	Display of total vibration value as well as evaluation of single measurement in traffic light colors	
Radio Switch	Binary signaling of single measurement's evaluation (good/bad)	
Digital Output	Binary signaling of single measurement's evaluation (good/bad)	
E-Mail	Transfer of total vibration value as well as evaluation of single measurement	
<b>Miscellaneous</b>		
Available as a Kit	VMSet-12	
General Functions	module is cloneable	

\* Centrally managed in InnoMaster