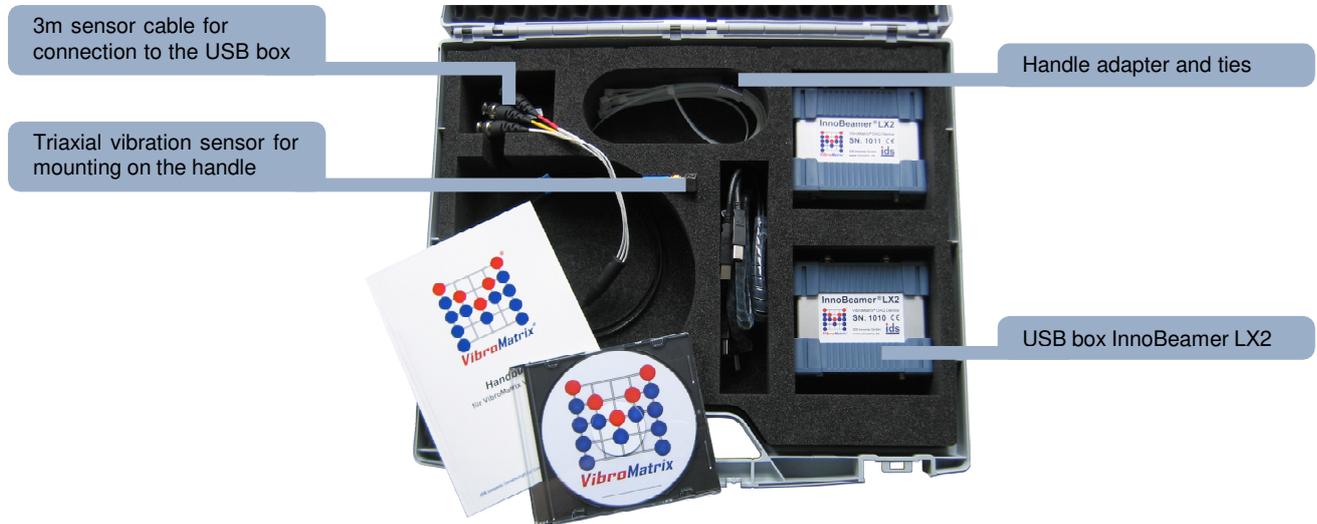




VibroMatrix® Kit

Kit for human Hand-Arm Vibration Measurement



The VMSet-11 come in a handy case and provide you with everything you need for the measurement of human hand-arm vibration acc. to ISO 5349:2001 and directive 2002/44/EC.

Simultaneous vibration measurement on up to two handles is possible. The complete solution exceeds the normal measurement with small hand-held 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.

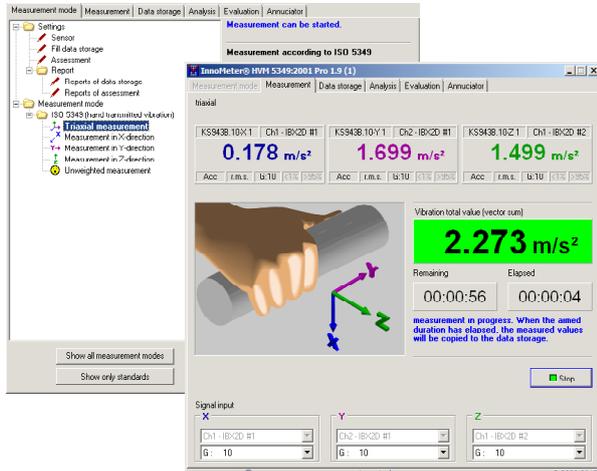
- Each measurement is automatically transferred to the data storage with time stamp and can be completed with your own remarks.
- A calculation sheet for combining different activities to one person-related daily vibration exposure is integrated.
- The Pro version additionally offers frequency analysis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

	VMSet-11-1	VMSet-11-2
	Measurement on 1 Handle	Measurement on 2 Handles
Hardware		
Sensor for Vibration Measurement	Piezoelectric accelerometer, shear design - Sensitivity: 10 mV/g, linear frequency range: 1.5 .. 10000 Hz - Operating temperature: -51 .. 121 °C - Accessories: Handle adapter, 3m cable to 3x BNC	
Amount	1	2
USB Box for Digitization	InnoBeamer LX2 - 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	
Amount	2	3
Software Licenses		
InnoMeter HVM 5349 Pro	3x	6x

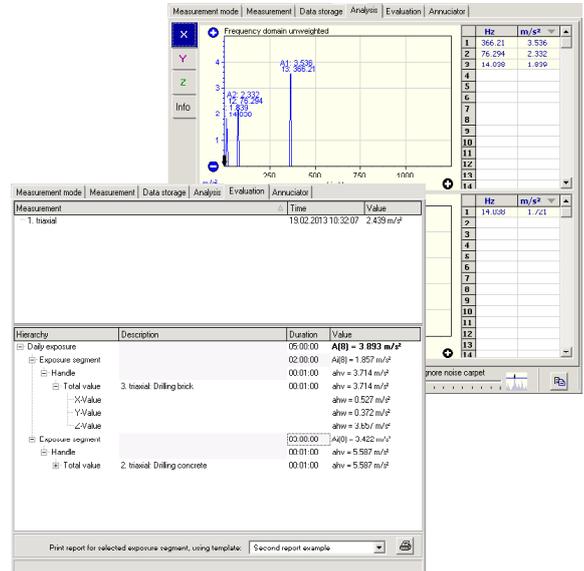


InnoMeter® HVM 5349 1.9

Human Hand-Arm Vibration Measurement



Clearly arranged selection and execution of the measurement



Integrated frequency analysis and calculator for daily vibration exposure

Measurement mode | Measurement | Data storage | Analysis | Evaluation | Annunciator

Measurement mode	X(m/s ²)	Y(m/s ²)	Z(m/s ²)	Total	Assessment
1. trisaval	0.093	0.310	2.417	2.439	good
2. trisaval: Drilling concrete	0.713	0.527	5.517	5.587	bad
3. trisaval: Drilling brick	0.527	0.372	3.657	3.714	acceptable

Overall assessment

1. trisaval

Measurement performed on: 19.02.2013 at 10:32:07

Duration: 1 min

Dose A(8h): 2.439 m/s² / 8h

Assessment: **no concerns detected**

Allowed daily exposure: 08:24:19 / 1d

Your remarks:

Low signal

Data folder

Current folder: C:\Dokumente und Einstellungen\All Users\Disk

Read data file | Copy to... | Save

Load recently used data folder: HAV-Measurement 194022013 10-32-07 617

Print overall assessment

First report example

Warning! Low signal during whole measurement (gain too low?)

Automatic data storage

Application

The InnoMeter HVM 5349 is designed for measurements of human exposure to hand-transmitted vibrations according to EN ISO 5349:2001 and directive 2002/44/EC.

If hand held machines or workpieces transmit strong vibrations to the operator, a decreased performance and even diseases might develop. For this reason, divers guidelines stipulate measurements acc. to EN ISO 5349, which determines the impact on the human hand-arm-system.

With the InnoMeter HVM 5349, these measurements are carried out conforming to standards. Piezoelectric sensors are mounted on the handholds of hand held power tools. Data acquisition devices (model InnoBeamer) accept the sensor data and transmit it to the InnoMeter HVM 5349 via the USB interface.

Properties

Compared to usual hand-held instruments, the InnoMeter HVM 5349 possesses a user guide. The user is guided through measurement from the choice of measurement mode to the evaluation of measurement's results. A graphical drawing of the correct axes allocation for the gripping hand eases multiaxial measurement. Even users who do not deal with HVM measurements very often can be sure to fulfill all details of the standard.

The InnoMeter HVM 5349 is able to carry out all measurement modes described in the standard, e.g. the simultaneous measurement in all 3 axes or the measurement in the main axis and weighting of the other two axes. In addition to the indication and quick evaluation of single measurements while measuring, the complete calculation of the daily vibration exposure is integrated. Therefore, measured data can be allocated to exposure segments or a certain handle 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

	InnoMeter HVM 5349:2001 Pro	InnoMeter HVM 5349:2001
Signal Processing		
Filter	W_n filter acc. to the standard or unweighted (for calibration)	
Measurand	Vibration acceleration	
Unit	m/s ²	
Parameters	Interval rms value, measurement duration adjustable 1 s .. 1 day	
Graphical Presentation		
Numeric Display	5 digits: 0.001 .. 99999	
Refresh	1.. 4 times per second *	
Status Indicators	Sensor, measuring channel, measurand, parameter, gain, underload, overload	
Data Acquisition, Storage and Presentation		
Measurement Modes	<ul style="list-style-type: none"> - Simultaneous triaxial measurement - Sequentially triaxial measurement with one sensor - Measurement in one axis, weighting of two axes 	
Calculations	<ul style="list-style-type: none"> - Axis weighting in case of using a respective measurement mode - Vibration total value - Daily vibration exposure A(8) 	
Data Storage	<ul style="list-style-type: none"> - Saving up to 100000 measurements - Indication of measurement mode, selected parameters as well as a verbally expressed assessment (good, acceptable, bad) - Integrated calculation and indication of the admissible exposure duration - Indication of detailed data for the marked measurement - For each measurement, remarks can be entered - Save and reload measured values in CSV format - Printing a report about the measurement, individual report examples can be configured 	
Calculation of Daily Vibration Exposure A(8)	<ul style="list-style-type: none"> - Several A(8) calculations possible at the same time - Export of the calculation into text file possible or print as a configurable report - Arbitrarily many exposure segments possible per A(8) calculation - Arbitrary name and duration of the exposure segments - Evaluation acceleration of the exposure segment calculated and indicated automatically - Arbitrarily many measurements can be included for each exposure segment - Consideration of several handles/measuring points possible - Weighting of not measured axes adjustable 	
Vibration Analysis	<ul style="list-style-type: none"> - Separate analysis for each measurement - Analysis already carried out while measuring - Analysis for each measurement is saved - Frequency resolution 1 Hz - Automatic amplitude recognition - Zooming and scaling 	-
Event Annunciators		
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	
Miscellaneous		
Available in a Kit	VMSet-11, VMSet-12	
General Functions	module is cloneable	

* Centrally managed in InnoMaster

Changes without prior notice

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