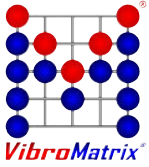


VibroMatrix[®]

1

***PC-Based
Vibration Measurement***



InnoBeamer

USB Data Acquisition Devices for VibroMatrix



Properties

- Inputs for 2 sensors with IEPE interface as well as 1 r.p.m. sensor
- Supports intelligent sensors with TEDS
- Supply of all sensors
- Data transfer to PC by USB
- Supplied by USB interface of PC
- 4 decade input ranges
- 24 Bit analog-digital-conversion
- Synchronous measurement with several devices
- Cases can be interlinked by means of connectors
- For signals from 0.1 to 40 000 Hz (InnoBeamer X2)
resp. from 0.1 to 3200 Hz (InnoBeamer LX2)

Application

The InnoBeamer makes digital real-time vibration measurement easy! It is automatically recognized by the PC and digitizes the sensor signals for the VibroMatrix measurement system. Transferring the sensor signals to the PC is carried out without loss as a permanent data stream.

The InnoBeamer is supplied by PC's USB host interface and on its part supplies the connected sensors. External power supply is not required, field measurement by means of a notebook is possible without any problems.

The InnoBeamer supports synchronous data acquisition beyond device's borders. This way, devices can flexibly work alone or be combined to multichannel-systems.

Sensors with integrated data sheet (TEDS) are automatically recognized by the InnoBeamer. All required sensor data is read electronically, operating errors are avoided.

The InnoBeamer is a high-precision measuring instrument in a small format.

Technical Data

Model	InnoBeamer X2	InnoBeamer LX2
Equipment	2x AC analog input, IEPE, TEDS 2x Digital trigger input 1x Supply photoelectric/contrast scanner 1x Optional power supply	
AC Analog Input		
Standard Configuration	AC input + IEPE supply	
IEPE supply can be switched off	By software	
TEDS: Internal sensor data sheet is transmitted	Yes, acc. to IEEE 1451.4	
IEPE Power Supply for Sensor	mA	2.8
IEPE Compliance Voltage	V	22
Number of Channels	2	
Input Resistance	MΩ	> 1
A/D Conversion	24 Bit, 96 kHz per channel	24 Bit, 8 kHz per channel
Signal Frequency (-3dB)	Hz	0.1 .. 40 000
Measuring Ranges	mV	±8000, ±800, ±80, ±8
Actual wideband noise	µV	5 (0.1 .. 40 000 Hz)
Measuring Error	%	< 2
Connector	BNC	
Digital Trigger Input		
Standard Configuration	Input for external phase reference signal	
Level	V	0 .. 24
Number	2	
Switching threshold High-Low	V	1.5
Minimum pulse length	µs	12
Supply for external sensors (additional to IEPE)		
Supply Voltage	V	13.5
Supply Current	mA	35 (150 when supplied externally)
InnoBeamer Characteristics		
USB Standard	2.0 and higher	
Synchronous Data Acquisition of Several Devices	Yes, by synchronisation cable	
Supply	5V by USB cable, optional 10 .. 30 V externally	
Supply Current	mA	475 (@ 5V, with 2 IEPE sensors and supply photoelectric/contrast scanner)
Operating Temperature	°C	-20 .. +55
Relative Humidity	%	< 95, without condensation
Dimensions Width x Height x Depth	mm	115 x 39 x 105
Mass	gr.	350

Changes without prior notice

February 2016

— D e u t s c h l a n d —

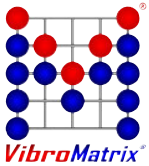
IDS Innomic
Gesellschaft für Computer- und Messtechnik mbH
Zum Buchhorst 35
29410 Salzwedel

☎ (03901) 305 99 50
☎ (03901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.de

— I n t e r n a t i o n a l —

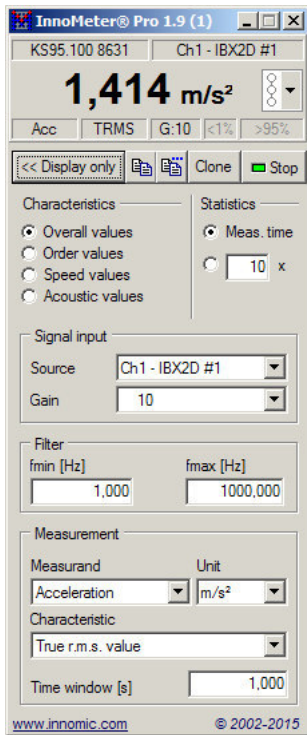
IDS Innomic GmbH
Zum Buchhorst 35
D-29410 Salzwedel
Germany

☎ +49 (3901) 305 99 50
☎ +49 (3901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.com/en



InnoMeter® 1.9

Vibration Meter with Numerical Display



InnoMeter Pro:
Overall values

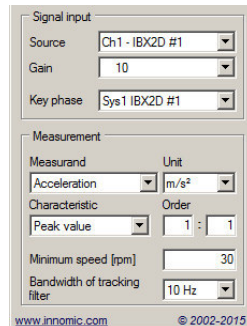
Application

When vibrations have to be measured as significant characteristics, InnoMeters are applied.

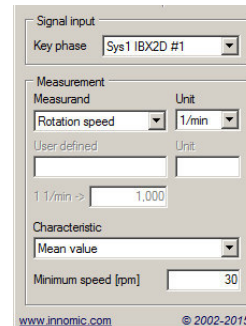
Rotating parts in drives, gears, pumps, fans and many other technical products cause vibrations. Recurring impacts like construction operations or vehicular traffic cause perturbing vibrations as well.

Numerous standards, e.g. DIN 10816 or the machinery directive, define significant vibration characteristics for a reliable evaluation of vibration and sound.

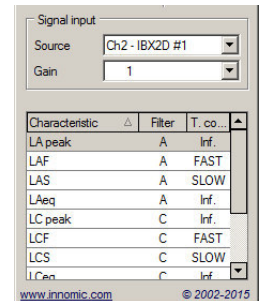
The InnoMeters measure these characteristics precisely and thus allow a reliable assessment of the vibration state. The InnoMeters are applied in the complete product cycle – development, manufacturing, final inspection. Weak spots are discovered, the success of counter measures is proven and the compliance with limits is controlled.



InnoMeter Pro:
Order values



InnoMeter Pro:
Speed values



InnoMeter Pro:
Acoustic values

Properties

The InnoMeters are universal measuring instruments for characteristics of vibration, sound and further mechanical and electrical measurands. They can be adapted to characteristics from numerous standards and directives. For instance, the InnoMeter Pro features:

- Measurands: acceleration, velocity, displacement, rotation speed, user-defined measurands
- SI and imperial units for each measurand
- Free filter adjustment 0.1 .. 40000 Hz
- 25 characteristics

Additional to overall values, the InnoMeter Pro offers order values for the measurement on rotating machines: Magnitude and phase angle can be displayed for adjustable orders. Fractional orders, e.g. from gear ratios, can be entered as well. The InnoMeter Pro can also display the rotation speed, which can be converted into other units as well, for instance to display length' speeds.

Sound measurements acc. to the machinery directive are, among others, supported in the InnoMeter Pro by means of the characteristics LEX,8h and LC,peak.

Status information concerning the measurement quality, like over- or underload, is always indicated.

The clone function makes it possible to operate several InnoMeters at the same time, for example to measure several characteristics simultaneously.

The measured values can be copied into other programs for documentation.

Technical Data

	InnoMeter Pro	InnoMeter
Signal Processing		
Filter	Freely adjustable 0.1.. 40 000 Hz **	
Time Window	Freely adjustable 0.1..10 s	
Measurands	Alternating measurands: Vibration acceleration, velocity, displacement; force, pressure, sound pressure, voltage, user-defined measurands Rotation speed, phase angle, Schall bewertet	
Integrated Measurands	Acceleration → velocity and displacement	
Units	m/s ² , mm/s ² , μm/s ² , nm/s ² , pm/s ² , g, mg, μg, km/s ² , kg, dB m/s, mm/s, μm/s, nm/s, pm/s, in/s, mil/s, μin/s, dB m, mm, μm, nm, pm, ft, in, mil, μin, dB kN, N, mN, μN, nN, lb, oz bar, mbar, MPa, kPa, hPa, Pa, mPa, μPa, nPa, psi V, mV, μV, nV, pV A, mA, μA, nA, pA 1/min, 1/s, Hz, 1/h (Rotation speed) Hz, kHz (Main frequency) % (Harmonic distortion) ° (Phase angle)	
Characteristics	Overall values: Instantaneous value, peak value absolute / positive / negative, peak-to-peak value, true r.m.s. value, main frequency, harmonic distortion, crest factor Order values: Peak value, r.m.s. value, phase angle Speed values: Mean value, instantaneous value Acoustic values: Noise level with A- and C-weighted frequency (peak / fast / slow time weighted, equivalent continuous noise); noise level unweighted (fast / slow time weighted); daily noise exposure level	Overall values: Instantaneous value, peak value absolute / positive / negative, peak-to-peak value, true r.m.s. value
Graphical presentation		
Display	5 digits 0.001 .. 99999	
Refresh	1.. 4 times per second *	
Status indicators	Sensor, measuring channel, measurand, characteristic, gain, underload, overload	
Recommended Screen resolution	From 800 x 600 pixels on	
Miscellaneous		
Available in a Kit	VMSet-03..07	-
General Functions	Measured value is held after switching off, instrument is cloneable, measured values can be copied to clipboard	

* Centrally managed in the InnoMaster

** 0.3 .. 2000 Hz when working with InnoBeamer L2, 0.1 .. 3200 Hz when working with the InnoBeamer LX2

Changes without prior notice

February 2016

— D e u t s c h l a n d —

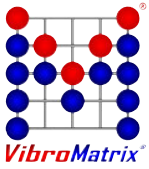
IDS Innomic
Gesellschaft für Computer- und Messtechnik mbH
Zum Buchhorst 35
29410 Salzwedel

☎ (03901) 305 99 50
☎ (03901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.de

— I n t e r n a t i o n a l —

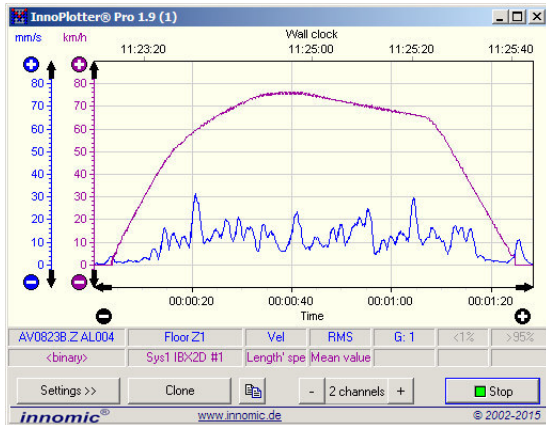
IDS Innomic GmbH
Zum Buchhorst 35
D-29410 Salzwedel
Germany

☎ +49 (3901) 305 99 50
☎ +49 (3901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.com/en

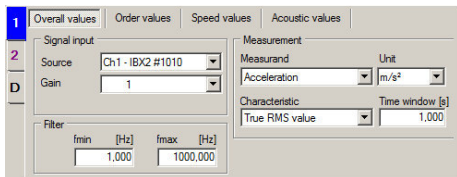


InnoPlotter® 1.9

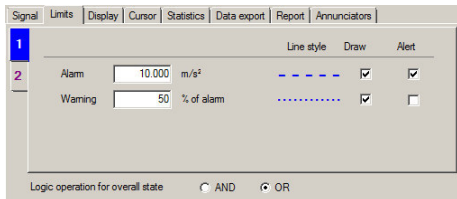
Digital Strip Chart Recorder



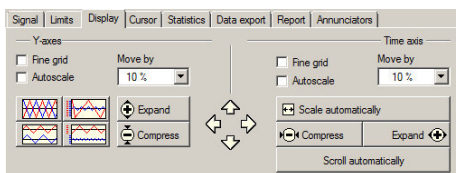
Simultaneous display up to 4 graphs, different measurands



Numerous settings for signal conditioning



Warning/alarm limit for monitoring characteristics

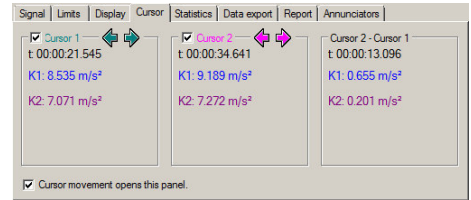


Arrange, zoom, compress graphs individually

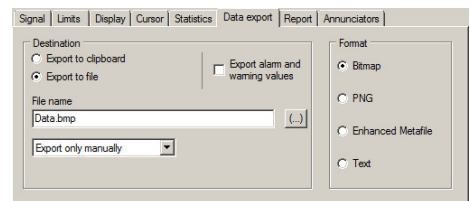
Application

Vibrations are caused by rotating parts or impulse-like loads, e.g. by a vibratory pile driver in the construction-field. In numerous vibration standards significant vibration characteristics and limit values are defined for a reliable evaluation of the vibration situation.

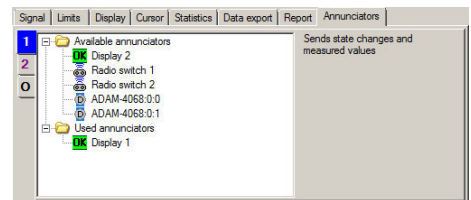
The InnoPlotters measure these vibration characteristics, display their trend graphically and monitor them when required. Thus, they are especially convenient for longer test sequences. Weak spots in the continuous operation become obvious, the success of counter measures is proven and the compliance with limits is controlled.



2 cursors, display of cursor data and difference



Data export by mouse click or automated



Annunciation of measured data and events

Properties

The InnoPlotter is a universal digital strip chart recorder for up to four characteristics. It features a memory for 24 hours continuous recording and various display modes. 2 time axes are available for the absolute time and the elapsed time since the start of measuring.

The Pro version is able not only to integrate vibration acceleration to vibration velocity and displacement, but also to measure rotation speed and user measurands. Optional monitoring of characteristics is offered as well.

The following settings are available for signal conditioning:

- Free filter adjustment 0.1 .. 40000 Hz
- SI and imperial units for each measurand
- 25 characteristics

2 cursors allow the exact measurement of the data. Measurement graphs can be moved and spread manually or be arranged automatically. Time bar can be moved depending on the progress of the measurement.

The export of data into other applications as graphic or text is possible without any problems. Saving measured data can be carried out manually or triggered. By means of annunciator function, the InnoPlotter can forward measured data or events automatically, e.g. by e-mail.

Technical Data

	InnoPlotter Pro	InnoPlotter
Signal Processing		
Filter	Freely adjustable 0.1..40 000 Hz **	
Time Window	Freely adjustable 0.1..10 s	
Measurands	Alternating measurands: Vibration acceleration, velocity, displacement; force, pressure, sound pressure, voltage, user-defined measurands Rotation speed, phase angle, noise weighted	
Integrated Measurands	Acceleration → Velocity and displacement	
Units	m/s ² , mm/s ² , μm/s ² , nm/s ² , pm/s ² , g, mg, μg, km/s ² , kg, dB m/s, mm/s, μm/s, nm/s, pm/s, in/s, mil/s, μin/s, dB m, mm, μm, nm, pm, ft, in, mil, μin, dB kN, N, mN, μN, nN, lb, oz bar, mbar, MPa, kPa, hPa, Pa, mPa, μPa, nPa, psi V, mV, μV, nV, pV A, mA, μA, nA, pA 1/min, 1/s, Hz, 1/h Hz, kHz % °	
Characteristics	Overall values: Instantaneous value, peak value absolute / positive / negative, peak-to-peak value, true r.m.s. value, main frequency, harmonic distortion, crest factor Order values: Peak value, r.m.s. value, phase angle Speed values: Mean value, instantaneous value Acoustic values: Noise level with A- and C-weighted frequency (peak / fast / slow time weighted, equivalent continuous noise); noise level unweighted (fast / slow time weighted); daily noise exposure level	Overall values: Instantaneous value, peak value absolute / positive / negative, peak-to-peak value, true r.m.s. value
Monitoring	Free alarm limit, warning limit 0..100% of alarm limit	
Statistics	Mean value, minimum, maximum	
Graphical Presentation		
Number of Measurement / Limit Graphs	1 .. 4 per window / 0 .. 8 per window	
Interval Y-axis / t-axis	0.01 .. 10000 / 6 s .. 24 h	
Digital Channel	Display of the variation in time of the trigger status (switchable, one measuring channel)	
Refresh	1 / 8 / 16 times per second *	
Status Indicators	Sensor, measuring channel, measurand, characteristic, gain, underload, overload	
Cursors	2 lines, freely adjustable by mouse or button, display of cursor values and difference	
Recommended Screen Resolution	From 800 x 600 pixels on	
Data Export		
Control	Manually, time-triggered, level-triggered	Manually, time-triggered
Formats / Destinations	Bitmap, PNG, Enhanced Meta File (EMF), text / Clipboard, file	
Event Annunciators		
Display	Single channel: Currently measured value Single channel: Current alarm state Instrument: Current alarm state	Single channel: Currently measured value
Radio Switch	Single channel: Current alarm state Instrument: Current alarm state	-
Digital Output	Single channel: Current alarm state Instrument: Current alarm state	-
E-Mail	Time-triggered transfer of measurement data Level-triggered transfer of measurement data	Time-triggered transfer of measurement data
Miscellaneous		
Available in a Kit	VMSet-03..07, VMSet-25, VMSet-26	
General Functions	Measurement data is held after switching off, instrument is cloneable	

* Centrally managed in the InnoMaster

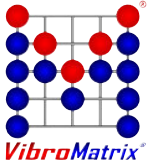
** 0.3 .. 2000 Hz when working with InnoBeamer L2, 0.1 .. 3200 Hz when working with the InnoBeamer LX2

Changes without prior notice

February 2016

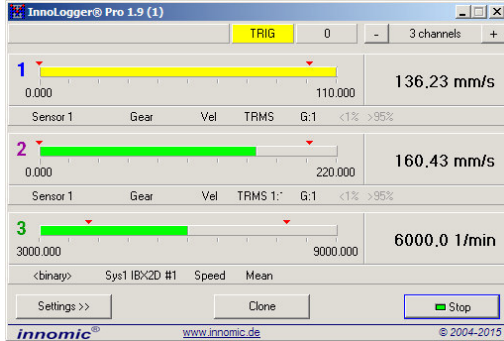
D e u t s c h l a n d	
IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de

I n t e r n a t i o n a l	
IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en

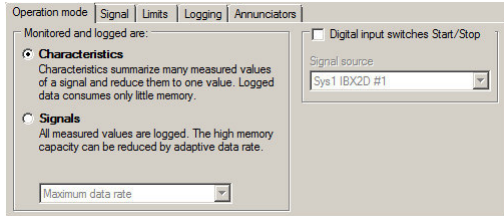


InnoLogger® 1.9

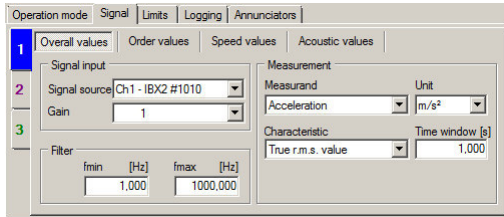
Monitoring and Logging Instrument



Simultaneous monitoring of up to 4 characteristics



2 operation modes: Log characteristics or signals



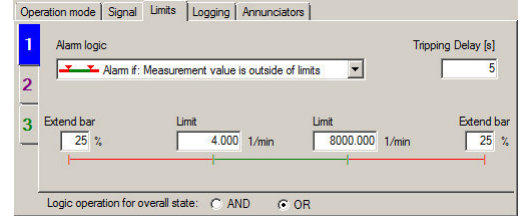
Numerous settings for signal conditioning

Application

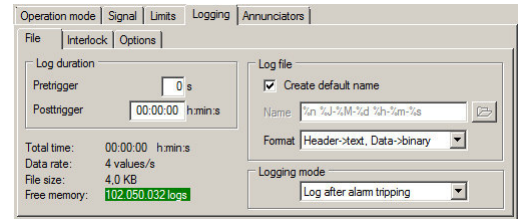
For the monitoring of vibration parameters and their logging for later analysis with other software systems, the InnoLoggers are available.

Vibrations are caused by rotating parts or impulse-like loads, e.g. by a vibratory pile driver in the construction-field. In numerous standards, significant characteristics and limits are defined for a reliable evaluation of vibrations.

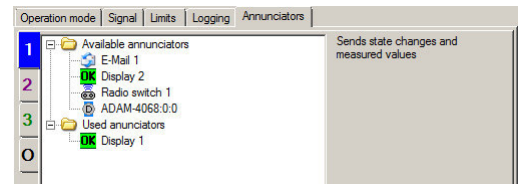
The InnoLoggers measure these characteristics and also monitor their level with regard to the exceedance of limits. Alarm states are indicated and allow a fast good-bad-recognition by means of colored bars. In addition, the alarm can initiate the logging of measured values. Additionally, events can be annunciated, e.g. by e-mail or signaling devices.



Alarm and alarm delay settings



Logging of characteristics or signals



Annunciation of measured data and events

Properties

- Free filter adjustment from 0.1 .. 40000 Hz
- SI and imperial units for each measurand
- 25 characteristics
- 2 alarms with alarm delay

The InnoLoggers are able to log and monitor signals or characteristics. The logged data can be used for further analysis with external programs.

Automated operation is supported by an external trigger: Thus, the start of the InnoLoggers' measurement can be controlled externally. Additionally, data logging can be prevented acc. to adjustable rules, e.g. if you already acquired enough data.

In combination with event annunciators, measured values and alarm states can be presented in a colored and enlarged extra display or be sent via e-mail. Alarm states can control radio switches and digital outputs like e.g. relays and thus are able to switch electrical alarm lamps or acoustic signaling devices.

The e-mail messenger additionally allows to send logged data automated.

Technical Data

	InnoLogger Pro	InnoLogger
Signal Processing		
Filter	Freely adjustable 0.1..40 000 Hz **	
Time Window	Freely adjustable 0.1..10 s	
Measurands	Alternating measurands: Vibration acceleration, velocity, displacement; force, pressure, sound pressure, voltage, user-defined measurands Rotation speed, phase angle, noise weighted	
Integrated Measurands	Acceleration → Velocity and displacement	
Units	m/s ² , mm/s ² , μm/s ² , nm/s ² , pm/s ² , g, mg, μg, km/s ² , kg, dB m/s, mm/s, μm/s, nm/s, pm/s, in/s, mil/s, μin/s, dB m, mm, μm, nm, pm, ft, in, mil, μin, dB kN, N, mN, μN, lb, oz bar, mbar, MPa, kPa, hPa, Pa, mPa, μPa, nPa, psi V, mV, μV, nV, pV A, mA, μA, nA, pA 1/min, 1/s, Hz, 1/h Hz, kHz % °	
Characteristics	Overall values: Instantaneous value, peak value absolute / positive / negative, peak-to-peak value, true r.m.s. value, main frequency, harmonic distortion, crest factor Order values: Peak value, r.m.s. value, phase angle Speed values: Mean value, instantaneous value Acoustic values: Noise level with A- and C-weighted frequency (peak / fast / slow time weighted, equivalent continuous noise); noise level unweighted (fast / slow time weighted); daily noise exposure level	Overall values: Instantaneous value, peak value absolute / positive / negative, peak-to-peak value, true r.m.s. value
Graphical Presentation		
Bar Graph	10 graduations, marks for min./max. limit, color change to green/yellow/red acc. to alarm state	
Numeric Display	5 digits; 0.001 .. 99999	
Number of Bar Graphs	1 .. 4 per window	
Refresh	1.. 4 times per second *	
Status Indicators	Sensor, measuring channel, measurand, characteristic, gain, underload, overload, log counter	
Recommended Screen Resolution	From 800 x 600 pixels on, 4 bar graphs per window require a resolution of 1074 x 768 pixel	
Alarm		
Limits	2 (1 for exceedance, 1 for under-run), -9999.999 .. 9999.999	
Alarm Delay / Combination	0 .. 3600 sec / AND, OR	
Logging of Signals or Characteristics		
Pretrigger / Posttrigger	0 .. 30 sec / 0 sec .. 24 h	
Logging Speed	Characteristics: 1 .. 4 per second*, signals: optionally 96000*** values / s or reduced adaptively	
Data Format	1. header: text, data: binary / 2. header: text, data: text / 3. 2 files, header: text, data: binary	
File Name Generation	Automated or manually, optionally with automatically filled placeholders	
Logging Mode	"Log always" or "Log after alarm tripping"	
Prevent Logging	After logging of x files, after recent logging, in case of little memory capacity	
Event Annunciators		
Display	Single channel: currently measured value, current alarm state Instrument: Current alarm state	
Radio Switch	Single channel: current alarm state Instrument: Current alarm state	
Digital Output	Single channel: current alarm state Instrument: Current alarm state	
E-Mail	Single channel: currently measured value, current alarm state Instrument: logged data, current alarm state	
Miscellaneous		
General Functions	Measurement data is held after switching off, instrument is cloneable	

* Centrally managed in the InnoMaster ** InnoBeamer L2: 0.3 .. 2000 Hz; InnoBeamer LX2: 0.1 .. 3200 Hz

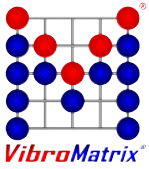
*** InnoBeamer L2: 10 000 values/s InnoBeamer LX2: 8000 values / s

Changes without prior notice

February 2016

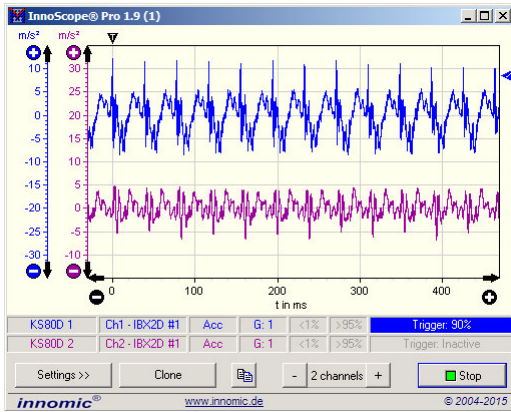
D e u t s c h l a n d	
IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de

I n t e r n a t i o n a l	
IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en

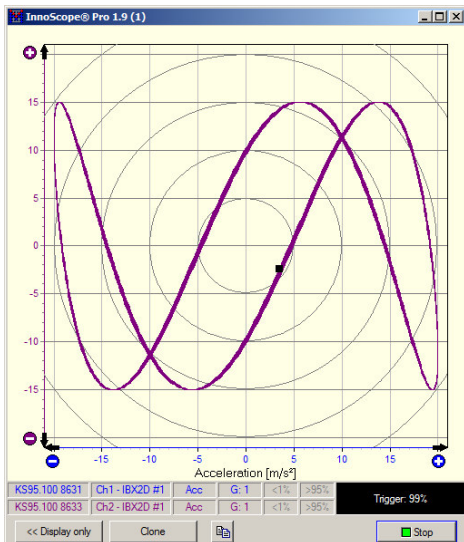


InnoScope® 1.9

Digital Oscilloscope



Simultaneous display of up to 4 graphs, optional: statistics

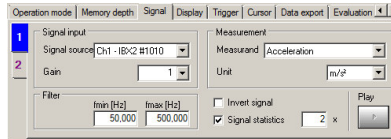


Application

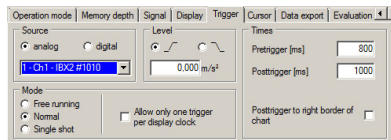
The InnoScopes allow the signals' shape analysis of fast vibration and shock processes in time domain. These processes can be displayed in detail, measured and exported for documentation or post-processing.

Thus, e.g. construction parts which are exposed to impulse-like loads can be optimized. Automated evaluations determine e.g. the HIC (Head Injury Criterion) directly after the measurement, but also parameters of decay processes. Working together with the InnoAnalyzer, natural frequencies can be determined.

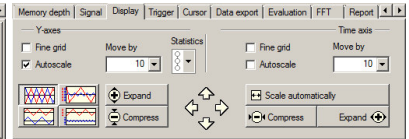
Likewise, the InnoScopes reliably display sporadically or periodically occurring events. The orbital mode displays movement of the object in the plane (e.g. shaft vibrations).



Numerous settings for signal conditioning



Analog and external digital trigger source



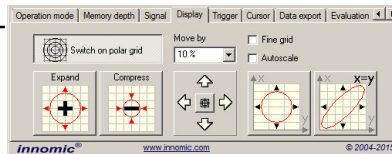
Arrange, zoom, compress graphs acc. to your demands

Y-Limits [%]		Measured time	Parameter	Display		
Upper	Lower	between limits	Exp. decay time	Log. Decrement	Decay	Range
90.0	10.0	4.645 s	2.114 s	0.16046	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Automated signal evaluations (Pro version)



Annunciation of measured data and events



Orbital mode: display movements of the measurement object in the plane

Properties

The InnoScopes are universal digital oscilloscopes.

Up to 4 measurement graphs can be displayed in one InnoScope simultaneously. They can represent both, signals of different sensors but also different measurands from one sensor signal, since the InnoScope Pro masters time integration and double integration.

The InnoScopes have a high memory depth of up to 10 million measured values per channel. They record up to 1000 seconds to display low-frequency processes, e.g. building vibrations.

The new statistical techniques can be used for smoothing the displayed processes, but also to detect the signal range.

For evaluation, 2 cursors are available. Time and measured values as well as differences at the cursor position are presented numerically.

The export of data as graphic or text provides additional fields of application. Furthermore, the recorded signals can be played back acoustically or be saved as wave file. The InnoScope can even carry out this export automated when triggering and then send this file via e-mail by means of the annunciator function.

Technical Data

	InnoScope Pro	InnoScope
Signal Processing		
Filter	Freely adjustable 0.1..40 000 Hz **	
Measurands	Alternating measurands: Vibration acceleration, velocity, displacement; force, pressure, sound pressure, voltage, user-defined measurands	
Integrated Measurands	Acceleration → Velocity and displacement	
Units	m/s ² , mm/s ² , μm/s ² , nm/s ² , pm/s ² , g, mg, μg, km/s ² , kg m/s, mm/s, μm/s, nm/s, pm/s, in/s, mil/s, μin/s m, mm, μm, nm, pm, ft, in, mil, μin kN, N, mN, μN, nN, lb, oz bar, mbar, MPa, kPa, hPa, Pa, mPa, μPa, nPa, psi V, mV, μV, nV, pV A, mA, μA, nA, pA	
Trigger		
Modes	Free running, normal, single shot	
Source	Analog or digital channel, each with rising / falling edge	
Level	Freely adjustable ±10000	
Pretrigger / Posttrigger	0 .. 1000 ms / 0.001 .. 1000 s	0 .. 1000 ms / 0,001 .. 100 s
Graphical Presentation		
Number of Graphs in the Chart	1 .. 4	
Number of Graphs for Statistics	1 .. 100	-
Statistical Presentation Modes	Minimum / maximum / mean value Current, min, max / mean, min, max	-
Interval Y-axis / X-axis (time)	0.01 .. 10000 / 1 ms .. 101 s	0.01 .. 10000 / 1 ms .. 11 s
Time Resolution / Memory Depth	Up to 0.01 ms *** / up to 10.1 million values	Up to 0.01 ms *** / up to 1.1 million values
Cursors	2 lines, freely adjustable by mouse or button, display of cursor values and difference	
Refresh	1.. 16 times per second *	
Status Indicators	Sensor, measuring channel, measurand, gain, underload, overload, trigger status	
Recommended Screen Resolution	From 800 x 600 pixels on	
Data Export		
Control	Manual and automatic after trigger	
Formats	Bitmap, PNG, Enhanced Meta File (EMF), text, wave	
Destinations	Clipboard or file	
Event Annunciators		
E-Mail	Trigger initiates transfer of exported measurement data	
Miscellaneous		
Integrated Evaluations	Decay time, log. decrement, Head Injury Criterion (HIC) and phase position (orbital mode)	-
Coupling	With InnoAnalyzer and InnoAnalyzer Pro	With InnoAnalyzer
Available in a Kit	VMSet-03 .. 07	-
General Functions	Measurement data is held after switching off, instrument is cloneable	

* Centrally managed in the InnoMaster

** 0.3 .. 2000 Hz when working with InnoBeamer L2, 0.1 .. 3200 Hz when working with the InnoBeamer LX2

*** 0.1 ms when working with InnoBeamer L2, 0.125 ms when working with the InnoBeamer LX2

Changes without prior notice

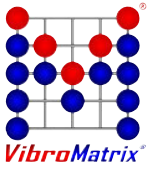
September 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de
--	---

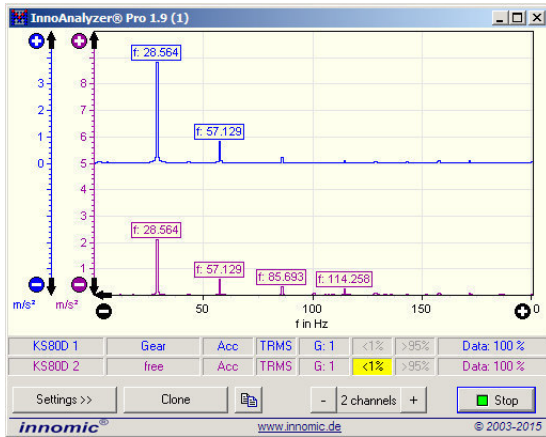
— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en
--	---

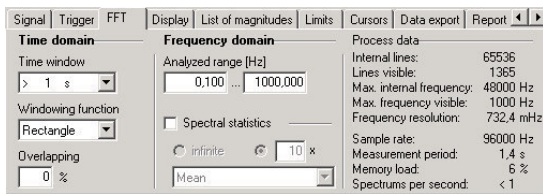


InnoAnalyzer® 1.9

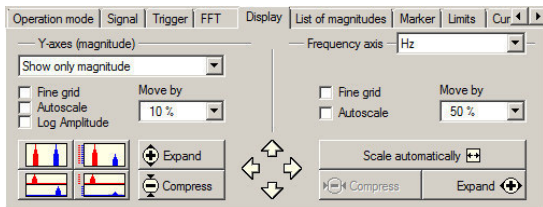
FFT Vibration Analyzer



Simultaneous analysis of up to 4 signals, phase display switchable



Manual mode for purposeful FFT configuration

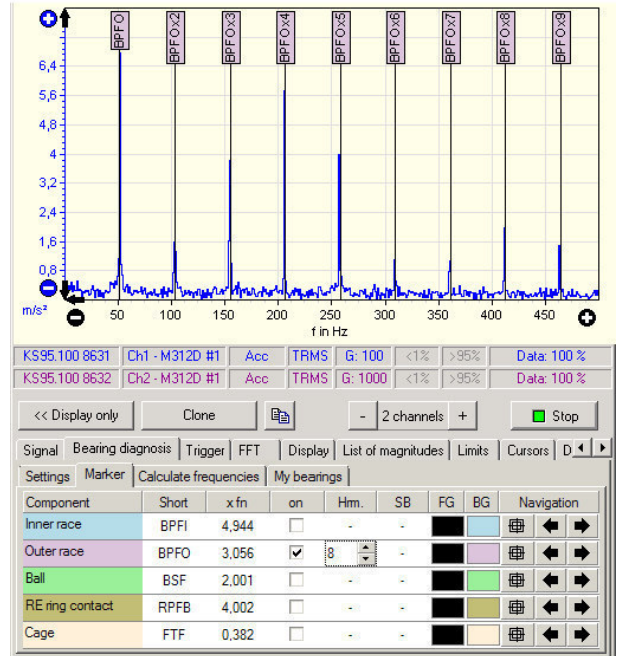


Arrange, zoom, compress graphs acc. to your demands

Application

For the frequency analysis of vibrations, the InnoAnalyzers are applied. Rotating parts in drives, gears, pumps, fans and many other technical products cause vibrations. Often, different frequency components generate a vibration mix.

InnoAnalyzers decompose this mix into its different frequency components by fast Fourier-transformation. So you can detect the parts which are primarily responsible for the vibrations. As a result, mechanical malfunctions are precisely and quickly tracked down in development, quality control or service. The success of measures to reduce vibrations is proven measurably.



Special modes, e.g. bearing diagnosis by envelope analysis

Properties

The InnoAnalyzers are universal vibration analyzers for vibration acceleration respectively also vibration velocity and displacement (Pro version).

The instruments cover the whole field of frequency analysis from an automatic mode to special modes like PSD, bearing diagnosis by envelope analysis, acoustics measurements or determination of frequency response.

The high number of lines of more than 500 000 FFT lines allows a frequency resolution of up to 1 mHz. Switching the frequency axis from Hz to 1/min simplifies the allocation to rotating parts. In addition, frequencies can be displayed as multiple of rotation speed (order analysis).

Amplitudes are detected and listed up automatically, values are also displayed in the chart when required. Additionally, two differently colored cursors with value display support you during the analysis. The export of the graphs into other applications as graphic or as pairs of values in text format is easily possible.

Frequency analyses can be carried out continuously as well as - e.g. for bump tests - in response to a triggered time signal. In this case, the InnoAnalyzer is working together with the InnoScope.

During unattended operation, analyses can be saved periodically or limit dependent or be sent via e-mail.

Technical Data

	InnoAnalyzer Pro	InnoAnalyzer
Signal Processing		
Measurands	Alternating measurands: Vibration acceleration, velocity, displacement; force, pressure, sound pressure, voltage, user-defined measurands	
Integrated Measurands	Acceleration → Velocity and displacement	-
Units	m/s ² , mm/s ² , μm/s ² , nm/s ² , pm/s ² , g, mg, μg, km/s ² , kg, dB m/s, mm/s, μm/s, nm/s, pm/s, in/s, mil/s, μin/s, dB m, mm, μm, nm, pm, ft, in, mil, μin, dB kN, N, mN, μN, nN, lb, oz bar, mbar, MPa, kPa, hPa, Pa, mPa, μPa, nPa, psi V, mV, μV, nV, pV A, mA, μA, nA, pA	
Characteristics	Peak value, Peak-to-peak value, r.m.s. value, phase	
Measurands and Units X-Axis	Frequency (Hz) / Rotation speed (1/min) / Rotation speed order	
Frequency Range	Freely adjustable 0 .. 40 000 Hz **	
Frequency Resolution, Overlapping	< 1 mHz, 0 .. 99%	
Windowing	Rectangle, Bartlett, Blackman, Hamming, Hann, Flatop	
FFT Modes	Automatic, manual, bearing diagnosis, PSD, Frequency response function, Acoustics	Automatic, manual
Time Data Feeding	Continuous / triggered in time domain	
FFT Statistics	Mean, quadratic mean, maximum	
Statistics Time Frame	Infinite / adjustable number of spectra (up to 1000)	
Number of Lines	2 .. 524288	
Graphical Presentation		
Number of Graphs	1 .. 4 for magnitude and 1..4 for phase per window	
Refresh	1 .. 16 times per second *	
Interval Y-Axis	Magnitude: 0.1 .. 10000 (logarithmic as well) / Phase: 0..360°, -180° .. +180°	
Interval X-Axis	1 .. 40 000 Hz / 600 .. 2 400 000 min ⁻¹ **	
List of Magnitudes	1..20 magnitudes (search sensitivity adjustable), sorting acc. to magnitude or frequency	
Cursors	2 lines, freely adjustable by mouse or button, display of cursor values and difference	
Markers (Bearing diagnosis)	Inner race, outer race, kaefig, ball, WK ring contact, side bands, harmonics (integrated database of > 20000 bearings)	-
Marker Control	Adjustable frequency / Rotation speed signal	-
Limit Graph	Graphically free adjustable with 100 points	-
Status Indicators	Sensor, measuring channel, measurand, characteristic, gain, underload, overload, level	
Recommended Screen Resolution	From 800 x 600 pixels on	
Data Export		
Control	Manually time- or level-triggered	
Formats	Bitmap, PNG, Enhanced Meta File (EMF), text	
Destinations	Clipboard or file	
Event Annunciators		
E-Mail	Trigger initiates transfer of exported measurement data	
Miscellaneous		
Available in a Kit	VMSet-03 .. 07, VMSet-25, VMSet-26	-
General Functions	Measurement data is held after switching off, instrument is cloneable	

* Centrally managed in the InnoMaster

** When working with InnoBeamer L2: Upper frequency limit 2000 Hz = 120 000 min⁻¹
when working with InnoBeamer LX2: Upper frequency limit 3200 Hz = 192 000 min⁻¹

Changes without prior notice

February 2016

— D e u t s c h l a n d —

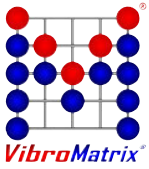
IDS Innomic
Gesellschaft für Computer- und Messtechnik mbH
Zum Buchhorst 35
29410 Salzwedel

☎ (03901) 305 99 50
☎ (03901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.de

— I n t e r n a t i o n a l —

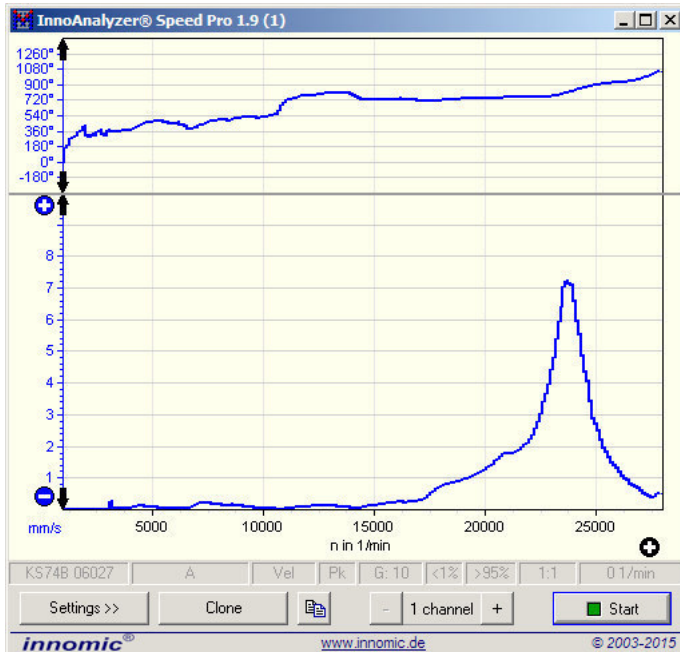
IDS Innomic GmbH
Zum Buchhorst 35
D-29410 Salzwedel
Germany

☎ +49 (3901) 305 99 50
☎ +49 (3901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.com/en



InnoAnalyzer® Speed 1.9

Run-up/Coast-down Tracking Analyzers



Magnitude and phase for adjustable orders

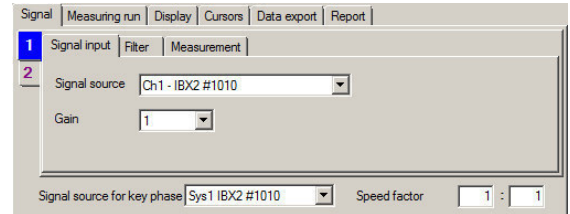
Application

Rotating parts in drives, gears, pumps, fans and many other technical products cause perturbing vibrations. Different rotation speeds cause different vibrations since the measurement objects develop or do not develop resonant behaviour at certain rotation speeds.

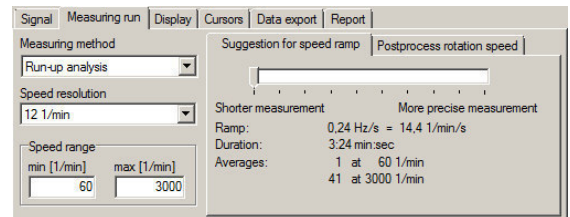
These differences become obviously in run-up or coast-down measurements. A rotor changes its rotation speed when run up or coast down and excites the whole system at different frequencies.

The InnoAnalyzers Speed measure the vibration level and phase angle at the rotation speed or a multiple and graphically display them at the respective rotation speed. This way, for instance resonant rotation speed levels are detected. The progression of the rotation speed is displayed graphically as well.

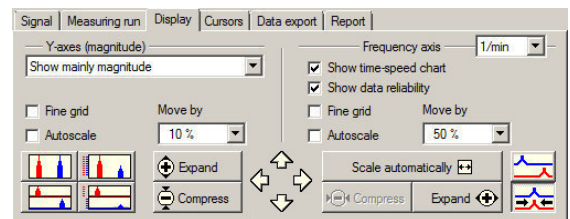
For rotation speed detection, different photoelectric reflex switches and contrast scanners are directly supplied by the InnoBeamer and their signal is read. Optionally, an existing rotation speed signal can be fed as pulse/revolution or reference can be taken towards a transformed rotation speed.



Simple signal conditioning



Settings for the measuring run, speed ramp



Arrange, zoom, compress graphs acc. to your demands or move them in direction of the frequency axis and display all orders stacked

Properties

The InnoAnalyzers Speed masters order-tracked filtering and band-pass filtering. Thus it can display magnitude and phase of (pre-filtered) orders but also wide-band overall values in dependence on the rotational speed.

Speed range and frequency resolution can be adjusted. Using these parameters, the InnoAnalyzer Speed calculates optimum settings for the speed change rate, which you can enter for instance into a frequency converter.

Magnitude and phase of arbitrary orders can be displayed at their actual frequency or they can be displayed frequency-transformed and stacked in relation to order 1.

The clone function makes it possible to operate several InnoAnalyzers at the same time.

The export of the measurement graph as graphic or pairs of numbers in text format into other applications provides additional fields of application.

Technical Data

	InnoAnalyzer Speed Pro	InnoAnalyzer Speed
Signal Processing		
Measurands	Alternating measurands: Vibration acceleration, velocity, displacement; force, pressure, sound pressure, voltage, user-defined measurands	
Integrated Measurands	Acceleration → Velocity and displacement	
Units	m/s ² , mm/s ² , μm/s ² , nm/s ² , pm/s ² , g, mg, μg, km/s ² , kg, dB m/s, mm/s, μm/s, nm/s, pm/s, in/s, mil/s, μin/s, dB m, mm, μm, nm, pm, ft, in, mil, μin, dB kN, N, mN, μN, nN, lb, oz bar, mbar, MPa, kPa, hPa, Pa, mPa, μPa, nPa, psi V, mV, μV, nV, pV A, mA, μA, nA, pA	
Characteristics of Order Analysis	Peak value, Peak-to-peak value, r.m.s. value, phase	
Character. of Wide-Band Analysis	Instantaneous value, peak value absolute / positive / negative, peak-to-peak value, true r.m.s. value	
Orders in Order Analysis	Freely adjustable ratio m : n (m, n: 1 ..1 000)	
Frequ. Range in Wide-Band Analysis	Freely adjustable range 0.1 .. 40 000 Hz **	
Measurands and Units X-Axis	Frequency (Hz) / Rotational speed (1/min)	
Frequency Resolution	0.05 / 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 20 Hz (3, 6, 12, 30, 60, 120, 300, 600, 1200 min ⁻¹)	
Graphical Presentation		
Number of Graphs	1 .. 4 for magnitude, 1..4 for phase, 1 time-speed chart	
Refresh	1 .. 16 times per second *	
Interval Y-Axis	Magnitude: 0.1 .. 10000 / Phase: 0..360°, -180 .. +180°, -3600 .. 3600 ° / Zeit: 1 min .. 14 days	
Interval X-Axis	0.2 .. 40 000 Hz / 2 .. 2 400 000 min ⁻¹ **	
Measuring Methods	Switchable without restart: Run-up/Coast down (rising/falling rotation speeds with average only), Run-up/coast-down monotonous(rising/falling rotation speed without average only), free analysis (all rotation speeds with average)	
Frequency Shift	All orders can be transformed to order 1 for a better comparison	
Statistics	Visualization of number of averages for each speed interval by means of line thickness and color	
Status Indicators	Sensor, measuring channel, measurand, characteristic, gain, underload, overload	
Cursors	2 lines, freely adjustable by mouse or button, display of cursor values and difference	
Recommended Screen Resolution	From 1024 x 768 pixels on	
Data Export		
Control	Manually or time-triggered	
Formats	Bitmap, PNG, Enhanced Meta File (EMF), text	
Destinations	Clipboard or file	
Miscellaneous		
Measuring Run	Optimum speed change rate is calculated and indicated	
Available in a Kit	VMSet-03 .. 07	-
General Functions	Measurement data is held after switching off, instrument is cloneable	

* Centrally managed in the InnoMaster

** When working with InnoBeamer L2: Maximum frequency 2000 Hz, maximum rotation speed 120 000 min⁻¹, when working with InnoBeamer LX2: Maximum frequency 3200 Hz, maximum rotation speed 192 000 min⁻¹

Changes without prior notice

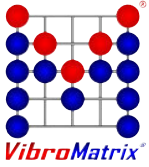
February 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de
--	---

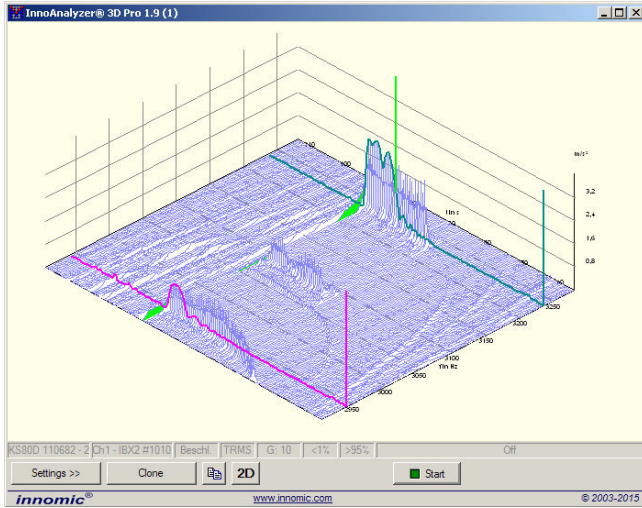
— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en
--	---



InnoAnalyzer® 3D 1.9

Time-Frequency Vibration Analyzer



View a wide range of frequency analyses simultaneously and identify critical frequencies at a glance.

Cursor	Frequency (f)	Acceleration (a)
Cursor 1	232.325 Hz	0.652 m/s ²
Cursor 2	110.053 Hz	0.269 m/s ²
Cursor 2 - Cursor 1	-122.272 Hz	0.000 m/s ²

Options: Synchronize 2D, Cursor movement opens this panel.

FFT-Cursor: Index: 104, t: 48,709 s

2 cursors, display data and difference, as well as cursor to select FFT for 2D mode

Application

In order to get the individual frequency components from many overlapping vibrations, a frequency analysis is performed. The frequency spectra of rotating machines are influenced by e.g. changes of rotational speed. Therefore, it is useful to be able to view several frequency analyses over time in connection to each other. With InnoAnalyzer 3D such time-frequency analyses can be performed. The spectra are displayed as a waterfall.

By means of the waterfall display of run-up and coast-down analysis the speed-dependent and -independent vibration components can easily be determined. Natural oscillations and resonance states are identified reliably.

Rotate the measurement diagram on horizontal and vertical axis and vary the depth extension

Zoom, compress and arrange graphs acc. to your demands

Component	Short	x fn	on	Hm.	SB	FG	BG	Navigation
Inner race	BPFI	4,944	<input type="checkbox"/>	-	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	← →
Outer race	BPFO	3,056	<input checked="" type="checkbox"/>	2	-	<input type="checkbox"/>	<input type="checkbox"/>	← →
Ball	BSF	2,001	<input type="checkbox"/>	-	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	← →
RE ring contact	RPFB	4,002	<input type="checkbox"/>	-	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	← →
Cage	FTF	0,382	<input type="checkbox"/>	-	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	← →

Special modes, e.g. bearing diagnosis by envelope analysis

Properties

The InnoAnalyzers 3D are universal vibration analyzers for vibration acceleration respectively also vibration velocity and displacement (Pro version).

The instruments perform freely configurable frequency analyses, bearing diagnosis by envelope analysis and acoustics measurements with weighting filters.

In addition to the time-frequency display (3D) it can be switched to a 2D-display for each spectrum. The selection is done by the corresponding cursor. The 3D diagram can be rotated, shifted and zoomed in various ways in order to get the best possible display.

The high number of lines of more than 500 000 FFT lines allows a frequency resolution of up to 0.01 Hz. Switching the frequency axis from Hz to 1/min simplifies the allocation to rotating parts.

During unattended operation, analyses can be saved periodically or limit dependent or be sent via e-mail.

Technical Data

	InnoAnalyzer 3D Pro	InnoAnalyzer 3D
Signal Processing		
Measurands	Alternating measurands: Vibration acceleration, velocity, displacement; force, pressure, sound pressure, voltage, user-defined measurands	
Integrated Measurands	Acceleration → Velocity and displacement	-
Units	m/s ² , mm/s ² , μm/s ² , nm/s ² , pm/s ² , g, mg, μg, km/s ² , kg, dB m/s, mm/s, μm/s, nm/s, pm/s, in/s, mil/s, μin/s, dB m, mm, μm, nm, pm, ft, in, mil, μin, dB kN, N, mN, μN, nN, lb, oz bar, mbar, MPa, kPa, hPa, Pa, mPa, μPa, nPa, psi V, mV, μV, nV, pV A, mA, μA, nA, pA	
Characteristics	Peak value, Peak-to-peak value, r.m.s. value, phase (2D mode)	
Measurands and Units X-Axes	Frequency (Hz) / Rotation speed (1/min), time (s)	
Frequency Range	Freely adjustable 0 .. 40 000 Hz **	
Frequency Resolution, Overlapping	< 1 mHz, 0 .. 99%	
Number of FFT in 3D display	4 .. 1000	
Windowing	Rectangle, Bartlett, Blackman, Hamming, Hann, Flattop	
FFT Modes	Manual, bearing diagnosis, acoustic	Manual
Time Data Feeding	Continuous / triggered in time domain	
Number of Lines	2 .. 524288	
Graphical Presentation		
Graphs	Switch between 2D and 3D possible, 3D mode: rotate, shift and zoom graph freely	
Refresh	1 .. 16 times per second *	
Interval Y-Axis	Magnitude: 0.1 .. 10000 (logarithmic as well) / Phase: 0..360°, -180° .. +180°	
Interval X-Axis	1 .. 40 000 Hz / 600 .. 2 400 000 min ⁻¹ **	
List of Magnitudes (2D mode)	1..20 magnitudes (search sensitivity adjustable), sorting acc. to magnitude or frequency	
Cursors	2 lines, freely adjustable by mouse or button, display of cursor values and difference, FFT cursor on time axis	
Markers (Bearing diagnosis)	Inner race, outer race, kaefig, ball, WK ring contact, side bands, harmonics (integrated database of > 20000 bearings)	-
Marker Control	Adjustable frequency / Rotation speed signal	-
Limit Graph	Graphically free adjustable with 100 points	-
Status Indicators	Sensor, measuring channel, measurand, characteristic, gain, underload, overload, level	
Recommended Screen Resolution	From 800 x 600 pixels on	
Data Export		
Control	Manually time- or level-triggered	
Formats	Bitmap, PNG, Enhanced Meta File (EMF), text	
Destinations	Clipboard or file	
Event Annunciators		
E-Mail	Trigger initiates transfer of exported measurement data	
Miscellaneous		
General Functions	Measurement data is held after switching off, instrument is cloneable	

* Centrally managed in the InnoMaster

** When working with InnoBeamer L2: Upper frequency limit 2000 Hz = 120 000 min⁻¹
when working with InnoBeamer LX2: Upper frequency limit 3200 Hz = 192 000 min⁻¹

Changes without prior notice

February 2016

— D e u t s c h l a n d —

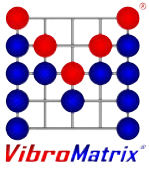
IDS Innomic
Gesellschaft für Computer- und Messtechnik mbH
Zum Buchhorst 35
29410 Salzwedel

☎ (03901) 305 99 50
☎ (03901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.de

— I n t e r n a t i o n a l —

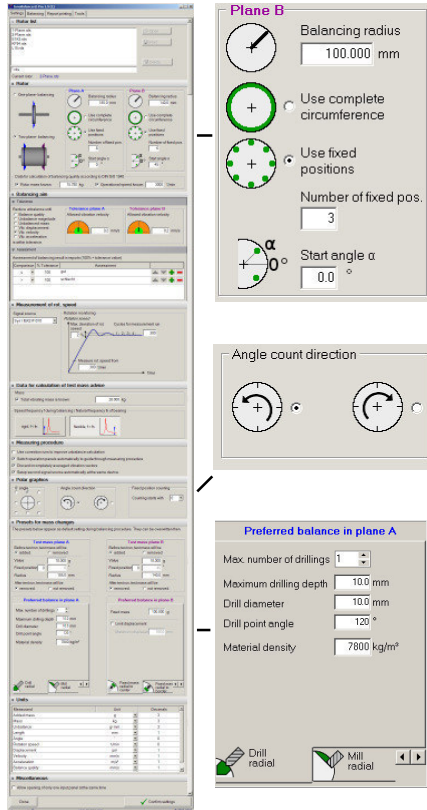
IDS Innomic GmbH
Zum Buchhorst 35
D-29410 Salzwedel
Germany

☎ +49 (3901) 305 99 50
☎ +49 (3901) 305 99 51
✉ info@innomic.de
🌐 www.innomic.com/en

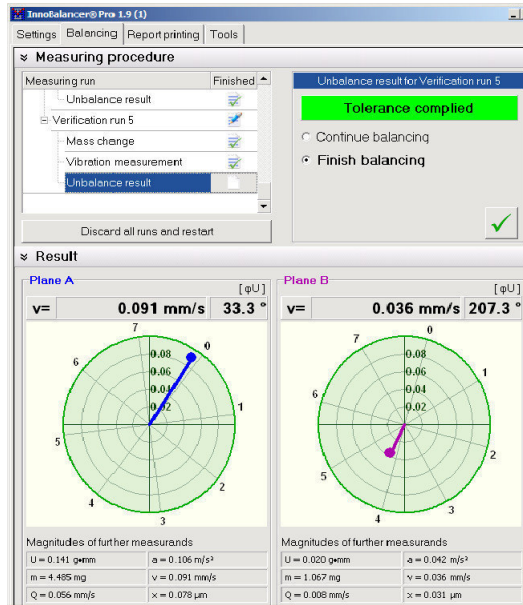


InnoBalancer® 1.9

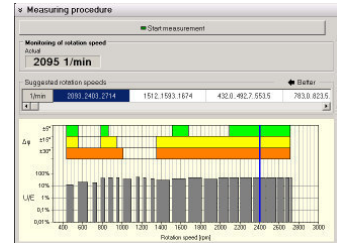
Field Balancing



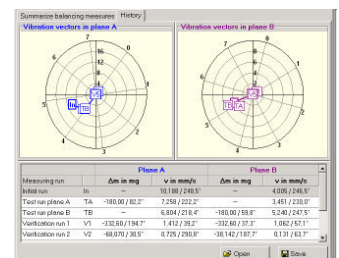
Clearly structured setting options



Purposefully reached balanced status



Analysis and display of optimum rotation speed for balancing



Overview of all measuring runs

Properties

The InnoBalancers guide the user through the balancing process so that unbalance and caused vibrations are reduced purposefully.

You enter the most important rotor data in a clearly structured control panel. Afterwards you open the “balancing” control panel. It presents the balancing process with its different steps which you simply carry out. For rotors with alternating rotation speeds, the InnoBalancer Pro offers the analysis of optimum rotation speed for balancing so that you are prevented from balancing at resonant rotation speeds.

By means of the automatic recognition of rotation speed, the InnoBalancer reads the vibration vectors in a high quality and calculates the unbalance. The InnoBalancer Pro also offers suggestions for the test mass.

After unbalance calculation, the InnoBalancer offers clear suggestions for balancing. In case of not following these suggestions, consequences are already shown in chart even before the measurement is started.

Furthermore, the InnoBalancer Pro masters continuous improvement of influence coefficients and shows the single vectors of each revolution as well as the development of the vibration vectors for all measuring runs.

Measuring runs can be saved and reloaded. Thereby balancing can be interrupted and later be continued.

Application

The InnoBalancers are designed for the reduction of vibrations.

Rotating parts in drives, gears, pumps, fans and many other technical products cause perturbing vibrations. These vibrations often have to be reduced in order to increase product quality and durability by smooth run.

The InnoBalancers allow a purposeful vibration reduction by balancing. Both discoidal and longish rotors can be balanced systematically and fast.

The InnoBalancers support field balancing. Ideally, the rotor is balanced directly in installed state. So you save the complex dismantling and the transport of the rotor to a balancing machine. Moreover, in many cases, an acceptable performance can only be achieved by balancing the installed rotor with all attached parts.

Technical Data

	InnoBalancer Pro	InnoBalancer	InnoBalancer Light
Balancing Methods and Calculations			
Planes	One- and Two-Plane Balancing for static and dynamic unbalance		
Fixed Positions	3..99 fixed positions, adjustable angle difference between 2 planes	-	
Balancing Aims: Reduction of the following measurands to an adjustable tolerance	Unbalance magnitude Unbalanced mass Balance quality acc. to DIN ISO 1940 Vibration displacement Vibration velocity Vibration acceleration	Unbalance magnitude Unbalanced mass	
Test Masses	Suggestion for test mass Before run: Add / Remove Afterwards: Keep / Revert	Before run: Add / Remove Afterwards: Revert	Before run: Add Afterwards: Revert
Balancing Measures	Add mass Remove mass Drill radial Mill Balancing rings, nuts Radial setscrews Mass list	Add mass Remove mass	Add mass
Additional Calculations and Analyses	Optimum rot. speed for balancing Defined unbalance Vector monitoring Adding influence coefficients Combining masses	Vector monitoring (checks whether the vector positions are plausible)	
Signal Processing			
Vibration Measurands	Vibration velocity Vibration acceleration Vibration displacement	Vibration velocity	
Units	m/s, mm/s, µm/s, nm/s, pm/s, in/s, mil/s, µin/s, dB m, mm, µm, nm, pm, ft, in, mil, µin, dB t, kg, g, mg, µg, ng, lb, oz, dram kgm, gm, gmm, mgmm, µgmm, ngmm, g in, lb in, dram in, oz in °, rad kHz, Hz, mHz, 1/s, 1/min, 1/h, rpm, cpm m/s², mm/s², µm/s², nm/s², pm/s², g, mg, µg, km/s², kg, dB kg/m³, g/cm³, kg/l, g/ml, lb/ft³, oz/in³, lb/in³		
Rotation Speeds	6 .. 600 000 min ⁻¹ *		
Rotation Speed Monitoring	Automatic recognition of run-up, monitoring of constant rotation speed incl. adjustable tolerance		
Graphical Presentation			
User Guide	Tree structure for measuring runs and division of each measuring run in balancing steps		
Optimum Rot.Speed for Balancing	Phase constancy and signal level	-	
Averaged Vibration Vectors	Numerical and in polar chart Optional display of single vectors Progress of all measuring runs	Numerical and in polar chart	
Display of Balancing Measures	Balancing suggestions and status of execution in polar chart and text / numerically Unbalance preview in polar chart and numerically in case of not following balancing suggestions		
Recommended Screen Resolution	From 1024 x 768 pixels on		
Miscellaneous			
Rotor List	Yes	-	
Save Measuring Runs	Yes	-	
Available in a Kit	VMSet-01.. 07	VMSet-01S VMSet-02S	VMSet-01L VMSet-02L
General Functions	Measurement data is held after switching off, instrument is cloneable		

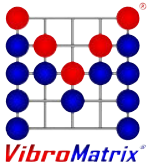
* When working with InnoBeamer L2 or LX2: 6 .. 20 000 min⁻¹

Changes without prior notice

February 2016

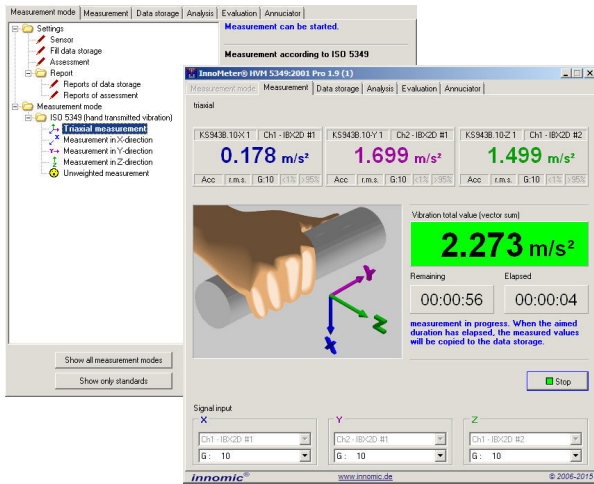
D e u t s c h l a n d	
IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de

I n t e r n a t i o n a l	
IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en

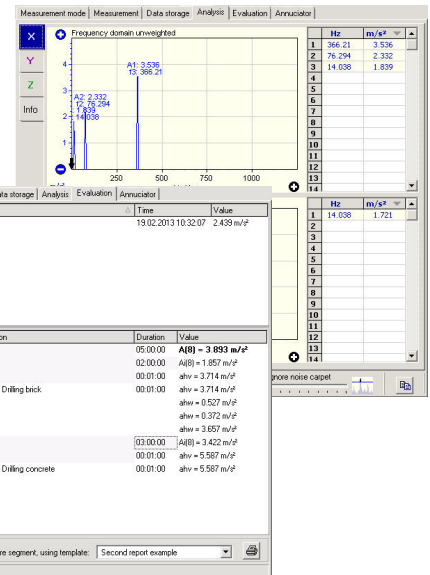


InnoMeter® HVM 5349 1.9

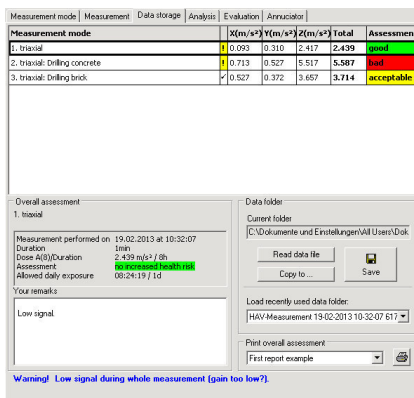
Human Hand-Arm Vibration Measurement



Clearly arranged selection and execution of the measurement



Integrated frequency analysis and calculator for daily vibration exposure



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_h 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	
Recommended Screen Resolution	From 800 x 600 pixels on	
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-11P, VMSet-12P, VMSet-14P	VMSet-11, VMSet-12, VMSet-14
General Functions	Instrument is cloneable	

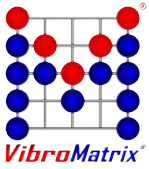
* Centrally managed in InnoMaster

Changes without prior notice

February 2016

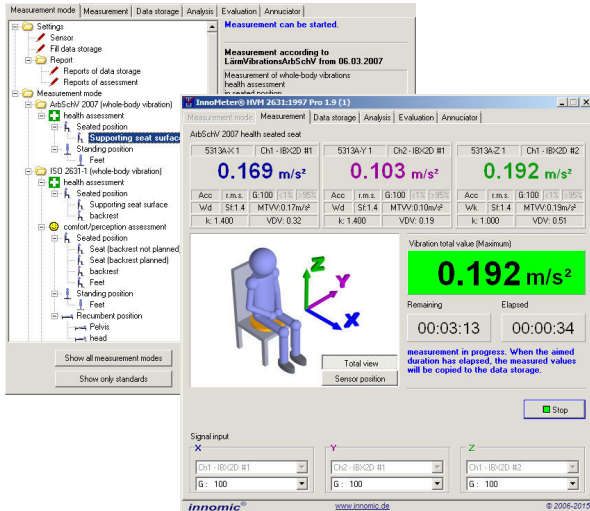
D e u t s c h l a n d		
IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de	

I n t e r n a t i o n a l		
IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en	

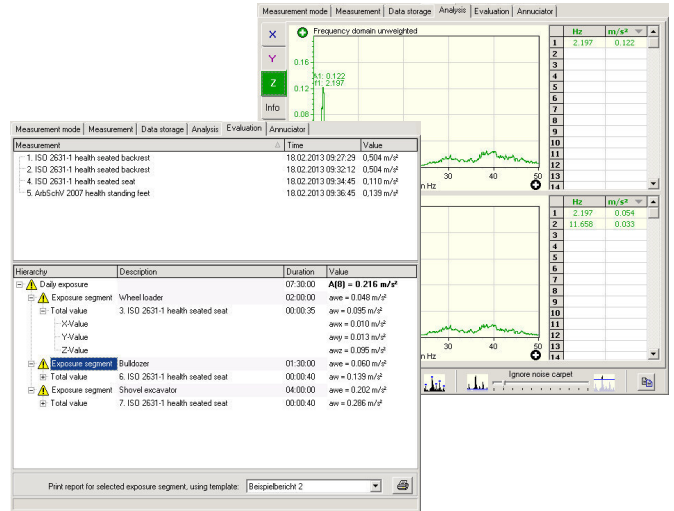


InnoMeter® HVM 2631 1.9

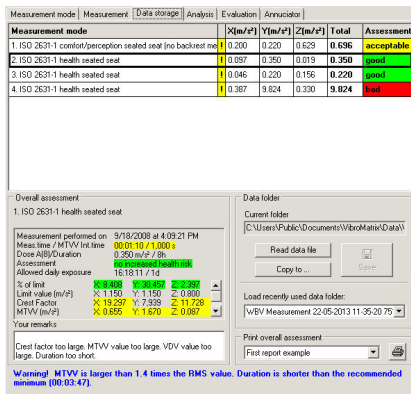
Human Whole-Body Vibration Measurement



Clearly arranged selection and execution of the measurement



Integrated frequency analysis and calculator for daily vibration exposure



Automatic data storage

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 the person and seat. The signals are transferred to the measurement software in real-time.

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 multi-axial 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





	InnoMeter HVM 2631:1997 Pro	InnoMeter HVM 2631:1997
Signal Processing		
Filter	W _b , W _c , W _d , W _f , W _k and W _m filter acc. to the standard	
Measurand, Unit	Vibration acceleration in m/s ²	
Parameters	Simultaneous (!) measurement of Interval rms value, crest factor, maximum rms (MTVV), vibration dose value (VDV)	
Measurement duration	Adjustable 1 s .. 1 day	
Graphical Presentation		
Numeric Display	5 digits: 0.0001 .. 99999	
Refresh	1.. 4 times per second *	
Status Indicators	Sensor, measuring channel, measurand, parameter, gain, underload, overload	
Recommended Screen Resolution	From 800 x 600 pixels on	
Data Acquisition, Storage and Presentation		
Measurement Modes	<ul style="list-style-type: none"> - Whole-body vibration acc. to ISO 2631-1 (except for kinetosis assessment and rolling motion) - Vibration in buildings acc. to ISO 2631-2 - Rail vehicles acc. to ISO2631-4 	
Measurement	<ul style="list-style-type: none"> - User guide, indication of the selected measurement mode, help for the sensor positioning - Indication of vibration total value as well as elapsed and remaining measurement duration - For all axes: Indication of interval rms value, crest factor, MTVV 	
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 noted - Save and reload measured values in CSV format - Printing a report about the measurement, individual report examples can be configured 	
Calculator for 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 	
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 as a Kit	VMSet-13P VMSet-14P	VMSet-13 VMSet-14
General Functions	Instrument is cloneable	

* Centrally managed in InnoMaster





Changes without prior notice

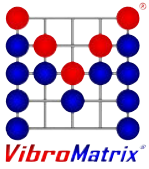
February 2016

Deutschland

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	 (03901) 305 99 50  (03901) 305 99 51  info@innomic.de  www.innomic.de
--	---

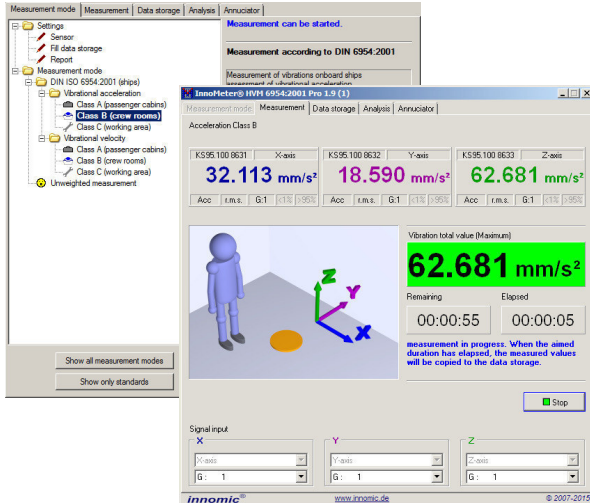
International

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	 +49 (3901) 305 99 50  +49 (3901) 305 99 51  info@innomic.de  www.innomic.com/en
--	---

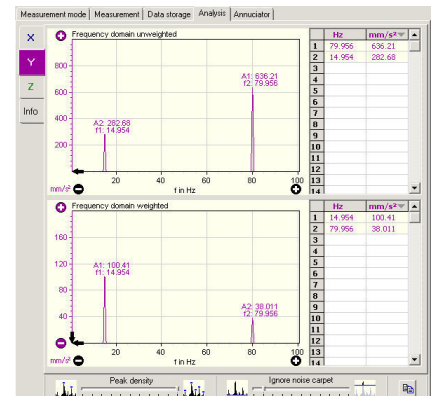


InnoMeter® HVM 6954 1.9

Vibration Measurement on Ships



Clearly arranged selection and execution of the measurement



Integrated frequency analysis

Measurement mode | Measurement | Data storage | Analysis | Annunciator

Measurement mode	X-Value	Y-Value	Z-Value	Total	Assessment
1. Acceleration Class A	100.54	107.14	175.84	175.84	bad
2. Acceleration Class A	76.674	84.188	70.547	84.188	acceptable
3. Acceleration Class A	56.255	43.425	62.750	62.750	good

Overall assessment: 3. Acceleration Class A

Measurement performed on: 5/22/2013 at: 11:19:56 PM

Assessment: **probably no assessment**

Your remarks:

Data folder: C:\Users\Public\Documents\VibroMatrix\Data\Ship Measurement 22-05-2013 13:11:32 411

Read data file | Copy to | Save

Load recently used data folder: [Ship Measurement 22-05-2013 13:11:32 411]

Print overall assessment | Report example

Data in folder "C:\Users\Public\Documents\VibroMatrix\Data\Ship Measurement 22-05-2013 13:11:32 41138654" written.

Automatic data storage

Application

Aboard passenger and merchant vessels vibrations can occur, which may negatively interfere with the work of the crew or which may diminish the comfort of passengers and crew. In order to assess complaints or to prevent them, measurements acc. to DIN ISO 6954:2001 are suitable, since they allow the evaluation of the vibration severity with regard to habitability aboard ships.

By using the InnoMeter HVM 6954:2001, one can easily perform these measurements conforming to standards. Additionally, the instrument contains a storage for recent measurement results.

Properties

Compared to usual hand-held instruments, the InnoMeter HVM 6954 possesses a user guide. The user is guided through 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 6954 is designed for simultaneous measurement in all 3 axes. The required vibration parameters and weighting filters are integrated. The classification defined in the standard (passenger cabins, crew rooms, working areas) is available together with the respective standard values. With the simple choice of the measurement mode, the parameters and standard values are adjusted automatically acc. to the standard.

Remarks about the measurements can be noted, measurements can be saved and read into again.

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 6954:2001 Pro	InnoMeter HVM 6954:2001
Signal Processing		
Filter	W _m filter acc. to the standard	
Measurand	Vibration acceleration or vibration velocity	
Unit	mm/s ² , mm/s	
Parameters	Interval rms value	
Measurement duration	Adjustable 1 s .. 1 day	
Graphical Presentation		
Numeric Display	5 digits: 0.0001 .. 99999	
Refresh	1.. 4 times per second *	
Status Indicators	Sensor, measuring channel, measurand, parameter, gain, underload, overload	
Recommended Screen Resolution	From 800 x 600 pixels on	
Data Acquisition, Storage, Presentation		
Measurement Modes	<ul style="list-style-type: none"> - Vibration measurement acc. to DIN 6954:2001 - Evaluation acc. to class A,B or C 	
Measurement	<ul style="list-style-type: none"> - User guide - Choice of the measurement mode - Indication of elapsed and remaining measurement duration - Indication of the interval rms value for all axes - Indication of the vibration total value 	
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) - Indication of detailed data for the marked measurement - For each measurement, remarks can be noted - Save and reload measured values in CSV format - Printing a report about the measurement, individual report examples can be configured 	
Frequency 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-16P	VMSet-16
General Functions	Instrument is cloneable	

* Centrally managed in InnoMaster

Changes without prior notice

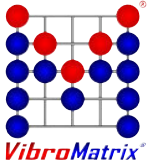
February 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	<ul style="list-style-type: none"> ☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de
--	---

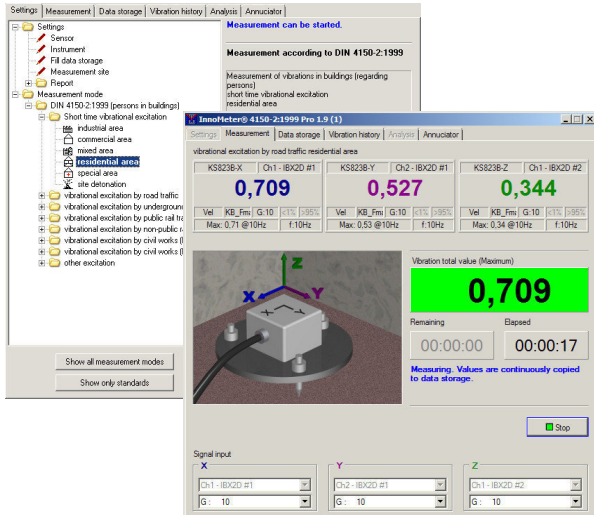
— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	<ul style="list-style-type: none"> ☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en
--	---

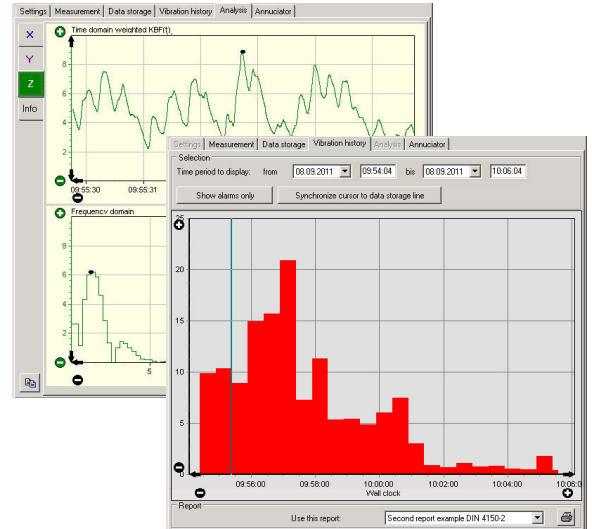


InnoMeter® 4150-2 1.9

Vibration effects on persons in buildings



Clearly arranged selection and execution of the measurement



Graphical event overview and event analysis

Measurement mode	Date	Time	Max	Assessment
vibrational excitation by road traffic mixed area	22.02.2013	10:31:24	3,144	bad
1. guide values observed	22.02.2013	10:31:24	0,873	good
2. guide values observed	22.02.2013	10:31:54	2,094	good
3. guide values observed	22.02.2013	10:32:24	3,144	good
4. guide values exceeded	22.02.2013	10:32:54	3,141	bad

Overall assessment: vibrational excitation by road traffic mixed area

Overall assessment: $KF_{max} = 3,14444 > A_u = 0,200$
 $KF_{max} = 3,14444 < A_a = 5,000$
 $KF_{TR} = 0,11389 > A_r = 0,100$

Maximal value: X: 0,886 Y: 1,152 Z: 3,144
at frequency (Hz): X: 11,930 Y: 11,900 Z: 11,908

Your remarks:

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

Automatic event storage

Application

The InnoMeter 4150-2 is designed for the measurement of vibrations in buildings assesses the effect on persons acc. to DIN 4150-2.

Persons in buildings are exposed to vibrations from heavy building activities, traffic, machine operation or also detonations. The InnoMeter 4150-2 measures these vibrations, immediately evaluates them acc. to the standard and informs about the occurred vibrations and their permissibility at any time.

Suitable kits incl. sensors and signal converters for connection to your own computer are available: VMSet-22(P) and VMSet-24(P).

Properties

The InnoMeter 4150-2 combines vibration measurement, automatic evaluation and presentation of results in one instrument. The most important characteristic: A report can be printed at any time since the evaluation is carried out simultaneously with the measurement. Circuitous data transfer is not required here. You are ready for giving a statement at any time.

The German standard DIN 4150-2 describes a multi-level system for deciding whether vibrations have a troubling effect on humans in buildings or not. The InnoMeter 4150-2 runs through this decision tree with the currently measured values. Based on these facts, it provides immediate assessment for the harassments.

You simply select the measurement mode and the type of area. Click the start button and and off you go!

The measured data is available in differently detailed levels: You can see the overall status at once, but you are able to display more details concerning interesting events progressively. Detail depth reaches up to the recorded high-resolution vibration signal.

When it comes to printing a record, the detail depth can be selected as well. The most important data incl. the measurement graph fits on one A4 page. If required, the single events are printed as well. The period for the report to be printed can also be selected.

Automatic transmission of measurement results via e-mail or notification of outsiders about alarms for instance via signal lamps is possible as well.

Technical Data

	InnoMeter 4150-2 Pro	InnoMeter 4150-2
Signal Processing		
Filter	Butterworth filter acc. to the standard with 40dB/decade, 1..80 Hz; frequency weighting filter acc. to DIN 4150-2	
Measurand	Weighted vibration severity acc. to DIN 4150-2	
Characteristics	Maximum weighted vibration severity $KB_{F_{max}}$ and $KB_{F_{Ti}}$ value	
Measurement Duration	Adjustable 30 s .. infinitely	
Graphical Presentation		
Numeric Display	5 digits: 0.001 .. 99999	
Refresh	1.4 times per second (centrally managed in InnoMaster)	
Status Indicators	Sensor, measuring channel, measurand, characteristic, gain, underload, overload	
Recommended Screen Resolution	From 800 x 600 pixels on	
Data Acquisition, Storage and Presentation		
Measurement Modes	<ul style="list-style-type: none"> - Short-time vibrations / vibrations caused by rail traffic / vibrations caused by civil works / other vibrations in: - Industrial / commercial / mixed / residential / special areas 	
Measurement	<ul style="list-style-type: none"> - User guide - Selection of the measurement mode - Selection of the location - Indication of elapsed and remaining measurement duration - Indication of the maximum weighted vibration severity $KB_{F_{max}}$ for all axes - Indication of the current main frequency for all axes - Indication of the vibration total value (maximum of the 3 axes) 	
Automated Evaluation	Calculation of $KB_{F_{max}}$ and $KB_{F_{Ti}}$ value already during measurement and comparison with guide values A_u, A_o, A_r acc. to the standard. Indication in traffic light colors.	
Data Storage	<ul style="list-style-type: none"> - Data storage of up to 100000 events with detailed data for each time interval - For marked measurement: Indication of $KB_{F_{Ti}}$ and further measurement values, evaluation - You can note own remarks for each event - Saving and reload measured values in CSV format - Printing a report about overall assessment, individual report templates can be configured 	
Integrated Graphical Evaluations		
Vibration History	<ul style="list-style-type: none"> - Expanding and compressing both Y- and time-axis - Y-axis optionally as absolute values or relative to the limit value in % - Time period to be selected by input boxes - Warnings can be displayed/omitted - Cursor available, movable by mouse, runs synchronously with the time interval in the data storage - Printing a report about the selected time period, individual report templates can be configured 	
Analysis Single Event	<ul style="list-style-type: none"> - Signal progression of weighted vibration velocity - Automatic marking of the maximum in the signal progression - Frequency analysis of the time interval 	-
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	<ul style="list-style-type: none"> - Transfer of total vibration value as well as evaluation of single measurement - Cyclic transfer of the data storage 	
Miscellaneous		
Available in a Kit	VMSet-22-P, VMSet-24-P	VMSet-22, VMSet-24
General Functions	Instrument is cloneable	

Changes without prior notice

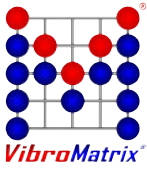
February 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de
--	---

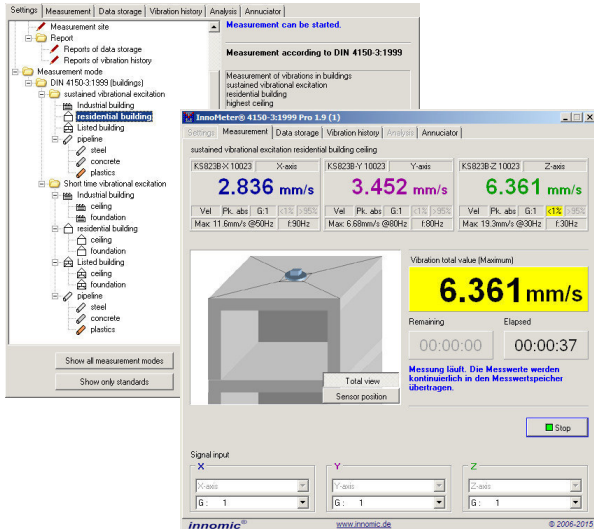
— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en
--	---

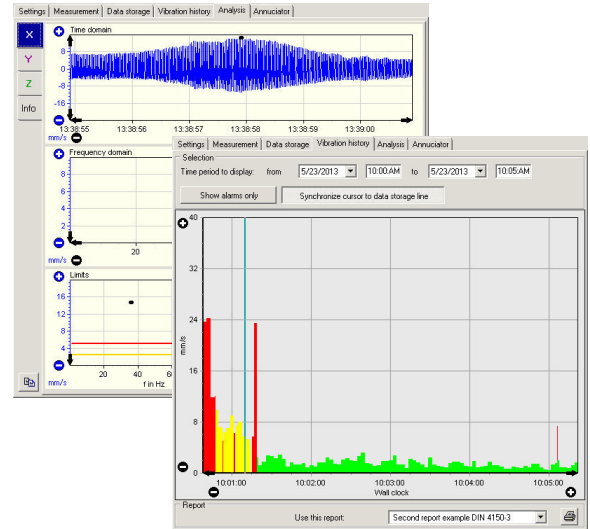


InnoMeter® 4150-3 1.9

Vibration Measurement on Buildings



Clearly arranged selection and execution of the measurement



Graphical event overview and event analysis

Measurement mode	Date	Time	Max (mm/s)	Assessment
short time vibrational excitation residential building foundation	21.02.2013	10:08:10	2.596	acceptable
1. warning threshold exceeded	21.02.2013	10:08:10	2.596	acceptable
2. no events	21.02.2013	10:21:01	2.490	good

Overall assessment	
Measurement performed on	21.02.2013 at 10:08:10
Duration	00:12:50
Time constant (s)	3.000
Assessment	50%
at frequency (Hz)	X: 7.939 Y: 7.939 Z: 7.939
Value (mm/s)	X: 0.438 Y: 0.239 Z: 2.596
Limit value (mm/s)	X: 5.000 Y: 5.000 Z: 5.000
Maximal value (mm/s)	X: 0.438 Y: 0.239 Z: 2.596
at frequency (Hz)	X: 7.939 Y: 7.939 Z: 7.939

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

Automatic event storage

Application

The InnoMeter 4150-3 is designed for the measurement of vibrations on buildings acc. to DIN 4150-3 and SBR.

Vibrations from heavy building activities, traffic, machine operation or also detonations affect existing building stock. The InnoMeter 4150-3 measures these vibrations, evaluates them acc. to the standard immediately and can inform about the occurred vibrations at any time.

Therefore, a triaxial vibration sensor is positioned at the building. By means of a signal converter type InnoBeamer, its signals are transmitted to the computer on which the InnoMeter 4150-3 is running.

Properties

The InnoMeter 4150-3 combines vibration measurement, evaluation and presentation of results in one instrument. The most important characteristic: A report can be printed at any time since the evaluation is carried out simultaneously with the measurement. Circuitous data transfer is not required here. You are ready for giving a statement immediately and at any time.

In the German standard DIN 4150-3 the main frequency is an important parameter as it determines the maximum allowable vibration level. The main frequency recognition is a problem for many instruments but not for InnoMeter 4150-3: It features a permanently active, automatic frequency recognition and achieves exact results with 4 million analyses/day.

The measured data is available in differently detailed levels: You can see the overall status at once, but you are able to display more details concerning interesting events progressively. Detail depth reaches up to the recorded high-resolution vibration signal. This way, analysis with additional software can be carried out easily.

When it comes to printing a record, the detail depth can be selected as well. The most important data incl. the measurement graph fits on one A4 page. If required, the single events are printed as well. The period for the report to be printed can also be selected.

Automatic transmission of measurement results via e-mail or notification of outsiders about alarms for instance via signal lamps is possible as well.

Technical Data

	InnoMeter 4150-3 Pro	InnoMeter 4150-3
Signal Processing		
Filter	Butterworth filter acc. to the standard with 40dB/decade, selectable 1..80 Hz and 1..315 Hz	
Measurand	Vibration velocity (vibration severity) in mm/s	
Parameter	Peak value of vibration velocity, instantaneous main frequency	
Measurement duration	Selectable 10 s .. infinitely	
Graphical Presentation		
Numeric Display	5 digits: 0.001 .. 99999	
Refresh	1 .. 4 times per second (centrally managed in InnoMaster)	
Status Indicators	Sensor, measuring channel, measurand, parameter, gain, underload, overload	
Recommended Screen Resolution	From 800x600 pixels on	
Data Acquisition. Storage and Presentation		
Measurement Modes	<ul style="list-style-type: none"> - Sustained vibrational excitation / Short-time vibrational excitation: - Industrial / residential / listed buildings - Pipelines: Steel / concrete / plastics 	
Measurement	<ul style="list-style-type: none"> - User guide - Choice of the measurement mode - Indication of elapsed and remaining measurement duration - Indication of the peak value for all axes incl. main frequency for all axes - Indication of the maximum vibration value so far incl. respective main frequency - Indication of the vibration total value (maximum of the 3 axes) 	
Data Storage	<ul style="list-style-type: none"> - Data storage of up to 100000 events with detailed data for each event - You can note own remarks for each event - Saving and reload measured values in CSV format - Printing a report about single event, individual report examples can be configured 	
Integrated Graphical Evaluations		
Vibration history	<ul style="list-style-type: none"> - Expanding and compressing both Y- and time-axis - Y-axis optionally as absolute values in mm/s or relative to the limit value in % - Time period to be selected by input boxes - Warnings can be displayed/omitted - Cursor available, movable by mouse, runs synchronously with the event in the data storage - Printing a report about the selected time period, individual report examples can be configured 	
Analysis Single Event	<ul style="list-style-type: none"> - Signal progression of vibration velocity - Automatic marking of the maximum in the signal progression - Frequency analysis of the event - Automatic marking of the maximum in the frequency analysis - Evaluation of the event in the InnoMeter 4150-3 limit-value-graphic 	
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	<ul style="list-style-type: none"> - Transfer of total vibration value as well as evaluation of single measurement - Cyclic transfer of the data storage 	
Miscellaneous		
Available as a Kit	VMSet-23P VMSet-24P	VMSet-23 VMSet-24
General Functions	Instrument is cloneable	

Changes without prior notice

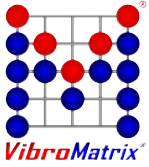
February 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	<ul style="list-style-type: none"> ☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de
--	---

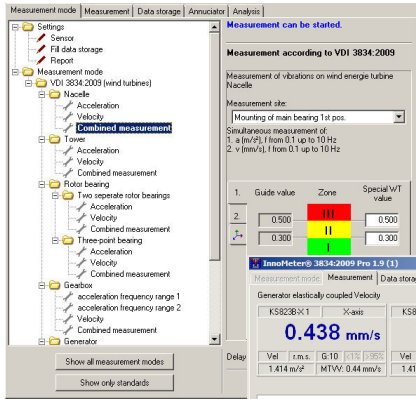
— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	<ul style="list-style-type: none"> ☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en
--	---



InnoMeter® 3834 1.9

Vibrations on Wind Energy Turbines



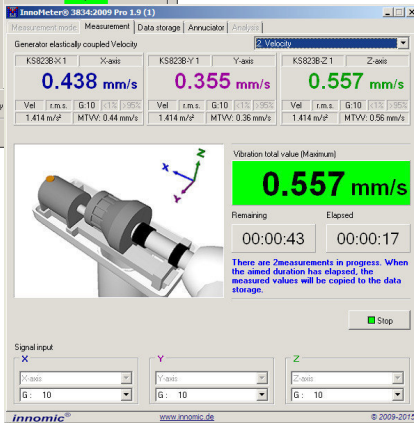
Clearly arranged selection of the measurement mode

Combined measurements shorten the measurement duration

Graphical view on the measuring point

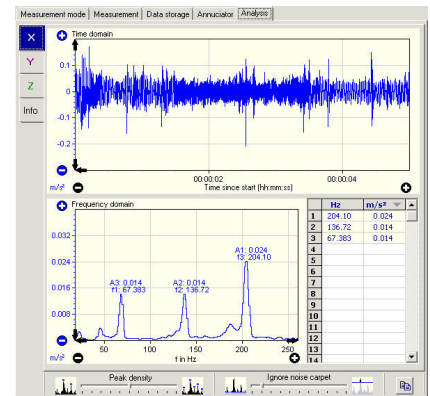
Watch measured values online

Immediate assessment in traffic light colors



Measurement mode	H-Value	V-Value	Z-Value	Total	Assessment
4. gearbox acceleration frequency range 1 Gearbox housing	0.320	0.052	0.400	0.400	acceptable
5. gearbox acceleration frequency range 2 Gearbox housing	0.320	1.411	0.400	1.411	good
6. gearbox velocity Gearbox housing	5.059	5.615	6.364	6.364	bad
7. gearbox acceleration frequency range 1 Gearbox housing	0.277	0.004	0.336	0.336	acceptable
8. gearbox acceleration frequency range 2 Gearbox housing	0.344	1.529	0.336	1.528	good

Automatic data storage



Detailed signal analysis in Pro version

Application

The InnoMeter 3834 is designed for the measurement and evaluation of vibrations on wind energy turbines and its components acc. to VDI 3834.

By means of this instrument, vibrations of structural components like housing and tower, but also of machine components like rotorbearing, gearbox and generator can be assessed.

Therefore, a triaxial vibration sensor is mounted at specified positions. By means of a signal converter type InnoBeamer, its signals are transmitted to the computer (e.g. notebook) on which the InnoMeter 3834 is running.

Properties

The InnoMeter 3834 combines vibration measurement, assessment, presentation of the results incl. printing a report in one instrument. In addition, signals can be analyzed in detail in time and frequency domain in Pro version.

Results are assessed in traffic light colors already during the measurement. This assessment is based on reference values from VDI 3834, which can be also adjusted acc. to the plant. All measurements are transferred to the data storage automatically, which lists up the results in a clearly arranged table. You can look at each measure-

ment in detail with all parameters once again. Furthermore, you can add your own remarks for each measurement.

Printing a report is carried out by mouse click. The report examples are freely adjustable, for instance with your own company logo.

WET vibration measurements can be carried out especially quick and effective with the InnoMeter 3834 since it masters **combined measurements**: Measurement modes at the same measuring point can be carried out simultaneously instead of tediously one after another. This way, measuring time is halved without relinquishing precision and more turbines can be measured per day than with usual equipment.

The VDI 3834 recommends measurements under stable conditions. Who wants to evaluate it? The InnoMeter 3834 features an objective monitoring technology and automatically indicates instable operational conditions. Thus there is safety for comparable measurement conditions.




Technical Data

	InnoMeter 3834 Pro	InnoMeter 3834
Signal Processing		
Filter	Automatically adjusted: 0.1 .. 10 Hz, 10 .. 1000 Hz, 10 .. 2000 Hz, 10 .. 5000 Hz	
Measurands	Vibration acceleration in m/s ² , vibration velocity in mm/s	
Parameter	Interval rms value of vibration acceleration and velocity, stability criterion	
Measurement duration	Acc. to VDI: 1 min / 10 min depending on the measurement mode	
Graphical Presentation		
Numeric Display	5 digits: 0.001 .. 99999	
Refresh	1 .. 4 times per second (centrally managed in InnoMaster)	
Status Indicators	Sensor, measuring channel, measurand, parameter, gain, underload, overload, stability	
Recommended Screen Resolution	From 800x600 pixels on	
Data Acquisition. Storage and Presentation		
Measurement Modes	Assessment acceleration / assessment velocity for housing, tower, rotorbearing, gearbox, generator	
Measurement	<ul style="list-style-type: none"> - User guide - Choice of the measurement mode - Indication of elapsed and remaining measurement duration - Indication of the interval rms value for all axes incl. stability criterion - Indication of the vibration total value (maximum of the 3 axes) 	
Data Storage	<ul style="list-style-type: none"> - Saving up to 100000 measurements per file - Indication of detailed data for the marked measurement - For each measurement, remarks can be noted - Save and reload measured values in CSV format - Printing reports about single event and about the complete data storage - Individual report examples can be configured 	
Integrated Graphical Evaluations		
Analysis Single Event	<ul style="list-style-type: none"> - Signal course of vibration acceleration - Signal course of vibration velocity - Frequency analysis for vibration acceleration - Frequency analysis for vibration velocity - Amplitude list for frequency analysis 	-
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 as a Kit	VMSet-31P	VMSet-31
General Functions	Instrument is cloneable	




Changes without prior notice

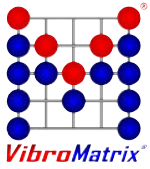
February 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	 (03901) 305 99 50  (03901) 305 99 51  info@innomic.de  www.innomic.de
--	---

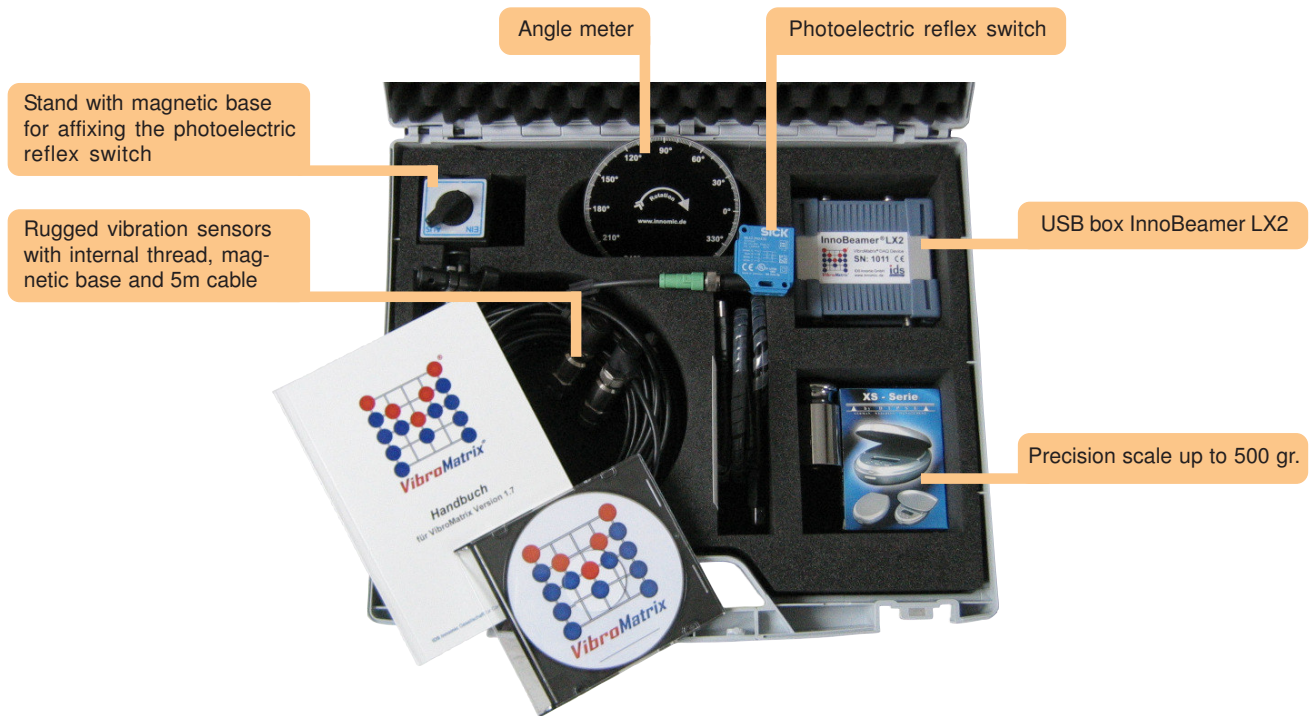
— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	 +49 (3901) 305 99 50  +49 (3901) 305 99 51  info@innomic.de  www.innomic.com/en
--	---



VibroMatrix® Kit

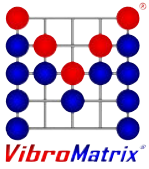
Balancing Kit



The VMSet-01 and VMSet-02 come in a handy case and provide you with everything you need for Single- resp. Two-Plane-Balancing. It is not necessary to select all required single components on your own.

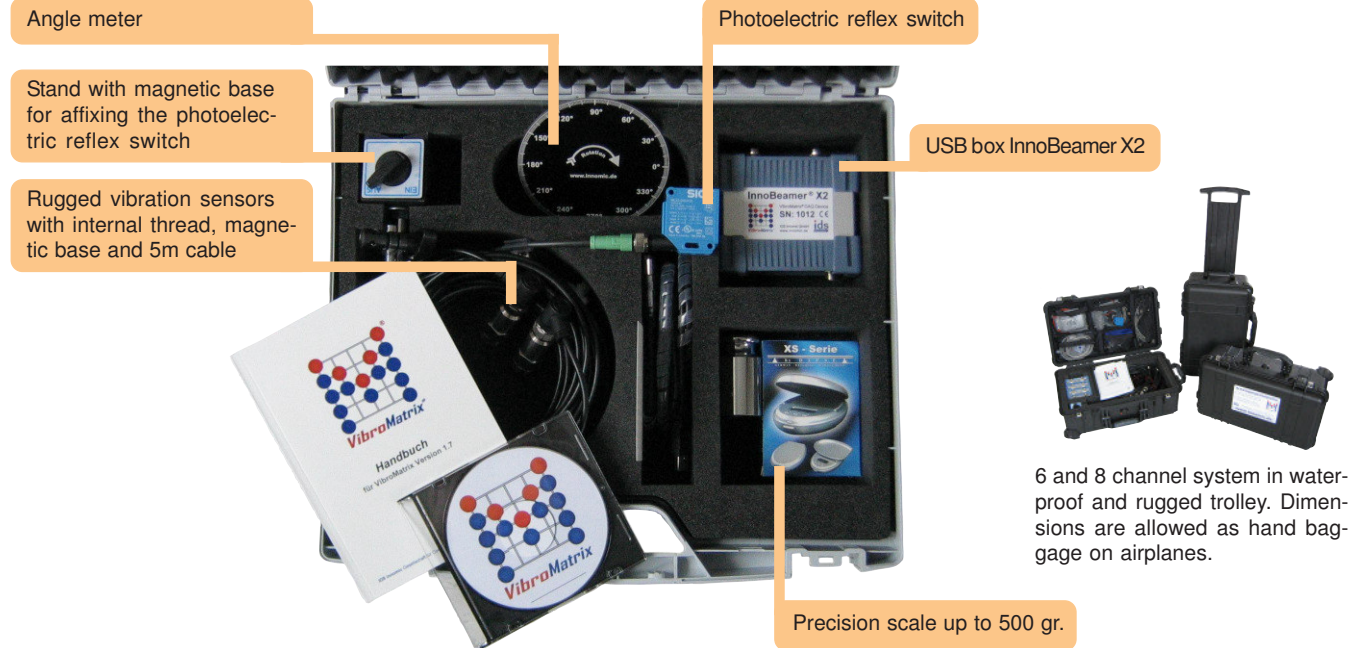
The system can be extended easily by new software instruments, e.g. for frequency or run-up analysis at any time. New hardware components are not necessary.

	VMSet-01P	VMSet-01S	VMSet-01L	VMSet-02P	VMSet-02S	VMSet-02L
	Single-Plane-Balancing			Single- and Two-Plane-Balancing		
Hardware						
Sensor for Vibration Measurement	<ul style="list-style-type: none"> - Type: Piezoelectric accelerometer, shear design - Sensitivity: 100 mV/g, linear frequency range: 0.13 .. 22 000 Hz - Operating temperature: -20 .. 120 °C - Protection grade: IP67 / insulated case avoiding ground loop problems - Accessories: Clamping magnet and cable (5m) 					
Amount	1	1	1	2	2	2
Sensor for Reference Position	<ul style="list-style-type: none"> - 1 piece opto-electronic sensor - Scanning range: Maximum 7m, signal sequence min: 1500/s, response time: < 330 µs - Protection grade: IP67, operating temperature: -40 .. 60 °C - Accessories: Stand with switchable magnetic base, 5m cable, reflection foil 					
Additional accessories	<ul style="list-style-type: none"> - Angle meter specialized for balancing, precision scale incl. test weight 					
USB Box for Digitization	<ul style="list-style-type: none"> - 1 piece 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 					
Software Licenses						
InnoBalancer	1x Pro	1x	1x Light	2x Pro	2x	2x Light



VibroMatrix® Kit

Machine Diagnosis and Balancing



The VMSet-03 and VMSet-04 come in a handy case and provide you with everything you need for the diagnosis of vibration problems and their elimination. The VMSets are applied on e.g. fans, pumps, electric motors / generators and components like roller bearings and gearboxes.

With these kits you answer, amongst others,:

Which are rotational speed and vibration level in a selected frequency range, vibration level at rotational speed or its multiples?

How is the allocation of the vibration levels in the complete frequency range, at which rotation speeds is the machine getting resonant, how high are the vibration levels then? What are the natural frequencies? Are the measurement points vibrating synchronously or oppositely?

How high is the unbalance and how can it be balanced?

Thanks to the high flexibility of the VibroMatrix-System, you are prepared for the measurement of vibration parameters acc. to different standards.

The system works on a PC or notebook and is suitable for both, mobile field work and stationary applications,

e.g. in research and development or quality control. Extra mains adapters are not required, VibroMatrix is supplied by the USB data cable.

High-quality piezoelectric accelerometers provide precise measurement signals. A photoelectric reflex switch permits, amongst others, the synchronization of measurements with the rotation speed.

The instruments are combined on the screen acc. to your needs. A suitable configuration can be saved and loaded again within seconds when required.

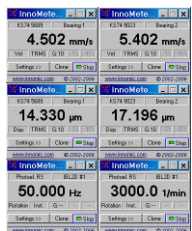
You export measurement data and graphics fast as lightning into files or your word processing. Thus you have compiled a conclusive documentation quickly.

Simultaneously with real-time measurement, you can record the raw data stream. If you need more details of your measurement later or want to present interesting processes to your colleagues in the office, you can replay the data like a live measurement. The configuration of the software instruments can even be different from the one during the original measurement.

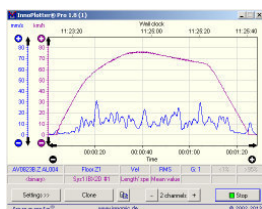
More channels? No Problem, several measurement kits can be combined to a multichannel systems.

	VMSet-03	VMSet-04	VMSet-05	VMSet-06	VMSet-07
	1 Channel	2 Channels	4 Channels	6 Channels	8 Channels
Hardware					
Sensor for Vibration Measurement	<ul style="list-style-type: none"> - Type: Piezoelectric accelerometer, shear design - Sensitivity: 100 mV/g, linear frequency range: 0.13 .. 22000 Hz - Operating temperature: -20 .. 120 °C - Protection grade: IP67 / Insulated case avoiding ground loop problems - Accessories: Screwable clamping magnet, 5m cable 				
Amount	1	2	4	6	8
Sensor for Reference Position	<ul style="list-style-type: none"> - 1 piece opto-electronic sensor - Scanning range: Maximum 7m, response time: < 330 µs - Protection grade: IP67, operating temperature: -40 .. 60 °C - Accessories: Stand with switchable magnetic base, 5m cable, reflection foil 				
Additional accessories	<ul style="list-style-type: none"> - Angle meter specialized for balancing, precision scale incl. test weight 				
USB Box for Digitization	<ul style="list-style-type: none"> - InnoBeamer X2 - Inputs: 2x analog for vibration sensor(s), 1x digital for photoelectric reflex switch - Signal frequency: 0.1 .. 40000 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	1	1	2	3	4
Software Licenses					
InnoMeter Pro	1x	2x	4x	6x	8x
InnoPlotter Pro	= up to 4 measurement windows for each instrument simultaneously	= up to 8 measurement windows for each instrument simultaneously	= up to 16 measurement windows for each instrument simultaneously	= up to 24 measurement windows for each instrument simultaneously	= up to 32 measurement windows for each instrument simultaneously
InnoScope Pro					
InnoAnalyzer Pro					
InnoAnalyzer Speed Pro					
InnoBalancer Pro			2x	2x	2x
Free Replay	1x	1x	1x	1x	1x

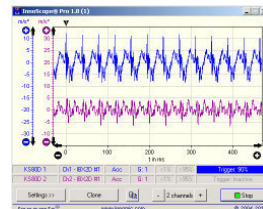
This rich software equipment allows an extensive analysis of the vibrational behavior of your machines/plants. Without further ado, it is possible to take down or extend equipment purposefully. We are at your disposal for advice.



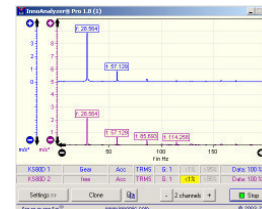
InnoMeter Pro:
Parameters at a glance



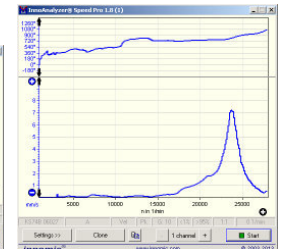
InnoPlotter Pro:
Monitor parameters in time domain



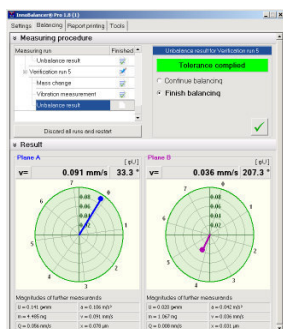
InnoScope Pro:
Display vibrations in time domain



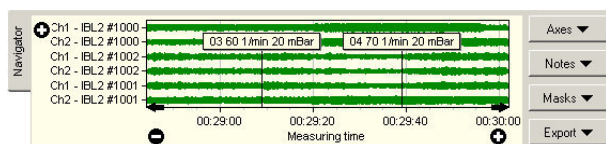
InnoAnalyzer Pro:
There are vibrations at which frequencies?



InnoAnalyzer Speed Pro:
Resonances occur at which rotation speeds?



InnoBalancer Pro:
Precise elimination of unbalances



InnoMaster Replay

Always inclusive: Recording raw data during the measurement. Replay live data with the InnoMaster Replay. By means of **FreeReplay** option, third parties can download VibroMatrix without costs and then analyse the raw data transmitted by you.

Changes without prior notice

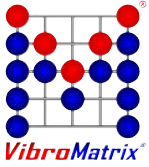
February 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	(03901) 305 99 50 (03901) 305 99 51 info@innomic.de www.innomic.de
--	---

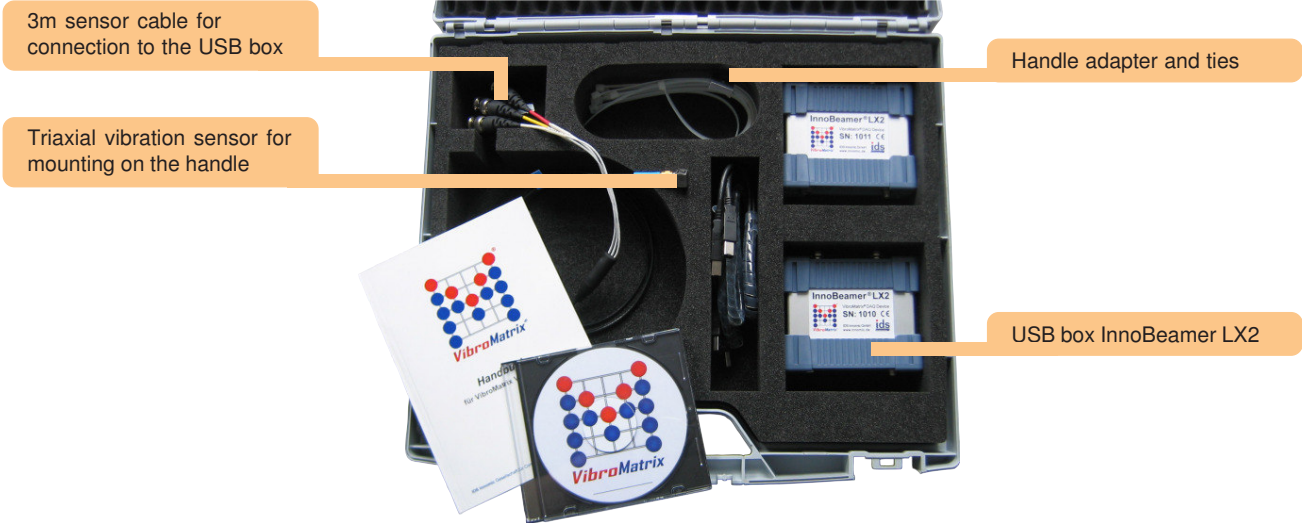
— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	+49 (3901) 305 99 50 +49 (3901) 305 99 51 info@innomic.de www.innomic.com/en
--	---



VibroMatrix® Kit

Kit for human Hand-Arm Vibration Measurement



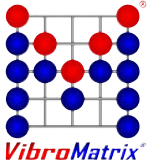
The VMSet-11 and VMSet-12 come in a handy case and provide you with everything you need for the measurement of human hand-arm vibration acc. to ISO 5349:2001 and directive 2002/44/EC.

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-11P	VMSet-11	VMSet-12P	VMSet-12
	Measurement on 1 Handle		Measurement on 2 Handles	
Hardware				
Sensor for Vibration Measurement	- Type: 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	3x Pro	3x	6x Pro	6x



VibroMatrix® Kit

Kit for human Whole-Body Vibration Measurement

Triaxial vibration sensor integrated in a seat pad, 3m cable



USB box InnoBeamer LX2

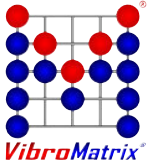
The VMSet-13 comes in a handy case and provides you with everything you need for the measurement of human whole-body vibration acc. to ISO 2631:1997 and directive 2002/44/EC.

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

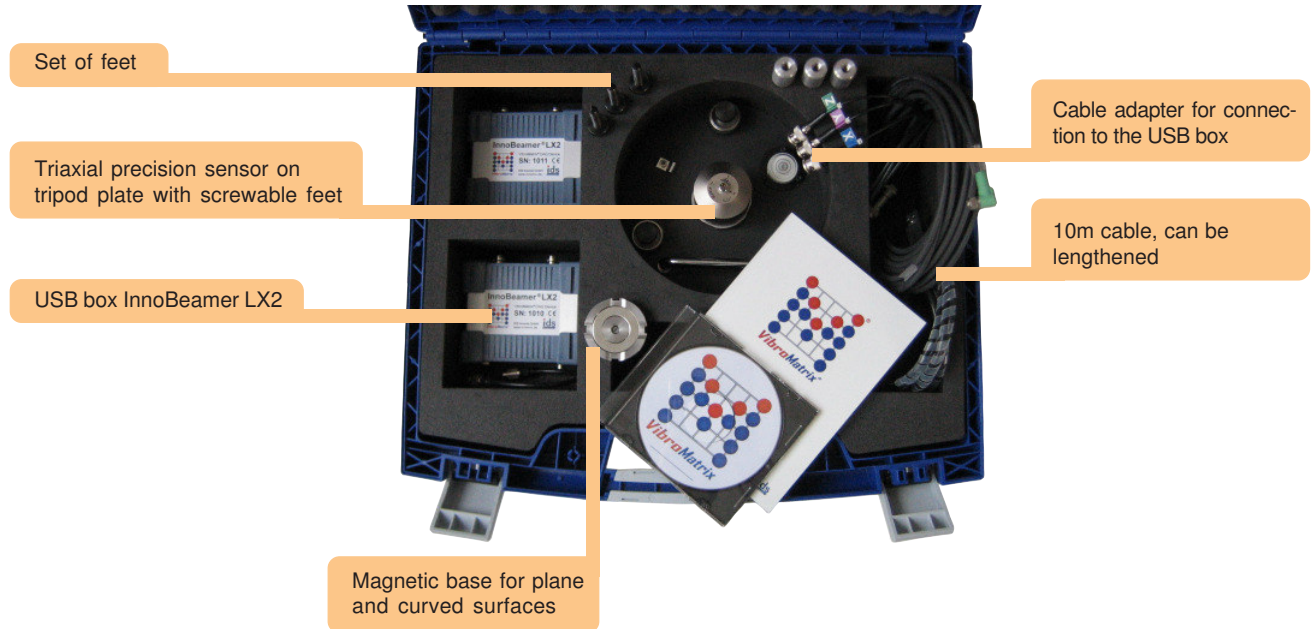
- Each measurement is automatically transferred to the data storage with time stamp and can be completed with your own remarks.
- A calculation sheet for combining different activities to one person-related daily vibration exposure is integrated.
- The Pro version additionally offers frequency analysis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

	VMSet-13	VMSet-13P
Hardware		
Sensor for Vibration Measurement	- 1x Piezoelectric accelerometer with integrated cable - 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	- 2x 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	
Software Licenses		
InnoMeter HVM 2631	3x	3x Pro



VibroMatrix® Kit

Kit for human Vibration Measurement on Ships



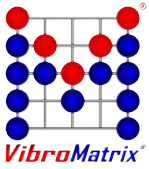
The VMSet-16 comes in a handy case and provides you with everything you need for the measurement of human vibration on ships acc. to ISO 6954:2001.

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

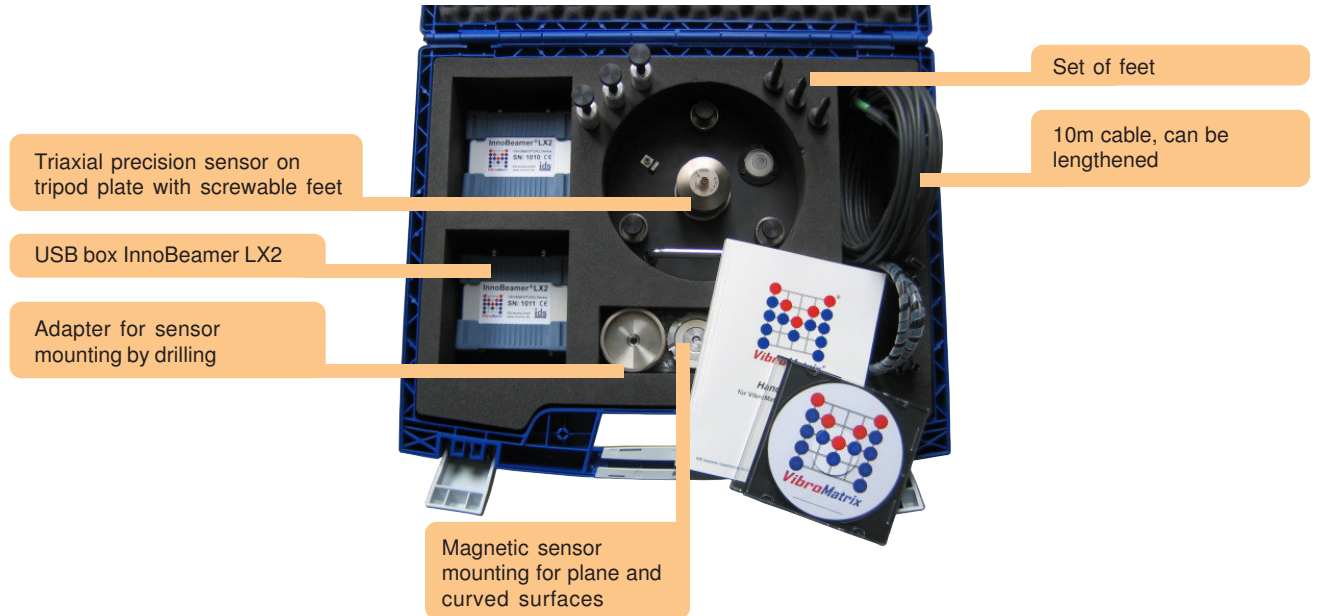
- Each measurement is automatically transferred to the data storage with time stamp and can be completed with your own remarks.
- A calculation sheet for combining different activities to one person-related daily vibration exposure is integrated.
- The Pro version additionally offers frequency analysis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

	VMSet-16	VMSet-16P
Hardware		
Sensor for Vibration Measurement	- 1x Piezoelectric accelerometer, shear design - Sensitivity: 500 mV/g, linear frequency range: 0.07 .. 6000 Hz - Operating temperature: -30 .. 90 °C - Accessories: Clamping magnet, tripod plate with screwable feet, 10m cable, cable adapter to 3x BNC	
USB Box for Digitization	- 2x 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	
Software Licenses		
InnoMeter HVM 5349	3x	3x Pro



VibroMatrix® Kit

Measuring Building Vibration



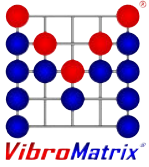
The VMSet-22, -23 and -24 come in a handy case and provide you with everything you need for the measurement of vibrations on buildings acc. to DIN 4150.

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

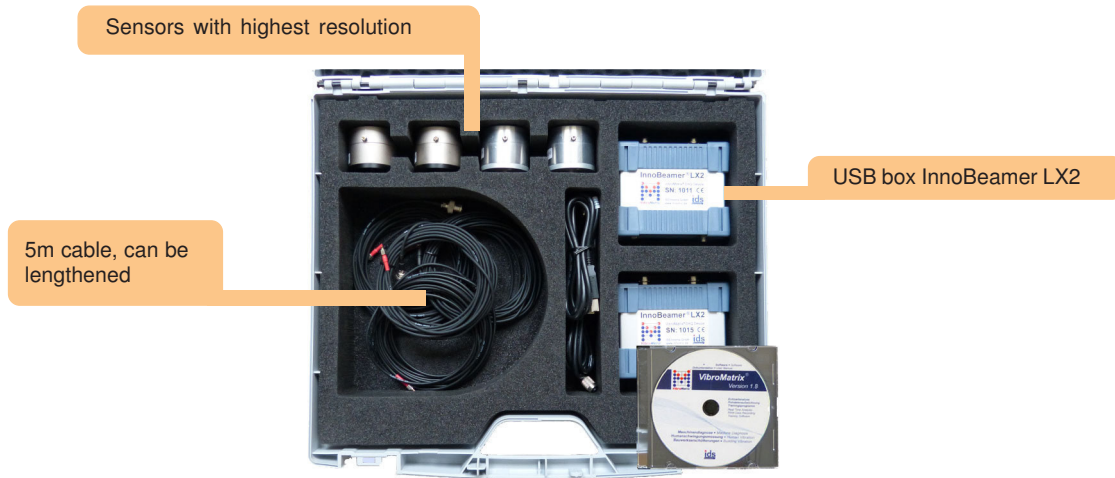
- Each measurement is automatically transferred to the data storage with time stamp and can be completed with your own remarks.
- Alarm by e-mail, lamps or horns can be added.
- The Pro version additionally offers displaying the signal course and a frequency analysis of each event. Thus, each exceedance can be followed in detail if required.

	VMSet-22	VMSet-22P	VMSet-23	VMSet-23P	VMSet-24	VMSet-24P
Hardware						
Sensor for Vibration Measurement	- 1x Piezoelectric accelerometer, shear design - Sensitivity: 500 mV/g, linear frequency range: 0.07 .. 6000 Hz - Operating temperature: -30 .. 90 °C - Accessories: Clamping magnet, wall adapter, tripod plate with screwable feet, 10m cable, cable adapter to 3x BNC					
USB Box for Digitization	- 2x 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					
Software Licenses						
InnoMeter 4150-2	3x	3x Pro	-	-	3x	3x Pro
InnoMeter 4150-3	-	-	3x	3x Pro	3x	3x Pro



VibroMatrix® Kit

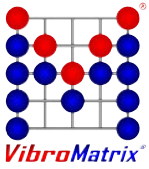
Measuring Microvibrations



The VibroMatrix kit for microvibrations contains all components needed for displaying and recording the slightest vibrations.

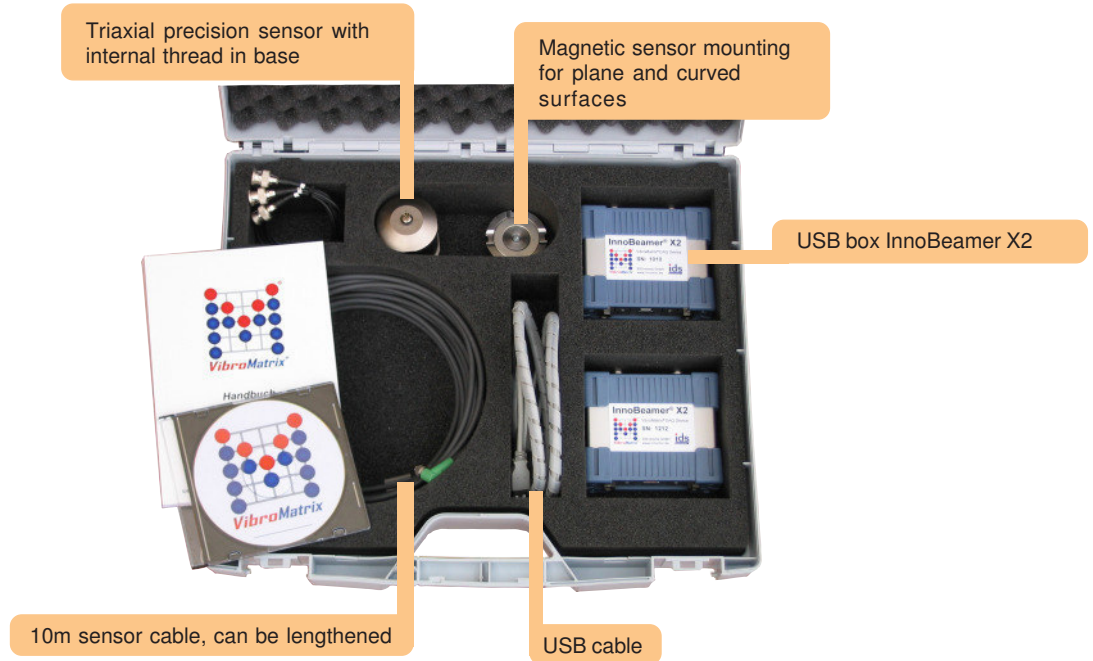
- The high-quality 24-bit digitization of the vibration signal in HD quality is taken by the data converter InnoBeamer LX2.
- The software instruments InnoPlotter Pro and InnoAnalyzer Pro are included for evaluation. They can be adapted to the most diverse parameters of the manufacturers because of their wide setting options and perform long-term-monitoring in time and frequency area.
- By means of limit value curves the instruments can automatically produce graphics of exceedances in order to ensure an unobserved measurement.
- Parallel to measurement / monitoring, a raw data logging can be switched on, additionally. This logged the sensor signals in an untreated condition and with full information content to the hard disk.
- Using the included InnoMaster Replay, these datas can be imported in the instruments. The full information content of the raw signal allows it to configure the instruments completely other than during the measurement time. Nevertheless, the results are exactly the way displayed as if this configuration has existed already at the measurement time.

	VMSet-25	VMSet-26
Hardware		
Sensor for Vibration Measurement	- 1x Piezoelectric accelerometer - Sensitivity: 10000 mV/g, linear frequency range: 0.08 .. 260 Hz - Operating temperature: -20 .. 80 °C - Accessories: 5m cable	
Amount	2	4
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	1	2
Software Licenses		
InnoPlotter Pro	2x	4x
InnoAnalyzer Pro	2x	4x



VibroMatrix® Kit

Vibration Measurement on Wind Energy Turbines



The VMSet-31 comes in a handy case and provides you with everything you need for the vibration measurement on wind energy turbines and their components acc. to VDI 3834.

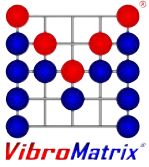
Vibrations in all three axes can be measured simultaneously. The complete solution offers more than small hand-held units:

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

green) are already indicated during the measurement.

- The innovative combined measurement saves up to 50% of measurement time without precision loss.
- Each measurement is automatically transferred to the data storage with time stamp and can be completed with your own remarks.
- The Pro version additionally offers the graphical analysis of the measurement in time and frequency domain. Thus, reasons for augmented values can be detected quickly.

	VMSet-31	VMSet-31P
Hardware		
Sensor for Vibration Measurement	- 1x Piezoelectric accelerometer, shear design - Sensitivity: 500 mV/g, linear frequency range: 0.07 .. 6000 Hz - Operating temperature: -30 .. 90 °C - Accessories: Clamping magnet, 10m cable, cable adapter to 3x BNC	
USB Box for Digitization	- 2x InnoBeamer X2 - Inputs: 2x analog for vibration sensor(s), 1x digital for photoelectric reflex switch - Signal frequency: 0.1 .. 40000 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	
Software Licenses		
InnoMeter 3834	3x	3x Pro



Many instruments of VibroMatrix can transfer measured values and states (e.g. alarms) outward automated. Annunciation can be carried out by different techniques which are described in the following.

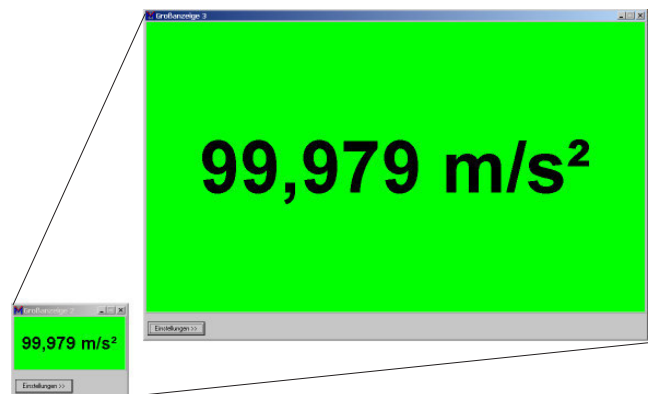
Annunciator display

If VibroMatrix is to be applied for monitoring or inspection tasks (for instance in quality control), work is often divided:

1. Measurement experts define measurement modes as well as limit values and configure the VibroMatrix instruments acc. to these specifications.
2. Measurement staff carries out the measurements afterwards. A clear but also simplified view on the measurement result is required.

This simplified view is fulfilled by the display annunciator. The display is a window adjustable in size, which fills out the complete screen if required. It indicates a measured value or status and colors the text color and the background acc. to the configured specifications.

This free annunciator is always included in VibroMatrix delivery.

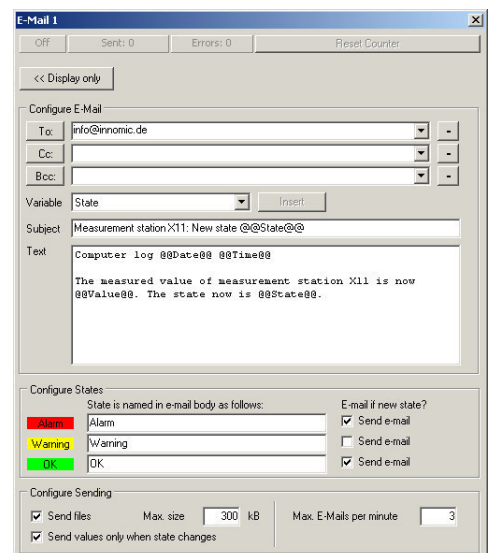


Annunciator e-mail

Long-term measurements with quite few events are often to run unattended. Still, interesting events are to reach the measurement staff.

A suitable way of transmitting data in general is by e-mail. Depending on the instrument, the following VibroMatrix data is transmitted:

- Single values
- Status messages
- Measurement graphics
- Greater amounts of measurement data

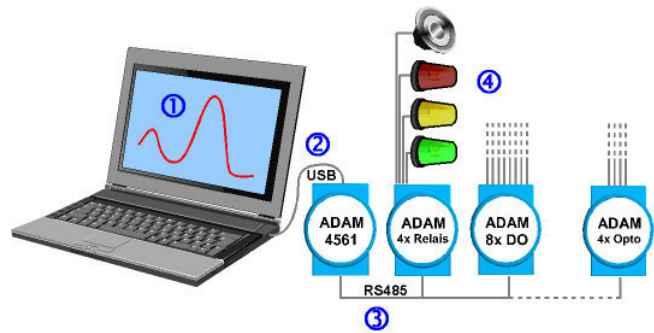


Annunciator **digital output**

A single VibroMatrix system is able to control hundreds of switching outputs. Therefore, VibroMatrix is combined with the industrial ADAM bus system, which can be equipped with as many switching modules as required. The switching modules are available in different variants and offer:

- Relay outputs
- TTL digital outputs
- Electrically insulated digital outputs

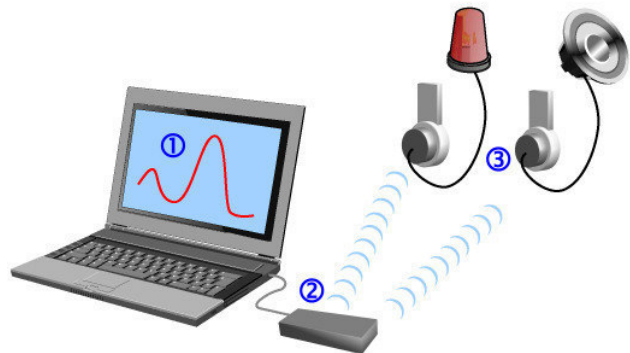
Thus, VibroMatrix - installed stationarily - becomes a powerful alarm system for limit exceedings of vibrations and shocks.



Annunciator **radio switch**

By means of this annunciator, alarm states can be signaled by electric devices. Therefore, the annunciator controls a 230V radio switch which switches the power supply of connected loads. These loads can be alarm lamps, horns, flashlights or other devices as well.

The measurement PC (1) is equipped with a single USB radio control center type FHZ 1000 PC (2). It transfers the switching commands to all associated radio switches (3) by radio communication.



Changes without prior notice

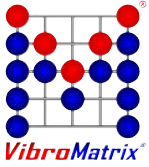
February 2016

— D e u t s c h l a n d —

IDS Innomic Gesellschaft für Computer- und Messtechnik mbH Zum Buchhorst 35 29410 Salzwedel	☎ (03901) 305 99 50 ☎ (03901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.de
--	---

— I n t e r n a t i o n a l —

IDS Innomic GmbH Zum Buchhorst 35 D-29410 Salzwedel Germany	☎ +49 (3901) 305 99 50 ☎ +49 (3901) 305 99 51 ✉ info@innomic.de 🌐 www.innomic.com/en
--	---

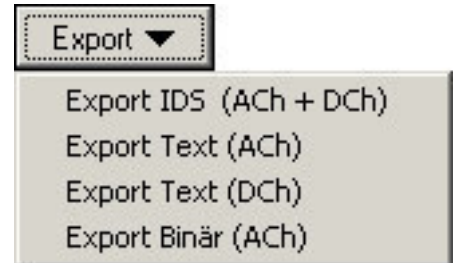


VibroMatrix®

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.

