Occupational Noise & Vibration Product Catalogue 2020

SVANTEK

SVANTEK specialises in the design and manufacture of professional instrumentation for the measurement and analysis of sound & vibration. Established in Warsaw, Poland in 1990, SVANTEK now supplies products across 40 countries, worldwide.

With 28 years of industry experience, the company has established itself as one of the leading innovators in sound & vibration products, with a global reputation for producing some of the most accurate and reliable instruments on the market.

SVANTEK has been the first company in the world that introduced dual-channel noise dosimeter, in 2006. Since that time, the line of Svantek products dedicated for health and safety made a great impact on the noise and vibration exposure measurements techniques. The Svantek mile-stones list includes:

- the first 6-channel human vibration meter
- the first line of MEMS accelerometers for human vibration
- the smallest class 1 sound level meter
- the first noise dosimeter with a life-time warranty for the MEMS microphone
- the first noise dosimeter with octaves and audio recording
- the first vibration dosimeter
- the first vibration calibrator fully meeting ISO 8041

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PC AND SMART-PHONE SOFTWARE

SVAN 971

Class 1
Sound Level Meter

SVAN 971 Sound Level Meter

SVAN 971 is a **CLASS 1** Sound Level Meter in accordance to IEC 61672-1. The meter is **TYPE APPROVED** in many countries around the globe.

The meter is suitable for noise at work measurements in accordance to standards such as **ISO 9612, OSHA, MSHA and ACGIH**.

It is the **SMALLEST** Class 1 instrument on the market. The size and weight are very convenient when making hand-held measurements.

The **TIME HISTORY LOGGING** of results such as Leq, Max, Min and Peak with two simultaneous logging steps is saved on a 8 GB **microSD** card (upgradeable to 128 GB).

The **OLED DISPLAY** is a full color and high contrast so it can be used in a sunlight or even at night. The OLED technology doesn't use back-light giving SVAN 971 more battery operating time. The size of display is a perfect compromise between power savings and visibility.

Once the calibration signal is detected, SVAN 971 starts the **AUTO-CALIBRATION**, saving the calibration data together with the measurement file, both before and after measurement.

The inbuilt **VIBRATION SENSOR** informs meter about vibrations that interfere with noise measurements. In addition, the sensor detects the horizontal position of meter so the meter knows when to **ROTATE** the display.

VOICE ANNOTATIONS (voice comments) before or after the measurements allow easy identification of data files.

SVAN 971 has **USB SOCKET** which can be used for communication with PC software as well as for powering the instrument from an external battery.

One of the biggest advantages of using SVAN 971 is its **POWER EFFICIENCY**. It can run up to 24 hours on one set of 4x AAA batteries.

About SVAN 971

The SVAN 971 is a Class 1 sound level meter in accordance to IEC 61672. The instrument is extremely small but offers unprecedented state of the art technology. For those who do not need to alter the measurement settings, the SVAN 971 has an extremely simple operational mode with only Start/Stop controls. This means that the SVAN 971 is the ideal choice for many applications including industrial noise measurement for health and safety, short term environmental noise monitoring and general noise measurements for acoustic consultants or technical engineers. The instrument is easily calibrated in the field using an acoustic calibrator as the calibration begins automatically when the microphone is inserted into the calibrator. The instrument also includes a built-in vibration sensor that provides information about vibrations that could influence the measurements. The SVAN 971 measures broad-band results with all necessary weighting filters as well as 1/1 octave or 1/3 octave band filters. It also offers time-history logging with two adjustable logging steps. The audio events recording allows to listen and recognize noise sources. The data are stored on a microSD card and can be easily downloaded to a PC using the Supervisor software.

What's inside the SVAN 971 kit?

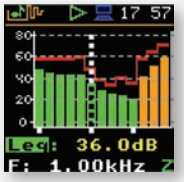
The kit consist of SVAN 971 Class 1 sound level meter with detachable preamplifier SV 18 and high quality omni-directional ACO SV 7052 microphone, compliant to IEC61094-4. The list of accessories includes: SA 22 windscreen, 8 GB microSD card, four AAA batteries, USB cable, and CD with user manual. Each SVAN 971 has its factory calibration certificate and 36 months warranty card.

PC Software for SVAN 971

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational noise exposure from noise level measurements in accordance to all standards using TWA and DOSE such as OSHA, ACGIH, MSHA, NR-15 or NHO-01. The data files from the SVAN 971 can be used for calculation of all required measurement results and uncertainties in accordance to the three measurement strategies described in ISO 9612.

Optional functions

AUDIO RECORDING is synchronized with a noise time-history and it can be opened and played back in Supervisor software enabling noise source recognition. The recording is programmable, it can be triggered on threshold or time and the length of recording can be set as well. It can be activated at any time by ordering the activation code.

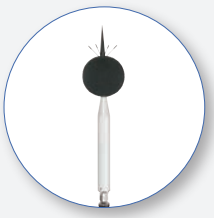


FREQUENCY ANALYSIS of the signal in 1/1 or 1/3 octave bands. The 1/1 octave analysis is often used for selection of hearing protectors. The 1/3 octave function allows to determine the influence of high or low frequencies on overall values. It can be activated at any time by ordering the activation code.

DOSIMETER option provides results such as: DOSE, DOSE_8h, PrDOSE, LAV, LAE (SEL), LAE8 (SEL8), PLAE (PSEL), E, E_8h, LEPd, PTC PEAK COUNTER), PTP (PEAK THRESHOLD %), ULT (UPPER LIMIT TIME), TWA, PrTWA, Lc-a and the selection of exchange rate between 2, 3, 4, 5, 6. It can be activated at any time by ordering the activation code.

Optional accessories to SVAN 971

SC 91
Microphone
Extension Cable



SA 271
Microphone
Outdoor
Protection Kit

SM 271 LITE
Outdoor
Monitoring
Case

SV 36 Class 1
Acoustic Calibrator
94 dB / 114 dB
at 1 kHz

SA 420B
Tripod Up To
4 m Height

SVAN 971 Technical Specifications

Standards	Class 1: IEC 61672-1:2013,Class 1: IEC 61260-1:2014 (Type Approved)	
Weighting Filters	A, B, C, Z, LF	
Time Constants	Slow, Fast, Impulse	
RMS Detector	Digital True RMS detector with Peak detection, resolution 0.1 dB	
Microphone	ACO SV 7052E, 35 mV/Pa, prepolarised 1/2" condenser microphone	
Preamplifier	SV 18 detachable (60 UNS thread)	
Linear Operating Range	25 dBA RMS ÷ 140 dBA Peak (in accordance to IEC 61672)	
Dynamic Measurement Range	15 dBA RMS ÷ 140 dBA Peak (typical from noise floor to the maximum level)	
Internal Noise Level	Less than 15 dBA RMS	
Dynamic Range	>110 dB	
Frequency Range	10 Hz ÷ 20 kHz	
Meter Mode Results	Elapsed time, Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), where x - weighting filter A/ B/ C/ Z; y - time constant Fast/ Slow/ Impulse LR (ROLLING LEQ OPTION), Ovl (OVERLOAD), Lxye (SEL), LN (LEQ STATISTICS), Lden, LEPd, Ltm3, Ltm5	
Dosimeter Mode Results	Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), DOSE, (optional) DOSE_8h, PrDOSE, LAV, Lxye (option) (SEL), Lxye8 (SEL8), PLxye, (PSEL), E, E_8h, LEPd, PTC (PEAK COUNTER), PTP (PEAK THRESHOLD %), ULT (UPPER LIMIT TIME), TWA, PrTWA, Lc-a Exchange Rate 2, 3, 4, 5, 6	
Measurement Profiles	Simultaneous measurement in three profiles with independent set of filters (x) and detectors (y)	
Statistics[1]	Ln (L1-L99), complete histogram in meter mode	
Data Logger[1]	Time-history logging of summary results, spectra with two adjustable logging steps down to 100 ms	
1/1 Octave Analysis[1] (optional)	Real-time analysis meeting Class 1 requirements of IEC 61260, centre frequencies from 31.5 Hz to 16 kHz	
1/3 Octave Analysis[1] (optional)	Real-time analysis meeting Class 1 requirements of IEC 61260, centre frequencies from 20 Hz to 20 kHz	
Audio Recording[1] (optional)	Audio events recording, trigger and continuous mode, 12 kHz sampling rate, wav format	
Voice Comments	Audio records on demand, created before or after measurement, added to measurement file	
Ingress Protection Rating	IP 65 (excluding microphone)	
Memory	MicroSD card 8 GB (removable & upgradeable up to 128 GB)	
Display	Colour 96 x 96 pixels OLED type	
Keyboard	8 push buttons	
Communication Interfaces	USB 2.0 client	
	SV 76 RS 232 cable with external power supply connector (optional)	
Power Supply	Four AAA alkaline or rechargeable NiMH batteries (not included)	
	operation time	16 h ÷ 24 h[2]
	USB interface	100 mA HUB
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity	up to 95 % RH, non-condensed
Physical Characteristics	Dimensions	232.5 mm x 56 x 20 mm (including microphone and preamplifier)
	Weight	Approx. 225 grams with batteries

[1]function parallel to the meter mode
[2]depending on configuration and environmental conditions

The policy of our company is to continually innovate and develop our products. Therefore, we reserve the right to change the specifications without prior notice.

SV 973

Class 2 Sound Level Meter & Sound Exposure Meter

SV 973 Sound Level Meter & Sound Exposure Meter

SV 973 **Sound Level Meter** is CLASS 2 instrument in accordance to IEC 61672.

Sound exposure meter mode with measurement range up to 141 dB Peak.

Wide frequency range up to **10 kHz** in sound level meter mode.

Microphone in **MEMS** technology with lifetime warranty.

Automatic calibration starts the calibration and saves the calibration data together with the measurement file, both before and after measurement.

The **OLED display** is a full color and high contrast so it can be used in a sunlight or even at night. The OLED technology doesn't use back-light giving SV 973 more battery operating time. The size of display is a perfect compromise between power savings and visibility.

The **time history logging** of results such as Leq, Max, Min and Peak is saved on built-in 8 GB memory.

The SV 973 can perform real-time frequency analysis in **1/1 octave** and **1/3 octave** bands (optional).

Optional **Audio recording** works during measurement and is logged in parallel to the time history.

Voice comments before or after the measurements allow easy identification of data files.

The **USB-C connector** can be used for communication with PC software as well as for powering the instrument from an external battery or PC.

About SV 973

SV 973 combines Class 2 sound level meter and sound exposure meter in one device. The meter has been designed in accordance to IEC 61672 and offers a wide frequency range up to 20 kHz (in the sound level meter mode).
The unique feature of the SV 973 is the microphone in MEMS technology with a lifetime warranty.
The meter's measurement range from 26 to 128 dB enables its use in industrial and environmental noise measurements. For measurements of noise at work, the dedicated sound exposure meter function shifts the dynamic measuring range of sound level meter to 141 dB Peak.

The instrument is easily calibrated in the field using an acoustic calibrator as the calibration begins automatically when the microphone is inserted into the calibrator.
The SV 973 can measure broad-band results with all the necessary weighting filters as well as 1/1 octave or 1/3 octave band filters. Audio events recording function works together with sound level meter mode.
The data are stored on built-in 8 GB memory and can be easily downloaded to a PC using the Supervisor or SVANPC++ software.

What's inside the SV 973 kit?

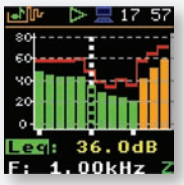
The kit consist of SV 973 Class 2 sound level meter equipped with a new robust MEMS microphone with a life-time warranty. The kit includes: SA 22 windscreen, 8 GB built-in memory, four AAA batteries, USB cable, and CD with user manual. Each SV 973 has its factory calibration certificate and 36 months warranty card.

PC Software for SV 973

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational noise exposure from noise level measurements in accordance to all standards using TWA and DOSE such as OSHA, ACGIH, MSHA, NHO-01 or NR-15. The data files from the SV 973 can be used for calculation of all required measurement results and uncertainties in accordance to the three measurement strategies described in ISO 9612.

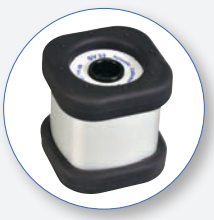
Optional functions

AUDIO RECORDING is synchronized with a noise time-history and it can be opened and played back in Supervisor software enabling noise source recognition. The recording is programmable, it can be triggered on threshold or time and the length of recording can be set as well. It can be activated at any time by ordering the activation code.



FREQUENCY ANALYSIS of the signal in 1/1 or 1/3 octave bands. The 1/1 octave analysis is often used for selection of hearing protectors. The 1/3 octave function allows to determine the influence of high or low frequencies on overall values. It can be activated at any time by ordering the activation code.

Optional accessories to SV 973



SV 34 Class 2
Acoustic Calibrator
114 dB at 1 kHz

SA 47M
Carrying Bag
Fabric Material

SA 21
Tripod

SV 973 Technical Specifications

Sound Level Meter

Standards	Class 2: IEC 61672-1:2013
Weighting Filters	A, B, C, Z, LF
Time Constants	Slow, Fast, Impulse
RMS Detector	Digital True RMS detector with Peak detection, resolution 0.1 dB
Microphone	MEMS ST 973 microphone in 1/2" casing
Preamplifier	Integrated
Total Dynamic Range	26 dBA RMS ÷ 128 dBA Peak (typical from noise floor to the maximum level)
Linear Operating Range	33 dBA RMS ÷ 128 dBA Peak (in accordance to IEC 61672)
Internal Noise Level	Less than 26 dBA RMS
Frequency Range	20 Hz ÷ 10 kHz
Meter Mode Results	Elapsed time, Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), where x - weighting filter A/ B/ C/ Z; y - time constant Fast/ Slow/ Impulse Ovl (OVERLOAD), Lxye (SEL), LN (LEQ STATISTICS), Lden, LEPd, Ltm3, Ltm5
Measurement Profiles	Simultaneous measurement in three profiles with independent set of filters (x) and detectors (y)
Statistics	Ln (L_1-L_{99}), complete histogram in meter mode
Data Logger[1]	Time-history logging of summary results, spectra with two adjustable logging steps down to 100 ms
Audio Recording[1] (optional)	Audio events recording, trigger and continuous mode, 12 kHz sampling rate, WAV format
Voice Comments	Audio records on demand, created before or after measurement, added to measurement file

Sound Exposure Meter

Total Dynamic Range	48 dBA RMS ÷ 141 dBA Peak (typical from noise floor to the maximum level)
Linear Operating Range	55 dBA RMS ÷ 141 dBA Peak (in accordance to IEC 61672)
Frequency Range	20 Hz ÷ 20 kHz
Exchange Rates	2, 3, 4, 5, 6
Measurement Results	Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), where x - weighting filter A/ C/ Z; y - time constant Fast/ Slow/ Impulse Lc-a, DOSE, DOSE_8h, PrDOSE, LAV, LAE (SEL), LAE8 (SEL8), PLAE, (PSEL), E, E_8h, LEPd, PTC (PEAK COUNTER), PTP (PEAK THRESHOLD %), ULT (UPPER LIMIT TIME), TWA, PrTWA, LN (LEQ STATISTICS), Measurement time, OVL (OVERLOAD TIME %), No Motion time

Frequency Analyser

1/1 Octave Analysis Filters[1]	Real-time analysis meeting Class 1 requirements of IEC 61260-1:2014, centre frequencies from 31.5 Hz to 16 kHz (optional)
1/3 Octave Analysis Filters[1]	Real-time analysis meeting Class 1 requirements of IEC 61260-1:2014, centre frequencies from 20 Hz to 20 kHz (optional)

General Information

Memory	Built-in 8 GB memory	
Display	Colour 96 x 96 pixels OLED type	
Keyboard	8 push buttons	
Communication Interfaces	USB-C	
Power Supply	Four AAA alkaline or rechargeable NiMH batteries (not included)	
	operation time	16 h - 24 h[2]
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity	up to 95 % RH, non-condensed
Physical Characteristics	Dimensions	235 mm x 56 x 20 mm with microphone and preamplifier
	Weight	Approx. 225 grams with batteries

[1]function parallel to the meter mode
[2]depending on configuration and environmental conditions

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Therefore, we reserve the right to change the specifications without prior notice.

SVAN 977A

Sound & Vibration
Level Meter & Analyser

SVAN 977A Sound & Vibration Level Meter & Analyser

SVAN 977A Class 1 **SOUND & VIBRATION** Level Meter and analyser is designed to meet the needs of both environmental monitoring and occupational health and safety monitoring specialists.

SVAN 977W **TYPE APPROVED WELMEC** version is available.

If you disconnect the microphone preamplifier, you can use the instrument to take **VIBRATION** measurements - simply by connecting a cable and a vibration sensor.

The microphone preamplifier has been **REINFORCED** with a metal collar to protect it against mechanical damage.

The **TIME HISTORY LOGGING** of results such as Leq, Max, Min and Peak with two simultaneous logging steps is saved on a 16 GB **microSD** card (upgradeable to 128 GB).

Large **OLED DISPLAY** is a full color and **HIGH CONTRAST** so it can be used in a sunlight or night. The OLED technology doesn't use back-light giving SVAN 977A more battery operating time.

With a special microphone the meter provides measurement range of the **ULTRASOUNDS** up to 40 kHz.

The **Bluetooth®** interface connects the meter with the SvanMobile application that allows the user to trigger measurements, edit settings, rename files and view the results remotely.
Anyone who makes measurements in the environment will appreciate the ability of SvanMobile to automatically add weather data and **GPS** position to the measurement report.
SvanMobile also allows to link measurement files from the sound level meter to media files from the smartphone such as photos, videos or audio recordings.

About SVAN 977A

The SVAN 977A is a Class 1 Sound and Vibration meter designed for occupational and environmental measurement applications. It provides broad-band results such as Leq, Max, Min and Peak with all standard weighting filters together with an incredible time-history logging feature with two adjustable logging steps.
One unique feature of the SVAN 977A is ultrasound measurement band up to 40 kHz. The ultrasound band is normally considered as the frequency range above 20 kHz.
Ultrasound is used in a number of industrial processes such as cleaning, drilling or welding as well as hospitals for medical procedures.
The built-in Bluetooth® interface together with smart-phone application, SvanMobile, extends measurement capabilities with all the features offered by smartphones including text/voice comments, photo, video, GPS position etc.

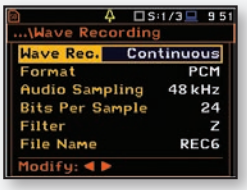
Software for SVAN 977A

SvanPC++ is a PC software supporting functions such as measurement data downloading from instruments to PC, measurement setups creation, basic Leq/RMS recalculation, measurement results in text, table and graphical form of presentation, export data to a spread sheet or text editor applications. New version of SvanPC++ software also supports analysis of wave files from Svantek's instruments (for example calculation of tonality).

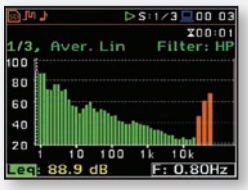
Supervisor is a dedicated software for determination of occupational noise & vibration exposure. It supports data download, instrument configuration and provides tools for reporting. The data files from the SVAN 977A can be used for calculation of all required measurement results and uncertainties in accordance to measurement strategies described in ISO 9612.

SvanMobile is an application for Android devices that uses the Bluetooth® connection to control the SVAN 977A. It allows the user to trigger measurements, edit settings, rename files and view the results remotely. Anyone who makes measurements in the environment will appreciate the ability of SvanMobile to automatically add weather data and GPS position to the measurement report. SvanMobile also allows to link measurement files from the sound level meter to media files from the smartphone such as photos, video or audio recordings.

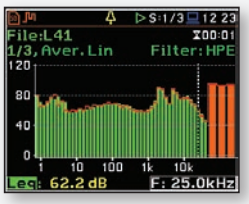
Optional functions



TIME SIGNAL RECORDING means recording the raw signal samples with defined frequency up to 48 kHz. Analysis of the raw signal is used whenever frequency analysis is not sufficient. Post-processing of high quality wave files (48 kHz, 24 bit) such as calculation of tonality is available in SvanPC++ program. Time domain signal is recorded in a wave format which means that it can be played back in the PC software and used for noise source recognition (audio recording).



The option **1/3 OCTAVE** real-time analysis allows accurate and correct selection of hearing protectors. When presented as a spectrogram, the octave analysis can be used for quick verification of noise sources in the time history. It can be activated at any time, by ordering an activation code.



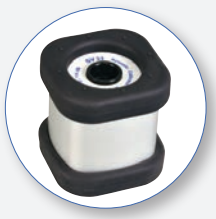
With an optional microphone and 1/3 octave or FFT analysis SVAN 977A provides analysis of the **ULTRASOUNDS** up to 40 kHz. The ultrasound band is normally considered as the frequency range above 20 kHz. Limits of permissible ultrasound levels are usually expressed in terms of Leq and Max values specified in 1/3 octave bands for 20 kHz, 25 kHz, 31.5 kHz and 40 kHz.

Optional accessories for SVAN 977A

SC 26
Extension Cable
for Preamplifier

SA 277
Microphone
Outdoor
Protection Kit

SM 277 PRO
Outdoor
Monitoring
Case



SV 36 Class 1
Acoustic Calibrator
94 dB / 114 dB
at 1 kHz

SV MK202E
Ultrasound
Microphone up to
40 kHz band

What's inside the SVAN 977A kit?

The kit consists of SVAN 977A Class 1 sound & vibration level meter with a detachable preamplifier SV 12L and high quality omni-directional ACO SV 7052E microphone, compliant to IEC61094-4. The list of accessories includes: SA 143 carrying case, SA 22 windscreen, 8 GB microSD card, four AA batteries, USB cable, and CD with user manual. Each SVAN 977A has its factory calibration certificate and 36 months warranty card.

SVAN 977A Technical Specifications

Sound Level Meter & Analyser

Standards	Class 1: IEC 61672-1:2013; Class 1: IEC 61260-1:2014
Weighting Filters	A, B, C, Z, LF, U, AU
Time Constants	Slow, Fast, Impulse
Microphone	ACO SV 7052E, 35 mV/Pa, prepolarised 1/2" condenser microphone
Preamplifier	SV 12L detachable (TNC)
Linear Operating Range	25 dBA RMS ÷ 140 dBA Peak (in accordance to IEC 61672)
Total Dynamic Measurement Range	15 dBA RMS ÷ 140 dBA Peak (typical from noise floor to the maximum level)
Internal Noise Level	Less than 15 dBA RMS
Dynamic Range	>110 dB
Frequency Range	10 Hz ÷ 20 kHz with ACO SV 7052E
Meter Mode Results	Elapsed time, Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), LR (ROLLING LEQ), Ovl (OVERLOAD), Lxye (SEL), LN (LEQ STATISTICS), Lden, LEPd, Ltm3, Ltm5
Measurement Profiles	Simultaneous measurement in three profiles with independent set of filters (x) and detectors (y)
Analyser[1] (optional)	1/1 octave or optional 1/3 octave real-time analysis, up to 40.0 kHz band meeting Class 1: IEC 61260-1 FFT analysis 1600 lines, up to 40.0 kHz band (optional) RPM rotation speed measurement parallel to the vibration measurement (optional)
Statistics	L_n (L_1-L_{99}), complete histogram in meter mode and 1/1 or 1/3 octave analysis
Data Logger[1]	Time-history logging of summary results, spectra with adjustable double logging steps down to 2 ms
Audio Recording[1] (optional)	Audio records to time-history data or WAV format with selectable band and recording period

Vibration Level Meter & Analyser

Standards	ISO 20816-1
Meter Mode	RMS, Max, Peak, Peak-Peak Simultaneous measurement in three profiles with independent filter sets and detectors
Filters	HP1, HP3, HP10, Vel1, Vel3, Vel10, VelMF, Dil1, Dil3, Dil10, Wh
Accelerometer	SV 80 (100 mV/g) or any IEPE accelerometer (optional)
Analyser[1] (optional)	1/1 octave or optional 1/3 octave real-time analysis, up to 40.0 kHz band meeting Class 1: IEC 61260-1 FFT analysis 1600 lines, up to 40.0 kHz band (optional) RPM rotation speed measurement parallel to the vibration measurement (optional)
Data Logger	Time-history logging of summary results, spectra with two adjustable logging steps
Time-domain Signal Recording[1]	Continuous or triggered time-domain signal recording to WAV format (optional)

General information

Input	IEPE with TNC connector	
Memory	MicroSD card 16 GB (removable & upgradeable)	
Display	Super contrast (10000:1) OLED 2.4" colour display (320 x 240 pixels)	
Interfaces	USB 2.0 Client, Bluetooth®, RS 232 (with optional SV 55)	
	External I/O - AC output (1 V Peak) or Digital Input/Output (Trigger – Pulse)	
Power Supply	Four AA batteries	operation time > 12 h (6 V / 2 Ah)[2]
	Four rechargeable AA batteries	operation time > 16 h (4.8 V / 2.6 Ah)[2] (not included)
	External power supply	6 V/500 mA DC ÷ 15 V/250 mA DC
	USB interface	500 mA HUB
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity	up to 90 % RH, non-condensed
Dimensions	340 x 79 x 39 mm (with microphone and preamplifier)	
Weight	Approx. 0.6 kg with batteries	

[1]works together with the meter mode
[2]dependent on instrument operation mode

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SV 104A
Noise Dosimeter

MICROPHONE LIFETIME WARRANTY
MICROPHONE LIFETIME WARRANTY

INTELLECTUAL PROPERTY
PATENTED MICROPHONE
INTELLECTUAL PROPERTY

SV 104A Noise Dosimeter

The dosimeter has been designed to meet requirements of the **ANSI S1.25** and **IEC 61252** standards for noise dosimeters and the **IEC 61672** standard for class 2 sound level meters.

The dosimeter is suitable for noise exposure measurements in accordance with the following standards: **ISO 9612, OSHA, MSHA** and **ACGIH.**

The colour graphical display is an **OLED SCREEN** with a high contrast visibility even in full daylight or in low ambient light areas.

The **2.0 USB** interface provides fast data download and is used for battery charging.

The SV 104A is **FULLY CONFIGURABLE** in Supervisor software. Settings such as exchange rate, time constants, measurement time, start, stop or pause can be adjusted and saved in the instruments' memory as setup files.

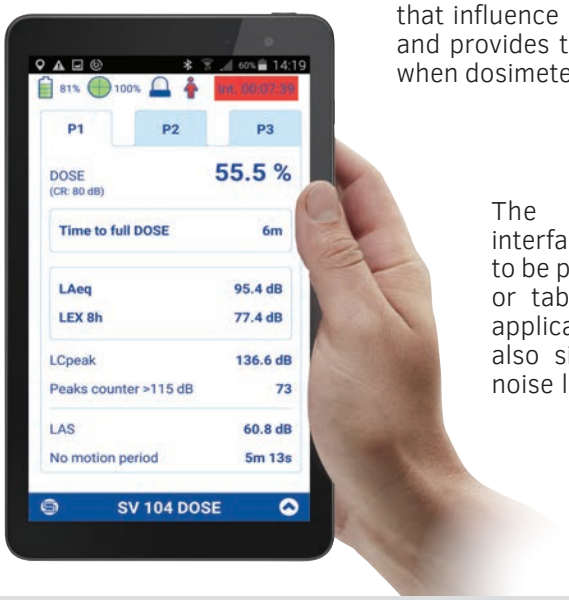
The **TIME HISTORY LOGGING** of results such as Leq, Max, Min and Peak with two simultaneous logging steps is saved in **8 GB** memory. All dosimetry results such as DOSE, TWA, Lav are also included.

Patented **MEMS MICROPHONE** is resistant to mechanical shocks and accidental drop downs. The excellent stability of measurement parameters over the years of use is confirmed by the **MICROPHONE LIFETIME WARRANTY**.

The **AUTO-CALIBRATION** facility detects a calibration signal and automatically starts the calibration process, saving the calibration data together with the measurement file, both before and after measurement.

The **VOICE ANNOTATIONS** before or after the measurements allow easy identification of data files.

The inbuilt tri-axial **VIBRATION SENSOR** detects mechanical shocks and vibrations that influence noise measurement results and provides the information on the time when dosimeter is not used by the worker.



The SV 104A **BLUETOOTH®** interface enables current results to be previewed on a smart-phone or tablet using our **ASSISTANT** application. The smart-phone app also signals an alarm when set noise limits are exceeded.

About SV 104A

The SV 104A is the first noise dosimeter on the market with a life-time warranty for the MEMS microphone that is resistant to accidental shocks, knocks or even fall-downs.
The SV 104A Bluetooth® interface enables current results to be previewed on a smart-phone or tablet using our Assistant application. The smart-phone application also signals an alarm when the set noise limits are exceeded.
All vibrations that affect noise measurement results are detected by an inbuilt tri-axial vibration accelerometer and are marked in the results time history, so they can be easily excluded from dose calculation. Additionally, the accelerometer detects if dosimeter is not used by the worker and marks this information in time history.
We have designed the SV 104A to make noise dosimetry measurements easier, once the SV 104A detects a calibration signal, it calibrates automatically saving the calibration data together with the measurement file, before and after measurement.
Options for 1/1 & 1/3 octave and Audio Event Recording allow selection of hearing protectors and noise sources recognition.

What's inside the SV 104A kit?

The standard SV 104A kit includes patented ST 104A shock resistant MEMS microphone with the **LIFE-TIME WARRANTY**, windscreen with a steel mounting thread and a USB cable for communication with PC. The instrument has an inbuilt 8 GB memory and a long-range Bluetooth® interface for communication with Assistant application. Each SV 104A has its factory calibration certificate and a **36-MONTH WARRANTY CARD**. The standard kit also includes license for PC software and Assistant application for smart-phones.

Supervisor Software

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational noise exposure from noise level measurements in accordance to all standards using TWA and DOSE such as OSHA, ACGIH, MSHA, NHO-01 or NR-15. The data files from the SV 104A can be used for calculation of all required measurement results and uncertainties in accordance to the three measurement strategies described in ISO 9612.

Assistant Application

The SV 104A Bluetooth® interface enables current results to be previewed on a smart-phone or tablet using our **ASSISTANT APPLICATION**. The smart-phone application also signals an alarm when the set noise limits are exceeded.

GET IT ON Google Play

Download on the App Store

Optional functions

The option for **1/1 AND 1/3 OCTAVE** real-time analysis allows accurate and correct selection of hearing protectors. When presented as a spectrogram, the octave analysis can be used for quick verification of noise sources in the time history. It can be activated at any time, by ordering an activation code.

The **AUDIO EVENTS RECORDING** option works during measurement and is logged in parallel to time history so it can be played back in the PC software. The settings, like triggers or recording time, are adjustable. It can be activated at any time, by ordering an activation code.

Optional accessories for SV 104A

SB 104B-1
Docking Station for
Single Dosimeter

SB 104B-5
Docking Station
for 5 Dosimeters

SA 147
Waterproof
Carrying Case

SV 34
Class 2 Acoustic
Calibrator

SA 122A
Spare Windscreen

SV 104A Technical Specifications

Standards	IEC 61252 ed1.1 (2002); ANSI S1.25-1991 (R2007) Class 2 IEC 61672-1 ed2.0 (2013)	
Weighting Filters	A, C and Z	
Time Constants	Slow, Fast, Impulse	
Exchange Rates	2, 3, 4, 5, 6	
Measurement Results	Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), where x - weighting filter A/ C/ Z; y - time constant Fast/ Slow/ Impulse Lc-a, DOSE, DOSE_8h, PrDOSE, LAV, LAE (SEL), LAE8 (SEL8), PLAE, (PSEL), E, E_8h, LEPd, PTC (PEAK COUNTER), PTP (PEAK THRESHOLD %), ULT (UPPER LIMIT TIME), TWA, PrTWA, LN (LEQ STATISTICS), Measurement time, OVL (OVERLOAD TIME %), No Motion Time	
Measurement Profiles	3 with independent settings of filters (x) and time constants (y)	
Microphone	ST 104A MEMS microphone, 1/2” housing, patented	
Linear Operating Range	53 dBA RMS ÷ 141 dBA Peak (in accordance to IEC 61672)	
Total Dynamic Range	43 dBA RMS ÷ 141 dBA Peak (typical from noise floor to the maximum level)	
Dynamic Range	98 dB	
Frequency Range	20 Hz ÷ 10 kHz	
Data Logging[1]	Summary results for measurement time Time-history logging of Leq/Max/Min/Peak and octave spectrum with 1s logger step	
Voice Comments	Audio records on demand, created before or after measurement, added to a measurement file	
Audio Recording[1] (optional)	Audio events recording, trigger and continuous mode, 12 or 24 kHz sampling rate, WAV format	
1/1 Octave[1] (optional)	Real-time analysis in octave band filters, Class 1 IEC 61260; 9 filters with center frequencies from 31.5 Hz to 8 kHz	
1/3 Octave[1] (optional)	Real-time analysis in 1/3 octave band filters, Class 1 IEC 61260; 28 filters with center frequencies from 20 Hz to 10 kHz	
Display	Colour OLED 128 x 64 pixels	
Ingress Protection	IP 65	
Memory	8 GB	
Interfaces	USB 2.0 client, electrical contacts (SB 104B-1 and SB 104B-5 docking station compatible) Long-range Bluetooth®, 4.0 Smart	
Keyboard	3 push buttons	
Power Supply	Li-Ion rechargeable cell operation time > 48 hours[2]	
	USB interface	500 mA HUB
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity up to 90 % RH, non-condensed	
Dimensions	88 x 49.5 x 19.2 mm	
Weight	121 grams	

[1]function parallel to the meter mode
[2]depending on configuration and environmental conditions

The policy of our company is to continually innovate and develop our products.
Therefore, we reserve the right to change the specifications without prior notice.

SV 104 BIS

Intrinsically Safe Noise Dosimeter

SV 104 BIS Intrinsically Safe Noise Dosimeter

The SV 104 BIS is the **INTRINSICALLY SAFE** personal noise dosimeter in accordance to **ATEX** directive and **IECEx** certification scheme.

The dosimeter has been designed to meet requirements of the **ANSI S1.25** and **IEC 61252** standards for noise dosimeters and the **IEC 61672** standard for class 2 sound level meters.

The colour graphical display is an **OLED SCREEN** with a high contrast visibility even in full daylight or in low ambient light areas.

The SV 104 BIS is **FULLY CONFIGURABLE** in Supervisor software. Settings such as exchange rate, time constants, measurement time, start, stop or pause can be adjusted and saved in the instruments' memory as setup files.

The **TIME HISTORY LOGGING** of results such as Leq, Max, Min and Peak with two simultaneous logging steps is saved in internal memory. All dosimetry results such as DOSE, TWA, Lav are also included.

The new **DOCKING STATIONS** enable charging and fast data transfer.

The **MEMS MICROPHONE** is resistant to mechanical shocks and accidental drop downs. The excellent stability of measurement parameters over the years of use is confirmed by the **MICROPHONE LIFETIME WARRANTY**.

The dosimeter is suitable for noise exposure measurements in accordance to the **ISO 9612** as well as **OSHA, MSHA** and **ACGIH** standards.

The **AUTO-CALIBRATION** facility detects a calibration signal and automatically starts the calibration process, saving the calibration data together with the measurement file, both before and after measurement.

The inbuilt tri-axial **VIBRATION SENSOR** detects shocks and vibrations that influence noise measurement results and provides the information on the time when dosimeter is not used by the worker.

The **VOICE ANNOTATIONS** before or after the measurements allow easy identification of data files.

The SV 104 BIS long-range **Bluetooth®** interface enables current results to be previewed on a smart-phone or tablet using our **ASSISTANT** application. The smart-phone app also signals an alarm when set noise limits are exceeded.

About SV 104BIS

The SV 104 BIS is a new version of our revolutionary SV104 IS personal noise dosimeter, the first noise dosimeter on the market with a life-time warranty on a microphone. The SV 104 BIS is an intrinsically safe noise dosimeter with a robust 1/2" patented MEMS microphone enabling easy calibration using most commonly available acoustic calibrators. The new microphone has a large dynamic range of the 96 dB which allows to measure noise from 55 dBA Leq to 141 dBA Peak. The long list of microphone advantages includes also the auto-calibration feature and TEDS memory that stores the calibration info in the microphone itself. The auto-calibration means performing acoustic calibration automatically once the microphone is inserted into the calibrator. The SV 104 BIS is a cable-free dosimeter and is typically attached to the user's shoulder, close to the ear using the mounting clips supplied. All results are clearly displayed on the amazing OLED screen which offers excellent visibility even in a full daylight or darkness.

The SV 104 BIS Bluetooth® interface enables current results to be previewed on a smart-phone or tablet using our Assistant application. The smart-phone application also signals an alarm when the set noise limits are exceeded.

The instrument works with Svantek's health and safety software package, "Supervisor", that provides various tools for data analysis and reporting. The docking station supports data transfer to the PC as well as handles battery charging. The SV 104 BIS rechargeable batteries usually power the instrument up to 45 hours. Additional features like 1/1 or 1/3 octave band real-time analysis and audio events recording can be activated at any time, by ordering an activation code.

What's inside the SV 104BIS kit?

The standard SV 104 BIS kit includes ST 104B shock resistant patented MEMS microphone with a **LIFE-TIME WARRANTY**, a windscreen with a stainless steel mounting thread. The dosimeter has inbuilt 8 GB memory and a license for PC software (for communication with a PC the optional docking station is required). Each SV 104 BIS has its factory calibration certificate and 36-months warranty card.

SV 104BIS K1 and SV 104BIS K5 kits

The SV 104 BIS dosimeter is also available in dedicated kits. The **K1** kit includes a SV 104 BIS dosimeter together with SB 104B-1 docking station for a single unit and the acoustic calibrator. The kit comes in a waterproof carrying case. The **K5** kit includes: five SV 104 BIS dosimeters, SB 104B-5 docking station for five dosimeters, the acoustic calibrator and carrying case for 5 dosimeters.

Supervisor Software

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational noise exposure from noise level measurements in accordance to all standards using TWA and DOSE such as OSHA, ACGIH, MSHA, NHO-01 or NR-15. The data files from the SV 104 BIS can be used for calculation of all required measurement results and uncertainties in accordance to the three measurement strategies described in ISO 9612.

Assistant Application

The SV 104 BIS Bluetooth® interface enables current results to be previewed on a smart-phone or tablet using our **ASSISTANT APPLICATION**. The smart-phone application also signals an alarm when the set noise limits are exceeded.

GET IT ON Google Play Download on the App Store

Optional functions

The option for **1/1 AND 1/3 OCTAVE** real-time analysis allows accurate and correct selection of hearing protectors. When presented as a spectrogram, the octave analysis can be used for quick verification of noise sources in the time history. It can be activated at any time, by ordering an activation code.

The **AUDIO EVENTS RECORDING** option works during measurement and is logged in parallel to time history so it can be played back in the PC software. The settings, like triggers or recording time, are adjustable. It can be activated at any time, by ordering an activation code.

Optional accessories for SV 104 BIS

SB 104B-1
Docking Station for Single Dosimeter

SB 104B-5
Docking Station for 5 Dosimeters

SV 34 Class 2
Acoustic Calibrator
114 dB at 1 kHz

SA 147
Waterproof Carrying Case for Noise Dosimeter and Single Docking Station

SA 144
Carrying Case for 5 Dosimeters and Docking Station for 5 Units

SV 104BIS Technical Specifications

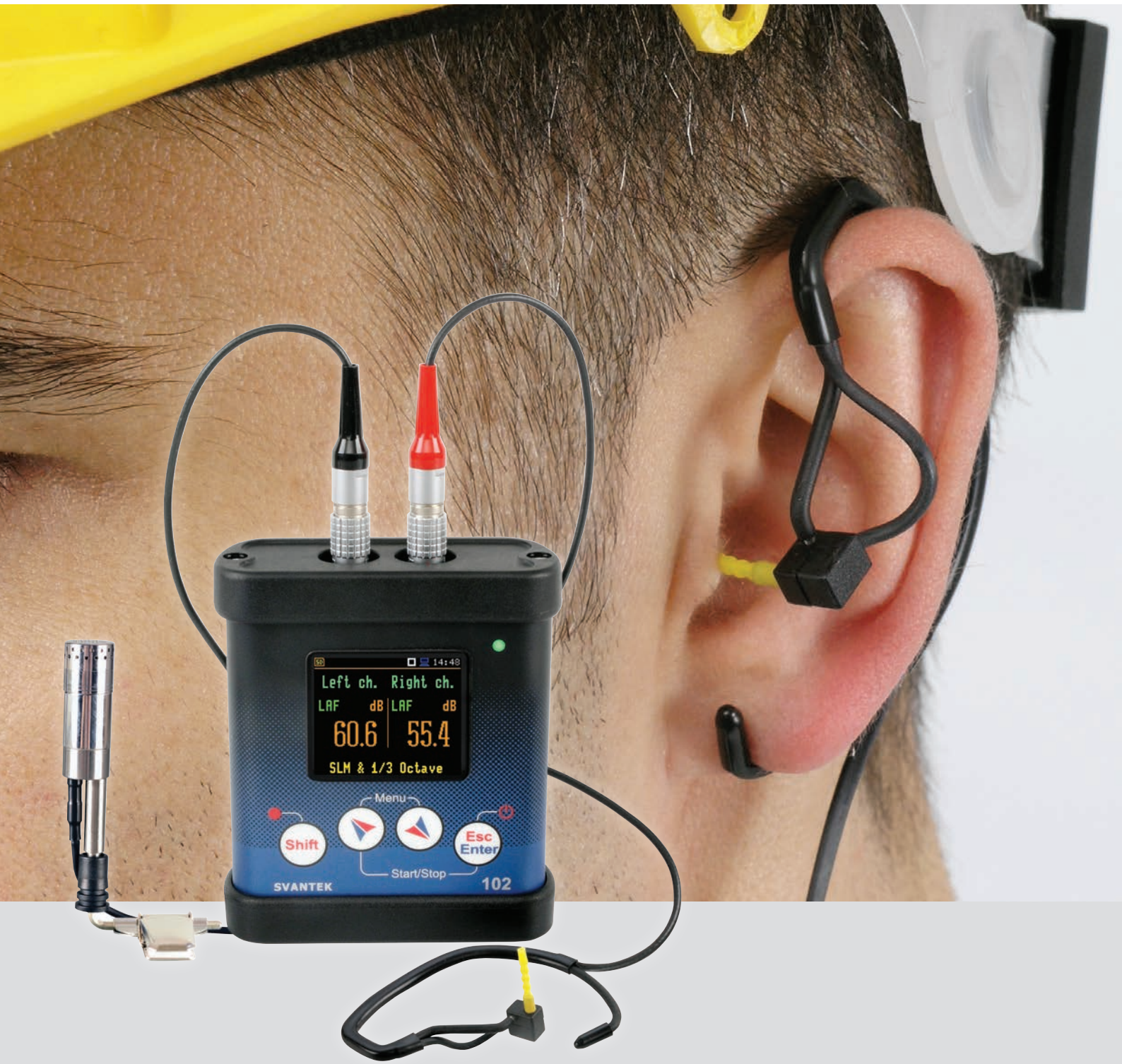
Standards	IEC 61252 ed1.2 (2017); ANSI/ASA S1.25-1991 (R2017); Class 2 IEC 61672-1 ed2.0 (2013) IEC 61010-1 (2010), IEC 60079-0 ed7.0 (2017), IEC 60079-11 ed6.0 (2011), CAN/CSA C22.2 No 61010-1; CAN/CSA C22.2 No 60079-0; CAN/CSA C22.2 No 60079-11 ANSI/UL 61010-1; ANSI/UL 60079-0; ANSI/UL 60079-11 Hazardous locations markings: I M1 Ex ia I Ma; II 1G Ex ia IIC T4 Ga; NRTL device marking: cQPSus, Ex ia IIC T4 Ga, Class I, Zone 0, AEx ia IIC T4 Ga NRTL certification for USA and Canada: [pending] ATEX: [pending] IECEx: [pending]
Weighting Filters	A, C and Z
Time Constants	Slow, Fast, Impulse
Exchange Rates	2, 3, 4, 5, 6
Measurement Results	Lxy (SPL), Lxeq (LEQ), Lxpeak (PEAK), Lxymax (MAX), Lxymin (MIN), where x - weighting filter A/ C/ Z; y - time constant Fast/ Slow/ Impulse Lc-a, DOSE, DOSE_8h, PrDOSE, LAV, LAE (SEL), LAE8 (SEL8), PLAE, (PSEL), E, E_8h, LEPd, PTC (PEAK COUNTER), PTP (PEAK THRESHOLD %), ULT (UPPER LIMIT TIME), TWA, PrTWA, LN (LEQ STATISTICS), Measurement time, OVL (OVERLOAD TIME %), No Motion time
Measurement Profiles	3 with independent settings of filters (x) and time constants (y)
Microphone	ST 104B MEMS microphone, 1/2" housing, patented
Linear Operating Range	55 dBA RMS ÷ 141 dBA Peak (in accordance to IEC 61672)
Total Dynamic Range	45 dBA RMS ÷ 141 dBA Peak (typical from noise floor to the maximum level)
Frequency Range	20 Hz ÷ 10 kHz
Dynamic Range	96 dB
Data Logging[1]	Summary results for the measurement time and time-history logging of Leq/Max/Min/Peak with adjustable logger step down to 1 s
Voice Comments	Audio records on demand, created before or after measurement, added to measurement file
Audio Recording[1]	Short audio events recording on trigger during measurement (optional)
1/1 Octave[1] (optional)	Real-time analysis in octave band filters, Class 1 IEC 61260; 9 filters with center frequencies from 31.5 Hz to 8 kHz
1/3 Octave[1] (optional)	Real-time analysis in 1/3 octave band filters, Class 1 IEC 61260; 28 filters with center frequencies from 20 Hz to 10 kHz
Display	OLED 128 x 64 pixels
Ingress protection	IP 65
Memory	8 GB
Interface	Electrical contacts (docking station required) Bluetooth®, 4.2 Smart
Keyboard	3 push buttons
Power Supply	
	Li-Ion rechargeable cell[2] operation time 45 hours[3]
	Environmental Conditions
	Temperature from -10 °C to 50 °C
	Humidity up to 90 % RH, non-condensed
Dimensions	88 x 49.5 x 19.2 mm
Weight	117 grams with batteries

[1] function parallel to the acoustic dosimeter mode
[2] docking station required for battery recharging
[3] dependent on configuration

The policy of our company is to continually innovate and develop our products. Therefore, we reserve the right to change the specifications without prior notice.

SV 102A+

Class 1 Dual-Channel Noise Dosimeter



SV 102A+ Class 1 Dual-Channel Noise Dosimeter

The SV 102A+ is a **DUAL-CHANNEL** noise dosimeter designed for the accurate measurement of noise exposure to ISO 9612, OSHA and NIOSH standards. The two channel technology allows for noise exposure levels to be assessed simultaneously on **BOTH SIDES OF THE HEAD**.

The meter meets **CLASS 1** requirements of IEC 61672 and it can be used when measuring at very **LOW TEMPERATURES** (from -10 °C) or when noise is **DOMINATED BY HIGH FREQUENCIES** as it is recommended by ISO 9612.

The colour digital display is an **OLED** screen with a high contrast visibility even in full daylight or in low ambient light areas. It displays information in both text and graphical form.

The **AUTO-CALIBRATION** facility makes the SV 102A+ very easy to use. Once the instrument detects the calibration signal it starts the calibration process automatically, saving the calibration data together with the measurement file, both before and after measurement.

The **TIME HISTORY LOGGING** of results such as Leq, Max, Min and Peak with two simultaneous logging steps is saved in **8 GB** memory. All dosimetry results such as DOSE, TWA, LAV are also included.

ISO 11904-1 MIRE (microphone in real ear) measurement takes sound measurements from the ear and performs the one-third octave band analysis. The SV 102A+ can perform such analyses using a special microphone probe SV 25S placed at the entrance of the ear canal. **MIRE** can be used to measure noise exposure in situations where normal dosimetry methods are inappropriate such as in a **TELEPHONE CALL CENTRE** where the sound comes from headphones. The option of MIRE measurements requires the SV 25S MIRE microphone and 1/3 octave analysis.

About SV 102A+

The SV 102A+ is a Class 1 dual-channel noise dosimeter that has been designed for the accurate measurement of noise exposure to ISO 9612 and MIRE (microphone in real ear) measurements to ISO 11904-1.
A typical application of MIRE measurement is a noise exposure monitoring in telephone call centres where the sound comes from headphones; an application not suited to classical dosimetry methods.
MIRE measurement involves measuring the sound in the ear and performing a one-third octave band analysis on it.

SV 102A+ gives the unique opportunity to assess the exposure on both sides of the head simultaneously. This is particularly important when a worker is exposed to noise coming from a dominant directional source where placing the microphone on only one side could understate the true level of noise exposure.
Another use of dual channel technology is the simultaneous measurement with the standard microphone outside and the MIRE inside any hearing protection.

What's inside the SV 102A+ kit?

The standard SV 102A+ kit includes SV 15 preamplifier with cable, SV 7052E microphone, 2x AA batteries, 8 GB memory card and a USB cable for communication with PC. Each SV 102A+ has its factory calibration certificate and a **36-MONTH WARRANTY CARD** that is also applicable to the microphone. The standard kit also includes license for PC software.

Supervisor Software

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational noise exposure from noise level measurements in accordance to all standards using TWA and DOSE such as OSHA, ACGIH, MSHA, NHO-01 or NR-15. The data files from the SV 102A+ can be used for calculation of all required measurement results and uncertainties in accordance to the three measurement strategies described in ISO 9612.

Optional functions

The option for **1/1** and **1/3 OCTAVE** real-time analysis allows accurate and correct selection of hearing protectors. When presented as a spectrogram, the octave analysis can be used for a quick verification of noise sources in the time history. It can be activated at any time, by ordering an activation code.

The **AUDIO EVENTS RECORDING** option works during measurement and is logged in parallel to time history so it can be played back in the PC software. The settings, like triggers or recording time, are adjustable. It can be activated at any time, by ordering an activation code.

Optional accessories

SV 15
Microphone
Preamplifier
with a Clip

ACO SV 7052E
Condenser
Microphone

SV 36 Class 1
Acoustic Calibrator
94 dB / 114 dB
at 1 kHz

SV 25S
MIRE Microphone

SA 131
Calibration
Adapter for MIRE

SV 102A+ Technical Specifications

Standards	IEC 61252; ANSI S1.25-1991; Class 1: IEC 61672-1:2013, ISO 11904-1	
Acoustic Dosimeter Mode	Lav/Leq, SPL, Lmax, Lmin, SEL, SEL8, PSEL, LEPd, Dose (%), TWA, E, E_8h, Peak, Run Time, Upper Limit Time (ULT), L(C-A), Projected Dose (D_8h)	
SLM Mode	Leq, Spl, SEL, LEP,d, Lden, Ltm3, Ltm5, statistics - Ln (L1- L99), LMax, LMin, LPeak Simultaneous measurement in three profiles with independent set of filters and detectors	
Weighting Filters	A, C and Z	
RMS Detector	Digital true RMS detector with Peak detection, resolution 0.1 dB Time constants: Slow, Fast, Impulse	
Microphone	ACO SV 7052E, prepolarised, 1/2" housing (one piece included) SV 25S, special microphone with dedicated probe for Microphone-In-Real-Ear technique (optional)	
Preamplifier	SV 15 with integrated cable	
Measurement Range	45 dBA RMS ÷ 141 dBA Peak (with ACO SV 7052E microphone)	
Typical Noise Floor	less than 35 dBA (with SV 7052E microphone)	
Frequency Range	20 Hz ÷ 20 kHz, sampling rate 48 kHz (with ACO SV 7052E microphone)	
Dynamic Range	100 dB	
Data Logger[1]	Time-history logging of Leq/Lmax/Lmin/Peak/Lav results to internal memory with time step down to 100 millisecond to microSD card	
Audio Recorder[1]	Time-domain signal events recorder (optional)	
Dual-channel Mode	Dual-channel measurement mode with second microphone ACO SV 7052E or SV 25S	
1/1 Octave[1]	Dual-channel 1/1 octave real-time analysis and spectra logging, 10 filters with centre frequencies from 31.5 Hz to 16 kHz, Type 1: IEC 61260 (optional)	
1/3 Octave[1]	Dual-channel 1/3 octave real-time analysis and spectra logging, 31 filters with centre frequencies from 20 Hz to 20 kHz, Type 1, IEC 61260 (optional)	
Input	2 x LEMO 2-pin, Direct	
Display	Colour 160 x 128 pixels OLED type	
Memory	MicroSD card 8 GB (removable & upgradeable)	
Interfaces	USB 1.1 Client Extended I/O - AC output (1 V Peak) / Digital Output (Alarm trigger) / Digital Input (Input trigger)	
Power Supply	Two AA batteries (alkaline)	operation time > 16 h (3.0 V / 1.6 Ah)[2]
	Two rechargeable batteries (not included)	operation time > 20h (2.4 V / 2.6 Ah)[2]
	USB interface	150 mA HUB
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity	up to 90 % RH, non-condensed
Dimensions	95 x 83 x 33 mm without microphones	
Weight	260 grams with batteries (without microphones)	

[1]function parallel to the meter mode
[2]depending on configuration and environmental conditions

Acoustic Calibrators SV 34B, SV 33B, SV 36

New SVANTEK sound calibrators use a **piezoresistive pressure sensor** as the reference sensor to control the calibration signal. Use of piezoresistive pressure sensor ensures an excellent long-term stability and immunity on the changes of the atmospheric conditions.

The calibration signal accuracy is controlled by the **microprocessor** and **built-in sensors** that measure **static pressure and temperature**. The feedback regulation control loop makes all adjustments of the calibration signal fully automatic so users do not require any manual adjustments to the ambient temperature and static pressure levels.

The SV 36 Class 1 acoustic calibrator features an **infrared sensor** that detects microphone presence and turns on/off the calibrator automatically.

The accuracy of acoustic calibrator should match the class of the sound level meter. A **CLASS 1** (SV 33B or SV 36) or **CLASS 2** (SV 34B) calibrator should be used, depending on the class of instrument.

SV 33B and SV 34B provide 114 dB calibration level whereas the SV36 offers two levels **94 dB or 114 dB**.

The user interface of the calibrator is equipped with a **PUSH BUTTON** and a **LED** diodes signalizing calibration and battery faults.

Is my result correct?

The only way to be sure that you can answer 'yes' to this questions is to perform an acoustic calibration using a calibrator that fully conforms to current standards. The norms and standards impose the requirement to calibrate the measurement channel before each measurement or measurement session and after the measurement as well for result verification purposes. If you don't perform these basics checks then what do your results actually mean?
An acoustic calibrator is a device which produces an acoustic pressure of defined level and frequency. In other words, an acoustic calibrator is a template of acoustic pressure. With the help of such a reference template we can check the accuracy of the measurements performed with the sound level meter and adjust it if a drift error in sensitivity is indicated.
The accuracy of acoustic calibrators used for the calibration of the measurement path should match the class of sound level meter. Depending on the instrument's performance Class 1 or Class 2 calibrators are used. A sound level meter is calibrated correctly only if the measurement error is within the allowed range of tolerance defined by the standards for the meter of a given class (defined by IEC 61672:).
Unlike many others, the Svantek calibrators feature a robust housing that gives the comfort of a secure grip to the user. The interior design of our acoustic calibrators is based on reference sensors and microprocessor controlled signal source including digital sound pressure level, static pressure and temperature compensation. Due to the feedback regulation control loop our calibrators do not require any adjustments by the user and operate over a wide range of ambient temperature and humidity assuring excellent stability of the calibration levels and their frequency.
Each acoustic calibrator is provided with a statement of the calibration which allows the user to be certain that their instruments will measure correctly.

Technical Specifications

	SV 36	SV 33B	SV 34B
Calibration Signal Parameters:			
Sound Pressure Level (SPL)	114 dB or 94 dB	114 dB	114 dB
IEC 60942:2003 Accuracy	Class 1	Class 1	Class 2
SPL Tolerance	± 0.3 dB	± 0.3 dB	± 0.5 dB
Frequency Tolerance	± 0.2 %	± 0.2 %	± 0.2 %
Total Harmonic Distortion (THD)	< 0.50 % for 94 dB < 0.75 % for 114 dB level	< 0.75 %	< 0.75 %
General Information:			
Effective Load Volume Sensitivity	0.00027 dB / mm^3	0.00027 dB / mm^3	0.00027 dB / mm^3
Level Stabilisation Time	typically 10 s, max 25 s	typically 15 s, max 30 s	typically 15 s, max 30 s
Calibrated Microphones	1/2" and 1/4" with SA 30 adapter	1/2" and 1/4" with SA 30 adapter	1/2" with SA 30 adapter
Storage Temperature Range	-25 °C ÷ +70 °C	-25 °C ÷ +70 °C	-25 °C ÷ +70 °C
CE Classification	EN 61010-1: 2010 EN 61326-1:2013 EN 60942:2003	EN 61010-1: 2010 EN 61326-1:2013 EN 60942:2003	EN 61010-1: 2010 EN 61326-1:2013 EN 60942:2003
Working Conditions:			
Temperature Range	from -10 °C to +50 °C (related SPL error ≤ ±0.15 dB)	from -10 °C to +50 °C (related SPL error ≤ ±0.15 dB)	from 0°C to +40 °C (related SPL error ≤ ±0.2 dB)
Atmospheric Pressure Range	from 65 kPa to 108 kPa (related SPL error ≤ ±0.10 dB)	from 65 kPa to 108 kPa (related SPL error ≤ ±0.10 dB)	from 65 kPa to 108 kPa (related SPL error ≤ ±0.10 dB)
Humidity Range	from 25 % to 90 % RH (related SPL error ≤ ±0.05 dB)	from 25 % to 90 % RH (related SPL error ≤ ±0.05 dB)	from 25 % to 90 % RH (related SPL error ≤ ±0.05 dB)

Reference conditions:	
Ambient Temperature	23 °C
Atmospheric Pressure	101.3 kPa
Humidity	30 % ÷ 80 % RH
Effective Microphone Load Volume	250 mm^3 for microphone type B&K 4134
Power supply:	
Battery Type	2 x LR03 (IEC) / AAA (ANSI) alkaline batteries
Continuous Operating Time	40 hours for 94 dB level, 30 hours for 114 dB level
Stand-by Period	around two years
Minimal Voltage Requirements	2.1 V
Maximum Operating Voltage	4 V DC - absolute maximum supply voltage at the battery terminals.

The policy of our company is to continually innovate and develop our products.
Therefore, we reserve the right to change the specifications without prior notice.

SV 106A

Six-Channel
Human Vibration Meter

SV 106A Six-Channel Human Vibration Meter

The SV 106A is a **SIX-CHANNEL** human vibration meter. It can be used with 2 tri-axial sensors to simultaneously measure vibrations on **BOTH HANDS OR ONE HAND AND A SEAT**.

The meter meets **ISO 8041** requirements and supports various vibration sensors both IEPE and MEMS type.

The colour digital display is an **OLED** screen with a high contrast visibility even in full daylight or in low ambient light areas.

The SV 106A offers the superior operational time on battery when used with dedicated SVANTEK **MEMS** sensors SV 105 or SV 38V.

ISO 5349-2 mentions that **CONTACT FORCE** measurement should be used to detect when the worker's hands first make contact with the vibrating surface and also when contact is broken.
With the SV 105F vibration sensor, it became possible to automatically obtain information about the period that the hand is in contact with the vibrating surface and to evaluate the total **CONTACT TIME PER DAY**.

The SV 106A is suitable for vibration exposure measurements in accordance to the **ISO 5349** as well as **ISO 2631**.

The **A(8) VIBRATION EXPOSURE** is calculated in real time and results from both sensors are displayed simultaneously in **VDV** and **RMS UNITS** or **POINTS**. In addition to exposure values, the SV 106A calculates time left to limits suggesting the safe working time for the user.

The **TIME HISTORY LOGGING** of results such as Leq, Max, Min and Peak with two simultaneous logging steps is saved in **8 GB** memory. All dosimetry results such as DOSE, TWA, Lav are also included.

The methods of evaluation of **VEHICLE SEAT VIBRATION** are described in ISO 10326. Following this standard SEAT values are the ratio of the vibration exposure at the seat to that at the floor, where a complete rigid seat would have a value of 1.0. For this application the SV 106A is using two sensors the SV 38V and SV 151.

The second parts of ISO 2631 and DIN 4150 refer to **HUMAN VIBRATION IN BUILDINGS**. Both standards provide different indicators and frequency weighting for the same type of measurement.
All required parameters are available in the SV 106A so it can be configured to the requirements of the selected standard. For this application SV 106A is using the SV 207B metal mounting base with the SV 84 accelerometer which is placed in the middle of the workplace floor.

Vibrations with frequencies below 0.5 Hz cause so called **MOTION SICKNESS,** primarily in the standing and sitting postures. This type of vibrations are typical for **SHIPS** and other **SEA VESSELS**. The most recognized symptoms of motion sickness are dizziness and vomiting. The SV 106A with a SV 38V MEMS sensor is capable to measure vibration frequencies from 0.1 Hz which makes it suitable for motion sickness measurements in accordance to ISO 2631-1. The low frequency vibrations are measured in vertical axis with Wf weighting filter.

About SV 106A

SV 106A Six-channel Human Vibration Meter and Analyser meets requirements of ISO 8041:2017 standard and it is an ideal choice for measurements according to ISO 2631-1,2&5, ISO 5349 and directive 2002/44/EC of European Parliament. This revolutionary, pocket-size instrument enables simultaneous measurements with two triaxial accelerometers (e.g. both-hands vibration or triaxial SEAT transmission measurements are possible).
The RMS, Peak, Peak-Peak, VDV, MTVV or dose results such as A(8) and AEQ with all required weighting filters for human vibration measurements, including band-limiting filters, are available with this instrument. Using computational power of its digital signal processor, the SV 106A can perform 1/1 or 1/3 octave real-time analysis simultaneously to the meter mode. Advanced time-history logging and time-domain signal recording (according to the ISO 2631-5) to the microSD flash card offer a great data input for detailed signal analysis. Results can be easily downloaded to PC using USB interface. The instrument works with Svantek's specialist health and safety software package, "Supervisor", and also with the full analysis package SVAN PC++.

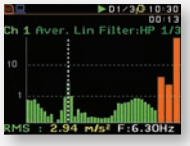
What's inside the SV 106A kit?

The standard SV 106A kit includes 8 GB microSD card and USB cable for the communication with PC software (license for PC software is included). Each SV 106A has its factory calibration certificate and 36-months warranty card. The set of 4 AA batteries is also included.

Supervisor Software

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational vibration exposure from measurements in accordance to ISO 2631-1 and ISO 5349-2 standards. Measurement results are expressed in m/s^2 and can be directly compared to limits given by the European Directive 2002/44/EC. It is also possible to convert units into Points widely used in health & safety sector. All information displayed within the panel window is directly printable to the report.

Optional functions



ISO standards imply to be desirable to report (unweighted) one-third-octave band root-mean-square acceleration magnitudes over the frequency range of the measurement system. Frequency analysis such as **1/3 OCTAVE** provides information on dominant frequencies and harmonics, which may help engineers to identify effective vibration control measure as well as detection of artifacts. It can be activated at any time, by ordering an activation code.

To meet the requirements of ISO 2631-5 the SV 106A offers a possibility of recording the raw time domain signal to the **WAV FORMAT**. The mentioned standard describes the dose calculation from the time domain signal in case of multiple shocks. It can be activated at any time, by ordering an activation code.

Dedicated MEMS accelerometers and accessories to SV 106A

MEMS accelerometers which have many advantages including shock resistance, no DC-shift effect, very low power and frequency response down to DC.

SV 105
Tri-Axial
Hand-Arm Vibration
Acclerometer

SV 105F
Tri-Axial
Hand-Arm Vibration
Acclerometer with
Force Detection

SV 150
Tri-Axial
Hand-Arm Vibration
Accelerometer

SV 38V
Whole-Body
Vibration
Accelerometer

SV 151
Tri-Axial
SEAT Vibration
Accelerometer

SV 110
Hand-Arm
Vibration
Calibrator

SV 111
Hand-Arm and
Whole-Body Vibration
Calibrator

SA 105
Calibration Adapter
to SV105 and
SV105F

SA 89
Belt Bag
for SV 106A

SA 146
Carrying Case
for SV 106A and
accessories

SV 106A Technical Specifications

Standards	ISO 8041:2017; ISO 2631-1:1997; ISO 2631-2:2003; ISO 2631-5:2004; ISO 5349-1:2001; ISO 5349-2:2001	
Meter Mode	ahw (RMS HAND-ARM), ahv (VECTOR HAND-ARM), aw (RMS WHOLE-BODY), awmax (RMS MAX WHOLE-BODY), VDV, MaxVDV, awv (VECTOR WHOLE-BODY), A(8) Daily Exposure, ELV Time (TIME LEFT TO LIMIT), EAV Time (TIME LEFT TO ACTION) MTVV, Max, Peak, Peak-Peak	
Profiles per Channel	2	
Filters in Profile (1)	Wd, Wk, Wm, Wb, Wc, Wj, Wg, Wf (ISO 2631), Wh (ISO 5349)	
Filters in Profile (2)	HP, KB, Vel3 (for PPV measurement), Band Limiting Filters according to ISO 8041:2017	
RMS & RMQ Detectors	Digital true RMS & RMQ detectors with Peak detection, resolution 0.1 dB	
Measurement Range	Transducer dependent: 0.01 m/s^2 RMS ÷ 50 ms^{-2} Peak (with SV 38V and Wd filter) 0.1 m/s^2 RMS ÷ 2000 ms^{-2} Peak (with SV 105A and Wh filter)	
Frequency Range	0.1 Hz ÷ 2 kHz (transducer dependent)	
Data Logger	Time-history data including meter mode results and spectra	
Time-Domain Recording[1]	Simultaneous 6-channel time-domain signal recording, sampling frequency 6 kHz (optional)	
Analyser[1]	6-channel 1/1 octave real-time analysis with centre frequencies from 0.5 Hz to 2000 Hz (optional) 6-channel 1/3 octave real-time analysis with centre frequencies from 0.4 Hz to 2500 Hz (optional)	
Accelerometer (optional)	SV 38V integrated tri-axial accelerometer for Whole-Body measurements SV 105 integrated tri-axial accelerometer including hand straps SV 105F integrated tri-axial accelerometer with force sensors including hand straps SV 150 integrated tri-axial accelerometer with adapter for direct attaching to hand-held power tools SV 151 integrated tri-axial accelerometer for SEAT transmissibility measurements SV 84 tri-axial IEPE accelerometer for ground / building vibration measurements	
Input	2 x LEMO 5-pin: six channels Direct or IEPE type and 2 channels for force transducers	
Dynamic Range	90 dB	
Force Range	0.2 N ÷ 200 N (only with an optional SV 105 F)	
Sampling Rate	6 kHz	
Memory	Internal 16 MB non-volatile memory 8 GB Micro SD card included (micro SD flash card slot supports cards up to 16 GB)	
Display	Super contrast (10000:1) OLED 2.4” colour display (320 x 240 pixels)	
Interfaces	USB 1.1 Client, Extended I/O - AC output (1 V Peak) or Digital Input/Output (Trigger - Pulse)	
Power Supply	Four AA batteries (alkaline)	operation time > 12 h (6.0 V / 1.6 Ah)[2]
	Four AA rechargeable batteries	operation time > 16 h (4.8 V / 2.6 Ah)[2] (not included)
	USB interface	500 mA HUB
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity	up to 90 % RH, non-condensed
Dimensions	140 x 83 x 33 mm (without accelerometer)	
Weight	Approx. 390 grams including batteries (without accelerometer)	

[1]function parallel to the meter mode
[2]depending on configuration and environmental conditions

The policy of our company is to continually innovate and develop our products.
Therefore, we reserve the right to change the specifications without prior notice.

SV 103

Hand-Arm Vibration Dosimeter

SV 103 Hand-Arm Vibration Dosimeter

SV 103 measures the A(8) vibration exposure in accordance with the **ISO 5349-2 and European 2002/44/EC** both in m/s^2 and points. The instrument significantly decreases the measurement uncertainty related to the estimation of daily exposure time as it is small enough to take daily vibration exposure measurements without interfering with normal working activities.

The instrument is equipped with **4 PUSH BUTTONS** and an **OLED** display that allows basic configuration in the field.

The **2.0 USB** interface provides fast data download and is used for battery charging.

The SV 107 tri-axial **MEMS** accelerometer is extremely robust, **SHOCK RESISTANT**, uses very low power and is free of the DC-shift effect that adversely affects systems based on piezoelectric accelerometers.

The **SV 107 TRI-AXIAL** accelerometer meets requirements of the ISO 5349 and is worn on the palm of the hand so it can be used underneath gloves.

The SV 103 is **FULLY CONFIGURABLE** in Supervisor software. Settings such as measurement time, start, stop or pause can be adjusted and saved in the instruments' memory as setup files.

The **TIME HISTORY LOGGING** of results such as RMS, VECTOR, Max, Min, Peak and Force with two simultaneous logging steps is saved in **8 GB** memory.

ISO 5349-2 mentions that **CONTACT FORCE** measurement should be used to detect when the worker's hands first make contact with the vibrating surface and also when contact is broken. With the SV 107 vibration sensor, it became possible to automatically obtain information about the period that the hand is in contact with the vibrating surface and to evaluate the total **CONTACT TIME PER DAY**.

About SV 103

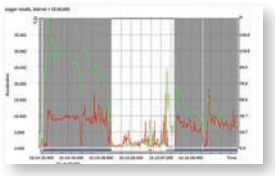
SV 103 Personal Human Vibration Exposure meter is dedicated to hand-arm vibration measurements. The instrument meets ISO 8041:2005 and is the ideal choice for making measurements according to ISO 5349 and European Directive 2002/44/EC. The SV 103 significantly decreases the measurement uncertainty as the instrument is attached to the user's arm and is small enough to take daily vibration exposure measurements without interfering with normal working activities.
The SV 103 uses our latest accelerometer, the SV 107, that has a contact force sensor in addition to the standard accelerometer. Contact force is the sum of grip force and push force and is therefore a measurement of how firmly a user is holding the vibrating tool. This is a recommendation of the new standards and the reading from the contact force sensor is also displayed on the screen. The SV 107 accelerometer is based on MEMS, the very latest in transducers technology. MEMS gives many advantages including shock resistance, very low power consumption and frequency response down to DC. The usage of MEMS breaks the technological barrier of a weight and dimensions additionally reducing the cost of the complete system.
The SV 103 is powered using rechargeable batteries charged through the USB interface which also enables easy interconnection between the instrument and a PC.
The measurement data is safely stored in the large 8 GB memory. The instrument works with our powerful Supervisor software which allows instrument configuration as well as viewing and exporting of measurement data and daily vibration exposure recalculations.

What's inside the SV 103 kit?

The standard SV 103 kit includes personal vibration meter together with a detachable tri-axial accelerometer SV 107 with set of adapters for a hand mounting. The USB cable for the communication with PC software (license for PC software is included) and the SA 54 charger for recharging the inbuilt battery is provided. Each SV 103 has its factory calibration certificate and 36-months warranty card.

Supervisor Software

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational vibration exposure from measurements in accordance to ISO 5349-2 standard. Measurement results are expressed in m/s^2 and can be directly compared to limits given by the European Directive 2002/44/EC. It is also possible to convert units into Points widely used in health & safety sector. All information displayed within the panel window is directly printable to the report.



Contact force detection

ISO 5349-2 mentions that contact force measurement should be used to detect when the worker's hands first make contact with the vibrating surface and also when contact is broken. With the SV 103 it became possible to automatically obtain information about the period that the hand is in contact with the vibrating surface and to evaluate the total contact time per day.

Optional functions

ISO standards imply to be desirable to report (unweighted) **ONE-THIRD-OCTAVE BAND** root-mean-square acceleration magnitudes over the frequency range of the measurement system. Frequency analysis such as **1/3 octave** provides information on dominant frequencies and harmonics, which may help engineers to identify effective vibration control measure as well as detection of artifacts. It can be activated at any time, by ordering an activation code.

The SV 103 offers a possibility of recording the raw **TIME DOMAIN SIGNAL** to the WAV format. The raw signal can be used for a detailed vibration analysis in order to improve the vibration characteristics of the hand-held tools. It can be activated at any time, by ordering an activation code.

Optional accessories to SV 103

SA 105
Calibration Adapter
to SV107

SV 110
Hand-Arm
Vibration
Calibrator

SV 111
Hand-Arm and
Whole-Body Vibration
Calibrator

SA 76
Waterproof
Carrying Case

SA 47M
Carrying Bag
Fabric Material

SV 103 Technical Specifications

Standards	ISO 8041:2005, ISO 5349-1:2001; ISO 5349-2:2001;	
Meter Mode	ahw (RMS), ahv (VECTOR), Max, Peak, Peak-Peak, A(8) Daily Exposure, ELV Time (TIME LEFT TO LIMIT), EAV Time (TIME LEFT TO ACTION)	
Filters	Wh (ISO 5349) and corresponding Band Limiting filter (ISO 8041)	
RMS Detectors	Digital true RMS detector with Peak	
Measurement Range	0.2 m/s^2 RMS ÷ 2000 m/s^2 Peak	
Frequency Range	1 Hz ÷ 2000 Hz	
Data Logger[1]	Time-history data including meter mode results and spectra	
Time-Domain Recording[1]	Simultaneous x, y, z time-domain signal recording (optional)	
Analyser[1]	1/1 octave real-time analysis (optional) with center freqences from 1 Hz to 1kHz 1/3 octave real-time analysis (optional) from 0.8 Hz to 1.3 kHz	
Accelerometer	Detachable SV 107 MEMS based tri-axial accelerometer with hand straps in accordance to ISO 5349	
Memory	8 GB	
Display	OLED 128 x 64 pixels	
Interfaces	USB 2.0 client	
Power Supply		
	Ni-MH rechargeable cells	operation time > 24 hours[2]
	USB interface	500 mA HUB
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity	up to 90 % RH, non-condensed
Dimensions	88 x 49.5 x 19.2 mm (instrument without accelerometer, cable and mounting stripes)	
Weight	150-160 grams with SV 107 accelerometer and one of vibration contact adapters	

[1]function parallel to the meter mode
[2]depending on configuration and environmental conditions

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Therefore, we reserve the right to change the specifications without prior notice.

SV 100A

Whole-Body Vibration Dosimeter

SV 100A Whole-Body Vibration Dosimeter

The SV 100A measures the A(8) vibration exposure and the overall vibration total value (VECTOR) in accordance with **ISO 2631-1 and EU Vibration Directive.** The A(8) result is given in: m/s^2 (RMS), $m/s^{1.75}$ (VDV) and Points. The SV100A monitors the time left to limits and activates the alarm when the limits are reached.

The instrument is equipped with **4 PUSH BUTTONS** and a small **OLED** display that allows basic configuration in the field.

The **2.0 USB** interface provides fast data download and is used for battery charging.

The SV 100A is **FULLY CONFIGURABLE** in Supervisor software. Settings such as measurement time, start, stop or pause can be adjusted and saved in the instruments' memory as setup files.

The **TIME HISTORY LOGGING** of results such as RMS, VECTOR, VDV, Max, Min and Peak with two simultaneous logging steps is saved in **8 GB** memory.

The **FORCE SENSORS** in the SV 100A automatically **DETECT** the presence of a user or **VEHICLE DRIVER** which enables real daily exposure calculations for the period of time when the user is in contact with the vibrating surface.

The SV 100A **wireless BT** interface enables current results to be previewed on a smart-phone or tablet using our Assistant application. The smart-phone application also signals an alarm when the set vibration limits are exceeded. The Assistant enables correlation of **GPS** data with the vibration data and plots them on a map. This solution gives a powerful tool for projecting the A(8) vibration exposure with respect to the vehicle speed and road conditions.

About SV 100A

The SV 100A is a wireless whole-body vibration exposure meter suitable for whole-body measurements in accordance with ISO 2631-1. Suitable for taking measurements both on the seat and seat-back, the device uses the very latest technology and is ease of use. The instrument is equipped with 4 push buttons and a small OLED display that allows basic configuration in the field.
The wireless BT communication interface enables current results to be previewed on a smart-phone or tablet using our Assistant Android application.
The smart-phone app can also signal an alarm when set vibration limits are exceeded. Our advanced technology enables the automatic detection of an operator in the workplace. By default the instrument is configured for seat measurements (in a horizontal direction) but this setting can be easily changed.
When changing the orientation of the SV 100A to the vertical, the directions of axes and weighting filters are automatically adjusted in accordance to ISO 2631-1.
The device is equipped with both RMS and RMQ detectors which allows the calculation of Daily Vibration Exposure A(8) based on RMS and VDV simultaneously. All measurement results are stored in a large 8GB internal memory which allows continuous recording over long periods. The standard 2.0 USB interface allows fast data download and is also used for battery recharging.
For advanced users, the SV 100A offers frequency analysis in 1/1 or 1/3 octaves and time domain signal recording to wave format in accordance to ISO 2631-5 that is compatible with popular recalculation software.
The SV 100A is fully configurable with our Supervisor software. It can quickly and easily be setup for all the weighting filters required by ISO standards.

What's inside the SV 100A kit?

The standard SV 100A kit includes built-in 8 GB memory and USB cable for the communication with PC software (license for PC software is included). The license for Assistant application is also included. The SA 54 charger for recharging an inbuilt battery is provided. Each SV 100A has its factory calibration certificate and 36-months warranty card. The kit is delivered in the SA 145 carrying case.

Supervisor Software

Supervisor software supports data download, instrument configuration and provides complete set of tools for determination of occupational vibration exposure from measurements in accordance to ISO 2631-1 standard. Measurement results are expressed in m/s^2 and can be directly compared to limits given by the European Directive 2002/44/EC. It is also possible to convert units into Points widely used in health & safety sector. All information displayed within the panel window is directly printable to the report.

Assistant Application

Assistant is an application for devices running on Android and iOS platforms extending functionalities of SV 100A. The application uses the BT Wireless interface enabling current results to be previewed on a smartphone or tablet as well as controlling the measurement Start / Stop and Markers.
The Assistant also signals an alarm when the vibration limits are exceeded. The unique feature of Assistant is functionality of sending the GPS position and vehicle speed to the SV 100A to create image of vibration on a map providing very powerful tools for identification of vibration sources.

Optional functions

ISO standards imply to be desirable to report (unweighted) **ONE-THIRD-OCTAVE BAND** root-mean-square acceleration magnitudes over the frequency range of the measurement system. Frequency analysis such as **1/3 octave** provides information on dominant frequencies and harmonics, which may help engineers to control vibrations and detect artifacts. It can be activated at any time, by ordering an activation code.

To meet the requirements of ISO 2631-5 the SV 100A offers an option of recording the raw **TIME DOMAIN SIGNAL** to the WAV format. The mentioned standard describes the dose calculation from the time domain signal in case of multiple shocks. It can be activated at any time, by ordering an activation code.

Vibrations with frequencies below 0.5 Hz cause so called **MOTION SICKNESS**, primarily in the standing and sitting postures. This type of vibrations are typical for ships and other sea vessels. The most recognized symptoms of motion sickness are dizziness and vomiting. The SV 100A is capable to measure vibration frequencies from 0.1 Hz which makes it suitable for motion sickness measurements in accordance to ISO 2631-1. The low frequency vibrations are measured in vertical axis with Wf weighting filter. It can be activated at any time, by ordering an activation code.

Optional accessories to SV 100A

SA 38
Calibration
Adapter

SV 111
Vibration
Calibrator

SV 100A Technical Specifications

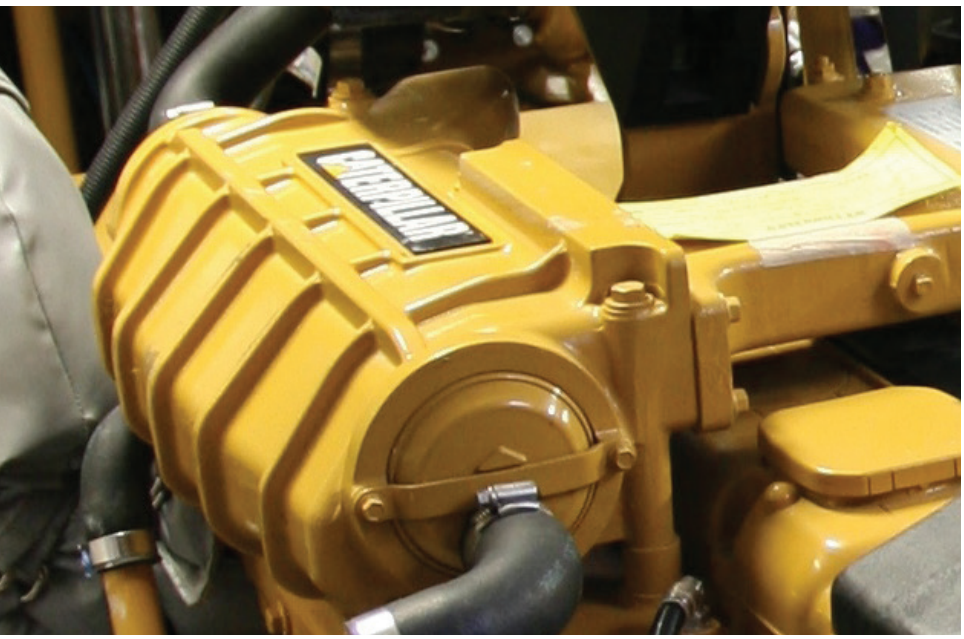
Standards	ISO 8041:2005; ISO 2631-1:1997; ISO 2631-2:2003; ISO 2631-5:2004;	
Meter Mode	aw (RMS WHOLE-BODY), awmax (RMS MAX WHOLE-BODY), VDV, MaxVDV, awv (VECTOR WHOLE-BODY), A(8) Daily Exposure, ELV Time (TIME LEFT TO LIMIT), EAV Time (TIME LEFT TO ACTION) MTVV, Max, Peak, Peak-Peak	
Filters	Wd, Wk, Wm, Wb (ISO 2631) and corresponding Band Limiting Filters according to ISO 8041:2017 Wf for motion sickness filter for measurements according to ISO 2631-1 (optional)	
RMS & RMQ Detectors	Digital true RMS & RMQ detectors with Peak detection, resolution 0.1 dB	
Measurement Range	0.01 m/s^2 RMS ÷ 157 m/s^2 PEAK	
Frequency Range	0.1 Hz ÷ 180 Hz	
Data Logger[1]	Time-history data including meter mode results and spectra	
Time-Domain Recording[1]	Simultaneous x, y, z time-domain signal recording (optional)	
Analyser[1]	1/1 octave real-time analysis (optional) with center frequencies from 0.12 Hz to 128 Hz 1/3 octave real-time analysis (optional) with center frequencies from 0.1 Hz to 128 Hz	
Accelerometer	Built-in tri-axial MEMS based	
Memory	8 GB	
Display	OLED 128 x 32 pixels	
Interfaces	USB 2.0 client, BT Wireless interface , detector of operator	
Power Supply		
	Ni-MH rechargeable cells	operation time > 24 hours[2]
	USB interface	500 mA HUB
Environmental Conditions	Temperature	from -10 °C to 50 °C
	Humidity	up to 90 % RH, non-condensed
Dimensions	Ø 235mm x 12 mm	
Weight	Approx. 500 grams	

[1]function parallel to the meter mode
[2]depending on configuration and environmental conditions

The policy of our company is to continually innovate and develop our products.
Therefore, we reserve the right to change the specifications without prior notice.

SV 110 & SV 111

Vibration Calibrators



SV 110 Hand-Held Vibration Calibrator

The SV 110 is a hand-held vibration calibrator designed for on-site checks of hand-arm vibration meters in accordance to ISO 8041 both at 80 Hz and 160 Hz. The menu is simply operated by three push-buttons and a small OLED display. Depending on a chosen frequency, a user may select a calibration range from 1 m/s² to 10 m/s².
The SV 110 is a perfect solution for calibration checks of hand-arm vibration meters including Svantek's SV 103 and SV 106. Following the requirements of ISO 8041, the calibrator's built-in tri-axial reference accelerometer measures the cross-axis (transverse) vibrations to detect any interference to the calibration signal. Faults caused by transverse vibrations are indicated by LED on the calibrator's housing. This unique solution ensures stability of both calibration level & frequency, independent from the mass of the test object.
A small size of the SV 110 makes it very useful for calibration checks of various types of machine vibration accelerometers. The calibrator menu provides selection between both metric systems 'g' and 'm/s²' as well as choice of frequency unit between Hertz (Hz) and Cycle Per Minute (CPM). Accelerometers are conveniently attached using a mounting stud, a mounting disc or a dedicated adapter.
The calibrator has a built-in rechargeable batteries that typically allows for 12 hours of continuous operation.

SV 110 is hand-held vibration field calibrator designed in accordance to ISO 8041 for in-situ checks of hand-arm vibration meters.

The calibrator operates on two frequencies **80 Hz or 160 Hz** enabling in-situ checks of hand-arm vibration meters as well as machine vibration meters.

Titanium shaking table and **POWERFUL SHAKER** enable calibration of sensors with mass up to 300 g at 80 Hz.

The built-in **RECHARGEABLE** battery typically provides enough power for 12 hours of continuous operation.

*Sensors shown on photos are not included in the kit.

Two conveniently located **LED DIODES** show the current status during the calibration process.

The calibrator aluminum housing is **ROBUST** and additionally protected with rubber covers on both ends.

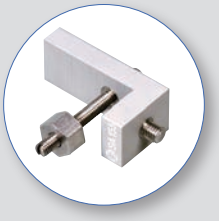
The **LEATHER COVER** gives comfort of a secure grip to the user.

The calibrator is simple in use. It has three **PUSH-BUTTONS** for selection of frequency and amplitude and start/stop control.

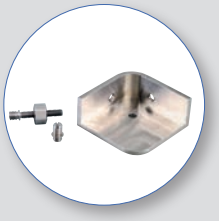
The **OLED** graphical screen displays information on selected frequency and vibration level.

Optional accessories to SV 110

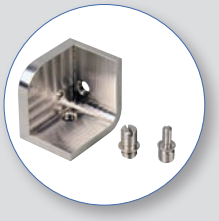
SA 105
Calibration Adapter to SV 105, SV105F and SV 107 Accelerometers



SA 155
Calibration Adapter to SV 150 and SV 151 Accelerometers



SA 40
Calibration Adapter to SV 3233A Accelerometer



SA 44
Calibration Adapter to SV 50 Accelerometer

SV 111 Vibration Calibrator

The SV 111 vibration calibrator is designed for in-situ checks in accordance with the ISO 8041 standard. The device is intended for operation in the field to check that an instrument is working correctly. The calibrator is based on a built-in tri-axial reference accelerometer and digitally-controlled shaker. In accordance with ISO 8041 requirements the reference accelerometer will measure cross-axes / transverse vibrations to detect any interference to the calibration signal. Three LEDs will light up on the calibrator panel whenever a fault caused by transverse vibrations is detected. This unique feature ensures the stability of the calibration level & frequency independently of the object being tested. The SV 111 is designed to calibrate a variety of vibration meters at different frequencies from 16 Hz up to 640 Hz. Depending on the frequency selected, the user may choose the level of calibration from 1 m/s^2 to 10 m/s^2.
The shaker can be loaded with up to 1 kilogram. Any improper object fixing is automatically detected and indicated by LEDs on the control panel giving information about the axis that needs correcting.
A set of adapters is available for calibration checks on tri-axial sensors including a special adapter for Svantek whole-body sensors (seat-pads), which can be directly mounted onto the shaker. Other types of vibration transducers can be easily attached using a mounting stand, a mounting disc or adapter.

SV 111 is a vibration field calibrator designed in accordance to **ISO 8041** for in-situ checks of whole-body and hand-arm vibration meters.

Calibrator is suitable for all types of vibration transducers for **ACCELERATION, VELOCITY and DISPLACEMENT** at 15.92 Hz; 79.6 Hz; 159.2 Hz and 636.6 Hz.

The shaker can be loaded with maximum payload of **1 kg at 15.92 Hz** enabling calibration of a complete seat-pad or building vibration sensors.

The built-in **RECHARGEABLE** battery provides up to 20 hours of continuous operation.

The **OLED** colour graphical screen displays information on selected frequency and vibration level.

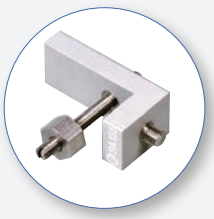
The calibrator is simple in use. It has three **PUSH-BUTTONS** for selection of frequency, amplitude and start/stop control.

The **BUILT-IN REFERENCE TRANSDUCER** detects errors during calibration process and ensures calibration stability.

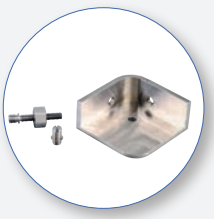
*Sensors shown on photos are not included in the kit.

Optional accessories to SV 111

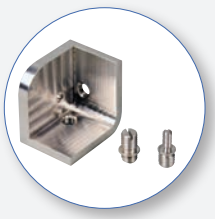
SA 105
Calibration
Adapter
to SV 105
Accelerometer



SA 155
Calibration
Adapter to SV 150
and SV 151
Accelerometers



SA 40
Calibration
Adapter to
SV 3233A
Accelerometer



SA 44
Calibration
Adapter to SV 50
Accelerometer

SA 154
Calibration
Adapter to SV 84
Accelerometer

Technical Specifications

SV 110

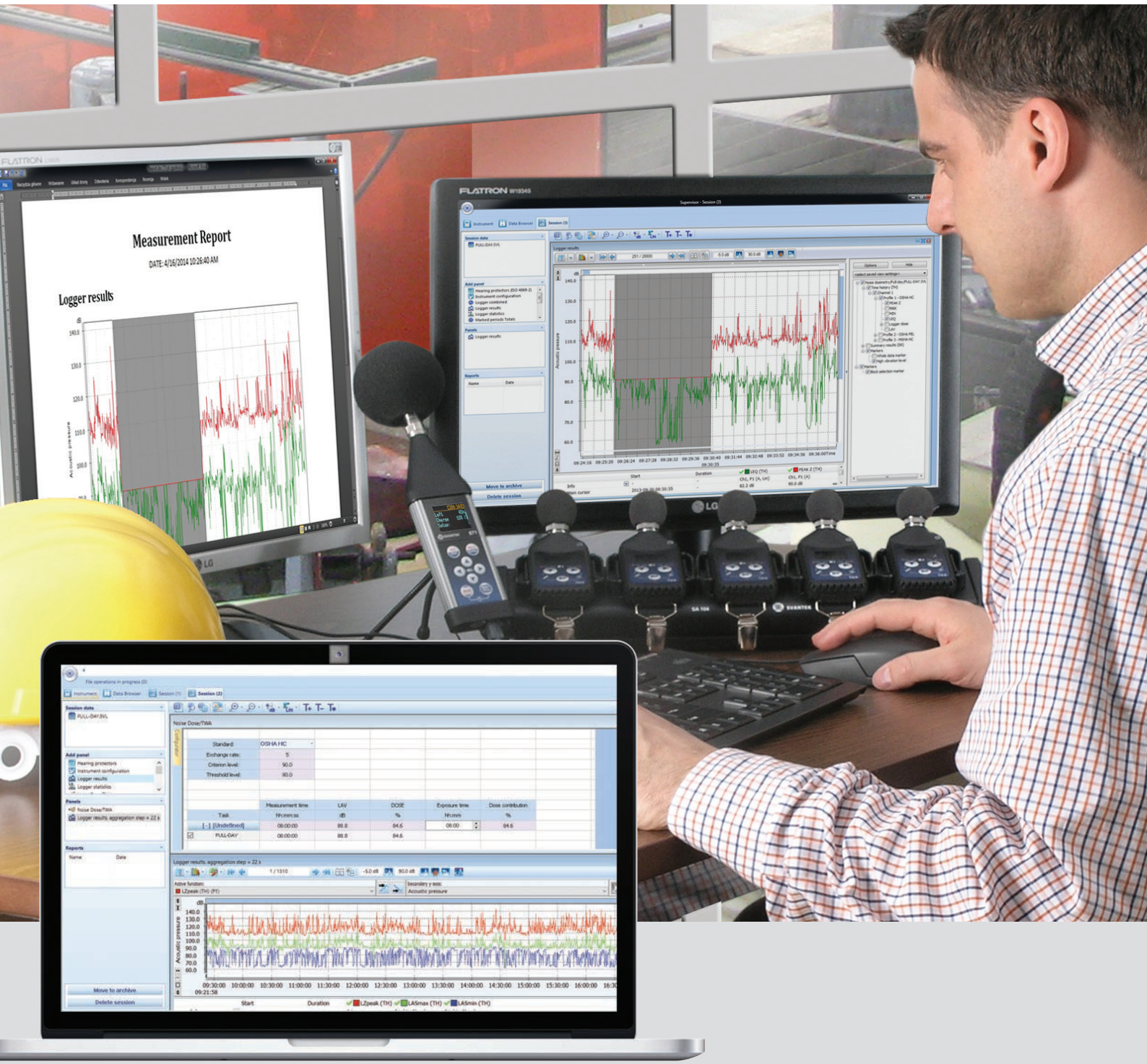
SV 111

	SV 110	SV 111
Calibration signal parameters		
Vibration Accelerations (RMS in m/s²)	1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 79.58 Hz) 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 159.2 Hz)	1 (at 15.92 Hz) 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 79.58 Hz) 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 159.2 Hz) 1 (at 636.6 Hz)
Vibration Velocities (RMS in mm/s)	2, 4, 6, 8 10, 12, 14, 16, 18, 20 (at 79.58 Hz) 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 159.2 Hz)	10 (at 15.92 Hz) 2, 4, 6, 8 10, 12, 14, 16, 18, 20 (at 79.58 Hz) 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 159.2 Hz) 0.25 (at 636.6 Hz)
Vibration Displacement (RMS in µm)	4, 8, 12, 16, 20, 24, 28, 32, 36, 40 (at 79.58 Hz) 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 159.2 Hz)	100 (at 15.92 Hz) 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 (at 79.58 Hz) 1; 2; 3; 4; 5; 6; 7; 8; 9; 10 (at 159.2 Hz) 0.0625 (at 636.6 Hz)
Amplitude Error	Less than ± 3%	Less than ± 3%
Frequency Error	Less than ± 0,5%	Less than ± 0,5%
Transverse Vibration	Less than 10% of the main direction	Less than 10% of the main direction
Harmonic Distortion	< 3 % (at 79.58 Hz) < 3 % (at 159.2 Hz)	< 5 % (at 15.92 Hz) < 3 % (at 79.58 Hz) < 3 % (at 159.2 Hz) < 3 % (at 636.6 Hz)
General information		
Maximum Weight of Calibrated Object	300 grams (at 79.58 Hz) 200 grams (at 159.2 Hz)	1000 grams (at 15.92 Hz) 300 grams (at 79.58 Hz) 200 grams (at 159.2 Hz) 200 grams (at 636.6 Hz)
Sensor Mounting	Thread M5 x 6 mm	Thread M5 x 12 mm
Working conditions		
Temperature Range	-10 °C ÷ 50 °C	-10 °C ÷ 50 °C
Humidity Range	25 % ÷ 85 %	25 % ÷ 85 %
Power supply		
Battery Type	Rechargeable 7.2 V / 2 Ah	Rechargeable 6 V / 12 Ah
Continuous Operating Time	up to 12 hours	Up to 20 hours
Charging Time	5 hours (with SA 54) or 10 hours (with USB)	Less than 10 hours
Power Supply for Charger	SA 54 (5V / 1A) or mini USB 500 mA HUB	SA 33 (12 V/ 1A) or15 W; 8÷24 V
Overall weight and dimensions		
Weight	1200 g (incl. battery)	8.2 kg (incl. battery)
Dimensions	170 x 65 x 65 mm	395 x 270 x 194 mm

*Sensors shown on photos are not included in the kit.

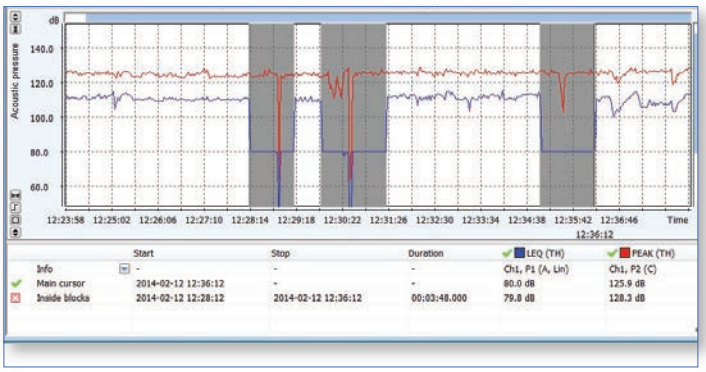
The policy of our company is to continually innovate and develop our products. Therefore, we reserve the right to change the specifications without prior notice.

Supervisor
Software



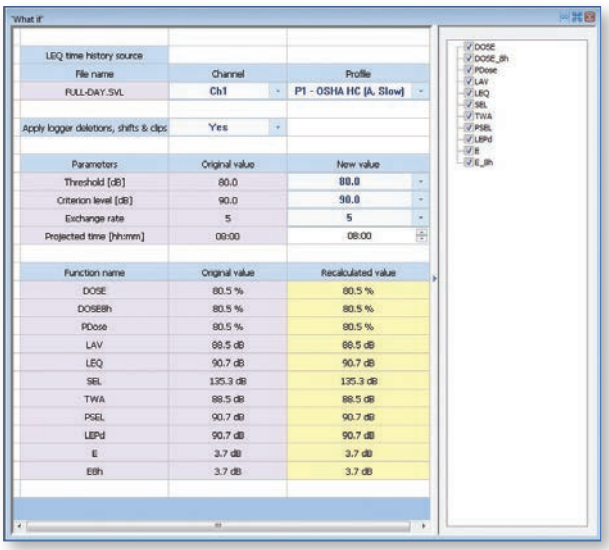
Supervisor Software Data Management & Reporting

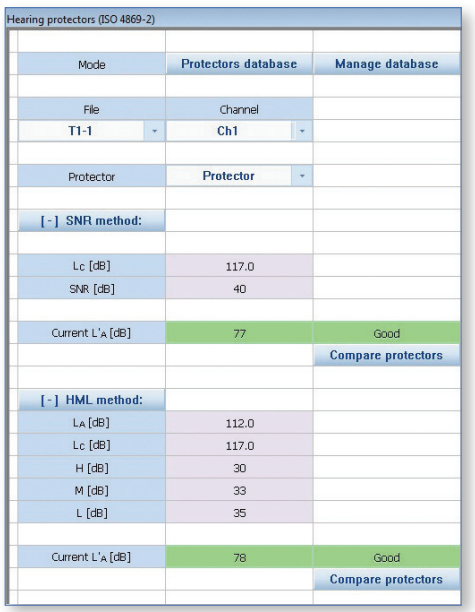
Supervisor is a software package for health and safety specialists. The package supports all Svantek instruments for the health and safety market.
The Supervisor is designed to meet the needs of different users. In the case of simple applications that only require the analysis of the main results such as LAeq, LAFmax and Lcpeak, the program offers quick previews and reporting without the necessity of opening data files. More advanced applications are handled within sessions where the user can choose the type of analysis to be performed. Those who draw up noise or vibration reports on a daily basis will appreciate the report templates, which once created can be applied to different sets of measurement files.
Each instrument that is connected to Supervisor is remembered together with information such as the uploaded settings, the firmware version, as well as the calibration validity date and instrument clock time. When data is downloaded, they are automatically categorised by measurement time and assigned to the instrument's serial number.



Simulation of changes of noise source emission

The Supervisor software gives tools to simulate hypothetical situations in which the noise differs from that which was measured. When selecting a data block it is possible to shift the data up or down for any given dB value. It is also possible to simulate a situation where noise is equal to a given dB level or completely removed from time history. The altered data is recalculated automatically and both the original and recalculated results are shown so as to answer the question "What if".





Hearing protection selection in accordance with ISO 4869-2

Workers should wear hearing protectors if the noise or sound level at the workplace exceeds 85 decibels. The selection of hearing protectors depends on a noise level in the working environment. Therefore the selection of suitable hearing protector should be based on noise measurement.
Each hearing protector has attenuation characteristics expressed in units of three methods:

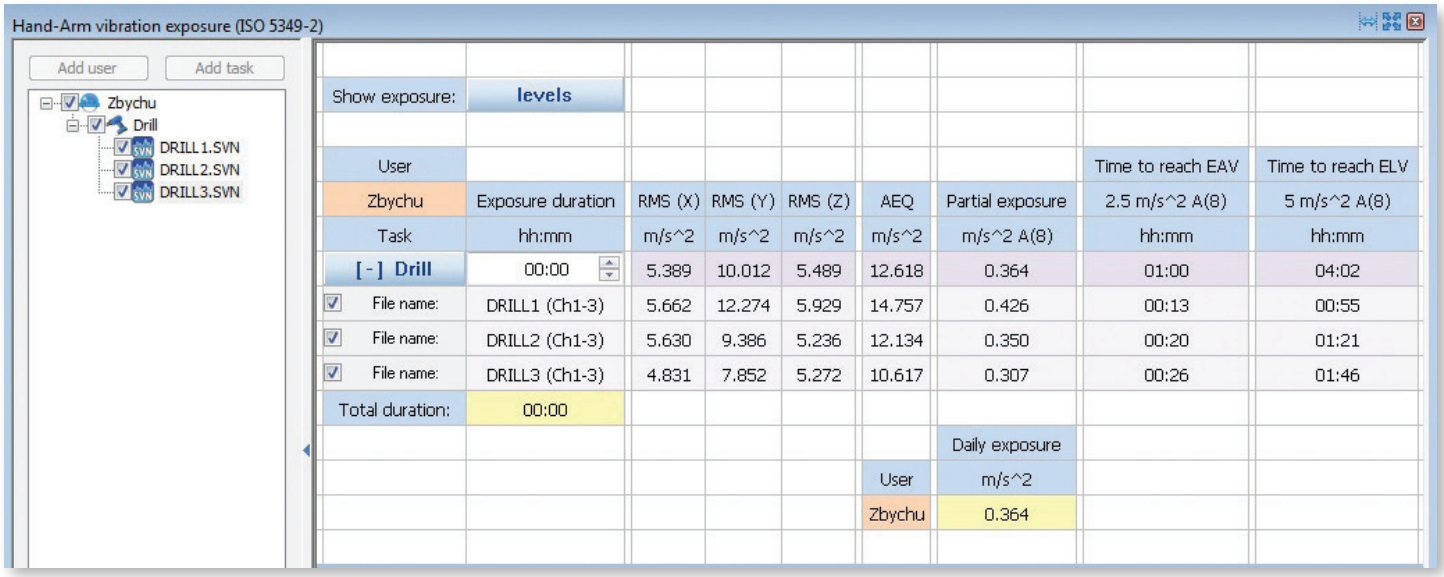
SNR_____Single Number Rating,
HML_____High, Medium and Low frequency method, using A-weighted and C-weighted sound measurements in the calculation
OCTAVES__The most accurate method requiring measurement in 1/1 octave bands

The Supervisor supports all three methods allowing users to build up the hearing protectors data base. The calculation is done automatically with selection of data files containing noise results required by selected method.

Supervisor Software Data Management & Reporting

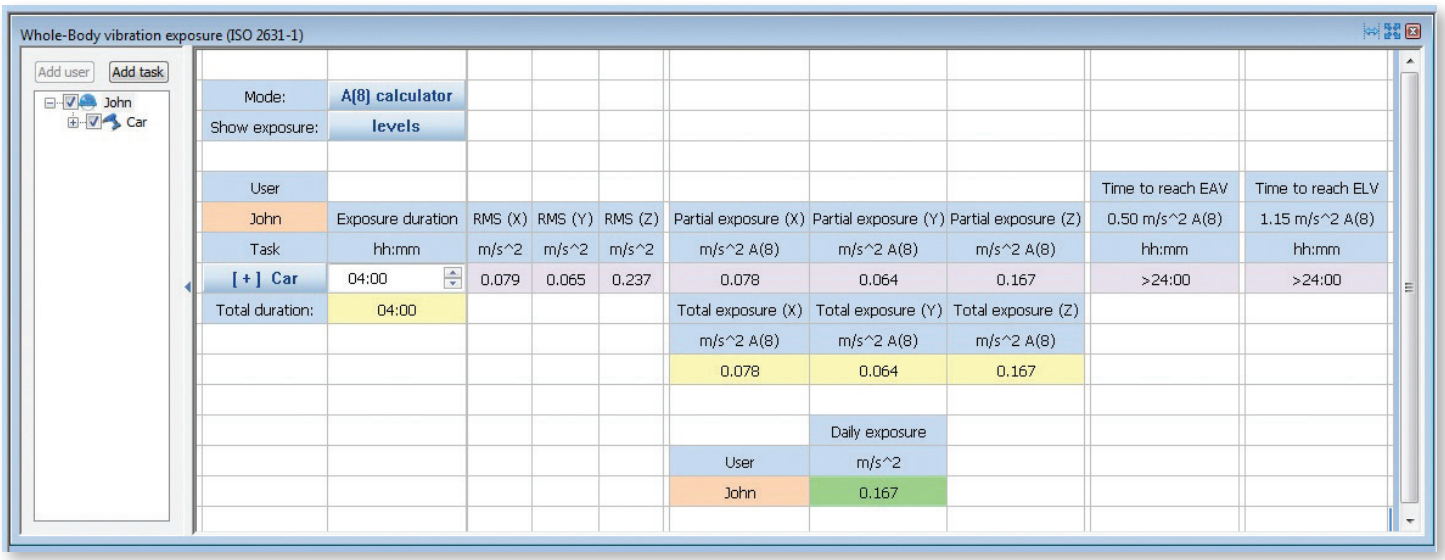
Hand-Arm Vibration Exposure Calculation in accordance with ISO 5349-2

ISO 5349-2 gives practical guidelines in accordance with ISO 5349-1 of how to take hand transmitted vibration measurements at the workplace. These kinds of measurements are possible with the SV 106 human vibration analyser or SV 103 hand-arm vibration dosimeter. The data downloaded into the Supervisor database are assigned either to a particular user or to a task while all calculations are performed automatically. The measurements are recorded in m/s² and are directly comparable to the limits laid down by European Directive 2002/44/EC. It is also possible to convert these units into Points, which are widely used within the health & safety sector. All the information displayed within the panel window can be printed in the report.



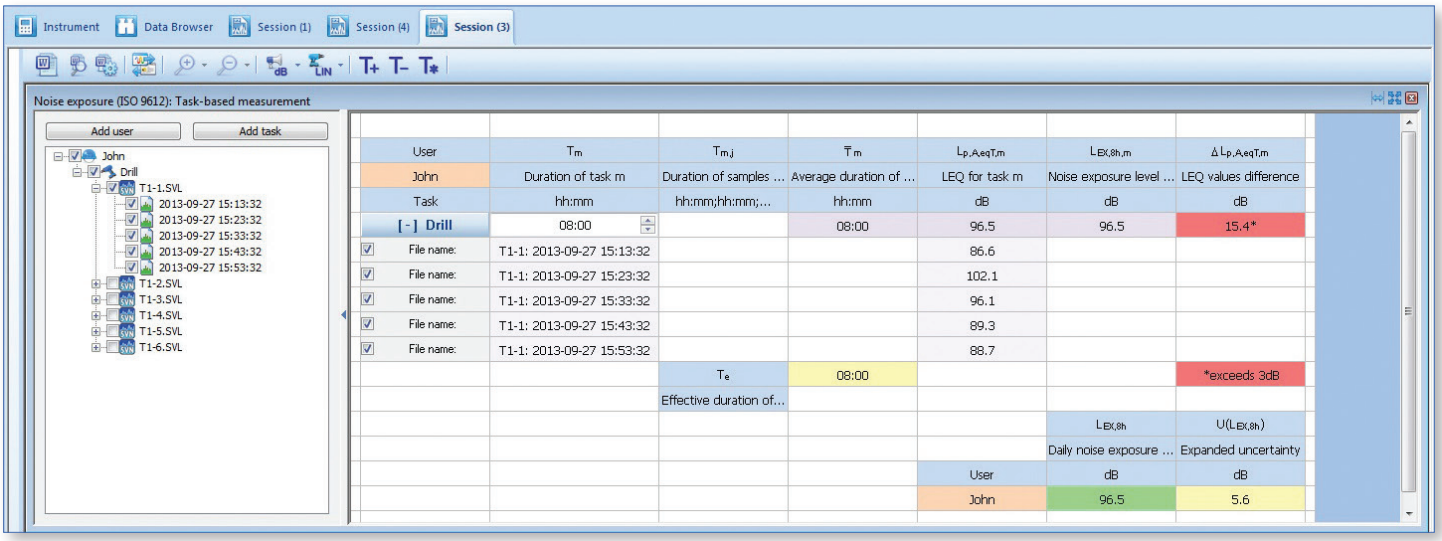
Whole-Body Vibration Exposure Calculation in accordance with ISO 2631-1

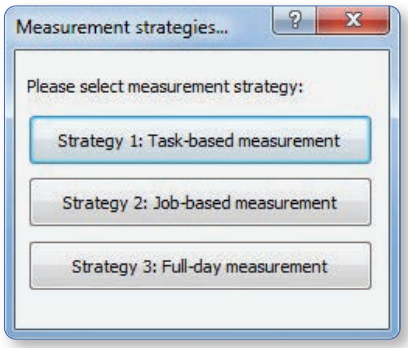
The ISO 2631-1 standard defines the general methodology to assess whole-body vibration exposure. These measurements can be performed with the SV 106 human vibration analyser or the SV 100A whole-body vibration dosimeter. The measurements downloaded into the Supervisor database are assigned either to a particular user or to a task while all calculations are performed automatically. The measurements are recorded in m/s² and are directly comparable to the limits laid down by European Directive 2002/44/EC.
It is also possible to convert these units into Points, which are widely used within the health & safety sector. By clicking on Mode, you can switch to calculations based on VDV which is often necessary when the vibration is characterized as impulsive.



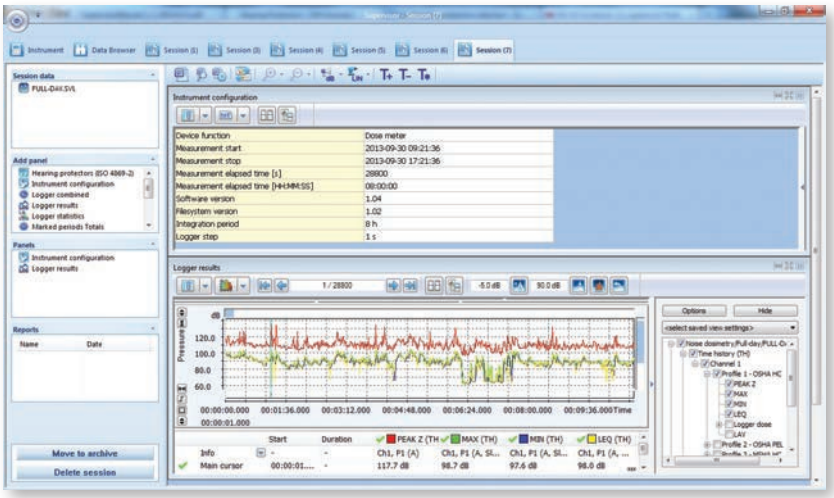
Supervisor Software Data Management & Reporting

Noise exposure recalculations in accordance with ISO 9612





The Supervisor software provides complete tool for determination of occupational noise exposure from noise level measurements. The Supervisor provides automatic calculation of all required measurement results and uncertainties in accordance to three measurement strategies described in ISO 9612: task-based, job-based and full-day.

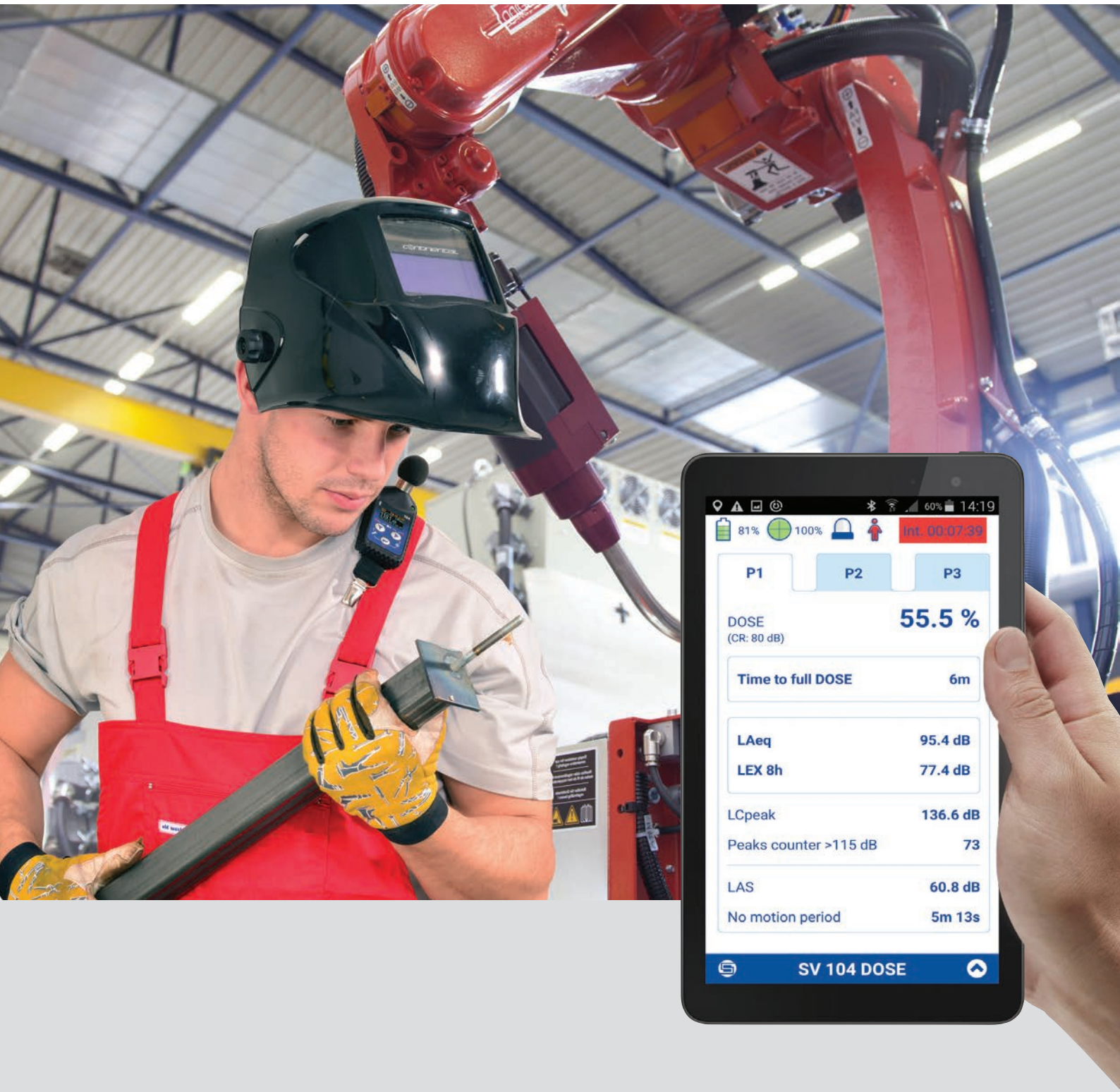


Reporting:
What You See is What You Get!

Supervisor creates reports* in a very fast and easy way. The user selects a file and opens it by double click. The measurements are automatically grouped into context panels which can be opened and closed with a single click. The panels can be arranged with the drag & drop. Then you only need to click on the MS Word™ icon to print a report.
The report layout can be saved at any time as a template and used for other files.

*MS Word™ required

Assistant Application
for Smartphones



Assistant Application for Smartphones

The Assistant application supports Svantek noise and vibration dosimeters equipped with the **Bluetooth®** interface.

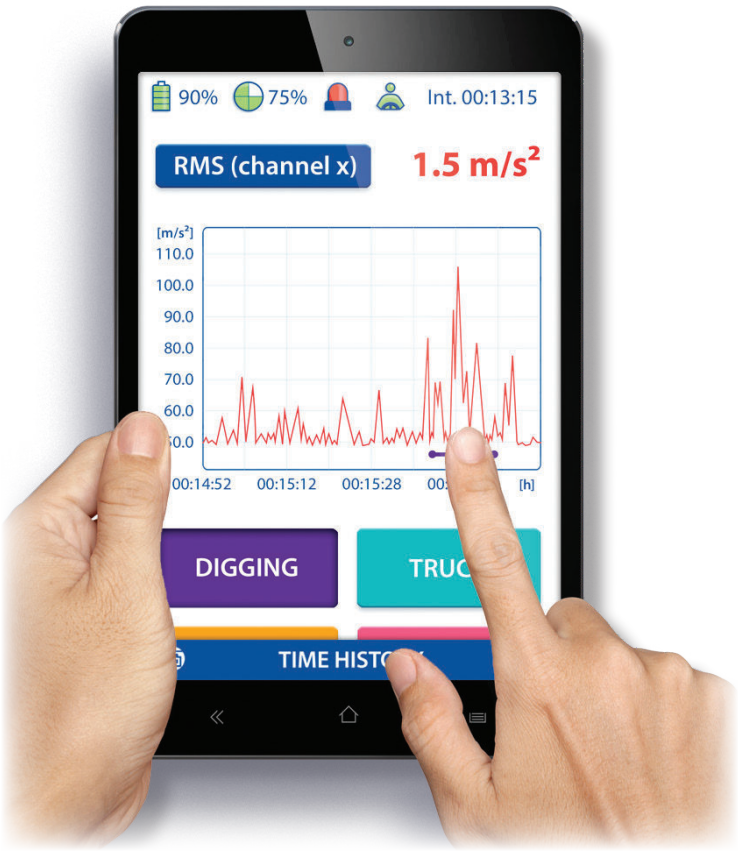
Application works both on **Android** and **iOS** platforms is easy to install and intuitive to operate.

The user interface allows to preview results in the form of **time-history plots** as well as numerical values.

The application **controls the exposure limits** in accordance to European Noise & Vibration Directives.

Measurement results in accordance to **ISO** standards for noise & vibration measurements are available in a form of **reports** that can be send **via e-mail**.

Assistant supports **markers** added to the time-history of measurement results for an easy identification of noise or vibration events.

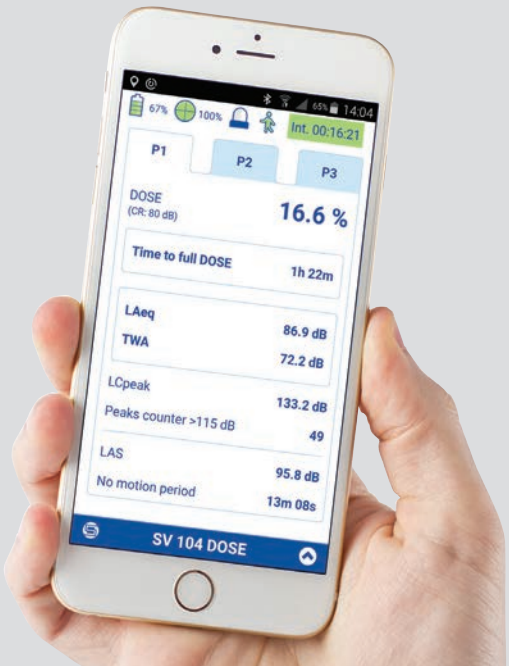


GET IT ON Google Play

Download on the App Store

Control the measurement using your mobile phone!

Assistant is an Android application for devices running on Android or iOS platforms dedicated for Svantek dosimeters with a Bluetooth® inteface.
The application enables the preview of current results as well as the control of the measurement Start / Stop and Markers. The Assistant also signals an alarm when the vibration limits are exceeded.
The Assistant supports multiple noise and vibration dosimeters simultaneously. The measurement results can be sent in the form of a report via e-mail. The uniqe feature of Assistant is functionality of sending the GPS position and vehicle speed to the vibration meters to create image of vibration on a map providing very powerful tools for identification of vibration sources.



ISO/IEC 17025
Accredited Calibration Services

Accredited calibration services

- Sound level meters to IEC 61672
- Acoustic calibrators to IEC 60942
- Band-pass filters to IEC 61260
- Noise dosimeters (noise exposure meters) to IEC 61252
- Vibration level meters
- Human vibration level meters to ISO 8041
- Vibration calibrators
- Vibration transducers to ISO 16063-21

We guarantee:

- Qualified & fully dedicated staff
- Highest level of competence
- State-of-the-art calibration equipment
- Patterns and equipment in accordance to International System of Units (SI)
- Integrity, impartiality and confidentiality
- Competitive pricing
- Short lead times
- Direct contact with repair service department

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