SV 103 & SV 100A
Vibration Dosimeters

airmet
Work with Confidence

Available for Rental at:
Air-Met Scientific Pty Ltd

Air-Met Sales/Service
P: 1800 000 744
F: 1800 000 774
E: sales@airmet.com.au

Air-Met Rental
P: 1300 137 067
E: hire@airmet.com.au
W: www.airmet.com.au

SVANTEK

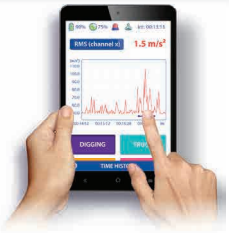
INSTRUMENTATION FOR SOUND & VIBRATION MEASUREMENTS

SV 100A Whole-Body Vibration Dosimeter

ISO 2631-1 and EU Directive 2002/44/EC

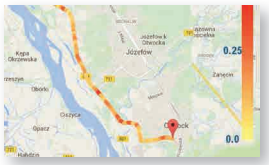
The SV 100A measures the A(8) vibration exposure and the overall vibration total value (VECTOR) in accordance with ISO 2631-1 and EU Directive 2002/44/EC. The A(8) result is given in m/s^2 (RMS), $m/s^{1.75}$ (VDV) and points. The SV 100A monitors the time left to limits and activates the alarm when the limits are reached.
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.

Remote control over Bluetooth™*



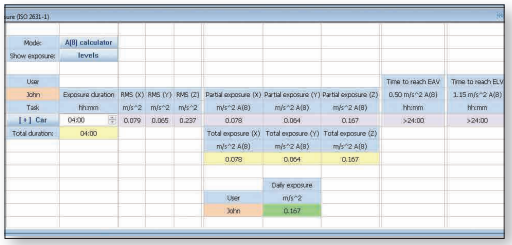
The SV 100A Bluetooth interface enables current results to be previewed on a smartphone or tablet using our Assistant application. The smartphone application also signals an alarm when the set vibration limits are exceeded.

GPS tracking*



The ISO 2631-1 standard implies that it is desirable for the measurement report to include information about any changes in conditions over time. The SV 100A enables correlation of GPS data with the vibration data and plots them on a map, where the colour indicates vibration magnitudes. This simple solution gives a powerful tool for projecting the A(8) vibration exposure with respect to the vehicle speed and road conditions.

Reporting with Supervisor software



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/s^2 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.

ISO 8041 in-stiu check*

In-situ checks require usage of the SV 111 vibration calibrator and are intended for check of the instrument's basic calibration and functionality in the field prior to and following a measurement or series of measurements. During the check procedure the SV 100A is mounted on the shaker which produces vibration level of 1 m/s^2 at 16 Hz. Any improper object fixing is automatically detected and indicated by LEDs on the calibrator's panel giving the information about direction which should be corrected.

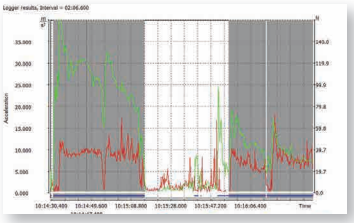
*Function requires optional software or hardware accessories. For more information contact Svantek distributor or check ordering information on svantek.com website.

SV 103 Hand-Arm Vibration Dosimeter

ISO 5349-2 and EU Directive 2002/44/EC

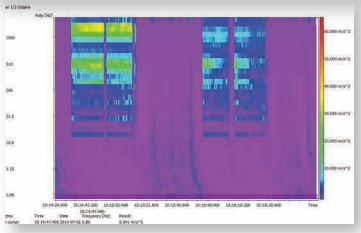
The SV 103 measures the A(8) vibration exposure in accordance with the ISO 5349-2 and European 2002/44/EC both in m/s^2 and points. The instrument significantly decreases the measurement uncertainty related to the estimation of daily exposure time as it is small enough to take daily vibration exposure measurements without interfering with normal working activities. The SV 103 uses the SV 107 moulded hand-held adaptor with the tri-axial MEMS accelerometer and contact force sensors. The MEMS technology means the SV 107 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.

Contact force detection



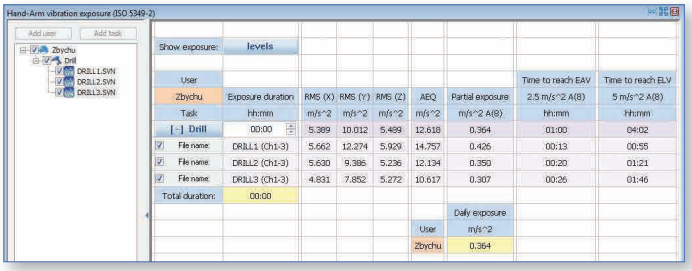
ISO 5349-2 mentions that contact force measurement should be used to detect when the worker's hands first make contact with the vibrating surface and also when contact is broken. With the development of the SV 103, it became possible to automatically obtain information about the period that the hand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

1/3 octave histogram*



ISO 5349-1 implies that it is desirable to report (unweighted) one-third octave band RMS acceleration magnitudes over the frequency range of the measurement system. One feature of mechanical vibrations is the wide frequency spectrum that can be clearly shown on spectrograms. With this powerful solution it is possible to verify if the source of recorded vibration was a machine.

Reporting with Supervisor software



The Supervisor software automatically calculates A(8) vibration exposure value for the time that the contact force was detected. The tools provided with the SV 103 enables the user to project the working time with the vibrating equipment as well as removing artefacts from the A(8) calculation. Reports are done in MS Word™ format and can be generated with a single click.

ISO 8041 in-stiu check*

SA 105A

In-situ checks require the use of a vibration calibrator such as the SV 111 and are intended for checking the instrument's basic calibration and functionality in the field prior to and following a measurement or series of measurements. During the check procedure, the SV 107 accelerometer is mounted on the shaker with the SA 105A calibration adapter. During the check procedure the calibrator excites the accelerometer at 10 m/s^2 at 80 Hz. The check procedure lasts 30s for each axis.

*Function requires optional software or hardware accessories. For more information contact Svantek distributor or check ordering information on svantek.com website.

Technical Specifications

SV 100A

Application	Whole-body
Standards	ISO 8041:2005, ISO 2631-1:1997
Meter Mode	aw (RMS), awmax (RMS MAX), VDV, MaxVDV, awv (VECTOR), 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 Wf for motion sickness filter measurements according to ISO 2631-1 (option)
RMS & RMQ Detectors	Digital true RMS & RMQ detectors with Peak detection, resolution 0.1 dB
Measurement Range	0.01 ms^{-2} RMS ÷ 157 ms^{-2} PEAK
Frequency Range	0.1 Hz ÷ 180 Hz
Data Logger	Time-history data including meter mode results and spectra
Time-Domain Recording	Simultaneous 3-channel time-domain signal recording (option)
Analyser	1/1 octave real-time analysis (option) 1/3 octave real-time analysis (option)
Accelerometer	Built-in tri-axial MEMS based

SV 103

Hand-arm
ISO 8041:2005, ISO 5349-1:2001; ISO 5349-2:2001;
ahw (RMS), ahv (VECTOR), Max, Peak, Peak-Peak A(8) Daily Exposure, ELV Time (TIME LEFT TO LIMIT), EAV Time (TIME LEFT TO ACTION)
W_h (ISO 5349) and corresponding Band Limiting filter
Digital true RMS detector with Peak detection, resolution 0.1 dB
0.2 ms^{-2} RMS ÷ 2000 ms^{-2} PEAK
1 Hz ÷ 2000 Hz
Time-history data including meter mode results and spectra
Simultaneous 3-channel time-domain signal recording (option)
1/1 octave real-time analysis (option) 1/3 octave real-time analysis (option)
detachable SV 107 tri-axial accelerometer with hand straps in accordance to ISO 5349

General Information

Display	OLED 128 x 32 pixels	colour OLED 128 x 64 pixels
Memory	8 GB	8 GB
Interfaces	USB 2.0 client, Bluetooth	USB 2.0 client
Keyboard	4 push buttons	4 push buttons
Power Supply		
	Ni-MH rechargeable cells operation time > 24 hours[1]	Ni-MH rechargeable cells operation time > 24 hours[1]
	USB interface 500 mA HUB	USB interface 500 mA HUB
Environmental Conditions		
	Temperature from -10 °C to 50 °C	Temperature from -10 °C to 50 °C
	Humidity up to 90 % RH, non-condensed	Humidity up to 90 % RH, non-condensed
Dimensions	ø235mm x 12 mm	88 x 49.5 x 19.2 mm (instrument without accelerometer, cable and mounting stripe)
Weight	0.5 kg	150-160 grams with SV 107 accelerometer and one of vibration contact adapters

[1]dependent on instrument operation 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.

Proudly distributed by:

SVANTEK Sp. z o. o.
ul. Strzygłowska 81, 04-872 WARSAW, POLAND
phone/fax (+48) 22 51 88 320, (+48) 22 51 88 312
http://www.svantek.com e-mail: office@svantek.com.pl