



**REPSS, Inc.**  
Instrumentation Specialists

# SV 106A

Six-Channel  
Human Vibration Meter



 **SVANTEK**  
health and safety



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# SV 106A Six-Channel Human Vibration Meter

SV 106A Six-channel Human Vibration Meter and Analyser meets requirements of ISO 8041:2005 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 SV106A 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++.

Two 3-axial inputs for **IEPE or MEMS** vibration accelerometers

Two additional channels for **FORCE** measurements

Aluminum **ROBUST** housing

**OLED 2.4"** color display (320 x 240 pixels)

4xAA **BATTERIES** that can be easily replaced in the field.

The **TIME HISTORY LOGGING** with two simultaneous logging steps is saved on a 8 GB **microSD** card.



## 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.

# Standard functions



The SV 106A is suitable for vibration exposure measurements in accordance 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.



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  
Accelerometer



SV 105F  
Tri-Axial  
Hand-Arm Vibration  
Accelerometer 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 8041:2005; 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 8041:2005
RMS & RMQ Detectors	Digital true RMS & RMQ detectors with Peak detection, resolution 0.1 dB
Measurement Range	Transducer dependent: 0.01 m/s <sup>2</sup> RMS ÷ 50 ms <sup>-2</sup> Peak (with SV 38V and Wd filter) 0.1 m/s <sup>2</sup> RMS ÷ 2000 ms <sup>-2</sup> 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 <sup>1</sup>	Simultaneous 6-channel time-domain signal recording, sampling frequency 6 kHz (optional)
Analyser <sup>1</sup>	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	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) <sup>2</sup> Four AA rechargeable batteries operation time > 16 h (4.8 V / 2.6 Ah) <sup>2</sup> (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)

<sup>1</sup>function parallel to the meter mode

<sup>2</sup>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.

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