SV 103
Hand-Arm
Vibration
Dosimeter

User Guide

SVANTEK

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 107B moulded hand-held adaptor with the tri-axial MEMS accelerometer and contact force sensors. The MEMS technology means the SV 107B 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.
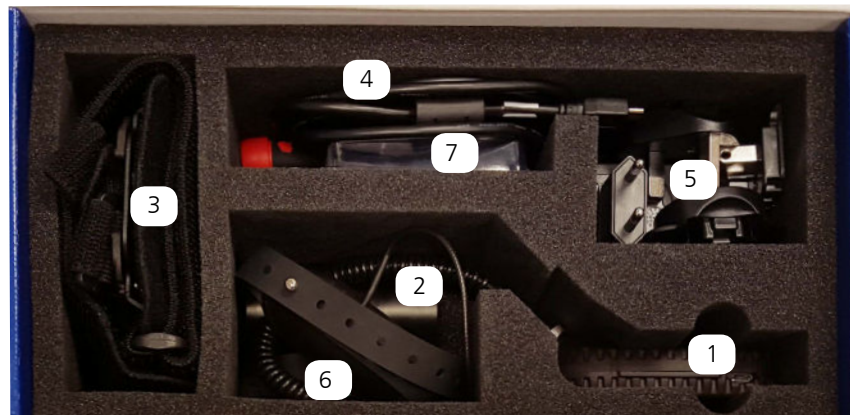
List of Contents

List of contents included in the SV 103 box:

Hardware accessories:

Lp.	Description	pcs.
1.	SV 103 Vibration dosimeter	1
2.	SV 107B Tri-axial accelerometer (connected to SV 103)	1
	SA 150B Adapter to SV 107B	1
	SA 151B Adapter to SV 107B (connected to SV 107B)	1
	SA 152B Adapter to SV 107B	1
3.	SA 103 Armband for SV 103	1
	SA 107 Wristband for SV 107B cable	2
4.	SC 156 USB cable	1
5.	SA 54 Charger/power supply with adapters	1
6.	SA 153 Force calibration adapter	1
7.	Spare screws for fixing SA 151B/152B/153B adapters do SV107B	3
	Screwdriver	1
8.	CD with user manual	1
9.	Factory calibration certificate	1
10.	Warranty card	1
11.	Information card	2

Please check the list against the contents. If any of the listed items are missing, please contact your local Svantek distributor or send an e-mail to office@svantek.com within 3 days of receiving the parcel.

List of optional extras not included in the SV 103 box

Hardware accessories:

Part name	Description	Applications
SA 76	Waterproof carrying case	Transportation
SA 105B	Calibration adapter	Periodical verification, in-situ checks
SV 110	Hand-held vibration calibrator	Instrument check before and after series of measurements
SV 111	Vibration calibrator	Instrument check before and after series of measurements

Software options that can be activated by code
(with no need to return the meter to factory):

Part name	Description	Applications
SF 103 3OCT	1/1 & 1/3 octave analysis	Verification of vibration sources Research and development
SF 103 WAV	Time domain signal recording during measurement - continuous or triggered	Analysis of vibration signal Post-processing Research and development

Accredited calibration
(requires sending the instrument to SVANTEK authorised laboratory)

Part name	Description	Applications
SV_CV_HA_T	Accredited calibration for vibration meter	ISO / IEC 17025 calibration certificate

Configuration with Supervisor software
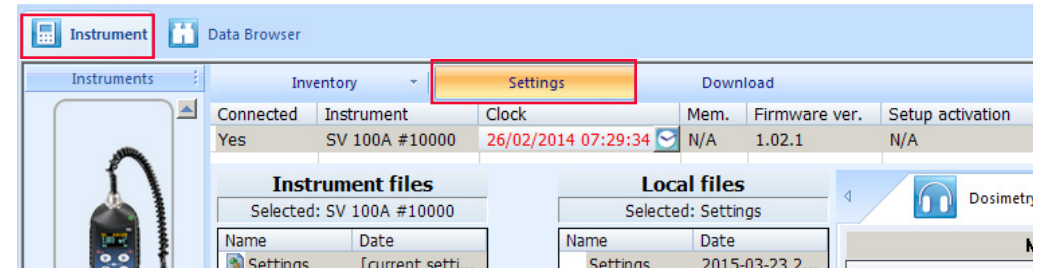
Configuration set-up

1) To switch the power on hold the <ENTER> button for a couple of seconds.
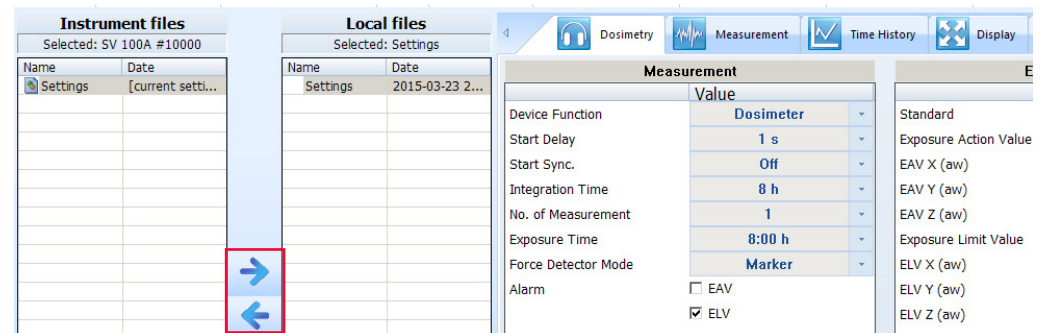

2) Connect the USB cable to PC. Make sure the Supervisor software and USB drivers are previously installed on the PC.

3) Open the Supervisor software and go to the Instrument tab.
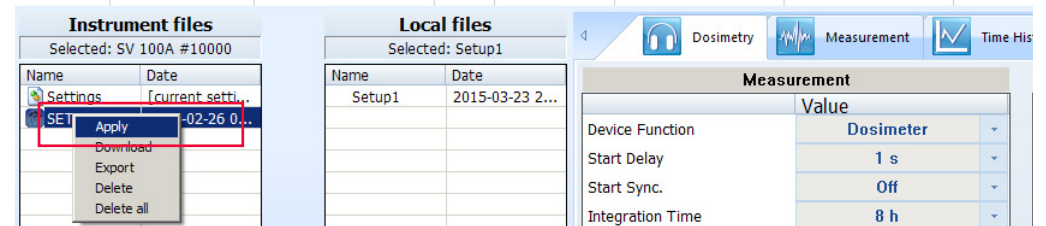
4) Select Settings

5) Download current Settings from Instrument files to Local Files using right arrow and edit SV103 settings using panels on the right hand side

6) Save settings file under new name

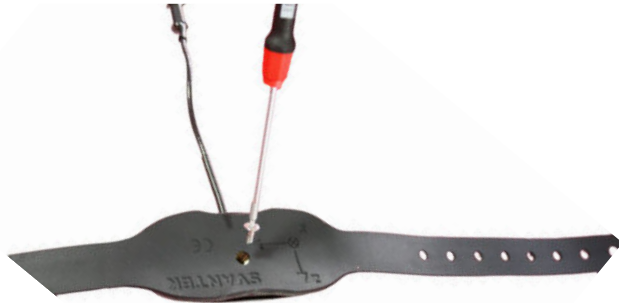7) Upload the file to the Instrument Files using left arrow and select Apply

8) Disconnect the USB cable. Instrument is ready to measure.

In-situ check with SV 110

Installation of SV107 on the calibrator

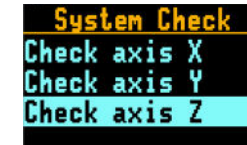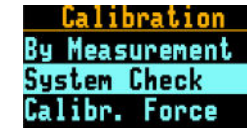1) Unscrew the SA 151 adapter from the SV 107B sensor

2) Mount the SA 105B adapter on the SV 110 hand-held calibrator*. Using magnets connect the SV 107B to SA 105B.

4) Enable Calibration menu in SV 103 by holding Right Arrow button. Select the System check and axis.

5) Start the calibrator using level of 10 m/s² at 80 Hz and wait until all LEDs are green.
6) Press Enter on SV 103 to start the check procedure.
7) Repeat the procedure for all 3 axes.

*SV110 calibrator and SA105B adapter are not the part of the SV103 kit. They need to be ordered additionally.

Running the measurement

Set up of SV 103

1) Connect one of the adapters to SV 107B sensor using the screw. It is mandatory to use a screw for measurements.

2) Put the mounting adapter on arm and place the SV 103 in it.

4) Place the SV 107B on the palm of the hand as shown below. Secure the cable on a wrist with a wrist band.
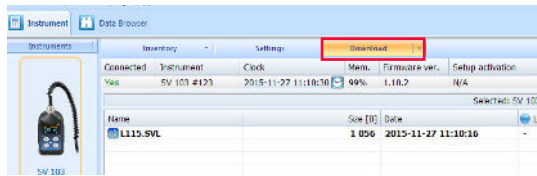

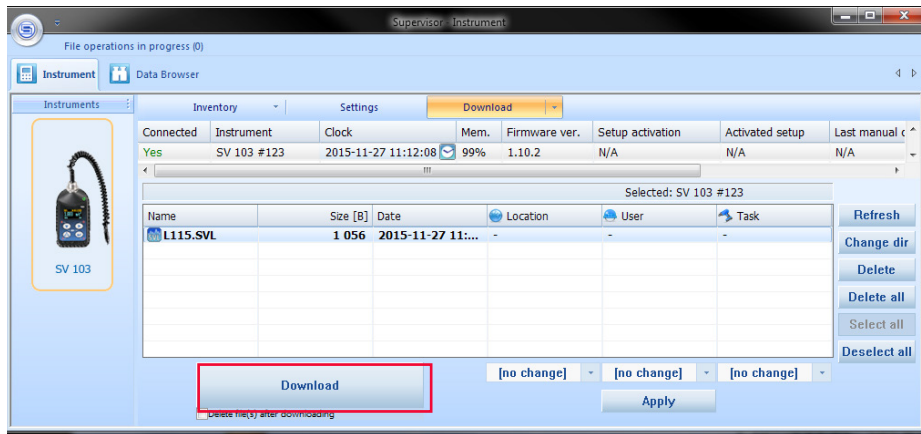5) To start the measurement manually pres 2 arrows simultaneously.

Data files download
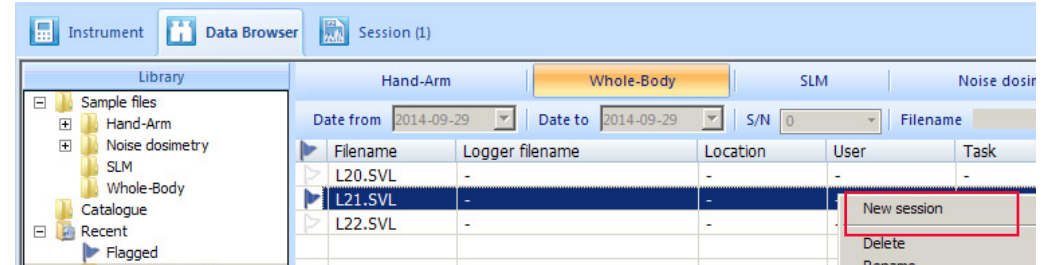
Downloading with Supervisor

1) Connect the SV103 to PC and open Supervisor software.
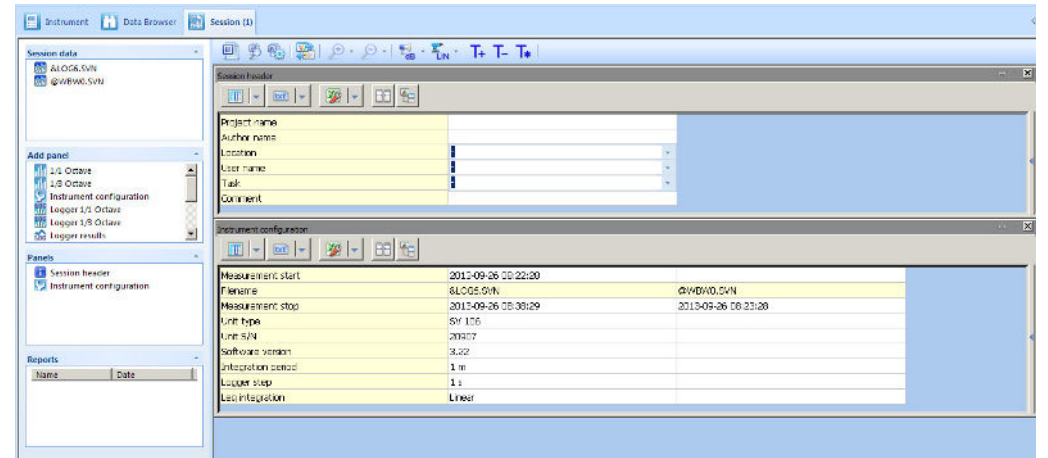Click the Download button located next to Settings and Inventory.

2) Select files you wish to download and click the Download button located in the bottom section.

3) Once the file is downloaded it will be automatically shown in the Data Browser. Right click on file and start "New session" or simply double click on file

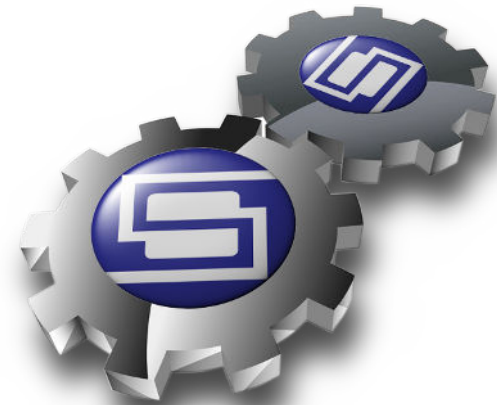
4) The file will open in default panels.

5) The detailed information on the operations within the Session panels is described in the SV 103 User Manual and Supervisor Software Manual.

Support and service

Should your SVANTEK professional measurement equipment need to be returned for repair or for calibration, please contact the service office at the following number or contact via the SVANTEK's website.

Service Office: +48 (22) 51-88-320 or +48 (22) 51-88-322.
Office hours are 9:00 a.m. to 5:00 p.m. Central European Time.
- E-mail at office@svantek.com
- Internet at www.svantek.com
- Address:
    SVANTEK Sp. z o.o.
    Strzygłowska 81
    04-872 Warszawa,
    Poland

SV 103 Technical Specification

Application_____Hand-arm
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_____W_h (ISO 5349) and corresponding Band Limiting filter
RMS & RMQ Detectors_____Digital true RMS detector with Peak detection, resolution 0.1 dB
Measurement Range_____0.2 ms^{-2} RMS ÷ 2000 ms^{-2} PEAK
Frequency Range_____1 Hz ÷ 2000 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_____Detachable SV 107B tri-axial accelerometer with hand straps in accordance to ISO 5349
Display_____OLED 128 x 32 pixels
Memory_____8 GB
Interfaces_____USB 2.0 client, Bluetooth
Keyboard_____4 push buttons
Power Supply

    Ni-MH rechargeable cells _____operation time > 24 hours[1]
    USB interface_____500 mA HUB
Environmental Conditions

    Temperature_____from -10 ºC to 50 ºC
    Humidity_____up to 90 % RH, non-condensed
Dimensions_____88 x 49.5 x 19.2 mm (instrument without accelerometer, cable and mounting stripe)
Weight_____150-160 grams with SV 107B 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.

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