Microphone in Real Ear Measurements with SV 102

Microphone In Real Ear (MIRE) is a technique for assessing the noise sources placed in a short distance to a human ear, requiring dedicated measuring instrumentation. SV 25S microphone has been designed together with SV 102 dual-channel acoustic dosimeter to meet requirements of ISO 11904 and ANSI S12.42-1995 standards which specify methods for the determination of sound immissions from sources located close to the human ear. SV 25S microphone measures sound pressure level in the ear canal by means of different lengths of probes, easily controlled and placed in repeatable position. SV 102 instrument with SV 25S microphone is a unique system which measures the noise from the headphones or hearing protectors with audio communication facilities when these are used in a real human ear.

Noise measurements in ear canal are important issue as different persons exposed to the same sound, have different sound pressure levels results at their eardrums.

Measurement of individual eardrum sound pressure levels is more accurate for estimating the individual risk of hearing damage in the comparison to usage of the mean eardrum sound pressure level of a population.

SV 25S microphone together with SV 102 analyser equipped with octave analysis provide individual real-world test of the earmuffs noise reduction ratio.

To prevent damage of the eardrum and skin of the ear canal microphone probe tube is covered by one time used silica pipe which provides hygienic comfort as well.

Applied TEDS technology ensures automatic calibration. Possibility of easy acoustic calibration with a dedicated adapter SA 130 accomplishes exceptional features of SV 102 dual-channel instrument and SV 25S microphone.

Advanced time-history logging for each profile, together with spectra saving and audio events recording provide complete information about measured signal, which is saved in non-volatile, up to 64 MB internal memory. Data files are easily downloaded to any PC using USB interface and SvanPC+ software.

FEATURES

- Measurements according to ISO 11904 and ANSI S12.42-1995, determination of sound immissions from sources located close to the ear
- Individual real-world test of the earmuffs noise reduction ratio
- Automatic calibration using TEDS technology
- Easy acoustic calibration with dedicated 1/2" adapter SA 130
- Easy and repeatable positioning in ear canal
- Dual-channel 1/1 octave analysis
- Dual-channel 1/3 octave analysis
- Audio Events Recording
- Microphone probe covered with one time used easy replicable soft silica pipe protecting ear canal and providing hygiene comfort

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INSTRUMENTATION FOR SOUND & VIBRATION MEASUREMENTS

TECHNICAL SPECIFICATIONS

MICROPHONE IN REAL EAR MEASUREMENTS

Standards	ISO 11904, ANSI S12.42-1995
Acoustic Dosimeter Mode	$L_{ear,exp}$ (L_{eq}), $L_{ear,FF}$, $L_{ear,DF}$, Spl, Peak, SEL Measurements simultaneous to the 1/1 or 1/3 octave analysis
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	SV 25S, Type 2, ceramic microphone, including special ear canal probe for measurements based on Microphone In Real Ear (MIRE) technique (option) Microphone has built-in TEDS functionality for the automatic calibration SA 130 adapter provides easy calibration with 1/2" acoustic calibrator
Measurement Range	50 dBA RMS ÷ 118 dBA Peak (with SV 25S MIRE microphone)
Frequency Range	20 Hz ÷ 10 kHz, sampling rate 24 kHz
Dynamic Range	90 dB

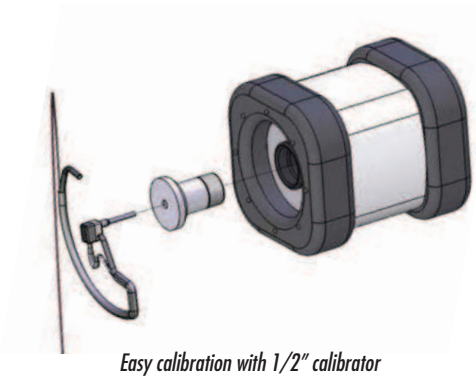
Data Logger*	Time-history logging of RMS / Max / Min / Peak results to internal memory with time step down to 1 second, up to 24 measurement results logged simultaneously
Audio Recorder*	Time-domain signal events recorder (option)
Dual Channel Mode	Dual-channel measurement mode with second microphone SV 25S or SV 25D (option)
1/1 Octave*	Dual-channel 1/1 octave real-time analysis and spectra logging, 9 filters with centre frequencies from 31.5 Hz to 8 kHz, Type 1, IEC 61260 (option)
1/3 Octave*	Dual-channel 1/3 octave real-time analysis and spectra logging, 27 filters with centre frequencies from 25 Hz to 10 kHz, Type 1, IEC 61260 (option)

BASIC DATA

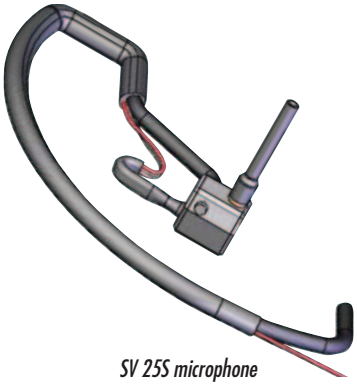
Input	2 x Lemo 2-pin	
Display	LCD 128 x 64 pixels plus icons with backlighting	
Memory	Up to 64 MB non-volatile flash type	
Interfaces	USB 1.1 Client,	
	Extended I/O - AC output (1 V Peak) / Digital Output (Alarm trigger) / Digital Input (Input trigger)	
Power Supply	Two AA batteries (alkaline)	operation time > 20 h (3.0 V / 1.6 Ah) **
	Two rechargeable batteries (not included)	operation time > 24 h (2.4 V / 2.6 Ah) **
	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)	

*function parallel to the acoustic dosimeter mode

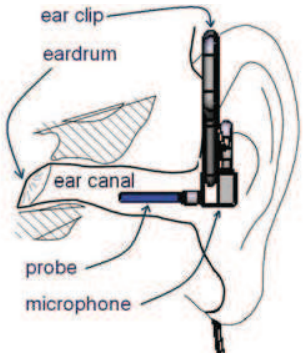
**in single-channel dose meter mode and backlight off



Easy calibration with 1/2" calibrator



SV 25S microphone



Probe in ear canal

Continuous product development and innovation are the policy of our company.
Therefore, we reserve the right to change the specifications without prior notice.

SVANTEK

ISO 9001 CERTIFIED

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