

# SVAN 959

## Sound & Vibration Analyser

The SVAN 959 is all digital, Type 1 sound & vibration level meter along with analyser. Instrument is intended to general acoustic and vibration measurements, environmental monitoring, occupational health and safety monitoring.

Three acoustic or vibration profiles allow parallel measurements with independently defined filters and RMS detector time constants. Each profile provides significant number of results (e.g. for sound:  $L_{eq}$ ,  $L_{Max}$ ,  $L_{Min}$ ,  $L_{Peak}$ ,  $Spl$ , SEL or RMS, PEAK, VDV, MTVV in the case of vibration measurements). Advanced time history logging for each profile provides complete information about measured signal in non-volatile 32 MB internal memory or external USB Memory Stick and can be easily downloaded to any PC using USB interface and SvanPC+ software.

All required weighting filters (e.g.: A, C,  $W_k$ ,  $W_o$ ,  $W_b$ ) including the latest ISO 2631-1&2 standard are available with this instrument. RMQ detector enables direct measurement of the Vibration Dose Value (VDV). Using computational power of its digital signal processor the SVAN 959 instrument can, simultaneously to the meter mode, perform real time 1/1 or 1/3 octave analysis including statistical calculations and FFT analysis. Following functions

are also available: acoustic loudness measurements, tonality measurements, reverberation time measurements and user programmable second order band pass filters. The time history logging of 1/1 octave, 1/3 octave and FFT analysis is provided. The time domain signal recording on the external USB memory stick is also available.

Built-in sophisticated signal generator enables to perform advanced measurement techniques like MLS, TDS etc.

Fast USB 1.1 interface (12 MHz) creates real time link for the PC "front-end" application of the SVAN 959 instrument. Instrument can be also remotely controlled and measurement results can be downloaded to a PC using the RS 232 or IrDA interfaces.

Instrument is powered from four AA standard or rechargeable batteries (separate charger is required). The External DC power source or USB interface can be used for powering the instrument.

Robust, hand held case and light weight design accomplish the exceptional features of this new generation instrument.

## FEATURES

- Type 1 sound level measurements meeting IEC 61672:2002
- General vibration measurements (acceleration, velocity and displacement) and HVM meeting ISO 8041:2005 standard
- Three parallel independent profiles
- 1/1 and 1/3 octave real time analysis
- FFT real time analysis (1920 lines in up to 22.4 kHz band)
- Pure tone detection
- Acoustic loudness measurements
- Reverberation Time measurements
- Advanced Data Logger including spectra logging
- USB Memory Stick providing almost unlimited logging capacity
- Time domain signal recording
- Advanced trigger and alarm functions
- USB 1.1 Host & Client interfaces (real time PC "front end" application supported)
- RS 232 and IrDA interfaces
- Built-in signal generator
- Integration time programmable up to 24 h
- Power supply by four AA rechargeable or standard batteries
- Hand held, light weight and robust case
- Easy in use



# TECHNICAL SPECIFICATIONS

## SOUND LEVEL METER & ANALYSER

Standards	Type 1: IEC 61672-1:2002
Meter mode	SPL, $L_{eq}$ , SEL, $L_{den}$ , $L_{tm3}$ , $L_{tm5}$ , Statistics - $L_n$ ( $L_1$ - $L_{99}$ ), $L_{Max}$ , $L_{Min}$ , $L_{Peak}$ Simultaneous measurement in three profiles with independent set of filters and detector time constants
Analyser	1/1 octave* real time analysis, Type 1, IEC 61260 1/3 octave* real time analysis, Type 1, IEC 61260 FFT* real time analysis, 1920 lines, up to 22.4 kHz band (option) Loudness* based on ISO 532B standard and Zwicker model (option) Pure tone detection based on FFT analysis (Tonality* option) Reverberation Time analysis in 1/3 octave bands (RT 60 option) User programmable second order band pass filters* (option) and more...
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	GRAS 40AE, 50 mV/Pa, prepolarised 1/2" condenser microphone with SV 12L IEPE preamplifier
Measurement Range	Total Dynamic Range: 15 dBA RMS ÷ 140 dBA Peak Linearity Range: 22 dBA RMS ÷ 140 dBA Peak
Dynamic Range	110 dB (both Low and High ranges)
Internal Noise Level	Less than 15 dBA RMS
Frequency Range	0.5 Hz ÷ 20 kHz; microphone dependent, with GRAS 40AE microphone: 3.15 Hz ÷ 20 kHz

## VIBRATION LEVEL METER & ANALYSER

Standards	ISO 8041: 2005 and ISO 10816-1
Meter mode	RMS, VDV, MTVV or MAX, Peak, Peak-Peak
Analyser	Simultaneous measurement in three profiles with independent set of filters and detector time constants 1/1 octave* real time analysis, Type 1 IEC 61260 1/3 octave* real time analysis, Type 1 IEC 61260 FFT* real time analysis, 1920 lines, up to 22.4 kHz band (option) RPM* rotation speed measurement parallel to the vibration measurement (option) Advanced enveloping option dedicated for bearing diagnostics (option) User programmable second order band pass filters* (option) and more...
Filters	HP1, HP3, HP10, Vel1, Vel3, Vel10, VelMF, Dil1, Dil3, Dil10, KB, $W_k$ , $W_c$ , $W_d$ , $W_i$ , $W_m$ , $W_p$ , $W_g$ (ISO 2631), $W_h$ (ISO 5349) (option)
RMS & RMQ Detectors	Digital True RMS & RMQ detectors with Peak detection, resolution 0.1 dB, Time Constants: from 100 ms to 10 s
Accelerometer (option)	Dytran 3185D general purpose accelerometer with 100 mV/g sensitivity
Measurement Range	Accelerometer dependent, with Dytran 3185D accelerometer: 0.003 ms <sup>-2</sup> RMS ÷ 500 ms <sup>-2</sup> PEAK
Frequency Range	0.5 Hz ÷ 20 kHz; accelerometer dependent, with Dytran 3185D accelerometer: 2 Hz ÷ 10 kHz

## BASIC DATA

Input	IEPE type with TEDS or Direct (TNC connector)
Frequency Range	0.5 Hz ÷ 20 kHz, sampling rate 48 kHz
Data Logger*	Time History logging to internal memory or USB Memory Stick Time domain signal recording on USB Memory Stick (option)
Signal generator	Sine, Sweep, White noise, Pink noise etc. (option)
Display	LCD 128 x 64 pixels plus icons with backlighting
Memory	32 MB non-volatile flash type, USB Memory Stick (not included)
Interfaces	USB 1.1 Client, USB 1.1 Host, RS 232 (with SV 55 option), IrDA (option)
Power Supply	External I/O - AC output (1 V Peak) or Digital Input/Output (Trigger - Pulse) Four AA batteries (alkaline) operation time > 12 h (6.0 V / 1.6 Ah)** Four AA rechargeable batteries (not included) operation time > 16 h (4.8 V / 2.6 Ah)** SA 17A external battery pack (option) operation time > 24 h** External power supply 6 V DC ÷ 15 V DC (1.5 W) USB interface 500 mA HUB
Environmental Conditions	Temperature from -10 °C to 50 °C Humidity up to 90 % RH, non-condensed
Dimensions	338 x 82 x 42 mm (with microphone and preamplifier)
Weight	630 grams with batteries, microphone and preamplifier

\* each function parallel to the meter mode \*\* with USB 1.1 Host function not active and backlight off

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



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