

FACTORY CALIBRATION DATA OF THE SVAN 977A No. 46010

with preamplifier SVANTEK type SV12L No. 77929 and microphone ACO PACIFIC type 7052E No. 72365

SOUND LEVEL METER

1. CALIBRATION (electrical)

LEVEL METER function; Characteristic: A; $f_{\text{sin}}=1$ kHz; Input signal =110.9 dB;

Range	Low (120dB)	High (137dB)
Indication [dB]	114.0	114.0
Error [dB]	0.0	0.0

2. CALIBRATION* (acoustical)

LEVEL METER function; Range: High; Reference frequency: 1000 Hz; Sound Pressure Level: : **114.00** dB.

Characteristic	Correct value [dB]	Indication [dB]	Error [dB]
Z	114.00	114.04	0.04
A	114.00	114.04	0.04
C	114.00	114.04	0.04

Calibration measured with the microphone ACO PACIFIC type 7052E No. 72365. Calibration factor: -0.54 dB.

3. LINEARITY TEST* (electrical)

LEVEL METER function; Range: Low; Characteristic: A; $f_{\text{sin}}=31.5$ Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0
Error [dB]	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0

LEVEL METER function; Range: Low; Characteristic: A; $f_{\text{sin}}=1000$ Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	120.0
Error [dB]	0.1	0.1	0.1	0.1	0.1	0.0	-0.0	0.0	0.0	-0.0

LEVEL METER function; Range: Low; Characteristic: A; $f_{\text{sin}}=8000$ Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	119.0
Error [dB]	0.1	0.1	0.1	0.0	-0.0	-0.0	-0.0	-0.0	0.0	-0.0

LEVEL METER function; Range: High; Characteristic: A; $f_{\text{sin}}=31.5$ Hz

Nominal result LEQ [dB]	35.0	36.0	37.0	38.0	40.0	60.0	80.0	97.0
Error [dB]	0.1	0.0	0.1	0.1	0.0	0.0	-0.0	0.0

LEVEL METER function; Range: High; Characteristic: A; $f_{\text{sin}}=1000$ Hz

Nominal result LEQ [dB]	35.0	36.0	37.0	38.0	40.0	60.0	80.0	100.0	120.0	137.0
Error [dB]	0.1	0.1	0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	-0.0

LEVEL METER function; Range: High; Characteristic: A; $f_{\text{sin}}=8000$ Hz

Nominal result LEQ [dB]	35.0	36.0	37.0	38.0	40.0	60.0	80.0	100.0	120.0	136.0
Error [dB]	0.1	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0

4. TONE BURST RESPONSE*

LEVEL METER function; Characteristic: A; $f_{\text{sin}}=4000$ Hz; Burst duration: 2 s

Range: **Low**; Steady level nominal result = 117dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5	0.25
MAX	Fast	Indication [dB]	117.0	116.9	116.0	114.4	112.2	108.7	105.8	102.9	99.0	95.9	92.9	89.9
		Error [dB]	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.1	0.0	-0.0	-0.0	-0.1	-0.1
	Slow	Indication [dB]	115.0	112.9	109.6	106.8	103.9	99.9	97.0	94.0	90.0	-	-	-
		Error [dB]	0.0	0.1	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-	-	-
SEL	-	Indication [dB]	117.0	114.0	110.0	107.0	104.0	100.0	97.0	94.0	90.0	86.9	83.9	80.8
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.1	-0.1

Range: **Low**; Steady level nominal result = 57dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1
MAX	Fast	Indication [dB]	57.0	56.9	56.0	54.4	52.1	48.6	45.8	42.9	38.9	35.9
		Error [dB]	0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.1	-0.0	-0.0	-0.1
	Slow	Indication [dB]	55.0	52.9	49.5	46.7	43.8	39.9	36.9	33.9	30.0	-
		Error [dB]	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	-
SEL	-	Indication [dB]	57.0	54.0	50.0	47.0	44.0	40.0	37.0	34.0	30.0	27.0
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.0	0.1	0.1

Range: **Low**; Steady level nominal result = 35dB

Result	Detector	Duration [ms]	1000	500	200
MAX	Fast	Indication [dB]	35.0	34.9	34.0
		Error [dB]	0.0	0.0	0.0
	Slow	Indication [dB]	33.0	30.9	27.6
		Error [dB]	0.0	0.1	0.0
SEL	-	Indication [dB]	35.0	32.0	28.1
		Error [dB]	0.0	0.0	0.1

Range: **High**; Steady level nominal result = 134dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5	0.25
MAX	Fast	Indication [dB]	134.0	133.9	133.0	131.4	129.1	125.7	122.8	119.9	115.9	112.9	109.9	106.8
		Error [dB]	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.1	0.0	-0.0	-0.1	-0.1	-0.1
	Slow	Indication [dB]	132.0	129.9	126.5	123.7	120.8	116.9	113.9	110.9	106.9	-	-	-
		Error [dB]	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-	-	-
SEL	-	Indication [dB]	134.0	130.9	127.0	124.0	121.0	117.0	114.0	110.9	106.9	103.9	100.9	97.8
		Error [dB]	0.0	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.1	-0.1	-0.1

Range: **High**; Steady level nominal result = 54dB

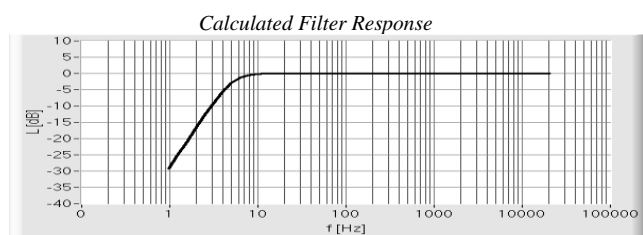
Result	Detector	Duration [ms]	1000	500	200	100	50
MAX	Fast	Indication [dB]	54.0	53.9	53.0	51.4	49.1
		Error [dB]	0.0	0.0	0.0	0.0	-0.0
	Slow	Indication [dB]	52.0	49.9	46.5	43.8	40.9
		Error [dB]	0.0	0.0	-0.0	0.0	0.1
SEL	-	Indication [dB]	54.0	50.9	47.0	44.0	41.0
		Error [dB]	0.0	-0.0	0.0	0.0	0.0

Range: **High**; Steady level nominal result = 46dB

Result	Detector	Duration [ms]	1000	500	200
MAX	Fast	Indication [dB]	46.0	45.9	45.0
		Error [dB]	0.0	0.0	0.0
	Slow	Indication [dB]	44.0	42.0	38.6
		Error [dB]	0.0	0.0	-0.0
SEL	-	Indication [dB]	46.0	43.0	39.1
		Error [dB]	0.0	0.0	0.1

5. FREQUENCY RESPONSE – BAND AUDIO* (electrical)

LEVEL METER function; Characteristic: Z; Range: High; Input signal =135 dB;



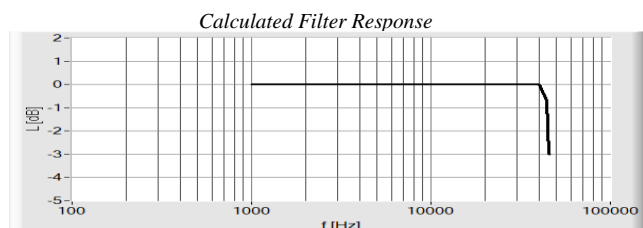
Measured Filter Response with Preamplifier SV12L
(f - frequency, L - level)

f [Hz]	L [dB]	f [Hz]	L [dB]	f [Hz]	L [dB]	f [Hz]	L [dB]	f [Hz]	L [dB]
1	-29.7	4	-6.0	16	0.0	250	0.0	16000	-0.0
1.25	-25.5	5	-3.2	20	0.0	500	0.0	20000	-0.0
1.6	-21.4	6.3	-1.4	25	0.0	1000	0.0		
2	-17.3	8	-0.5	31.5	0.0	2000	0.0		
2.5	-13.3	10	-0.2	63	0.0	4000	0.0		
3.15	-9.5	12.5	-0.0	125	0.0	8000	0.0		

All frequencies are nominal center values for the 1/3 octave bands

6. FREQUENCY RESPONSE – BAND ULTRA* (electrical)

LEVEL METER function; Characteristic: HPE; Range: High; Input signal =135 dB;



Measured Filter Response with Preamplifier SV12L
(f - frequency, L - level)

f [Hz]	L [dB]	f [Hz]	L [dB]	f [Hz]	L [dB]
1000	0.0	16000	-0.0	40000	-0.1
2000	0.0	20000	-0.0	43856*	-0.4
4000	0.0	25000	-0.0	45255*	-2.6
8000	-0.0	32000	-0.1		

All frequencies not marked by * are nominal center values for the 1/3 octave bands

7. INTERNAL NOISE LEVEL* (electrical - compensated)

LEVEL METER function ; Calibration factor: 0 dB

	Characteristic	Z	A	C
Range Low	Level [dB]	≤20	≤11	≤10
Range High	Level [dB]	≤40	≤23	≤22

* measured with preamplifier SVANTEK type SV12L No. 77929.

8. INTERNAL NOISE LEVEL (acoustical - compensated)

LEVEL METER function; Characteristic: A; (Backlight – off)

Range	Low	High
Indication [dB]	11.4	18.8

Noise measured in special chamber, with reference microphone G.R.A.S type 40AN No. 73421

VIBRATION LEVEL METER

1. CALIBRATION (electrical)

LEVEL METER function; Characteristic: HP10; f=79.58 Hz; Input signal =140 dB;

Range	Low	High
Indication [dB]	140.0	140.0
Error [dB]	0.0	0.0

2. CALIBRATION (vibrational)

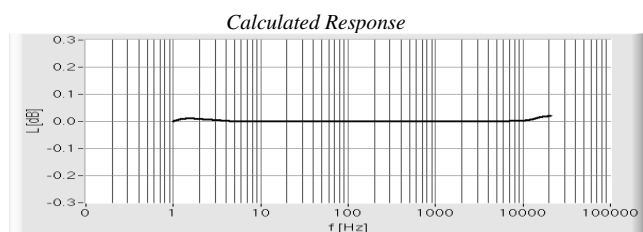
LEVEL METER function; Range: High; Input signal: 140dB;

Characteristic	Reference frequency [Hz]	Correct value [dB]	Indication [dB]	Error [dB]
HP1	79.58	140.0	140.2	0.2

Calibration measured with the accelerometer DYTRAN type 3185D No. 2975. Calibration factor: -0.2dB

3. FREQUENCY RESPONSE (electrical)

LEVEL METER function; Characteristic: HP; Range: High; input=175 dB;



Measured Response (f-frequency, L-level)

f [Hz]	L [dB]
1	-0.1
1000	-0.0
20000	-0.0

All frequencies are nominal center values for the 1/3 octave bands

4. INTERNAL NOISE LEVEL (electrical)

LEVEL METER function; Range: Low;

Characteristic	HP1
Indication [dB]	34.7

ENVIRONMENTAL CONDITIONS

Temperature	Relative humidity	Ambient pressure
23 °C	28%	991 hPa

TEST EQUIPMENT

Item	Manufacturer	Model	Serial no.	Description
1.	SVANTEK	SVAN 401	84	Signal generator
2.	SVANTEK	SVAN 912A	9537	Sound & Vibration Analyser
3.	RIGOL	DM3068	DM30155100773	Digital multimeter
4.	SVANTEK	SV30A	24563	Acoustic calibrator
5.	SVANTEK	ST02	-	Microphone equivalent electrical impedance (18pF)
6.	DYTRAN	3233A	747	Reference accelerometer

CONFORMITY & TEST DECLARATION

1. Herewith Svantek company declares that this instrument has been calibrated and tested in compliance with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass them.
2. The acoustic calibration was performed using the Sound Calibrator and is traceable to the GUM (Central Office of Measures) reference standard - sound level calibrator type 4231 No 2292773.
3. The vibrational calibration was performed using the Back-to-Back Comparison method and is traceable to the GUM (Central Office of Measures) reference standard - accelerometer type 8305 No 1435233.
4. The information appearing on this sheet has been compiled specifically for this instrument. This form is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.
5. This calibration sheet shall not be reproduced except in full, without written permission of the SVANTEK Ltd.

Calibration specialist: Paweł Bednarczyk

Test date: 2019-01-30