SVANTEK

USER MANUAL

SV 271 LITE

MONITORING STATION

Warsaw, 2019-06-19
Rev. 1.02

Note: *Because of continuous product improvement SVANTEK reserves the right to make changes to product specifications without notice. To download the most up to date user's manual please visit our web site at www.svantek.com.*

This user's manual presents the controller firmware revision SD270-LITE v3.01 and SD270A-LITE v2.02.

The succeeding software revisions (marked with the higher numbers) can change the view of some displays presented in the text of the manual.

WEEE Notice: *Do not throw the device away with the unsorted municipal waste at the end of its life. Instead, hand it in at an official collection point for recycling. By doing this you will help to preserve the environment.*

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IMPORTANT NOTES BEFORE USE

- ✓ *Only SVAN 971 and the controller can be disconnected and removed from the station case by the user. All other disassembling work should be performed strictly by an authorized service team.*
- ✓ *The producer does not recommend removing the controller without a sound reason. Double check that the controller has a good fixation in the connector after reconnecting.*
- ✓ *Do not remove the battery from the case! This operation must be done only by the authorised service.*
- ✓ *SVAN 971 is powered from the external source and doesn't use its internal batteries. Internal instrument's batteries must be removed for correct system operation and safety reasons.*
- ✓ *The correct connection of the microphone is not signalled by the controller therefore it is recommended to perform a test measurement each time the station is turned on.*
- ✓ *During station operation it is recommended to charge the internal and external batteries as often as possible; this will extend battery life. It is necessary to charge the battery after any total discharge.*
- ✓ *Monitoring station and/or SB 272 should not be stored for a long time with discharged batteries. Storing with discharged batteries can damage their batteries. Storing with discharged batteries for more than one month may result in impossibility to recharge them.*
- ✓ *If Monitoring station and/or SB 272 are planned to be stored for a long period of time, it is recommended to charge their batteries up to 100% of their capacity. Batteries should be charged at least every 6 months.*
- ✓ *Monitoring station and SB 272 have their own chargers, which are incompatible: SB 270 is a waterproof power supply for SV 271 LITE, whereas SB 273 is an indoor charger for SB 272.*
- ✓ *Before installing the station at the measurement site, make sure that the protective caps on the four antibird spikes are removed. It is recommended to use the protective caps during transportation.*

Table of Contents:

1. INTRODUCTION

SV 271 LITE is an outdoor monitoring station based on the **SVAN 971** Class 1 sound level meter and **SA 271** outdoor microphone kit. The solution is recommended for short-term and semi-permanent noise measurement in the environment.

The IP 67 rated case contains a lead-acid battery the operating time of which can be easily extended by connecting an external battery or a solar panel. The intelligent charging unit enables using of a solar panel without expensive controllers or heavy batteries. The case is fitted with very robust, waterproof connectors (military standard).

The station provides broad-band results such as **Leq**, **Max**, **Min** and **Peak** with all standard weighting filters together with an incredible time-history logging feature with two adjustable logging steps. The broad-band results can be recorded in three profiles which enable parallel measurements with 3 different filters (e.g. **A**, **C**, **Z**) as well as 3 different detector time constants (e.g. **Fast**, **Slow**, **Impulse**).

The SA 271 outdoor kit protects the SVAN 971 preamplifier and microphone from weather conditions. The SA 271 is made of lightweight materials and can be easily installed on a mast with standard mounting threads.

SVAN 971 can be easily removed from the station case and used as a hand-held sound level meter.

1.1. FEATURES

- SV 271 LITE is a portable monitoring station housed in an IP 67 waterproof case dedicated for periodic outdoor measurements.
- The station is based on the SVAN 971 which can be easily removed from the case and used as a hand-held sound level meter.
- **Class 1** noise measurements are performed over a very wide dynamic range over 110 dB from 10 Hz up to 20 kHz according to the IEC 61672-1:2013 standard.
- The **Time history** of results such as **Leq**, **Max**, **Min** and **Peak** is saved on a micro SD-card.

- The station can perform real-time frequency analysis in **1/1** or **1/3 Octave** bands and save it as time-history data.
- The **1/3 Octave** real-time frequency analysis allows the analysis of the noise frequency contents.
- Recording to **Wave** format during measurements and in parallel to the time history logging. Once downloaded to a PC it can be played back. Settings such as triggers or recording time are adjustable
- The station can be powered from an internal battery, external battery or external DC power supply and is ready for direct connection to a solar panel. The powering is managed by the intelligent charging unit.
- The station uses a waterproof CHARGER that is designed for an outdoor use.
- Military standard CONNECTORS provide reliable, robust and waterproof cable connections.

1.2. ACCESSORIES INCLUDED

SVAN 971	Class 1 Sound Meter including time history logging and: prepolarised ½" condenser microphone with nominal sensitivity 38 mV/Pa (**SV 7052**), microphone preamplifier (**SV 18**)
SM 271 LITE	Outdoor monitoring station for SVAN 971 including: 17Ah battery and external power supply (**SB 270**)
SC 271	Preamplifier cable for SV 18 (SA 271) and SV 271, 6 meters
SA 270D	Desiccator for outdoor protection kits
SA 271	Outdoor protection kit for SV 7052 microphone (microphone, preamplifier, cable and desiccator not included)
SA 250	Carrying case for SA 271, SB 270, cables and accessories
SvanPC++	PC Software for MS Windows for downloading and viewing data

1.3. ACCESSORIES AVAILABLE

SV 33B	Class 1 Sound calibrator: 114 dB@1000 Hz
SB 272	External battery for SV 27x monitoring stations series (33 Ah) including indoor charger
SB 271	Solar panel for SV 27x monitoring stations (40 W)
SA 206	Mast with adjustable height from 1.5 meter to 4 meters (cover SA 21_45 included)

2. MONITORING STATION SET

2.1. SV 271 LITE STANDARD SET AND OPTIONAL ELEMENTS

The SV 271 LITE station consists of two carrying cases. The main case is waterproof with an internal 17 Ah battery and internal charging unit supporting powering from external DC or a solar panel. The SVAN 971 Class 1 sound level meter is installed inside but can be removed and used as a hand-held meter.

All accessories fit conveniently into a second carrying case.

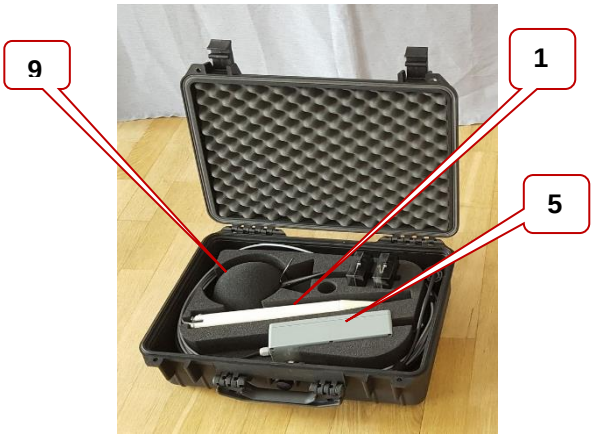
The SV 271 LITE station includes:

- outdoor microphone kit (1),
- waterproof case with battery, charging unit and connectors (2),
- controller (3),
- SVAN 971 – Class 1 Sound Level Meter and Analyser (4),
- power supply (5).

The waterproof case is equipped with:

- external power connector (6),
- air pressure compensation valve (7)
- input signal connector (8).

The outdoor microphone kit (1) and outdoor power supply (5) are packed inside the second transportation case together with microphone, windscreen (9), power supply and input cables.



Additional accessories for SV 271 LITE system, not included in the standard set, but in many applications, essential for reliable system operation and task performance are:

1. Sound calibrator (**SV 33B**), – see Chapter 2.2.1
2. external battery 33 Ah including indoor charger (**SB 272**), – see Chapter 2.2.2
3. solar panel 40 W (**SB 271**), – see Chapter 2.2.3
4. mast with adjustable height from 1.5 meter to 4 meters (**SA 206**), – type: Manfrotto 269BU

2.1.1. *SV 271 LITE - waterproof case*

The IP 67 waterproof case houses and protects the main elements of the monitoring station:

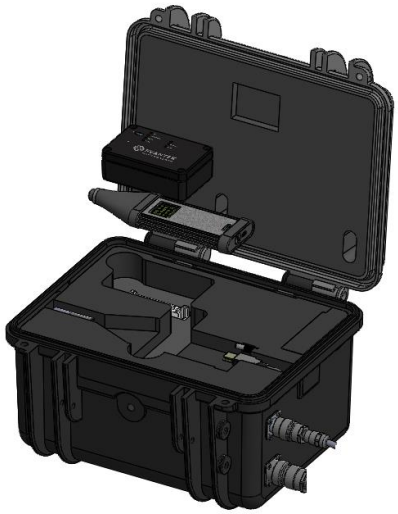
- controller,
- SVAN 971 instrument,
- other internal elements such as: rechargeable battery, connectors, cables, circuit boards.

***Note**: Only SVAN 971 and the controller can be disconnected and removed from the station case by the user. All other disassembling work should be performed strictly by an authorized service team.*

SVAN 971 can be removed from the case by the user and used as a hand-held sound meter.

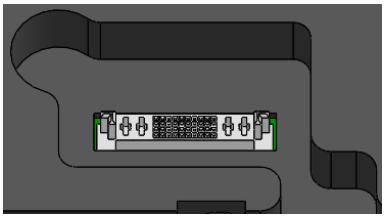
To do this the user should;

1. switch off the instrument by pressing together **<Shift>** and **<Start/Stop>** keys,
2. unscrew the input connector and disconnect the input cable,
3. disconnect the USB cable.



The controller is fixed in the station case by a Signal Power Combo connector and can also be removed from the case. To do this the user should pull the controller up and remove it from the slot.

To return it the user should put the controller in the slot and press on it to achieve a good fix with the connector.



***Note**: The producer does not recommend removing the controller without a sound reason. Double check that the controller has a good fixation in the connector after a reconnecting!*

The monitoring station case is equipped with an air pressure compensation valve that enables the user to open the case easily if the internal pressure is lower than the atmospheric one.

Use the silica gel bags (optional accessory) for absorbing any remaining moisture after closing the lid.

The valve should be released if opening the top lid is problematic.

***Note**: The valve must be closed when the station is used outdoors, otherwise the case is not sealed against moisture.*

The station case is equipped with two Souriau UTO type connectors for:

- input signals from the microphone (**INPUT**).

- powering station and charging the internal battery (**DC SUPPLY**).

To connect the cable to the case socket, start by lining up the key on the plug and socket, then lock the connector by turning the ring clockwise (only the ring close to the socket will rotate).

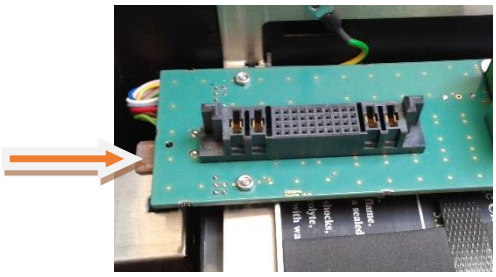
To disconnect cables, push the connector towards the station and turn it counter-clockwise. New connectors require more force so using a closed hand is more effective than using only fingers.

The station is equipped with a Lead-Acid rechargeable battery (17Ah, 12V), located in the bottom of the case.

The battery can be used in any chosen position without the risk of leakage. The battery has a pressure relief valves that allows safe dispersal of any excess pressure inside the cell (VRLA).

Battery capacity may vary depending on the ambient temperature.

The safety fuse is located on the left side of the connection plate.



***Note**: Do not remove the battery from the case! This operation must be done only by the authorised service.*

***Note:** Battery is not restricted for air, surface and water transport. Classified as non-hazardous material (IATA/ICAO Special Provision A67, DOT-CFR Title 49 parts 171-189, IMDG amendment 27).*

***Note**: During station operation it is recommended to charge the internal battery as often as possible; this will extend battery life. It is necessary to charge the battery after any total discharge.*

***Note**: The station should not be stored for a long time with a discharged battery. Storing the station with a discharged battery can damage the battery. Storing the station with a discharged battery for more than one month may result in impossibility to recharge the battery.*

***Note**: If the station is planned to be stored for a long period of time, it is recommended to charge its battery up to 100% of its capacity. The battery should be charged at least every 6 months.*

2.1.2. *SD 270(A) LITE Controller*

The SV 271 LITE monitoring station is equipped with the SD 270 LITE (and later modification SD 270A LITE) controller that integrates and controls all system modules and is responsible for the powering of all elements of the monitoring station.

A very important task of the controller is power distribution - it provides appropriate DC power to the SVAN 971, managing external power sources such as a power supply SB 270 or optional solar panel or external battery.

The next key task of the controller is integration of the whole system – examining the state and condition of every module of the system and the immediate indication of all problems on the control panel by means of several LEDs.

The controller also analyses the temperature condition inside the monitoring station case. If the internal temperature is higher than 50°C, the controller will switch off internal battery charging. If the temperature further increases over 65°C, the controller

will switch off the monitoring station. The station will be also switched off, if the internal temperature falls below -30ºC.

The TEST key in the SD 270A LITE controller enables the controller resetting. To do this the user should press the TEST key for more than 20 seconds until the LED lights up. Release the key and the controller reset will be done.

A mini USB connector is positioned on the front panel of the controller and is designated to the controller firmware upgrade.

Note: *The mini USB connector on the controller panel doesn't provide any measurement or setup data exchange with the PC. Such data exchange is carried out via the USB Device interface of the SVAN 971 (**USB** socket).*

Note: *Communication of the controller or SVAN 971 with a PC requires installation of the USB drivers on your PC. USB driver for Svantek devices are available on http://svantek.com/support-drivers-software.html*

Note: *Before starting upgrading be sure that your SvanPC++ software is Off! If not, please Exit it before starting any upgrading.*

To upgrade the firmware of the controller, go through the next steps:

1. Switch off SVAN 971 and wait until all LEDs are off.
2. Connect the controller to the PC with SC 56 cable.
3. Run the "file2usb.exe" file on the connected PC. The **BAT 1** LED will start flashing a green colour.
4. After "Success" is registered on the PC, disconnect the SC 56 cable.

Note: *In case of any problems with the upgrade, switch off SVAN 971 and wait until all LEDs are off, then extract the controller from the case and repeat steps from 2 to 4.*

2.1.3. *SB 270 - external power supply with AC/DC converter*

SB 270 is waterproof Single Output Switching Power Supply which is characterised by:

- Universal AC input / Full range (90 ~ 264VAC)
- Protections: Short circuit / Over load / Over voltage
- Fully encapsulated with IP65 level
- Fully isolated plastic case

2.1.4. *SVAN 971 - Sound and Vibration Analyser*

SVAN 971 is a Class 1 Sound & Vibration level meter as well as a real time 1/1 or 1/3 octave analyser and is a core of the SV 271 LITE system. Its role is to make measurements and save results in files. The measurement results can be downloaded analysed later with the use of the SvanPC++ software.

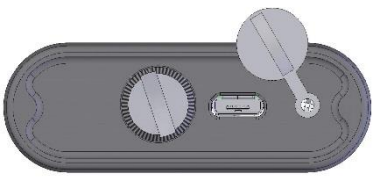
SVAN 971 can be easily removed from the case and used as an independent hand-held sound level meter/analyser, not as an integral part of the SV 271 LITE system.

Main important features of SVAN 971 as a part of SV 271 LITE system:

- Three user configurable profiles allow parallel measurements with independently defined frequency filters and RMS detector time constants. Each profile provides a significant number of results (like **Spl**, **Leq, Sel**, **Lden**, **LEPd**, **Ltm3**, **Ltm5**, **LN%**, **LR15**, **LR60**, **Ovl**, **Peak**, **Max** and **Min**).
- Advanced time history logging for each profile provides complete information about the measured signal using the SD-card fitted in the bottom of the meter and can be downloaded to any PC using SvanPC++ software.
- All required weighting filters: **A**, **B**, **C**, **Z** are available with this instrument.
- SVAN 971 can, simultaneously to the meter mode, perform real time **1/1 Octave** or optional **1/3 Octave** analysis (optionally) including calculations of statistical levels.

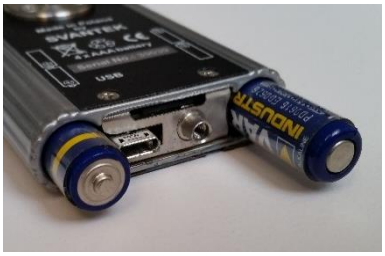
***Note**: See also SVAN 971 user manual.*

SVAN 971, when it works with the monitoring station, is powered from the USB.



***Note**: As a part of the SV 271 LITE station SVAN 971 is powered from the external source and doesn't use its internal batteries. Internal instrument's batteries must be removed for correct system operation and safety reasons!*

To extract the batteries the user should switch off the instrument, unscrew the bolt, take off the black bottom cover of the instrument and slide the batteries out.



The user should then fix the bottom cover back on.

SVAN 971 is delivered with 8GB micro SD-card.

The user may exchange it for a 32GB card, but before insertion the card must be formatted as FAT32.

The micro-SD Memory Card is in the slot under the bottom cover and can be accessed after the bottom cover is removed.

To extract the card from the card-slot, the user should push on the card and then pull it out of the slot.

There are some important settings, which should be assured in the instrument as a part of the monitoring station:

1. The **Compensation Filter** should be set to **Outdoor: Environment** or **Outdoor: Airport** filter (*path: <Menu> / Measurement / Comp. Filter / Outdoor*). Both filters are dedicated for the permanent outdoor monitoring application with the **SA 271** outdoor kit. The characteristics of the outdoor filters depend on the application: environmental (the acoustic signal is parallel to the microphone's grid) or airport (the acoustic signal is perpendicular to the microphone's grid). The frequency characteristic of the designed filters is given in App. C to the SVAN 971 manual.

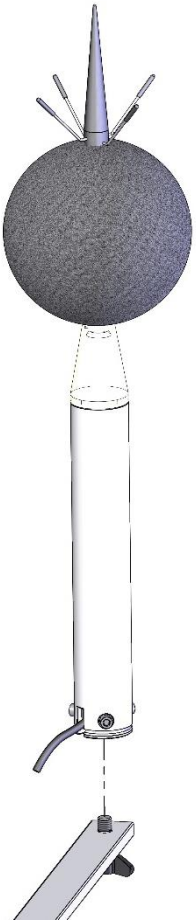
►

Other settings depend on measurement.

All measurement, instrument and transmission settings can be set up via SVAN 971 user interface, or via the SvanPC++ program.

2.1.5. *SA 271 - outdoor microphone protection kit*

The **SA 271** outdoor kit protects the SVAN 971 preamplifier and microphone from weather conditions. The use of the outdoor kit requires an extension cable between the instrument and its preamplifier (**SC 271**). The SA 271 is made of lightweight materials and is easy to install on a tripod. This solution is recommended for short term and semi-permanent noise measurements in the environment.

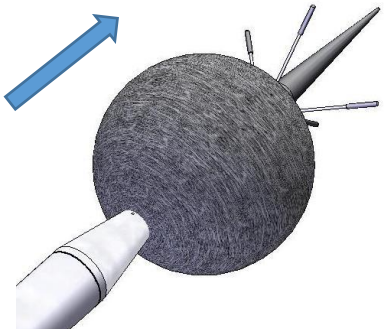


The outdoor microphone kit has ¾" screw on its bottom which enables the use of standard tripods or other user specific mountings. Technical data such as direct and frequency characteristics associated with the microphone are included in the SVAN 971 user manual.

As an option the user may use desiccator - Silikogel. The desiccator absorbs moisture commonly contained in the air. The desiccator should be regenerated after some period of use, when it changes colour to red, by drying it for 3 hours in a temperature of 150°C. The colour of the silica gel is visible through the hole on the top of the desiccator.

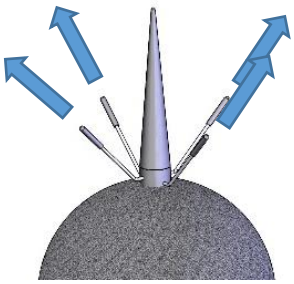
Note: *After assembling the SA 271 or after calibration check that the windscreen foam is properly installed. It should be shifted close to the anti-bird spikes. Otherwise the SA 271 free-field characteristics will be different from declared ones.*

For absolute certainty, push the windscreen up to the stop.



Note: *Before installing the station at the measurement site, make sure that the protective caps on the four antibird spikes are removed.*

It is recommended to use the protective caps during transportation.



***Note**: See also SA 271 Assembly Guide to learn how to assemble and disassemble the microphone's outdoor protection.*

***Note**: Correct connection of the microphone is not signalled by the controller therefore it is recommended to perform a test measurement each time the station is turned on.*

2.2. OPTIONAL ACCESSORIES FOR SV 271 LITE SYSTEM

2.2.1. *SV 33B – Class 1 Sound Calibrator*

For result verification purposes, most norms and standards impose the requirement to calibrate the measurement channel before and after each measurement or measurement session.

Sound calibrator is a device which produces a sound pressure of defined level and frequency.

SV 33B Sound Calibrator produces a sound pressure of defined level 114 dB at a frequency of 1 kHz.

2.2.2. *SB 272 - External rechargeable battery*

SB 272 is an external source of DC power for the monitoring station. SB 272 includes a Lead-Acid rechargeable battery (33 Ah, 12 V) and is dedicated for outdoor use because of its waterproof case. The battery capacity enables up to three times longer operating time of the monitoring station in comparison to the station's internal 17 Ah battery.

The SB 272 set includes the SB 273 indoor charger and a cable for connection between SB 272 and the monitoring station case.

SB 272 has one connector for charging and for power supply and therefore cannot be used as a power supply for the monitoring station and at the same time be charged itself (as the internal station battery with solar panel or external power supply).

***Note**: SB 272 cannot be charged by the SB 270 station power supply!*

***Note**: SB 272 is not restricted for air, surface and water transport. Classified as non-hazardous material (IATA/ICAO Special Provision A67, DOT-CFR Title 49 parts 171-189, IMDG amendment 27).*

***Note**: It is necessary to charge SB 272 after any total discharge, otherwise the battery may lose its capacity*.

***Note**: SB 272 should not be stored for a long time with a discharged battery. Storing SB 272 with a discharged battery can damage the battery. Storing SB 272 with a discharged battery for more than one month may result in impossibility to recharge the battery.*

Note *If: SB 272 is planned to be stored for a long period of time, it is recommended to charge its battery up to 100% of its capacity. The battery should be charged at least every 6 months.*

2.2.3. *SB 271 - Solar panel*

The **SB 271** solar panel (40 Watt, 12 V) extends the working time of the monitoring station. The size and weight of the panel enables easy transportation in the dedicated carrying bag.

The SB 271 solar panel does not require additional batteries or external controllers.

The mounting system enables mounting of the SB 271 solar panel above the monitoring case which provides a natural shade that protects the station from overheating.

The SB 271 is equipped with a military standard connector cable for direct connection to the monitoring station.

3. OPERATING THE STATION

3.1. POWERING

The SV 271 LITE monitoring station can be powered from:

- internal rechargeable battery,
- external power supply (SB 270);

and optionally from:

- external rechargeable battery (SB 272),
- solar panel (SB 271).

When the power supply is connected, it starts powering the station and loading the internal battery in parallel (as a voltage source).

When the external rechargeable battery is connected to the station the station controller switches the powering from the internal battery to the external one. As soon as the external battery is discharged the controller switches powering back to the internal battery.

When the solar panel is connected to the station it starts to load the internal battery (as a current source). And all the time that the solar panel charges the internal battery, the station continues to be powered from the internal battery.

The status of powering is indicated at the controller's panel by a combination of **DC**, **CHARGING**, **BAT 1** or **BAT 2** LEDs (see Table below).

***Note**: It is recommended that the batteries of SV 271 LITE and SB 272 are charged before going on site.*

***Note**: Monitoring station and SB 272 have their own chargers, which are incompatible: SB 270 is a waterproof power supply for SV 271 LITE, whereas SB 273 is an indoor charger for SB 272.*

***Note**: SVAN 971 is powered from the external source and doesn't use its internal batteries. Internal instrument's batteries must be removed for correct system operation and safety reasons!*

3.2. CONTROLLER INTERFACE

The controller interface consists of several LEDs, which indicate the configuration of the station power supply and charging process:

- **DC** – external power supply connection state (AC/DC converter),
- **CHARGING** – charging state of the internal battery,
- **BAT 1** – internal battery state,
- **BAT 2** – additional external battery state.

Colour of LEDs can be red, orange or green. Colour of **DC**, **CHARGING**, **BAT 1** or **BAT 2** LEDs depend on the state of the power supply and charging of the internal battery.

The table below shows combinations of LED colours in the specific supply states.

Power from	Internal battery	Power supply	External battery	Solar panel
DC	off	green	off	off
CHARGING	off	• red when charging; • green when charged	off	• red when charging; • green when charged
BAT 1	• green if loaded > 50%; • orange if loaded 20-50%; • red if loaded <20%; • blinking red if loaded <8%; • off if 0% loaded or disconnected	• when charging, colour is changed: red-orange-green; • green when charged	off	• when charging, colour is changed: red-orange-green; • green when charged
BAT 2	off	off	• green if loaded > 50%; • orange if loaded 20-50%; • red if loaded <20%; • blinking red if loaded <8%; • off if 0% loaded or disconnected	off

3.3. MODES OF STATION OPERATION

3.3.1. *Operational mode*

In the Operational mode, the SVAN 971 and controller are switched on and the following modules are powered continuously: SVAN 971 instrument, controller and outdoor microphone. The power supply for these modules can be switched off only by turning off the SVAN 971 instrument.

When the station case is open all LED diodes of the controller shine, informing about the station condition. The SVAN 971 display is switched on permanently regardless of the instrument's settings.

When the station case is closed all LED diodes of the controller are off and the SVAN 971 display is also off in order to save energy.

3.3.2. *Battery charging mode*

When the SVAN 971 is switched off but there is a power supply (voltage from SP 270 or current from solar panel) and the lid is open, only **DC**, **CHARGING** and **BAT 1** LEDs of the controller will be active and these LEDs show:

- connection of AC/DC converter indicated by green **DC** LED,
- charging of the internal battery indicated by red **CHARGING** LED. When charging is complete **CHARGING** LED turns green and **BAT1** LED stops changing colors and also turns green,
- status of the internal battery charging indicated by green-orange-red **BAT 1** LED.

If the lid is closed all LEDs will be off but charging will continue.

3.3.3. *Bootstrap mode*

The bootstrap allows upgrades of the internal firmware of the controller.

There are two ways to activate "bootstrap mode":

- by removing the controller from the monitoring station and connecting it to the PC through the USB or
- by connecting the controller to the PC via USB while SVAN 971 is off (all LEDs should be turned off).

Activation of bootstrap mode is indicated:

- in the case of SD 270, by the green **BAT 1** LED or
- in the case of SD 270A, by the LED above the **TEST** key.

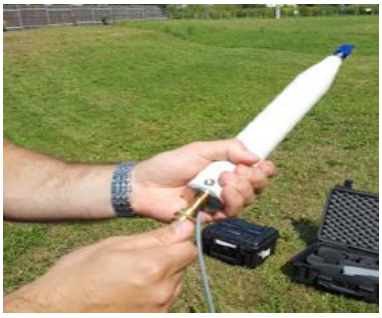
***Note**: USB connection between controller and PC can be established only if USB driver for SVANTEK instruments had been previously installed on the PC. USB driver can be downloaded from www.svantek.com*

3.4. ASSEMBLING THE STATION

1. The system consists of 2 carrying cases. Before use check the serial numbers on labels located on the side of both cases and ensure they are a matching set.

2. Open the case with accessories and take out the SA 271 microphone outdoor kit.

3. Mount the SA 271 on a tripod (not included) or other stable support.



4. Remove the protection cap from the input socket on the case by turning it counter-clockwise.

5. To connect the microphone extension cable, start by lining up the key on the plug and the INPUT socket, then lock the connector by turning the ring clockwise (only the ring close to the socket will rotate).

6. If you want to power the station from the Power supply connect the power supply cable to the DC Supply socket in the same way.

7. Press **<Alt>+<Start>** on SVAN 971 to turn on the system.

8. Remove the protection cap from the microphone and perform a calibration check.

9. Take out from the case with accessories the anti-bird spike with the foam from the accessories case, push the foam upwards and mount the tube on the thread. Then slide the foam down so it hides the metal parts of the kit.

***Note**: Make sure that the protective caps on the four antibird spikes are removed.*

10. The station now is ready for use.

3.5. SWITCHING ON THE STATION

When the remote communication is installed, and the station is fully assembled:

- Turn on the SVAN 971 instrument. The controller will turn on automatically.

  System integration is checked directly after turning on the controller. This procedure includes checking the connections with the instrument. Additionally, system power, internal temperature of the station and the battery state are checked.

  During the test procedure, the controller's LEDs light up sequentially orange in the sequence from **DC** to **BAT2**. In the case of the SD270A controller during the test (about 3-5s) the red LED next to the TEST button is still lit. All errors are indicated on the front panel by appropriate LED indicators. If all red indicators are off after above procedure, it means that the station is ready to use.

4. SV 271 CONFIGURATION

The SV 271 LITE station is designed to work in autonomic mode. Therefore, it should be configured before the installation on-site.

There are two ways of configuration the station:

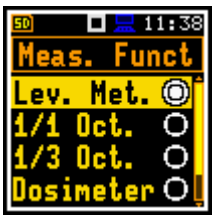
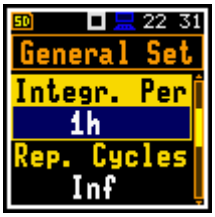
- directly via SVAN 971 user interface or
- via USB connected PC with the use of SvanPC++ software.

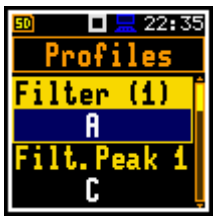
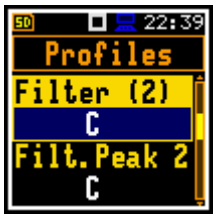
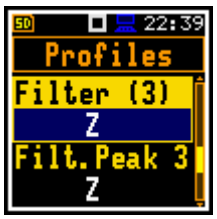
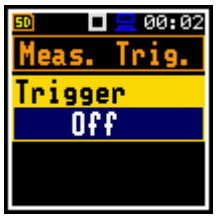
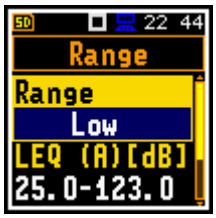
4.1. SV 271 CONFIGURATION VIA SVAN 971 USER INTERFACE

SVAN 971 user interface is fully described in the “SVAN 971 User Manual”.

Here some example settings are presented for medium-time traffic noise monitoring.

The monitoring is doing for 7 days (from Monday to Sunday). The user switches on and off the instrument and measurement manually or with the use of Timer function.

Parameter	***Setting***	***Screen***
Device Function	Level Meter	
LEQ integration	Linear according to IEC 61672-1:2013	
Integration period	1 hour	
Repetition cycles	Infinitive	

Profile 1	Default settings: C weighting filter for Peak result, A weighting filter for other results, Fast LEQ detector *)	 
Profile 2	Default settings: C weighting filter for Peak result, C weighting filter for other results, Fast LEQ detector *)	 
Profile 3	Default settings: Z weighting filter for Peak result, Z weighting filter for other results, Fast LEQ detector *)	 
Trigger mode	Both measurement and logger triggers are Off	 
Measurement range	Low	
Compensation filter	Outdoor Environment	
Logger	On	

Logger step	1 s	
Summary results saving	On	

*) The exponential Leq detector with Fast time constant will be applied to results: **L**, **Ltm3**, **Ltm5**, **Lmax** and **Lmin**.

The output file will contain two measurement sequences: main measurement results (**L**, **Leq**, **LE**, **Lden**, **LEPd**, **Ltm3**, **Ltm5**, **Lxx**, **OVL**, **Lpeak**, **Lmax**, **Lmin**) measured with the 1-hour step to reflect the traffic fluctuation in the day and time of night and the time-history results (**Leq**, **Lpeak**, **Lmax**, **Lmin** and **Leq Spectra**) measured with the 1-second step for statistic calculation and other data post-processing.

4.2. SV 271 CONFIGURATION VIA SVANPC++

To enable configuration via SvanPC++ software the SVAN 971 should be connected to the PC with this software installed.

Since the USB connection is used for powering the SVAN 971 when it is installed in the SV 271, the user should:

1. disconnect station USB cable from the SVAN 971 and
2. connect another USB cable to the SVAN 971 and the PC.

It is not necessary to disconnect the input connector of the instrument and remove the instrument from the station slot. There is no need also to install internal batteries to the SVAN 971 as it will be powered from PC via USB.

To start working with both programs you should turn the SVAN 971 on and run the program, which automatically install USB connection with the instrument.

***Note**: USB connection between SVAN 971 and PC can be established only if USB driver for SVANTEK instruments had been previously installed on the PC. USB driver can be downloaded from www.svantek.com*

Working with the SvanPC++ software is fully described in the documents: “SvanPC++ User Manual”.

APPENDIX A. SV 271 LITE TECHNICAL DATA[1]

Nr	*Parameter*	*Value/ Description*
	Physical data	
1	Dimensions	SM 271 LITE – 300 x 260 x 190 mm SA 250 – 450 x 400 x 155 mm
2	Weight	SM 271 LITE – ~9 kg SA 250 – ~4 kg
4	Leakproof classification	SM 271 LITE – IP67 according to EN 60529 (1997) + A1 (2000)
5	Working temperature range	-30°C do +60°C (Ambient air temperature, without direct sunlight). *Note: Outside this range the station will automatically switch itself off.* *Note: In charging mode the range of working temperature is: -20℃ to +50℃ !*
6	Storage temperature range	SM 271 LITE and SA 250: -40°C to +70°C
9	Working relative humidity range	0 – 100 %RH
	Power Supply	
20	Internal battery	Europower EP 17-12 (12 V, 17 Ah)
21	SV 271 LITE power consumption without charging	~0,4W
22	Operating time when powered from the internal battery, (20°C, 17 Ah, fully charged)	~530h (~22d)
23	SV 271 LITE power consumption	up to 30W ±5%

[1] Our Company's policy is based upon continuous product development and innovation. Therefore, we reserve the right to change the specifications without any prior notice whatsoever

Nr	*Parameter*	*Value/ Description*
	including charging	
24	External DC input	voltage: 10,5 V to 28 V ***Note:*** *When external DC input voltage is in the range 11 V to 15 V, the station is powered from the external DC source but the internal battery is not charged!*
25	External DC power supply SB 270	15 V, 4 A, 60 W
	External battery SB 272	Europower EP 33-12 (12 V, 33 Ah)
26	Operating time when powered from the internal and external SB272 batteries, (20°C, 17+33 Ah, fully charged)	~1560h (~65d)
27	Solar panel (option)	System best fit with solar panel with a MPPV voltage 17,5±0,5V and power in the range of 30W to 120 W (without control system). ***Note:*** *Size and power of the panel depend on the climate of the area where the station operates.*
Measurement Line		
30	SVAN 971 Meter/analyser	Datasheets are available at http://www.svantek.com .
31	SA 271 outdoor kit	Set of weather protection for SV 18 preamplifier and SV 7052E microphone.
32	SV 7052 microphone	Pre-polarised 1/2” condenser microphone with sensitivity 38 mV/Pa.

Nr	Parameter	Value/ Description
		Note: *With the use of* ***Outdoor Airport*** *type compensation filter (filter must be defined in SVAN 971, see Chapter 2.1.4) the acoustic characteristics of SA 271 conforms the class 1 sound meters and IEC 61672:2002 standard for the direction 0 degree (normal direction regarding the microphone membrane). With the use of* ***Outdoor Environmental*** *type compensation filter the acoustic characteristics of SA 271 is switched to the direction 90 degree (parallel to the microphone membrane).*

APPENDIX B. LIST OF RELATED DOCUMENTS

1. SVAN 971 User Manual (www.svantek.com)
2. SvanNET User Manual (www.svantek.com)
3. SvanPC++ User Manual (www.svantek.com)
4. SA 271 Assembly Guide (www.svantek.com)
5. WXT520 User Guide (www.vaisala.com)