

3. SETTING OF THE INSTRUMENT

In order to perform the measurements using the instrument the user has only to plug in the preamplifier with the microphone and switch the power on.



Notice: The user has to press the <◀ >, <▶ > push buttons in parallel in order to switch the power On/Off.

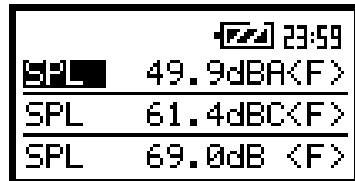
3.1. POWERING OF THE INSTRUMENT

The **SLM** is powered from the internal rechargeable NiMH battery 4.8 V / 1.6 Ah. The instrument is equipped with the external power (110 V / 220 V mains) adapter. For the external power operation and recharging the battery, this adapter should be connected to the **Power** socket located on the bottom cover of the instrument. The battery has to be charged until the switch off of the red diode named **CHARGING** placed on the instrument's keyboard. In order not to decrease the battery lifetime at least **once for ten charging the battery has to be fully discharged** (up to self switch off of the instrument)!

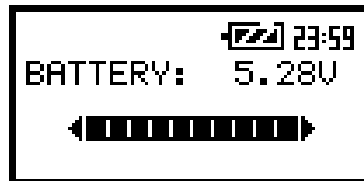


Notice: The battery is also recharged during the instrument's operation with the external power. The internal power supply circuit protects the battery from the overcharging. Nevertheless, it is not recommended to keep the external power continuously plugged into the **Power** socket.

The fully charged battery ensures more than 8 hours of the continuous work of the instrument (with the backlight off). The operation time is decreased about 20 % with the backlight switched on. The battery condition can be checked by means of the **BATTERY** function. It is also presented continuously on the display by means of the „battery” icon.



a)



b)

The screen in 3 PROFILES mode with the battery icon (a) and in the open BATTERY position (b)

The instrument indicates too low state of the battery displaying the text:

**ALERT !!!
BATTERY LOW !**

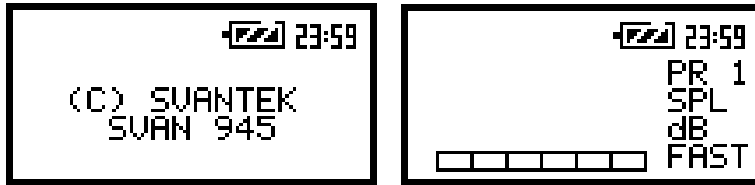


Notice: It is strongly recommended to use in this case as soon as possible the external power adapter. In the other case the instrument after a moment will be switched off by itself!

The display's "back-light" can be activated by means of the <DISPLAY> push-button. In order to switch the backlight on / off the pushbutton has to be pressed for about 2 seconds. For saving the power of the battery, in the normal "day-light" operation it is recommended to **keep the backlight off**.

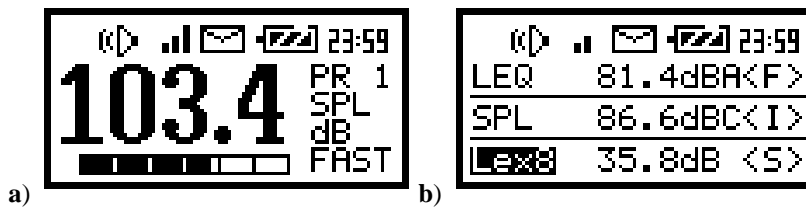
3.2. INITIAL SETUP OF THE INSTRUMENT

The instrument passes the self-test after switching on (in this time the producer and the name of the instrument is displayed on the screen) and then it enters the default Sound Level Meter (SLM) mode. The default display mode for result's presentation is One Profile (see Chapter 4 for details).



The view of the display after switching on the instrument

To start measurements the user has to press <ST/SP> (START/STOP) push-button (the <PAUSE> push-button in conjunction with the <SHIFT>).



The view of the default One Profile (a) and 3 PROFILES display mode (b)

For **3 PROFILES** display mode the default settings (set up by the producer) are as follows:

- PROFILE 1 - **A** weighting filter (**FILTER: A**), **FAST** type of the RMS detector (**DETECTOR: FAST**), the results of the measurements are not stored in the buffer's file (**BUFFER: None**);
- PROFILE 2 - **C** weighting filter (**FILTER: C**), **FAST** type of the RMS detector (**DETECTOR: FAST**), the results of the measurements are not stored in the buffer's file (**BUFFER: None**);
- PROFILE 3 - **LIN** (or **Z**) weighting filter (**FILTER: LIN**), **FAST** type of the detector (**DETECTOR: FAST**), the results of the measurements are not stored in the buffer's file (**BUFFER: None**).

The results of the measurements can be presented as default in one profile, in **3 PROFILES** and in **STATISTICS** (these are the available display modes set by the producer, cf. the description of the *DISPLAY* list).

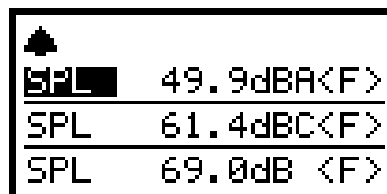
The user can change all settings. The instrument remembers all changes. The return to the default settings (set up by the producer) is possible after the execution of the position **CLEAR SETUP** available in the *SETUP* list.



Notice: See Chapters 4 and 5 for more details concerning different settings.

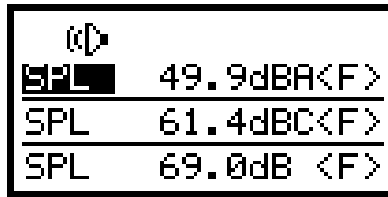
More data about the instrument's state are given by means of the icon's row visible in the top of the display. The meanings of the icons are as follows:

- "**Bell**" is displayed as a **WARNING** in several situations. When the "**Bell**" icon is visible the user has to pay attention to the state of the instrument. Typically some user's action is required (e.g. on the low battery state, on too low input signal etc.).



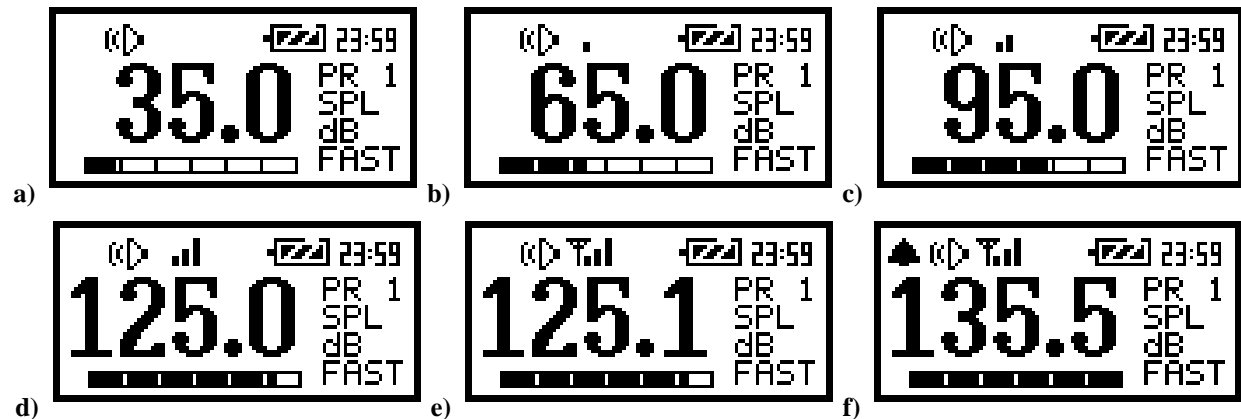
The view of the display with the "Bell" icon

- "Loudspeaker" icon is displayed when the measurement is started and executed.



The view of the display with the "Loudspeaker" icon

- "Vertical bars" icon corresponds to the current **input signal level** (it is related to the maximum measured value over the last second). The sign Υ means that the level of the signal was from 0.1 dB to 10 dB higher than the current measurement range. For the SLM mode, in which only one range is available (125 dB), the result of the measurement is in this case from 125.1 dB to 136 dB. The indicator of the overload (the "Bell" icon) appears when the signal overpasses more than 10 dB the measurement range (cf. Fig. below).



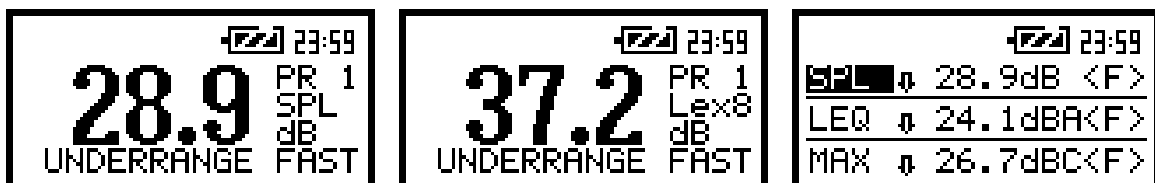
The view of the screen in the SLM mode without the "Vertical bars" icon (a); with one "Vertical bar" (b); with two "Vertical bars" (c); with three "Vertical bars" (d); with three "Vertical bars" and the Υ sign (e); with the indicator of the overload (f)

The number of the "Vertical bars" on the screen depends on the level of the measured signal, the selected mode (SLM, 1/1 OCTAVE or 1/3 OCTAVE analysis) and the calibration factor. The limits of the signal causing the different icon's indication for the calibration factor equal to 0 dB are presented in the Table 3.1. Non-zero value of this factor causes the shift of the limits given in the table.



Notice: The "Bell" icon is used as an indicator of an overload.

In the case when the level of the measured signal is too low in the relation to the measuring range (when the level of the input signal is under the linearity of the range declared in App. C, so-called **UNDERRANGE**) in one profile mode the message is displayed in the field of the analogue indicator of the measurement result. The arrow directed down is used for this reason in **3 PROFILES** mode.

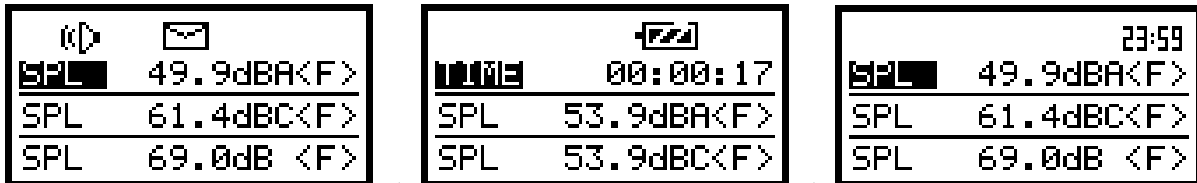


The view of the display when the level of the measured signal is too low

Table 3.1. The limits of the signal causing the different icon's indication

INDICATOR	SLM	1/1 OCTAVE or 1/3 OCTAVE ANALYSIS		
	125 dB range	125 dB range	110 dB range	95 dB range
“Bell”	135.5 dB	135.5 dB	120.5 dB	105.5 dB
☐ + 3 “Bars”	125.1 dB – 135.4 dB	125.1dB – 135.4 dB	110.1 dB – 120.4 dB	95.1 dB – 105.4 dB
3 “Bars”	95.1 dB – 125.0 dB	100.1 dB – 125.0 dB	85.1 dB – 110.0 dB	70.1 dB – 95.0 dB
2 “Bars”	65.1 dB – 95.0 dB	75.1 dB – 100.0 dB	60.1 dB – 85.0 dB	45.1 dB – 70.0 dB
1 “Bar”	35.1 dB – 65.0 dB	50.1 dB – 75.0 dB	35.1 dB – 60.0 dB	20.1 dB – 45.0 dB
	< 35.0 dB	< 50.0 dB	< 35.0 dB	< 20.0 dB
UNDERRANGE	< 24.0 dBA	< 40.0 dBA	< 30.0 dBA	< 24.0 dBA
UNDERRANGE	< 24.0 dBC	< 40.0 dBC	< 30.0 dBC	< 24.0 dBC
UNDERRANGE	< 30.0 dB	< 46.0 dB	< 36.0 dB	< 30.0 dB


- “Envelope” icon is presented when the current **measurement results are logged** in the instrument's buffer. Together with this icon the “Loudspeaker” icon is always displayed.





a) The view of the display with the icons: “Envelope” (a); “Battery” (b) and with internal real time clock (c)

- “Battery” icon corresponds to the internal **battery state**. This icon is also used for the indication of the current state (the current filling) of the internal battery during the charging process.

- “Clock” icon displays the internal clock state (**the current time**) when the colon is flashing or the current time of the measurement (set in the **INT. TIME**). In the latter case the colon is displayed without flashing. The current time of the measurement is displayed after the start of the measurement and is shown also during it's pausing (after pressing the <PAUSE> push button). In the case of the cutting off the last results (cf. the <PAUSE> push button description) the indicator is also updated. When the **2nd Func.** mode is selected (cf. the description of the **SETUP** list) instead of the clock the text **2n dF** is flashing. This flashing lasts from the pressing of the <SHIFT> push button till the pressing of any other one.

 **Notice:** The time of the measurement is displayed **in minutes and seconds** in the range from **1 sec. to 39 minutes and 59 seconds**. After this limit the hours and minutes are shown (i.e. 00:40).

 **Notice:** In all modes of the instrument the “Battery” and the “Clock” icons are always displayed on the screen.

 **Notice:** **THE USER DYNAMICALLY MODIFIES THE DEFAULT SETUP. The last instrument's setup (during the power off) is stored as a new default (see chapter 5 for details).**