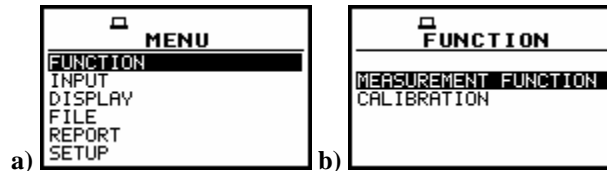


4 FUNCTIONS OF THE INSTRUMENT - FUNCTION

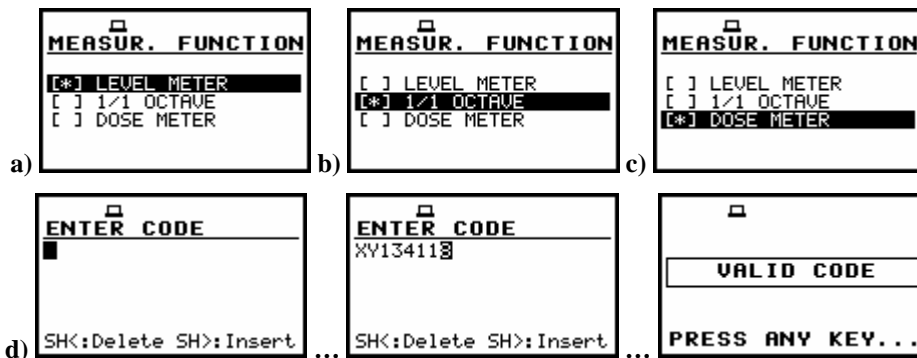
In order to select the **FUNCTION** list one has to press the **<MENU>** push-button, select by means of the **<▲>**, **<▼>** (or **<<>**, **<>>**) push-buttons the **FUNCTION** text and press the **<ENTER>**. The **FUNCTION** list contains two elements: **MEASUREMENT FUNCTION** and **CALIBRATION** sub-lists. The list is closed and the instrument returns to the presentation mode after pressing the **<ESC>** push-button.



Main list with **FUNCTION** text selected (a) and **FUNCTION** list opened with **MEASUREMENT FUNCTION** selected (b)

4.1 Measurement functions of the instrument - MEASUREMENT FUNCTION

In order to select the required function the user has to enter the **MEASUREMENT FUNCTION** sub-list. The set of the available functions appears on the display. The function is selected by placing the special character in the line with the function's name. The position of the character can be changed using the **<▲>**, **<▼>** push-buttons. After placing the character in the line with the option's name the user has to press the **<ENTER>** push-button.



MEASUREMENT FUNCTION window opened with **LEVEL METER** text selected (a), **1/1 OCTAVE** text selected (b), **DOSE METER** text selected (c) and the activation of optional functions (d)

The main function of the instrument is the **measurement of sound level**. The **DOSE METER** and **1/1 OCTAVE** functions are optional and they broaden the applications of the instrument. They can be supported by the producer or purchased later. The producer activates the optional functions bought with the instrument. The user should activate by himself the functions purchased later.

The **sound LEVEL METER (SLM) mode** provides the user with the functions of the **SLM** meeting the IEC 61672:2002 standard for Type 2 accuracy. The instrument can also be used for the long-term acoustic monitoring thanks to the huge logger, in which the measurement results are stored.

The **SLM** mode is selected by placing the special character in the line with the **LEVEL METER** text. The position of the character can be changed using the **<▲>**, **<▼>** (or **<<>**, **<>>**) push-buttons. After placing the character in the line with the **LEVEL METER** text the user has to press the **<ENTER>** push-button, which closes the **MEASUREMENT FUNCTION** sub-list.

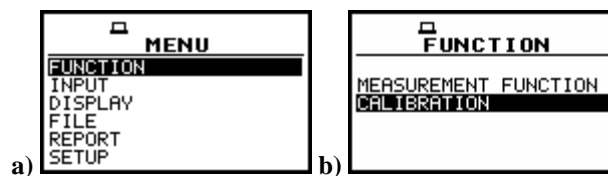


Notice: It is not possible to change the mode during the measurements. The instrument displays in this case for about 3 seconds the text: **“MEASUREMENT IN PROGRESS”**. In order to **change the mode of the instrument the measurement must be finished!**

4.2 Instrument's calibration - CALIBRATION

The instrument is factory calibrated with the supplied microphone for the standard environmental conditions. Because the microphone sensitivity is a function of the temperature, ambient pressure and humidity, when the absolute sound pressure level value is important, the calibration of the measurement channel has to be done. In order to select a calibration function the user has to enter the **CALIBRATION** sub-list (to select the **CALIBRATION** text using the <▲>, <▼> or <◀>, <▶> push-buttons and press the <ENTER> one, when this text is displayed inversely).

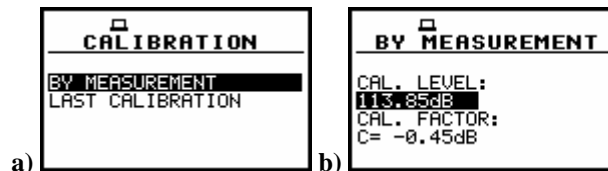
The **CALIBRATION** sub-list consists of two positions: **BY MEASUREMENT**, which is used to perform the calibration measurements and **LAST CALIBRATION**, which contains the list of the performed in the past calibration measurements and the obtained results.



Main list with **FUNCTION** text selected (a), **FUNCTION** list opened with **CALIBRATION** text selected (b)

4.2.1 Calibration procedure of the instrument - BY MEASUREMENT

In order to enter the **BY MEASUREMENT** window, the user has to select the proper text in the **CALIBRATION** window using the <▲>, <▼> push-buttons and press the <ENTER> one.



CALIBRATION list with **BY MEASUREMENT** text selected (a) **BY MEASUREMENT** window opened (b)

The calibration for the sound measurements can be done in the following way:

1. Attach the acoustic calibrator **SV 30A** (or equivalent **114.0 / 1000 Hz**) to the microphone of the instrument.



Notice: It is also possible to use the piston-phone, which generates the signal ca 124 dB or different type of acoustic calibrator dedicated for ½" microphones. **In any case, before starting the calibration measurement, the user has to set** (by means of the <◀>, <▶> push-buttons or <◀>, <▶> push-buttons pressed together with <SHIFT> for a bigger step) **the level of the signal generated by the given calibrator (CAL. LEVEL position of CALIBRATION sub-list), which is usually stated in the calibration certificate of the unit** (the value of the **CAL. LEVEL** set by the producer of **SVAN 953** in the case of **ACO 7052S** microphone is equal to 113.85 dB).

2. Switch on the calibrator and wait ca 30 seconds before starting the calibration measurement.

3. Start the calibration measurement by pressing the <START / STOP> push-button.

The measurement time is set to 5 seconds with 5 seconds delay. During the calibration measurement the <ESC> and <PAUSE> push-buttons do not operate but it is possible to stop the measurement using the <START / STOP> one.



Notice: It is not recommended to stop the calibration measurement before programmed 5 seconds period!

BY MEASUREMENT	BY MEASUREMENT
CAL. LEVEL: 113.85dB CALIBRATION DELAY = 4 s	CAL. LEVEL: 113.85dB CAL. MEASURE LEQ =114.25dB C

Displays during the calibration measurement

Waiting for the start of the measurements the **DELAY** is counted down on the display. During the measurements, each one-second result is presented on the display. After the end of the measurement, its result is displayed on the display in the bottom line.

It is recommended to repeat the calibration measurement few times. The obtained results should be almost the same (with ± 0.1 dB difference). The reasons for the unstable results are as follows:

- the calibrator is not properly attached to the instrument,
- there are external disturbances,
- the calibrator or the measurement channel (the microphone, the preamplifier or the instrument itself) are damaged.



Notice: During the calibration measurement, the external disturbances (acoustic noise or vibrations) should not exceed the value of 100 dB.

4. Press the <ENTER> push-button in order to accept the measurement result.

After pressing the <ENTER> push-button the calibration factor is calculated, stored and displayed (cf. next Figure).



Notice: The user has to press the <ESC> push-button in order to quit the calibration procedure without saving the calibration factor.

BY MEASUREMENT	BY MEASUREMENT
CAL. LEVEL: 113.85dB CAL. RESULT: LEQ =114.25dB C	CAL. LEVEL: 113.85dB CAL. FACTOR: C= -0.40dB

a)

b)

Displays after the measurements (a) and after the acceptance of the value of the calibration factor (b)



Notice: The calibration factor is always added to the results of sound level measurements and sound analysis.

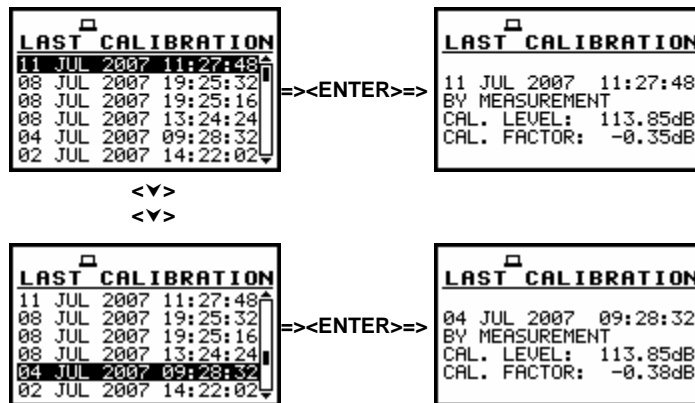
4.2.2 History of the calibration - LAST CALIBRATION

In order to enter the **LAST CALIBRATION** window in which up to last ten calibration records are remembered, the user has to select the proper text in the **CALIBRATION** window using the <▲>, <▼> push-buttons and press the <ENTER> one.



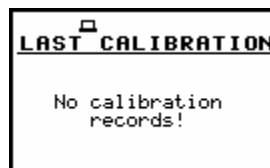
CALIBRATION list with **LAST CALIBRATION** text selected (a) **LAST CALIBRATION** window opened with ten calibration records (b)

In order to review the calibration record, the user has to select the required line in the **LAST CALIBRATION** window using the <▲>, <▼> push-buttons and press the <ENTER> one. The opened window contains the date and time of the performed calibration measurement, the way the calibration was done (**BY MEASUREMENT**), the desired calibration level (**CAL. LEVEL**) and the obtained calibration factor (**CAL. FACTOR**).



Displays with the LAST CALIBRATION records

In the case when the calibration measurements were not performed, the **LAST CALIBRATION** window does not contain any records. The contents of this window is cleared after the **CLEAR SETUP** operation.



Empty LAST CALIBRATION window