



PCE-SC 09 Sound Level Calibrator User Manual

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PCE-SC 09 Sound Level Calibrator



Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The instrument may only be used if the environmental conditions (temperature, relative humidity, ...) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Do not expose the device to shocks or strong vibrations.
- The case should only be opened by qualified PCE Instruments personnel.
- Never use the instrument when your hands are wet.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.

- The device must only be used with accessories from PCE Instruments or equivalent.
- Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- Do not use the instrument in explosive atmospheres.
- The measurement range as stated in the specifications must not be exceeded under any circumstances.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.

We expressly point to our general guarantee terms which can be found in our general terms of business.

If you have any questions please contact PCE Instruments. The contact details can be found at the end of this manual.

Specifications

Technical specifications

Specification	Description
Sound pressure level	94 dB, 114 dB
Accuracy class	IEC 942, class 1
Accuracy sound level	± 0.3 dB (20 °C, 760 mm Hg)
Frequency	1000 for A, B, C and D frequency weighting
Accuracy frequency	± 0.01 %
Microphone size	1 inch, with adaptor: 1/2 inch, 1/4 inch
Display	Digital display
Height dependence	0.1 dB per 610 m height difference from zero level
Temperature coefficient	0.... 0.01 dB/°C
Battery level	Graphical display of the battery level

Power supply	2 x 1.5 V AA batteries
Operating conditions	-10 ... +50 °C 20 ... 90 % RH, non-condensing
Storage conditions (without battery)	-40 ... +65 °C 20 ... 90 % RH, non-condensing
Dimensions	100 mm x 100 mm x 75 mm (L x W x H)
Weight	250 g

Delivery contents

- 1 x sound level calibrator PCE-SC 09 (IEC 942 class 1)
- 1 x calibration certificate
- 1 x 1/2 inch adaptor
- 1 x carrying case
- 2 x 1.5 V AA battery
- 1 x quick start guide

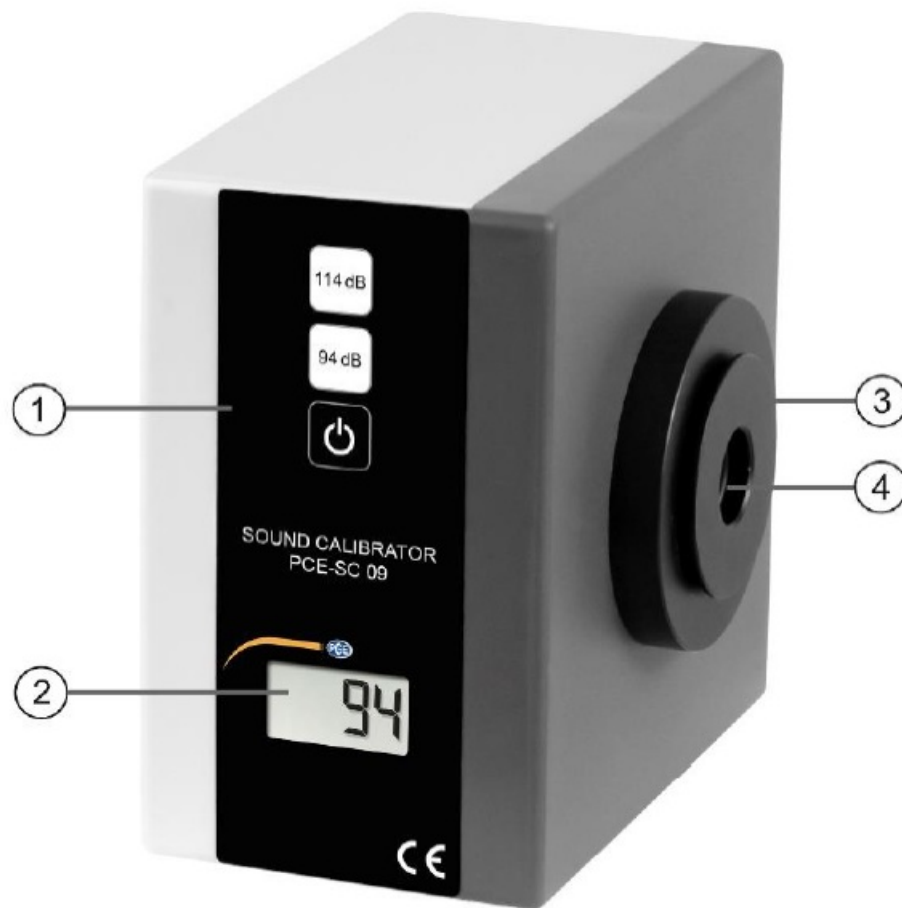
Optional accessories

- PCE-SC 09 1/4" (1/4 inch adaptor)

System description

The PCE-SC 09 sound level calibrator is a battery-powered sound source for direct and quick calibration of sound level meters and other systems for noise measurement. With adaptors, it can be placed on 1/2- and 1/4-inch microphones. The calibration reference is 1000 Hz. This is the reference frequency for the internationally standardised evaluation curves. This means that with this calibrator you can calibrate sound level test equipment with A-, B-, C- or D weighting filters or with linear sound levels. The calibration pressure is 94 ± 0.3 dB (1 Pa) and 114 ± 0.3 dB (10 Pa).

Device



1. Membrane keypad with control elements
2. Display
3. 1/2 inch adaptor
4. Microphone aperture with calibration speaker located behind it

Display



1. Battery level
2. Sound level display

3.3 Function keys

Key	Description	Function
	On/off	Turning the device on/off
	94 decibels	Setting the sound level to 94 dB
	114 decibels	Setting the sound level to 114 dB

Getting started

Power supply

Two 1.5 V AA batteries are required as a power supply. Before replacing the batteries, switch off the meter. The battery compartment is located on the back of the device and is closed by a cover. Remove the cover, insert the batteries as marked, and place the cover back on the battery compartment.

Preparation

To turn on the meter, press until the display shows a reaction. The meter directly starts with the sound output and displays the set sound level. To switch the sound level, press the key for the desired measurement range. To turn off the meter, press.

Operation

Preparation for calibration

First select the right aperture size for your sound level meter. As standard, 1/1 inch microphones can be inserted into the aperture. Use the included adaptor for 1/2 inch microphones. The adaptor can easily be inserted into the standard aperture. For a 1/4 inch microphone, use the optional adaptor.

Calibration

The calibration procedure for sound level meters within the measurement range of both calibration points is described below. For sound level meters within the measurement range of only one calibration point, you can perform only steps 1-3 with the respective sound level.

1. After turning on the calibrator, use the "94 dB" key to select the 94 dB sound level.
2. Carefully insert the microphone into the aperture of the calibrator as far as it will go. The sound level meter

should be placed in the aperture horizontally so that the inner seal is as high as possible.

3. 3. Wait a short moment for the sound level displayed on the meter to stabilize. Now you adjust the meter to the 94 dB sound level.
4. If the sound level meter has a measurement range of 114 dB, use the "114 dB" key to select the sound level of 114 dB.
5. Compare the sound level displayed on the meter with the calibrator setting of 114 dB. If the reading is within tolerance, you can finish the calibration and carefully remove the meter from the calibrator. If the deviation is not acceptable, you must start again with the step.

Effect of ambient temperature and pressure

In environments with normal atmospheric pressure, the influence is generally negligible. However, sound level calibrators including the PCE-SC 09 are dependent on changes in altitude. The diaphragm generates sound waves within the calibrator which have to work against the environmental air. When the air at higher altitudes becomes thinner and the atmospheric pressure decreases, the calibrator generates a lower sound level. The PCE-SC 09 sound calibrator generates 0.1 dB less every 610 m above zero level. The effects of the temperature are less severe. The sound level calibrator has a temperature coefficient of 0 ... 0.01 dB/°C

Warranty

You can read our warranty terms in our General Business Terms which you can find here: <https://www.pce-instruments.com/english/terms>.

Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU, we take our devices back. We either re-use them or give them to a recycling company that disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.

PCE Instruments contact information

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Documents / Resources

	<p>PCE PCE-SC 09 Sound Level Calibrator [pdf] User Manual PCE-SC 09, Sound Level Calibrator, PCE-SC 09 Sound Level Calibrator</p>
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