Sauter GmbH

Instruction Manual
Sound Level Calibrator

SAUTER ASU-01

Version 1.2
04/2018
GB

PROFESSIONAL MEASURING

ASU-01-BA-e-1812

GB

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Bedienungsanleitung

Sound Level Calibrator

Summarize:

SOUND LEVEL CALIBRATOR ASU-01

Thank you for buying a SAUTER sound level Calibrator. This Sound Level Calibrator is small, light in weight and easy to carry. Although it is a complex and advanced instrument, its ruggedness will allow many years of use if you will care for an appropriate operating technique and maintenance. Please read the following operating instructions carefully and always keep this manual within easy reach.
If there are any queries, wishes or helpful suggestions, do not hesitate to call our service number.

1 Application

* Handy instrument for quick and easy calibration of sound
  Level meters and other sound measuring systems
* The calibrator employs solid state integrated circuitry that
  Provides accurate and stable lead-through
* Sensitivity calibration of microphones
* Suitable for field and laboratory use

2 Specifications

* Sound pressure level: 94 dB and 114 dB

* Accuracy: ± 0.4 dB (20°C, 760 mm Hg)

* Frequency of 1000 ± 0.01% Hz allows calibration with
  A, B, C or D weighting networks or linear
* Extremely low influence of static pressure

* Calibration of 1” and ½ “microphones
* Temperature range: -10°C to +50 °C during operation

* Storage temperature (with batteries removed): - 40°C to +65°C

* Temperature coefficient: 0 to 0.01 dB/°C

* Altitude effects: approximately 0.1 dB decrease for each
  2000 feet increase in altitude from sea level to 12,000 feet elevation or comparable atmospheric pressure change (approx. every 50 mm of Hg decrease)

* Power source: Battery operation: 2 x 9V transistor batteries NEDA 1604,
  Burgess 2U6 or equivalent
  Battery life approx. 100 hours

* Size: 48 x 48 x 138 mm

* Weight: about 250 g

3 Description of parts

Fig. 1

3-1 Transducer cap of acoustic sender
3-2 Microphone adaptor
3-3 Battery cap
3-4 ON/OFF button (also 94 or 114 dB select switch)
3-5 Low battery indicator (LED)

4 Operation, generally

The ASU-01 calibrator was designed to check the accuracy of many types of sound instruments. Our instruments commonly use the standard ½ inch diameter ceramic microphone, which directly fits into the calibrator coupler cavity. When testing an instrument with a 1-inch microphone, the proper adaptor ring first must be taken out. This keeps a close tolerance fit around the microphone head. It has to be assured, that the microphone fits down inside the adaptor and rests on the lower rim. This rim supports the microphone and forms the necessary inner seal.

5 Operation procedure

5.1 The calibrator switch has to be set to 94 dB or 114 dB position. A 1000 Hz tone should be able to hear.
5.2 The sound level meter which is going to be calibrated, has to be turned ON.
5.3 The microphone has to be inserted carefully into the calibrator coupler. It has to t be checked, whether the microphone is down inside the coupler, resting flush on the lower coupler rim.
5.4 As soon as calibration has been finished, the microphone has to be removed carefully. Then the calibrator has to be turned OFF.

6 Battery replacement

When the battery indicator becomes dim, it is necessary to replace batteries. The bottom ring has to be unscrewed, the face plate and the outer shell have to be slided

off and the batteries have to be removed. Then the new ones, 2 x 9V transistor batteries have to be inserted and everything has to be fixed again.

7 Maintenance

* Any spilled medium has to be cleaned immediately from the instrument and it has to be wiped dry.
If the spillage is corrosive, a suitable cleaner has to be used to remove it and to neutralize corrosive action.
* The instrument always has to be turned off, if it is not in use.
* Prolonged exposure or usage in areas with extreme temperatures or humidity is to be avoided, as well as vibration, mechanical shock, dust, corrosive fumes and strong electrostatic and electromagnetic interference.
* It has to be checked whether the transducer cap is firmly placed.
* If the instrument has not been used for about 30 days, battery hast to be checked for leakage and it has to be replaced if necessary.
* If the instrument is not in use, it has to be stored in a room free of extreme temperatures, dust, corrosive fumes, mechanical vibration or shock. Batteries always have to be removed if the instrument is expected not to be used for longer than 30 days.

8 Effects of atmospheric pressure and temperature

For any location, the effects of normal variations of atmospheric pressure are usually negligible. However, most calibrators, including the ASU-01, are effected by altitude. The transducer diaphragm within the calibrator creates the sound as it vibrates against the air. When the air is thinner (at higher elevations), a lower sound level is produced.
The ASU-01 is calibrated to produce 94 dB at sea level.
When the device is operated above sea level, a slightly lower sound level is emitted depending on altitude. For each 2000 feet of elevation above sea level, the ASU-01 produces 0.1 dB less than the 94 dB rating.
As an example, the calibrator will only emit 93.7 dB at an elevation of 6,000 feet. Therefore, a sound level meter should be set at 93.7 dB, not at the rated 94 dB.
The effects of temperature are less than ± 0.05 dB/°C (reference is 23°C)

9 Accessories

- Carrying case
- Instruction manual