

Sound Level Calibrator

This Sound Level Calibrator is small in size, light in weight, easy to carry. Although complex and advanced, it is convenient to use and operate. Its ruggedness will allow many years of use if proper operating techniques are followed. Please read the following instructions carefully and always keep this manual within easy reach.

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7. Care Of The Instrument

- 7.1 Immediately clean any spilled materials from the Instrument and wipe dry. If spillage is corrosive, use a suitable cleaner to remove it and to neutralize corrosive action.
- 7.2 Remember to turn off the Instrument when not using it.
- 7.3 Avoid prolonged exposure or usage in areas subject to temperature and humidity extremes, vibration, mechanical shock, dust, corrosive fumes, and strong electrostatic and electromagnetic interference.
- 7.4 Be sure the transducer cap is firmly in place.
- 7.5 If the Instrument has not been used for 30 days, check battery for leakage, and replace if necessary.
- 7.6 When the Instrument is not in use, store it in a room free from temperature extremes, dust, corrosive fumes, mechanical vibration, or shock. If storage time is expected to exceed 30 days, remove the battery.

8. Effects Of Atmospheric Pressure And Temperature

For any one location, the effects of normal variations of atmospheric pressure are usually negligible. But most calibrators including the ND9 are affected 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.

1. Application

- * Handy sound source for quick and easy calibration of sound level meters and sound measuring systems.
- * The Calibrator employs solid state integrated circuitry that provides accurate and stable performance.
- * Sensitivity calibration of microphones.
- * Suitable for field and laboratory use.

2. Properties

- * Sound pressure level 94 dB and 114 dB.
- * Accuracy: ± 0.4 dB (20°C, 760 mm Hg)
- * Frequency of $1000 \pm 0.01\%$ Hz allows calibration with A,B,C or D weighting networks or linear.
- * Extremely low influence of static pressure.
- * Conforms to IEC 942 class 1
- * Calibration of 1" and 1/2" microphones.
- * Battery operated
- * Temperature Range: -10 to +50°C operating.
- * Storage (with batteries removed) -40 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 (approximately every 50 mm of Hg decrease).
- * Power Source: one 9V transistor batteries NEDA

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The ND9 is calibrated to produce 94 dB at sea level. When the unit is operated above sea level a slightly lower sound level is emitted depending on altitude. For each 2000 feet of elevation above seal level the ND9 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/ $^{\circ}$ C (reference is 23 $^{\circ}$ C).

9. ACCESSORIES

Carrying case 1 PC

Operation manual.....1 PC

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1604, Burgess 2U6 or equivalent. Battery life approximately 100 hours.

* Size: 142x47x47 mm

* Weight: about 275g

3. Front panel descriptions

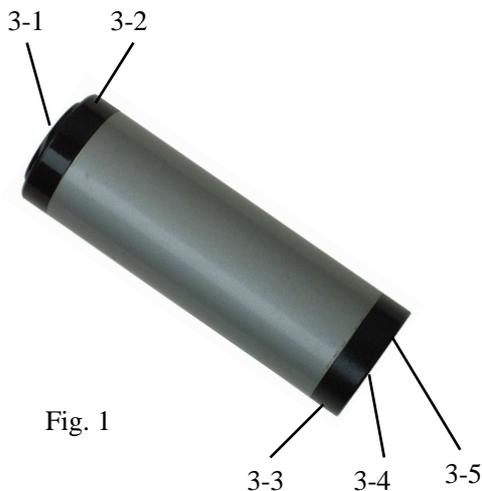


Fig. 1

- 3-1 Transducer Cap
- 3-2 Microphone adaptor
- 3-3 Battery Cap
- 3-4 OFF/ON (94 or 114 dB select switch)
- 3-5 Lo Battery Indicator (LED)

4. Operation

The ND9 Calibrator is designed to check the accuracy of many types of sound instruments, not only Landtek manufactured equipment. Our instruments commonly use the standard 1/2-inch diameter ceramic microphone which fits directly into the calibrator coupler cavity. When testing an instrument with a 1-inch microphone, the proper adaptor ring must first be taken out. This keeps a close tolerance fit around the microphone head. Be sure 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 Set Calibrator switch to 94 dB or 114 dB position. A 1000 Hz tone should be heard.
- 5.2 Turn on the sound level meter which is to be calibrated.
- 5.3 Carefully insert the microphone into the calibrator coupler. Be sure the microphone is down inside the coupler resting flush on the lower coupler rim.
- 5.4 When calibration has been made, carefully remove the microphone and turn calibrator to OFF.

6. Battery replacement

When it is necessary to replace batteries, that is battery indicator become dim, unscrew bottom ring, Slide off face plate and outer shell to expose batteries.