

# 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.

Size: 51x51x137mm

Weight: about 200g

## 3. FRONT PANEL DESCRIPTIONS



Fig. 1

- |                        |               |
|------------------------|---------------|
| 3-1 Transducer Cap     | 3-4 94dB Key  |
| 3-2 Microphone Adaptor | 3-5 Power Key |
| 3-3 114dB Key          | 3-6 Display   |

## 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.

## 1. APPLICATION & FEATURES

- \* 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.
- \* Applies display and key operation, simple to use.

## 2. PARAMETER

Sound pressure level 94 dB and 114 dB

Accuracy:  $\pm 0.3$  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

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: 2x1.5 AAA(UM-4) battery

When testing an instrument with a 1-inch microphone, the Transducer Cap 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 Press the Power key to power on the calibrator. A 1000 Hz tone should be heard. Press the 114 dB Key or the 94dB Key to select 94 dB or 114 dB position.
- 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

- 6.1 When the battery voltage is too low, the battery symbol '  ' will appear on the lower left quarter of the display. It is necessary to replace the batteries.
- 6.2 Slide the Battery Cover away from the instrument and remove the batteries.
- 6.3 Install the batteries correctly into the case.

## 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.

The ND9 is calibrated to produce 94dB 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 0.1dB less than the 94 dB rating. As an example, the calibrator will only emit 93.7dB at an elevation of 6,000 feet. Therefore, a sound level meter should be set at 93.7dB, not at the rated 94dB. The effects of temperature are less than  $\pm 0.05\text{dB}/^{\circ}\text{C}$  (reference is  $23^{\circ}\text{C}$ ).

## 9. ACCESSORIES

- Carrying case .....1PC
- Operation manual.....1PC