

# Sound Calibrator Type 42AB

## Product Data and Specifications

### Typical applications

- *Microphone calibration*
- *Microphone comparisons*

The G.R.A.S. Sound Calibrator Type 42AB (Fig. 1) is a small battery-operated precision microphone calibrator. The calibrator can be used directly on 1-inch and ½-inch microphones. For ¼-inch microphones, use the included adapter. An adapter for calibrating ⅛-inch microphones is available.

The Type 42AB works at the reference frequency (1 kHz) of the internationally standardized weighting filters A, B, C and D. This means that it can be used directly for calibrating sound level meters and other similar equipment with these weighting filters activated without having to make corrections. The calibration level is 114 dB (re. 20 µPa) which corresponds with 10 Pa. This is enough to ensure immunity to background noise without overloading the equipment.

The Type 42AB consists of a sound source, a reference microphone and an electronic control circuit. The special reference microphone is extremely stable and independent of variations in barometric pressure, temperature and humidity. The reference microphone and control circuit, together, maintain a



Fig. 1 Sound Calibrator Type 42AB

constant sound pressure level inside the calibration chamber and automatically adjusts for changes in load volume, temperature, humidity and barometric pressure. Furthermore, the calibrator will automatically switch off when the microphone under test is removed from the calibration chamber.

The output level of the Type 42AB, viz. 114 dB (re. 20 µPa) at 1 kHz, meets the requirements of IEC Standard 60942 Class 1 and is therefore in accordance with international standards.

The Type 42AB is supplied with a leather protection case and an individual calibration certificate.

## Specifications

<p><b>Output signal:</b> Specified on the calibrator for reference conditions.</p> <p><b>Reference conditions:</b> Ambient temperature: .....20 °C Ambient pressure: ..... 101.3 kPa Humidity: ..... 65% RH Effective load volume: ..... 250 mm<sup>3</sup></p> <p><b>Accuracy:</b> SPL: ..... 114 dB ±0.2 dB re. 20 µPa Frequency: ..... 1000 Hz ±0.2% Complies with IEC 942-1988 Class 1.</p> <p><b>General:</b> Typical sensitivity to change in load volume: ..... 0.0003 dB/mm<sup>3</sup> at 1000 Hz Time for level to stabilize: ..... max. 2 sec.</p> <p><b>Microphone sizes:</b> According to IEC 1094-4 With adapters removed: ..... 1-inch With adapter(s): ..... ½-inch and ¼-inch</p> <p><b>Harmonic distortion:</b> Maximum: ..... 1%</p> <p><b>Controls:</b> Push-button start. Automatic switch-off.</p> <p><b>CE classification:</b> EMC: ..... EN 50081-1, EN 50082-1 Safety: ..... EN 61010-1, 1993 For portable equipment, pollution category 2.</p>	<p><b>Ambient requirements for specified operation:</b> Temperature: ..... -10 °C to +50 °C Ambient pressure: ..... 65 kPa to 108 kPa Humidity: ..... 10% to 90% RH</p> <p><b>Battery:</b> Type: ..... 6LR61, 9V Life: ..... ≈ 30 hours Battery type 6F22G has a shorter life, whereas a 9V lithium battery gives an extended operating time.</p> <p><b>External supply voltage:</b> 7.5V to 15V Automatic shut-off when voltage drops below 7.5V</p> <p><b>Overall weight and dimensions:</b> Weight: ..... 185 gm with battery Length: ..... 109.5 mm Diameter: ..... 40 mm</p> <p><b>Accessories included:</b> Delivered fitted with a removable adapter for calibrating ½-inch microphones. Remove this for calibrating 1-inch microphones. Adapter for ¼-inch microphones: .... RA0049 9V alkaline battery: ..... EL0003</p> <p><b>Accessories available:</b> Adapter for ⅛-inch microphones: .... RA0069</p>
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