

Product Data

Sound Level Calibrator — Type 4231

FEATURES:

- Conforms to IEC 942 (1988) Class 1 and ANSI S1.40-1984 (R 1997)
- Robust pocket-size design with highly stable level and frequency
- Calibration accuracy ± 0.2 dB
- 94 dB SPL, or 114 dB SPL for calibration in noisy environments
- Extremely small influence of static pressure
- Sound pressure independent of microphone equivalent volume
- 1 kHz calibration frequency for correct calibration level independent of weighting networks
- Fits Brüel & Kjær 1" and 1/2" microphones (1/4" and 1/8" microphones with adaptor)
- Switches off automatically when removed from the microphone

USES:

- Calibration of sound level meters and other sound measurement equipment

The Sound Level Calibrator Type 4231 is a handy, portable sound source for calibration of sound level meters and other sound measurement equipment. The calibrator is very robust and stable and conforms to IEC 942 Class 1 and ANSI S1.40-1984.

The Sound Level Calibrator Type 4231 is a pocket-sized, battery operated sound source for quick and direct calibration of sound level meters and other sound measuring systems. It fits Brüel & Kjær 1" and 1/2" microphones and, with adaptors, it can be used for 1/4" and 1/8" microphones as well.

The calibration frequency is 1000 Hz (the reference frequency for the standardized international weighting networks), so the same calibration value is obtained for all weighting networks (A, B, C, D and Linear). The calibration pressure of 94 ± 0.2 dB re $20 \mu\text{Pa}$ is equal to 1 Pa or 1 N/m^2 . The +20 dB level step gives 114 dB SPL which is convenient for calibration in noisy environments.

The design of the 4231 is based on a feed-back arrangement to ensure a highly stable sound pressure level and ease of use. The feed-back loop uses a condenser microphone (see Fig. 1), which is specially developed for this purpose. This microphone is optimised to have extremely high sta-

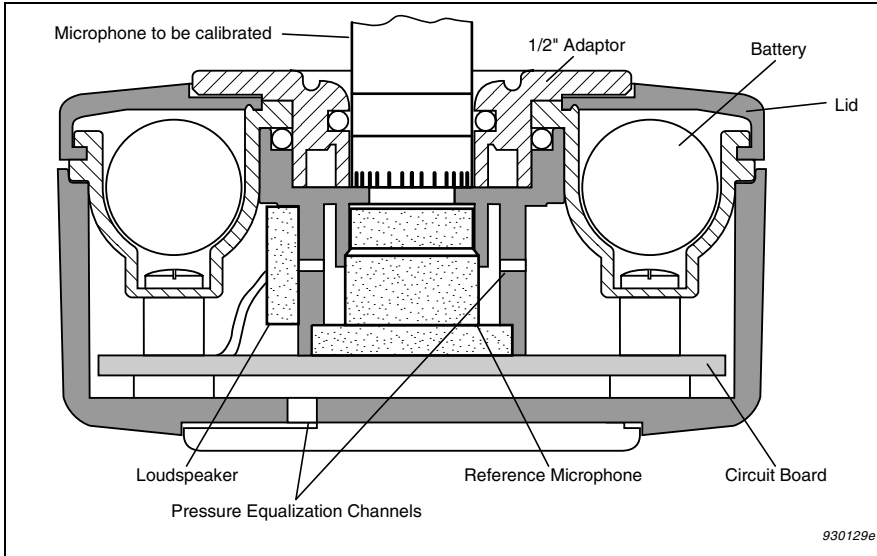


bility and independence of variations in static pressure and temperature around the 1 kHz calibration frequency. The result of this is a user-friendly calibrator where exact fitting of the microphone is non critical and the effects of changes in temperature and static pressure are negligible.

The calibrator gives a continuous sound pressure level when fitted on

a microphone (see Fig. 2) and activated. The sensitivity of the sound measuring equipment can then be adjusted until it indicates the correct sound pressure level. The calibrator is automatically switched off when removed from the microphone.

A leather protecting case, which does not need to be removed to use the calibrator, is supplied.



Sound Level Calibrator — Type 4231

FEATURES:

- Conforms to IEC 942 (1988)
Class 1 and ANSI S1.40-1984

(R 1997)

<ul style="list-style-type: none"> ○ Robust pocket-size design with highly stable level and frequency ○ Calibration accuracy ± 0.2 dB ○ 94 dB SPL, or 114 dB SPL for calibration in noisy environments ○ Extremely small influence of static pressure ○ Sound pressure independent of microphone equivalent volume ○ 1 kHz calibration frequency for correct calibration level independent of weighting networks ○ Fits Brüel & Kjær 1" and 1/2" microphones (1/4" and 1/8" microphones with adaptor) ○ Switches off automatically when removed from the microphone 	<p style="text-align: center;">_____</p> <p>USES:</p> <ul style="list-style-type: none"> ○ Calibration of sound level meters and other sound measurement equipment <p>COMPLIANCE WITH STANDARDS:</p> <table border="1"> <tr> <td style="text-align: center; vertical-align: middle;">CE</td> <td>CE-mark indicates compliance with: EMC Directive.</td> </tr> <tr> <td>Safety</td> <td>EN 61010-1 and IEC 1010-1: Safety requirements for electrical equipment for measurement, control and laboratory use.</td> </tr> <tr> <td>EMC Emission</td> <td>EN 50081-1: Generic emission standard. Part 1: Residential, commercial and light industry. EN 50081-2: Generic emission standard. Part 2: Industrial environment. CISPR 22: Radio disturbance characteristics of information technology equipment. Class B Limits. FCC Rules, Part 15: Complies with the limits for a Class B digital device.</td> </tr> <tr> <td>EMC Immunity</td> <td>EN 50082-1: Generic immunity standard. Part 1: Residential, commercial and light industry. EN 50082-2: Generic immunity standard. Part 2: Industrial environment.</td> </tr> <tr> <td>Temperature</td> <td>IEC 68-2-1 & IEC 68-2-2: Environmental Testing. Cold and Dry Heat. Operating Temperature: -10 to +50°C (14 to 122°F) Storage Temperature: -25 to 70°C (-13 to 158°F)</td> </tr> <tr> <td>Humidity</td> <td>IEC 68-2-3: Damp Heat: 90% RH (non-condensing at 40°C (104°F))</td> </tr> <tr> <td>Enclosure</td> <td>IEC 529 (1989): Protection provided by enclosures: IP 50</td> </tr> </table>	CE	CE-mark indicates compliance with: EMC Directive.	Safety	EN 61010-1 and IEC 1010-1: Safety requirements for electrical equipment for measurement, control and laboratory use.	EMC Emission	EN 50081-1: Generic emission standard. Part 1: Residential, commercial and light industry. EN 50081-2: Generic emission standard. Part 2: Industrial environment. CISPR 22: Radio disturbance characteristics of information technology equipment. Class B Limits. FCC Rules, Part 15: Complies with the limits for a Class B digital device.	EMC Immunity	EN 50082-1: Generic immunity standard. Part 1: Residential, commercial and light industry. EN 50082-2: Generic immunity standard. Part 2: Industrial environment.	Temperature	IEC 68-2-1 & IEC 68-2-2: Environmental Testing. Cold and Dry Heat. Operating Temperature: -10 to +50°C (14 to 122°F) Storage Temperature: -25 to 70°C (-13 to 158°F)	Humidity	IEC 68-2-3: Damp Heat: 90% RH (non-condensing at 40°C (104°F))	Enclosure	IEC 529 (1989): Protection provided by enclosures: IP 50	<p>The Sound Level Calibrator Type 4231 is a handy, portable sound source for calibration of sound level meters and other sound measurement equipment. The calibrator is very robust and stable and conforms to IEC 942 Class 1 and ANSIS1.40-1984.</p> <p>The Sound Level Calibrator Type 4231 is a pocket-sized, battery op-</p>
CE	CE-mark indicates compliance with: EMC Directive.															
Safety	EN 61010-1 and IEC 1010-1: Safety requirements for electrical equipment for measurement, control and laboratory use.															
EMC Emission	EN 50081-1: Generic emission standard. Part 1: Residential, commercial and light industry. EN 50081-2: Generic emission standard. Part 2: Industrial environment. CISPR 22: Radio disturbance characteristics of information technology equipment. Class B Limits. FCC Rules, Part 15: Complies with the limits for a Class B digital device.															
EMC Immunity	EN 50082-1: Generic immunity standard. Part 1: Residential, commercial and light industry. EN 50082-2: Generic immunity standard. Part 2: Industrial environment.															
Temperature	IEC 68-2-1 & IEC 68-2-2: Environmental Testing. Cold and Dry Heat. Operating Temperature: -10 to +50°C (14 to 122°F) Storage Temperature: -25 to 70°C (-13 to 158°F)															
Humidity	IEC 68-2-3: Damp Heat: 90% RH (non-condensing at 40°C (104°F))															
Enclosure	IEC 529 (1989): Protection provided by enclosures: IP 50															

erated sound source for quick and direct calibration of sound level meters and other sound measuring systems. It fits Brüel & Kjær 1" and 1/2" microphones and, with adaptors, it can be used for 1/4" and 1/8" microphones as well.

<p>The calibration frequency is 1000 Hz (the reference frequency for the standardized international weighting networks), so the same</p>	<p>calibration value is obtained for all weighting networks (A, B, C, D and Linear). The calibration pressure of 94 ± 0.2 dB re 20 μPa is equal to 1 Pa</p>	<p>or 1 N/m^2. The +20 dB level step gives 114 dB SPL which is convenient for calibration in noisy environments.</p>
--	---	---

The design of the 4231 is based on a feed-back arrangement to ensure a highly stable sound pressure level and ease



HEADQUARTERS: DK-2850 Nærum · Denmark · Telephone: +4545800500 · Fax: +4545801405 · <http://www.bk.dk> · e-mail: info@bk.dk
Australia (02)9450-2066 · Austria 0043-1-8657400 · Brazil (011)5182-8166 · Canada (514)695-8225 · China (86) 1068029906
Czech Republic 02-67021100 · Finland (0)9-755 950 · France (01)69906900 · Germany 06103/908-756 · Hong Kong 25487486 · Hungary (1)2158305
Ireland (01)450 4922 · Italy 02 57 68061 · Japan 03-3779-8671 · Republic of Korea (02)3473-0605 · Netherlands (31)318 559290 · Norway 66771155
Poland (22)858 9392 · Portugal (1)4711453 · Singapore (65) 377-4512 · Slovak Republic 4217 544 307 01 · Spain (91)3681000 · Sweden (08)4498600
Switzerland 01/9436070 · Taiwan (02)7139303 · United Kingdom (0181)954-2366 · USA 18003322040
Local representatives and service organisations worldwide