CALIBRATORS

TYPES 4231, 4226, 4228 SOUND LEVEL CALIBRATORS
TYPE 4294 VIBRATION CALIBRATOR
TYPES 3541 AND 4297 SOUND INTENSITY CALIBRATORS

The most important parameter for any measurement device is sensitivity. Sensitivity can be defined as the ratio of the output parameter to the input parameter. To determine the sensitivity is to calibrate the measurement device.

A calibration is performed:

- To ensure that your measurements are correct
- To prove that measurement methods and the equipment used are accurate, for example, to prove that a measurement complies with the requirements of national legislation, standard bodies and customers
- To verify the stability of the measurement equipment, including equipment used to perform calibration
- To account for local measurement conditions, for example, variations in ambient pressure and temperature
- To ensure product quality
- To build confidence in measurement results

SOUND LEVEL CALIBRATOR TYPE 4231

Sound Level Calibrator Type 4231 is a handy, portable sound source for calibration of sound level meters and other sound measurement equipment.

FEATURES:

- Robust pocket-size design with highly stable level and frequency
- Sound pressure independent of microphone equivalent volume
- Switches off automatically when removed from the microphone

ORDERING INFORMATION

Type 4231: Sound Level Calibrator

Accessories includes:

KE 0317: Leather Case

2 × QB 0013: Alkaline Batteries Type LR6

UC 0210: Adaptor for ½-inch microphones

4231

MULTIFUNCTION ACOUSTIC CALIBRATOR TYPE 4226

This device is a portable calibrator for sound level meters, dose meters, microphones and related instruments. It is able to give 3 different output levels at 1/1-octave frequencies from 31.5 Hz to 16 kHz, and at 12.5 kHz.

4226

PISTONPHONE TYPE 4228

The Pistonphone is for calibration of sound level meters and other acoustic instruments using ⅛", ¼", ½" and 1" microphones. Based on mechanical production of sound pressure using oscillating pistons, the sound pressure level delivered by the Pistonphone can be very accurately defined.

BRIEF SPECIFICATIONS

Type Number		4231	4226	4228
Description		Sound Level Calibrator	Multifunction Acoustic Calibrator	Pistonphone
Standards		IEC 60942 (1998) Class 1 ANSI S1.4–1984	IEC 60942 (1998) Class 1 Ansi S1.4–1984	IEC 60942 (1998) Class 1
Calibration Pressure	dB SPL	94 and 114	94, 104 and 114	124
Calibration Frequencies	Hz	1000	31.5Hz to 16 kHz in octave steps. 12.5 kHz	251.2
Calibration Accuracy	dB	±0.2	±0.2 at 94 dB	±0.2
Transducer		1-inch and 1/2-inch (1/4-inch and 1/8-inch with adaptor)	1/2-inch and 1/4-inch	1-inch, 1/2-inch, 1/4-inch and 1/8-inch

030250

4228

VIBRATION CALIBRATOR TYPE 4294

Vibration Calibrator Type 4294 is a small, handy, completely self-contained vibration reference source. It is intended for rapid calibration and checking of vibration measurement, monitoring and recording systems.

FEATURES

- Small, lightweight and battery-driven
- Leather case with impact protection – designed for everyday use in harsh environment

BRIEF SPECIFICATIONS

Vibration System
Electromagnetic exciter with internal built-in accelerometer for servo regulation of vibration amplitude.

Frequency
159.15 Hz ±0.02% (1000 rads^{-1})

Acceleration
10 ms^{-2} (RMS) ±3%

Velocity
10 mms^{-1} (RMS) ±3%

Displacement
10 µm (RMS) ±3%

Accessories
KE 0278: Leather Case
QB 0016: 9 V Battery
YQ 2962: 10–32 UNF Steel Stud
DB 2996: Mounting Disc Adaptor

4294

CALIBRATORS

SOUND INTENSITY CALIBRATORS TYPES 3541 AND 4297

Requirements for laboratory and field use are different. Brüel & Kjær, therefore, offers two instruments for sound intensity calibration – Type 3541 for laboratory use and Type 4297 for field use. Both calibrators fulfil IEC 61043, 1993 Class 1.

BRIEF SPECIFICATIONS

Type Number		3541	4297
Main Application		In the laboratory	In the field
Dismantling of Probe		Necessary	Unnecessary (up to 3 kHz)
Calibration of Sound Intensity Level	L_I	Yes	No
Calibration of Sound Pressure Level	L_p	Yes	Yes
Calibration of Particle Velocity Level	L_v	Yes	No
Pressure-Residual Intensity Index	L_p–L_I	20 to 5 kHz	20 to 3 kHz with spacer 20 to 6.3 kHz without spacer
Spacings Accommodated		Irrelevant as spacer must be removed from probe	Probe must be based on 12 mm spacer
Sound Pressure Source		Separate pistonphone	Integrated
Noise Generator		Separate pink and white noise generator	Integrated pink noise generator
Microphones Accomodated	inch	$^1/_4$ and $^1/_2$	$^1/_2$
Number of Mechanical Parts		4	1

030249

3541

4297

4297