

PRODUCT DATA

Mini-shaker — Type 4810

USES

- Calibration of accelerometers
- Vibration testing of small objects
- Educational demonstrations
- Mechanical impedance measurements

FEATURES

- Force rating 10 newton (2.25 lbf) sine peak
- Frequency range DC to 18 kHz
- First axial resonance above 18 kHz
- Max. bare table acceleration 550 m/s^2
- Rugged construction
- Optimised to obtain full output force when used with Power Amplifier Type 2718



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Description

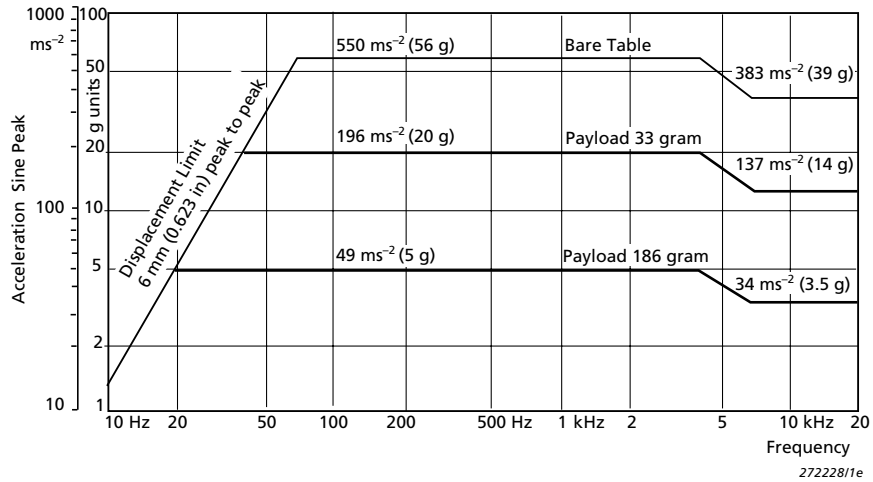
Mini-shaker Type 4810 is of the electrodynamic type with a permanent field magnet. It is well-suited as the motive force generator in mechanical impedance measurements where only smaller forces are required. It can also be used in the calibration of vibration transducers, both to determine their sensitivity, by comparison with a standard accelerometer, as well as their frequency response, up to 18 kHz.

The suspension system consists of radial flexure springs that restrict the moving element to almost perfectly rectilinear motion. Laminated flexure springs provide a high degree of damping to minimise distortion due to flexure resonances.

The object to be vibrated is attached to the table by means of a 10–32 UNF screw, the thread size commonly used for mounting accelerometers. Performance limits defined by the maximum displacement (6 mm), maximum force (10 N or 7 N depending on frequency), and the first axial resonance of the moving element (above 18 kHz), are shown in Fig. 1.

4810

Fig. 1
Sine performance
curves for
Type 4810



Specifications – Mini-shaker Type 4810

COMPLIANCE WITH STANDARDS



compliance with EMC Directive
compliance with EMC Requirements of Australia and New Zealand

Safety, EMC Emission and Immunity: According to relevant standards: EN 61010-1, IEC 61010-1, UL 3111-1, EN 50081-1/2, IEC 61000-6-1/2/3/4, EN 61326-1, CISPR22 Class B limits, FCC Rules Part 15, EN 50082-1/2, EN 61326-1

Temperature: According to IEC 60068-2-1 & IEC 60068-2-2
Operating temperature: +5 to +40°C (41 to 104°F)
Storage temperature: -25 to +70°C (-13 to 158°F)

Humidity: According to IEC 60068-2-3, Damp Heat: 90% RH (non-condensing at 40°C (104°F))

Mechanical: Non-operating according to IEC 60068-2-6, IEC 60068-2-27, IEC 60068-2-29

SPECIFICATIONS

FREQUENCY RANGE: DC to 18 kHz

FIRST MAJOR ARMATURE RESONANCE: Above 18 kHz

FORCE RATING (PEAK):

10 N (2.25 lbf). 65 Hz to 4 kHz

7 N (1.5 lbf). 65 Hz to 18 kHz

MAX. BARE TABLE ACCELERATION (PEAK):

550 m/s^2 (65 Hz to 4 kHz)

383 m/s^2 (6.5 kHz to 18 kHz)

(1 m/s^2 = 0.102 g)

MAX. DISPLACEMENT (PEAK-TO-PEAK): 6 mm (0.236 in)

DYNAMIC FLEXURE STIFFNESS: 2 N/mm (11.5 lb./in)

DYNAMIC WEIGHT OF THE MOVING SYSTEM: 18 grams

MAGNETIC FIELD: Permanent magnet

MAX. INPUT CURRENT: 1.8 A RMS

COIL IMPEDANCE: 3.5 Ω at 500 Hz

CONNECTION: Microsocket 10-32 UNF

TABLE SIZE: 14 mm (0.55 in) diameter

FASTENING THREAD: 10-32 UNF

WEIGHT: 1.1 kg (2.4 lb)

DIMENSIONS

Diameter: 76 mm (3 in)

Height: 75 mm (2.9 in)

Ordering Information

Type 4810 Mini-shaker
Includes the following accessories:
AO 0069 Cable for connection of Type 4810 to Power Amplifier Type 2718
YQ 2962 Threaded Steel Stud, 0.3 in 10-32 UNF

EE 0115 ENDEVCO 2311-500 ISOTRON Force Transducer
EE 0357 ENDEVCO Model 2312 Force Transducer
Type 8203 Force Transducer/Impact Hammer
UA 0125 Mounting Equipment (includes isolated studs YP 0150 and non-isolated studs YQ 2960)
Trunnion
WA 0429 Nylon Stinger Kit
WZ 0066 Bushing Adaptor, 1/4-28 UNF to 10-32 UNF
EE 5227-002 Adaptor, Male 10-32 UNF to Male 1/4-28 UNF
EE 5004 Adaptor, 4 mm Socket Pair to BNC Plug for use with old Type 2706
JP 0150

Optional Accessories

EE 0112 ENDEVCO 2311-1 ISOTRON® Force Transducer
EE 0113 ENDEVCO 2311-10 ISOTRON Force Transducer
EE 0114 ENDEVCO 2311-100 ISOTRON Force Transducer

Brüel & Kjær reserves the right to change specifications and accessories without notice.