

# BRÜEL & KJÆR® Modal and Measurement Exciters

## Mini-shaker Type 4810

### Uses

- Accelerometer calibration
- Vibration testing of small objects
- Mechanical impedance and mobility measurements
- Experimental modal analysis

### Features

- Force rating: 10 N (2.25 lbf) sine peak
- Frequency range: DC to 18 kHz
- First axial resonance frequency: above 18 kHz
- Max. displacement: 4 mm (0.16 in) peak-to-peak
- Max. bare table acceleration: 550 m/s<sup>2</sup> (56 g)
- Rugged construction
- Robust rectilinear guidance system
- Low cross motion and low distortion
- Optimized performance using Power Amplifier Type 2718
- High-quality cable with MICRODOT connectors for connection to Type 2718



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### Description

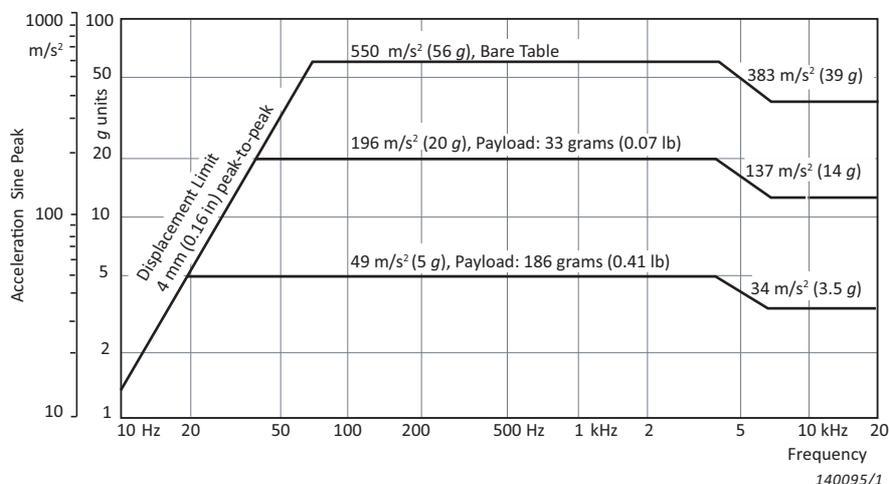
Mini-shaker Type 4810 is of the electrodynamic type with a permanent field magnet. It is well-suited as the force generator in general vibration tests, mechanical impedance and mobility measurements, and experimental modal analysis where only smaller force levels are required. It can also be used in 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.

Power Amplifier Type 2718 (75 VA) has been designed specifically to drive Type 4810, but Type 4810 can also be driven by any amplifier up to maximum input current of 1.8 A RMS.

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 (4 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.

Fig. 1 Sine performance curves for Type 4810



## COMPLIANCE WITH STANDARDS



The CE marking is the manufacturer's declaration that the product meets the requirements of the applicable EU directives



RCM mark indicates compliance with applicable ACMA technical standards – that is, for telecommunications, radio communications, EMC and EME



China RoHS mark indicates compliance with administrative measures on the control of pollution caused by electronic information products according to the Ministry of Information Industries of the People's Republic of China



WEEE mark indicates compliance with the EU WEEE Directive

**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:** 93% RH (non-condensing at 40 °C (104 °F))

## SPECIFICATIONS

## Force Rating (Sine Peak):

- 10 N (2.25 lbf), 65 Hz to 4 kHz
- 7 N (1.5 lbf), 65 Hz to 18 kHz

**Frequency Range:** DC to 18 kHz

**First Major Armature Resonance:** Above 18 kHz

## Max. Bare Table Acceleration (Peak):

- 550 m/s<sup>2</sup> (56 g), 65 Hz to 4 kHz
- 383 m/s<sup>2</sup> (39 g), 6.5 kHz to 18 kHz

**Max. Displacement (Peak-to-Peak):** 4 mm (0.16 in)

**Dynamic Weight of the Moving System:** 18 grams (0.040 lb)

**Dynamic Flexure Stiffness:** 2 N/mm (11.5 lb/in)

**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 Diameter:** 14 mm (0.55 in)

**Fastening Thread:** 10-32 UNF

## WEIGHT AND DIMENSIONS

**Weight:** 1.1 kg (2.4 lb)

**Diameter:** 76 mm (3 in)

**Height:** 75 mm (2.9 in)

## Type 4810 Mini-shaker

includes the following accessories:

- AO-0069: Cable kit including Cable AO-0038 (length: 1.2 m (4 ft)) for connection of Type 4810 to Power Amplifier Type 2718
- YQ-2962: Threaded Steel Stud, 10-32 UNF × 5/16"

## Optional Accessories

## TRUNNION

WA-0429 Trunnion

## POWER AMPLIFIER

Type 2718 Power Amplifier (75 VA)

## STINGERS

**Note:** Other stingers are available, please ask your sales representative.

- WZ-0066 Nylon Stinger Kit
- 10 × stingers, length 50 mm
  - 10 × stingers, length 120 mm

## FORCE TRANSDUCERS AND IMPEDANCE HEAD

- Type 8230 CCLD Force Transducer (+44/-44 N range)
- Type 8230-001 CCLD Force Transducer (+220/-220 N range)
- Type 8230-002 CCLD Force Transducer (+2200/-2200 N range)
- Type 8230-003 CCLD Force Transducer (+22000/-2200 N range)
- Type 8230-C-003 Charge Force Transducer (+22200/-2200 N range)
- Type 8231-C Charge Force Transducer (+110000/-2200 N range)
- Type 8001 Impedance Head

## ADAPTORS AND STUDS

- UA-2052 Set of 10 Stud Adaptors, 10-32 UNF to ¼"-28 UNF
- UA-2054 Set of 20 Bushing Adaptors, 10-32 UNF to ¼"-28 UNF
- UA-0125 Mounting Equipment (includes isolated studs YP-0150 and non-isolated studs YQ-2960)

## CABLES

- AO-0038 Cable, super low-noise 10-32 UNF (M) to 10-32 UNF (M), available in different lengths for connection to Type 2718



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