

# PRODUCT DATA

## Vibration Exciter — Type 4809

### USES

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

### FEATURES

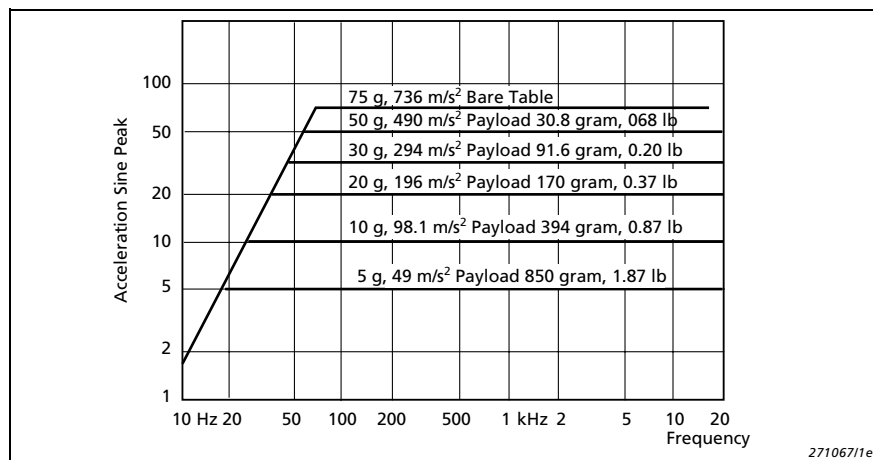
- Powered by Power Amplifier Type 2718
- Force rating 45 N (10 lbf) sine peak, 60 N with air cooling
- Frequency range 10 Hz to 20 kHz
- First axial resonance 20 kHz
- Maximum bare table acceleration  $736 \text{ ms}^{-2}$  (75 g),  $981 \text{ ms}^{-2}$  with air cooling
- Robust rectilinear guidance system
- Low cross motion and low distortion



## Description

Vibration Exciter Type 4809 is a small versatile instrument with an impressive performance. High quality materials ensure long term constructional reliability, and strict quality control results in consistent high performance. Type 4809 can be driven by any small power amplifier, with an input current up to a maximum 5 A and a sufficient voltage rating, without assisted cooling. The Brüel & Kjær Power Amplifier Type 2718, rated at 75 VA, has been designed specifically to drive Type 4809.

**Fig. 1**  
Sine performance curves for Type 4809 operating without assisted cooling



4809

A threaded insert is set into the table surface for attachment purposes. The insert is replaceable and acts as a mechanical fuse, protecting the moving element against damage. For most types of abusive treatment the inner threads fail before the moving element is damaged. A continuous 8 mm (0.315 in) peak-to-peak displacement is possible. If the exciter should be over-driven, over-travel stops will prevent excessive displacements.

## Specifications – Vibration Exciter Type 4809

### 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, 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

### RATED FORCE:

44.5 N (10 lbf) sine peak

60 N (13.5 lbf) with forced air cooling

**FREQUENCY RANGE:** 10 Hz to 20 kHz bare table

**AXIAL RESONANCE FREQUENCY:** 20 kHz bare table

### MAXIMUM BARE TABLE ACCELERATION

736 m/s<sup>2</sup> (75 g)

1000 m/s<sup>2</sup> (100 g) with air cooling

**MAXIMUM DISPLACEMENT:** 8 mm (0.315 in) peak-to-peak

**MAXIMUM VELOCITY:** 1.65 m/s (65 in/s) peak

**DYNAMIC WEIGHT OF MOVING ELEMENT:** 60 g (0.132 lb)

**DYNAMIC FLEXURE STIFFNESS:** 12 N/mm (69 lb./in)

### MAXIMUM INPUT CURRENT

5 A RMS

7 A RMS with forced air cooling

### CURRENT-TO-FORCE RATIO

~0.16 A/N (peak-peak)

(~6.4 N/A (peak-peak))

**COIL IMPEDANCE:** 2Ω approx. at 500 Hz (bare table)

### STRAY MAGNETIC FIELD

20 × 10<sup>-3</sup> T at table face

8 × 10<sup>-3</sup> T at 12.7 mm (0.5 in) above table face

**TABLE SIZE:** 29 mm (1.14 in) diameter

**FASTENING THREAD:** 5 × 5/16" – 18 UNC for M5 and 10–32 UNF inserts

**TOTAL WEIGHT:** 8.3 kg (18.3 lb)

### DIMENSIONS

**Diameter:** 149 mm (5.87 in)

**Height:** 143 mm (5.63 in)

## Ordering Information

Type 4809 Vibration Exciter  
Includes the following accessories:

4 × YS 0810 Thread Inserts (M5)  
4 × YS 0811 Thread Inserts (10–32)  
QA 0061 Insert Mounting Tool  
QA 0029 Tap for 10–32 UNF  
DB 1416 Hose Connection  
2 × YM 0414 Nut  
5 × YQ 2960 Steel Stud, 10–32 UNF

UA 0125 Mounting Equipment (including isolated studs YP 0150 and non-isolated studs YQ 2960)

WA 0308 Trunnion  
WZ 0066 Nylon Stinger  
UA 1596 Five push/pull steel stingers, dia. 2.5 mm  
UA 1597 Five push/pull steel stingers, dia. 3.5 mm  
EE 5227-002 ENDEVCO Model 14159-1 – Adaptor, Female 10–32 UNF to Female ¼–28 UNF  
DB 1443 Adaptor, Male 10–32 UNF to Male ¼–28 UNF  
WL 1325 Banana Plug to Neutrik 4-pin Speakon Plug

### 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  
EE 0115 ENDEVCO 2311-500 ISOTRON Force Transducer  
EE 0357 ENDEVCO Model 2312 Force Transducer

### Cables and Connectors

WL 1325 Type 4809 with Power Amplifier Type 2718  
WL 1325 Type 4809 with Power Amplifier Type 2719  
2 × JP 0150 and AO 0087 Type 4809 with old Type 2706  
JP 0308 and JP 0150 Type 4809 with old Type 2712

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