**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 m/s\(^2\) (75 g), 981 m/s\(^2\) 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.

![Sine performance curves for Type 4809 operating without assisted cooling](image_url)

**Fig. 1**

<table>
<thead>
<tr>
<th>Payload</th>
<th>Acceleration Sine Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 g</td>
<td>91.6 g, 294 m/s(^2)</td>
</tr>
<tr>
<td>20 g</td>
<td>196 g, 294 m/s(^2)</td>
</tr>
<tr>
<td>10 g</td>
<td>98.1 m/s(^2), 394 g</td>
</tr>
<tr>
<td>5 g</td>
<td>49 m/s(^2), 850 g</td>
</tr>
</tbody>
</table>
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, EN 61326-1

**Temperature:** According to IEC 60068-2-1 & IEC 60068-2-2

**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 lb) sine peak
- 60 N (13.5 lb) 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/s² (75 g)
- 1000 m/s² (100 g) with air cooling

**Ordering Information**

**Type 4809**
- Vibration Exciter

Includes the following accessories:
- 4×YS0810 Thread Inserts (M5)
- 4×YS0811 Thread Inserts (10-32)
- QA0061 Insert Mounting Tool
- QA0029 Tap for 10-32 UNF
- DB1416 Hose Connection
- 2×YM0414 Nut
- 5×YQ2960 Steel Stud, 10-32 UNF

**Optional Accessories**

EE0112 ENDEVCO 2311-1 ISOTRON® Force Transducer
EE0113 ENDEVCO 2311-10 ISOTRON Force Transducer
EE0114 ENDEVCO 2311-100 ISOTRON Force Transducer
EE0115 ENDEVCO 2311-500 ISOTRON Force Transducer
EE0357 ENDEVCO Model 2312 Force Transducer

**Cables and Connectors**

- UA0125 Mounting Equipment (including isolated studs YP0150 and non-isolated studs YQ2960)
- WA0308 Trunnion
- WZ0066 Nylon Stinger
- UA1596 Five push/pull steel stingers, dia. 2.5 mm
- UA1597 Five push/pull steel stingers, dia. 3.5 mm
- EE5227-002 ENDEVCO Model 14159-1 – Adaptor, Female
- DB1443 Adapter, Male 10-32 UNF to Female ¼-28 UNF
- WL1325 Banana Plug to Neutrik 4-pin Speakon Plug

**Specifications – Vibration Exciter Type 4809**

**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)

**Current-to-Force Ratio:**
- –0.16 A/N (peak-peak)
- (~6.4 A/N (peak-peak))

**Coil Impedance:** 21 Ω approx. at 500 Hz (bare table)

**Stray Magnetic Field**
- 20×10⁻³ T at table face
- 8×10⁻³ 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)

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