

SE-16

Vibration Exciter for High Frequencies



Application

- High-frequency vibration excitation of small components and sensors in the longitudinal and transverse direction

Range of use

- Quality assurance in sensor manufacturing
- Development and testing of MEMS sensors

Features

- Rugged ceramic armature (15 mm x 15 mm) with coupling surfaces for attaching the test device
- Very high first axial resonance frequency (> 115 kHz)
- High acceleration amplitude (up to 400 m/s²)
- Low transverse motion (typically < 10 %)
- Wide frequency range: 5 kHz to 100 kHz

Description

The SE-16 vibration exciter has been specially developed for high frequency vibration excitation of small components and sensors both in the longitudinal and transverse direction. It can thus be used, for example, for developing and testing MEMS sensors and for quality assurance in sensor manufacturing.

The test device can be attached by glueing on the side or on the top of the coupling surfaces. Thanks to the special design of the rugged ceramic armature and its special bearing, the test device can be excited almost free of any transverse motion in a frequency range of between 5 kHz and 100 kHz.

The drive of the vibration exciter is electro-dynamic, with the required electric energy provided by the power amplifier. All components of the drive are explicitly designed for high performance. With acceptable temperature rise of the vibration exciter, high acceleration amplitudes can be created.

Through the required frequency and power range, the 7224 AE Techron power amplifier can deliver a voltage signal with extremely low distortion factor.

SE-16

High-Frequency Vibration Exciter



Technical data

| SE-16 vibration exciter | |
|---|---|
| Force rating ¹⁾ | 12 N |
| Frequency range ²⁾ | 5 kHz ... 100 kHz |
| Resonance frequency | > 115 kHz |
| Max. stroke ³⁾ | 0.8 µm |
| Max. acceleration ¹⁾ | 400 m/s ² |
| Max. payload | 5 g |
| Transverse motion (typical) ³⁾ | < 10% in the range of 5 kHz ... 100 kHz |
| Rated current | 8 A RMS |
| Max. voltage | 10 V RMS |
| Dimensions (H x W x L) | 82 mm x 130 mm x 130 mm |
| Weight | 2.9 kg |
| 7224 AE Techron power amplifier | |
| Power output | 1100 W RMS at 4 Ohm |
| Output voltage ⁴⁾ | 49 V |
| Output current ^{4) 5)} | 12 A |
| Frequency range | 0 Hz to 300 kHz |
| Input impedance | 20 kOhm |
| Power supply | 230 V, 10 A, 50/60 Hz |
| Input signal | ±10 V |
| Control mode | Voltage |
| Current monitor | 0.2 V/A |
| Dimensions (H x W x L) | 89 mm (2 units) x 578 mm x 483 mm |
| Weight | 18.6 kg |
| System cable | |
| Length | 3 m |
| Connector of vibration exciter | 9-pole Sub-D connector |
| Connector of power amplifier | Free cable ends |

All specification are at room temperature unless otherwise specified

¹⁾ Sine peak value

²⁾ Frequency range may be extended on request

³⁾ Peak-peak

⁴⁾ When in use with SE-16

⁵⁾ Up to 8 A RMS permitted