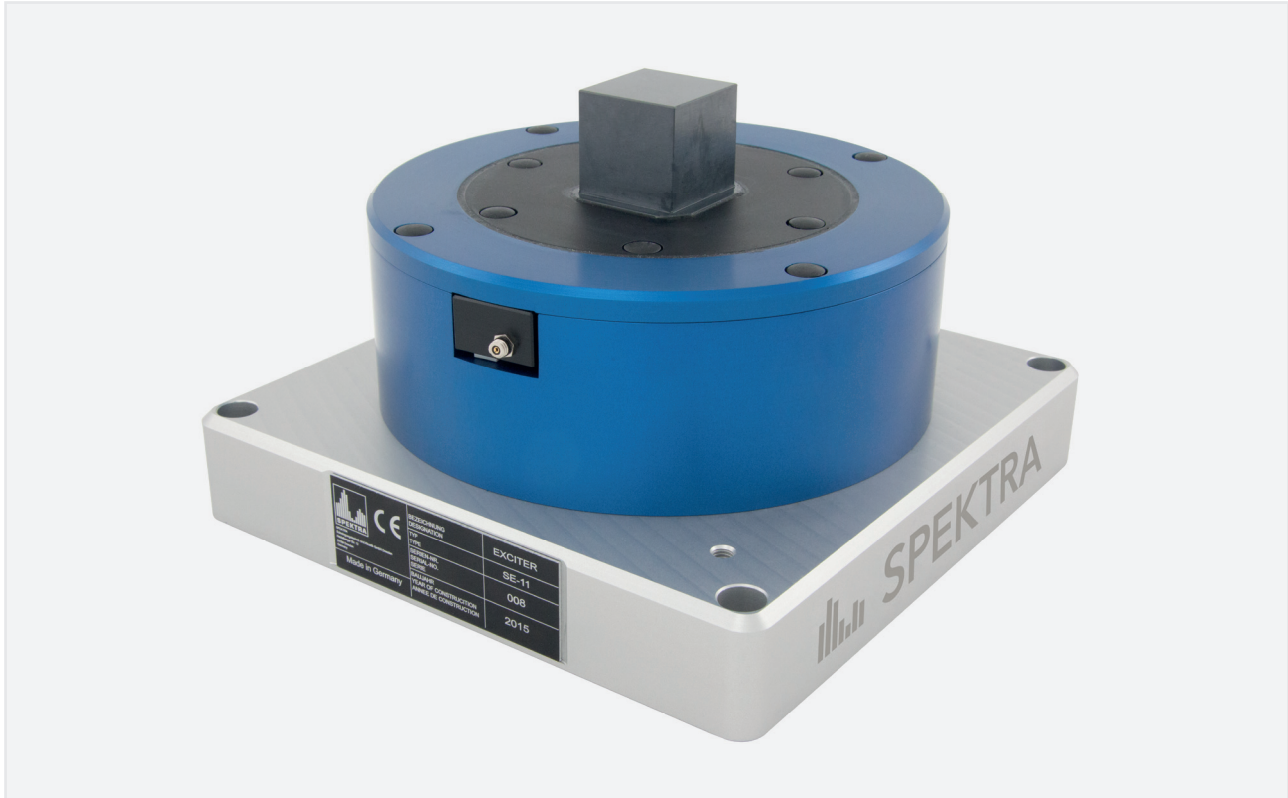


SE-11

Vibration exciter for high frequencies



Applications

- ✓ precise vibration excitation of devices at high frequencies
- ✓ testing of MEMS sensors regarding immunity against vibrations
- ✓ quality assurance in sensor manufacturing

Selected data

- ✓ frequency range: 1 kHz ... 50 kHz
- ✓ max. force: up to 100 N (23 lbf)
- ✓ max. acceleration: 400 m/s² (41 g_n)
- ✓ max. payload for best performance: 10 g

Features

- ✓ ceramic armature with additional coupling surfaces on the side
- ✓ high acceleration amplitude up to 400 m/s² (41 g_n)
- ✓ very high first axial head resonance frequency (> 52 kHz)
- ✓ very low transverse motion typical < 10 %
- ✓ internal reference accelerometer covering the whole frequency range



Specification

Testing MEMS sensors for immunity to vibration requires precise excitation of the devices under test (DUTs) up to very high frequencies. The SE-11 was designed especially for such test tasks and allows the DUT to be mounted in any orientation to the vibration axis on top or on the sides of the armature.

For this purpose, the armature made of technical ceramics allows the gluing of the DUT. Customer-specific adaptations with thread holes for fastening the DUT are possible on request.

A special bearing reduces transverse motions to less than 10 %.

Technical data

Force rating ¹⁾²⁾ , max. (sine peak)	100 N (23 lbf)
Frequency range	1 kHz ... 50 kHz
Resonance frequency	> 52 kHz
Displacement ¹⁾²⁾ , max. (peak-peak)	20 µm (0.79 mils)
Acceleration ¹⁾²⁾ , max. (sine peak)	400 m/s ² (41 g _n)
Rated current, max.	9 A RMS
Transverse motion ³⁾	< 10 %
Payload ⁴⁾ , max.	100 g (0.22 lbs)
Weight armature	200 g (0.44 lbs)
Weight total	9 kg (20 lbs)
Dimensions (H × W × L)	130 mm × 200 mm × 200 mm (5,1 in × 7,9 in × 7,9 in)
Temperature range (in operation)	+5 °C ... +40 °C (+41 °F ... +104 °F)
Temperature range (storage)	-25 °C ... +55 °C (-13 °F ... +131 °F)

1) interval mode of operation

2) all specifications are at room temperature unless otherwise specified

3) between 2 kHz ... 50 kHz

4) maximum 10 g (0.02 lbs) for optimal excitation

Options and accessories

- ✓ internal reference standard BN-09¹⁾
 - sensitivity ($\pm 10\%$): 1 mV / m/s² (10 mV / g_n)
 - frequency range in combination with the SE-11: 1 kHz ... 50 kHz
 - resonance frequency: approx. 70 kHz
 - operating voltage: 18 VDC ... 30 VDC
 - constant current supply: 2 mA ... 20 mA
- ✓ recommended power amplifier: PA14-500
- ✓ cables:
 - sensor: cable 3 m with BNC plug 10-32 fixed connection
 - vibration exciter: cable 3 m with Speakon® plug

1) all specifications are at room temperature unless otherwise specified

Application example

Example of customer-specific adaptations with thread holes for fastening the device under test:

