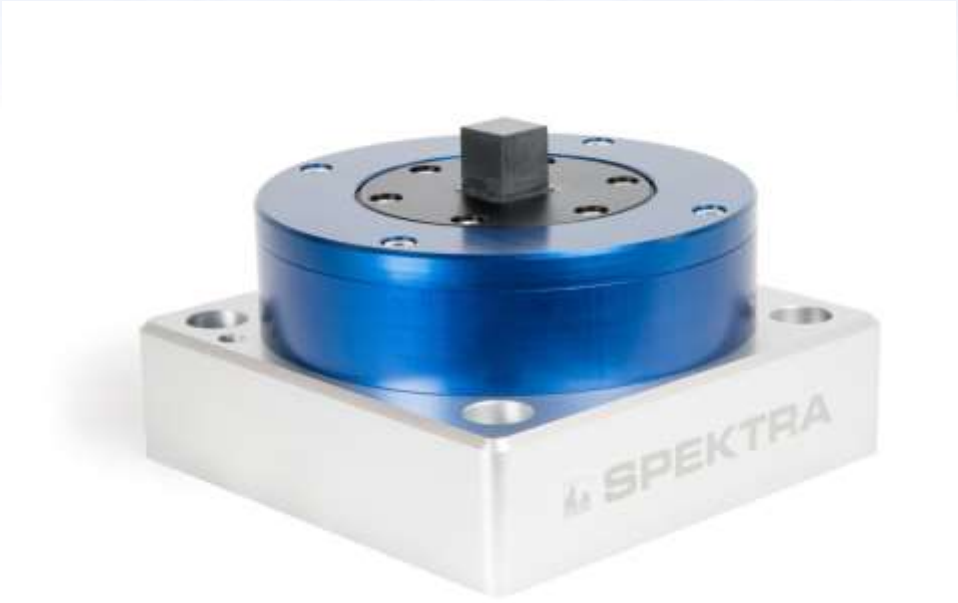
SE-16

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/s²
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

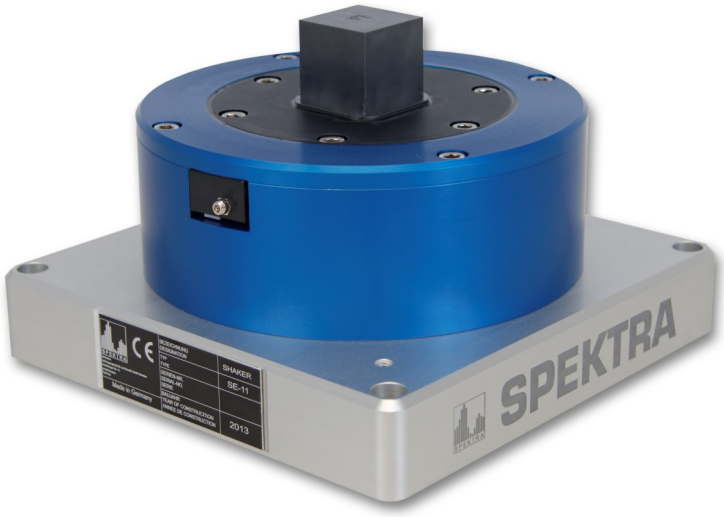
[1] Sine peak value
[2] Frequency range may be extended on request
[3] Peak-peak
[4] When in use with SE-16
[5] Up to 8 A RMS permitted

日本代理店：エフ・アイ・ティー・パシフィック株式会社
東京都台東区浅草橋3-20-15　浅草橋ミハマビル4F
Tel：03-5820-7021　Mail：asdummy@fitpacific.com

May 2017

SE-11

Vibration Exciter for High Frequencies



Application

- Cross sensitivity testing of small components or sensor with true monoaxial excitation

Range of use

- Developement and Test of MEMS Sensors
- Quality assurence in sensor manufacturing

Features

- Ceramic armature with coupling surfaces on the side
- Very high first axial head resonance frequency (> 52 kHz)
- high acceleration amplitude (up to 400 m/s²)
- Very low cross motion typical < 10 % [3)]
- Usable frequency range from 2 kHz to 50 kHz
- Extreme wear resistant ceramic armature
- Internal high frequency reference accelerometer (ICP®-type, sensitivity about 10 mV / g_n)

Description

The SE-11 is a high-tech product, specially designed for cross sensitivity testing of small components or sensors. The DUT can be fixed on the side of the armature. Due to the special design of the armature the DUT can be excited with nearly no cross motion [3)] in the frequency range between 2 kHz and 50 kHz.
The drive of the shaker is electro dynamic. All components of the drive are designed for high performance. With acceptable temperature rise of the shaker, high acceleration amplitudes can be created.

Because of the application of top performance materials (armature made from technical ceramic, drive with high-performance magnets) and the optimized form of construction the shaker has a very high power density. The result is a lightweight shaker with small dimensions.

SE-11

Vibration Exciter for High Frequencies

Technical Data

Components

- Internal reference accelerometer
- Basis mass

Vibration Exciter		
Force Rating [1) 2)]	100 N peak	
Frequency Range	1 kHz ... 50 kHz	
Resonance Frequency	> 52 kHz	
Max. Stroke [1) 2)]	20 µm	
Max. Acceleration [1) 2)]	400 m/s² peak	
Max. Payload	10 gram	
Transverse Motion [3)]	typical less than 10 % between 2 kHz...50 kHz	
Max. Current Input	9 A rms	
Total Weight	9 kg	
Working Temperature Range	23°C (± 2 °C)	73.4°F (± 4 °F)
Storage Temperature Range	-25°C ... +55°C	-13°F … +131°F
Data of the Internal Reference Accelerometer [2)]		
Sensitivity (± 10 %)	1 mV / m/s² (10 mV / g_n)	
Frequency Range	2 Hz ... 50 kHz	
Amplitude Linearity	< 0,25%	
Resonance Frequency	ca. 70 kHz	
Excitation Voltage	18 V_{DC} … 30 V_{DC}	
Constant Current Excitation	2 mA … 20 mA	
Output Bias Voltage	8 V_{DC} … 12 V_{DC}	
Discharge Time Constant	0.5 sec … 2.0 sec	
Settling Time (Within 10% of Bias)	< 5 sec	
Connectors		
Sensor	Cable 3 m with BNC plug 10-32 fixed connected	
Shaker	Cable 3 m with Speakon® plug	

[1)] Interval mode of operation
[2)] All specifications are at room temperature unless otherwise specified
[3)] Bending vibration at 43 kHz, higher transverse motion

Recommended Power Amplifier: **PA 14-500**

All data are subject to change without notice

May 2015