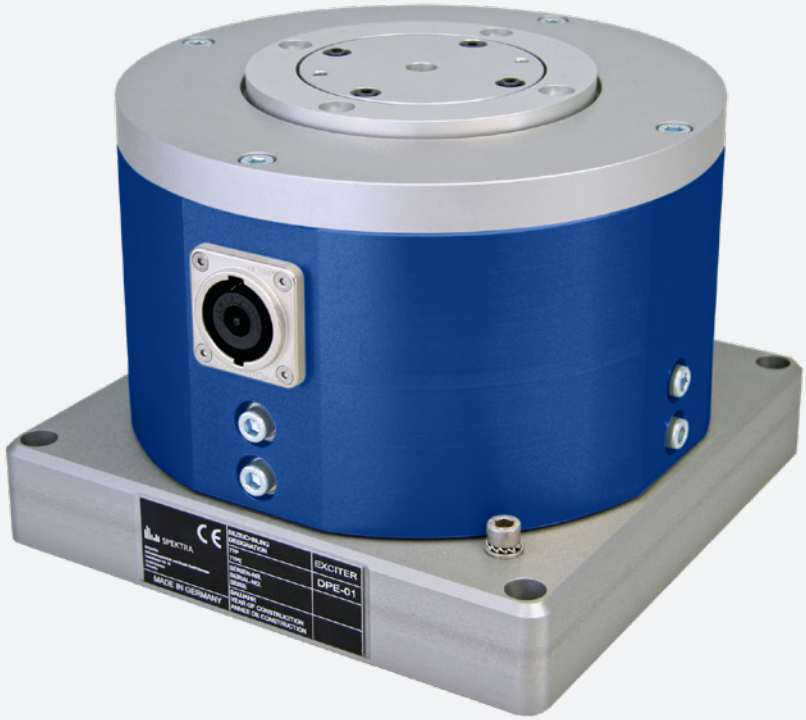
DPE-01

Dynamic pressure exciter



Applications

- ✓ secondary calibration of pressure sensors
- ✓ MEMS development and qualification

Selected data

- ✓ pressure amplitude (peak): up to 16 kPa
- ✓ frequency range: DC … 1.25 kHz

Features

- ✓ transmission medium is air
- ✓ low total harmonic distortion
- ✓ ability to generate sine, shock, noise or pre-defined pressure signals in combination with a vibration control system (VCS)
- ✓ with internal reference standard
- ✓ compact design
- ✓ customizable adaptation for DUT mounting
- ✓ available with calibration system

Specification

The DPE-01 dynamic pressure exciter has been developed as a precise sinusoidal pressure exciter to analyze the frequency response of standard pressure transducers. A typical application is the measurement of the amplitude and phase frequency response of pressure sensors which are exposed to dynamic pressures such as airbag sensors in the automotive industry. Especially the knowledge of the phase response is critical when a time delay between an excitation and the output of the DUT is expected. Thanks to the broad product range of SPEKTRA, the device can be operated in a calibration system or with a vibration control system (VCS), where step, half sine shock or arbitrary signals can also be defined as an input. Because of its specific design, a wide range of sensors, including large ones, can be adapted to the exciter.

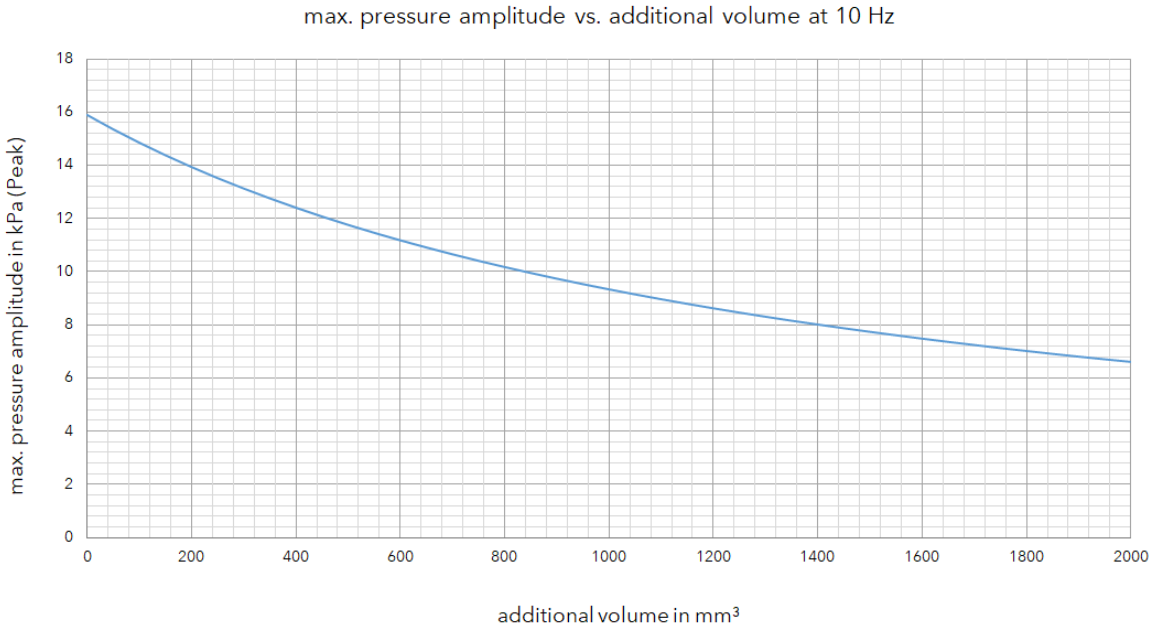
Technical data

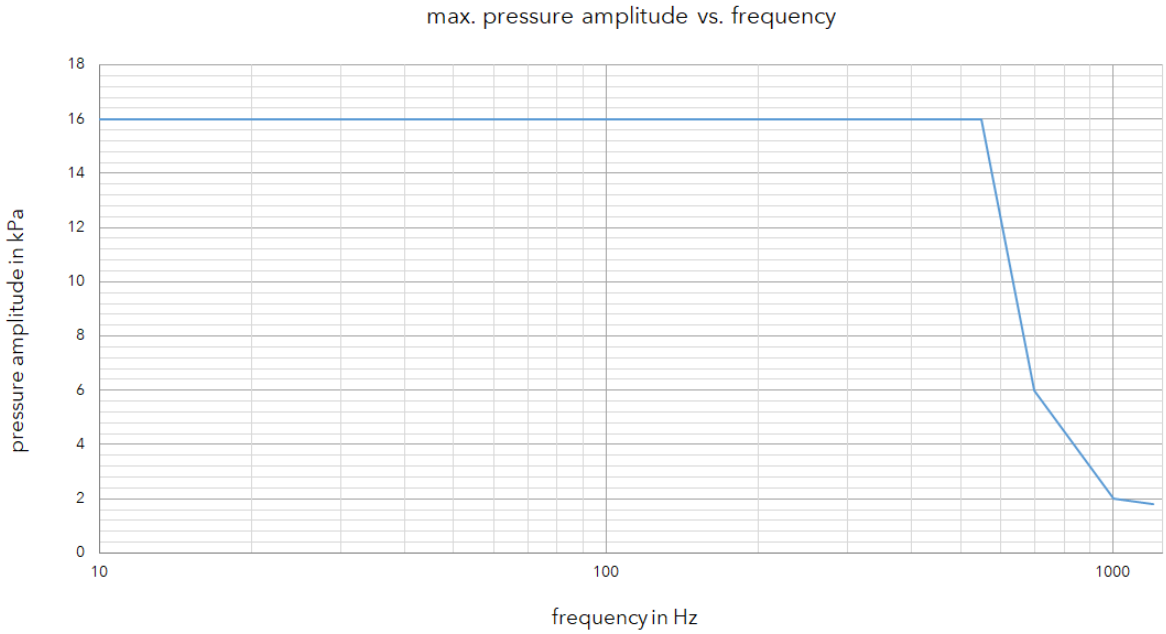
Pressure, max. (sine peak)	16 kPa (2 psi)
Frequency range	DC … 1.25 kHz
Mounting table (size)	Ø 54 mm (2.1 in)
Stray magnetic field	< 9 mT in the range of the pressure chamber
Weight (net weight)	11.5 kg (25 lbs)
Dimensions (H x W x L)	152 mm × 200 mm × 200 mm (5.9 in × 7.8 in × 7.8 in)
Temperature range (in operation)	+5 °C … +40 °C (+41 °F … +104 °F)
Temperature range (storage)	-25 °C … +55 °C (-13 °F … +131 °F)

Electrical parameters	
Rated current, max.	8 A RMS
Current burst mode, max.	13 A RMS
Drive	electrodynamic coil
Connector	Speakon® 8-pin

Performance

The possible pressure amplitude depends on the additional volume of the DUT and the frequency.
An estimate of the maximum pressure amplitude is shown in the diagrams below.
Note that the performance is related to the actual setup and all given diagrams are under ideal conditions.





Options and accessories

Internal reference standard Keller M5

- ✓ Sensitivity: 30 mV/bar
- ✓ Frequency range: 0 Hz … 50 kHz

Power amplifier PA14-180

- ✓ Power output, max.: 180 VA into a 0.8 Ω resistive load
- ✓ Voltage output, max.: 12 V
- ✓ Current output, max.: 15 A
- ✓ Power supply: 100 V, 120 V or 230 V; 50 / 60 Hz

All specifications are at room temperature unless otherwise specified.