

CS18 SPL-VLF

Calibration System SPL Very Low Frequency



Calibration of
pressure transducers,
measuring
microphones



Application

- Very low frequency calibration of pressure transducers and pressure measuring devices
- Pressure chamber secondary calibration of measuring microphones and microphone measuring chains

Range of use

- Calibration laboratories
- Departments of measuring instrument verification in research and industry, for example in the fields of automotive, aviation and space industry, military research, medical and environmental engineering, ...
- Quality assurance in manufacturing of pressure transducer and measuring microphones.

Features

- True **pressure chamber calibration** with an acoustic calibrator
- **Calibration** of pressure transducers
- **Calibration** of all established measuring microphones (capacitor and electrets microphones, ...)
- **No special mechanical adaptation** necessary
- **Complete exposition** of the test object to the pressure field
- **Supply** of an alternating sound pressure level for the calibration of dynamic pressure measuring chains and devices, in particular of sound level meters
- **Upgradeable** to a combined acoustical calibration system e.g. CS18 SPL / SPL-VLF or an CS18 FF / SPL-VLF



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Components

- Vibration control system **SRS-35**, SPEKTRA
- **SQ-03** Very-low-frequency pressure generator, SPEKTRA
- **PA14-80** Power amplifier, SPEKTRA
- Reference standards:
 - **BN-A-03** Acoustic calibrator pistonphone type **LS** (124 dB / 250 Hz)
 - **BN-A-04** pressure reference standard
- Standard-PC

Specification of CS18 SPL-VLF

for environmental conditions: temperature 23°C ($\pm 2^\circ\text{C}$) and relative humidity 30 % ... 75 %

Description	Calibration System CS18 for very low frequency sound pressure level
Size of pressure chamber	20 cm x 20 cm x 65 cm
Signal form	sinusoidal
Frequency range	0.1 Hz ... 31.5 Hz
Pressure range	10 Pa ... 32 Pa 114 dB ... 124 dB
Total harmonic distortion	up to ≤ 0.3 %
Measurement uncertainty ¹⁾	≤ 0.05 dB ≤ 0.5 %

¹⁾Determined according to GUM (ISO Guide to the expression of uncertainty in measurement, 1995) with $k = 2$ (coverage factor)

Calibration procedure:

- Calibration by the method of comparison with a reference standard pressure sensor
- Calibration by the method of comparison among the test objects