CS18 MF

Calibration System Medium-Frequency

Application

- Secondary calibration according to **ISO 16063-21** (comparison method) of charge type, ICP®, voltage, capacitive and piezo-resistive sensors for acceleration, velocity and displacement, with Sine excitation with high accuracy
- Secondary calibration of **reference standard accelerometer**

Range of Use

- **Certified calibration laboratories**
- Departments for the **supervision of measuring instruments** (automotive, aviation, space, military)
- **Quality assurance** in sensor production

Features

- **Traceable** to **P**hysikalisch **T**echnische **B**undesanstalt (**PTB**) Braunschweig by the accredited SPEKTRA Calibration Laboratory D-K-15183-01-00 **(DAkkS Calibration Certificate)**
- **Calibration of sensors** with / without amplifiers, measurement instruments with indication of their own by applying of determinate acceleration signals
- **Calibration of calibrators** by exact measurement of vibration quantities
- **Frequency range 3 Hz ... 10 kHz**
- **Sensor mass up to 500 gram**
- **Repeatability** under identical conditions up to 5 kHz < 0.2 %, otherwise less than 0.5 %
- **Upgradeable** to a combined Sine calibration system, e.g. type CS18 LF / MF
- **Continuous frequency sweep** for consistency check of vibration sensors

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Components

- Vibration control system **SRS-35**, SPEKTRA
- Power amplifier **PA 14-180**, SPEKTRA
- Vibration exciter **SE-10**
- Internal reference standard accelerometer **BN-09**
- Standard-PC

Specification

for environmental conditions: temperature 23°C / 73 °F (± 2°C) and relative humidity 30 % ... 75 %

CS18 MF with internal reference standard accelerometer BN-09

in the frequency range 3 Hz ... 10 kHz for sensors with mass to max. 500 gram (DUT)

Frequency Range		Sensor Mass DUT	Expanded Measurement Uncertainty [2]		PEAK Acceleration in g_n	
From	To	Up to	Amplitude [3] / Phase [1]	min.	max. [4]	max. [5]
3 Hz	< 5 Hz	500 gram	3.0 % / 2.0°	1	0.18 … 0.5	0.18 … 0.5
5 Hz	< 10 Hz		2.0 % / 1.5°	2	0.5 … 2.0	0.5 … 2.0
10 Hz	< 20 Hz		1.0 % / 1.0°	8	2.0 ... 8.0	2.0 … 8.0
20 Hz	1,000 Hz		0.75 % / 1.0°	10	8.0 ... 12.2	8.0 ... 50
> 1,000 Hz	5,000 Hz	250 Gramm	1.5 % / 1.5°		19.3	50
> 5,000 Hz	10,000 Hz	50 Gramm	2.5 % / 2.0°		35.7	
reference frequency 80 Hz (100 Hz)		500 gram	0.5 % / 0.5°	10	5.0	

[1] Only in combination with optional extra PHASE
[2] Determined according to GUM (ISO Guide to the expression of uncertainty in measurement) with k = 2 (coverage factor)
[3] Valid for electrical sensor signals ≥ (1 mV or 1 pC)
[4] Maximum acceleration for maximum payload (DUT)
[5] Maximum acceleration without any payload

Options for calibration systems: see leaflet CS18-extras

All data are subject to change without notice

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