

CS18 VHS

Calibration System Very-High-g-Shock Secondary



Applications

- **Secondary calibration** of shock transducers as well as complete measuring instruments in form of a measuring chain, with very high precision and efficiency, according to **ISO 16063-22** (calibration by the comparison method)
- Secondary calibration of **shock accelerometer reference standards**

Range of Use

- **Accredited calibration laboratories**
- Departments of **measuring instrument verification** in research and development particular in the aviation and space travel or in the military industry
- **Quality assurance** in sensor manufacturing
- **National metrology laboratories** as highest measurement authorities

Features

- **Traceable** to Physikalisch Technische Bundesanstalt (**PTB**) Braunschweig by the accredited SPEKTRA Calibration-Laboratory D-K-15183-01-00
- Type of excitation: **sinusoidal shock**
- Shock amplitudes up to **200.000 g_n**
- **Excellent repeatability** of shock
- Position of DUT: **horizontal**
- Sensor mass (DUT) up to **15 gram**
- Realization of **all automatic calibrations** according to own test regime (up to 20 shocks/minute)
- **Calibration** of sensors with / without measuring amplifier and **measuring systems** (sensor with signal conditioner)
- **Direct connection** of piezo-resistive sensors through integrated **PR signal conditioner**
- Determination of **aptitude for calibration** (bridge resistance, offset, drift) of PR sensors in conjunction with software **PR measurement**
- **Upgradeable** to a combined calibration system e.g. CS18 VHS / HF

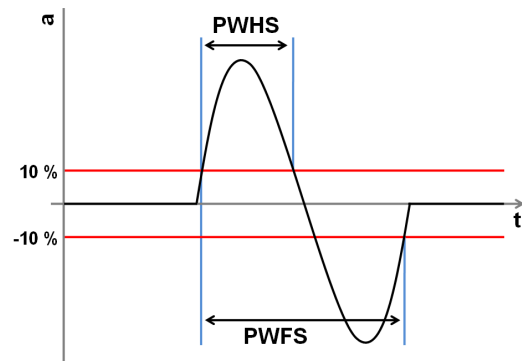
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Components

- Vibration control system **SRS-35** by SPEKTRA with integrated PR signal conditioner
- Shock exciter **SE-222 HOP-VHS**
- Reference standard strain gauge **BN-19**
- High speed **Data Acquisition System**



Performance Specification¹⁾

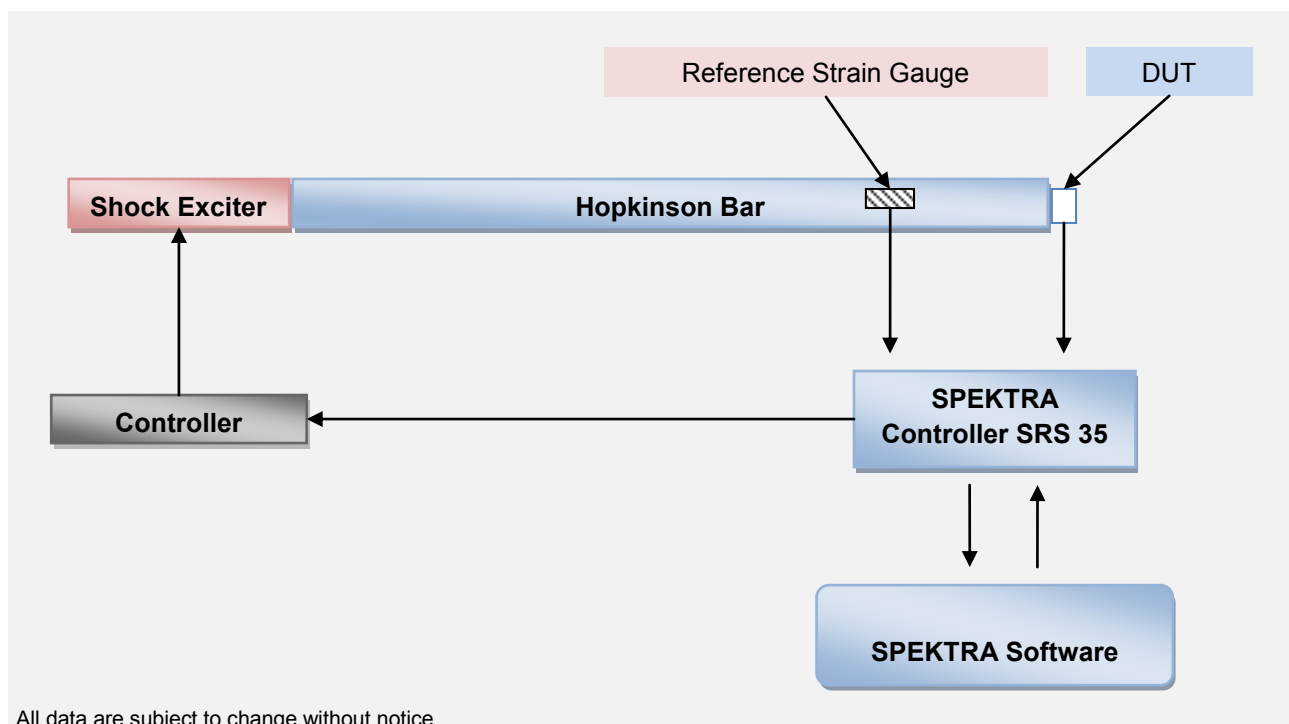
Shock Acceleration		10,000 g_n ... 200,000 g_n
Pulse Width PWFS / PWHS²⁾		typical 40 μs / 20 μs
Sensor Mass (DUT)		max. 15 gram
Uncertainty³⁾	10,000 g_n ... 20,000 g_n	< 3 %
	20,000 g_n ... 50,000 g_n	< 4 %
	50,000 g_n ... 100,000 g_n	< 5 %
	100,000 g_n ... 200,000 g_n	< 8 %

¹⁾ All data for environmental conditions: temperature 23°C (\pm 2°C) and relative humidity 30 % ... 75 %

²⁾ PWHS = Pulse Width Half Sine Wave; PWFS = Pulse Width Full Sine Wave

³⁾ Determined according to GUM (ISO Guide to the expression of uncertainty in measurement, 1995) with $k = 2$ (coverage factor)

Air Supply		8 bar
Dimensions Hopkinson Bar	Length	approx. 3.5 m
	Height	0.8 m ... 1.2 m
	Width	approx. 1 m



All data are subject to change without notice

November 2013