

CS18P MS

Primary Calibration System Medium-Shock



Adjustable
Signal Shape, Amplitude,
Pulse Width

Patented

Applications

- **Primary calibration** of shock transducers as well as complete measuring instruments (measuring chain) with very high precision and efficiency, according to **ISO 16063-13**
- **Primary calibration** of shock accelerometer reference standards

Typical Users

- **National metrology laboratories** as highest measurement authorities
- **Accredited calibration laboratories**
- **Calibration laboratory departments** of industrial companies particular in automotive, aviation or space travel industry
- **Quality assurance** in sensor manufacturing

Features

- **Traceable** to Physikalisch Technische Bundesanstalt (PTB) Braunschweig by the accredited SPEKTRA Calibration-Laboratory D-K-15183-01-00
- **Broad amplitude range** from **2 g_n ... 5,000 g_n**
- Type of excitation: **sinusoidal shock, adjustable signal shape or burst**
- **Independent control** of amplitude and pulse width (within certain ranges, see table)
- **Excellent repeatability** of shock
- Sensor mass (DUT) up to **30 gram**
- Realization of **fully automatic calibrations** according to own test regime (up to 1 shock/s)
- **Calibration of sensors** with / without measuring amplifier and **measuring systems**
- **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 option **PR measurement**
- Integration of a **reference standard** for secondary calibration according to ISO 16063-22
- **Upgradeable** to a combined calibration system e.g. CS18P MS / HF

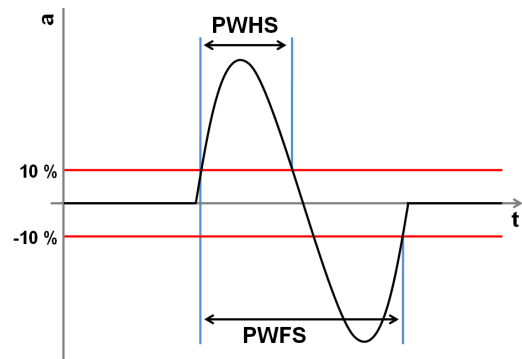
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Components

- Vibration control system **SRS-35** by SPEKTRA with integrated PR signal conditioner
- Shock exciter **SE-220 HOP-MS**
- Reference standard laser vibrometer **PLV-02**
- Reference standard **BN-02** for secondary calibration
- High speed **Data Acquisition System**
- **PA 14-500** power amplifier



Performance Specification Primary¹⁾

Max. sensor mass (DUT): 30 gram

Min. shock amplitude: 2 g_n

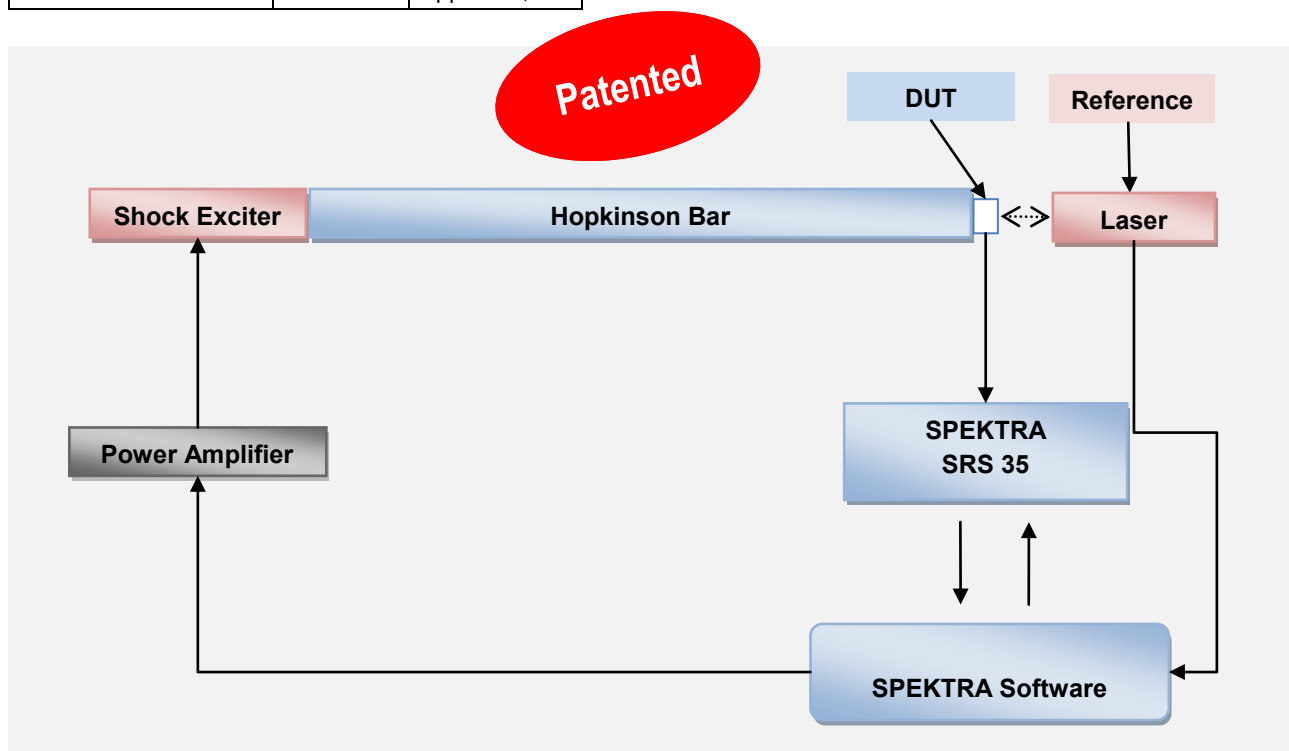
| Shock Amplitude | Max. PWHS ²⁾ | Max. PWFS ²⁾ | Uncertainty ³⁾ |
|--------------------------|-------------------------|-------------------------|---------------------------|
| 2 g_n ... 20 g_n | 200 μs | 400 μs | < 3 % |
| 20 g_n ... 250 g_n | 200 μs | 400 μs | < 1,5 % |
| 20 g_n ... 550 g_n | 125 μs | 250 μs | < 1,5 % |
| 20 g_n ... 1,000 g_n | 100 μs | 200 μs | < 1,5 % |
| 20 g_n ... 4,000 g_n | 60 μs | 120 μs | < 2 % |
| 20 g_n ... 5,000 g_n | 40 μs | 80 μs | < 2,5 % |

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)

| Dimensions Hopkinson Bar | Length | approx. 2,5 m |
|-----------------------------|--------|---------------|
| | Height | approx. 1,3 m |
| | Width | approx. 0,5 m |



All data are subject to change without notice

November 2013