CS18P HS
Primary Calibration System High-g-Shock

Applications
- **Primary calibration** of shock sensor 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**

Range of Use
- **National metrology laboratories** as highest measurement authorities
- **Accredited calibration laboratories**
- Departments of **measuring instrument verification** in research and development particular in the aviation and space travel
- **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** to 75,000 g, optionally up to 150,000 g, with High Speed Vibrometer
- **Type of excitation**: sinusoidal shock
- **Excellent repeatability** of shock
- Sensor mass (DUT) up to 30 gram
- Realization of **all automatic calibrations** according to own test regime (up to 20 shocks/min)
- **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
- **Upgradable** to a combined calibration system e.g. CS18P HS / HF
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Components
- Vibration control system SRS-35 by SPEKTRA with integrated PR signal conditioner
- Shock exciter SE-221 HOP-HS
- Reference standard laser vibrometer PLV-03
- Reference standard for secondary calibration
- High speed Data Acquisition System

Performance Specification Primary

<table>
<thead>
<tr>
<th>Shock Acceleration</th>
<th>1,000 ( g_n ) … 75,000 ( g_n )</th>
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<tbody>
<tr>
<td>Pulse Width PWFS / PWHS</td>
<td>typical 50 ( \mu s ) / 25 ( \mu s )</td>
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<tr>
<td>Sensor Mass (DUT)</td>
<td>max. 30 gram</td>
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<tr>
<td>Uncertainty</td>
<td></td>
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<tr>
<td>1,000 ( g_n ) – 2,000 ( g_n )</td>
<td>&lt; 2.2 %</td>
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<tr>
<td>2,000 ( g_n ) – 20,000 ( g_n )</td>
<td>&lt; 2.5 %</td>
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<tr>
<td>20,000 ( g_n ) – 50,000 ( g_n )</td>
<td>&lt; 2.8 %</td>
</tr>
<tr>
<td>50,000 ( g_n ) – 75,000 ( g_n )</td>
<td>&lt; 3.1 %</td>
</tr>
<tr>
<td>75,000 ( g_n ) – 150,000 ( g_n )</td>
<td>&lt; 5 % (^4)</td>
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</table>

1) All data for environmental conditions: temperature 23°C (± 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)
4) with optional high speed vibrometer

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

June 2015