THE MODAL SHOP
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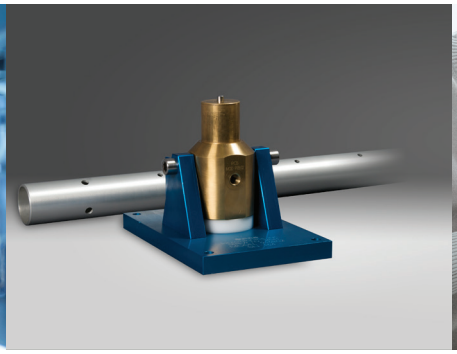



MODEL **K9913C**

HIGH PRESSURE CALIBRATION WORKSTATION

- Save time and improve efficiency with automated calibration
- Turnkey system includes all needed components
- Dynamically calibrate pressure transducers as they are used in the field
- Improve accuracy by implementing curve fitting to impulse calibration data
- Calibration data allows transducer trending for better instrumentation management
- Create customizable ISO compliant certificates

TYPICAL APPLICATIONS

- Metrology laboratories
- Research & development

DYNAMIC PRESSURE TO 15 000 PSI

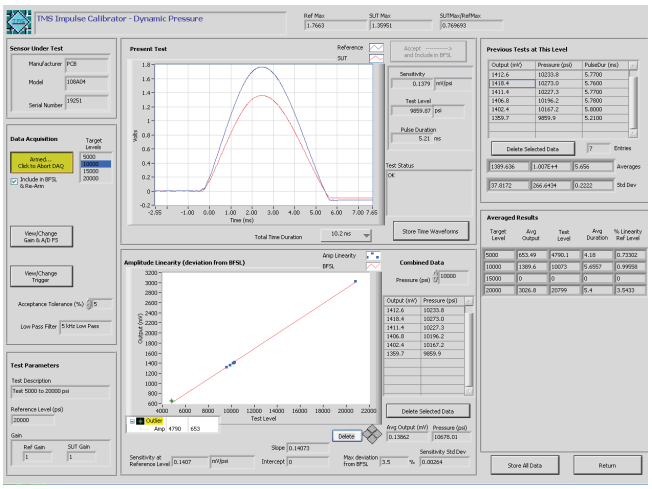
The K9913C Dynamic Pressure Calibration System features accurate dynamic calibration of pressure sensors over a mid-pressure range (200 to 15 000 psi) using a stable tourmaline reference sensor. A pressure impulse is simultaneously applied to both the reference and sensor under test (SUT) to determine the sensitivity of a pressure sensor at a particular amplitude. By varying the amplitude level, the linearity of the SUT can also be determined. Using a high quality data acquisition system, the K9913C automatically measures, stores and reports calibration results on an ISO 17025 compliant calibration certificate.

Dynamic pressure calibration is also available as an option with the 9155 Series Accelerometer Calibration Workstation. Option number 9155D-913 adds the 9913 Hydraulic Impulse Calibrator, sensor, and software verification to the 9155 base system. The PC system controller and data acquisition hardware are core to the base 9155 workstation, while the -913 control software runs integrated with the 9155 user interface and database. Model K9913C01 upgrades a PCB Model 913B02 to a turnkey K9913C.

AUTOMATED IMPULSE CALIBRATION SOFTWARE

A Model 9913C records the instantaneous output of both the sensor under test (SUT) and a piezoelectric reference sensor following an impulse. The peak voltage output of both the sensor under test and reference sensor are measured. Three values (two voltage measurements and the known reference sensitivity) are used to calculate the sensitivity of the sensor under test. The test activity and results are shown in the easy-to-use software:

- Displayed time data allows technician to view waveform and check for anomalies in the hydraulic impulse
- Linearity plot provides an overview of test results in real-time
- Software automatically computes values such as sensitivity, pressure level, and pulse duration
- Results table provides a snapshot of average results for all test levels



Impulse Calibrator - Pressure Response

9913C calibrates at predetermined levels and calculates linearity over the testing range

SPECIFICATIONS

Performance (Actuator)	
Manufacturer Model Number	PCB Model 913B02
Amplitude Range (usable)	200 to 15 000 psi (13.8 to 1034.2 Bar)
Typical Rise Time	3 ms
Typical Pulse Duration	6 to 8 ms
Performance (Ref Transducer)	
Manufacturer Model Number	PCB Model 136A
Sensitivity (+/- 15%)	0.2 pC/psi (0.029 pC/kPa)
Measurement Range	15 000 psi (1034.2 Bar)
Resolution	0.5 psi (3.45 kPa)
Resonant Frequency	≥ 1.0 MHz
Linearity	≤ 0.5% FS

K9913C System Components	
TMS 9913C [1]	Actuator
PCB 136A [1]	Reference transducer
PCB 443B02	Charge amplifier and accessories (QTY. 2)
PCB 108A04 [1]	Verification pressure transducer
PC System Controller	Pre-installed software [1]
	Data acquisition system
	System acceptance testing

]1] Included in 9155D-913 option for integration with 9155 Accelerometer Calibration Workstation

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10310 Aerohub Boulevard, Cincinnati, OH 45215 USA
Toll-Free in the USA: **800 860 4867**
Phone: **1 513 351 9919** | Email: **info@modalshop.com**

The Modal Shop, Inc. offers structural vibration and acoustic sensing systems and services for various applications in design and test laboratories as well as manufacturing plants. An extensive sound and vibration rental program, precision calibration systems, and both modal and vibration shakers are designed to simplify test phases. Non Destructive Testing Systems help manufacturers provide 100% quality inspection of metal components. The Modal Shop, Inc. is a subsidiary of PCB Piezotronics, Inc., and PCB® is a wholly owned subsidiary of MTS Systems Corporation.

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