



Model 9110D

PORTABLE VIBRATION CALIBRATOR

Benefits

- Field validation of vibration sensors, proximity probes, and related monitoring equipment
- Battery-powered for up to 18 hours
- Rugged and portable
- Internal memory and USB flash drive output
- Easy certificate of calibration
- Complete turnkey system

Applications

- 4-20 mA loop velocity vibration transmitters
- Eddy current probes / proximity probes
- Moving coil vibration sensors
- Condition monitoring system, process control, DCS, and SCADA
- Portable vibration meters and analyzers

The 9110D Portable Vibration Calibrator is the ideal tool for checking accelerometers, velocity transducers, and proximity probes over a wide operating frequency and amplitude range. The unit is a compact, battery-powered, and completely self-contained vibration reference source, which can be conveniently used to calibrate individual sensors, vibration switches, and data collectors, as well as to validate the entire measurement channel of a condition monitoring or recording system. An integral precision quartz reference accelerometer and closed-loop level control gives the 9110D enhanced stability and superior vibration calibration over an extended 5 Hz to 10 kHz frequency range. Packaged in a rugged Pelican® Storm case, the 9110D is always ready for travel to test sites, bringing laboratory accuracy to the field.

Additional features include an ICP® or voltage test sensor input for direct connection and readout of the most common types of accelerometers and velocity transducers. The test sensor sensitivity is calculated and displayed on the screen in real time. The unit's internal memory capability can store up to 500 calibration records, and data can be easily transferred to a computer through a USB flash drive. This allows for the creation and printing of ISO 17025-compliant, customizable calibration certificates and reports using the supplied Excel® worksheet template.



More Product Information at
www.modalshop.com/vibration-calibrator



MODEL 9110D SPECIFICATIONS

Performance	US	SI
Frequency Range (operating, 100 gram payload)	5 Hz to 10 kHz	300 to 600k CPM
Maximum Amplitude (100 Hz with no payload)		
Acceleration	20 g pk	196 m/s ² pk
Velocity	15 in/s pk	380 mm/s pk
Displacement	50 mils pk-pk	1270 µm pk-pk
Maximum Payload ^[1]	800 grams	
Accuracy of Readout		
Acceleration (10 Hz to 10 kHz)	±3 % ^[2]	
Acceleration (5 Hz to 10 Hz)	±5 % ^[2]	
Velocity (10 Hz to 1000 Hz)	±3 %	
Displacement (30 Hz to 150 Hz)	±3 %	
Amplitude Linearity (100 gram payload, 100 Hz)	< 1 % up to 10 g pk	
Waveform Distortion (100 gram payload, 30 Hz to 2 kHz)	< 5 % THD (typical) up to 5 g pk	
Units of Readout		
Acceleration (peak and RMS)	g	m/s ²
Velocity (peak and RMS)	in/s	mm/s
Displacement (peak to peak)	mils	µm
Frequency	Hz	CPM

Physical

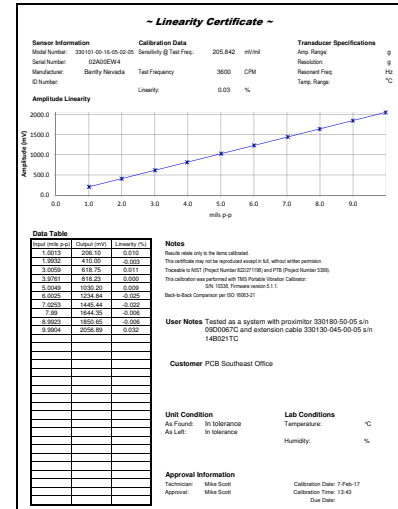
Test Sensor In	Voltage or ICP®
Bias Fault Indication (ICP® Sensors)	Yes
External Source In (max.)	1 VAC RMS
Monitor Reference Out	10 mV/g (nominal), buffered internal reference
Internal Battery (sealed solid gel lead acid)	12 VDC, 4 amp hours
Charging Adaptor	110 VAC–240 VAC, 50 Hz–60 Hz
Input Power Rating	18 VDC, 1 A
Operating Battery Life ^[3]	
100 gram payload (100 Hz, 1 g pk)	18 hours
100 gram payload (100 Hz, 10 g pk)	1 hour
Memory Size	Up to 500 calibration records
Points Per Record	30 calibration data points
Sensor Information	Model number, serial number, sensitivity direction (x, y, z), user notes
USB Port	Export to flash drive (FAT32)
Export File Format	CSV (comma-separated values)
Operating Temperature	32 °F–122 °F 0 °C–50 °C
Dimensions (H x W x D)	8.5 x 12 x 10 in 22 x 30.5 x 28 cm
Weight	18 lb 8.2 kg
Sensor Mounting Platform Thread Size	¼-28

[1] Operating range reduced at higher payloads. Reference manual for full details.

[2] Calculated by measuring the % difference between the known sensitivity of a reference accelerometer as calibrated by laser primary system per ISO 16063-11 and the measured sensitivity of same reference accelerometer when tested at the same points.

[3] As shipped from factory in new condition.

[4] Microsoft Excel® required.



Calibration Certificate

Accessory Pouch

PD-1320-01	Mounting Wrench
9100-PS01	Universal Power Supply and Plug Adaptors
081B20	1/4-28 to 1/4-28 Adaptor
081A08	10-32 to 1/4-28 Adaptor
080A118	Mounting Pad For Sensor With a Magnet Base
9110-USB	USB Flash Drive with Report Generation Worksheet ^[4]

Optional Accessories

9100-MNTKIT	Mounting accessory kit
9105D	Transfer standard reference accelerometer
9100-MPPA01	Proximity probe adaptor kit (metric)
9100-PPA01	Proximity probe adaptor kit
9100-PPA02	Target for proximity probe (AISI 4140)
9100-PS01	18 VDC, 1 amp power supply/charger
9100-PS02	Modulated current & 4-20 mA vibration sensor USB power supply
9100-BAT01	Replacement battery



www.modalshop.com

3149 E Kemper Rd, Cincinnati, OH 45241 USA

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. Visit The Modal Shop at www.modalshop.com. Additional information on MTS can be found at www.mts.com.

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