Model Number	PRELIMINARY PORTABLE VIBRATION CALIBRATOR	Revision: NR
C9110D-T		ECN#:

GENERAL

Frequency Range (operating) [1]	5 Hz–10 kHz	300–600k CPM
Maximum Amplitude	20 g pk	196 m/s^2 pk
(50 Hz, 10-gram payload)	20 in/s pk	500 mm/s pk
	150 mils pk-pk	3.8 mm pk-pk
Maximum Amplitude	2.5 g pk	24.5 m/s^2 pk
(50 Hz, 500-gram payload)	3.5 in/s pk	90 mm/s pk
Maximum Payload [2]	800 grams	
Test Operation	Manual (Closed Loop) or Semi-Automatic	
Auto-Payload Calculation	Controlled via Reference Accelerometer, No User Entry Required	
Memory	Stores 500 Calibration Records	
	Stores 30 Data Points per Calibration Record	
	Stores Model Number, Serial Number, Mounting Orientation & Notes for each Record	
Non-Volatile Memory	Storage of Calibration Settings for Accuracy	
	Stores Semi-Automated Test Routine	
Programmability	Up to 30 Test Points per Routine with Pass/Fail Upper & Lower Bound Tolerances. Flexible Pass/Fail Based Upon Deviation from Sensitivity at Reference Frequency or Hard Values and Supports Asymmetric Tolerances.	

PHYSICAL

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
Operating Temperature	32 °F–122 °F	0 °C–50 °C
Sensor Mounting Platform	¼-28 Thread Size	
Internal Battery (sealed solid gel lead acid)	12 VDC, 4 amp-hours, commercially available	
AC Power (for recharging battery)	110–240 VAC, 50–60 Hz	
Input Power Rating from Charger	18 VDC, 1 A	
Battery Life [3] - 100 Hz, 1 g pk [1]	18 hours	
Battery Life [3] - 100 Hz, 10 g pk [1]	1 hour	

UNITS OF READOUT

Acceleration (pk and RMS)	g	m/s^2
Velocity (pk and RMS)	in/s	mm/s
Displacement (pk to pk)	mils	µm
Frequency	Hz	CPM
Sensor Under Test Sensitivity	mV/EU, mA/EU, µA/EU, or pC/EU	
Pass/Fail Notification	After Each Test Point (CALROUTE Mode)	

ACCURACY OF READOUT [4]

Acceleration (10 Hz to 10 kHz)	± 3% [5]
Acceleration (5 Hz to 10 Hz)	± 5% [5]
Velocity (10 Hz to 10 kHz)	± 3%
Velocity (5 Hz to 10 Hz)	± 5%
Displacement (30 Hz to 150 Hz)	± 3%
Amplitude Linearity (100 Hz) [1]	< 1% up to 10 g pk
Waveform Distortion (30 Hz to 2 kHz) [1]	< 5% THD (typical) up to 5 g pk
Accuracy Verification Test	Independent of Product Firmware, Utilizes Internal Quartz Reference Accelerometer, Performed On-Site, Procedure Provided, Recommended but not Required After Battery Replacement
Factory Calibration Accuracy Stability	Survives Loss of Power, Battery Replacement

INPUT/OUTPUT

Sensor Under Test Input	ICP®, Voltage, Modulated Current[6], Single-ended Charge[7], Differential Charge [7]
Bias Fault Indication (ICP®)	Yes
Monitor Reference Out	10 mV/g (nominal) Quartz Reference Accelerometer, BNC Jack Output
USB Port	Export Calibration Records to Flash Drive Used for Loading Semi-Automated Test Routines (Model CALROUTE) [8]
Export File Format	CSV (comma-separated values)

CALIBRATION REPORT GENERATION WORKBOOK

Certificates Generated Via C9110D Memory: Frequency Response & Linearity for AC Voltage Output Transducers such as Accelerometers, Proximity Probes, Moving Coil Vibration Sensors, and Dynamic Velocity Sensors.
Certificates Generated Via User-Input: Vibration Analyzer/Meter Linearity & Frequency Response Accuracy, Linearity for 4-20 mA Vibration Transmitters, Proximity Probe Curves (Gap vs. DC Voltage)

All specifications are at room temperature unless otherwise specified.
ICP is a registered trademark of PCB Piezotronics, Inc. Excel is a registered trademark of Microsoft Corporation in the United States and/or other countries.
In the interest of constant product improvement, specifications may change without notice.

CE

Project Engineer:	Product Manager:	SAM Team Leader:	Spec Number:
NMA	MRS		PS-0180
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SUPPLIED ACCESSORIES

Mounting Wrench **Model PD-1320-01**
Power Supply and Plug Adaptors **Model 9100-PS01**
¼-28 to ¼-28 Mounting Stud **Model 081B20**
10-32 to ¼-28 Mounting Stud **Model 081A08**
5-40 F to ¼-28 M Mounting Pad **Model 9155-MNT05**
10-32 F to ¼-28 M Mounting Pad **Model 9155-MNT06**
Adhesive mounting plate to ¼-28 M **Model 9155-MNT07**
NIST Traceable Certificate of Calibration, Metric & English Units, Accredited to ISO 17025 by A2LA, 18-point Certificate of Calibration, Published Uncertainties on www.a2la.org, Reference Accelerometer Calibrated via ISO 16063-11 Laser Primary Method **Model 9100-CAL01**
USB Flash Memory Drive: Loaded with Microsoft Excel® Macro-Enabled Calibration Report Generation & CALROUTE Semi-Automated Test Programming Workbook **Model 9110-USB**
Warranty: 2 Years, Inclusive of Drift/Accuracy

Quick Start Guide: English, Chinese, Polish, Japanese, Russian, French, or German

NOTES:
[1] 100-gram payload.
[2] Operating range reduced at higher payloads. Reference manual for full details.
[3] As shipped from factory in new condition.
[4] Measured with 10-gram quartz reference accelerometer.
[5] 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.
[6] Requires external power supply.
[7] Integral charge amp low operating frequency limit is 10 Hz.
[8] And provides power for optional external power supplies.

OPTIONAL ACCESSORIES

PROXIMITY PROBE CALIBRATION

Proximity probe adaptor kit for probes with 5 mm or 8 mm tip diameter. Includes Mitutoyo micrometer scaled in mils and 4140 steel calibration target. **Model 9100-PPA01**
Proximity probe adaptor kit for probes with 5 mm or 8 mm tip diameter. Includes Mitutoyo micrometer scaled in microns and 4140 steel calibration target. **Model 9100-MPPA01**
Proximity probe adaptor kit for probes with 11 mm tip diameter. **Model 9100-PPA05**
Proximity probe adaptor kit for testing probes mounted inside a probe holder. Includes digital micrometer scaled in mils or microns. Fine adjustment via positional micrometer. **Model 9100-PPASH**

MOUNTING

½-20 F to ¼-28 F Mounting Pad **Model 9155-MNT93**
¼" NPT F Mounting Adaptor to ¼-28 M **Model 9155-MNT43**
⅜-24 M to ¼-28 M Mounting Stud **Model 9155-MNT73**
M4 triangular thread pattern 30.2mm diameter circle **Model 9155-MNT19**
6-32 F to ¼-28 M Mounting Pad **Model 9155-MNT08**
8-32 triangular thread pattern 1.20" diameter circle **Model 9155-MNT01**
6-32 square thread pattern 1.375" diameter circle **Model 9155-MNT03**

POWER & CABLING

DC Voltage Power Supply for 3-wire, 9 VDC Sensors, Wilcoxon 991D & Similar, Mating Connector Included **Model 9100-PS09**
DC Voltage Power Supply for Modulated Current and Loop-Powered, 24 VDC Sensors, **Model 9100-PS02**
Triaxial ICP® Accelerometer Mating Cable, 4-socket Bendix to Three Labeled BNC, **Model 9100-CBL01**
3-socket MIL cable used with 9100-PS02 for testing GE/Bently Nevada® 3-pin MIL case mounted vibration sensors. Spade Lug terminations & BNC output for signal. **Model 9100-PS02-CBL01**
15 VDC Power Supply for Testing Pruftechnik CLD Vibration Sensors & Other Modulated Current Sensors with Same Power Scheme. USB Powered. TNC Input. Plug & Play. BNC Output. **Model 9100-PS07-PT**

TRAINING

On-Site Seminars Available Upon Request **Model 9100-TRAINING**

CE

Project Engineer:	Product Manager:	SAM Team Leader:	Spec Number:
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