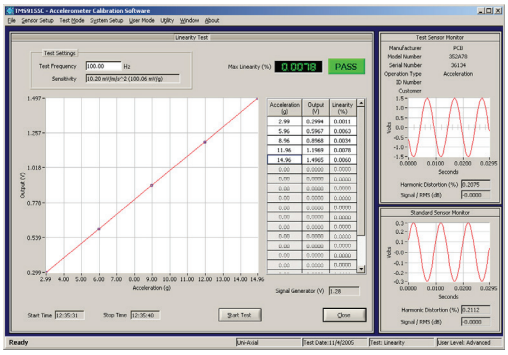
THE MODAL SHOP
AN AMPHENOL COMPANY



MODEL **9155D-500/501**

LINEARITY OPTION

- Perform multipoint sensor linearity check up to 40 g pk using the K394B30 or K394B31 air bearing shaker system, up to 500 g pk using a mechanical amplifier bar (MAB)
- Easy-to-use software GUI automates data acquisition across specified amplitude range
- Allows for measurement at user-defined test frequencies
- Confirms sensor's linearity performance within the test range

TYPICAL APPLICATIONS

- In-House Calibration of Vibration Instrumentation

FOR CALIBRATION SYSTEM MODEL 9155

The Accelerometer Calibration Workstation with Model 9155D-501 Linearity option allows users to perform multipoint sensor linearity checks. Verifying linearity provides additional assurance of sensor health and performance, increasing confidence in measurement accuracy.

Depending on the shaker, linearity checks can be performed up to an amplitude of 500 g pk with a mechanical amplifier bar.

The easy-to-use software GUI automates data acquisition across the specified amplitude range and provides seamless interface with the Model 9155 Accelerometer Calibration Workstation software and database.

The Accelerometer Calibration Workstation Model 9155 features back-to-back comparison calibration of ICP® (IEPE), and charge mode accelerometers for both sensitivity and phase according to ISO 16063-21. Printed certificates fulfill the requirements set forth by ISO 17025 for calibration certificates.

CE

LINEARITY SPECIFICATIONS			
9155D Option:	**-875**	**-875 + MAB [1]**	**-830 / 831**
Maximum Amplitude	20 g pk (196 m/s²pk)	500 g pk (4 900 m/s²pk)	40 g pk (392 m/s²pk)
Uncertainty [2] [3]	1.00%	TBD	0.77%
Maximum # of Points	20	20	20
Maximum SUT Weight [4]	35.3 oz (1 000 grams)	3.0 oz (85 grams)	9.5 oz (270 grams)
Frequency Range [5]	100 – 10 000 Hz	100 – 1 000 Hz	100 – 15 000 / 20 000 Hz

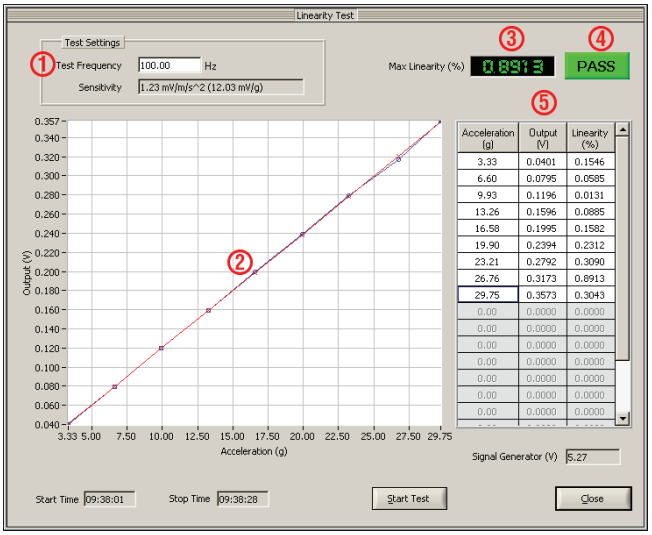
Optional Accessories	
9155D-100	**19" Rack Integration.** Approx. 36.5 in H x 21.75 in W x 26 in D [93 cm x 55 cm x 66 cm]. Integrates components in 19" rack.
9155D-120	**Shaker Mount.** Provides wood pedestal to support calibration shaker. Requires user to fill with sand (not included).
9155D-160	**Tool Kit.** Includes torque wrench, screwdrivers, crescent wrenches, toolbox, etc.
9155D-350	**Calibration Label Printing.** Provides automatic calibration label printing using a Zebra thermal transfer label printer.
9155D-400	**TEDS Sensor Support.** Provides for automatic update of TEDS sensors. Requires 9155D-443 option.
9155D-442	**Basic ICP Signal Conditioning.** Adds signal conditioner for ICP and charge mode sensors.
9155D-443	**Dual-mode Charge Amplifier.** Computer control and automated switching between ICP and charge mode sensors.
9155D-445	**Capacitive Sensor Signal Conditioning.** Adds signal conditioner for capacitive sensors.
9155D-478	**Piezoresistive Signal Conditioning.** Adds support for piezoresistive sensors. Includes PCB 478A30 signal conditioner.
9155D-525	**Shock Calibration.** Provides for verification of shock accelerometers from 20 g to 10 000 g
9155D-550	**Resonance Check.** Provides for resonance check of accelerometers up to 50 kHz.
9155D-575	**Laser Primary Calibration.** Adds primary calibration capability as specified in ISO 16063-11.
9155D-600	**Velocity Sensor Calibration.** Allows calibration of velocity sensors. Reports data in velocity units.
9155D-771	**Low Frequency (0.5 Hz – 500 Hz).** Long stroke shaker with SmartStroke™ technology and accelerometer reference sensor.
9155D-779	**Low Frequency (0.1 Hz – 500 Hz).** Long stroke shaker with SmartStroke™ technology, accelerometer and optical reference sensors.
9155D-830	**K394B30 Air Bearing Shaker.** Adds precision air-bearing shaker 5 Hz – 15 kHz.
9155D-831	**K394B31 Air Bearing Shaker.** Adds precision high-frequency air-bearing shaker 5 Hz – 20 kHz.
9155D-875	**High Payload Calibration Shaker.** Offers a useable frequency range of 5Hz to 10kHz for heavy payload transducers.
9155D-961	**Hammer Calibration.** Allows calibration of instrumented impact hammers, includes 9961C cal fixture

[1] MAB = Mechanical Amplifier Bar. Testing using the MAB is fixed frequency at or near the resonance of the MAB
[2] At reference frequency of 100 Hz
[3] Uncertainty based upon typical 9155 standard reference accelerometer uncertainty
[4] SUT (Sensor Under Test) weight may impact maximum amplitude and/or achievable frequency range
[5] Usable frequency range dependent upon desired maximum amplitude and SUT weight

LINEARITY OPTION

The 9155D-501 Linearity option is a software option available with the 9155 Accelerometer Calibration Workstation System. The software option allows for measurement of linearity across a specified amplitude range at a user-defined fixed frequency, dependent upon allowable test frequencies for the given shaker. The measurements are limited by the actuator hardware (i.e. the shaker, amplifier, etc.) and the specifications listed below are achievable with the indicated hardware only.

9155-500 Software



1. User-defined test frequency
2. Easy-to-read graphical display of results
3. Maximum linearity clearly indicated
4. Pass/Fail automatically determined based on sensor specification
5. Tabulated results for each test frequency

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