

PC-Based Vibration Calibrator

Precision • Reliability • Automation

Product Overview

The **Model T-Calibro PC-Based Vibration Calibrator** is a high-performance solution designed to calibrate and verify the working conditions of accelerometers and vibration meters, and to simplify online vibration protection system installs. Powered from a **230 V AC supply** and controlled through intuitive windows based PC software, it delivers stable, traceable vibration signals for accelerometers.

Ideal for **laboratories, R&D facilities, and condition monitoring teams**, this calibrator combines robust hardware with intelligent software to ensure reliable, repeatable, and fully documented calibration results.

Key Highlights

- **PC-Based Control** with intuitive software
- **Frequency Range***: 10 Hz – 10 kHz
- **Amplitude**: Up to 10 g RMS (@100Hz) with closed-loop feedback
- **Multiple Sensor Support**: IEPE, Voltage, Charge, Accelerometers and velocity sensors.
- **Real-Time Reports** and calibration for sensitivity database management
- **Rugged & Reliable** for continuous operation
- **Software features**: Discreet sine sweep, Linearity test, Random test, Sine sweep test, single point test.

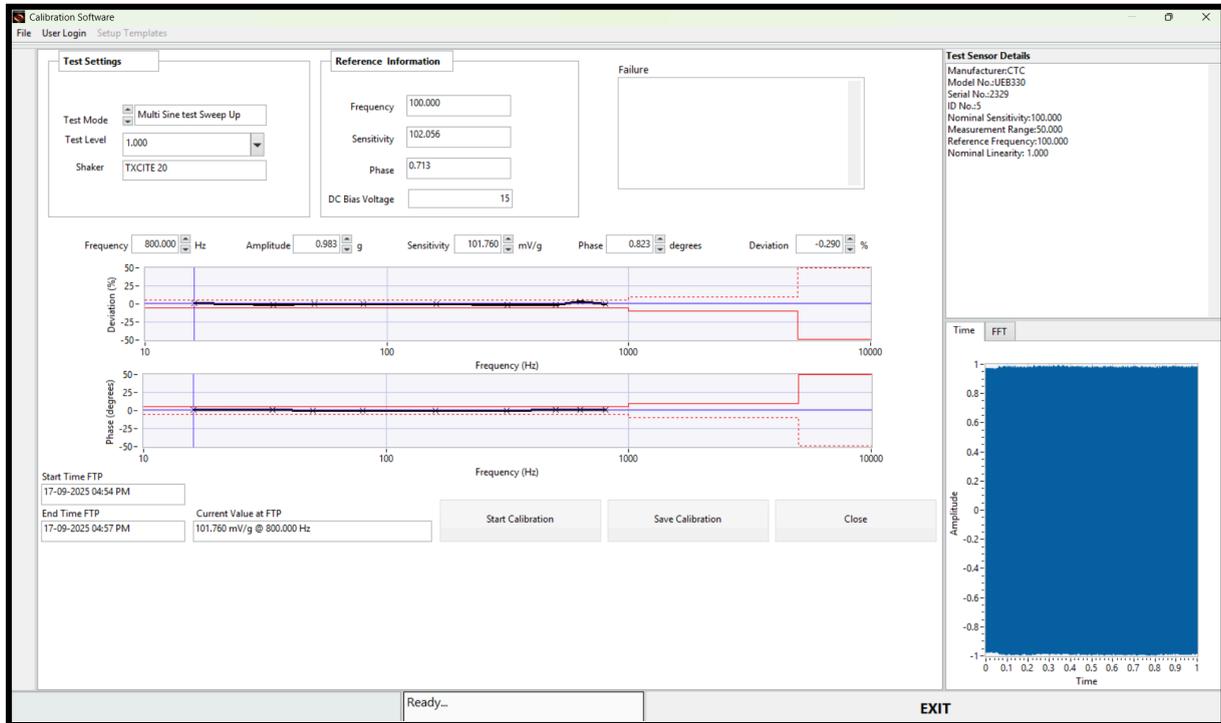


Technical Snapshot

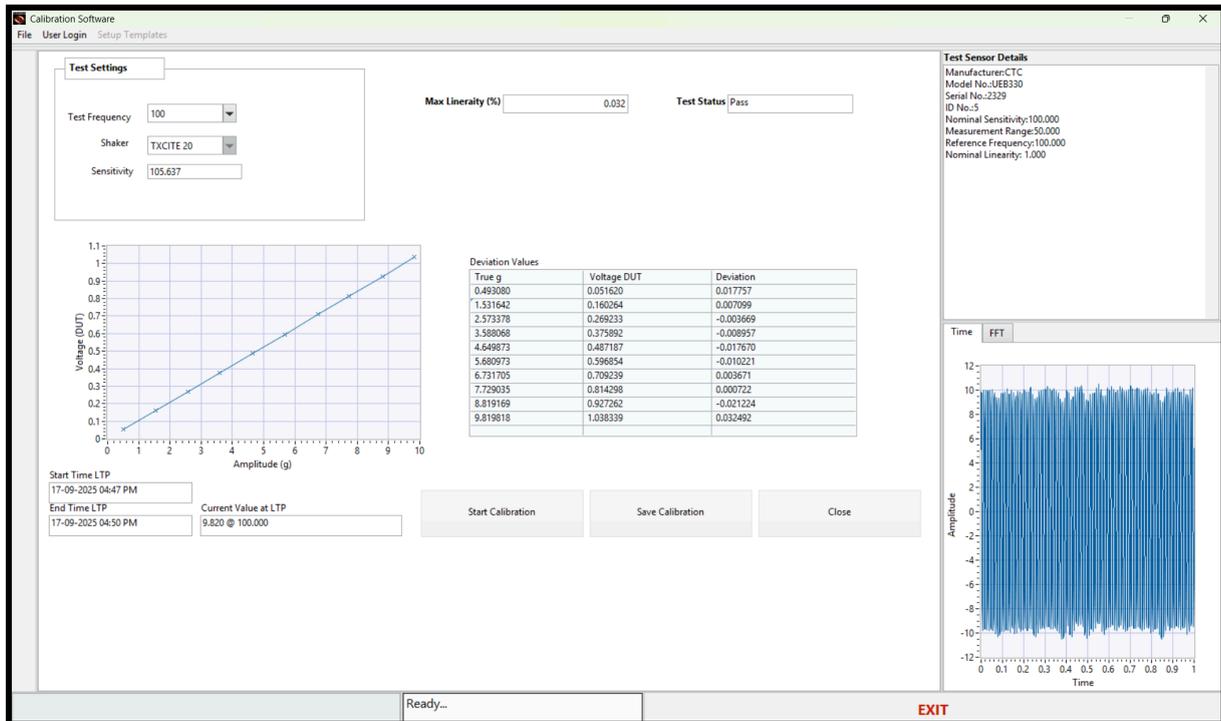
Parameter	Specification
Frequency Range	10 Hz – 10 kHz
Amplitude Range	0.1 g – 10 g RMS
Max Load Capacity	500 g
Reference Sensor	Built-in accelerometer with traceable/NABL calibration (10mV/g or 100mV/g)
Control & Interface	Windows 10 or above, PC software (USB)
Accuracy	±3.5%, 10Hz to 10kHz
Power Supply	230 V AC, 50 Hz
Waveform	< 5%
Distortion (100gram payload, 30Hz to 4kHz upto 5g)	

Software Features

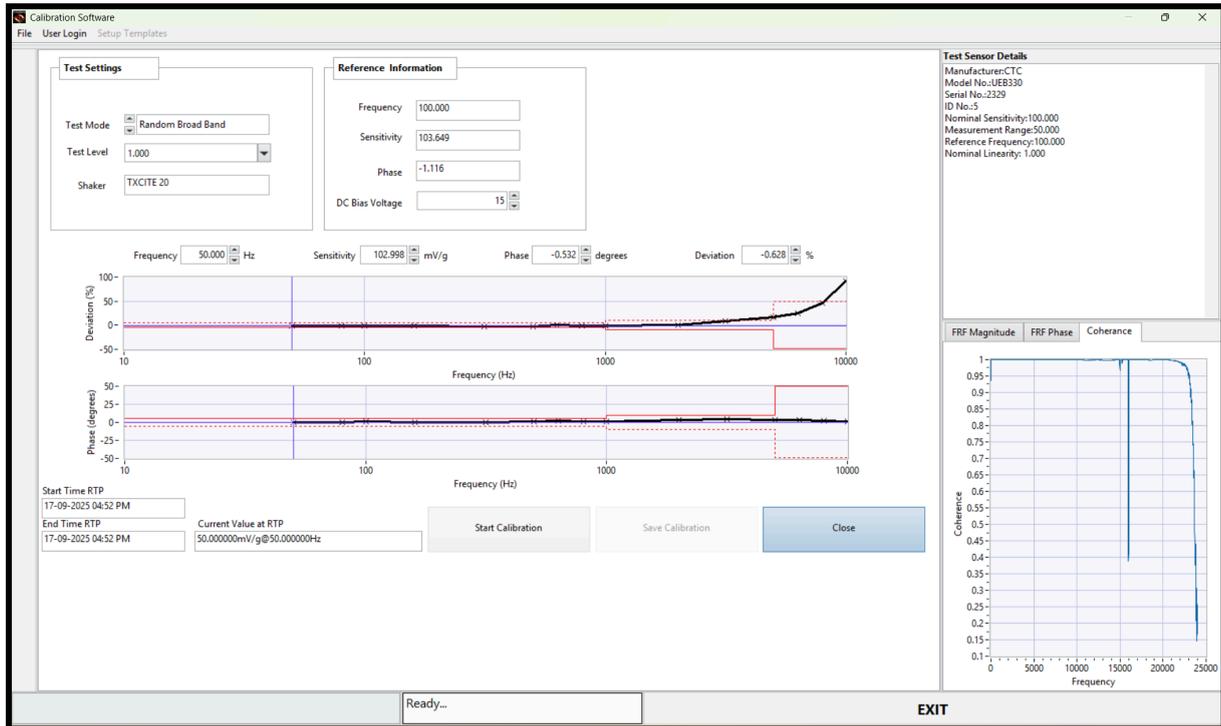
- Automated frequency step tests for sensitivity/phase deviations (included).



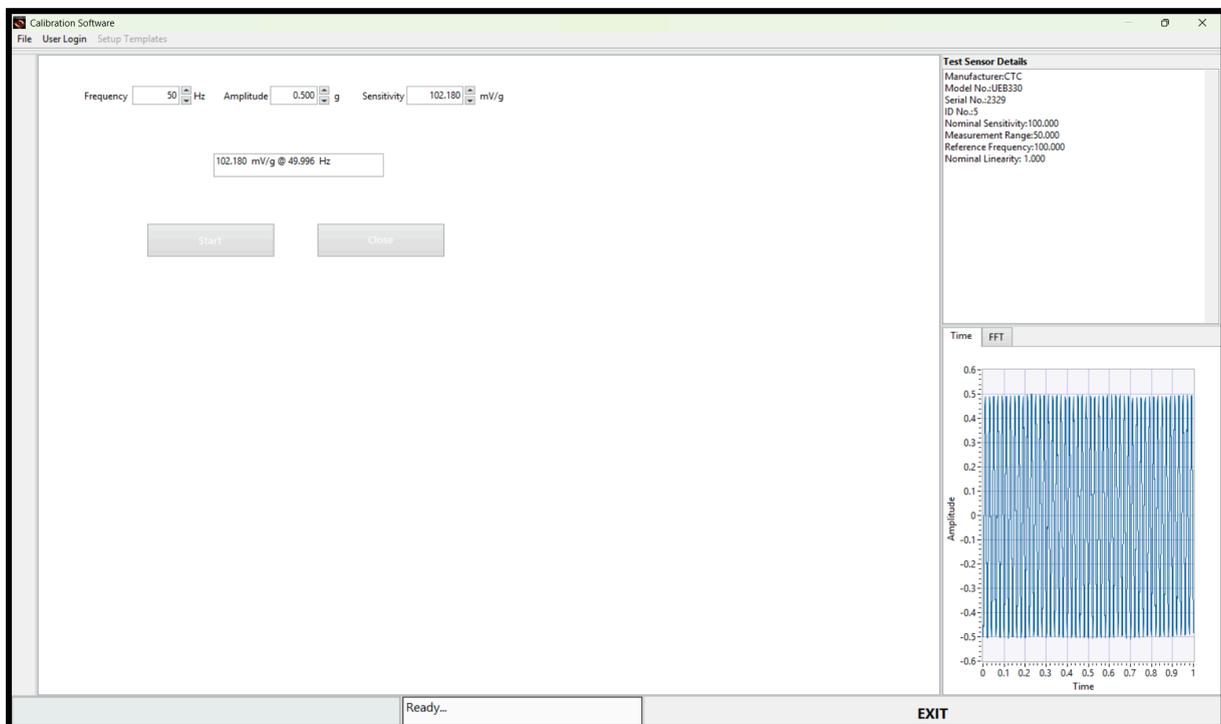
- Linearity tests (option)



- Random noise based test for sensitivity/phase deviations (option)

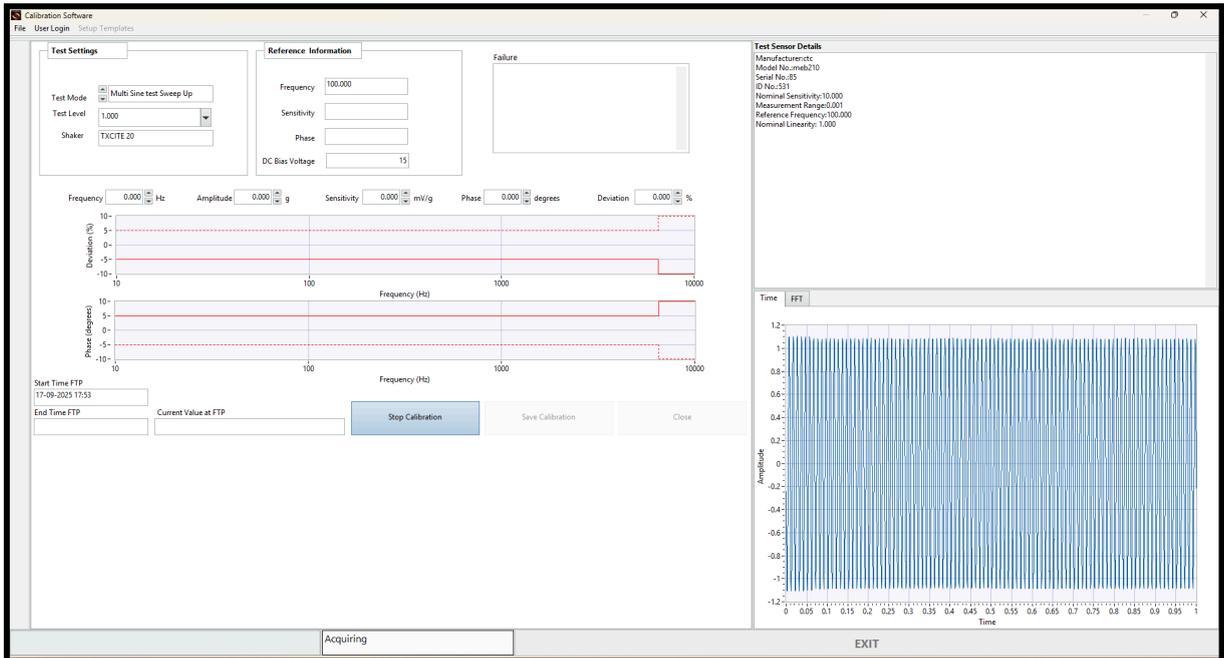


- Single point calibration (included)

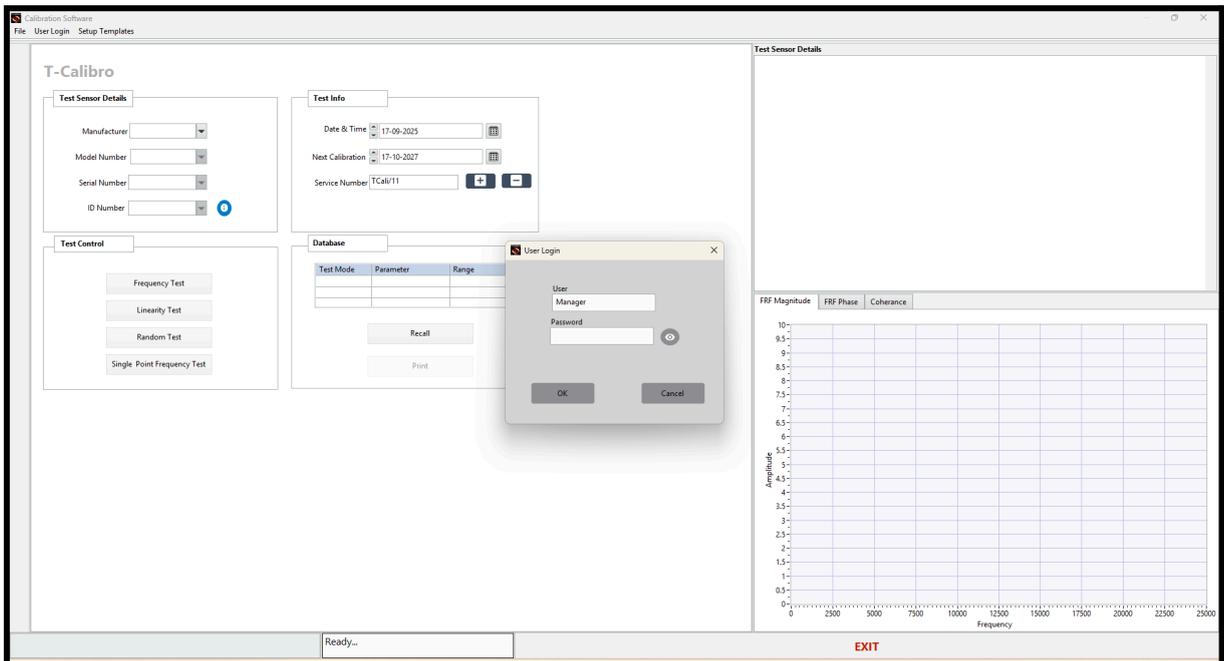


- Swept sine testing for sensitivity/phase deviations (option)

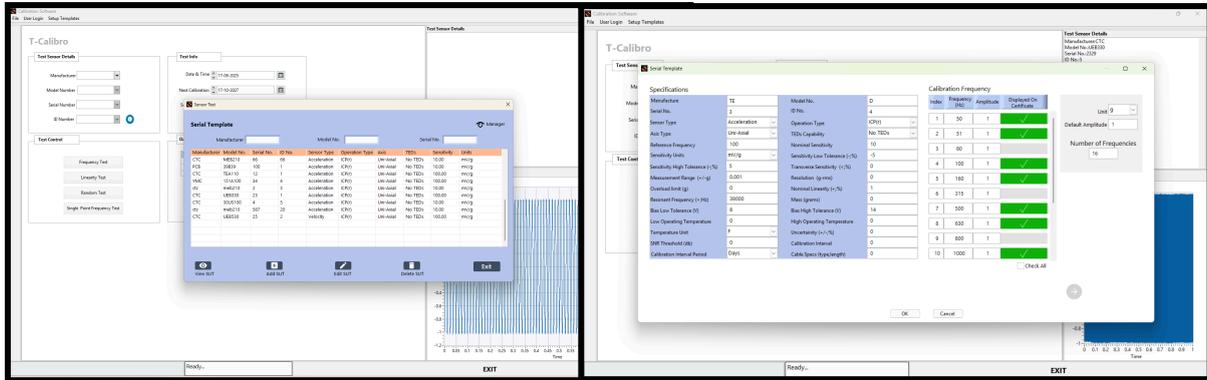
- Real-time data visualization



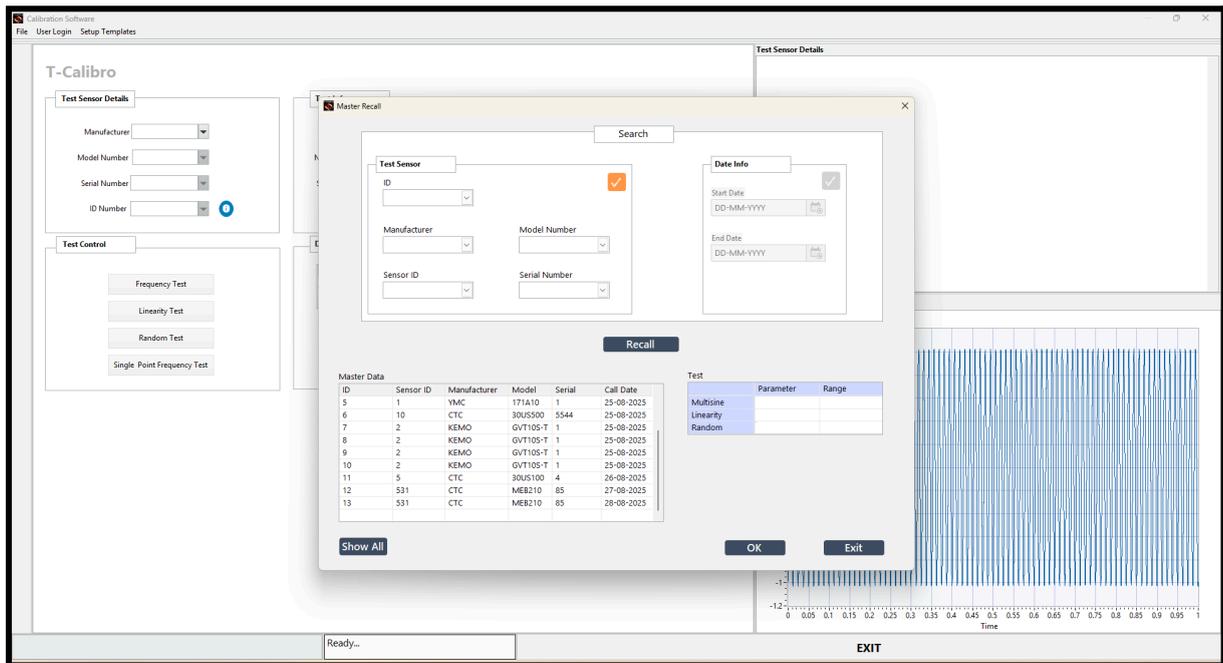
- Multi-level user login access with role-based permissions.



- Sensor database



- Calibration history & asset management



- Exportable reports in word format (See Appendix)

Applications

- Laboratory calibration of vibration sensors
- Verification of condition monitoring systems
- R&D testing and validation
- Production line quality control

Standards & Compliance

- Conforms to **ISO 16063-21 vibration calibration**
- Traceable to **international standards**

Included/optional Accessories

- Shaker and controller with reference sensor.
- Calibration software suite
- Sensor mounting adapters
- User manual
- Power cable
- Short-handle wrench
- Calibration certificates for reference sensor and DAQ.
- USB drive: loaded with setup software
- Rugged Carry case (Optional)
- Inline charge conditioner (Optional)
- Inline IEPE source follower (Optional)
- MEMS sensor powering unit (Optional)
- 4-20mA sensor measuring unit (Optional)

Safety checks & Best practices

- Shaker Loading Maximum advisable vibration levels are dependent upon the maximum frequency of operation and the payload. The chart below shows the maximum vibration levels as a function of both frequency and payloads (see Appendix). Payloads exceeding 500 grams should not be tested. Excessive loads may result in damage to the moving coil and flexure.
- Care must be taken when testing payloads with large footprints, particularly those with an offset center of gravity. Severe rocking modes can produce high transverse motion and lateral loads on the moving coil and flexure, resulting in damage.
- When fitting test transducers and fixtures onto the mounting platform, aim to keep the center of gravity directly above, and in line with the center axis of threaded hole. This is a safeguard against side loading the shaker.
- Mating surfaces of the mounting platform and sensor should be flat, parallel and free of dirt, paint, epoxy, scratches, etc.
- Threads in platform, sensor and adaptor (if needed) must match to ensure a proper fit and that testing is free of errors. Clean any worn threads with a tap or die and coat them in a silicone grease for best results.
- Silicone grease can be applied to the mating surfaces and threads to ensure good mechanical coupling. This is particularly important when testing at high frequencies.
- Make sure that switch on the device only after powering the PC and after connecting the USB cable.
- While tightening the sensor, secure the mounting platform with the

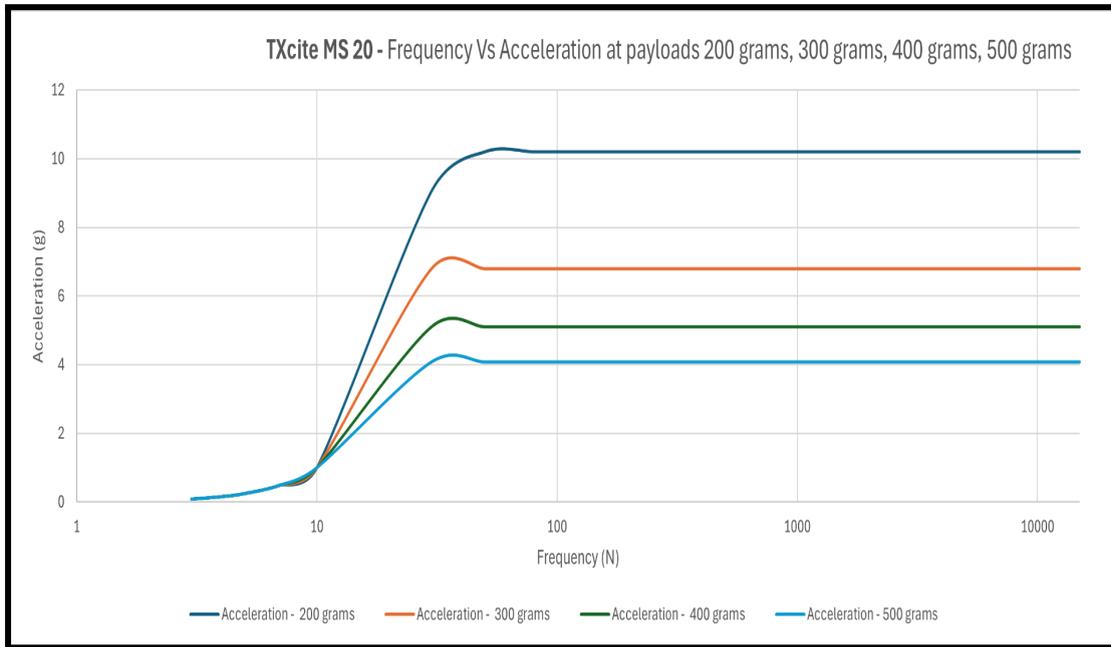
supplied wrench to prevent damage to the shaker from torque.

- The system should always be operated on a stable, flat surface.

 **Contact Us** to learn how the **T-Calibro** can simplify and enhance your vibration sensor calibration process.

APPENDIX

1) Performance graph Frequency vs Acceleration at different payload



2) Report format

(i) Frequency test report (multisine/random)

Certificate

Sensor Information Model Number: MEB210 Serial Number: 85 Manufacturer: CTC Cert. Number: TCal/20 Description: Good Discipline: Mechanical	Calibration Data Sensitivity @ 100Hz: 103.211 mV/g Phase @ 100Hz: 0.508 deg. Test Level: 1.000 g Bias Voltage: 15.000 VDC	Transducer Specifications Amp. Range: 0.001 Resonant Freq.: 38000.000 Temp. Range: 50.000 122.000 Axis: Z
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Phase Response

Amplitude Response

Data Table

Freq. (Hz)	Deviation (%)	Phase
20.000	-0.212	-0.333
30.000	0.074	-0.065
50.000	-0.784	-2.070
80.000	1.302	0.622

TIERA
 Trivandrum
 sales@tieraonline.in

Note

1. Interlaboratory comparison to NIST (project number 822/271196).
2. This certificate may not be reproduced except in full, without written permission.
3. Calibration is performed in compliance with ISO 9001 and ISO 17025
4. This Calibration was performed with TMS 9155 Calibration Workstation version 5.0.0
5. Back-to-Back Comparison Calibration per ISO 16063 Part 21

Unit Condition As Found: good condition As Left: good condition Technician: Varghese User Notes: This done in labview	Lab Conditions Temperature: 0-0 F Humidity: 50.000 Cal Date: 12-09-2025 Next Cal. Due Date: 12-10-2027
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