



Automated Vibration Transducer Calibration

High accuracy calibration systems for acceleration, velocity, and displacement transducers

MB Dynamics offers a variety of options for automated calibration of vibration transducers. The systems range from the tried and true Win475-Basic, which is trusted to handle the calibration duties of the United States Air Force, to the first of its kind Win475-TS, which measures a transducer's transverse sensitivity. In delivering this wide range of options MB has a system to calibrate almost any motion transducer on the market.

MB Dynamics also supplies a calibration shaker and a reference transducer for manual calibrations, however, this document will only focus on automated calibration systems.

Win475-Standard & Win475-Basic

The General Purpose Packages



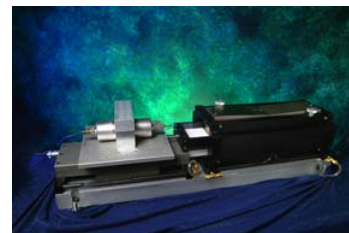
IDEAL FOR: Any IEPE/Voltage or Charge mode vibration sensor under 900 g

	Standard	Basic
ESU	0.4%	1.1%
FREQUENCY	1 - 10,000 Hz	1 - 10,000 Hz
REF Type	Laser Calibrated	Comparison Calibrated
DUT Mass	< 900 g	< 900 g
DUT TYPE	IEPE, voltage, charge	

System Includes: CAL50 exciter, reference transducer, SL500VCF amplifier, Model 405 signal conditioner, PC, Win475 software (stepped and swept sine plus linearity; random and shock excitation optional), all interconnecting cables, and an accessory kit.

Win475 Low Frequency Options

Calibrate down to 0.1 Hz



IDEAL FOR: Any high sensitivity IEPE/Voltage or Charge mode vibration sensor used from 0.1 to 200 Hz; ones that weigh < 4500 g

	Low Freq	Ultra Low Freq
ESU	0.4%	0.4%
FREQUENCY	0.2 - 200 Hz	0.1 - 100 Hz
Excitation	Vertical	Horizontal
DUT Mass	< 500 g	< 4500 g
DUT TYPE	IEPE, voltage, charge	

System Includes: CAL20 (CAL20-LZ for ULF) 6" stroke exciter, SL500VCF amplifier, concrete base, 1000 mV/g REF (laser or comparison calibrated), all cables and accessories, and software to add low frequency calibration features to other Win475 deliverables.

Win475-DC

Calibrate DC Response Accelerometers

Static or DC measurements include: Bridge excitation voltage; Zero Measurand Output (ZMO); DC voltage measurement; Shunt calibration; Input and output resistances, error; Opens and shorts; Makes 4-wire measurements

IDEAL FOR: Piezoresistive, variable capacitance, servo, strain gage, and MEMS devices; validate crash sensor performance – static & dynamic

	Win475-DC
ESU	0.4%
FREQUENCY	1 – 10,000 Hz; up to 50 kHz
DUT Mass	< 500 g
DUT TYPE	Piezoresistive, variable capacitance, servo, strain gage, and MEMS.

System Includes: All Win475-Basic deliverables, plus Model 407 signal conditioner for bridge excitation and shunt calibration, and software for making static measurements plus measuring transducer resonance up to 50 kHz.

Win475-Multi-DUT

Calibrate Up to 4 PR Devices Simultaneously



IDEAL FOR: Calibrating 4 Piezoresistive accelerometers at the same time; productivity checks on crash sensors, before and after a test

	Multi-DUT
ESU	0.4%
FREQUENCY	1 - 4000 Hz
DUT Mass	< 50 g
DUT TYPE	Piezoresistive

System Includes: All Win475-Basic deliverables, plus Model 409 signal conditioner for 4 separate channels of simultaneous data acquisition, and software for making multiple-DUT measurements and calibrations.

Win475-TS

Measure Transverse Sensitivity



IDEAL FOR: Sensors used in multi-axial vibration environments

- Automatically rotate sensor & acquire data at different rotation angles about its sensing axis
- Measure frequency-based transverse sensitivities at any user-selectable frequencies from 30 Hz to 2 kHz
- Report the amplitude in % of nominal sensitivity and the radial direction of max transverse sensitivity
- Print amplitude vs. frequency plots, and typical "figure 8" shaped polar plots

System Includes: All Win475-Basic deliverables plus CAL110 exciter, TS fixture, TS REF or control accelerometer, rotating assembly, TS power board, and all cables and accessories

Win475-Heavy DUT

Calibrate Massive Transducers & Switches



IDEAL FOR: Sensors and vibration switches weighing between 900g and 4500g

	Heavy DUT
ESU	1.1%
FREQUENCY	0.75 - 2500 Hz
DUT Mass	< 4500g
DUT TYPE	IEPE, voltage, charge, vibration switch

System Includes: All Win475-Basic deliverables with CAL 110 exciter replacing CAL 50