

## AT-2040

### Portable Vibration Test Set



### World's Most Innovative Portable Calibrator

#### Applications

- Cabling and wiring troubleshooting
- Vibration signal simulation— accelerometers and velocity probes
- Machinery speed signal simulation
- Calibration of:
  - Accelerometers
  - Proximity probes and drivers
  - Monitoring systems
  - Charge amplifiers
  - Avionics equipment

#### Advanced Features

- Sensor simulation
- Built-in sensor signal conditioner
- Custom sensor can be configured to meet specific sensor needs
- Built-in -24 V proximity probe supply
- Programmable sensor voltage
- Automatic mass load correction
- Dual USB ports
- Advanced computer algorithms for accurate readout

#### Overview

AT-2040 is the world's first and only portable vibration calibrator capable of measuring sensitivity readings for voltage, IEPE, charge accelerometers, and 4-20 mA transmitters without external equipment or add-on accessories.

AT-2040 provides a positive 24-volt supply for 4-20 mA input sensors and negative 24 volts for proximity probe drivers. AT-2040 can also simulate a wide variety of accelerometers, proximity probes, and other transducers that can be fed back into drivers, cabling, connectors, and meters to quickly conduct system checkouts and new system installs.

#### Features

- Voltage, charge (piezoelectric), 4-20mA, and proximity probe sensitivity readings.
- Adjustable current and voltage.
- Full-Automatic Test Mode.
- Superior accuracy.
- Color touch screen.
- Automatic PDF certificate generation tailored to your custom specifications.
- Two USB ports for attaching peripherals and exporting data via USB drive.

#### Functionality

- Create calibration certificates for vibration instruments.
- Test all types of vibration sensors and transducers from a variety of accelerometer and eddy current probe manufacturers.
- Test and verify performance of vibration system meters, portable data collectors, and cabling by using an accurate and traceable signal generator to simulate a variety of sensors.
- Identify and quickly address issues in vibration system setup with the assistance of user-friendly software tools.
- Control AT-2040 from a remote location.

# Specifications

Performance		
Frequency Range (operating) <sup>[1]</sup>	7 Hz to 10 kHz	420 to 600000 CPM
Maximum Amplitude (100 Hz, with no payload)	20 g pk	196 m/s <sup>2</sup> pk
	15 in/s pk	380 mm/s pk
	50 mils p-p	1270 μm p-p
Maximum Payload <sup>[2]</sup>	800 grams	
Sensor Test Method	Automatic sweep or manual operation	
Test Types	Manual sensitivity Automatic sweep	Sensor simulation Certification
Sensor Select	Built-in transducer library	
Calibration Sheets	Automatic creation to memory Export to USB drive in PDF or CSV format No spreadsheet or user input required Certificate includes test point with graph	
Memory	16GB (internal storage) MicroSD slot for additional storage	

Simulation Performance		
Frequency Range	0.1 to 11,000 Hz	
Maximum Amplitude Examples:	1 V	1000 pF
	100 g at 10mV/g	10pF/g@100g
	10 g at 100mV/g	100pF@10g
Test Type	Manual	
Accuracy	< 1 % error	

Accuracy	
Acceleration (30 Hz to 2 kHz)	± 3 %
Acceleration (7 Hz to 10 kHz)	± 1 dB
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

Input/Output	
Test Sensor Inputs	Accelerometer: <ul style="list-style-type: none"> <li>• Charge</li> <li>• Voltage</li> <li>• IEPE</li> </ul> Velocity 4-20 mA vibration transmitters Proximity probes
Bias Measurement	Yes
Built-in Excitation Current and Supply Voltages for Transducers	IEPE current source -24 V proximity driver source +24 V 4-20 mA supply Variable voltage supply
External Source In (Max)	1 V AC RMS
Transducer Simulation	Charge IEPE bias and signal 4-20 mA loop simulator Proximity probe driver (axial and radial)
Monitor Reference Out	10 mV/g (nominal) Internal Reference

# AT-2040

## Portable Vibration Test Set

Readout		
Acceleration	g pk m/s <sup>2</sup> pk	g RMS m/s <sup>2</sup> RMS
Velocity	mm/s pk in/s pk	mm/s RMS in/s RMS
Displacement (peak to peak)	mils p-p	μm p-p
Frequency	Hz	CPM

Power		
Internal Battery (sealed solid gel lead acid)	12 V DC	6 amp hours
AC Power (for recharging battery)	100-240 V	50-60 Hz
Operating Battery Life	100 gram payload, 100 Hz 1 g pk 10 hours 100 gram payload, 100 Hz 10 g pk 3 hours	

Physical		
Sensor Connectors	BNC Terminal strip	DIN
Display	4.3" TFT LCD with 480x272 resolution	
Controls	2 dials with touch screen	
Dimensions (H x W x D)	8.5 x 12 x 10 in	22 x 30.5 x 28 cm
Weight	15.2 lb	6.9 kg
Sensor Mounting Platform Thread Size	1/4-28	
Operating Temperature	32 °F - 122 °F	0 °C - 50 °C
Agency Requirements and Certifications	NIST Traceable Accredited NIST Certified NVLAP Laboratory Tested EMC: EN61326-1 LVD: EN61010-1 RoHS	

Accessories		
Included Accessories	<ul style="list-style-type: none"> <li>• Power cable</li> <li>• Micro dot (10-32)</li> <li>• 1/4-28 Stud</li> <li>• 2-56 UNC Adapter</li> <li>• Universal Velocity Adapter Disc</li> <li>• Universal Accelerometer Adapter Disc</li> <li>• Short-handle wrench</li> <li>• 10-32 UNF Stud</li> <li>• 6-32 UNC Adapter</li> <li>• 10-32 UNF Adapter</li> <li>• USB drive: loaded with setup software for custom sensor</li> </ul>	
Optional Accessories <sup>[3]</sup>	<ul style="list-style-type: none"> <li>• Proximity Probe Adapter Kit (digital or manual micrometer)</li> <li>• Chadwick-Helmuth Velocimeter Cable</li> <li>• Triaxial Accelerometer Adapter</li> </ul>	
Warranty	2 years (includes drift/accuracy)	
Tech Support	Training webinars, email support	

[1] 100 gram payload.

[2] Maximum weight recommendations:

Frequency	0-100 Grams	100-250 Grams	250-500 Grams	500-800 Grams
10-100 Hz	10 g	4 g	2 g	1 g
100-1000 Hz	7 g	4 g	2 g	1 g
1000-10000 Hz	3 g	1.5 g	0	0

[3] For comprehensive list, please consult the Product Spec Sheet or contact sales.