

Technical Data

Fluke 810 Vibration Tester



The most advanced troubleshooting tool for mechanical maintenance teams who need an answer now. The unique diagnostic technology helps you quickly identify and prioritize mechanical problems, putting the expertise of a vibration analyst in your hands. You take pride in your facility, your team, and your work. You do what it takes to keep things up and running, but sometimes there is not enough time or resources to keep up with the workload, let alone be proactive about mechanical maintenance.

The Fluke 810 Vibration Tester puts you one step ahead by coupling a powerful diagnostic engine with a simple step-by-step process to report on specific machine faults and their severity the first time measurements are taken, without prior measurement history. Overall vibration measurements and spectral diagrams give technicians the ability to quickly assess overall machine health, while enhanced reporting and actionable recommendations give you the confidence you need to address critical problems first.



Key features

On-board identification and location of the most common mechanical faults (bearings, misalignment, unbalance, looseness) focus maintenance efforts on root cause, reducing unplanned downtime

Overall vibration level allows you to quickly assess overall machine health directly from the diagnosis screen

Fault severity scale with four severity levels help you prioritize maintenance work

Repair recommendations advise technicians on corrective action

Detailed diagnostic reports and spectral diagrams help confirm data quality, and narrow down the root cause of failures

On-board context sensitive help provide real-time tips and guidance to new users

Flexible machine speed configurations gives the ability to test a broad range of assets including belt drives, gear boxes, and bevel gears

2 GB expandable on-board memory provides enough space for your machinery's data

Self-test function ensures optimal performance and more time on the job

Tri-axis accelerometer reduces measurement time by 2/3 over single axis accelerometers

Use the Fluke 810 Vibration Tester to:

- Troubleshoot problem equipment and understand the root cause of failure
- Survey equipment before and after planned maintenance and confirm the repair
- Commission new equipment and ensure proper installation
- Provide quantifiable proof of equipment condition and drive investment in repair or replacement
- Prioritize and plan repair activities and operate more efficiently
- Anticipate equipment failures before they happen and take control of spare parts inventories
- Train new or less-experienced technicians and build confidence and skill across the team

Product anatomy



Specifications

Diagnostic specifications	Fluke 810	
Standard faults	Standard faults Unbalance, looseness, misalignment and bearing failures	
Analysis for	Motors, fans, blowers, belts and chain drives, gearboxes, couplings, centrifugal pumps, piston pumps, sliding vane pumps, propeller pumps, screw pumps, rotary thread/gear/lobe pumps, piston compressors, centrifugal compressors, screw compressors, closed coupled machines, spindles	
Machine rotational speed range	200 rpm to 12000 rpm	
Diagnosis details	Plain-text diagnosis, fault severity (slight, moderate, serious, extreme), repair details, cited peaks, spectra	
Electrical specifications		
Ranging	Automatic	
A/D converter	4 channel, 24 bit	
Usable frequency bandwidth	5 Hz to 20 kHz	
Digital signal processing functions	Automatically configured anti-alias filter, high-pass filter, decimation, overlapping, windowing, FFT, and averaging	
Sampling rate	128 dB	
Signal to noise ratio	100 dB	
FFT resolution	800 lines	
Spectral windows	Hanning	
Frequency units	Hz, orders, cpm	
Amplitude units	in/sec, mm/sec, VdB (US), VdB* (Europe)	
Non-volatile memory	SD micro memory card, 2 GB internal + user accessible slot for additional 2 GB storage	
General specifications		
Dimensions (HxDxW)	18.56 cm x 7.00 cm x 26.72 cm (7.30 in x 2.76 in x 10.52 in)	
Weight (with battery)	1.9 kg (4.2 lb)	
Display	¼ VGA, 320 × 240 Color (5.7 inch diagonal) TFT LCD with LED backlight	
Input/Output connections	Triaxial sensor connection Single axis sensor connection PC connection	4 pin M12 connector BNC connector Mini DIN 6 pin connector Mini ‘B’ USB (2.0) connector
Battery	Battery type Lithium-ion Battery charging time Battery discharge time	14.8 V, 2.55 Ah Three hours Eight hours (under normal conditions)
AC adapter	Input voltage Input frequency	100 V ac to 240 V ac 50/60 Hz
Operating system	WinCE 6.0 Core	
Language support	English, French, German, Italian, Japanese, Portuguese, Simplified Chinese, Spanish	
Warranty	Three-years	

Specifications (continued)

Environmental		
Operating temperature	0 °C to 50 °C (32 °F to 122 °F)	
Storage temperature	-20 °C to 60 °C (-4 °F to 140 °F)	
Operating humidity	10 % to 95 % RH (non-condensing)	
Agency approvals	CHINA RoHS, CSA, CE, C TICK, WEEE	
Electromagnetic compatibility	EN 61326-1:2006, EN 61010-1:2001 2nd ed.	
Sensor specifications		
Sensor type	Accelerometer	
Sensitivity	100 mV/g (± 5 %, 25 °C)	
Acceleration range 80 g peak	80 g peak	
Amplitude nonlinearity	1 %	
Frequency response	Z	2 to 7,000 Hz ± 3dB
	X, Y	2 to 5,000 Hz ± 3dB
Power requirement (IEPE)	18 V dc to 30 V dc, 2 mA to 10 mA	
Bias output voltage	12 V dc	
Grounding	Case grounded	
Sensing element design	PZT ceramic / shear	
Case material	316L stainless steel	
Mounting	10-32 captive socket head screw, 2-pole rare earth magnet (48 lb pull strength)	
Output connector	4-Pin, M12	
Mating connector	M12 - F4D	
Non-volatile memory	TEDS 1451.4 compatible	
Vibration limit	500 g peak	
Shock limit	5000 g peak	
Electromagnetic sensitivity, equivalent g	100 µg/gauss	
Sealing	Hermetic	
Temperature range	-50 °C to 120 °C (-58 °F to 248 °F) ± 7 %	

Ordering information



Model	Fluke-810 Vibration Tester
Includes	Vibration Tester with diagnostic technology, tri-axial TEDS accelerometer, accelerometer magnet mount, accelerometer mounting pad kit with adhesive, accelerometer quick-disconnect cable, smart battery pack with cable and adapters, shoulder strap, adjustable hand strap, mini-USB to USB cable, getting started guide, Illustrated quick reference guide, and hard carrying case.

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