FLUKE®

Fluke 810 Vibration Tester

Technical Data

When you need an answer now

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 using a simple step-by-step process to report on machine faults the first time measurements are taken, **without prior measurement history**. The combination of diagnoses, severity and repair recommendations help you make informed maintenance decisions and address critical problems first.

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

Features and benefits

- **On-board identification and location of the most common mechanical faults (bearings, misalignment, unbalance, looseness)** focus maintenance efforts on root cause, reducing unplanned downtime
- **Fault severity scale with four severity levels** help you prioritize maintenance work
- **Repair recommendations** advise technicians on corrective action
- **On-board context sensitive help** provide real-time tips and guidance to new users
- **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
- **Laser tachometer for accurate machine running speed** promotes confident diagnoses
- **Tri-axial accelerometer** reduces measurement time by 2/3 over single axis accelerometers
- **Viewer PC Software** expands data storage and tracking capacity

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Tester specifications

Diagnostic specifications	
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 bandwidth	2 Hz to 20 kHz
Sampling	51.2 Hz
Digital signal processing functions	Automatically configured anti-alias filter, high-pass filter, decimation, overlapping, windowing, FFT, and averaging
Sampling rate	2.5 kHz to 50 kHz
Dynamic range	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 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	4 pin M12 connector
Single axis sensor connection	BNC connector
Tachometer Connection	Mini DIN 6 pin connector
PC Connection	Mini 'B' USB (2.0) connector
Battery	
Battery type	Lithium-ion, 14.8 V, 2.55 Ah
Battery charging time	Three hours
Battery discharge time	Eight hours (under normal conditions)
AC adapter	
Input voltage	100 Vac to 240 Vac
Input frequency	50/60 Hz
Operating system	WinCE 6.0 Core
Language Support	English, French, German, Italian, Japanese, Portuguese, Simplified Chinese, Spanish
Warranty	Three-years

Tester 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
Amplitude nonlinearity	1 %
Frequency response	
Z	2 – 7,000 Hz ± 3dB
X, Y	2 – 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 %
Warranty	One-year

Tachometer specifications

Dimensions (DxW)	2.86 cm x 12.19 cm (1.125 in x 4.80 in)
Weight	96 g (3.4 oz) with cable
Power	Powered by 810 Vibration Tester
Detection	Laser Diode Class 2
Range	6.0 to 99,999 rpm
Accuracy	
6.0 to 5999.9 rpm	± 0.01 % and ± 1 digit
5999.9 to 99999 rpm	± 0.05 % and ± 1 digit
Resolution	0.1 rpm
Effective range	1 cm to 100 cm (0.4 in to 39.27 in)
Response time	1 second (> 60 rpm)

Tachometer specifications continued

Controls	Measure on/off transparent button
Interface	6 Pin Mini DIN
Cable length	50 cm (19.586 in)
Warranty	One-year
Tachometer accessories	Reflective tape: 1.5 cm x 52.5 cm (0.59 in × 20.67 in)

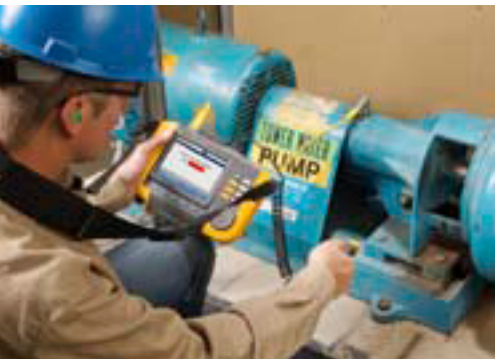
Viewer PC Software

Minimum hardware requirements	1 GB RAM
Operating system requirements	Windows XP, Vista

Viewer PC Software

The Fluke 810 Vibration Tester includes Viewer PC software, expanding your data storage and tracking capability. With Viewer you can:

- Generate diagnostic reports and track the severity of your machine's condition
- Create machine setups with the convenience of your keyboard and mouse, and transfer the data to your 810 Vibration Tester
- View diagnosis and vibration spectra in greater detail
- Import and store JPEG images and Fluke IS2 thermal images for a more complete view of your machine's condition



MOBIUS INSTITUTE

Industry-leading training... on your terms

The Fluke 810 Vibration Tester takes the guesswork out of diagnosing the most common mechanical problems, but a better understanding of vibration and its impact on your equipment will help you or your team be more aware of issues that may come up in the future. Fluke has partnered with Mobius Institute, an industry leader in vibration training, to provide you with a self-paced DVD training program using award-winning Mobius Institute interactive training tools. This DVD is available with purchase and will help you learn more about the basics of vibration and how to fully utilize the features and functionality of the Fluke 810 Vibration Tester.

Ordering information

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, laser tachometer and storage pouch, smart battery pack with cable and adapters, shoulder strap, adjustable hand strap, Viewer PC software, mini-USB to USB cable, getting started guide, illustrated quick reference guide, users manual CD-ROM, and hard carrying case.