TECHNICAL DATA

Fluke 805 FC Vibration Meter

The reliable, repeatable, accurate way to check bearings and machine health.

Make go or no-go maintenance decisions with confidence. The Fluke 805 FC Vibration Meter is the most reliable vibration screening device available for frontline mechanical troubleshooting teams that need repeatable, severity-scaled readings of overall vibration, bearing health and machine health.

What makes the Fluke 805 FC the most reliable vibration screening device available?

- Innovative sensor design minimizes measurement variations caused by device angle or contact pressure
- Consistent data quality at both low and high frequency ranges
- Four-level severity scale assesses urgency of problems for overall vibration and bearing condition
- Exportable data via USB or wirelessly, through the Fluke Connect® mobile app
- Trending in Microsoft® Excel using pre-built templates
- Overall vibration measurement (10 Hz to 1,000 Hz) for acceleration, velocity and displacement units of measurement for a wide variety of machines
- Crest Factor+ technology provides reliable bearing assessment using direct sensor tip measurements between 4,000 Hz and 20,000 Hz
- Get authorization to take next steps in an instant if machine health is at risk via Fluke Connect® mobile app
- Colored lighting system (green, red) and on-screen comments indicate how much pressure needs to be applied to take measurements
- Temperature measurement with Spot IR Sensor increases diagnostic capabilities
- On-board memory holds and saves up to 3,500 measurements
- External accelerometer (optional) support for hard to reach locations
- Flashlight for viewing measurement locations in dark areas
- Large screen with high resolution for easy navigation and viewing

*Within provider's wireless service area.

EASY SETUP

- Quickly create asset list and work order on your PC, setup machine profiles using Fluke Connect App on your smart device, push routes to your 805 FC for your technicians in the field.

CONSISTENT DATA QUALITY

- Take accurate, reliable measurements at both low and high frequency ranges

MOBILE DATA ACCESS

- Store results in the cloud and share data with your team remotely

INNOVATIVE SENSOR DESIGN

- Minimize measurement variations caused by device angle or contact pressure

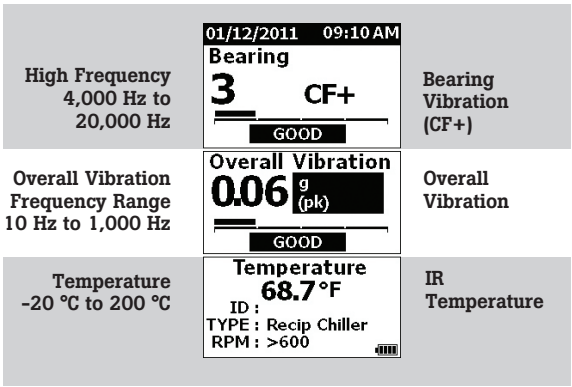
FLUKE CONNECT®

Fluke Connect compatible

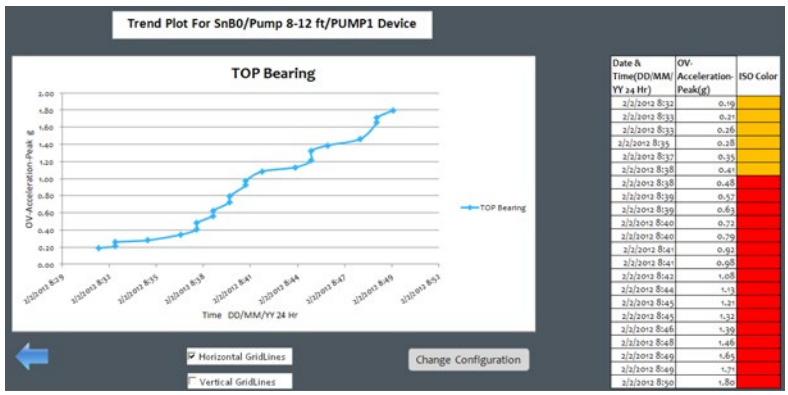
View data locally on the meter, or via Fluke Connect mobile app.

Manage and monitor workflow for better maintenance results

Using the Fluke Connect Mobile App it's now easier than ever to manage your vibration screening workflow. Integrated machine profile functionality allows you to set up machine profiles using the app and then push them directly to your 805 FC Vibration Meter. Users can then use the list of machine profiles to create work orders, and develop route based maintenance schedules which can be dynamically sent to technicians in field, helping to ensure the proper focus on critical assets. Once a machine is tested, the 805 FC communicates the results directly to the app and associates them with the proper profile and route. This data can easily be shared between teams so you can make better maintenance decisions.



Sample measurement results screen indicating a four-level severity scale (*Good, Satisfactory, Unsatisfactory, Unacceptable*) for bearing and overall vibration



Sample trend plot using the Fluke 805 trending template.

What is Crest Factor +?

Fluke 805 FC with Crest Factor + takes the confusion out of bearing assessment

The original Crest Factor is used by vibration analysts to identify bearing faults. It is defined as the ratio of the peak value/RMS value of a time domain vibration signal.

A key limitation of using Crest Factor to identify bearing faults is that the Crest Factor does not increase linearly as the bearing degrades. In fact, the Crest Factor can actually decrease as a bearing nears catastrophic failure due to large RMS values.

In order to overcome this limitation, Fluke uses a proprietary algorithm known as Crest Factor + (CF+). CF+ values range from 1 to 16. As the bearing condition worsens, the CF+ value increases. To keep things simple, Fluke has also included a four-level severity scale that identifies the bearing health as Good, Satisfactory, Unsatisfactory or Unacceptable.

Exporting and trending with the 805 FC

Export and trend in Excel

Trending, or repeated vibration measurements kept in a spreadsheet over time, is the best method to track machine health. With 805 FC you can easily:

- Export your result to Excel through USB connection
- Trend the readings with the pre-built Excel templates and plot graphs
- Compare the overall vibration readings to ISO Standards (20816-1, 20816-3, 20816-7)

Import measurements from the 805 FC Vibration Meter to an Excel template on your PC in order to trend the bearing parameters: overall vibration, CF+, and temperature. Looking at just the number alone for the overall vibration or bearing impact might not be of much benefit to the operator or technician if they don't know what the number means. The user may not know what is normal or what indicates a problem.

If measurements taken on the operator rounds are loaded into Excel, then the trend will show patterns of something that is becoming abnormal. The user can now see a clear picture of the changing bearing condition and health of the machine.

Use the Fluke 805 FC Vibration Meter to check these machine categories:

Chiller (refrigeration)
- Reciprocating (Open motor and compressor separate)
- Reciprocating (Hermetic motor and compressor)
- Centrifugal (Hermetic or Open Motor)

Fans
- Belt-driven fans 1800 RPM to 3600 RPM
- Belt-driven fans 600 RPM to 1799 RPM
- General direct drive fans (direct coupled)
- Vacuum blowers (belt or direct drive)
- Large forced draft fans (fluid film bearings)
- Large induced draft fans (fluid film bearings)
- Shaft-mounted intergral fan (extended motor shaft)
- Axial flow fans (belt or direct drive)

Cooling tower drives
- Long, hollow drive shaft (motor)
- Belt drive (motor and fan—all arrangements)
- Direct drive (motor and fan—all arrangements

Centrifugal pumps (Note: height is measured from grade to top motor bearing)
- Vertical pumps (12 ft to 20 ft height)
- Vertical pumps (8 ft to 12 ft height)
- Vertical pumps (5 ft to 8 ft height)
- Vertical pumps (0 ft to 5 ft height)
- Horizontal centrifugal end suction pumps—direct coupled
- Horizontal centrifugal double suction pumps—direct coupled
- Boiler feed pumps (turbine or motor driven)

Positive displacement pumps
- Positive displacement horizontal piston pumps (under load)
- Positive displacement horizontal gear pumps (under load)

Air compressors
- Reciprocating
- Rotary screw
- Centrifugal with or without external gearbox
- Centrifugal—internal gear (axial meas.)
- Centrifugal—internal gear (radial meas.)

Blowers
- Lobe-type rotary blowers (belt or direct drive)
- Multi-stage centrifugal blowers (direct drive)

Generic gearboxes (rolling element bearings)
- Single stage gearbox

Machine tools
- Motor
- Gearbox input
- Gearbox output
- Spindles—roughing operations
- Spindles—machine finishing
- Spindles—critical finishing

FLUKE®

Technical specifications

Vibration meter	
Low frequency range (overall measurement)	10 Hz to 1,000 Hz
High frequency range (CF+ measurement)	4,000 Hz to 20,000 Hz
Severity levels	Good, Satisfactory, Unsatisfactory, Unacceptable
Vibration limit	50 g peak (100 g peak-peak)
A/D converter	16-bit
Signal to noise ratio	80 dB
Sampling rate	
Low frequency	20,000 Hz
High frequency	80,000 Hz
Real time clock backup	Coin battery
Sensor	
Sensitivity	100 mV / g ± 10%
Measurement range	0.01 g to 50 g
Low frequency range (overall measurement)	10 Hz to 1,000 Hz
High frequency range (CF+ measurement)	4,000 Hz to 20,000 Hz
Resolution	0.01 g
Accuracy	At 100 Hz ± 5 % of measured value
Amplitude units	
Acceleration	g, m/sec^2
Velocity	in/sec, mm/sec
Displacement	mils, mm
Infrared thermometer (temperature measurement)	
Range	-20 °C to 200 °C (-4 °F to 392 °F)
Accuracy	± 2 °C (4 °F)
Focal length	Fixed, at ~3.8 cm (1.5 in)
External sensor (optional accessory)	
Frequency range	10 Hz to 1,000 Hz
Bias voltage (to supply power)	20 V dc to 22 V dc
Bias Current (to supply power)	Maximum 5 mA
Firmware	
External interfaces	USB 2.0 (full speed) communication
Data capacity	Database on internal flash memory
Upgrade	through USB
Memory	Up to 3,500 measurements
Radiated emission	
Electrostatic discharge: Burst	Standard EN 61000-4-2
Electromagnetic interference	Standard EN 61000-4-3
RE	Standard CISPR 11, Class A
Environmental	
Operating temperature	-20 °C to 50 °C (-4 °F to 122 °F)
Storage temperature	-30 °C to 80 °C (-22 °F to 176 °F)
Operating humidity	10 % to 95 % RH (non-condensing)
Operating/Storage altitude	Sea Level to 3,048 meters (10,000 feet)
IP rating	IP54
Vibration limit	500 g peak
Drop test	1 meter
General specifications	
Battery type	AA (2) Lithium Iron Disulfide
Battery life	250 measurements
Size (L x W x H)	25.72 cm x 16.19 cm x 9.84 cm (10.13 in x 6.38 in x 3.875 in)
Weight	1.16 kg (2.55 lb)
Fluke Connect® mobile app compatible*	Yes
Connectors	USB mini-B 7-pin, external sensor jack (SMB connector)

*RF connection time (binding time) can take up to 1 minute.