# Fluke 805 Vibration Meter

## Technical Data

### The reliable, repeatable, accurate way to check bearings and overall vibration.

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

**What makes the Fluke 805 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
- Trending in Microsoft® Excel using built-in 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
- 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
- Audio output for listening to bearing tones directly
- External accelerometer support for hard to reach locations
- Flashlight for viewing measurement locations in dark areas
- Large screen with high resolution for easy navigation and viewing

sales@prom-elec.com / ООО ПРОМЭЛЕКТРОНИКА

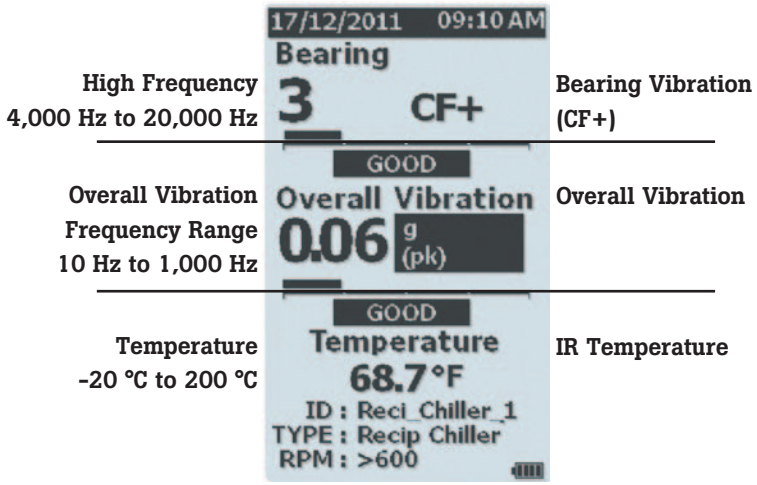
## What is Crest Factor +?

### Fluke 805 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

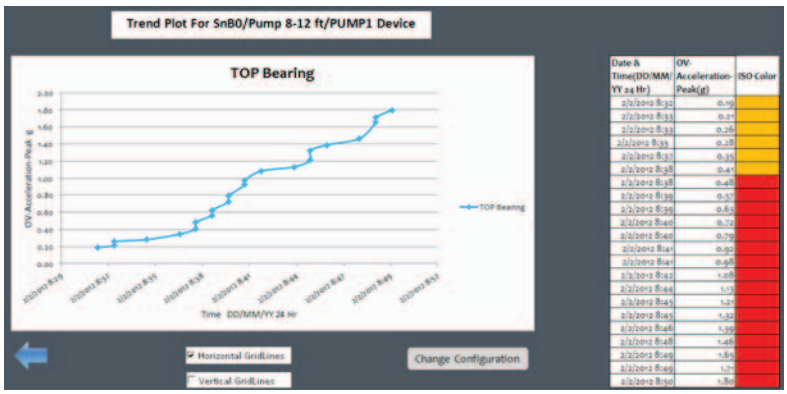
### Export and Trend in Excel

Trending, or repeated vibration measurements kept in a spreadsheet over time, is the best method to track machine health. With 805 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 (10816-1, 10816-3, 10816-7)

Import measurements from the 805 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 temperature 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 easily 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 deteriorating health of the machine.




Sample trend plot using the Fluke 805 trending template.

## Use the Fluke 805 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 to 3600 RPM
- Belt-driven fans 600 to 1799 RPM
- General direct drive fans (direct coupled)
- Vacuum blowers (belt or direct drive)
- Large forced draft fans (fluid film brgs.)
- Large induced draft fans (fluid film brgs.)
- 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 arrangemetns

**Centrifugal Pumps**
Note: height is measured from grade to top motor bearing
- Vertical pumps (12′ to 20′ height)
- Vertical pumps (8′ to 12′ height)
- Vertical pumps (5′ to 8′ height)
- Vertical pumps (0′ to 5′ 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

## 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″) |
| **External sensor** Note: Fluke supports, but does not provide, external sensors. | |
| 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** | |
| Calibration | Factory calibration required |
| 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) Alkaline or Lithium-ion 2 V dc |
| 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) |
| Connectors | USB mini-B 7-pin, stereo audio output jack (3.5 mm Audio Plug), external sensor jack (SMB connector) |

## Ordering information

Fluke-805 Vibration Meter

**Includes:** 805 Vibration Meter, USB cable, storage case, belt holster, quick reference guide, CD-ROM (includes MS Excel template and documentation), and two AA batteries

**Fluke.** *Keeping your world up and running.®*

**Fluke Corporation**
PO Box 9090, Everett, WA 98206 U.S.A.

**Fluke Europe B.V.**
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

**For more information call:**
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa +31 (0) 40 2675 200 or
Fax +31 (0) 40 2675 222
In Canada (800)-36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: http://www.fluke.com

©2012 Fluke Corporation.
Specifications subject to change without notice.
Printed in U.S.A. 4/2012 4151049A_EN

**Modification of this document is not permitted without written permission from Fluke Corporation.**