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With any other power quality analyzer you're just wasting energy.

Fluke 430 Series II Power Quality and Energy Analyzers

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Fluke 430 Series II Models

434 Series II Energy Analyzer

The Fluke 434 Series II Energy Analyzer is the ideal tool for energy logging. Utilizing the new Energy Loss Calculator function, the 434 II measures the fiscal cost of energy wasted due to poor power quality. This energy monetization capability identifies the most energy-wasteful areas of your facility, enabling you to identify energy saving solutions. Add basic power quality measurements to the package and you've got yourself one powerful troubleshooting tool.

435 Series II Power Quality and Energy Analyzer

Think of the Fluke 435 Series II Power Quality and Energy Analyzer as your insurance policy. No matter what goes wrong in your facility, with the 435 II you will always be prepared. Equipped with advanced power quality functions and energy monetization capabilities, there is no electrical issue this model can't handle.

- PowerWave function captures fast RMS values and allows you to see every waveform to determine how the voltage, current and frequency values are interacting.
- Power Inverter Efficiency function measures both ac power and dc power, in and out, to monitor the efficiency of your inverters.
- And, as with the other 430 Series II models, the 435 II features an Energy Loss Calculator that will monetize energy waste due to poor power quality, helping you save on the energy bill.

437 Series II Power Quality and Energy Analyzer

The Fluke 437 Series II Power Quality and Energy Analyzer is designed specifically for the defense and avionics industries. Equipped with all the functionalities of the 435 II including PowerWave, Power Inverter Efficiency and an Energy Loss Calculator, the 437 II goes one step further by measuring up to 400 Hz. The ability to measure at a higher frequency is necessary for those working in submarines, aircrafts, and other transport applications.

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Fluke 430 Series II Three-Phase Power Quality and Energy Analyzers

The new 430 Series II Three-Phase Power Quality and Energy Analyzers offer the best in power quality analysis and introduce, for the first time ever, the ability to monetarily quantify energy losses.

The new Fluke 434, 435 and 437 Series II models help locate, predict, prevent, and troubleshoot power quality problems in three-phase and single-phase power distribution systems. Additionally, these models feature revolutionary power quality and energy measurement functions that help facilities reduce electrical power consumption, and improve the performance and lifespan of electro-mechanical equipment. Below you will find brief descriptions of these new features.

Unified power measurement

Previously, only experts could calculate how much energy was wasted due to power quality issues; utilities could calculate the cost, but the required measurement process was beyond the reach of average electricians. With the new, patented Unified Power function of the 430 Series II, you can use one handheld tool to determine how much power is being wasted, and calculate exactly what the extra consumption costs.

Fluke's patented Unified Power Measurement System provides the most comprehensive view of power available, measuring:

- Parameters of Classical Power (Steinmetz 1897) and IEEE 1459-2000
- Detailed Loss Analysis
- Unbalance Analysis

These UPM calculations are used to quantify the fiscal cost of energy loss caused by power quality issues. The calculations are computed, along with other facility-specific information by an Energy Loss Calculator that ultimately determines how much money a facility loses due to wasted energy.

PowerWave data capture

For some users, loads switching is a cause of power quality problems. When loads switch on, the current draw sometimes causes the voltage to drop to a level that causes other equipment to malfunction. The PowerWave function available in the 435 and 437 Series II models enables users to capture voltage, current and frequency signals simultaneously at a high speed to see which interaction is potentially causing problems.

PowerWave goes beyond standard power quality measurements; PowerWave's fast data capture mode enables system dynamics to be characterized. Waveforms for voltage and current are continuously captured for the specified time, and are displayed on screen in high detail; the power waveform is derived from the data. In addition, half-cycle RMS values for voltage, current, power and frequency can be stored and retrieved for analysis. This feature is particularly useful for testing of standby generation systems and UPS systems where reliable switch-on can be vital.

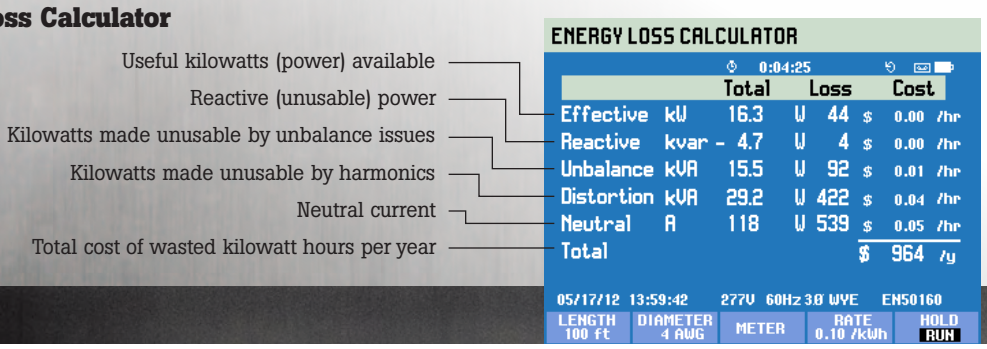
Power inverter efficiency

Power inverters take dc current and transform it into ac current, or vice versa. Solar generation systems usually include an inverter that takes the dc energy from the solar cells and converts it to useful ac power. Inverters can lose performance over time and need to be checked. By comparing the input power with the output power you can determine the system efficiency. All 430 Series II models can measure the efficiency of such inverters by simultaneously measuring the dc and ac power of a system to determine how much power is lost in the conversion process.

400 Hz

By increasing the power frequency to 400 Hz, transformers and motors can be much smaller and lighter than at 50 Hz or 60 Hz, which is an advantage in aircrafts, submarines, space crafts, and other military equipment and hand-held tools. The 437 II model captures power quality measurements for these types of avionic and military systems.

Energy Loss Calculator



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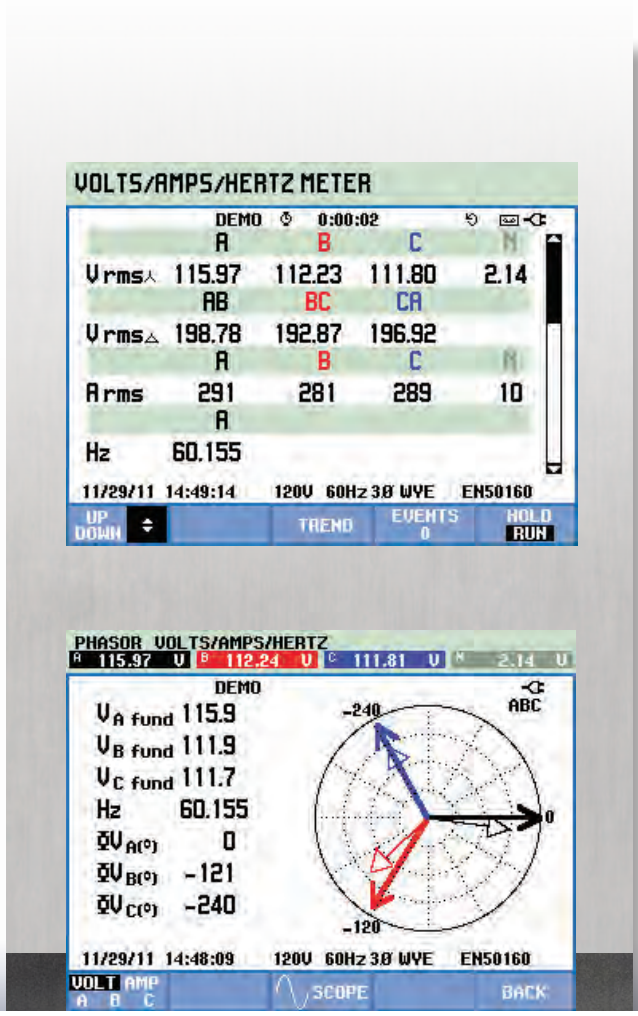
Extensive data analysis possibilities
The Fluke 430 Series II analyzers provide two ways to analyze measurements. Cursors and zoom tools can be used for on-screen analysis of measurement data. Additionally, the stored measurements can be transferred to a PC with the included software to perform custom analysis and create reports. Measurement data can also be exported to common spreadsheet programs. Store hundreds of measurement datasets and screen captures for use in reports (depending on memory capacity).

Easy to use
Pre-programmed setups and user-friendly screens make power quality testing as simple as you would expect from Fluke. The high-resolution color screen updates every 200 ms and displays waveforms and wiring diagrams color coded to industry standards. Handy on-screen wiring diagrams for all commonly used three-phase and single-phase configurations guide you through connections.



Measures everything
Measure true-rms, peak voltage and current, frequency, dips and swells, transients, interruptions, power and power consumption, peak demand, harmonics up to the 50th, inter-harmonics, flicker, mains signaling, inrush and unbalance.

CAT IV 600 V and CAT III 1000 V safety rating
Designed to help protect you and your equipment, the Fluke 430 Series II analyzers and accessories are all certified to meet the stringent standards for use in CAT IV 600 V and CAT III 1000 V environments such as power connections and outlets throughout a low-voltage power distribution system.

Logger: record the detail you need
User-configurable, long-term recording of MIN, MAX and AVG readings for up to 150 parameters on all three phases and nuetral. Enough memory is available to record 600 parameters for over a year with 10 second resolution, or capture smaller variations with resolution down to 0.25 seconds. The logger function is quickly accessed by the LOGGER button, the simple step-by-step setup makes capturing your important measurements as easy as can be.

Automatic transient display
When using the 435 and 437 II models, every time an event or voltage distortion is detected, the instrument triggers and automatically stores voltage and current waveforms on all three phases and neutral. The analyzer will also trigger when a certain current level is exceeded. Hundreds of dips, swells, interruptions and transients can be captured this way. You can see voltage transients as high as 6 kV and as fast as 5 microseconds.

System-monitor: summary screen of overall power quality health
The MONITOR mode delivers a dashboard display of rms voltage, harmonics, flicker, interruptions, rapid voltage changes, swells, unbalance, frequency and mains signaling.

The dashboard is updated live, showing compliance of each parameter to EN50160 limits or your own limits. Color-coded bars clearly show which parameters are inside (pass) or outside (fail) limits. During a monitor session, you can easily drill down to more detail of any parameter to view and capture its trend for a report.

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Fully Class-A compliant

The Fluke 435-II and 437-II are fully compliant with the new IEC 61000-4-30 Edition 2 Class-A standard. With this powerful capability, all measurements will be consistent and reliable in accordance with the latest international standard. Fluke's Class A compliance, including time synchronization compliance has been independently verified, certification is available on request.

IEC 61000-4-30 Edition 2 Class Compliance

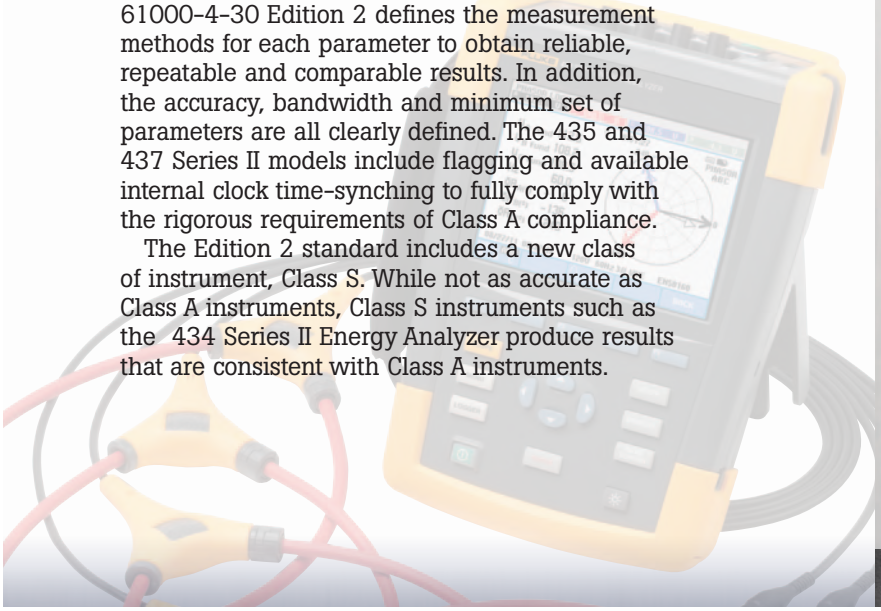
	437-II	435-II	434-II
Measurement algorithms	•	•	•
Voltage accuracy	0.1 % of Vnom	0.1 % of Vnom	0.5 % of Vnom
Class compliance	A	A	S
Time synchronization	Optional with GPS430 accessory		

What is Class-A conformity?

Power quality measurement is a relatively new, and quickly evolving field. There are hundreds of manufacturers around the world with unique measurement methodologies. Whereas basic single- and three-phase electrical measurements like rms voltage and current were defined long ago, many power quality parameters were not previously defined, forcing manufacturers to develop their own algorithms. With so much variation between instruments, electricians tend to waste too much time trying to understand an instrument's capabilities and measurement algorithms instead of understanding the quality of the power itself!

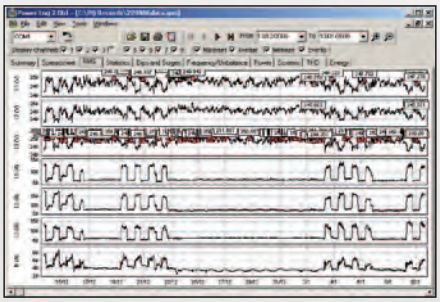
The new IEC 61000-4-30 Edition 2 Class-A standard takes the guesswork out of selecting a power quality instrument. The standard IEC 61000-4-30 Edition 2 defines the measurement methods for each parameter to obtain reliable, repeatable and comparable results. In addition, the accuracy, bandwidth and minimum set of parameters are all clearly defined. The 435 and 437 Series II models include flagging and available internal clock time-synching to fully comply with the rigorous requirements of Class A compliance.

The Edition 2 standard includes a new class of instrument, Class S. While not as accurate as Class A instruments, Class S instruments such as the 434 Series II Energy Analyzer produce results that are consistent with Class A instruments.

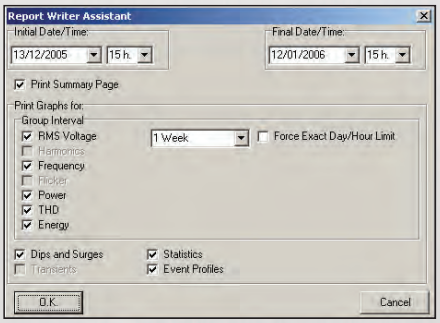


Generate reports and view graphs with Fluke Power Log Software

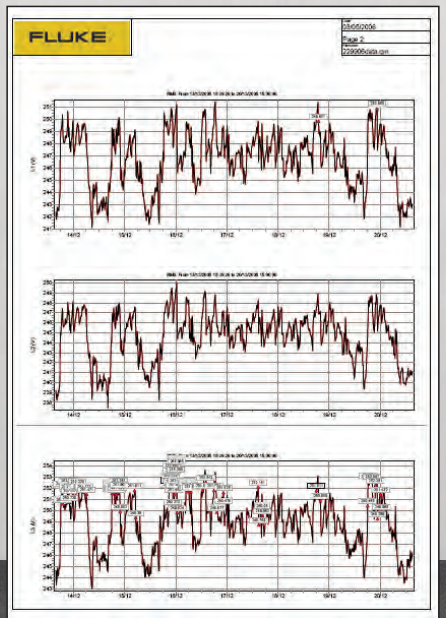
Designed to quickly view recorded data, the included Power Log software displays all recorded parameters on interactive trends. Generate a professional report with the 'Report Writer' function, or copy and paste images into the report document manually.



View recorded data in simple graphs and tables.



Easily customize the report by selecting time period and measurements to include.



Create professional reports quickly and easily.

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430 Series II Power Quality and Energy Analyzer selection chart

Model	Fluke 434-II	Fluke 435-II	Fluke 437-II
IEC 61000-4-30 compliance	Class S	Class A	Class A
Volt Amp Hz	•	•	•
Dips and swells	•	•	•
Harmonics	•	•	•
Power and energy	•	•	•
Energy loss calculator	•	•	•
Unbalance	•	•	•
Monitor	•	•	•
Inrush	•	•	•
Event waveform capture		•	•
Flicker		•	•
Transients		•	•
Mains signaling		•	•
Power wave		•	•
Power inverter efficiency	•	•	•
400 Hz			•
C1740 Soft Case	•	•	
C437-II Hard Case with rollers			•
SD card (Max 32 GB)	8 GB	8 GB	8 GB

All models include the following accessories TL430 test lead set, 4 x i430 thin flexi current probes, BP290 battery, BC430 power adapter with international power adapter set, USB cable A-B mini and PowerLog CD.

Fluke. *The Most Trusted Tools in the World.*

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