



Power Quality

Whether you work in an industrial plant, manufacturing facility or a utility, Fluke Power Quality and energy management tools make it easy to record and analyze the power quality and energy data necessary to maintain the best performance and reliability.

Power Quality Tools Selection Guide

Application use	Single-Phase					Three-Phase				
	VR1710	1732/34	1736/38	1742	1746	1773	1775	1777		
Basic measurements										
Energy Studies										
Measure V, I, kW, Cos/DPF, kWhr										
Measure MIN/MAX and AVG values										
Waste energy monetization										
Basic Harmonics Study										
THD measurement (V & I)										
Harmonics 1 to 25 for V & I										
Advanced Harmonics Study										
Full harmonic spectrum										
Power harmonics										
Basic Industrial PQ Troubleshooting										
Oscilloscope function										
Voltage dips and swells										
Advanced Industrial PQ Troubleshooting										
Comprehensive logging capability										
Transient capture										
Flicker										
Event capture and transients with waveforms										
8kV transients										
Features										
Inrush										
Flicker										
Transients										
Mains signaling										
Event waveform capture										



NEW

Fluke 1770 Series Power Quality Analyzers



The faster, easier way to perform power quality studies.

Fluke 1770 Series Three-Phase Power Quality Analyzers eliminate the complexities of power quality logging, troubleshooting, and analysis. Engineered to be the faster, easier way to perform power quality studies, the 1770 Series offers automatic measurements, a straightforward user interface and setup, best-in-class specifications, and a simplified reporting platform. The instrument can also be powered directly from the measurement circuit, eliminating the need to find a power outlet or use a lengthy extension cord. With the 1770 Series you'll never miss a critical power quality event—from fast transients up to 8 kV, harmonics up to 30 kHz, dips and swells, as well as the voltage, current, and power measurements that enable you to characterize your electrical system.

- **True power quality tool:** Captures all the key measurements you need to determine power quality health automatically without additional setup, including key power quality parameters harmonics, dips, swells, unbalance, inrush etc.
- **AC/DC applications:** Measure AC up to 6000 A and DC up to 2000 A
- **High speed transients:** 20 MS/s (1777) & 1 MS/s sampling up to 8 kV to enable capture of high voltage, high speed transients that can cause physical damage to equipment.
- **Class A compliant:** Perform tests knowing you are fully compliant with stringent international IEC 6100-4-30 Class A standards
- **Power quality health summary:** Automatically evaluate power quality inputs against the EN 50160 electrical standard, providing detailed troubleshooting of problem areas
- **Real time data:** At-a-glance “Advanced Power Quality Health” summary screen with graphical representation, allows you to analyze real time data and zoomed views while all your recording needs are taken care of
- **Simple guided setup functionality:** Auto-detection of system type (WYE/Delta/Frequency 50–60 Hz/Nominal voltage) and auto-population of non-system-specific parameters
- **Ease of operation:** High resolution capacitive touch-screen and button user interface ensures that gloved operation is simple and easy providing clear results in seconds
- **Power system connection and instrument setup autocorrection:** Automatically detect and correct errors in voltage and current wiring, manual correction also available
- **Automatic parasitic power from measurement line:** Power internal battery with 120/240 V AC adapter or direct connection to measurement line (up to 600 V AC)
- **Customized views and reporting:** Create custom views to operate more efficiently and simply. Using Energy Analyze Plus software custom reporting templates can be created
- **Highest safety rating in the industry:** CAT III 1000 V / CAT IV 600 V rated for use at service entrance
- **Easy access to data:** with 8 GB of internal memory, expandable to 32 GB, continual powering of measurement circuits and advanced communication options such as WIFI and LTE communication, no event or data will be missed
- Two-year warranty

Fluke Premium Care plans are available for this product. Premium Care plans provide coverage above and beyond your tool's original product warranty. See pages 12 - 13.

Ordering Information

- FPC1S-FPQ170-1** Fluke 1770 Series Standard 1 Year
- FPC3S-II900-1** Fluke 1770 Series Standard 3 Year
- FPC1G-FPQ170-1** Fluke 1770 Series Gold 1 Year
- FPC3G-FPQ170-1** Fluke 1770 Series Gold 3 Year
- FLUKE-1775/FPC** Fluke 1770 Series with Standard 1 Year Bundle



Captures all the key measurements you need to determine power quality health.



Log up to 10 sessions of 8 weeks with 1-minute intervals and 100 events.

	1773	1775	1777
Applications			
Harmonic surveys	•	•	•
Basic power and power quality studies	•	•	•
Energy surveys and load testing	•	•	•
Nuisance circuit breaker tripping		•	•
Advanced power and power quality studies		•	•
Discovery of equipment failures caused by transients		•	•
Utility power quality surveys		•	•
Diagnose electronic equipment damage with capture of high speed, high magnitude (8 kV) voltage transients			•
Features			
Event capture with table	•	•	•
Event capture and transient with waveforms		•	•
High speed transient capture with waveshape analysis in FEA+ application software		1 MHz	20 MHz



Fluke 1777 Power Quality Analyzer kit with included iFlex™ and Alligator clips.

Fluke 1770 Series Power Quality Analyzers	
Voltage inputs	
Number of inputs	4 inputs, 3 phases and neutral referenced to PE (5 connectors)
Measurement category	CAT III 1000 V / CAT IV 600 V
Maximum input voltage	1000 V rms / 1000 V DC (1700 Vpk)
Nominal voltage range	Wye and single phase: variable (50 V – 1000 V) Delta: Variable (100 V – 1000 V) IEC 61000-4-30 Class A compliance for the nominal voltages (V_{dim}) 100 V – 690 V
Input impedance	10 MΩ between P-P and P-N, 5 MΩ between P-PE and N-PE
Bandwidth	DC to 30 kHz for PQ measurements, excluding transients
Resolution	24-bit synchronous sampling
Sampling frequency	80 kS/s at 50/60 Hz
Scaling	1:1, variable for use of potential transformers
Voltage transients	
Measurement range	±8 kVpk
Sampling rate	1775: 1 MS/s 1777: 1 MS/s, 20 MS/s
Bandwidth	DC to 1 MHz
Trigger	Adjustable trigger level. Triggers on high-frequency components >1.5 kHz
Resolution	14-bit synchronous sampling
Current inputs	
Number of inputs	4 inputs 3 phases and Neutral, range selected automatically to attached sensor
Range	AC 1 A to 1500 A with i17XX-FLEX1500 12 1 A to 1500 A with i17XX-FLEX1500 24 3 A to 3000 A with i17XX-FLEX3000 24 6 A to 6000 A with i17XX-FLEX6000 36 40 mA to 40 A with clamp i40s-EL 4 A to 400 A with clamp i400s-EL DC 20 A to 2000 A with 80i-2010-EL clamp
Bandwidth	DC to 30 kHz
Resolution	24-bit synchronous sampling
Sampling frequency	80 kS/s at 50/60 Hz
Scaling	1:1, variable
Input voltage	Clamp: 50 mV / 500 mV rms; CF 2.8 Rogowski Coil: 15 mV / 150 mV rms at 50 Hz, 18 mV / 180 mV rms at 60 Hz; CF 4 all at nominal probe range
Input impedance	11 kΩ
Aux inputs	
Wired connection with 17xx-AUX adapter	
Number of inputs	2
Input range	Direct: 0 V DC to ±10 V DC or 0 V to ±1000 V DC
Input impedance	Direct: 2.92 MΩ

Fluke PQ400 Electrical Measurement Window



Fluke PQ400



Compliance without compromise. Safety without sacrifice.

The Fluke PQ400 Electrical Measurement Window enables the connection of three-phase measurement equipment to energized panels, without the need to open the panel door, or wear supplemental personal protective equipment (PPE).

- Permanently connected voltage and current sensors located inside the electrical panel allow you to make power quality and energy measurements using the external access points without opening the panel door
- Automatic probe detection for Fluke 1740, 1730 and 1770 series power quality analyzers and energy loggers and compatible clamps
- Full 360 degree rotation allows the PQ400 window to be oriented in any direction
- Simple installation using a step drill bit and electro-hydraulic hole punch
- IP67 with cover closed, IP50 with cover opened and all connectors attached
- Five-year warranty

Recommended Accessories



i17XX-FLEX6KIP
IP65 iFlex™ 6000 A
90 cm Current Probes
(individual, 3pk or 4pk)



i400s
AC Current Clamp



i40s-EL/3pk
40 A Clamp-on
Current Transformer
(individual or 3pk)



80i-2010s/3PK
2000 A AC/DC
Current Clamp
(individual or 3pk)



Antenna Cable
Antenna cable 5 m



177X WiFi/BLE
Wi-Fi/BLE Module

Included Accessories

17XX iFlex™ 1500 A 24 IN, Voltage Test Lead 3-Phase+N, 4x AC285 Black Alligator Clips, 1x AC285 Green Alligator Clip, USB-C Cable, Line Cord, FLK-17XX 0.18 M Test Lead Set, Green Test Lead, Cable Marker Set, WiFi/BLE Module (1775, 1777), Magnet Probe (1775, 1777), Hanger Kit (1775, 1777), Black Soft Case (1775), Hardcase (1777)

PQ400: Enclosure, 4x Male-Male Cable 2 m for iFlex™ Current Probes, Cable Marker Set 3P+N+PE, Cable Ties, Instruction Sheet.

Ordering Information

- FLUKE-1773** Three-Phase Power Quality Analyzer w/ Accessories
- FLUKE-1773/BASIC** Three-Phase Power Quality Analyzer Only
- FLUKE-1775** Three-Phase Power Quality Analyzer w/ Accessories
- FLUKE-1775/BASIC** Three-Phase Power Quality Analyzer Only
- FLUKE-1777** Three-Phase Power Quality Analyzer w/ Accessories
- FLUKE-1777/BASIC** Three-Phase Power Quality Analyzer Only
- FLUKE-PQ400** Power Quality Window

Contact your local distributor for price and availability.
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Fluke 1732 and 1734 Three-Phase Electrical Energy Loggers



Fluke 1734



Energy logging is now within your reach — discover where you're wasting energy, optimize your facility's energy use and reduce your bill

The Fluke 1732 and 1734 Three-Phase Electrical Energy Loggers introduce a new simplicity to discovering sources of electrical energy waste. Discover when and where energy in your facility is being consumed—from the service entrance to individual circuits. Access and share data remotely with your team via the Fluke Connect™ app so you can maintain safer working distances and make critical decisions in real-time, reducing the need for protective equipment, site visits and check-ins.

Profiling energy use across your facility helps you identify opportunities for energy savings, and provides you with the data you need to act on them. The new Energy Analyze software package allows you to compare multiple data points over time to build a complete picture of energy use, which is the first step to reduce the cost of your energy bill.

- **Key measurements:** Automatically capture and log voltage, current, power, power factor, energy and associated values
- **Fluke Connect™ compatible:** View data locally on the instrument, via Fluke Connect™ mobile app and desktop software or through your facilities' WiFi infrastructure
- **Convenient instrument powering:** Power instrument directly from the measured circuit
- **Highest safety rating in the industry:** CAT IV 600 V / CAT III 1000 V rated for use at the service entrance and downstream
- **Measure all three-phases:** With included three flexible current probes
- **Fully integrated logging:** Connect other Fluke Connect™ devices to the Fluke 1734 to simultaneously log up to two other measurement parameters, virtually any parameter available on a Fluke Connect™ wireless digital multimeter or module
- **Energy Analyze Plus application software:** Download and analyze every detail of energy consumption with our automated reporting
- One-year warranty

Recommended Accessories



i17XX-FLEX 1500
1500 A 12 inch iFlex™ Current Clamps
(Purchase as individual, 3pk or 4pk)



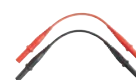
i17XX-FLEX 3000
3000 A 24 inch iFlex™ Current Clamps
(Purchase as individual, 3pk or 4pk)



i17XX-FLEX 6000
6000 A 36 inch iFlex™ Current Clamps
(Purchase as individual, 3pk or 4pk)



i40s-EL/3pk
40 A Clamp-on Current Transformer 3 pack
(Purchase as individual or 3pk)



FLUKE-17XX-TL 0.1M
Test Lead Set, 1000V CAT III, Non-stackable Connectors; 0.1 m; Red/Blk



FLUKE-17XX-TL 1.5M
Test Lead Set, 1000V CAT III, Non-stackable Connectors; 1.5 m; Red/Blk



1730-Hanger
Hanging Strap Kit



MP1-Magnet Probe 1
Magnet Probes for 4mm banana, Set of 4



1732/UPGRADE
Upgrade Kit for 1732 to 1734



C17XX
Soft case

Specifications

Parameter	Range	Max resolution	Intrinsic accuracy at reference conditions (% of reading + % of full scale)
Voltage	1000 V	0.1 V	±(0.2% + 0.01%)
Current	i17xx-flex 1500 12"	150 A	0.1 A
		1500 A	1 A
	i17xx-flex 3000 24"	300 A	1 A
		3000 A	10 A
	i17xx-flex 6000 36"	600 A	1 A
		10 A	±(1.5% + 0.03%)
	i40s-EL clamp	4 A	1 mA
	40 A	10 mA	±(0.7% + 0.02%)
Frequency	42.5 Hz to 69 Hz	0.01 Hz	±(0.1%)
Aux input	±10 V DC	0.1 mV	±(0.2% + 0.02%)
Voltage min/max	1000 V	0.1 V	±(1% + 0.1%)
Current min/max	defined by accessory	defined by accessory	±(5% + 0.2%)
THD on voltage	1000%	0.1%	±0.5
THD on current	1000%	0.1%	±0.5
Voltage harmonics 2nd ... 50th	1000 V	0.1 V	≥ 10 V: ±5% of reading < 10 V: ±0.5 V
Current harmonics 2nd ... 50th	defined by accessory	defined by accessory	≥ 3% of current range: ±5% of reading < 3% of current range: ±0.15% of range
Unbalance	100%	0.1%	±0.2

Included Accessories

Power Supply, Voltage Test Leads, 4× Alligator Clips, 3× 12 inch 1,500A Flexible Current Probe, Soft Case, Energy Analyze Plus Software, Line Cords, Colour Coding Set and Documentation on USB Flash Drive, Magnetic Hanging Strap (1734) and Magnetic Voltage Probes (1734).

Ordering Information

FLUKE 1732/B Energy Logger, Basic Version (excl. current probes)

FLUKE 1732/EUS Energy Logger (incl. current probes)

FLUKE 1734/B Energy Logger, Basic Version with Fluke Connect™ (excl. current probes)

FLUKE 1734/EUS Energy Logger (incl. current probes)

Contact your local distributor for price and availability.
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Fluke 1736 and 1738 Three-Phase Power Loggers



Fluke 1736



Fluke 1738



More visibility, reduced uncertainty

The Fluke 1736 and 1738 Three-Phase Power Loggers built with Fluke Connect™ mobile app and desktop software compatibility give you the data you need to make critical power quality and energy decisions in real-time. The ideal test tools for conducting energy studies and basic power quality logging, the 1736 and 1738 automatically capture and log over 500 power quality parameters so you have more visibility into the data you need to optimize system reliability and savings.

- **Measure all three-phases and neutral** with included 4 flexible current probes.
- **Comprehensive logging:** More than 20 separate logging sessions can be stored on the instruments. In fact, all measured values are automatically logged so you never lose measurement trends.
- **Capture dips, swells, and inrush currents:** Includes event waveform snapshot and high resolution RMS profile, along with date, timestamp and severity to help pinpoint potential root causes of power quality issues
- **Optimized user interface:** Capture the right data every time with quick, guided, graphical setup and reduce uncertainty about your connections with the intelligent verification function.
- **Complete “in-the-field” setup through the front panel or Fluke Connect™ App:** No need to return to the workshop for download and setup or to take a computer to the electrical panel.
- **Energy Analyze Plus application software:** Download and analyze every detail of energy consumption and power quality state of health with our automated reporting.
- One-year warranty

Recommended Accessories

117XX-FLEX 1500 1500 A 12 inch iFlex™ Current Clamps (Purchase as individual, 3pk or 4pk)	FLUKE-17XX-TL 2M Blue, Non-stackable Plug and 2x Alligator Clips
117XX-FLEX 3000 3000 A 24 inch iFlex™ Current Clamps (Purchase as individual, 3pk or 4pk)	FLUKE-17XX-TL 1.5M Test Lead Set, 1000 V CAT III, Non-stackable Connectors; 1.5 m; Red/Blk
117XX-FLEX 6000 6000 A 36 inch iFlex™ Current Clamps (Purchase as individual, 3pk or 4pk)	MP1-MAGNET PROBE 1 Magnet Probes for 4 mm banana, Set of 4
FLUKE-17XX AUX Input adapter	117XX 140S-EL/3PK 40 A Clamp-on Current Transformer (Purchase as individual or 3pk)
1736/UPGRADE Upgrade Kit for 1736 to 1738	1738X Soft Case

Included Accessories

Power Supply, Voltage Test Leads, 4× Alligator Clips, 4× 12 inch 1500A Flexible Current Probe, Soft Case, Energy Analyze Plus Software, Wi-Fi Adapter, Line Cords, Color Coding Set and Documentation on USB Flash Drive, Magnetic Hanging Strap (1738) and 4× Magnetic Voltage Probes (1738).

Ordering Information

- | | |
|-----------------------|--|
| FLUKE 1736/B | Power Logger, Basic Version
(excl. current probes) |
| FLUKE-1736/EUS | Power Logger,
(excl. current probes) |
| FLUKE 1738/B | Power Logger, Advanced Version
(excl. current probes) |
| FLUKE-1738/EUS | Power Logger, Advanced Version
(excl. current probes) |

	Three-Phase Energy Loggers		Three-Phase Energy Loggers	
	1732 Energy Logger	1734 Energy Logger	1736 Power Logger	1738 Advanced Power Logger
Load studies	•	•	•	•
Energy assessments	•	•	•	•
Neutral Current Measurement (four current channels)	-	-	•	•
Harmonics measurements	-	-	•	•
Voltage event capture	-	-	•	•
Advanced analysis: Waveform and Inrush event capture PQ Health (EN 51060)	-	-	Upgrade package*	•
Fully integrated logging with Fluke Connect™	Upgrade package*	•	Upgrade package*	•
WiFi	Optional	•	•	•
Wi-Fi / Bluetooth	Optional	•	Optional	•
Magnetic probe set	Optional	•	Optional	•
Magnetic hanger	Optional	•	Optional	•
Connection via WiFi router	Requires FREE software license available upon product registration.		Requires FREE software license available upon product registration.	

*Upgrade packages are available to upgrade existing 1732 Energy Loggers with the same features of the 1734 Energy logger, and to upgrade existing 1736 Power Loggers with the same features and capabilities of the 1738 Advanced Power Logger. Please note that 1732 and 1734 Energy Loggers cannot be upgraded with the functionality of 1736 and 1738 Power Loggers.

Contact your local distributor for price and availability.
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Fluke 1742, 1746 and 1748 Three-Phase Power Quality Loggers



Fluke 1746



Troubleshoot, quantify energy usage and perform quality of service surveys easier than ever

The Fluke 1742, 1746 and 1748 Three-Phase Power Quality Loggers give you fast, easy access to the data you need to make critical power quality and energy decisions in real time, and with the included Energy Analyze Plus software package you can easily create detailed reports.

Fully compliant with international power quality standards such as IEC 61000-4-30 Class A including local compliance to a variety of national and international standards and capable of simultaneously logging up to 500 parameters while also capturing events, the Fluke 1740 Series helps uncover intermittent and hard-to-find power quality issues more easily than ever. Energy Analyze Plus software quickly assesses the quality of power at the service entrance, substation, or at the load, according to national and international standards.

- "In-workshop" or "in-the-field" setup and download through PC application software using USB Memory Stick, Wi-Fi download, wired ethernet connection or via USB cable
- One-touch reporting: Create standardized reports or export data in PQDIF or NeQual compatible format for use with third-party software
- Capture dips, swells and interruptions
- Measures harmonics and interharmonics for voltage and current; also includes unbalance, flicker and rapid voltage changes
- Two-year warranty (battery not included)

Measure all power quality and power parameters	1742 Power Quality Logger	1746 Power Quality Logger	1748 Power Quality Logger
Functions			
Energy	•	•	•
Basic Power Quality	Optional	•	•
Advanced Power Quality	Optional	Optional	•
Selection Guide	1742 Power Quality Logger	1746 Power Quality Logger	1748 Power Quality Logger
Functions			
Voltage, current, power, power factor, frequency	•	•	•
Energy forward/reverse	•	•	•
Peak Demand	•	•	•
THD	•	•	•
Voltage and current harmonics (to 50th)	-	•	•
Flicker	•	•	•
Unbalance	-	•	•
Rapid voltage change events	-	•	•
Interharmonics (to 50th)	-	•	•
Dips, swells, interruption and transient events tables	-	•	•
Mains signaling	-	•	•
Inrush current	-	•	•
Transients (low frequency)/Waveform deviation events	-	-	•
Recording			
Trend	•	•	•
Waveform snapshots	-	-	•
RMS profile	-	-	•
Communication			
Ethernet	•	•	•
USB (mini B)	•	•	•
WiFi download Instrument to device	•	•	•
Wifi download via WiFi hub (requires registration)	Opt.	Opt.	Opt.

Recommended Accessories



i17XX-FLEX1.5KIP
IP65 iFlex™ 1.5KA 60 cm (24") Current Probes
(Purchase as individual, 3pk or 4pk)



i17XX-FLEX3KIP
IP65 iFlex™ 3KA 60 cm (24") Current Probes
(Purchase as individual, 3pk or 4pk)



i17XX-FLEX6KIP
IP65 iFlex™ 6KA 90 cm (36") Current Probes
(Purchase as individual, 3pk or 4pk)



i40S-EL/3PK
40 A Clamp-On Current Transformer
(Purchase as individual or 3pk)



IP65 VOLT CONN
IP65 Rated Voltage Connector



MP1-3R/1B
Magnet Probe 1 (3× Red, 1× Black)



3PHVL-1730-5M
Cable Assembly, Voltage Test Lead 3-Phase+N 5 m



17XX AUX
Auxiliary Input Adapter



174X-HANGER
174X Hanger Kit



1742-6/8 UPGRADE
Upgrade Kit 1742 to 1746/1748 & 1746 to 1748

Included Accessories

4× Flexible Current Probes, USB Stick, USB Cable, 3PHVL-1730 3-Phase + Neutral Voltage Test Lead, Test Lead Set Red/Black 0.18m, Test Lead Set Red/Black 1.5m, 4× Alligator Clips, 173X/174X Soft Case, Cable Marker Kit, MP1-3R/1B-Magnet Probe 1 Set (3 Red, 1 Black) and Hanger Kit (1748).

Ordering Information

FLUKE-1742/15/EUS	Three-Phase Power Quality Logger
FLUKE-1742/30/EUS	Three-Phase Power Quality Logger
FLUKE-1746/15/EUS	Three-Phase Power Quality Logger
FLUKE-1746/30/EUS	Three-Phase Power Quality Logger
FLUKE-1748/15/EUS	Three-Phase Power Quality Logger
FLUKE-1748/30/EUS	Three-Phase Power Quality Logger

Contact your local distributor for price and availability.
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Fluke Norma 6000 Series Portable Power Analyzers



Fluke Norma 6003



Fluke Norma 6004



The Fluke Norma 6000 Series Portable Wide-band Precision Power Analyzers gives you more freedom than ever before to make high accuracy power measurements wherever you need. Designed for portability the lightweight, battery powered Fluke 6000 Series eliminates the need to carry large analyzers into the field, allowing you to make measurements directly at the load in nearly any environment. By measuring directly at the load, you can discover how the equipment operates under real-world conditions, with real-world variables, not just at a test bench or in the lab.

- Measure three-phase power and DC output power at the same time (available in 3 or 4 channel), with voltage and current inputs on each channel
- Make mechanical torque and speed measurements using the included inputs and outputs of the Fluke 6003+ and 6004+
- 0.1% accuracy, 500 kHz bandwidth, 200 kS/s sample rate so you can rely on the power conversion system measurements you take no matter what distortion may be present
- Take precision power measurements almost anywhere – highly portable, battery powered analyzer weighing only 3.5 kg and 9.3 cm depth with up to 10 hours of battery life
- View critical data in the field on the main display meter, including waveform, harmonics up to the 100th, vector and trend
- Ensure high common-mode rejection and allow flexible configurations according to measurement requirements using the electrically isolated channels
- User-adjustable measurement rate from 100 ms to 1 s with continuous logging via 32 GB of onboard storage
- Easy in-field set up using the large 5.7" front LCD screen or a remote PC connection (USB or RS485),
- Online measuring, data download and analysis with included PC software (Fluke NormaView Software)
- Three-year warranty

	Norma 6003	Norma 6003+	Norma 6004	Norma 6004+
Number of channels for voltage/current	3/3	3/3	4/4	4/4
Motor speed/torque measurement	-	Yes	-	Yes
Basic accuracy	0.1%			
Channel-to-channel isolation	Yes			
Main Function	Meter, Scope, Harmonic, Phasor, Trend			
Measuring Parameters *Available in N6003+ and N6004+ only	RMS, DC Component, AC Component, Rectified Mean, Peak Value, Peak-Peak, Crest Factor, Form Factor, Fundamental Component, Fundamental Content, Harmonic Distortion, Harmonic Content, Harmonic Factor for voltages and currents, Active Power, Reactive Power, Apparent Power, Power Factor, Phase Shift, Efficiency, Impedance, Electric Energy, Charge/Discharge capacity (Ah), Frequency, Motor Speed*, Torque*, Mechanical Power*, Mechanical Energy*			
Ingress Protection (IEC 60529)	IP50			
Safety Compliance (IEC 61010-2-030)	CAT III 1000 V, CAT IV 600 V			
Color screen	14.48 cm (5.7 in), backlight, 4:3			
Lithium battery	10.8 V/5000 mAh, 54 Wh			
Communication Interface	USB/RS485			
PC Software	Fluke NormaView Software			
Storage Capacity	32 GB			

Recommended Accessories



801-2010S
2000 A AC/DC
Current Clamp



801-2010S/3PK
2000 A AC/DC
Current Clamp 3 pack



BP291
Additional Battery



Included Accessories

Battery BP291, Power Supply Adapter (18V DC, CAT IV 600V Adapter), Power Line Cord, Soft Case, Mains Adapter Set, Test Lead Set, USB (mini B) Cable, RS-485/Synchrony Adapter (3.81 mm, black, 3 pin), Speed / Torque Adapter (3.81 mm, black, 6 pin), USB Flash Drive for PC SW and User Manual.

3-Channel Models: Test Leads, 1.5 m, 3× Red, 3× Black, 6× Blue, Alligator Clips, 3× Red, 3× Black, 6× Blue

4-Channel Models: Test Leads, 1.5 m, 4× Red, 4× Black, 8× Blue, Alligator Clips, 4× Red, 4× Black, 8× Blue

Ordering Information

NORMA 6003 3-Channel Portable Power Analyzer

NORMA 6003+ 3-Channel Portable Power Analyzer with Speed/Torque Inputs

NORMA 6004 4-Channel Portable Power Analyzer

NORMA 6004+ 4-Channel Portable Power Analyzer with Speed/Torque Inputs

Contact your local distributor for price and availability.
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Power Quality



Fluke VR1710 Single Phase Voltage Quality Recorder



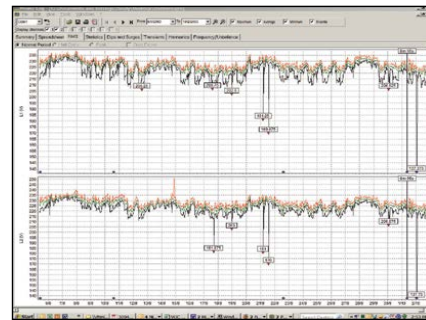
Fluke VR1710



Easy-to-use solution for detecting and recording voltage quality problems

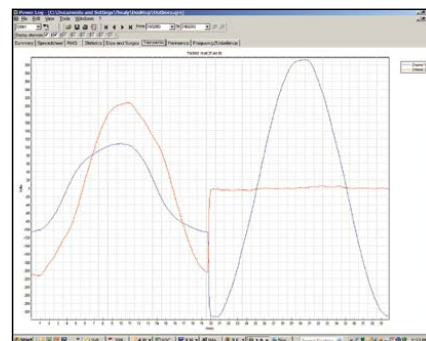
The Fluke VR1710 is a single-phase, plug-in voltage quality recorder that provides fast and easy recording of voltage trends, dropouts, harmonics and general power quality—including dips and surges—to help maintenance and facilities management personnel easily pinpoint the root cause of voltage problems. Voltage quality parameters including RMS average, transients, flicker, and harmonics up to the 32nd are recorded using a user-selected average period from 1 second to 20 minutes.

- Fast and easy recording of voltage trends, dropouts and power quality: Easily pinpoint the root cause of single-phase voltage problems
- Extremely easy to use: Plugs directly into the mains power socket and capture data
- Quickly see what happened and when: Min, Max, average RMS values (1/4 cycle) with time stamp and transient display (>100 μ s) with time stamp
- Easily identify problems: Power quality or equipment related Flicker recording to EN 61000-4-15, individual harmonic and THD values with trends
- Includes PowerLog software: For quick download, analysis and automatic reporting
- Save time: Generate power quality reports automatically with pre-set templates
- One-year warranty



PowerLog Setup – Simple set up of internal clock, logging periods, and intervals with default values for quick results.

PowerLog View – Data presentation showing RMS voltage and harmonic trends, actual transients, summary information and statistics in accordance with EN50160.



Actual transient display (> 100 μ s) with time stamp – Quickly identify issues with included graphical software.



Includes PowerLog software

Applications

Voltage recording	Monitors and records supply voltage; measures RMS average, minimum and maximum values, and checks whether the socket outlet is providing voltage within tolerance.
Distortion measurement	Measure frequency and harmonics; check whether the distorting loads (UPS systems, drives, etc.) are affecting your other equipment.
Flicker measurement	Quantify the affects of switching loads on lighting systems.
Voltage transients	Capture those intermittent, momentary events that may be affecting your equipment; the full waveform is captured with date, timestamp, and duration.

Specifications

Operating voltage	70 V to 300 V 0.5% of range
Min/Max/Avg RMS value	Resolution 0.12 V
Number of events	175 000
Dips/Interruptions	Yes
Time resolution	5 ms
Voltage resolution	0.12 V
Over-voltages	Yes
Frequency	Yes
Harmonics measurement	IEC 61000-4-7 (up to 32nd)
Flicker measurement	IEC 61000-4-15
Number of recording channels	1 Phase to Neutral, 2 Phase/Neutral to Ground
Recording time	1 day to 339 days depending on average time from 1 second to 20 minutes
Transients	Yes
Frequency range	50 Hz \pm 1 Hz and 60 Hz \pm 1 Hz
Safety Compliance (IEC 61010-2-030)	CAT II 300 V

Included Accessories

USB Cable, PowerLog Software CD, Power Cord Adapter.

Ordering Information

FLK-VR1710 Voltage Quality Recorder

Contact your local distributor for price and availability.
fluke.com/wtb