Electronix EXPRESS
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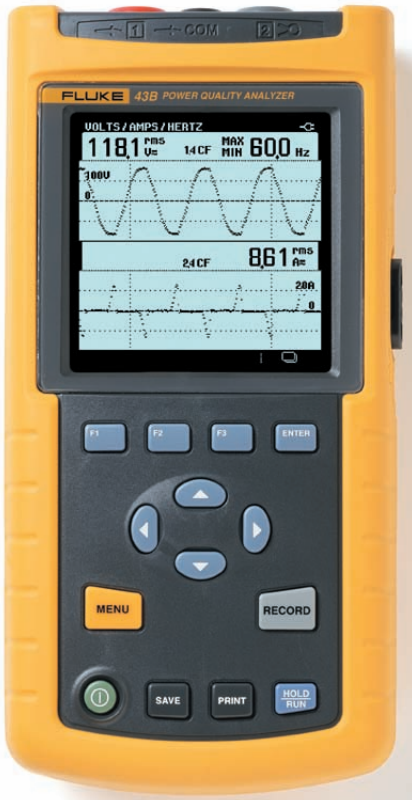
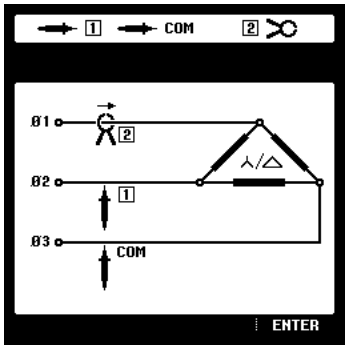
Fluke 43B Power Quality Analyzer

Maintain power systems, troubleshoot power problems, diagnose equipment failures

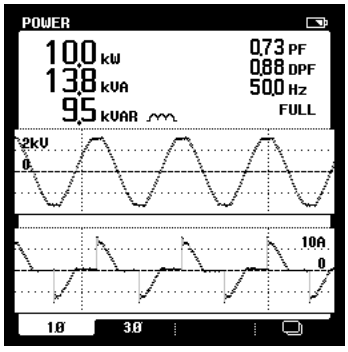


The Fluke 43B Power Quality Analyzer performs the measurements you need to maintain power systems, troubleshoot power problems and diagnose equipment failures. All in a rugged handheld package.

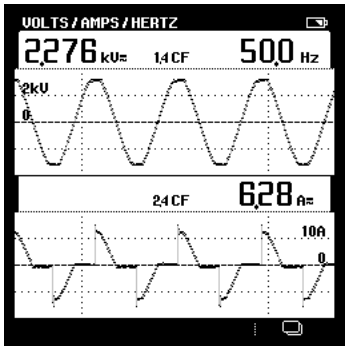
- **New!** NiMH Battery provides extended operating time of 6.5 hours
- Combines the most useful capabilities of a power quality analyzer, multimeter and scope
- Calculates 3-phase power on balanced loads, from a single-phase measurement
- Trends voltage, current, frequency, power harmonics and captures voltage sags, transients and inrush current
- Monitoring functions help track intermittent problems and power system performance
- Records two selectable parameters for up to 16 days
- 20 measurement memories to save/recall screens and data with cursor readings
- FlukeView® Software can log harmonics and all other readings over time and provides a complete harmonics profile up to the 51st harmonic
- Measures resistance, diode voltage drop, continuity, and capacitance
- Users/applications manual and power quality video to help answer tough questions
- Complete package with voltage probes and 400 A current clamp, FlukeView Software and optically isolated interface cable
- 3 year warranty on the Fluke 43B, 1 year on accessories



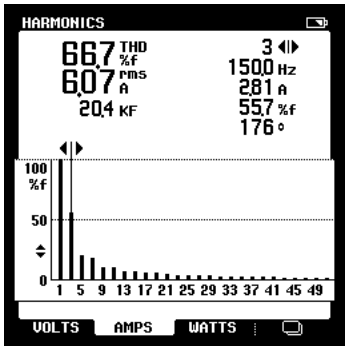
- On screen graphics show you how to set up 3-phase power measurements



- Watts, power factor, displacement power factor (Cos ϕ), VA and VAR
- Voltage and current waveforms



- Voltage and current waveforms
- True-rms voltage and current
- Frequency



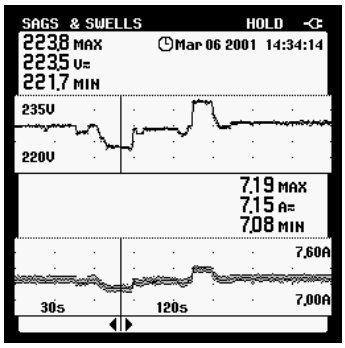
- Voltage, current, and power harmonics
- Up to 51st harmonic
- Total harmonic distortion (THD)
- Phase angle of individual harmonics

Electrical Safety 600 V CAT II

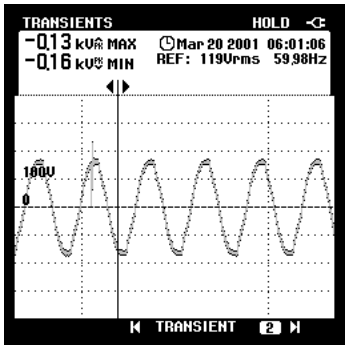
Specifications

Accuracies are stated as ± (percentage of reading + counts) without probes unless otherwise noted.

Specifications are valid for signals with a fundamental between 40 and 70 Hz.



- Measurements are always automatically recorded to instantly show changes over time
- Use cursors to read time and date of sags and swells



- Catch voltage transients and waveform distortion down to 40 nS
- Catch and save up to 40 transients
- Correlate the cause of transients with time and date stamps

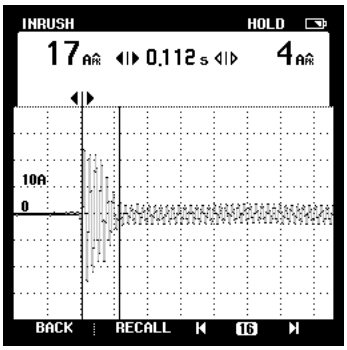
Input Characteristics	Ranges	Accuracy
Input impedance	1 MΩ, 20 pF	
Voltage rating	600 Vrms, CAT III	
Volt/Amps/Hertz		
True-rms voltage (AC+DC)	5.000 V, 50.00 V, 500.0 V, 1250 V*	± (1 % + 10 counts)
True-rms current (AC+DC)	50.00 A, 500.0 A, 5.000 kA, 50.00 kA, 1250 kA	± (1 % + 10 counts)
Frequency	10.0 Hz to 15.0 kHz	± (0.5 % + 2 counts)
CF Crest Factor	1.0 to 10.0	± (5 % + 1 count)
Power		
W, VA, VAR Reactive Power 1-phase and 3-phase, 3 conductor balanced loads	250 W 2.50 kW, 25.0 kW, 250kW, 2.50 MW, 25 MW, 250 MW, 625 MW, 1.56 GW	± (2 % + 6 counts) Total Power ± (4 % + 4 counts) Fundamental Power
PF Power Factor	0.00 to 1.00	± 0.04
DPF Displacement Power Factor	0.00 to 0.25 0.25 to 0.90 0.90 to 1.00	not specified ± 0.04 ± 0.03
Hz Frequency fundamental	40.0 to 70.0 Hz	± (0.5 % + 2 counts)
Harmonics		
Volts, Amps, Watts	Fundamental	V, A ± (3 % + 2 counts), W ± (5 % + 2 counts)
	2 to 31st Harmonic	V, A ± (5 % + 3 counts), W ± (10 % + 10 counts)
	32 to 51st Harmonic	V, A ± (15 % + 5 counts), W ± (30 % + 5 counts)
Frequency of fundamental	40 Hz to 70 Hz	± 0.25 Hz
Phase	Volt & Amps (between Fund. & Harmonic)	2nd (± 3°) … 51st (± 15°)
	Watts (between Volt Fund. & Amps Harmonic)	Fund (± 5°) … 51st (± 15°)
K-Factor (Amps & Watts)	1.0 to 30.0	± 10 %
THD	0.00 to 99.99	± (3% + 8 counts)
Sags & Swells		
Recording times (selectable)	4 min to 16 days	
Vrms actual, Vrms max, min (AC + DC)	5.000 V, 50.00 V 500.0 V, 1250 V*	Readings ± (2 % +10 counts) Cursor readings ± (2 % + 12 counts) Cursor Readings Average ± (2 % +10 counts)
Arms actual, Arms max, min (AC + DC)	50.00 A, 500.0 A, 5.000 kA, 50,00 kA	
Recording		
Recording times (selectable)	4 min to 16 days	
Parameters	Choose one or two parameters from one of the groups below	
V/A/Hz	Line Voltage, Current, Frequency	
Power	Watts, VA, VAR, PF, DPF, Frequency	
Harmonics	THD, Volts (Fund. & Harmonic), Amps(F&H) Watts(F&H) Freq.(H), %(H) of total, Phase(H), KF	
Ohms	Ohms, Diode, Continuity, Capacitance	
Temperature	°C or °F	
Scope	DC Voltage, DC Current, AC Voltage, AC Current, Frequency, Pulse Width + or –, Phase, Duty cycle + or –, Peak max, Peak min, Peak min-max, Crest Factor	
Transients		
Minimum pulse width	40 ns	
Useful bandwidth input	DC to 1 MHz (with test leads TL24)	
Number of transients	40	
Voltage threshold settings	20 %, 50 %, 100 %, 200 % above or below reference signal	
Reference signal	After START, the Vrms and frequency of the signal are measured. From these data a pure sinewave is calculated as reference for threshold setting.	
Vpeak min, Vpeak max at cursor	10 V, 25 V, 50 V, 125 V, 250 V, 500 V, 1250 V	± 5 % of full scale

*Rated 600 V CAT II

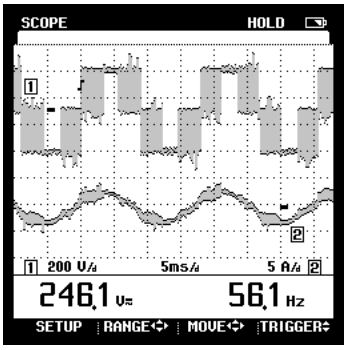
Inrush Current	Ranges	Accuracy
Current ranges (selectable)	1 A, 5 A, 10 A, 50 A, 100 A, 500 A, 1000 A	
Inrush times (selectable)	1 s, 5 s, 10 s, 50 s, 100 s, 5 min	
Cursor readings	A peak max at cursor 1 and cursor 2	± 5 % of full scale
Time between cursors**	4 to 235 pixels	± (0.2 % + 2 pixels)
Scope, dual channel scope with measurement reading		
Input impedance		
Input 1	1 MΩ/12 pF; with BB120: 20 pF	± 2 pF; with BB120 ± 3 pF
Input 2	1 MΩ/10 pF; with BB120: 18 pF	± 2 pF; with BB120 ± 3 pF
Vertical		
Voltage ranges	50 mV/div to 500V/div	± (1% + 2 pixels)
Vertical sensitivity, resolution	5 mV/div to 500V/div, 8 bit (256 levels)	
Bandwidth input 1 (voltage)	DC to 20 MHz at inputs, or with VPS40 probe (Opt); 1 MHz with TL24 Leads	
Bandwidth input 2 (current)	DC to 15 kHz at inputs 10 kHz with 80i-500s Current Clamp	
Coupling	DC, AC (10Hz (-3 dB)	
Horizontal		
TimeBase modes	Normal, roll, single	
TimeBase ranges	60 s/div to 20 ns/div	± (0.4 % + 1 pixel)
Sampling rate	25 MS/s	
Record length (min / max samples)	512 per channel	
Trigger source	Input 1 or Input 2 or Automatic selection	
Trigger mode	Automatic Connect-and-View™, Free Run, Single Shot.	
Connect-and-View™	Advanced automatic triggering that recognizes signal patterns and automatically adjusts triggering, timebase and amplitude. Automatically displays stable pictures of complex and dynamic signals like motor drive and control signals.	
Pre-trigger	Up to 10 divisions	
Measurement readings, per channel selectable	Volts & Amps (DC, AC, AC + DCrms, Peak max, Peak min, Peak min / max), Frequency, Duty cycle + or – , Phase, Pulse Width + or –, Crest factor	
Ohms, Diode, Continuity, Capacitance		
Ohms	500.0 Ω 5.000 kΩ, 50.00 kΩ, 500.0 kΩ, 5.000 MΩ, 30.00 MΩ	± (0.6 % +5 counts)
Diode voltage	0 to 3.000 V	± (2 % +5 counts)
Continuity, shorts > 1 ms	Beeper on at < 30 Ω ± 5 Ω,	
Capacitance	50.00 nF, 500.0 nF, 5.000 µF, 50.00 µF, 500.0 µF	±(2 % +10 counts)
Temperature***	-100.0 °C to 400.0 °C, -200.0 °F to 800.0 °F	±(0.5 % +5 counts)
Max current, max open circuit volt.	0.5 mA, < 4 V (all functions above)	
Memory		
Number of screens	20	
Optical Isolated Interface		
To printer	Supports HP LaserJet™, DeskJet, Epson FX/LQ and Postscript printers with optional PAC91 Printer Adapter Cable	
To PC	FlukeView® Power Quality Analyzer software with PM9080 Interface Adapter included	
FlukeView® Power Quality Software		
Hardware requirements	PC or 100 % compatible with Windows® 95, 98, Me, 2000, NT4.0.	

** 1 pixel = inrush time/250

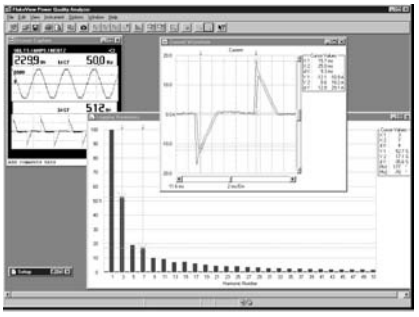
*** Requires optional temperature accessory



- Inrush current up to 500A with supplied current probe
- Use cursors to measure inrush current timing



- Connect-and-View™ scope for quick waveform display
- 20MHz bandwidth with optional 10:1 voltage probe. 15kHz on current channel with optional current clamp



- FlukeView® Power Quality Analyzer software (included)
- Capture measurement screens for professional-looking reports
- Log readings to your computer disk drive
- Works with Windows word processing, spreadsheet and analysis software
- Windows 95 / 98 / Me / 2000 / NT 4.0

General Specifications

Power	
Line voltage adapter/battery charger included	
Installed battery	Rechargeable NiMH pack (4.8v dc)
Operating time	4 hours
Charging time	7 hours
Environmental	
Temperature	0 °C to 50 °C (32 °F to 122 °F)
Environmental	MIL 28800E, Type 3, Class III, Style B
Enclosure	IP51 (dust, drip water proof)
Mechanical Data	
Size (H x W x D)	232 x 115 x 50 mm (9.1 x 4.5 x 2 inches)
Weight	1.1 kg (2.5 lbs.) incl. battery pack
Safety	
For measurements on 600 Vrms Category III installations, Pollution Degree 2 in accordance with EN 61010-1 ANSI/ISA S82.01-1994 CAN/CSA-C22.2 No. 61010.1-04	
Surge protection	6 kV on input 1 and 2
Floating measurements	600 Vrms from any terminal to ground
Warranty	**3 years parts and labor on Fluke 43B, 1 year on accessories**

Ordering Information

Fluke 43B Power Quality Analyzer

Included Accessories

C120 Hard Case
TL24 Test Leads
AC20 Industrial Test Clips
AC85 Large Jaw Alligator Clips
TP1 Flat-tipped Slim-Reach™ Test Probes
TP4 4 mm Round Slim-Reach™ Test Probes
i400s 400 A AC Current Clamp
OC4USB Optically Isolated USB Interface Adapter
BP120MH Rechargeable NiMH Battery Pack (installed)
PM8907 Line Voltage Adapter/Battery Charger
SW43W FlukeView® Power Quality Analyzer Software for Windows

Power Quality CD with:

- **User's manual**
- **Power quality video**
- **Application guide**

Getting started guide
Shielded Banana-to-BNC adapter

Optional Accessories

C789 Soft Carrying Case
80i-110s 100A AC/DC Current Probe
i200s AC Current Clamp
i1000s 1000A AC Current Clamp
i2000flex Flexible 2000A AC Current Probe
i3000s Clamp-On AC Current Clamp
VPS40 10:1 Voltage Probe
BB120 Two Shielded Banana-to-BNC Adapters
80TK Thermocouple Module
80T-150U Universal Temperature Probe
PAC91 Parallel Printer Adapter
TLK225 SureGrip® Master Accessory Test Lead Kit
TL220 63" Test Lead Set
TL221 Extension Lead Set
TL223 Electrical Test Lead Set