

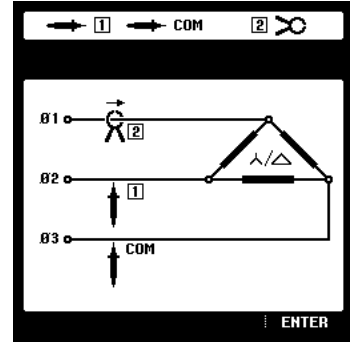
## Fluke 43B Power Quality Analyzer

Maintain power systems, troubleshoot power problems, diagnose equipment failures

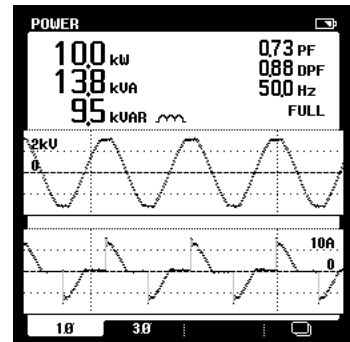


The Fluke 43B Power Quality Analyzer performs the measurements you need to maintain power systems, troubleshoot power problems and diagnose equipment failures. All in a rugged handheld package.

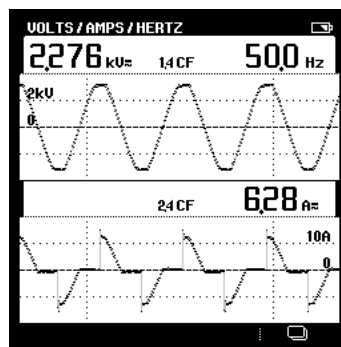
- **New!** NiMH Battery provides extended operating time of 6.5 hours
- Combines the most useful capabilities of a power quality analyzer, multimeter and scope
- Calculates 3-phase power on balanced loads, from a single-phase measurement
- Trends voltage, current, frequency, power harmonics and captures 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 51<sup>st</sup> 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



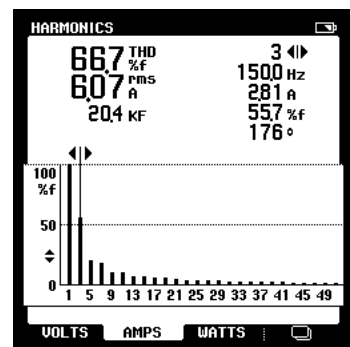
- On screen graphics show you how to set up 3-phase power measurements



- Watts, power factor, displacement power factor (Cos  $\phi$ ), VA and VAR
- Voltage and current waveforms



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

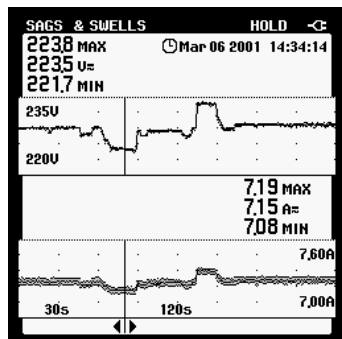


- Voltage, current, and power harmonics
- Up to 51<sup>st</sup> harmonic
- Total harmonic distortion (THD)
- Phase angle of individual harmonics

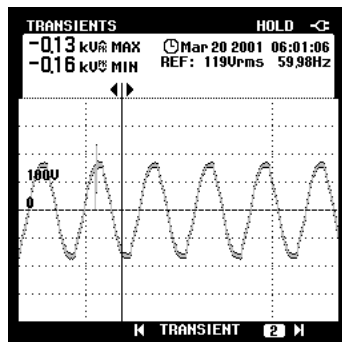
## Specifications

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

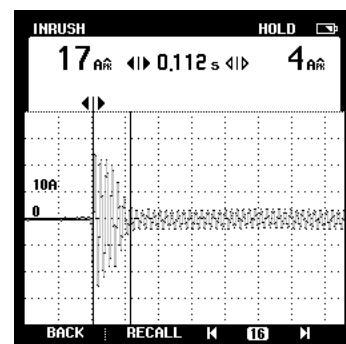
| Input Characteristics   | Ranges   | Accuracy  |
|---|--|---|
| Input impedance   | 1 MΩ, 20 pF  |   |
| Voltage rating  | 600 Vrms, CAT III  |   |
| <b>Volt/Amps/Hertz</b>  |  |   |
| True-rms voltage (AC+DC)  | 5.000 V, 50.00 V, 500.0 V, 1250 V*   | ± (1 % + 10 counts)   |
| True-rms current (AC+DC)  | 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)   |
| <b>Power</b>  |  |   |
| W, VA, VAR Reactive Power<br>1-phase and 3-phase, 3<br>conductor balanced loads | 250 W 2.50 kW, 25.0 kW, 250kW, 2.50 MW,<br>25 MW, 250 MW, 625 MW, 1.56 GW  | ± (2 % + 6 counts) Total Power<br>± (4 % + 4 counts) Fundamental<br>Power   |
| PF Power Factor   | 0.00 to 1.00   | ± 0.04  |
| DPF Displacement Power Factor   | 0.00 to 0.25<br>0.25 to 0.90<br>0.90 to 1.00   | not specified<br>± 0.04<br>± 0.03   |
| Hz Frequency fundamental  | 40.0 to 70.0 Hz  | ± (0.5 % + 2 counts)  |
| <b>Harmonics</b>  |  |   |
| Volts, Amps, Watts  | Fundamental  | V, A ± (3 % + 2 counts),<br>W ± (5 % + 2 counts)  |
|   | 2 to 31st Harmonic   | V, A ± (5 % + 3 counts),<br>W ± (10 % + 10 counts)  |
|   | 32 to 51st Harmonic  | V, A ± (15 % + 5 counts),<br>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<br>Harmonic )   | Fund (± 5°) ... 51st (± 15°)  |
| K-Factor (Amps & Watts)   | 1.0 to 30.0  | ± 10 %  |
| THD   | 0.00 to 99.99  | ± (3% + 8 counts)   |
| <b>Sags &amp; Swells</b>  |  |   |
| Recording times (selectable)  | 4 min to 16 days   |   |
| Vrms actual, Vrms max,<br>min (AC + DC)   | 5.000 V, 50.00 V 500.0 V, 1250 V*  | Readings ± (2 % + 10 counts)<br>Cursor Readings ± (2 % + 12 counts)<br>Cursor Readings Average ± (2 %<br>+ 10 counts) |
| Arms actual, Arms max,<br>min (AC + DC)   | 50.00 A, 500.0 A, 5.000 kA, 50.00 kA   |   |
| <b>Recording</b>  |  |   |
| Recording times (selectable)  | 4 min to 16 days   |   |
| <b>Parameters</b>   |  |   |
| V/A/Hz  | Choose one or two parameters from one of the groups below<br>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 -,<br>Phase, Duty cycle + or -, Peak max, Peak min, Peak min-max, Crest Factor |   |
| <b>Transients</b>   |  |   |
| 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<br>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

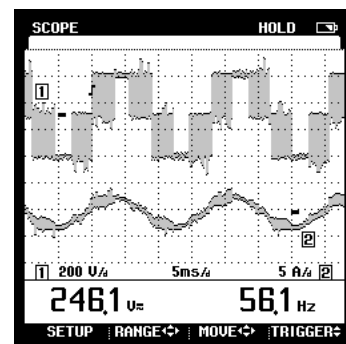
| Inrush Current  | Ranges  | Accuracy                  |
|---|---|---------------------------|
| Current ranges (selectable)                               | 1 A, 5 A, 10 A, 50 A, 100 A, 500 A, 1000 A  |                           |
| Inrush times (selectable)                                 | 1 s, 5 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)      |
| <b>Scope, dual channel scope with measurement reading</b> |   |                           |
| 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 |
| <b>Vertical</b>   |   |                           |
| 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<br>10 kHz with 80i-500s Current Clamp  |                           |
| Coupling  | DC, AC (10Hz (-3 dB))   |                           |
| <b>Horizontal</b>   |   |                           |
| 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   |                           |
| <b>Ohms, Diode, Continuity, Capacitance</b>               |   |                           |
| 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,<br>-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)   |                           |
| <b>Memory</b>   |   |                           |
| Number of screens   | 20  |                           |
| <b>Optical Isolated Interface</b>                         |   |                           |
| 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   |                           |
| <b>FlukeView® Power Quality Software</b>                  |   |                           |
| Hardware requirements                                     | PC or 100 % compatible with Windows® 95, 98, Me, 2000, NT4.0.   |                           |

\*\* 1 pixel = inrush time/250

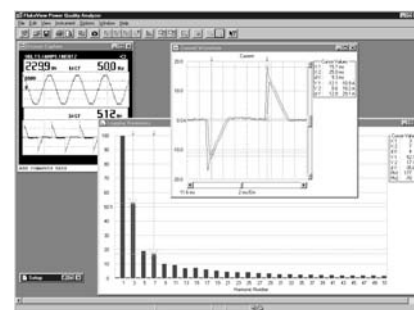
\*\*\* Requires optional temperature accessory



- 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

|   |  |
|---|--|
| <b>Power</b>  |  |
| Line voltage adapter/battery charger included   |  |
| Installed battery   | Rechargeable NiMH pack (4.8v dc)                                   |
| Operating time  | 4 hours  |
| Charging time   | 7 hours  |
| <b>Environmental</b>  |  |
| 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)                                      |
| <b>Mechanical Data</b>  |  |
| 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                               |
| <b>Safety</b>   |  |
| For measurements on 600 Vrms Category III installations, Pollution Degree 2 in accordance with EN 61010-1<br>ANSI/ISA S82.01-1994<br>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                               |
| <b>Warranty</b>   | <b>3 years parts and labor on Fluke 43B, 1 year on accessories</b> |

### Ordering Information

**Fluke 43B** Power Quality Analyzer

### Included Accessories

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

### Power Quality CD with:

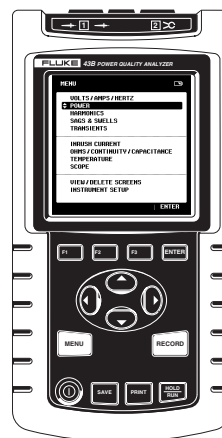
- User's manual
- Power quality video
- Application guide

### Getting started guide

**Shielded Banana-to-BNC adapter**

### Optional Accessories

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



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

### Fluke Corporation

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