

AEMC Single-Phase Power Quality Analyzer



- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures, displays and stores inrush current waveforms and statistics
- Stores up to eight screen captures
- Stores up to 1MB of trend recorded data
- Configurable from DataView® software or front panel
- Captures up to 4096 alarm events using up to 10 different thresholds
- Displays and records up to 17 different power quality parameters
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

All models include current probe with 10 ft lead and black connector, black & red 10 ft voltage leads and alligator clips, optical USB cable, NiMH battery, US 120V power cord, DataView® software, carrying bag, soft carrying pouch and user manual.

▲ 8230 PowerPad® Jr.

DataView® Software included with Model 8230

- Display and analyze real-time or recorded data on the PC
- Configure all PowerPad® Jr. functions & parameters
- Customize views, templates and reports
- Create and store a complete library of configurations
- Zoom in and out and pan through sections of the graph
- Display waveforms, trend graphs, harmonic spectrums, text summaries, transients, event logs & stored alarms

ORDERING INFORMATION

AE/2130.82	PowerPad® Jr. Model 8230 w/MN93-BK (240A)
AE/2130.83	PowerPad® Jr. Model 8230 w/SR193-BK (1200A)
AE/2130.84	PowerPad® Jr. Model 8230 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.85	PowerPad® Jr. Model 8230 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.86	PowerPad® Jr. Model 8230 w/MR193-BK (1000AAC/1400ADC)
AE/2130.87	PowerPad® Jr. Model 8230 w/MN193-BK (6A/120AAC)

SPECIFICATIONS

Electrical	
Voltage (TRMS)	660V Phase-to-Phase, 600V Phase-to-Neutral
Current (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A MR Clamp: 10 to 1000AAC, 10 to 1400ADC SR Clamp: 3 to 1200A AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, kWh, kVARh, kVAh, K-Factor, Flicker, Harmonic Phase Shift, Phase Rotation
Harmonics	THD-R, THD-F, V, A, VA 1st to 50th, Direction, Sequence
Sampling Frequency	256 samples/cycle
Data Storage	1.5MB partitioned for waveforms, alarms & trend
Power Source	NiMH AA rechargeable battery pack AC Supply: 120/230VAC (50/60Hz)
Battery Life	>Eight hrs with display on, >40 hrs with display off (recording mode)
Mechanical	
Communication Port	Optically isolated USB
Display	1/4 VGA (320 x 240) color LCD
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Safety Rating	EN 61010, 600V Cat. III, Pollution Degree 2

AEMC Power Quality Meter



- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak value and K-Factor
- Calculates and displays Watts, VARs and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures and displays inrush current
- Calculates & displays phase rotation & RPM
- Displays °F or °C & resistance to 2000Ω
- Conducts continuity and diode tests
- Stores up to nine complete sets of readings for all volt, amp, power, harmonics and other measurements
- Configurable from DataView® software or front panel
- Operates off batteries or optional AC adapter
- Includes DataView® software for data storage, real-time waveform display, analysis and report generation

All models include current probe with 10 ft lead & black connector, black & red 10 ft voltage leads and alligator clips, optical USB cable, six 1.5V batteries, two safety test probes, DataView® software, carrying bag, soft carrying pouch and user manual.

▲ 8220

Three-line backlit digital display with custom icons

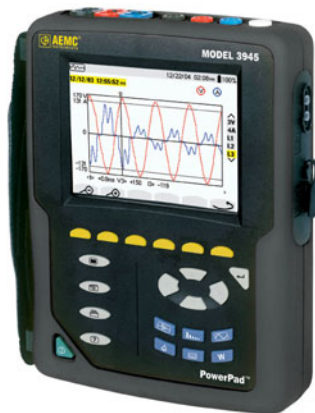
ORDERING INFORMATION

AE/2130.91	Power Quality Meter Model 8220 w/MN93-BK (240A)
AE/2130.92	Power Quality Meter Model 8220 w/SR193-BK (1200A)
AE/2130.93	Power Quality Meter Model 8220 w/24" AmpFlex® 193-24-BK (6500A)
AE/2130.94	Power Quality Meter Model 8220 w/36" AmpFlex® 193-36-BK (6500A)
AE/2130.95	Power Quality Meter Model 8220 w/MR193-BK (1000AAC/1400ADC)
AE/2130.96	Power Quality Meter Model 8220 w/MN193-BK (6A/120AAC)

SPECIFICATIONS

Electrical	
Voltage (TRMS)	660V Phase-to-Phase, 600V Phase-to-Neutral
Current (TRMS)	MN Clamp: 5mA to 120A or 2 to 240A MR Clamp: 10 to 1000AAC, 10 to 1400ADC SR Clamp: 3 to 1200A AmpFlex®: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 70Hz
Other Measurements	kW, kVAR, PF, DPF, VA, Harmonics, Phase Rotation, Temperature, RPM, Resistance, Continuity, Diode Test
Sampling Frequency	256 samples/cycle
Data Storage	Stores nine sets of readings
Power Source	Six 1.5V AA Alkaline batteries (>8hr life with display on) AC Supply: 120/230VAC (50/60Hz) – optional
Communication Port	Optically isolated USB
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)

AEMC Three-Phase Power Quality Analyzers



**PowerPad™
3945B**



- True RMS single-, two- and three-phase measurements at 256 samples/cycle, plus DC
- Real-time color waveforms
- Easy-to-use on-screen setup
- Automatic current probe recognition and scaling
- True RMS voltage and current measurement
- Measures DC volts, amps and power
- Display and capture voltage, current and power harmonics to 50th order, including direction, in real time
- Capture transients down to 1/256th of a cycle
- Phasor diagram display
- VA, VAR and W per phase and total
- kVAh, VARh and kWh per phase and total
- Neutral current display for three-phase
- Transformer K-factor display
- Power Factor, displacement PF display
- Captures up to 50 transients
- Short-term flicker display
- Phase unbalance (current and voltage)
- Harmonic Distortion (total and individual) from 1st to 50th
- Alarms, surges and sags
- Screen snapshot function captures waveforms or other information on the display
- Includes DataView® software for data storage, real-time display, analysis and report generation

SPECIFICATIONS

Electrical

Sampling Frequency	256 samples/cycle
Data Storage	3945B: 4MB 8335: 2GB SD card
Voltage (TRMS)	3945B: 960V Ø-Ø, 480V Ø-N 8335: 10-1000V Ø-Ø & Ø-N
Current (TRMS)	MN Clamp: 5mA to 100mA/120A or 2 to 240A MR Clamp: 10 to 1000Aac, 10 to 1400Adc SR Clamp: 3 to 1200A AmpFlex™: 10 to 6500A (Crest factor at 6500 = 1)
Frequency	40 to 69Hz
Other Measurements	kW, kVAR, kWh, kVARh, kVAh, K-Factor, Flicker 3945B: PF, DPF 8335: INrush
Harmonics	1st to 50th, Direction, Sequence
Power Source	9.6V NiMH rechargeable battery pack AC Supply: 110/230VAC ±20% (50/60Hz)
Battery Life	≥8 hrs with display on; ≥35 hours with display off (record mode)

Mechanical

Communication	Port Optically coupled RS-232
Display	1/4 VGA (320 x 240) color LCD
Dimensions	9.5 x 7 x 2" (240 x 180 x 55mm)
Weight	4.6 lbs (2.1 kg)
Safety Rating	3945B: 600V CAT III 8335: 1000V, CAT IV



All models include three color-coded current probes with 10 ft leads (MN93 example shown), four* color-coded 10 ft voltage leads, four* color-coded alligator clips, RS-232 DB9F optically coupled serial cable, NiMH battery, US 120V power cord, DataView® software, carrying bag, soft carrying pouch and user manual.
*Five in 8335 Kits

ORDERING INFORMATION

AE/2130.75	PowerPad™ Model 3945B w/MN93 (240A)
AE/2130.76	PowerPad™ Model 3945B w/SR193 (1200A)
AE/2130.77	PowerPad™ Model 3945B w/24" AmpFlex™ 193-24 (6500A)
AE/2130.78	PowerPad™ Model 3945B w/36" AmpFlex™ 193-36 (6500A)
AE/2130.79	PowerPad™ Model 3945B w/MR193 (1000Aac/1400Adc)
AE/2130.80	PowerPad™ Model 3945B w/MN193 (6A/120Aac)
AE/2136.21	PowerPad® Model 8335 w/MN93 (240A)
AE/2136.22	PowerPad® Model 8335 w/SR193 (1200A)
AE/2136.23	PowerPad® Model 8335 w/24" AmpFlex® 193-24 (6500A)
AE/2136.24	PowerPad® Model 8335 w/36" AmpFlex® 193-36 (6500A)
AE/2136.25	PowerPad® Model 8335 w/MR193 (1000AAC/1400ADC)
AE/2136.26	PowerPad® Model 8335 w/MN193 (5A/120AAC)

Accessories (Optional)

AE/2140.14	Set of three color-coded MN193 probes (6A/120A) with 10 ft leads
AE/2140.17	5A Adapter box
AE/2140.61	Set of four color-coded 30 ft voltage leads
AE/2140.24	Set of three color-coded MN93-30 probes (240A) with 30 ft leads
AE/2140.25	Set of three color-coded SR193-30 probes (1200A) with 30 ft leads
AE/2140.26	Set of three color-coded 24" AmpFlex™ 193-24-30 probes (6500A) with 30 ft leads
AE/2140.27	Set of three color-coded 36" AmpFlex™ 193-36-30 probes (6500A) with 30 ft leads
AE/2140.28	One AC/DC Current Probe Model MR193-BK (black connector) (1000Aac/1400Adc)
AE/2140.29	Set of three color-coded MN193-30 probes (6A/120A) with 30 ft leads
AE/2140.30	Set of three color-coded MR193-30 probes (1000Aac/1400Adc) with 30 ft leads



Only a few products from each manufacturer are shown on our website.

Please call 800-903-9870 or 440-238-2550 for information and assistance on the product you selected.

WESCHLER INSTRUMENTS

Manufacturer & Distributor of Meters, Instruments and related equipment

MANUFACTURERS		PRODUCTS	
Action Instruments	LFE	Meters	Signal Conditioners
Adalet	London Electronics	Analog	Isolators
AEMC	Madison	Digital	Transmitters
Alaron	Martel / Beta	Bargraph	Loop Splitters
Altek	Megger / Biddle	Panel	Alarms
Amprobe	Meterman	Process	Switches
API (Absolute Process)	MeterMaster	Power	Test Equipment
Applied Technical	Midwest Transformers	Switchboard	Multimeters
Ashcroft	Modutec	Mil Spec	Clamp-On Meters
ATC (Westcon/Diversified)	Monarch	Large Display	Thermometers
Bacharach	National Meter	Meter Relays	Humidity Meters
Control Switches	Newport	Sensors	Light Meters
Crompton	NK Technologies	Temperature	Megohmmeters
Dixson	Non-Linear Systems	Pressure	Hipot Testers
EIL	Noshok	Flow	Ground Testers
Electro Industries	Partlow	Strain	Insulation Testers
E-Mon D-Mon	Pyragon	Position	Cable Testers
Empro	Pyromation	Load	Power Analyzers
ENM	Raytek	Voltage	Process Calibrators
Extech	Red Lion	Current	Miscellaneous
Flexcore	Selco / Asahi	Speed	Counters
Fluke	Simpson	Level	Timers
Fuji Electric / TTI	Texmate	Humidity	Clocks
Hioki	Transmation	Vibration	Controllers
Hoyt	Triplett	Transducers	Recorders
Instrument Transformer	Vaisala	Current Transformers	Data Loggers
International Instrument	VAS / Doric	Potential Transformers	Power Supplies
Ideal	Veris	Shunts	Protection Relays
Jewell	Weschler		Enclosures
Kessler Ellis (KEP)	Westinghouse		& More
Kobold	Weston (A&M)		
Laurel Electronics	Yokogawa		

Extech Sound Meters

Datalogging Sound Level Meter

- ANSI Type 2 meter with 16000 record memory
- Large LCD with fast 50 segment bargraph
- Time stamped data, Max Hold function
- RS-232 & recorder outputs
- Tripod mounting

407764 ▶



SPECIFICATIONS

Range:	30-130dB
Basic Accuracy:	±1.5dB
Weighting:	A & C
Response Time:	Fast, slow
Dimensions:	10.4 x 2.8 x 0.8" (265x72x21mm)

ORDERING INFORMATION

Complete with microphone, wind cover, Windows software, serial cable, AA batteries & carrying case.

EX/407764	Datalogging Sound Level Meter
EX/144117	120V AC Adapter
EX/407764-EXT	Microphone Extension Cable, 15ft (4.7m)
EX/407744	94dB Sound Calibrator
EX/407766	94/114dB Sound Calibrator

Sound Level Monitor

NEW

- Extra large display with bargraph
- Adjustable high or low limit
- OVER display
- External alarm output
- Time stamped Max reading memory
- Meets ANSI Type 2
- Wall, bench or tripod mounting

▶ **SL130**



SPECIFICATIONS

Frequency:	31.5Hz - 8kHz
Ranges:	30-80dB, 60-110dB, 80-130dB
Resolution:	0.1dB
Weighting:	A & C
Response Time:	Fast (125ms), Slow (1s)
Dimensions:	8.75 x 7.1 x 1.25" (22x18x3.2mm)

ORDERING INFORMATION

Complete with swivel microphone, wind cover, AA batteries

EX/SL130G	Sound Level Monitor with 110V AC Adapter
EX/SL125	Microphone Extension Cable, 15ft (4.7m)
EX/SL123	AC Alarm Relay Module, 9ft cable
EX/SL124	DC Alarm Relay Module, 9ft cable
EX/TR100	Tripod

Extech Clamp-On Power Datalogger

- 1000A Clamp measures 1Ø & 3Ø power to 600kW
- Display True Power, Apparent Power, Power Factor, True RMS Voltage & Current, Resistance and Frequency
- Dual display of kW+PF, kVA+PF, V+A, A+Hz or V+Hz
- Clamp jaws open to 1.8" (46mm)
- Data Hold and Auto Power Off
- Built-in recorder datalogs up to 4000 readings
- 25 point data memory viewable on the LCD display
- Full function display on large 4-digit LCD with fast 40 segment bargraph, Peak Hold and Min/MAX
- CAT III-600V; CE
- Includes 9V battery, alligator clips, test leads, case, RS-232 module, Windows compatible software and cable

382068 ▶



SPECIFICATIONS

	Range	Resolution	Basic Accuracy
True Power:	600kW	10W	±(2%rdg+5d)
Apparent Power:	1000kVA	10VA	±(2%rdg+5d)
Peak Current:	1000A	0.1A	±(6%rdg+10d)
Peak Voltage:	600V	0.1A	±(6%rdg+10d)
AC Current (40-500Hz):	1000A	0.1A	±(1.5%rdg+5d)
DC Current:	1000A	0.1A	±(1.5%rdg+5d)
AC Voltage (40-500Hz):	600V	100mV	±(0.5%rdg+5d)
DC Voltage:	600V	100mV	±(0.5%rdg+5d)
Frequency:	5kHz	0.1Hz	±(0.5%rdg+5d)
Resistance:	10kΩ	1Ω	±(1%rdg+5d)
Continuity:	Beeper when <50Ω		
Dimensions/	10.2x3.7x1.8" (260x93x45mm)/		
Weight:	15.9oz (450g)		

ORDERING INFORMATION

EX/382068	Clamp-on Power Datalogger kit with software
EX/382068-NIST	Clamp-on Power Datalogger kit with software & NIST certificate
EX/480172	AC Line Splitter, 3-prong plug with x1 & x10 positions, live voltage indicator

480172 ▶



RECORDERS /
DATA LOGGERS

Fluke Leakage Clamp Meter

NEW

- Measure leakage current with 1 μ A resolution, for monitoring of insulation erosion
- Measure to 60 A, for general installation needs
- Perform tests without powering down the installation or disconnecting equipment
- Advanced shielding ensures accurate results when measuring near other conductors
- Easy-to-carry, pocket-sized clamp with 40 mm (1.5") jaw size
- Handy "Display-Hold" button for capturing readings in hard-to-reach places
- Auto power-off, with warning buzzer, saves battery life
- Meets safety standard VDE0404-4 and VDE0702 for leakage current and differential current measurement of electrical appliances



360

SPECIFICATIONS

Ranges:	3 ma, 30 mA, 30 A, 60 A
Resolution:	0.001 mA, 0.01 mA, 0.01 A, 0.1 A
Accuracy:	$\pm 1\%$ rdg $\pm 5d$ (≤ 50 A) $\pm 5\%$ rdg $\pm 5d$ (>50 A)
Frequency range:	15-150 Hz
Maximum current:	60 A rms
Digital display:	3200 count LCD
Bargraph display:	32 segment LCD
Measurement cycle:	2/sec. (digital display), 12 /sec. (bargraph display)
Range switching:	Auto-range
Environment:	0-50 °C, <80 % RH (non-condensing)
Temperature coefficient:	<0.05 % of range/°C (0-18 °C & 28-50 °C, <50 A)
Influence of external magnetic field:	0.0005 % typical (on current value of adjacent cable)
Influence of conductor position:	Within accuracy
Circuit voltage:	≤ 300 Vrms
Safety standard:	EN 61010-1, EN 61010-2-032. 300 V CAT II, Pollution Degree 2
Battery type:	3 V Lithium battery (CR2032)
Battery life:	Approx. 90 hours (continuous use)
Conductor diameter:	40 mm (1.57") max.
Dimensions:	176 x 70 x 25 mm (6.9" x 2.8" x 1")

ORDERING INFORMATION

Fluke-360 Leakage Current Clamp Meter

Hioki AC Power Monitors

Clamp-On Power HiTester

- Measure up to two 3 \emptyset , 3-wire systems
- Measure up to four 1 \emptyset , 2-wire systems
- 5A to 5000A range
- Simultaneous recording of demand values and harmonics
- Ideal for troubleshooting & energy management



3169

3169 SPECIFICATIONS

Systems:	1 \emptyset 2-wire, 1 \emptyset 3-wire, 3 \emptyset 3-wire, 3 \emptyset 4-wire (50/60 Hz)	Accuracy:	$\pm 0.2\%$ rdg $\pm 0.1\%$ f.s. + Clamp accuracy (for active power) With 9660: $\pm 0.3\%$ rdg $\pm 0.02\%$ FS With 9661: $\pm 0.3\%$ rdg $\pm 0.01\%$ FS With 9669: $\pm 1.0\%$ rdg $\pm 0.01\%$ FS With 9667: $\pm 2.0\%$ rdg ± 1.5 mV With 9694: $\pm 0.3\%$ rdg $\pm 0.02\%$ FS
Functions:	ACV, ACA, W, VA, VAR, PF, integrated power, Frequency, Harmonics	Harmonics:	Up to the 50th order, $\pm 3\%$ FS + measurement accuracy
Ranges:	150/300/600V With 9660: 5-100A, 4 ranges With 9661: 5-500A, 5 ranges With 9669: 100A-1kA, 3 ranges With 9667: 500A-5kA, 2 ranges With 9694: 0.5A-5A, 3 ranges	Power:	100 to 240VAC, 50/60 Hz
Power:	75W to 9MW, 108 combination patterns	Dimensions:	8.3"W x 6.3H x 2.4"D

Power Quality Analyzer

- Measure Dips, Swells, Interruptions, Flicker, Transients
- Harmonic to the 50th order
- High frequency transient over voltage
- Detection and waveform display
- 4 current and 4 voltage channels



3196

3196 SPECIFICATIONS

Systems:	1 \emptyset 2-wire, 1 \emptyset 3-wire, 3 \emptyset 3-wire, 3 \emptyset 4-wire (50/60 Hz)
Ranges:	Ch1, Ch2, Ch3: 150/300/600V AC Ch4: 60/150/300/600V AC, 60/600V DC 9660: 50/100A, 9661: 50/500A, 9667: 500/5000A, 9669: 1000A
Measurements:	1. Transient overvoltage 2. Voltage swell, Voltage dip, Voltage interruption 3. Frequency, Voltage, Current, Voltage/Current peak, Active/Reactive / Apparent power, Power factor, DPF 4. Voltage unbalance ratio, Current unbalance ratio 5. Harmonic voltage/current/power, Inter harmonic voltage/current, Harmonic voltage current phase angle, Total harmonic/inter harmonic distortion 6. IEC flicker[Pst, Plt], K factor / $\Delta V10$ (Japan)
Internal Memory:	13MB
Interface:	Flash ATA card (up to 528MB), RS-232C, LAN (10BASE-T), HTTP server function
Power:	Rechargeable battery & AC adapter
Dimensions:	11.8"W x 8.5"H x 2.7"D

ORDERING INFORMATION

Order Clamp-on Sensor Separately

HK/3169-20	Clamp-On Power HiTester, with voltage leads
HK/3196	Power Quality Analyzer, with voltage leads
HK/9660	100A Clamp-On Sensor
HK/9661	500A Clamp-On Sensor
HK/9669	1000A Clamp-On Sensor
HK/9667	5000A Flexible Clamp-On Sensor
HK/9694	5A Clamp-On Sensor

Other Options: Printer, memory cards, PC software, carrying case

Fluke Power Logger



▲ 1735

Includes soft carrying case, 4 flexible current probes (15/150/3000A), voltage leads & clips, RS-232 PC interface cable, Power Log software, AC adapter, manual

ORDERING INFORMATION

Fluke 1735 Power Logger

Accessories

FL/MBX 1A/5A Clamp for secondary CT applications
 FL/MBX 5A/50A Clamp for general applications
 FL/C534 Water-tight hard carry case with rollers

- Monitor demand at 15 minute or user-defined averaging periods
- Verify efficiency improvements with energy consumption tests
- Measure harmonic distortion caused by electronic loads
- Capture voltage dips and swells from load switching
- Easily confirm instrument setup with color display of waveforms and trends
- Measure all three phases and neutral with included 4 flexible current probes
- View graphs and generate reports with included Power Log software
- Compact, rugged design with IP65 case, 600 V CAT III and 2-year warranty

The Fluke 1735 Power Logger is ideal for conducting 30-day load studies according to National Electric Code 220.65. The 1735 also logs most electrical parameters and harmonics as well as capturing voltage events. Sets up in seconds with the included flexible current probes and color display.

SPECIFICATIONS

V-rms Wye Ranges	57/66/110/120/127/220/230/240/260/277/347/380/400/417/480 V ac
V-rms Delta Ranges	100/115/190/208/220/380/400/415/450/480/600/660/690/720/830 V ac
Resolution	0.1 V
A-rms Ranges	15/150/3000 A rms (at sine) with supplied flex clamps
Resolution	0.01 A
PF (Power factor)	Range 0-1, Resolution 0.001
Frequency	46-54 Hz and 56-64 Hz, Resolution 0.01 Hz
Power Measurements	P (active), S (apparent), Q (reactive), D (distorting)
Energy Measurements	kWh, kVAh, kVARh
Display	¼ VGA Graphic Color, 320x240 pixel, with background lighting
Battery Life	Typical >12 hours with backlight low and >6 hours with backlight high
Working Temperature	-10 °C to +50 °C (+14 °F to +122 °F)
Dimensions	240 mm x 180 mm x 110 mm (6.1 in x 4.6 in x 2.8 in)

Yokogawa Portable Data Logger



▲ XL122 CE

SP1 Kit includes mating screw terminal block, US power cord, rechargeable battery, protective rubber boot, carrying case, utility software & manual.

Utility software for Windows XP displays data & waveforms, copies data, converts to CSV, saves settings & files.

Accessories

YE/90060 Type K thermocouple, 48" length with mini-plug
 YE/93037 Carrying case
 YE/94009 Lithium ion battery, 2.4Ah, 7V
 YE/91029 Digital I/O cable, 3m
 YE/91011 RS232 cable to PC (9 pin)
 YE/93039 Stand for tilted desktop, wall or DIN rail mounting
 YE/XL900 Datum-LOGGER PC data analysis software (WinXP)

- 8 or 16 isolated analog input channels
- Supports direct TC, RTD and DCV inputs
- 16MB internal memory + flash card capability
- Wide viewing angle 3.5" color LCD
- Trigger and alarm functions
- 1 pulse and 2 digital logic inputs
- 100msec to 1 hour sample interval
- Ethernet, USB, RS232 & RS485
- Web server, FTP client and email functions

SPECIFICATIONS

Input	Type	Accuracy	Resolution
	DCV: ±100/500mV, ±1/5/10/50V, 1-5V F.S.	±0.1% F.S.	10µV
	TC: K,E,J,T,L,U,N	±0.05% F.S. ±1°C	0.1°C
	TC: W,R,S,B	±0.05% F.S. ±2°C	1°C
	3-wire RTD: Pt100, Jpt100	±0.05% F.S. ±0.5°C	0.1°C
	Pulse: Instantaneous value, integration, revolution		
	Logic: Voltage, contact		
Maximum Input	±50V		
Measurement Interval	100/200/500ms, 1/2/5/10/20/30s, 1/2/5/10/20/30/60min (8 ch max for 100ms)		
Data Storage	16MB internal memory, External storage: Compact flash memory card (Type II), SD card, USB memory (copy function only)		
Functions	Alarm output (4ch), Trigger function (pre-trigger/trigggerdelay), Calculation (inter-channel calculation, linear scaling,statistical operation), Average, Automatic Measurement		
Display Screens	Waveform, digital, bargraph, waveform + digital, alarm summary, log		
Communication	10Base-T/100-BaseTX Ethernet (SMTP, HTTP, FTP, TCP/IP, SNTP protocols) USB 1.1 (Windows XP) RS-232 @2.4-38.4kbps, RS-485 @2.4-115.2kbps half-duplex (ASCII or Modbus RTU protocols)		
Operating Temperature	0 to 50°C, 5 to 85%RH (non-condensing)		
Storage Temperature	-20 to 60°C, <90%RH (non-condensing)		
Size	6.1" x 6.1" x 2.2" (155×155×55mm), without projecting parts or rubber boot		
Weight	1.8 lbs (800g), without battery or rubber boot		
Safety	EN61010-1: Measurement Category I, Pollution degree 2, Rated transient 350Vp-p		

ORDERING INFORMATION

YE/XL121-D/SP1 8 channel Portable Data Station Kit. Plug-in screw terminal block accepts wires
 YE/XL122-D/SP1 16 channel Portable Data Station Kit. Plug-in screw terminal block accepts wires
 YE/XL124-D/SP1 16 channel Portable Data Station Kit. M3 screw terminal block accepts wires or lugs. [no RTD inputs]

Fluke Three Phase Power Quality Analyzers



The Fluke 435 and 434 three-phase power quality analyzers help locate, predict, prevent and troubleshoot problems in three-phase and single-phase power distribution systems. The new IEC standards for flicker, harmonics and power quality are built in.

- Analyzer trends using cursor & zoom tools even while background recording
- Seven hours operating time per charge on NiMH battery pack
- Transfer data files to your PC for reporting and analysis using FlukeView® software

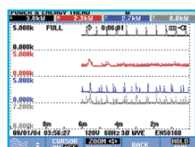
435 Includes: Hard carrying case with rollers, four flexible current probes (i430-flex), five test leads and clips, battery charger, FlukeView software, Power Log software, optical USB cable, color localization set, Getting Started manual, Users manual.

434 Includes: Hard carrying case, four current probes (i400s), five test leads and clips, battery charger, FlukeView software, optical USB cable, color localization set, Getting Started manual, Users manual.

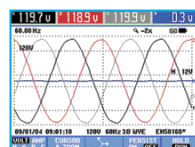
3 Year warranty

ORDERING INFORMATION

Fluke 435	3Ø Power Quality Analyzer
Fluke 434	3Ø Power Quality Analyzer



- Automatic transient capture: never miss an event
- Auto Trends: don't waste time setting up recordings



- Four voltage and four current channels capture waveform data on all phases simultaneously
- Meter display of phase readings

Feature	435	434
Measure voltage, current, dips, swells, interruptions, harmonics, inter-harmonics, flicker, power, energy, transients, frequency, unbalance, inrush, EN50160 overview	•	•
Logger function with multiple parameters	•	Optional*
Mains signalling	•	Optional*
Current probes	3000A flexible (4)	40/400A clamp (4)
Memory	16MB	8MB
Software	Power Log & FlukeView	FlukeView
IEC61000-4-30 Class A compliance	•	•
Safety rating	CAT IV 600 V/CAT III 1000 V	
Battery life	Up to 7 hours/charge	

*Optional function can be added with upgrade kit.

SPECIFICATIONS

System Configuration	1Ø+neutral, 1Ø split phase, 1Ø IT no neutral, 3Ø WYE, 3Ø Δ, 3Ø IT, 3Ø hi leg, 3Ø open leg, 3Ø 2-element, 3Ø 2½-element
Voltage Inputs	Four (3 phases + neutral), dc coupled
Maximum	1000V rms, 6kV maximum peak measured
Bandwidth	>10kHz, up to 100kHz for transient display
Accuracy (ac+dc)	435: ±0.1% of nominal voltage, 434: ±0.5% of nominal
Current Inputs	Four ((3 phases + neutral), dc coupled
Range	Determined by clamp-on probes used
Nominal Frequency	40-70Hz, BW >10kHz
Accuracy (ac+dc)	435: ±0.5%±20d, 434: ±1%±5d (with supplied probes)
Watts (VA, VAR)	1.0-20.00MW (resolution 0.1 to 1 kW)
Accuracy	435: ±1%±10d, 434: ±1.5%±10d
Sampling	16 bit resolution. 200k samples/second max
Logger Function	Captures up to 10000 events, 100 parameters/phase
Display	4.5" x 3.4" Color LCD, 320x240 pixel
Power	115/230V ac or battery, built-in battery charger

Fluke Power Quality Analyzer



- Voltage, current and power harmonics up to 51st
- Total harmonic distortion (THD)
- Phase angle of individual harmonics
- Watts, power factor, displacement power factor, VA and VAR
- Voltage and current waveforms
- Calculates 3Ø Power on Balanced Load from 1Ø Measurement
- Use cursors to read time and date of sags and swells.
- Catch voltage transients and waveform distortion
- See current at the instant of voltage events
- Catch and save up to 40 transients
- Correlate the cause of distortion with time and date stamps
- 3 Year Warranty

The Fluke 43B includes a hard case, voltage and current probes, FlukeView® PC software and cable, line voltage adapter/battery charger, applications manual, power quality video and user's manuals.

ORDERING INFORMATION

Fluke 43B	Power Quality Analyzer
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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.

Function	Measurement	Accuracy/Selection
Volts	5.000V-600V RMS (AC & DC)	
Amps	50.00A-50.00kA RMS (AC & DC)	±(1%+10d)
Mains Frequency	40.0-70.0Hz	±(0.5%+2d)
Watts, VAR, VA	250W-2.5MW	±(4%+4d)
PF, DPF	0.25-1.00	±0.04
Sags & Swells	Voltage and Current	4 min-16 days selectable
Transient Capture	40 ns pulse width Up to 40 transients	Select 20/50/100/200% above or below line voltage
Thrush Current	1A to 1000A	1s to 5 min selectable
Ohms	500.0Ω to 30.00MΩ	±(0.6%+5d)
Capacitance	50.00nF to 500.0μF	±(2%+10d)
Scope	Dc, ac, ac+dc, peak, peak-peak, Hz, duty cycle, phase, pulse width, crest factor	Sampling rate: 25MS/sec Bandwidth: Voltage BW (Channel 1): 20MHz Current BW (Channel 2): 15kHz
Screen Saves	All functions	10 screens
Recording	V/A/Hz, Power, Harmonics, Ω/Cap, Temperature, Scope	4 min-16 days selectable parameters in each display mode

Battery life: Rechargeable Ni-Cd pack (charger included), 6 hrs typical (continuous)

OPTIONAL ACCESSORIES

i200s	240A AC current probe
80i-1000s	1000A AC current probe
i2000flex	2000A flexible AC current probe
80TK	Thermocouple module
80T-IR	Non-contact infrared temperature probe
PAC91	Parallel printer adapter

Hioki Power Quality Analyzer

Catch power quality problems on the fly.

- Monitor Inrush Current, Voltage Swells, Voltage Dips, Transient Over-Voltage, Interruptions
- Measure and Record: Power and Power Factor, Active/Reactive Energy, Demand, Load Changes (with graph display), Voltage and Current
- Large 4.7" Color LCD with Backlight

3197
 & three
 9661
 sensors



ORDERING INFORMATION

HK/3197	Power Quality Analyzer
HK/9660	100A Clamp-on Sensor (300V, Ø15mm jaw)
HK/9661	500A Clamp-on Sensor (300V, Ø46mm jaw)
HK/9667	5000A Flexible Clamp-on Sensor (1000V, Ø254mm jaw)
HK/9669	1000A Clamp-on Sensor (600V, Ø55mm jaw)
HK/9694	5A Clamp-on Sensor (300V, Ø15mm jaw)
HK/9624-50	Deluxe PQA Analysis Software

Includes: voltage cord set, 6 hour battery pack (rechargeable), AC adapter, USB cable, basic PC software, carrying case & strap. Order current sensors separately.

SPECIFICATIONS

Measurement lines:	Single-phase 2-wire (1P2W), single-phase 3-wire (1P3W), three-phase 3-wire (3P3W2M & 3P3W3M), three-phase four-wire (3P4W and 3P4W2.5E)
Measurement line frequency:	Auto-detect (50Hz/60Hz)
Voltage range:	600.0V AC (crest factor 2 or less)
Current ranges:	500.0mA, 5.000A, 50.00A, 10.00A, 100.0A, 500.0A, 1.000kA, 5.000 kA (manually switchable in 2 range sets according to clamp sensor)
Measurement items:	
Impulsive voltage quality:	Transient overvoltage (Impulse)
RMS voltage quality:	Voltage swell, Voltage dips, Voltage interruption
Power quality:	Frequency, Voltage, Current, Current peak, Active/Reactive/Apparent power, Power factor (displaced power factor)
Three phase quality:	Voltage unbalance ratio, Current unbalance ratio
Harmonic quality:	Harmonic voltage, Harmonic current, Harmonic power, Harmonic voltage/current phase angle, Total harmonic voltage distortion, Total harmonic current distortion (THD-F, THD-R), (to 50th harmonic)
Measurement method:	Simultaneous digital sampling of voltage and current (sampling frequency 10.24 kHz per channel)
Interval settings:	Auto / 1 / 5 / 10 / 15 / 30 / 60 minutes
Recordable period:	125 days maximum; partition memory into four segments for maximum 31 days of recording each
Internal memory:	4 MB non-volatile
PC Interface:	USB 2.0
Dimensions:	5.1" W x 9.7" H x 2.5" D (128 x 246x 63 mm)

Hioki AC/DC Current Monitor



3290

Choice of measurement mode:

- DC (for battery measurement)
- AC+DC RMS (for full-/half-wave rectification measurement)
- AC RMS (for current distortion measurement)
- PEAK (for peak value measurement of inrush current, etc.)
- Selectable recorder output and response time
- Current integral, operating time/duty measurements (3290-10)

ORDERING INFORMATION

HK/3290	Clamp-On AC/DC HiTester
HK/3290-10	Deluxe Clamp-On AC/DC HiTester
HK/9691	100A AC/DC Clamp-on Sensor (600V, Ø35 mm jaw)
HK/9692	200A AC/DC Clamp-on Sensor (600V, Ø33 mm jaw)
HK/9693	2000A AC/DC Clamp-on Sensor (600V, Ø55 mm jaw)
HK/9445-02	AC Adapter
HK/9400	Carrying Case

Includes: carry strap, 4 AA batteries. Order clamp-on sensor separately.

SPECIFICATIONS

Current measurement:	AC RMS, AC MEAN, AC+DC, DC
Current ranges:	20 to 100A with 9661 clamp 20 to 200A with 9662 clamp 200 to 2000A with 9663 clamp
Frequency:	10 to 1000 Hz
Analog outputs:	DC or AC Current: 2V f.s. Level output with REC mode Waveform output with MON mode Integ./Frequency: 1V/f.s.
Accuracy:	Current: ± 1.3 % rdg. ± 3 digits. (typical) Frequency: ± 0.3 % rdg. ± 1 dgt. (typical at 50/60Hz)
Frequency response:	± 2.3 % rdg. ± 8 dgt. (DC to 1 kHz)
Digital display:	4 digit, maximum 3000 counts (9999 counts on 3290-10)
Bar display:	20 segments
Sampling rate:	Fast: 4 times / sec (3290-10: 10times/sec), Normal: 2 times / sec, Slow: 1 time / 3sec
Crest factor:	2.5 or less
Max. circuit voltage:	600 V AC rms. (insulated wire)
Dimensions:	6.1" W x 3.6" H x 1.9" D (155 x 98 x 47 mm)

3290-10: Polarity specific integral function measures battery charging and discharging. Peak current display shows peak charge and discharge.

Yokogawa Clamp-on Power Monitors/Analyzers



CW121 Clamp-on Power Monitor

For maintenance and long term monitoring of electrical equipment and systems.

- Supports 1Ø 2W to 3Ø 4W systems
- Internal flash card memory
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer
- Compact and light weight unit

SPECIFICATIONS

Voltage:	150, 300, 450 ACV
Current:	20 - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, Hz, Wh
Accuracy:	±0.8% rdg ± 0.4% rng, depending on clamp probe
Record Time:	Settable from 1-30 sec., 1-30 min., 1 hr.
Flash Memory:	Compatible up to 128 MB flash card
External I/O:	One of three options for start / stop Wh
Data Accumulation:	24 hours of data in one second intervals
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Dimensions:	4.6"W x 6.4"H x 2.0"D (117x161x51mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)

ORDERING INFORMATION

YE/CW121-D-1/SP1 Clamp-on Power Monitor with complete accessory package

Includes all required hardware and software, except clamp-on current probes: Portable Clamp-on Power Meter, UL/CSA standard power cord, four voltage probes, RS-232 communications, 9 pin RS232 communication cable, 16 MB flash memory card and card holder, flash card reader and cable, power cable. (Supplies power from measured circuit), magnetic case for power meter, carrying case for power meter and accessories, data analysis software package.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (3pcs / set)
/C4	Clamp-on Probes for 500A (3pcs / set)
/C6	Clamp-on Probes for 700A (3pcs / set)
/C8	Clamp-on Probes for 50A (3pcs / set)
/96034	Clamp-on Probe for 3000A Jaw type
/96035	Clamp-on Probe for 3000A Flexible type



CW240 Clamp-on Power Analyzer

Records electric energy measurements, instantaneous measurements, demand measurements, waveform measurements, voltage fluctuation measurements, harmonics measurements and leakage current.

- Supports 1Ø 2W to 3Ø 4W 4i (neutral line current) systems
- Supports two system measurements (1Ø 2W X2) (1Ø 3W X2) (3Ø 3W X2)
- Data logging interval up to 1 hour
- Internal flash card memory system
- RS-232 or RS-485 communications
- Sends data to internal memory, PC, optional floppy disk or printer

SPECIFICATIONS

Voltage:	150, 300, 600, 1000 ACV
Current:	200.0 ACmA - 3000 ACA
Measurement Parameters:	V, A, VAR, PF, HZ, WATTS, VA, PA
Record Time:	1 cycle- 0.5 sec., 1-30 sec., 1-60 min .
Flash Memory:	Compatible up to 512 MB flash card up to 50th
Harmonic Measurement:	Function ensures correct measurement operations
Wiring Error Check:	Function ensures correct measurement operations
Communications:	RS-232 standard, RS-485 available
Display:	Large backlit LCD
Safety:	UL approved
Operating temperature:	5-40°C, 5-80% RH (no condensation)
Dimensions:	8.11" W x 7.25" H x 2.56" D (206 x 184 x 65mm)
Power:	100 - 240V AC, 50/60Hz (CAT II)
Location:	Indoor use

ORDERING INFORMATION

YE/CW240-D/DA/PMI/SPI Clamp-on Power Analyzer with complete accessory package. Includes all required hardware and software, except clamp-on current probes (see below): UL/CSA standard power cord, four voltage probes, NiMH battery pack & six AA alkaline batteries, carrying case, 16 MB flash card and card reader, 9 pin RS-232 cable and Toolbox software package, users manual, quick manual, communications manual.

Add suffix to part number for correct size Current Clamp-on Probes:

/C2	Clamp-on Probes for 20/200A (4 pcs / set)
/C4	Clamp-on Probes for 500A (4 pcs / set)
/C6	Clamp-on Probes for 700A (4 pcs / set)
/C8	Clamp-on Probes for 50A (4 pcs / set)
/C10	Clamp-on Probes for 2A (4 pcs / set)
/C12	Clamp-on Probes for 3000A Jaw type (4 pcs / set)
/C14	Clamp-on Probes for 3000A Flexible type (4 pcs / set)
/96036	Clamp-on Probe for 2A measurement

Optional AP240E Data analysis software package