

PROVA[®]

6830+6801 Power and Harmonics Analyzer (100A)
6830+6802 Power and Harmonics Analyzer (1000A)
6830+3007 Power and Harmonics Analyzer (3000A, Flexible)

The Most Powerful Power and Harmonics Analyzer with 3 selectable probes.
It is able to do almost all the analysis for 3 phases power system.



EN 61010
CAT III 600V

Features:

- Analysis for 3P4W, 3P3W, 1P2W, 1P3W
- True RMS value (V123 and I123)
- Active Power (W, KW, MW, GW)
- Apparent and Reactive Power (KVA, KVAR)
- Power Factor (PF), Phase Angle (θ)
- Energy (WH, KWH, KVARH, PFH)
- Current measurement from 0.1mA to 3000A, capable of analyzing IT standby power consumption to the maximum demand of a factory
- Display of 35 Parameters in One Screen (3P4W)
- Programmable CT (1 to 600) and PT (1 to 3000) Ratios
- Display of Overlapped Voltage and Current Waveform
- Average Demand (AD in W, KW, MW)
- Maximum Demand (MD in KW, MW, KVA, MVA) with Programmable Period
- Harmonic Analysis to the 99th Order
- Display of 50 Harmonics in one Screen with Waveform
- Display of Waveform with Peak Values (1024 Samples / Period)
- Analysis of Total Harmonic Distortion (THD-F)
- Graphic Phasor Diagram with 3 Phase System Parameters
- Capture 28 Transient Events (Time + Cycles) with Programmable Threshold (%)
- DIP, SWELL, and OUTAGE are included in transient events.
- 3 Phase Voltage or Current Unbalance Ratio (VUR, IUR)
- 3 Phase Voltage or Current Unbalance Factor (d0%, d2%)
- Calculated Unbalanced Current through Neutral Line (In)
- 512K Memory with Programmable Interval (Sampling time from 2 to 3000 seconds, 17,000 records for 3P4W system)
- Output of Waveform, Power Parameters and Harmonics at Command
- Large Dot Matrix LCD Display with Backlight
- Optical Isolated RS-232C to USB Interface
- Built-in timer and calendar for data logging
- Option: 300XP Portable Thermal Printer



PROVA®

PROVA INSTRUMENTS INC.

6F-2, No. 129, Lane 235, Pao-Chiao Rd., Shin-Tien, Taipei Hsien 231, Taiwan

Tel: 886-2-8919-1255 Fax: 886-2-8919-1489

<http://www.prova.com.tw> E-mail: prova@ms3.hinet.net

Electrical Specifications (23°C ± 5°C)

AC Watt (50 or 60 Hz, PF 0.5 to 1)

6830 + 6801

Range (0 to 100A)	Resolution	Accuracy of Readings
5.0 – 999.9 W	0.1W	±1% ± 0.8W
1.000 – 9.999 KW	0.001 KW	±1% ± 8W
10.00 – 99.99 KW	0.01 KW	±1% ± 80W
100.0 – 999.9 KW	0.1 KW	±1% ± 0.8KW
1000 – 9999 KW	1 KW	±1% ± 8KW

6830 + 6802

Range (0 to 1000A)	Resolution	Accuracy of Readings
5.0 – 999.9 W	0.1W	±1% ± 0.8W
1.000 – 9.999 KW	0.001 KW	±1% ± 8W
10.00 – 99.99 KW	0.01 KW	±1% ± 80W
100.0 – 999.9 KW	0.1 KW	±1% ± 0.8KW
1000 – 9999 KW	1 KW	±1% ± 8KW
0.000 – 9.999MW	0.001MW	±1% ± 80KW

6830 + 3007

Range(0 to 3000A)	Resolution	Accuracy of Readings	
		> 20 V & > 30A	< 20V or < 30A
10.0 – 999.9 W	0.1W	±1% of range	±2% of range
1.000 – 9.999 KW	0.001 KW		
10.00 – 99.99 KW	0.01 KW		
100.0 – 999.9 KW	0.1 KW		
1000 – 9999 KW	1 KW		

AC Current (50 or 60 Hz, Auto Range, True RMS)

6830 + 6801 (Overload Protection AC 200A)

Range	Resolution	Accuracy of Readings
10.00A	0.001A/0.01A	–
4A – 100.0A	0.01A/0.1A	±0.5% ± 0.5A
40A – 1000.0 A	0.1A/1 A	±0.5% ± 5A

6830 + 6802 (Overload Protection AC 200A)

Range	Resolution	Accuracy of Readings
0.04 – 1 A	0.001 A	±0.5% ± 0.05A
0.4 – 10 A	0.01 A	±0.5% ± 0.05A
4 – 100 A	0.1 A	±1.0% ± 0.5A

6830 + 3007 (Overload Protection AC 200A)

Range	Resolution	Accuracy of Readings
0 – 300.0A	0.1A	±1% of range
300.0 – 999.9A	0.1A	
1000 – 3000 A	1 A	

AC Voltage (50 or 60 Hz, True RMS, Overload Protection AC 800V)

Range	Resolution	Accuracy of Readings
20.0 V – 500.0 V (Phase to Neutral)	0.1 V	±0.5% ± 5dpts
20.0 V – 600.0 V (Phase to Phase)		

Harmonics of AC Voltage in Percentage

Range	Resolution	Accuracy
1 – 20 th	0.1%	±2%
21 – 49 th		4% of reading ±2.0%
50 – 99 th		6% of reading ±2.0%

Harmonics of AC Current in Percentage

6830 + 6801

Range	Resolution	Accuracy
1 – 10 th	0.1 %	±0.2% of reading ±1%
11 – 20 th		±2% of reading ±1%
21 – 50 th (A range)		±5% of reading ±1%
21 – 50 th (mA range)		±10% of reading ±1%
51 – 99 th		±35% of reading ±1%

6830 + 6802

Range	Resolution	Accuracy
1 – 20 th	0.1%	±2%
21 – 49 th		4% of reading ±2.0%
50 – 99 th		6% of reading ±2.0%

6830 + 3007

Range	Resolution	Accuracy
1 – 20 th	0.1%	±2%
21 – 50 th		±6%
51 – 99 th		±10%

Power Factor (PF)

6830+6801, 6830+6802

Range	Resolution	Accuracy
0.00 – 1.00	0.01	± 0.04

6830 + 3007

Range	Resolution	Accuracy	
		> 20 V & > 30A	< 20V or < 30A
0.000 – 1.000	0.001	± 0.04	±0.1

Phase Angle (°)

6830+6801, 6830+6802

Range	Resolution	Accuracy
-180° to 180°	0.1°	± 1°

6830+3007

Range	Resolution	Accuracy
-180° to 180°	0.1°	± 2°
0° to 360		

Total Harmonic Distortion

6830 + 6801

Range	Resolution	Accuracy
0.0 – 20.0 %	0.1%	± 1%
20.0 – 100%		±3% of reading ± 5%
100 – 999.9%		±10% of reading ±10%

6830 + 6802

Range	Resolution	Accuracy
0.0 – 20%	0.1%	±2%
20 – 100%		± 6% of reading ± 1%
100 – 999.9 %		± 10% of reading ± 1%

6830 + 3007

Range	Resolution	Accuracy
0.0 – 20%	0.1%	± 2% of range
20 – 100%		± 6% of range ± 1%
100 – 999.9 %		± 10% of range ± 1%

Peak Value of AC Voltage or AC Current, VT=1

Range	Sampling Time	Accuracy of Reading
50 Hz	19µs	± 5% ± 30 digits
60 Hz	16µs	

Crest Factor (C.F.) of AC Voltage or AC Current, VT=1

Range	Resolution	Accuracy of Readings
1.00 – 99.99	0.01	± 5% ± 30 digits

Frequency in AUTO mode

6830+6801, 6830+6802

Range	Resolution	Accuracy of Reading
45 – 65 Hz	0.1Hz	0.1Hz

Frequency (RMS value > 10V) or ACA (RMS value > 30A)

Range	Resolution	Accuracy of Reading
45 – 65	0.1	± 0.2Hz

General Specifications:

6830 Analyzer

Battery Type: 1.5V SUM-3 x 8
 External DC Input: Use only power supply adapter Model PHAPSA
 Display: Dot Matrix LCD (240x128) with backlight
 LCD Update Rate: 1 time / second
 Power Consumption: 140mA (approx.)
 No. Of Samples: 1024 samples / period
 Data Logging Files: 85
 Max. File Capacity: 17474 records (3P4W, 3P3W)
 26210 records (1P3W)
 52420 records (1P2W)
 4096 records (50 Harmonics / record)
 Sampling Time: 2 to 3000 seconds for data logging
 Low battery Indication: B
 Overload Indication: OL
 Dimension: 257(L) x 155(W) x 57(H) mm
 10.1"(L) x 6.1"(W) x 2.3"(H)
 Weight: 1160g (Batteries included)
 Operating Temperature: -10°C to 50°C
 Operating Humidity: less than 85% relative
 Altitude: up to 2000M
 Storage Temperature: -20°C to 60°C
 Storage Humidity: less than 75% relative
 Accessories: test leads (3 meter long) x 4
 Probes 6801 x 3 or 6802 x 3 or 3007 x 3
 Alligator clips x 4
 Batteries 1.5V x 8
 Carrying bag x 1
 Users manual x 1
 Software users manual x 1
 Software CD x 1
 USB to RS232 cable x 1

6801 Current Probe (100A)

Conductor Size: 30mm (approx.)
 Range Selection: Manual (1A, 10A, 100A)
 Dimension: 210mm (L) x 62mm (W) x 36mm (H)
 8.3" (L) x 2.5" (W) x 1.4" (H)
 Weight: 200g

6802 Current Probe (1000A)

Conductor Size: 55mm (approx.), 64 x 24mm (bus bar)
 Range Selection: Manual (10A, 100A, 1000A)
 Dimension: 244mm (L) x 97mm (W) x 46mm (H)
 9.6" (L) x 3.8" (W) x 1.8" (H)
 Weight: 600g

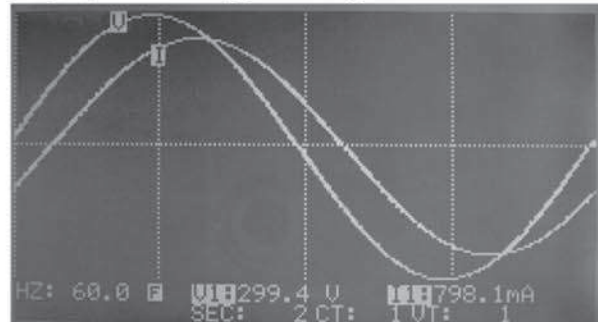
3007 Flexible Current Probe (3000A)

Probe Length: 24 in / 610 mm
 Minimum Bending Diameter: 35mm
 Connector Diameter: 23mm
 Cable Diameter: 14mm
 Cable Length from Probe to Box: 170mm
 Cable Length from Box to Output: 170mm
 Dimension (Box): 130mm(L) x 80mm(W) x 43mm(H)
 5.1"(L) x 3.1"(W) x 1.7"(H)
 Weight: 410g

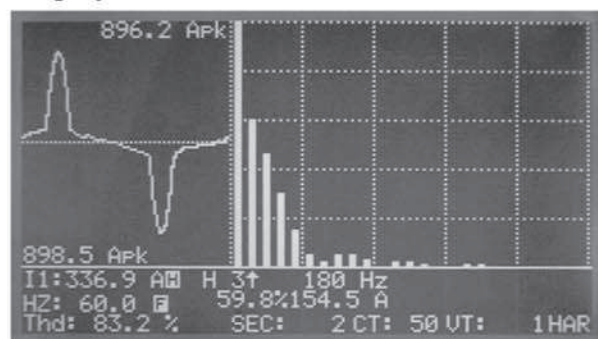
All parameters of the system shown in LCD

U1P2: 381.6 U	U1S1: 219.9 U	U1S2: 799.1mA
U2P3: 381.1 U	U2S1: 219.9 U	U2S2: 800.1mA
U3P1: 379.1 U	U3S1: 219.5 U	U3S2: 800.7mA
P1P: 156.5 W	S1P: 175.7 VA	Q1P: -79.8 VAR
P2P: 154.0 W	S2P: 175.9 VA	Q2P: -84.9 VAR
P3P: 153.8 W	S3P: 175.7 VA	Q3P: -84.9 VAR
P2P: 464.4 W	S2P: 527.1 VA	Q2P: -249.4 VAR
PF2: 0.88	PF1: 0.89	PF2: 0.87
PF3: 0.87	PF1: 0.88	PF2: 0.87
PF3: 0.87	PF1: 0.88	PF2: 0.87
WH1: 127.7 WH	SH1: 144.8 VAH	QH1: 68.2 VARH
HZ: 50.0	MD1: 436.5 VA	MD3: 385.1 W
3P4W	SEC: 2 CT: 1 UT: 1	

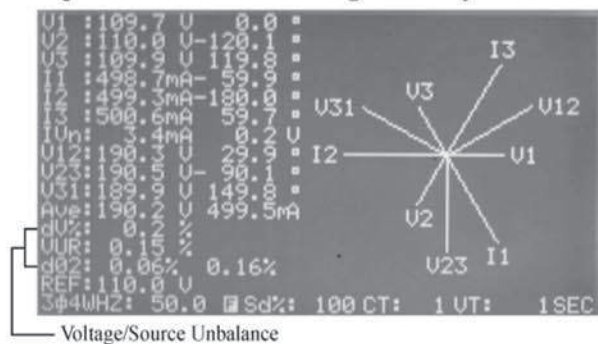
Display of Overlapped Voltage and Current Waveform



Display of Harmonics with Waveform (1-99)



Graphic 3P4W Phasor Diagram + System Parameters



Transient Capture (Dips, Swells, Outage)

