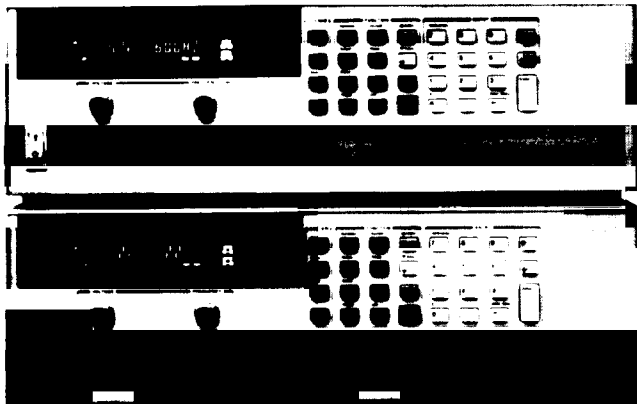


AC Source/Analyzers

AC Power Solutions

6800
Series
6811B
6812B
6813B
6814B
6834B
6843A

- Versatile ac power test solutions
- Generate stable or distorted ac and dc power
- 50/60 Hz power up to 300 Vrms
- 400 Hz avionics power up to 300 Vrms
- Arbitrary waveform generation
- Built-in precision power analyzer
- Easy to integrate into ATE systems
- VXIplug&play drivers available



6811B, 6812B, 6813B, top; 6814B, 6834B, 6843A, bottom

6800 AC Power Solutions AC Power Sources/Analyzers and Regulatory Test Solutions

6811B	300 V _{rms} , 375 VA Single phase model	6814B	300 V _{rms} , 3000 VA Single phase model
6812B	300 V _{rms} , 750 VA Single phase model	6834B	300 V _{rms} , 4500 VA _{avail} One/three phase model
6813B	300 V _{rms} , 1750 VA Single phase model	6843A	230 V _{rms} , 4000 VA _{avail} Single phase model

Agilent Technologies ac power source/analyzers are designed for applications which require precise control, accurate measurement, and analysis of single- and three-phase ac power. The feature set and performance levels of this product family provide the flexibility necessary to power and test a wide variety of devices. These products are ideal for applications such as power supply testing, AC Mains CE Mark Testing UPS testing, avionics, air traffic control equipment, testing power-factor-corrected equipment and telecom equipment.

The 6800 series utilizes a low noise switching topology, which delivers high performance and reduced size. These products can output dc, ac complex, and user-defined waveforms for exceptional application flexibility over the bus.

Key Features

- High peak current capability
- Programmable voltage, frequency, phase, output impedance, distortion, and current limit
- Voltage and frequency slew control
- Power line disturbance simulation
- Avionics power disturbance simulation
- Measurement of Vrms, Irms, Ipeak, frequency, phase, VA, watts, PF, and THD
- Two current measurement ranges. Low range increases sensitivity 10:1 (6811B, 6812B, 6813B)
- Harmonic analysis of V and I
- Programmable 1 phase/3 phase mode (6834B)
- Built-in GPIB and RS-232 interfaces
- Built-in output isolation relays
- MIL-STD 704 and RTCA DO160 (Section 16) testing capability
- Built-in 26 Vrms AUX output option (6834B not available with Opt. 400)
- Remote shutdown via TTL signal
- dc output autoranging on 6811B, 6812B, 6813B
- Application specific options

- SCPI (standard commands for programming instruments)
- Drop-in replacement—Elgar PIP9012 code built in
- Electronic calibration
- Full protection features (OV, OI, OP, OT)
- Three year warranty
- CE mark
- New FREE graphical user interface
- New dual power analyzer option

Powerful Direct Digital Synthesis (DDS) Waveform Generation

The 6800 series offers the ultimate in waveform generation versatility. For testing products under ac line distortion conditions, clipped sine waves can be generated with 0% to 43% distortion. There are a number of methods for creating waveforms some include inputting harmonic content, phase angles, and data points. These waveforms can be used to generate steady state outputs or can be combined for more complex transient generation schemes.

Flexible Transient Generation

When testing requires precise synchronization between waveform generation and measurement of the device under test, the 6800 series transient generation capability provides a powerful tool. The output voltage amplitude, frequency, phase, waveform shape, voltage slew rate, and frequency slew rate can be controlled in response to an input trigger generated from an internal or external event. The Step and Pulse modes offer an easy and convenient method of executing single-step and continuous-output changes. The List transient mode further extends this capability for more complex waveform generation needs. Up to 100 sequences of output settings can be precisely executed in response to a trigger or paced by programmed dwell times without computer intervention.

Extensive Measurement and Analysis

The 6800 series has measurement functionality equivalent to commercially available high-accuracy power analyzers. This eliminates the need for this standalone instrument for most applications, and lowers systems cost, increases available rack space, and simplifies cabling. All measurements are made with 16-bit resolution, suitable for even the most demanding applications.

The 6800 series has built-in voltage and current waveform digitization combined with harmonic analysis capability. Amplitude, phase, and total harmonic distortion results up to the 50th harmonic are provided for output frequencies equal to or less than 250 Hz. This measurement feature, accessible via the front panel graphical user interface software or over the bus, provides a sophisticated solution for testing during product development. A new dual power analyzer option (020) now provides the equivalent of two standalone power analyzers for measuring the input.

AC Mains Regulatory Testing

Testing for ac mains emissions and immunity tests is now even easier. The 14760A series regulatory test solution (RTS) software can be used with 6812B, 6813B, and 6843A ac power solutions. This Windows based software provides a fast and easy way to set-up, perform and document tests.

Multiple Interfaces

The 6800 series ac power solutions offer multiple programming interfaces for convenience. The front panel offers access to most commonly used commands, SCPI can be sent via GPIB or RS-232. The graphical user interface (GUI) that is shipped with every ac power solution provides easy access to the capabilities of the instrument. Key tests such as inrush characterization are set-up in templates to facilitate testing. In addition to saving waveforms in non-volatile memory, they can be saved in the GUI and quickly downloaded to the source.

Key Literature

2000/01 Agilent Power Products Catalog, p/n 5968-2199E

For more information, visit our web site:
<http://www.agilent.com/find/acpower>

Supplemental Characteristics Non-warranted characteristics determined by design that are useful in applying the product

	6811B	6812B ¹	6813B ¹	6814B	6834B	6843A
Number of phases	1	1	1	1	1/3	1
Output ratings						
Power	375 VA	750 VA	1750 VA	3000 VA	4500 VA	4800 VA
Maximum rms voltage	300 V	300 V	300 V	300 V (high range) 150 V (low range)	300 V	300 V
Maximum rms current	3.25 A	6.5 A	13 A	10 A (high range) 20 A (low range)	15 A/5A 30 A/10 A	32 A
Maximum repetitive peak current	40 A	40 A	80 A	40 A (high range) 80 A (low range)	60 A/20A (high range) 120 A/40 A (low range)	48 A (high range) 96 A (low range)
Crest factor	12	6	6	5	6.7	3
Output frequency range	dc; 45 to 1kHz	dc; 45 to 1kHz	dc; 45 to 1kHz	dc; 45 to 1kHz	dc; 45 to 1kHz	dc; 45 to 1kHz
dc power (watts)	285 W	575 W	1350 W	—	—	—
dc voltage	± 425 V	± 425 V	± 425 V	—	—	—
dc current	2.5 A	5 A	10 A	—	—	—

Measurement Accuracy (25 ± 5 dec C) from 45–100 Hz in High range where applicable

Output ratings	Rms voltage	0.03% +100mV	0.03% +100mV	0.03% +100mV	0.05% +250mV	0.05% +250mV	0.05% +250mV
Rms current	0.05% + 10 mA	0.05% + 10 mA	0.05% + 10 mA	0.01% + 50 mA	0.01% + 50 mA	0.01% + 25 mA (in 3 phase)	0.01% + 75 mA
Power (VA)	0.1% + 1.5 VA +12 mVA/V	0.1% + 1.5 VA +12 mVA/V	0.1% + 1.5 VA +12 mVA/V	0.15% + 5 VA	0.15% + 5 VA	0.15% + 3 VAI (in 3 phase)	0.15% + 9 VA
Power (Watts)	0.1% + 0.3 W + 1.2 mW/V	0.1% + 0.3 W + 1.2 mW/V	0.1% + 0.3 W + 1.2 mW/V	0.15% + 5 W	0.15% + 5 W	0.15% + 3 W (in 3 phase)	0.15% + 9 W

Regulatory Test Solution IEC mode measurement system characteristics

Output frequency range	—	50/60 Hz	50/60 Hz	—	—	—
Reference impedance accuracy	—	3% (at 0.4 Ω and 796 uH)	3% (at 0.4 Ω and 796 uH)	—	—	3% (at 0.4 Ω and 796 uH)
Maximum total harmonic distortion	—	0.25%	0.25%	—	—	0.1%
Measurement accuracy						
Current magnitude (low range)	Fundamental	0.03% + 1.5 mA	0.03% + 1.5 mA	—	—	0.03% + 3 mA
	Harmonics 2–49	0.03% + 1mA + 0.2%/kHz	0.03% + 1mA + 0.2%/kHz	—	—	0.03% + 2 mA + 0.2%/kHz
Current magnitude (high range)	Fundamental	0.05% + 5 mA	0.05% + 5 mA	—	—	0.05% + 8 mA
	Harmonics 2–49	0.05% + 3mA + 0.2%/kHz	0.05% + 3mA + 0.2%/kHz	—	—	0.05% + 3 mA + 0.2%/kHz
Price	\$5,500	\$7,040	\$9,680	\$11,960	\$14,680	\$21,830 ²

¹Regulatory test ready.²14761A Harmonic and Flicker Emissions Test Software bundled in to 6843A price.

Remote Sensing: Up to 10 Vrms can be dropped across each load lead.
Command Processing Time: The average time for the output rms voltage to start to change after receiving an GPIB command is 10 milliseconds.
Calibration Interval: One year
GPIB Capabilities: SH1, AH1, T6 L4, SR1, RL1 PPO, DC1, DT1, E1, and CO, and a command set compatible with IEEE-488.2 and SCPI
Regulatory Compliance: Listed to UL-1244; certified to CSA 22.2 No. 231; complies with EN61010-1
RFI Suppression: Complies with CISPR-11, Group 1, Class A

Ordering Information

	Price
14761A Harmonic and Flicker Emissions Tests Software	\$3,000
14762A Voltage and Frequency Disturbances Immunity Tests Software	\$1,250
14763A Interharmonics Test Software	\$2,000
14769A All the 14760A Series Test Software	\$5,625
Support rails (p/n 1494-0059E) required when rackmounting the 6812B and 6813B Opt 1CM and Opt 1CP	\$115
Support rail kit E3664AC must be ordered with Opt 1CM for rackmounting the 6814B, 6834B, and 6843A	\$75

A line cord option must be specified. For details, refer to page 192.

Accessories

p/n 5060-3513 Three 30-A replacement fuses for 6814B/34B/43A	\$29
p/n 5063-2310 Heavy-duty rack slide kit (6814B/34B/43B)	\$300

6800 Series
 6811B
 6812B
 6813B
 6814B
 6834B
 6843A