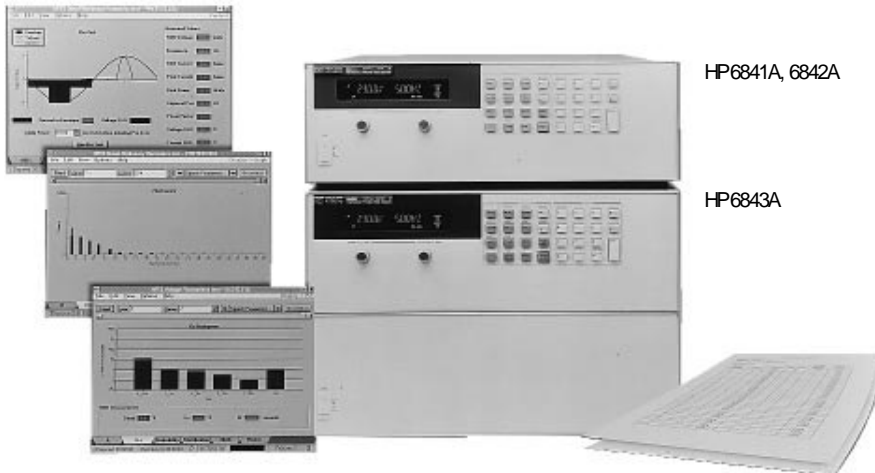


HARMONIC/FLICKER TEST SYSTEMS

HP 6840 Series Harmonic/Flicker Test Systems

HP 6841A, 6842A, 6843A

- One-box solution tests products for compliance to EN 60555-2, EN-60555-3, EN 61000-3-2, and EN 61000-3-3
- Full 1-phase coverage at 230 Vrms and 16 Arms
- Measurement and generation implementation compliant with IEC 868, IEC 1000-7-4, and IEC 725
- Compliant-level harmonic current measurements for the fundamental through the 40th harmonic
- Windows™ software for IEC/EN testing capability
- Real-time and off-line test data review and analysis
- Test report generation
- Advanced diagnostic capabilities for failure analysis
- Standard ac source operating mode (normal mode)
- Standard three-year warranty



HP Harmonic/Flicker Test Systems

The HP 6840 Series Harmonic/Flicker Test Systems are specifically designed for testing products for compliance to the low-frequency emissions regulations for quasi-stationary current harmonics, fluctuating current harmonics, and voltage fluctuations and flicker. Three new models provide full power coverage of the single phase regulatory standard requirements:

HP 6841A	230 Vrms, 3.3 Arms, 750 VA (compliance testing) 300 Vrms, 6.5 Arms, 750 VA (maximum ratings) Panel height: 5.25 inch
HP 6842A	230 Vrms, 7.6 Arms, 1750 VA (compliance testing) 300 Vrms, 13 Arms, 1750 VA (maximum ratings) Panel height: 5.25 inch
HP 6843A	230 Vrms, 16 Arms, 4800 VA (compliance testing) 300 Vrms, 16 Arms, 4800 VA (maximum ratings) Panel height: 10.5 inch

Reduce Cost and Integration Time with the HP One-Box Test System

The HP 6840 series eliminates the time and cost required to research, specify, and integrate individual instruments, and offers a more cost-effective solution than multiple-box test systems. These fully-integrated test systems combine all of the generation and measurement functionality required for full compliance-level testing in one compact unit.

Each one-box test system contains the capabilities of a standalone ac source, power analyzer, flicker meter, and line impedance network. All regulatory testing functionality is available via the HP-IB and test system software.

High Performance Ensures Compliance-Level Testing Capability

Low distortion power generation, low- and programmable-output impedance, and an accurate measurement system assure compliance-level performance. The HP 6841A, 6842A, and 6843A were designed according to the normative references for voltage and current harmonic measurement techniques (IEC 1000-4-7), flicker measurements (IEC 868), and reference impedance requirements (IEC 725).

Unlike multiple-box ac source and measurement configurations, the power generation and measurement of the HP 6840 series are controlled by a common internal timebase and are truly synchronized. This allows precise measurement of harmonics since they will fall directly within the center of the FFT bins with a synchronization accuracy better than 1 ppm.

Easy-to-Use Windows™ Graphical User Interface

Each HP 6840 series test system is shipped with the HP Harmonic/Flicker Test System for Windows™ software, providing a fast and easy way to access the IEC/EN testing capabilities. The software provides the following capabilities:

- Test set-up and execution
- Pre-test for EUT class determination (current harmonics)
- Data archiving of all parameters
- Real-time test data display (graphical and tabular)
- On-line/ off-line test data review with user-specified search criteria
- Test termination under user-defined conditions
- Pass/ Fail indication
- Diagnosis of test results via advanced features
- Report generation

Recommended PC Configuration

- 486DX4 100 MHz or Pentium
- 16 MB of RAM
- 1.2 GB IDE PCI hard disk (13 ms access time)^{1,2}
- Windows 3.1, 3.11 or Windows for Work Groups
- Networking disabled

Supported GPIB Interfaces

HP 82335B HP-IB Interface and the National Instruments AT-GPIB/ TNT Interface

Notes:

- ¹HP HFTS software requires ~4 MB of hard disk space for installation.
- ²The recommended hard disk space accommodates data storage for the maximum possible test length (7 days). Less disk space is required for shorter test lengths.

Key Literature

1996/97 Power Products Catalog, p/n 5964-6035
Regulatory Testing Application Note 1273, p/n 5964-1917

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HARMONIC/Flicker TEST SYSTEMS

Specifications

Specifications are warranted over the ambient temperature range of 0 to 40°C. Unless otherwise noted, specifications are for a sinewave with a resistive load at an output frequency of 50 Hz or 60 Hz in IEC MODE.

For specifications pertaining to standard ac source operation and ac input requirements, see the HP 6800 AC Power Source/ Analyzer Specifications and Supplemental Characteristics on pages 182, 183.

	HP 6841A	HP 6842A	HP 6842A
Number of phases	1	1	1
Output ratings			
Power (VA)	750 VA	1750 VA	4800 VA
Maximum rms voltage	300 V	300 V	300 V range
Maximum rms current	6.5 A	13 A	32 A
Output frequency range	50 Hz/60 Hz		
Reference impedance accuracy	3% (at 0.4 Ω and 796 μH)		
Constant voltage ripple and noise (20 kHz to 10 MHz) rms relative to full scale rms	±60 dB 300 mV	±60 dB 300 mV	±60 dB 300 mV
Load regulation	0.5% of full scale		0.5% of full scale
Line regulation	0.1% of full scale		0.3% of full scale
Maximum total harmonic distortion	0.25%		1%
Output voltage harmonic content ¹	Compliant with IEC 868 and IEC 1000-3-2		
Programming accuracy (25°C ± 5°C)			
Voltage (rms)	0.15% + 0.3 V		
Frequency	0.01% + 10 mHz		
Measurement accuracy (25°C ± 5°C)			
Current magnitude (low range)			
Fundamental	0.03% + 1.5 mA		0.03% + 3 mA
Harmonics 2-49	0.03% + 1 mA + 0.2%/kHz		0.03% + 2 mA + 0.2%/kHz
Current magnitude (low range)			
Fundamental	0.05% + 5 mA		0.05% + 6 mA
Harmonics 2-49	0.05% + 3 mA + 0.2%/kHz		0.05% + 3 mA + 0.2%/kHz
Flicker	Compliant with IEC 868		
Flicker perceptibility (pst)	Compliant with IEC 868		
Synchronization accuracy	< 1 ppm		
Current shunt burden	0 volts		
Current harmonic smoothing filter time constant	1.5 seconds		
Pst Integration time	1, 5, 10 or 15 minutes		

¹Output voltage harmonic content specification is limited for the HP 6843A for half-wave rectified Class C loads. Compliance will be tested, verified and reported by the HP HFTS software for all DUTs.

IEC Mode Measurement System Characteristics for the HP 6841A, 6842A, and 6843A

	Sample rate	Window width	Acquisition overlap
50 Hz Operation			
Rectangular measurement window	12.8 kHz	16 cycles	None
Hanning measurement window	8.533 kHz	24 cycles	50%
60 Hz Operation			
Rectangular measurement window	15.360 kHz	16 cycles	None
Hanning measurement window	7.680 kHz	32 cycles	50%

Ordering Information

HP 6841A Harmonic/Flicker Test System

- Opt CBN Extra Documentation
- Opt ICM Rack Mount Kit
- Opt ICP Rack Mount Kit with Handles (HP p/n 5062-3983)
- Opt 100 87 to 106 Vac, 48 to 63 Hz (Japan only)
- Opt 230 191 to 254 Vac, 48 to 63 Hz
- Opt 831 12 AWG, 200 to 240 Vac, unterminated
- Opt 833 1.5 mm 2 wire size, 200 to 240 Vac, unterminated
- Opt 834 10 AWG, 100 to 120 Vac, unterminated
- Opt 841 Line Cord with NEMA 6-20P; 20 A, 250 V Plug
- Opt 845 Line Cord with IEC 309; 16 A, 220 V Plug
- Opt 846 Line Cord with NEMA L5-30P; 30 A, 120 V Plug
- Opt 847 Line Cord with CEE 7/7; 16 A, 220 V Plug
- Opt 848 Line Cord with BS 546; 15 A, 240 V Plug

HP 6842A Harmonic/Flicker Test System

- Opt CBN Extra Documentation
- Opt ICM Rack Mount Kit

Support rails required when rack mounting the HP 6841A and 6842A with Option 1CM.

Opt ICP Rack-mount Kit with Handles

(HP p/n 5062-3983)

- Opt 200 174 to 220 Vac, 48 to 663 Hz. If Opt 200 is not ordered, this unit will be configured to operate at 191 to 254 Vac, 47 to 63 Hz
- Opt 831 12 AWG, 200 to 240 Vac, unterminated
- Opt 832 4 mm 2 wire size, 200 to 240 Vac, unterminated
- Opt 841 Line Cord with NEMA 6-20P; 20 A, 250 V Plug
- Opt 842 Line Cord with IEC 309; 32 A, 220 V Plug
- Opt 844 Line Cord with NEMA L6-30P; 30 A, 250 V Locking Plug

HP 6843A Harmonic/Flicker Test System

- Opt CBN Extra Documentation
- Opt ICM Rack-mount Kit
- Opt 400 360 to 440 Vac L-L, 48 to 63 Hz operation (required for Europe)

HP E3664A cabinet rails must be ordered with Option 1CM for rack mounting the HP 6843A.

HP p/n 5063-2310 Heavy duty rack slide kit

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