KEYSIGHT TECHNOLOGIES (AGILENT HP)

6843A

The Keysight Agilent HP 6843A is a high-performance, single-phase programmable AC Power Source and Analyzer. Designed for rigorous testing, it combines the capabilities of a power amplifier, AC calibrator, and harmonic analyzer in a single cabinet. It is widely used for mains simulation, power compliance testing, and harmonic and flicker analysis.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), RS-232
Display	Vacuum Fluorescent Display (VFD)

Physical

Power Supply	200 V / 208 V / 230 V / 400 V AC (3-phase, configuration dependent), 47 to 63 Hz
Operating Temperature	0 to 40 °C °C
Dimensions (W×H×D)	426 mm × 222 mm × 641 mm mm
Weight	63 kg kg

AC Output Ratings

Number of Phases	1 (Single-Phase)
Maximum AC Output Power	4800 VA
AC Voltage Ranges	0 to 135 Vrms / 0 to 270 Vrms
Maximum AC RMS Current (135 V Range)	36 A
Maximum AC RMS Current (270 V Range)	18 A
Maximum AC Peak Current (135 V Range)	180 A
Maximum AC Peak Current (270 V Range)	90 A
Output Frequency Range	45 Hz to 1000 Hz

Output Accuracy & Resolution

AC Voltage Programming Accuracy	±(0.15% of output + 0.3 V) for 135 V range, ±(0.15% of output + 0.6 V) for 270 V range
Frequency Programming Accuracy	±0.01%
Frequency Programming Resolution	10 mHz (45 to 100 Hz), 100 mHz (100 to 1000 Hz)
AC Voltage Programming Resolution	125 mV (135 V range) / 250 mV (270 V range)

DC Output Ratings

Maximum DC Output Power	3200 W
DC Voltage Ranges	0 to 190 VDC / 0 to 380 VDC

Measurement Capabilities

RMS Voltage Measurement Ranges	0 to 135 Vrms / 0 to 270 Vrms
RMS Current Measurement Ranges	4 A / 40 A
Measurement Functions	Voltage (RMS, DC, AC, Peak), Current (RMS, DC, AC, Peak), Power (Active, Reactive, Apparent), Power Factor, Crest Factor, Frequency, Harmonic Analysis
Harmonic Measurement Range	1st to 50th harmonic
Harmonic Fundamental Frequency Range	45 Hz to 75 Hz

Output Distortion

Total Harmonic Distortion (THD) of Output	< 1% (45 Hz to 400 Hz)

Output Capabilities

Waveform Generation Modes	Sine, Square, User-defined (Arbitrary)
Start Phase Programming Range	0 to 360 degrees

Remote Sensing

Remote Sense Line Drop Compensation	Up to 2 V per load lead

System Connectivity & Control

Command Set	SCPI (Standard Commands for Programmable Instruments)

Protection Features

Over-Voltage Protection (OVP)	Programmable AC and DC limits
Over-Current Protection (OCP)	Programmable AC and DC limits
Over-Temperature Protection (OTP)	Automatic shutdown with error reporting

DC Output Specifications

DC Voltage Programming Accuracy	0.1% + 0.5 V (135 V range) / 0.1% + 1.0 V (270 V range)
DC Voltage Programming Resolution	125 mV (135 V range) / 250 mV (270 V range)

Inputs & Outputs

External Analog Input Bandwidth	DC to 5 kHz
External Analog Input Voltage Range	-10 V to +10 V

Environmental

Storage Temperature	-40 °C to +75 °C

AC Input

AC Input Phase	3-phase
AC Input Frequency Range	47 Hz - 63 Hz
AC Input Voltage Options	174 - 220 Vac (Option 200) / 191 - 242 Vac (Option 208) / 207 - 254 Vac (Option 230) / 360 - 440 Vac (Option 400) / 414 - 508 Vac (Option 460)
Maximum Input Power	7500 VA

DC Output

Maximum DC Output Current (135 V Range)	26 A
Maximum DC Output Current (270 V Range)	13 A

Performance

AC Voltage Line Regulation	0.1 V
AC Voltage Load Regulation	0.5 V
DC Voltage Line Regulation	0.1 V
DC Voltage Load Regulation	0.5 V
Transient Generation Modes	Step, Pulse, List

Measurements

Active Power Measurement Range	0 - 4800 W
Apparent Power Measurement Range	0 - 4800 VA
Power Factor Measurement Range	0.00 - 1.00

TECHNOLOGY

Linear/Switching hybrid AC Source with DSP-based Analyzer

APPLICATIONS

AC power simulation, harmonic testing, avionics power testing, and flicker analysis