

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E3647A

The Keysight (formerly Agilent) E3647A is a high-performance, 58W dual-output programmable DC power supply designed for both benchtop and rack-mounted system environments. It offers clean, reliable power with low ripple and noise, featuring dual output channels with dual range capability (0 to 35 V / 0.8 A or 0 to 60 V / 0.5 A) and standard GPIB and RS-232 interfaces.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), RS-232 (9-pin)
Display	Vacuum Fluorescent Display (VFD)
Acoustic Noise	< 40 dBA (with fan speed control)
Warm-Up Time	30 minutes
Calibration Interval	1 year

Physical

Power Supply	100 Vac / 115 Vac / 230 Vac ($\pm 10\%$), 47 Hz to 63 Hz, 260 VA max
Operating Temperature	0 to 40 °C °C
Dimensions (W×H×D)	212.8 mm × 133.0 mm × 348.3 mm mm
Weight	9.2 kg

Output Ratings and Capabilities

Number of Channels	2
Rated Output Power	60 W
Output 1 Range 1 Rating	0 to 35 V / 0 to 0.8 A
Output 1 Range 2 Rating	0 to 60 V / 0 to 0.5 A
Output 2 Range 1 Rating	0 to 35 V / 0 to 0.8 A
Output 2 Range 2 Rating	0 to 60 V / 0 to 0.5 A
Output Voltage Isolation	240 Vdc relative to ground

Load and Line Regulation

Voltage Load Regulation	< 0.01% + 3 mV
Current Load Regulation	< 0.01% + 250 μ A
Voltage Line Regulation	< 0.01% + 3 mV
Current Line Regulation	< 0.01% + 250 μ A

Ripple and Noise

Constant Voltage Ripple (Vp-p)	< 8 mVpp
Constant Voltage Ripple (Vrms)	< 1 mVrms
Constant Current Ripple (Irms)	< 4 mArms
Common Mode Noise Current	< 1.5 μ Arms

Programming Accuracy and Resolution

Voltage Programming Accuracy (Output 1)	< 0.05% + 10 mV
Voltage Programming Accuracy (Output 2)	< 0.05% + 10 mV
Current Programming Accuracy (Both Outputs)	< 0.2% + 10 mA
Voltage Programming Resolution	5 mV
Current Programming Resolution	1 mA

Readback Accuracy and Resolution

Voltage Readback Accuracy (Output 1)	< 0.05% + 5 mV
Voltage Readback Accuracy (Output 2)	< 0.05% + 5 mV
Current Readback Accuracy (Output 1)	< 0.15% + 5 mA
Current Readback Accuracy (Output 2)	< 0.15% + 5 mA
Voltage Readback Resolution	5 mV
Current Readback Resolution	1 mA

Transient Response and Dynamic Performance

Transient Recovery Time	< 50 μ s (to recover within 15 mV after 50% to 100% load change)
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Protection Features

Over-Voltage Protection (OVP) Range 1	1 V to 40 V
Over-Voltage Protection (OVP) Range 2	1 V to 66 V

System Connectivity and Interfaces

Remote Sensing Compensation Voltage	Up to 1 V per lead (2 V total)
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Physical and Mechanical

Form Factor	Half-rack, 3U
Cooling System	Fan cooled

Environmental and Standards

Storage Temperature Range	-20 °C to 70 °C
Operating Humidity Range	Up to 80% RH (non-condensing)

Performance

Voltage Temperature Coefficient	< 0.01% + 3 mV per °C
Current Temperature Coefficient	< 0.02% + 0.5 mA per °C
Voltage Drift (8 hours)	< 0.03% + 3 mV
Current Drift (8 hours)	< 0.1% + 2.5 mA
Command Processing Time	< 10 ms (average time for output to change after receiving GPIB command)
Over-Voltage Protection (OVP) Accuracy	< 0.5% + 0.5 V
Over-Voltage Protection (OVP) Activation Time	< 1.5 ms (OVP > 3 V), < 10 ms (OVP <= 3 V)
Auto-Tracking Mode	Not supported
Output Enable/Disable	Yes

Programming & Control

Non-Volatile Memory States	3 storage locations (states 1 to 3)
Programming Language	SCPI (Standard Commands for Programmable Instruments)

Power Supply

Maximum Input Power	155 VA
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Compliance

Safety Compliance	Certified to CSA C22.2 No. 1010.1, EN 61010-1, UL 3111-1
EMC Compliance	Complies with CISPR 11 Group 1 Class A, EN 50082-1, EN 55011

Protection

Over-Current Protection (OCP)	Programmable electronic OCP
Over-Temperature Protection (OTP)	Yes

Power

AC Input Frequency	47 Hz to 63 Hz
AC Input Voltage	100 Vac / 115 Vac / 230 Vac (±10%, option dependent)

Inputs & Outputs

Output Terminals	Front-panel binding posts and rear-panel screw terminals
Remote Sensing Terminals	Rear-panel screw terminals

TECHNOLOGY

Linear

APPLICATIONS

General purpose benchtop testing, automated electronic test systems, and education.

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