TECHNICAL OVERVIEW

Choosing the Right DC System Power Supply

Basic and High-Performance DC Power Supplies

- Reliable
- Programmable
- Affordable
- Practical

Reliable Power

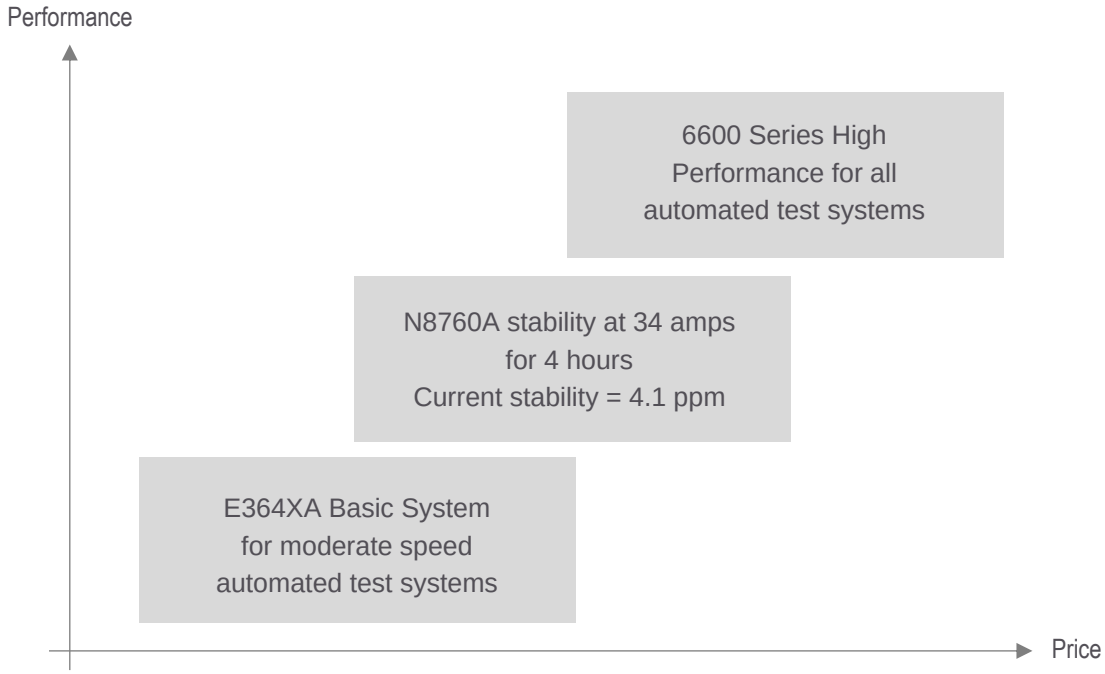
We may live in an unpredictable world, but not when it comes to DC power for test. The Keysight Technologies, Inc. DC system power supplies are consistent, reliable performers, ready to handle the most demanding applications. Our high-performance system solutions meet the most exacting needs for production test applications, while our basic DC power supplies provide essential features for a tight budget. In each case, you get stable, clean DC power at a great price, with the features you need and the day-to-day reliability you expect from Keysight.

- Excellent performance — low noise, excellent line and load regulation, fast transient response
- Programmable — GPIB or RS-232 interfaces, SCPI and VXI*plug&play* drivers
- Flexible — single and dual range, single/dual/triple outputs, 30 W to 200 W
- Affordable — industry-leading price/performance

KEYSIGHT TECHNOLOGIES

Power to Choose

What type of power do you need? Keysight gives you choices. Our 6600 Series high performance sources provide precise control over a range of output power levels with highly accurate measurements, so you can meet the most exacting needs for automated test applications. Keysight "E" series power supplies are available with a wide range of output levels, all providing essential capabilities at an economical price, with low ripple and noise, excellent regulation, and Keysight's trade-mark reliability. Whether you need a low-power source to provide bias power to circuits, to characterize components, or to make fast measurements, Keysight gives you power to choose.



Series	Models	Power range	Voltage
E364XA	10	30 W – 100 W	8 V - 60 V
E363XA	4	80 W – 200 W	6 V – 50 V
661XC	4	40 W, 50 W	8 V – 100 V
663XB	4	80 W, 100 W	8 V – 100 V
664XA	5	200 W	8 V – 12

E363X: Power to the Bench

Keysight E3631A - E3634A power supplies are designed for bench automation in R&D design and QA verification. Even at value prices, these power supplies deliver great features and power. Their low noise and excellent regulation are essential for R&D engineers who need to evaluate assemblies or applications, and for test engineers who need to develop repair strategies for production.

Hybrid regulation techniques create a denser, lighter package and a smaller footprint — key considerations when bench space is at a premium. Front panel output connections enable ease-of-use, while GPIB and RS-232 interfaces make for a versatile power source.

Key Features

- Power up to 200 watts and voltage ranges up to 50 volts
- Low noise and excellent regulation
- Overvoltage and overcurrent protection (except E3631A)
- Built-in GPIB and RS-232 interfaces
- Dual-range outputs in the E3632A, E3633A, and E3634A for great coverage of voltage and current for various applications
- Triple output on the E3631A allows for flexibility in mixed-signal applications (such as providing analog and digital bias power) and for tracking feature ± 25 V outputs
- Front and rear output on E3633A and E3634A
- 3-year warranty

Typical Applications

- General Purpose Bench Testing either in R&D or in Production
- QA Verification

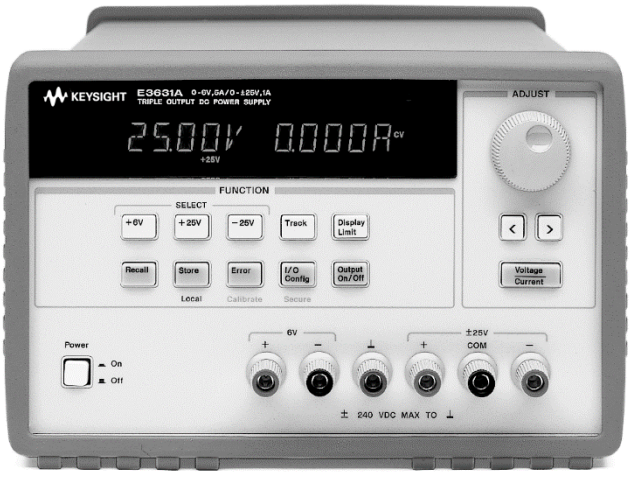


Figure 1. E364X: Basic System Power

E364X: Basic System Power

The Keysight E3640A - E3649A power supplies fill the gap between manual bench power supplies and high-performance system supplies, offering unmatched performance and functionality at a great price. They're designed for moderate speed test where automation is important and throughput is not critical. These single- and-dual-output, dual-range power supplies are ideal for contract manufacturers and OEMs who need to perform basic electronic functional tests on a variety of products quickly and economically.

All models support GPIB and RS-232 for quick connectivity. SCPI (Standard Commands for Programmable Instruments) keeps programming fast and simple. Less than 90 ms output settling time keeps throughput high without the need for a down programmer. Up to five store/recall states help minimize programming time while accelerating test. Remote sensing capability ensures output stability with longer leads.

Key Features

- Power up to 100 watts and 60 volts
- Low output noise and excellent regulation
- Overvoltage and overcurrent protection
- Front binding posts and rear output terminals for configuration flexibility
- Front-panel calibration — unit does not need to be removed from the rack
- Built-in GPIB and RS-232 interfaces
- Simple set-up for easy programming
- 3-year warranty

Typical Applications

- Flexible Low Volume Production Testing
- Sub-assembly Test
- Bias Power for Circuits

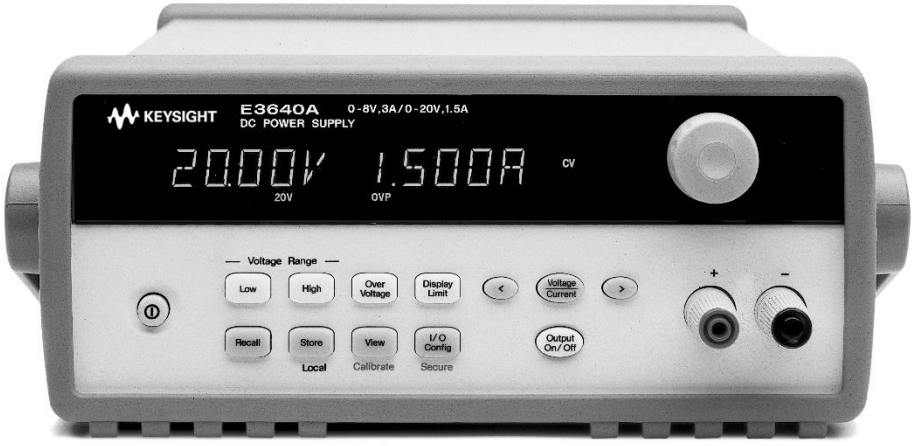


Figure 2. E3640A Dual Range Power Supply

6600: High Performance System Solutions

Do you need a power supply with excellent performance and built-in measurement capability? Keysight 6600 Series systems are ideal for production test applications where throughput is critical and rack space is at a premium. These one-box solutions reduce integration time and increase system reliability and offer a variety of features to reduce test costs, increase test speed, and lower the cost of integration and ownership.

Compared to the “E” series, output transitions are over ten times faster, measurement times are up to five times faster, and program response and command processing times are accelerated. The built-in DMM allows for more accurate measurement capability. Throughput is significantly enhanced via the active down programmer that can quickly remove any energy from the unit under test when the output is programmed to zero. Extended remote sensing capability compensates for voltage drops in load leads of up to 50 percent of the rated output voltage, eliminating troublesome sourcing and measurement inaccuracies due to resistance in the load wiring.

Key Features

- Up to 200W and 120V
- Excellent regulation and low output noise
- Overvoltage and overcurrent protection
- Built-in GPIB and RS-232 (664XA - GPIB only)
- Discrete Fault Interrupt and Remote Inhibit (DFI/RI) for fast remote power disablement
- Analog programming capability simulates a true power source and serial link to control up to 16 supplies from one address (664XA only)
- 3-year warranty

Typical Applications

- Production Testing
- Electronic Sub-assembly Test
- Battery Test
- Battery Charging

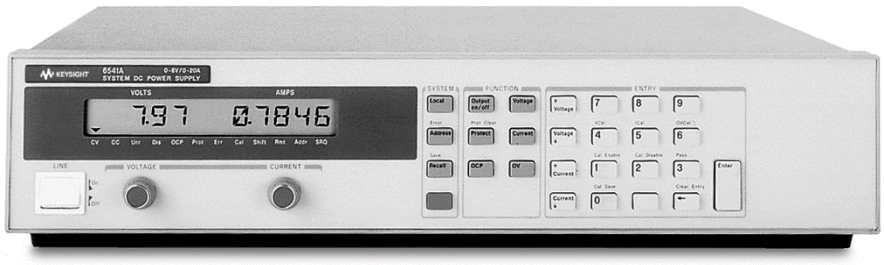


Figure 3. 6600 Series High Performance System Power Supply

Quick Comparison of Keysight 30W to 200W Low Power DC Power Supplies

Features	E363XA	E364XA	661XC	663XB	664XA
No. of Models	4	10	4	4	5
Delivery	< 1 week, typically	< 1 week, typically	1 week	1 week	1 week
No. of Outputs	1 or 3	1 or 2	1	1	1
Applications	Semi-automated general purpose bench testing	Moderate speed semi-automated and automated production test	High performance automated production test	High performance automated production test	High performance automated production test
Size	Half rack, 3U	Half rack, 2U/3U	Half rack, 2U	Full rack, 2U	Full Rack, 2U
Connections	E3631/2A, Front only	Front & rear E3633/4A, Front & rear	Rear only	Rear only	Rear only
Programming	GPIB and RS-232	GPIB and RS-232	GPIB and RS-232	GPIB and RS-232	GPIB only
Programmable Wakeup State	No	No	Yes	Yes	Yes
Throughput Capabilities					
Output rise/fall	130 to 550 ms	<90 ms	6 ms	6 ms	35 ms
Transient	<50 µs for output to recover within 15 mV following a change in output current	<50 µs for output to recover within 15 mV following a change in output current	≤100 µs (50 µs in the fast mode) for output voltage to recover from zero to full load	≤100 µs (50 µs in the fast mode) for output voltage to recover from zero to full load within 20 mV	≤100 µs for output voltage to recover from zero to full load within 20 mV
DFI/RI	Relay control available from pin 1 of RS-232 connector	Relay control available from pin 1 ofx RS-232 connector	Allows shut down of multiple supplies or other h/w, provides for output relay control	Allows shut down of multiple supplies or other h/w, provides for output relay control	Allows shut down of multiple supplies or other h/w, provides for output relay control
Active Down programmer	No	No	Yes	Yes, negative current is programmable	Yes, sinks 20% of rated output current.
Performance					
Ripple and Noise (20 Hz to 20 MHz)	2 – 3-mVpp/ 0.35 – 0.5mVrms	<5mVpp/0.5mVrms for 8V/20V models <8mVpp/1mVrms for 35V/60V models	3mVpp/0.3mVrms for 8V/20V models 3mVpp/0.5mVrms for 50V model 3mVpp/0.5mVrms for 100V model	3mVpp/0.3mVrms for 8V/20V models 3mVpp/0.5mVrms for 50V model 3mVpp/0.5mVrms for 100V model	3mVpp/300mVrms for 8V/20V models 4mVpp/400mVrms for 35V model 5mVpp/500mVrms for 60V model 7mVpp/700mVrms for 120V model
Line/Load Regulation	Voltage <0.01% + 2 mV Current <0.01% + 250 mA	Voltage <0.01% + 3 mV Current <0.01% + 250 mA	Voltage 0.5 mV – 5 mV Current 0.25 mA – 1 mA	Voltage 0.5 mV – 5 mV Current 0.25 mA – 1 mA	Voltage 0.5 mV –– 5 mV Current 0.25 mA – 1 mA
Remote Sensing	Can drop up to 0.7V in each load lead E3631A, None	Can drop up to 1V in each load lead	Can drop up to 2V in each load lead	Can drop up to 2V in each load lead	Can drop up to 2V in each load lead
Meters	4 or 5 digit voltage/ 4 digit current	4 digit	4 digit	4 digit	4 digit

For more information on choosing the best Keysight DC system power supply for your application, visit https://www.keysight.com/us/en/products/dc-power-supplies.html or call Keysight DIRECT in the U.S.A. at 800-452-4844.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications, or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

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