DATA SHEET

U8000 Series
Single Output DC Power Supplies

KEYSIGHT TECHNOLOGIES

Key Features

- Excellent load and line regulation:
  (CV: <0.01% +2 mV;
  CC: <0.02% + 2mA)
- Low output noise: 1 mVrms (20 Hz to 20 MHz)
- Over Voltage and Over Current Protection
- LCD display with backlight capability
- Standby output for safety purposes
- Save-and-recall function upto three memory states
- Security features: keypad lock and physical lock mechanism

Figure 1. The U8001A 90 W and U8002A 150 W single output DC power supplies

More Protection, More Convenience — For Less

It's often difficult to find a power supply that is just right for your test requirements and your budget. Whether you're manufacturing consumer products, testing electronic components, or simply looking for reliable, affordable power, the Keysight Technolgoies, Inc. family of basic power supplies now includes single output, non-programmable models in the 90 W to 150 W power range. With capabilities typically found only in programmable supplies, you get excellent value along with great efficiency in your work. As a result, you can minimize setup time and measurement errors and maximize device reliability. You'll get the right power with a difference — backed by stringent safety certifications and Keysight quality standards — at an affordable price.

The Keysight U8000 Series offers 90 W to 150 W single output, non-programmable DC power supplies that include features typically found only in costly programmable supplies. The U8000 Series delivers excellent value by providing reliable DC power, efficient setup capabilities, and important security features that let you address a variety of applications in electronics manufacturing and educational settings.

Power That's Suitable for Your Application Requirements

The Keysight U8000 Series with power ranging from 90 W to 150 W provides performance that is suitable for electronics manufacturing for computers and peripherals, communication systems and peripherals, aircraft/avionics systems, electronic components, and more. The U8000 Series complements the Keysight E3600 DC power supplies family to provide a wider range of power source alternatives.

Work Efficiently with Great Features and Solid Performance — Within Budget

Differentiated features typically found only in programmable power supplies

The U8000 Series offers fully integrated over voltage protection (OVP) and over current protection (OCP) to prevent damage to the device-under-test (DUT). Using the capability to save and recall three memory states, you can minimize errors and reduce set-up time. The U8000 Series also provides security features such as keypad lock to prevent measurement errors due to accidental front panel usage. When the keypad lock is activated, the knob and all the buttons on the front panel are disabled except the keypad lock button. The physical lock mechanism found at the rear panel of the power supply provides secure instrument storage. The LCD display with backlight on/off options enables brighter display for data viewing (see Figure 2).

Solid, reliable performance in its class

The U8000 Series provides excellent load and line regulation (Constant Voltage, CV: < 0.01% +2 mV; Constant Current, CC: < 0.02% +2 mA) to ensure stable output even when the load changes. With the fast 50 µsec transient response, test times and manufacturing cost are significantly reduced.

The U8000 Series comes with low output noise of 1 mVrms, 3 mArms from 20 Hz to 20 MHz, providing clean output and minimizing the interference in the DUT.

Get That Something Extra: Safety and Security

The U8000 Series has been stringently tested according to various industrial safety standards: CSA (for US and CA regulatory requirements), C-tick (Australia), and CE (Europe). The U8000 Series is fully integrated with OVP and OCP in order to prevent damage to the DUT. The security features offered in the U8000 Series prevent measurement errors and also ensure safety storage of the power supply. Security features such as keypad locking capability preclude accidental front panel usage while the physical lock mechanism provides secure instrument storage.

Front Panel Operation

An easy-to-use rotary knob and self-guiding keypads allow you to set the output at your desired resolution without any effort. Also, both voltage and current levels can be set to a maximum resolution of 10 mV/10 mA from the front panel. In addition, you can save and recall for up to three operating states that are stored in the internal non-volatile memory.

Easy-to-use control functions:

- Enabling or disabling OVP and OCP
- Setting the OVP and OCP trip levels
- Clearing OVP and OCP conditions
- Setting and displaying the voltage and current limit values
- Operating state storage/recall
- Resetting the power supply to power-on state
- Calibrating the power supply
- Enabling or disabling the output

Figure 2. Backlight on/off options for LCD display

Physical lock mechanism

Compliant to several safety standards—CSA, C-tick, CE

Figure 3.

Features of the U8000 Series

Fully integrated over voltage and over current protection to prevent damages to the DUT

Three storage locations (M1, M2, and M3) for user-defined operating states with save-and-recall capability

Setting and display of the voltage and current limit values

Rotary knob for quick and analog-like control of voltage and current

Highly visible LCD displaying actual values of output voltage and current in meter mode and limit values of voltage and current in limit mode

Versatile binding posts offer flexibility to use safety test leads, banana plugs or stripped wires

Backlight On/Off options enabling brighter data display

Keypad Lock/Unlock options to prevent accidental front panel usage

Control for enabling and disabling the output of the power supply

Selects the knob control function for voltage and current adjustment

Performance Specifications

Electrical Specifications

Parameter	U8001A	U8002A
Output Ratings (at 0 °C to 40 °C)	0 to +30 V 0 to 3 A	0 to +30 V 0 to 5 A
Line and Load Regulation	CV: <0.01% +2 mV CC: <0.02% +2 mA	
Ripple and Noise (25 °C ±5 °C)	CV: 12 mVp-p, <1 mVrms; CC: 3 mArms	
Load Transient Response Time (within 15 mV from full load to half load and from half load to full load)	<50 µs	
Programming Accuracy1 (25 °C ±5 °C)	<0.35% +20 mV <0.35% +20 mA	
Readback Accuracy1 (25 °C ±5 ° C)	<0.35% +20 mV <0.35% +20 mA	
Meter Resolution	Voltage: 10 mV Current: 10 mA	
Maximum Output Float Voltage	±240 Vdc	

1 Specifications are based on one hour warm-up period.

Supplemental Characteristics

Supplemental Characteristics

Parameter	U8001A	U8002A
Temperature Coefficient (for 12 months)	CV: <100 ppm/ °C	
	CC: <380 ppm/ °C	CC: <300 ppm/ °C
Output Voltage Overshoot (during turn-on or turn-off of AC power state with the output control set to less than 1 V)	<1 V	
Voltage Programming Speed, to within 1% of total excursion		
Up Full Load	150 ms	
Up No Load	100 ms	
Down Full Load	30 ms	
Down No Load	450 ms	
Last Memory Setting Enabled	Yes	
Over Voltage Protection Response Time	<1.5 ms when the trip voltage is equal to or greater than 3 V and <10 ms when the trip voltage is less than 3 V (average time for output to drop from 90% of output voltage to 1 V after OVP condition occurred)	

Protection Features

Parameter	U8001A	U8002A
Over Voltage Protection Accuracy ± (% of output + offset)	<0.5% +0.5 V	
Over Voltage Protection Programmable Range	1 V to 33 V	
Over Current Protection Accuracy ± (% of output + offset)	<0.5% +0.5 A	
Over Current Protection Programmable Range	1 A to 3.3 A	1 A to 5.5 A

AC Power Input Specifications

Parameter	U8001A	U8002A
Input Power Option (selectable)	100 Vac ± 10%, 47 to 63 Hz 115 Vac ± 10%, 47 to 63 Hz 230 Vac ± 10%, 47 to 63 Hz	
Maximum Input Power	330 VA	500 VA
Fuse	External, customer assessable	

Physical Specifications

Parameter	U8001A	U8002A
Dimensions (H x W x L)	88.1 mm x 212.3 mm x 394.3 mm	
Weight	7.3 kg	8.3 kg

General Characteristics

Display

- Liquid Crystal Display (LCD)

Operating Environment

- Operating temperature from 0 °C to 40 °C (for full rated output) and 40 °C to 55 °C (for derated output)
- Relative humidity up to 95%
- Altitude up to 2000 meters

Storage Compliance

- -20 °C to 70 °C

Safety and EMC Compliance

Certified with:

- IEC 61326:2002/ EN61326:1997+ A1:1998+A3:2003
- CISPR 11:1990/ EN55011:1990
- Canada: ICES-001:2004
- Australia/New Zealand: AS/ NZS CISPR11:2004
- IEC 61010-1:2001/EN61010-1:2001 (2nd Edition)
- Canada: CAN/CSA-C22.2 No. 61010-1-04
- USA: ANSI/UL 61010-1:2004

Memory Operations

Up to three operating states

Calibration Cycle

One year

Warm-up time

- 60 minutes

Ordering Information

- U8001A DC Power Supply, 30 V, 3 A
- U8002A DC Power Supply, 30 V, 5 A

Included Documentation:

- U8001A-0B0 No documentation
- package

Additional Documentation:

- U8001A-AB0 Traditional Chinese User's and Service Guide
- U8001A-AB2 China – Simplified
- Chinese printed User's and Service Guide
- U8001A-ABA English User's and Service Guide
- U8001A-ACF Japanese User's and Service Guide

Calibration Document:

- U8001A-UK6 Commercial calibration with test result data

Power Options

- Opt 0E9 90 to 110 Vac, 47 to 63 Hz
- Opt 0EM 104 to 126 Vac, 47 to 63 Hz
- Opt 0E3 207 to 253 Vac, 47 to 63 Hz

Other Options

- Option U800xA-AUT Custom Power On (available only upon purchase with main model)
- E3600A-100 Test lead kit
- Option 1CM Rack-mount kit

Rack-mount Kits

- To rack-mount a single instrument:
  - Adapter kit (P/N 5063-9240)
- To rack-mount two instruments side-by-side:
  - Lock-link kit (P/N 5061-9694)
  - Flange kit (P/N 5063-9212)
- To rack-mount two instruments in a sliding support shelf:
  - Support shelf (P/N 5063-9255)
  - Slide kit (P/N 1494-0015)

Learn more at: www.keysight.com

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