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DATA SHEET

Keysight U8030 Series Triple-Output DC Power Supplies



KEYSIGHT TECHNOLOGIES

Introduction

Higher Power. Better Reliability. Unrivalled Performance.

Keysight Technologies, Inc. extends its family of basic DC power supplies to include a one of a kind power supply that offers up to 375 W power at three outputs. Equipped with output sequencing capability, it allows you to generate output sequences even with minimal programming skills. Each power supply is also built with excellent load regulation and clean output noise for continued stability. With these and many other features, you get a solid and reliable triple-output power supply at an unsurpassed performance.

The U8030 series offers two models – the U8031A and U8032A, each with different voltage and current ratings to cater to your needs. Both models are well-regulated compact bench-tops with total output of 375 W, making it an ideal power source alternative in electronics manufacturing, research and development as well as education sector.

Generate power supply output sequences – No extensive programming skills necessary

The output sequencing capability is carefully thought out for your convenience and ease when operating. Designed to perform automation function, our U8030 series is well-suited even for those with minimal programming skills. With easy-to-use knob and intuitive keypads, you can now set your desired output sequences for margin test, burn-in test and other general purpose tasks in an industrial setting.

Key Features

- Provides total power of 375 W for three outputs
- Output sequencing capability
- Excellent load and line regulation (CV: < 0.01% + 2 mV; CC: < 0.02% + 2 mA) ensures stable output
- Provides clean output with ≤ 1 mVrms (0.5 mVrms typical) noise
- Fast < 50 µs transient response for stable testing
- Dual display shows both voltage and current reading
- Over-voltage and over-current protection
- Security features: keypad lock and physical lock mechanism

Unrivalled performance—with low output noise and excellent load regulation

The U8030 series provides excellent load and line regulation (CV: < 0.01% + 2 mV; CC: < 0.02% + 2 mA) to ensure stable output even when load changes. This is crucial especially when dealing with noise-sensitive circuits that demand clean power. At a wide bandwidth of 20 Hz to 20 MHz, our bench power supplies continue to provide clean output at the lowest Vrms ≤ 1 mVrms (0.5 mVrms typical), leaving your signals uncontaminated and ensuring minimal interference to your Device-Under-Test (DUT).

Added safety features—with OVP, OCP and physical lock mechanism

Safety is an important consideration when dealing with power. Users may not only want to protect themselves from exposure to current, but also the additional costs incurred to their investment (DUT). Our U8030 series power supplies are integrated with an array of security features such as over-voltage (OVP) and over-current (OCP) protection to mitigate these risks.

Additionally, security features such as keypad locking capability prevents accidental front panel usage while physical lock mechanism which is strategically located at the rear of the unit provides secure instrument storage.

Differentiated features—allowing you to work better

Both models of the U8030 series come with a set of features to suit your needs while remaining easy to use. The LCD screen displays both voltage and current readings in a one-view panel while the all ON/OFF button allows multiple outputs to be controlled simultaneously. Additionally, the auto-track feature simplifies setup between output 1 and output 2. With these, you get a solid bench power supply plus a set of convenient and easy to use features.



Figure 1. Output sequencing made easy with intuitive keypads



Figure 2. Backlight on/off feature with dual reading (voltage and current) on an LCD display



Figure 3. Simplifies Output 1 and Output 2 setup with tracking feature

Front Panel Description

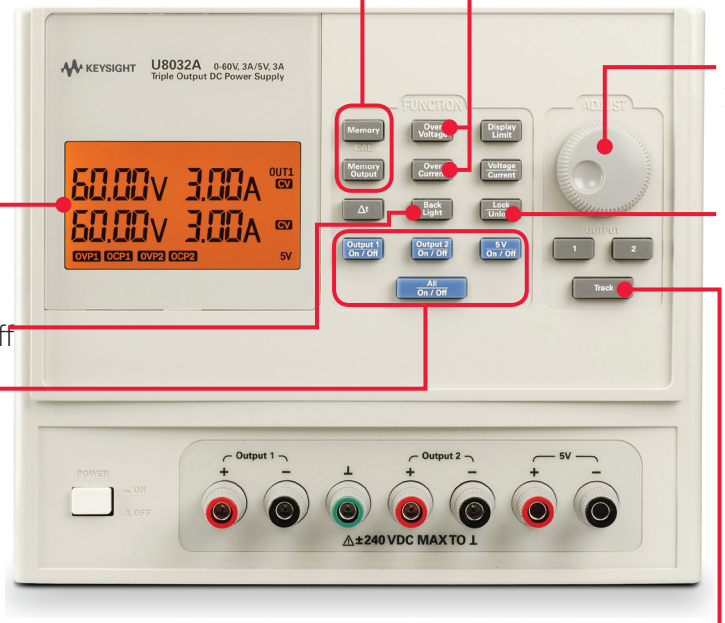
Essential security features:
Over-voltage protection (OVP)/
Over-current protection (OCP),
keypad lock and physical lock
mechanism



Physical lock mechanism as illustrated

Output sequencing function:
Generates output sequences
without a PC

LCD display:
Allows dual reading
(voltage and current) in one
display



Rotary knob:
Allows quick and easy
voltage and current setting

Keypad lock/unlock:
Locks front panel to
prevent accidental
change

Backlight On/Off:
Switches backlight off
when not needed

Channel control:
Allows channels to be controlled
individually/simultaneously (ON/
OFF)

Tracking:
Auto-tracking between output 1
and output 2 with single control

Figure 4. The U8032A as illustrated

Key Specifications

Electrical Specifications

Table 1.1 Electrical specifications [1]

Parameter	U8031A	U8032A
Total power output (W)	0 – 375 W	
Voltage output (V) Output Channel 1 & 2 (@ 0 to 40 °C)	0 to 30 V	0 to 60 V
Current output (A) Output Channel 1 & 2 (@ 0 to 40 °C)	0 to 6 A	0 to 3 A
Number of outputs	Three isolated outputs – Two variable: CV and CC operation – One fixed: CV operation only	
5 V fixed output [2] Output Channel 3	– Voltage/Current output: 5 V, 3A – Output accuracy: ≤ 5% or (5 V ± 0.25 V) – Vrms: < 2 mVrms, or Vpp: < 50 mVpp – Load and line regulation: ≤ 5 mV – Overload condition: 3 A + 20% (typical)	
Line & load regulation (for variable output)	CV: < 0.01% + 2 mV CC: < 0.02% + 2 mA	
Ripple & noise Based on calculation at temp 18 - 28 °C and bandwidth at 20 Hz to 20 MHz	CV: ≤1 mV_{rms}, 0.5 mV_{rms} (typical) or ≤ 10 mV_{pp}, 5 mV_{pp} (typical) CC: ≤ 1 mA_{rms}	
Load transient response time Within 15 mV from full load to half load and from half load to full load	< 50 us	
Stability (output drift) Following a 30-minute warm-up, with the output in the ON state according to the operating mode (CC with load or CV), and with a change in the output over 8 hours under constant load, line, and ambient temperature.	Voltage: < 0.02% Current: < 0.1%	
Programming accuracy (23 °C ± 5 °C)	CV: ≤ 0.25% + 15 mV CC: ≤ 0.30% + 15 mA	
Meter readback accuracy (23 °C ± 5 °C)	CV: ≤ 0.25% + 10 mV CC: ≤ 0.25% + 10 mA	
Programming/meter resolution	Voltage: 10 mV (4 digits) Current: 10 mA (3 digits)	
Maximum output float voltage	±240 V_{dc}	

1. The specifications stated are based on a 1 hour warm-up period.
2. The specifications referenced in this row are for Output Channel 3 (5 V fixed output). All other specifications listed in this table are intended for Output Channel 1 and 2, unless otherwise stated. .

Physical characteristics

Table 1.2 Physical characteristics

Parameter	U8031A/U8032A
Display	LCD with amber backlight
Rotary knob for reading adjustment	Yes
Size	4U, half rack
Dimensions (H x W x D)	179.0 x 212.3 x 379.0 mm
Weight	8.2 kg

Supplemental characteristics

Table 1.3 Supplemental characteristics

Parameter		U8031A	U8032A
Temperature coefficient (for 12 months) ±(% of output + offset)		Output – CV: (0.01% + 1 mV)/°C – CC: (0.01% + 1 mA)/°C OVP, OCP – CV: < 0.05%/°C – CC: < 0.05%/°C	
Output voltage overshoot During turn-on or turn-off of AC power, if output control is set less than 1 V		< 1 V	
Voltage programming speed to within 1 % of total excursion		30 V	60 V
Up	Full load	80 ms	200 ms
	No load	80 ms	100 ms
Down	Full load	30 ms	30 ms
	No load	150 ms	300 ms
Over temperature protection		Yes	
Last memory setting enabled		Yes	
Three memory storage locations for voltage and current settings		Yes	
Erasing non-volatile memory		Yes, erasable through front panel	
Rack mount capability		Yes, front panel and rear have rack-mountable support	

AC power input specifications

Table 1.4 AC power input specifications

Parameter	U8031A/U8032A
Input power option (selectable)	100 V_{ac} ± 10%, 47 to 63 Hz 115 V_{ac} ± 10%, 47 to 63 Hz 230 V_{ac} ± 10%, 47 to 63 Hz
Maximum input power	600 VA
Fuse	External, located at the rear panel

Environmental specifications

Table 1.5 Environmental specifications

Parameter	U8031A/U8032A
Operating temperature	0 to 40 °C
Storage temperature	–40 to 70 °C
Humidity	15% RH (relative humidity) to 85% RH at 40 °C (non condensing)
Altitude	Up to 2000 m
Fan acoustic noise	< 60 dB sound power
Environment of use	– Installation category II – Pollution Degree 2

Connection specifications

Table 1.6 Connection specifications

Parameter	U8031A/U8032A
Output connections	+Out, –Out, and chassis ground on the front panel. (Either positive or negative output terminal may be grounded or can be operated floating at up to a maximum of 240 V off ground. Total output voltage to ground must not exceed 240 V_{dc})
Binding posts	Output binding post located horizontally and side by side
I/O connections	N/A
AC input	3 pins standard IEC AC power connector with fuse and line selection at the rear

Protection Features

Table 1.7 Protection features

Parameter	U8031A	U8032A
Overvoltage protection accuracy ± (% of output + offset)	< 0.5% +0.5 V	
Overvoltage protection programmable range	0.1 to 33.0 V	0.1 to 66.0 V
Overvoltage protection response time	< 10 ms	
Overcurrent protection accuracy ± (% of output + offset)	< 0.5% + 0.5 A	
Overcurrent protection programmable range	0.1 to 6.6 A	0.1 to 3.3 A
Overcurrent protection response time	< 10 ms	

Ordering Information

Included documentation:

U8030 Series Product Reference CD-ROM

Additional documentation:

U8031A-ACF Japanese language user guide, printed
U8031A-ABA English language user guide, printed
U8032A-ACF Japanese language user guide, printed
U8032A-ABA English language user guide, printed

Calibration document:

U8031A-UK6 Commercial calibration with test result data
U8032A-UK6 Commercial calibration with test result data

Other Options:

E3600A-100 Test lead kit
Option 1CM Rack-mount kit

Rack-mount kits:

To rack-mount a single instrument:
Adapter kit (P/N 5063-9245)

Learn more at: www.keysight.com

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