Tektronix®

2231A-30-3

195 W Triple Channel DC Power Supply

DATA SHEET

The 2231A-30-3 Triple Channel DC Power Supply can output a total of 195 W of power, providing the power levels needed to energize a wide range of circuits and devices for benchtop work. Two channels can supply up to 30 V at 3 A each; the third channel can provide up to 5 V at 3 A. The 2231A-30-1 does not compromise on performance or convenience features, offering the versatility and ease of use you need, so it can be the only DC power supply on your bench.

Key Features

- Get three isolated, independent, and adjustable outputs in one instrument
- Output a total of 195 W of power with two 30 V @ 3 A outputs and one 5 V @ 3 A output
- Set voltage outputs with 0.06% basic accuracy and current outputs with 0.2% basic accuracy
- Output DC power with less than 5 mV p-p noise
- Display voltage and current measurements continuously from all three outputs
- Double output levels by connecting the two 30 V channels in series or parallel
- Store frequently used configurations in any of 30 setup memory locations
- Turn off any output after a predetermined test time with each channel's output timer
- Control the supply from a PC with an optional USB adapter

Quality DC Power

The 2231A-30-3 is a linear-based design with less than 5 mV p-p noise per output. Voltage and current settings have basic accuracies of 0.06% and 0.2% respectively. The load voltage and load current readback results provide the same levels of accuracy, so you can be confident you are sourcing accurate, low noise voltages and currents to your device-under-test (DUT).

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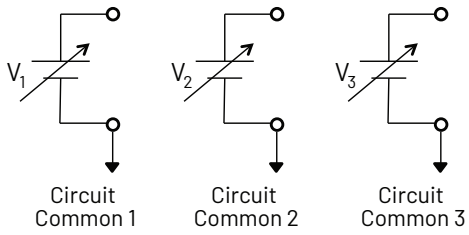
Three Fully Independent Outputs

Each output of the 2231A-30-3 is fully programmable and can be turned on and off independently from the other channels; it essentially provides three power supplies in one instrument. You can power up both the analog circuitry and the digital circuitry of a printed circuit board or a complete device, all with the same instrument.



The 2231A-30-3 has three fully independent, programmable outputs that are electrically isolated from each other. This allows them to power circuits that are on different grounds, such as optically isolated circuits.

All Outputs Are Isolated from Each Other and from Ground

Each output can power a circuit on a different ground reference. The low connection on each output is not connected to any of the other outputs. That means one supply can test three separate circuits on three different ground references or can power circuits that are transformer or optically isolated from each other.

Furthermore, all outputs are not referenced to ground, so the 2231A-30-3 can power both floating circuits and grounded circuits.

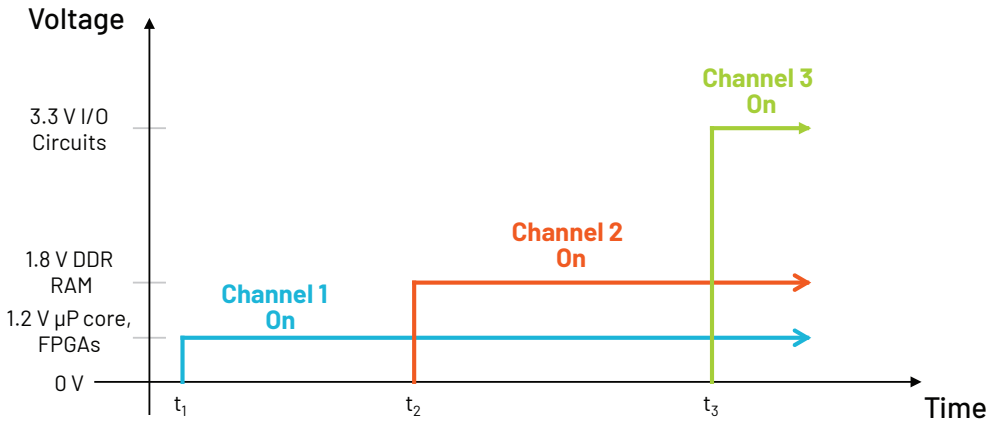
Power Bipolar Circuits

Because the 2231A-30-3's outputs are isolated, one output can be turned effectively into a negative source by connecting its high terminal to the common reference point of a bipolar circuit. A second output can connect its low terminal to the same common reference point. The result is a positive output and a negative output. If the two 30 V channels are used in this configuration, both outputs can be changed at the same time by using the 2231A-30-3's tracking function. That allows varying both channels at the same time while keeping their outputs at identical magnitudes.

Supply 60 V or 6 A

When the application requires outputting more than 30 V or 3 A, the two 30 V channels can be combined to double the output level. Wire the two outputs in series to deliver up to 60 V or wire them in parallel to deliver up to 6 A. For your convenience, the 2231A-30-3 display will read the total output, either voltage or current, to eliminate confusion. Also, the supply controls both outputs to deliver the required voltage or current. There's no need to set up each channel individually; the supply manages the channels for you, so combining channels is uncomplicated.

Wire the two 30 V channels in series or parallel to double the output voltage to 60 V or the supplied current to 6 A. The 2231A-30-3 has series and parallel modes that manage the channels and display the total output. This display shows the supply's parallel mode, including the output voltage and the total current from the channels wired in parallel.



Safely power circuits up and down in the proper sequence using the three independently programmable output channels.

Easily Test, Monitor, and Protect Your Circuits

- Adjust the outputs with the rotary knob or enter the output values precisely using the keypad with setting resolution of 10 mV or 1 mA.
- See the voltage and current readings on all channels at all times; the 2231A-30-3's display shows the readings from all three outputs simultaneously.
- Protect your DUT with an overvoltage protection setting for each output.
- Set timers to turn off an output after a programmed time to prevent excess stress on a circuit under development.
- Store and recall instrument setups for frequently used tests to begin testing quickly. You can store up to 30 unique test setups.

Control the Supply and Upload Data to a PC

Use the optional 2231A-001 USB Adapter to control the 2231A-30-1 via a PC's USB interface, then transfer readings from the outputs to combine with other test data for a more thorough analysis of DUT performance. The 2231A-001 USB Adapter provides the flexibility to use the supply under either manual or automated control.

Specifications

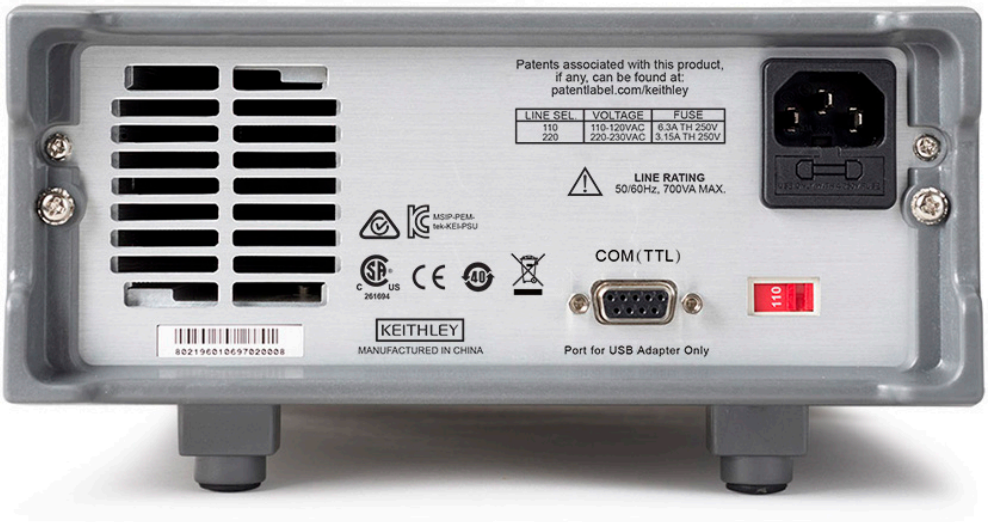
DC Output Rating

	Channel 1	Channel 2	Channel 3
Voltage	0–30 V	0–30 V	0–5 V
Current	0–3 A	0–3 A	0–3 A

Maximum Power	195 W.
Load Regulation	**Voltage:** ≤0.02% + 4 mV. **Current:** ≤0.2% + 3 mA.
Line Regulation	**Voltage:** ≤0.02% + 4 mV. **Current:** ≤0.2% + 3mA.
Ripple and Noise (20 Hz–20 MHz)	**Voltage:** ≤1mVrms/≤5 mVp-p. **Current:** ≤6 mA rms.
Setting Resolution	**Voltage:** 10 mV. **Current:** 1 mA.
Setting Accuracy	**Voltage:** ≤0.06% + 20 mV. **Current:** ≤0.2% + 10 mA.
Readback Resolution	**Voltage:** 10 mV. **Current:** 1 mA.
Readback Accuracy	**Voltage:** ≤0.06% + 20 mV. **Current:** ≤0.2% + 10 mA.
Isolation Voltage, Output to Chassis	Any output can be isolated up to 240 V (DC + peak AC with AC limited to a maximum of 3 V pk-pk and a maximum of 60Hz) relative to the earth ground terminal.
Isolation Voltage, Output to Output	Any output can be isolated up to 240V (DC + peak AC with AC limited to a maximum of 3Vpk-pk and a maximum of 60Hz) relative to any other output terminal.
Tracking and Combination Modes:	
Tracking Mode	Maintains the ratio on the two 30 V output channels that is present when the control is activated.
Combination V1 + V2 Series Mode	Deliver up to 60 V when CH1 and CH2 are wired in series. Meter reads back combined voltage.
Combination I1 + I2 Parallel Mode	Deliver up to 6 A when CH1 and CH2 are wired in parallel. Meter reads back combined current.

General

Memory	30 setup memory locations.
Output Timer Range	0.1 s to 99999.9 s.
Display	Vacuum fluorescent display.
Connections	**Front:** Power output jacks: 3 sets, safety-shrouded banana jacks. **Rear:** DB9 connector for remote control.
Overtemperature Protection	If the internal temperature of the supply exceeds 85°C, the supply will automatically turn off.
EMC Compliance	Conforms to European Union EMC Directive.
Safety Compliance	Conforms to European Union Low Voltage Directive.
Power Line Ratings	110 VAC/230 VAC ±10%.
Power Line Frequency	47 Hz–63 Hz.
Maximum Power Consumption	750 VA.
Operating Environment	0° to 40°C, 5% to 80% relative humidity at up to 40°C. For indoor, non-residential use only.
Storage Environment	–20° to 70°C, 5% to 80% relative humidity up to 40°C, and 5% to 60% relative humidity from 40° to 70°C.
Physical Characteristics	
Height	88.2 mm (3.5 in)
Width	214.5 mm (8.5 in)
Depth	354.6 mm (14 in)
Net Weight	7.10kg (15.7 lbs.).
Shipping Weight	9.40kg (20.7 lbs.).
Warranty	3 years.



2231A-30-3 rear panel showing the communication port, line power setting switch, and the power input connector with fuse holder.

Ordering Information

2231A-30-3	Triple Channel DC Power Supply

Supplied Accessories

	Certificate of Calibration
	Power Cord

Available Accessories

2231A-001	USB Adapter with USB Cable
4299-7	Universal Fixed Rack Mount Kit
4299-14	Dual Fixed Rack Mount Kit
RMU-2U	Dual Fixed Rack Mount Kit

Service Options

2231A-30-3-EW	1 Year KeithleyCare® Gold Plan
2231A-30-3-5Y-EW	5 Year KeithleyCare Gold Plan
C/2231A-30-3-3Y-STD	KeithleyCare 3 Yr Std Calibration Plan
C/2231A-30-3-5Y-STD	KeithleyCare 5 Yr Std Calibration Plan

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