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PICOTEST CORP.

**P9610A/11A**

**PORTABLE/LOW-NOISE/108W (P9610A: 36V/7A)**

*Best Value*

**150W (P9611A: 60V/6A)**

# MIXED MODE DC POWER SUPPLY

## Features:

- Mixed Mode: Switched Efficiency + Linear Performance
- Programming Accuracy: (V: 0.05% + 10mV / C: 0.2% + 10mA)
- Line & Load Regulations: (V: 0.01% + 2mV / C: 0.01% + 250uA)
- Autoranging: P9610A (1mV ~ 36V), P9611A (10mV ~ 60V)  
1mA ~ 7A 1mA ~ 6A
- Fast Transient Response Time: (P9610A <30us)  
P9611A <50us)
- Ripple & Noise: (P9610A <350uVrms, P9611A <500uVrms)
- Master / Slave Control: (Various Connections for P9610A)
- Sequencing Mode: (8 Programmable Points)
- Remote Sense: (Stable & Accurate Output)
- Output & Protection: (CV, CC / OVP, OCP, OTP)
- An Optical Knob: (Provides a Durable & Precise Control)
- P9610A/11A's Size & Weight: 214.6Wx88.8Hx280D mm, < 2500 g  
5.5 Lbs

**P9610A**



**P9611A**

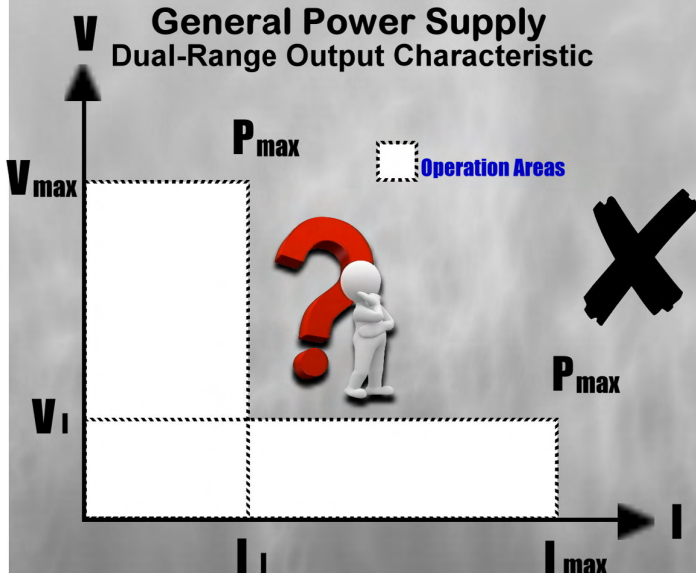


## 1 Advanced Function Autoranging

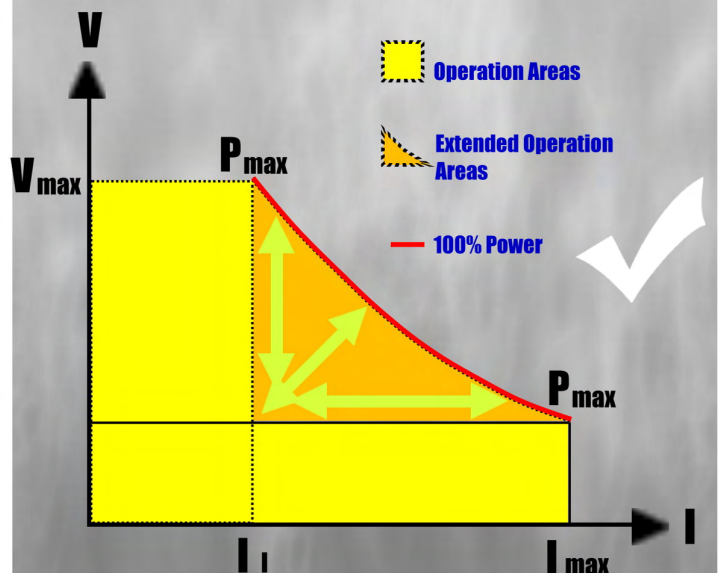
The P9610A/11A features the autoranging capability, while other power supplies require the user to switch ranges to maximize output power.

The P9610A/11A provides the extended operation areas (see below). This means that you have access to 100% power all the time at any voltage or current within the maximum limits. This also means that the P9610A/11A can meet more of your needs, minimizing the number and cost of power supplies you need to purchase.

**General Power Supply**  
Dual-Range Output Characteristic



**Picotest P9610A/11A**  
Autoranging Output Characteristic

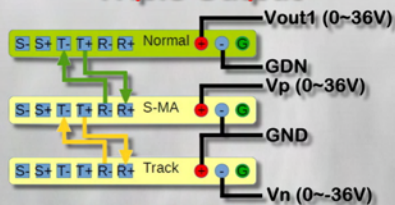




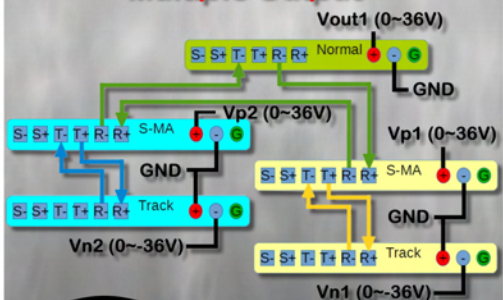
## 2 Versatile Connection Master-Slave

The P9610A supports Master-Slave operation to increase the maximum output power. This capability can be also used to create sophisticated multi-output power systems, for example:

### Triple Output



### Multiple Output



## 3 Cooling System Evolution Advanced Fan

The P9610A/11A provides an efficient internal cooling system. The advanced technology fan minimizes distracting and annoying acoustic noise. You won't even notice the fan. Experience the evolution of the cooling system.



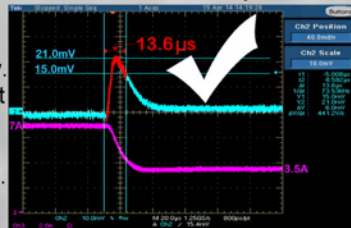
Air Outtake



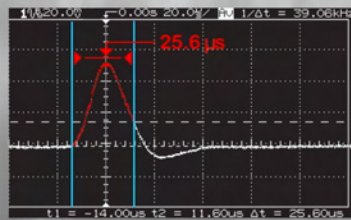
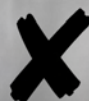
Air Intake

## 4 Fast Recovery Load Transient Response Time

The P9610A recovers fast from large load current changes. The following oscilloscope images show the power supply response to 7 A to 3.5 A load change. It recovers to 15 mV in 13.6  $\mu$ s. The P9610A also has a smaller excursion and is more stable. Note the recovery under-shoot in the competitor's power supply. This does not exist in the P9610A. It is more precise.



On the contrary, a well-known competitor's model under the same test conditions shows 25.6  $\mu$ s.



## 5 Protection Evolution I Short-Withstood Circuit

The P9610A/11A can withstand continuous short circuits or repetitive short circuits up to 13 times per second. This is much more robust than many competing power supplies. The P9610A/11A incorporates a unique design which can protect itself instantaneously from abnormal and unpredictable events.



## 6 Elegant Design Knob & No Shorting Bar

● **Knob:** The P9610A/11A provides a precise and durable adjustment knob. This optical knob has a numerical capability. Rotating it with the right or left direction button, you can move the cursor among the digits and numbers on the display. The optical control will not degrade like the potentiometers used in competing products.



● **No Shorting Bar:** The P9610A provides a selectable circuit that eliminates the complexity of shorting bars when using remote sensing. The P9610A allows you to implement remote sensing or not at any time, providing the maximum flexibility. With the P9610A, there are no shorting bars to misplace and no time required to install them saving you time and money.



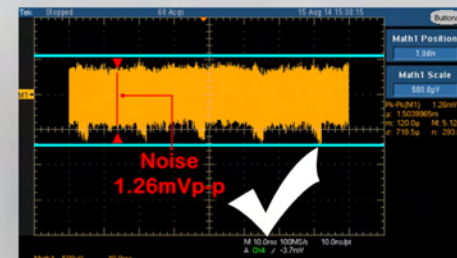
## 7 Protection Evolution II OVP/OCP/OTP

Overvoltage protection (OVP), overcurrent protection (OCP), and over temperature protection (OTP) are exclusively designed to protect both the P9610A/11A and your DUT (Device under Test).

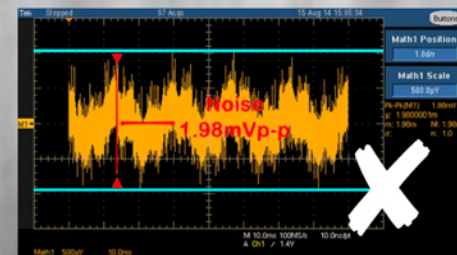


## 8 Pure Source Low Noise Output

The P9610A can generate pure source with the low noise around 1.26mV p-p in the bandwidth from 20Hz to 20MHz.

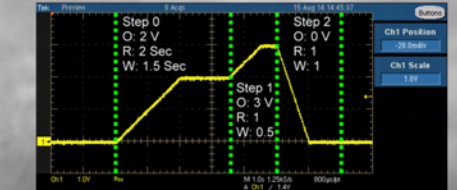


The well-known competitor's model under the same test conditions shows 1.98mVp-p.



## 9 Programmable Output SEQ Function

Many digital circuits require power supplies to turn on & off in a particular order. The P9610A/11A supports the output voltage sequencing mode. This mode allows you to control the timing to output different volts and currents.





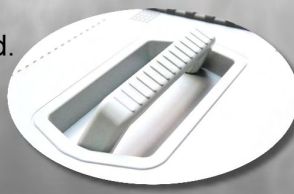
# 10 Other Features

## Fast Settling & Compact Size

● **Settling Time:** The advanced driver circuit of the P9610A/11A is very fast (<40ms/<50ms) allowing you to improve your production throughput.

● **Compact Size:** The P9610A/11A's weight is less than 5.5 Lbs. The shipping carton for one P9610A is 10.25"(W)\*5.5"(H)\*13.5"(D). The dimensional weight for marine shipment is about 5.5 Lbs, and for air shipment is about 6.6 Lbs. The low weight of the P9610A/11A is less expensive to ship, saving you money.

● **Hidden Barrier-Free Carrying Handle:** The P9610A/11A's handle is designed to meet your demand for different situations. The handle conveniently stores out of the way allowing equipment to be safely stacked. For more information about the P9610A/11A, refer to the user's manual or contact your agency.



## Specifications

### Output Ratings (@ 0 °C ~ 40 °C) (P9610A/11A)

Voltage: 0 to 36 V / 0 to 60 V<sup>3</sup>

Current: 0 to 7 A / 0 to 6 A

### Programming Accuracy<sup>1</sup> 1 Year (@ 25 °C ±5 °C), (% of Output + Offset)

Voltage: 0.05% + 10 mV

Current: 0.2% + 10 mA

### Read-Back Accuracy<sup>1</sup> 1 Year (over USB or front panel with respect to actual output (@ 25 °C ±5 °C), (% of Output + Offset)

Voltage: 0.05% + 5 mV

Current: 0.15% + 5 mA

### Ripple and Noise (with outputs ungrounded, or either output terminal grounded, 20 Hz to 20 MHz)

Voltage: < 0.35 mVrms / < 0.5 mVrms  
< 2 mV p-p / < 3 mV p-p

Current: < 2 mArms

Common Mode Current: < 1.5 μArms

### Load Regulation ±(% of Output + Offset)

Change in output voltage or current for any load change within ratings.

Voltage: < 0.01% + 2 mV

Current: < 0.01% + 250 μA

### Line Regulation ±(% of Output + Offset)

Change in output voltage or current for any load change within ratings.

Voltage: 0.01% + 2 mV

Current: 0.01% + 250 μA

### Programming Resolution

Voltage: 1 mV

Current: 0.21 mA / 1 mA

### Read-Back Resolution

Voltage: 1 mV

Current: 0.1 mA / 0.21 mA

### Meter Resolution

Voltage: 1 mV / 10 mV

Current: 0.1 mA / 1 mA

### Transient Response Time

Less than 30/50 usec for output recover to within 15 mV following a change in output current from full load to half load or vice versa.

### Command Processing Time via GPIB

Read-Back Commands: Maximum  
time to read-back output by MEASure? < 20 ms  
commands

### Output Programming Range (maximum programmable values)

Voltage: 0 to 37.8 V / 0 to 60 V

Current: 0 to 7.35 A / 0 to 6 A

### Temperature Coefficient ±(% of Output + Offset)

Maximum change in output / read-back per °C after a 30-minute warm-up.

Voltage: 0.01 % + 3 mV / 0.01 % + 10 mV

Current: 0.02 % + 3 mA

### Stability (% of Output + Offset)

Maximum change in output / read-back per °C after a 30-minute warm-up.

Voltage: 0.02 % + 1 mV / 0.05 % + 10 mV

Current: 0.1 % + 1 mA / 0.15 % + 2 mA

### Voltage Programming Speed

Maximum time required for output voltage to settle within 1 % of its total excursion (for resistive load). Excludes command processing time.

Full Load Up (0V ~ 36V): < 40 ms / (0V~60V): < 100 ms

Full Load Down (36V ~ 0V): < 40 ms / (60V~0V): < 50 ms

No Load Up (0V ~ 36V): < 20 ms / (0V~60V): < 35 ms

No Load Down (36V ~ 0V): < 400 ms / (60V~0V): < 500 ms

## General Specifications<sup>2</sup>

| Item                             | Limitation & Description                             |
|----------------------------------|------------------------------------------------------|
| Power Supply :                   | 100V ~ 120V (115V Range)<br>220V ~ 240V (230V Range) |
| Power Line (Hz) :                | 47Hz ~ 63Hz                                          |
| Interfaces :                     | Optional USB / USB&GPIB                              |
| Power Consumption :              | 400VA Maximum                                        |
| Size & Weight for Rack (WxHxD) : | 214.6 x 88.6 x 280 mm, < 2500 g<br>(5.5 Lbs)         |

1. The accuracy specifications are gained under 1-hour warm-up condition and the calibration at 25°C.
2. For more information, please check the user's manual.
3. The gray supplements are the P9611A's specifications. If there is no gray, the specs. are the same as the P9610A's.

The specifications are subject to change without notice due to design improvements.