Keysight Technologies SMU (Source/Measure Unit) for IC and Electronic Components

Quick Bench-top Evaluation Series Introduction

The Keysight B2900A Series of Precision Source/Measure Units improves bench-top DC measurement efficiency for IC and electronic component evaluation.

Known issues for bench-top IC and electronic component evaluation

With limited bench-top space you cannot afford to accommodate multiple single-function instruments.

- It is difficult to place multiple DC sources, multimeters, etc. on your limited bench-top space.
- Changing wiring for each measurement is messy, time consuming and can easily lead to improper connections.

Many benchtop solutions require a PC to display data graphically and make interactive measurements.

- Requiring a PC to make interactive measurements is inconvenient and reduces productivity due to time spent on PC interface issues.
- Adding a PC to your instrument setup takes up valuable bench space.

Solution: The B2900A series' architecture reduces the number of instruments and eliminates messy wiring.

Solution: The B2900A series' graphical user interface supports real-time IV curve monitoring directly on the instrument.

The B2900A series does not require you to lug a PC to the bench. You can monitor graphical measurement results on the B2900A and save the graphs to a USB memory stick in both CSV and JPEG formats. This improves the efficiency of your bench-top evaluation and debugging.
What is a “Source/Measure Unit”?

A Source/Measure Unit (SMU) can perform many roles, thereby eliminating multiple rack and stack instruments that require frequent cable reconfiguration.

- An SMU integrates the following capabilities into each channel.
  - 4-quadrant voltage source
  - 4-quadrant current source
  - Volt meter
  - Current meter
- You can easily select any source and measurement combination using the front panel GUI. The figures below show some commonly used configurations.
- The “Sense” and “Guard” terminals are available for 4-wire (Kelvin) and more precise low level measurements.

What does the graphical user interface offer?

The B2900A series can display XY graphs (such as current vs. voltage and time-varying signals) without requiring a PC.

- You can check device characteristics in real time on a color graphical display during measurement. This dramatically improves your efficiency.
- A cursor function is available to enable you to display the exact data values at any point along a curve.
- Front-panel graphical data can be saved onto a USB memory stick in both CSV and JPEG formats.

Do you prefer using a PC?

No problem! Keysight has free “Quick I/V Measurement Software” to control the B2900A from a PC.

Who can benefit from these capabilities?

- IC/electronic component designers and technicians that need to perform quick evaluation and debug of engineering samples on their bench-top.
- Electronics engineers and technicians that need to select ICs/electronic components for their system designs.

To Learn More...

Please visit our website at: www.keysight.com/find/b2900a

How broad is the B2900A series capability?

The specifications below cover most bench-top IC evaluation needs.

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Number of channels</th>
<th>Max output (DC, Pulse)</th>
<th>Min source resolution</th>
<th>Min measure resolution</th>
<th>Min timing interval</th>
<th>Viewing mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2901A</td>
<td>1</td>
<td>210 V 3.03 A 200 V 10.5 A</td>
<td>1 pA 1 µV</td>
<td>100 fA 100 nV</td>
<td>20 µs</td>
<td>Single graph</td>
</tr>
<tr>
<td>B2902A</td>
<td>2</td>
<td>210 V 3.03 A 200 V 10.5 A</td>
<td>1 pA 1 µV</td>
<td>100 fA 100 nV</td>
<td>20 µs</td>
<td>Single, dual, graph</td>
</tr>
<tr>
<td>B2911A</td>
<td>1</td>
<td>210 V 3.03 A 200 V 10.5 A</td>
<td>10 fA 100 nV</td>
<td>10 fA 100 nV</td>
<td>10 µs</td>
<td>Single, graph, roll</td>
</tr>
<tr>
<td>B2912A</td>
<td>2</td>
<td>210 V 3.03 A 200 V 10.5 A</td>
<td>10 fA 100 nV</td>
<td>10 fA 100 nV</td>
<td>10 µs</td>
<td>Single, dual, graph, roll</td>
</tr>
</tbody>
</table>