

# Keysight Technologies

## E36100B Series

### Programmable DC Power Supplies

#### Data Sheet



## Power Forward

Designs change—and so should your DC power supply. Meet the E36100B, engineered by Keysight to power your designs safely and quietly during manual tests or automated sequences. From every angle – size, display, and I/O – the E36100B will impress you. Add one to your bench and power forward.

- Choose the best model for your needs: five models offer up to 5 A or 100 V
- Save space on your bench, 2U ¼-form factor
- Connect for computer control with standard LAN (LXI Core) and USB connectivity
- Perform manual tasks quickly with the intuitive on-screen menu system
- Easily view the high-contrast OLED display from anywhere on your bench, even from a sharp angle
- Protect your device under test (DUT) with overvoltage and over-current detection
- Power your DUT with confidence through excellent accuracy in programming and readback
- Quiet operation

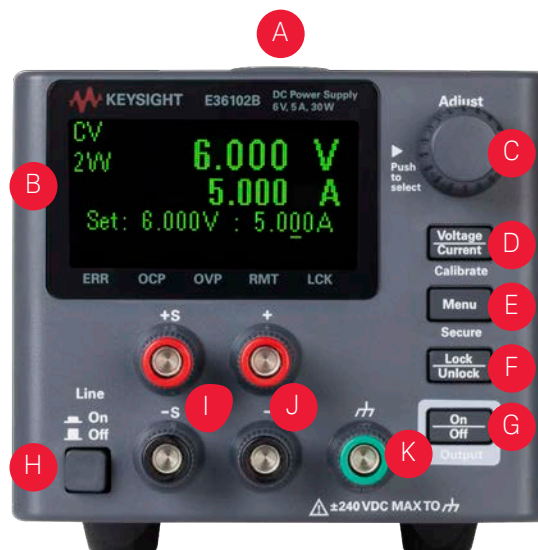
## Accurate, Reliable Power

The E36100B Series is the latest addition to Keysight's industry standard family of bench power supplies, backed with Keysight's standard 3-year warranty.

Power your DUT with excellent voltage and current programming and readback accuracy. Use the power supply's highly accurate low-current measurement feature for demanding measurements. Protect your DUT with built-in overvoltage and overcurrent protection, and count on the built-in overtemperature protection to keep your power supply safe.

## Excellent Front-Panel Usability

The clean design of the E36100B Series front-panel lets you become productive with the unit very quickly. The easy-to-use rotary knob and keypad interface allows you to set the output at your desired resolution quickly and easily, with digit-by-digit control. You can store and recall up to 10 complete power supply setups from non-volatile memory in order to quickly change instrument states. The output on/off key quickly turns the output on and off.



- A Tough carrying handle
- B Information-packed, high-contrast OLED display; easily viewable even from sharp angles
- C Rotary knob for quick and easy configuration
- D Fast voltage/current setting and front-panel electronic calibration
- E Menu key opens intuitive user interface
- F Front-panel lock prevents accidental changes during tests
- G Output enable/disable switch to protect your DUT quickly
- H Dual-position power switch
- I Sense terminals
- J Output terminals
- K Earth ground reference point

## Fast, Industry-Standard Programming

Every E36100B Series model ships standard with both LAN (LXI Core) and USB (TMC488). The easy-to-use SCPI (Standard Commands for Programmable Instruments) programming language lets you create fast and simple programs with transient response faster than 50  $\mu$ s and fast command processing time—less than 10 ms. You can also program the instrument with the power supply's Interchangeable Virtual Instruments (IVI) driver.

Use the Keysight IO Libraries Suite ([www.keysight.com/find/iosuite](http://www.keysight.com/find/iosuite)) to accelerate your programming. The IO Libraries' instrument-centric view and auto-discovery of instruments get you connected to your instrument quickly

## Simple, Powerful Soft Front Panel

When you cannot be near your DUT, open your browser and control the instrument via the power supply's built-in Web interface, with a look and feel that replicates the front-panel experience.

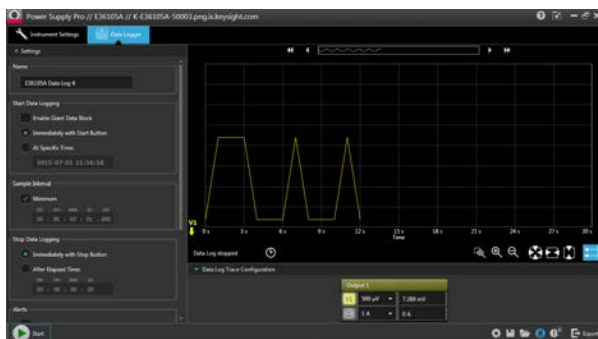


## BenchVue Control and Visualization

BenchVue software for the PC makes it simple to connect, control, and view Keysight power supplies simultaneously with other Keysight bench instruments without programming.

- Visualize the outputs of multiple power supplies simultaneously
- Log data, capture screen shots, and save a system state
- Recall a past state of your bench to replicate results
- Export measurement data in desired format fast
- Quickly access manuals, drivers, FAQs and videos
- Monitor and control bench from mobile devices

The power supply app within BenchVue lets you control power supplies, visualize voltage and current output, log data, and annotate captured data. Use the companion BenchVue Mobile app to monitor and respond to long-running tests from anywhere.



## Easy Power and I/O Connection

Connect for computer control with standard LAN (LXI Core) and USB connectivity. Use the security slot to keep the supply on your bench.



Do you need to convert the power supply for different mains power? The two switches on the bottom of the instrument make it straightforward. See the product manual for details.



Option J01 recessed binding posts

## Performance Specifications

|                                                                                                                                                          | Tolerance % | E36102B            | E36103B           | E36104B           | E36105B           | E36106B           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|-------------------|-------------------|-------------------|-------------------|
| DC output rating (0 to 40 °C)                                                                                                                            |             |                    |                   |                   |                   |                   |
| Max. voltage                                                                                                                                             |             | 6 V                | 20 V              | 35 V              | 60 V              | 100 V             |
| Max. current                                                                                                                                             |             | 5 A                | 2 A               | 1 A               | 0.6 A             | 0.4 A             |
| Load regulation ± (% of output + offset)                                                                                                                 |             |                    |                   |                   |                   |                   |
| Voltage                                                                                                                                                  | <0.01% +    | 2 mV               | 3 mV              | 6 mV              | 10 mV             | 20 mV             |
| Current                                                                                                                                                  | <0.02% +    | 250 µA             | 100 µA            | 50 µA             | 30 µA             | 20 µA             |
| Line regulation ± (% of output + offset)                                                                                                                 |             |                    |                   |                   |                   |                   |
| Voltage                                                                                                                                                  | <0.01% +    | 1 mV               | 2 mV              | 4 mV              | 7 mV              | 12 mV             |
| Current                                                                                                                                                  | <0.02% +    | 250 µA             | 100 µA            | 50 µA             | 30 µA             | 20 µA             |
| Output ripple and noise (20 Hz to 20 MHz)                                                                                                                |             |                    |                   |                   |                   |                   |
| Voltage                                                                                                                                                  | RMS         | 350 µV             | 0.8 mV            | 1.2 mV            | 1.55 mV           | 2.5 mV            |
|                                                                                                                                                          | Pk-Pk       | 8 mV               | 15 mV             | 20 mV             | 30 mV             | 40 mV             |
| Accuracy 12 months (23 °C ± 5 °C)                                                                                                                        |             |                    |                   |                   |                   |                   |
| Programming accuracy ± (% of output + offset)                                                                                                            |             |                    |                   |                   |                   |                   |
| Voltage                                                                                                                                                  | 0.05% +     | 3 mV               | 8 mV              | 12 mV             | 20 mV             | 40 mV             |
| Current                                                                                                                                                  | 0.05% +     | 5 mA               | 1 mA              | 0.6 mA            | 0.4 mA            | 0.3 mA            |
| Readback accuracy ± (% of output + offset)                                                                                                               |             |                    |                   |                   |                   |                   |
| Voltage                                                                                                                                                  | 0.05% +     | 3 mV               | 5 mV              | 8 mV              | 12 mV             | 20 mV             |
| Current                                                                                                                                                  | 0.05% +     | 4 mA               | 1 mA              | 0.5 mA            | 0.3 mA            | 0.2 mA            |
| Low range current                                                                                                                                        | 0.25% +     | 40 µA<br>(0-20 mA) | 40 µA<br>(0-8 mA) | 40 µA<br>(0-4 mA) | 40 µA<br>(0-3 mA) | 40 µA<br>(0-2 mA) |
| Load transient recovery time<br>(Time to recover to within the settling band following a load change from 50% to 100% and from 100% to 50% of full load) |             |                    |                   |                   |                   |                   |
| Voltage settling band                                                                                                                                    |             | 15 mV              | 50 mV             | 87.5 mV           | 150 mV            | 250 mV            |
| Time                                                                                                                                                     |             | <50 µs             | <50 µs            | <50 µs            | <50 µs            | <50 µs            |

## Typical Characteristics

|                                                                                                  |                                                                | E36102B | E36103B | E36104B | E36105B | E36106B |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------|---------|---------|---------|---------|
| Resolution                                                                                       |                                                                |         |         |         |         |         |
| Program (Average)                                                                                | Voltage                                                        | 360 μV  | 1.2 mV  | 2.1 mV  | 3.6 mV  | 6.0 mV  |
|                                                                                                  | Current                                                        | 300 μA  | 120 μA  | 60 μA   | 36 μA   | 24 μA   |
| Readback                                                                                         | Voltage                                                        | 240 μV  | 800 μV  | 1.4 mV  | 2.4 mV  | 4 mV    |
|                                                                                                  | Current                                                        | 200 μA  | 80 μA   | 40 μA   | 24 μA   | 16 μA   |
|                                                                                                  | Small current                                                  | 5 μA    | 960 nA  | 280 nA  | 180 nA  | 120 nA  |
| Program (Meter)                                                                                  | Voltage                                                        | 1 mV    | 1 mV    | 2 mV    | 3 mV    | 6 mV    |
| Minimum perceivable change                                                                       | Current                                                        | 1 mA    | 1 mA    | 1 mA    | 1 mA    | 1 mA    |
| Readback (Meter)                                                                                 | Voltage                                                        | 1 mV    | 1 mV    | 1 mV    | 3 mV    | 6 mV    |
|                                                                                                  | Current                                                        | 1 mA    | 1 mA    | 1 mA    | 1 mA    | 1 mA    |
|                                                                                                  | Small current                                                  | 1 μA    | 1 μA    | 1 μA    | 1 μA    | 1 μA    |
| Output ripple and noise (20 Hz to 20 MHz)                                                        |                                                                |         |         |         |         |         |
|                                                                                                  | RMS                                                            | 2 mA    | 1 mA    | 400 μA  | 200 μA  | 160 μA  |
| Overvoltage protection (OVP) ± (% of output + offset)                                            |                                                                |         |         |         |         |         |
| Accuracy                                                                                         | 0.20%                                                          | 0.5 V   | 1.5 V   | 3 V     | 5 V     | 8 V     |
| Activation time (average time for the output to start to drop after OVP or OCP condition occurs) |                                                                |         |         |         |         |         |
| Overvoltage (OVP)                                                                                | < 1.5 ms when the trip voltage is greater than or equal to 3 V |         |         |         |         |         |
| Overcurrent (OCP)                                                                                | < 1.5 ms                                                       |         |         |         |         |         |
| Command processing time                                                                          |                                                                |         |         |         |         |         |
|                                                                                                  | < 10 ms                                                        |         |         |         |         |         |
| Programming temperature coefficient per °C (% of output + offset)                                |                                                                |         |         |         |         |         |
| Voltage                                                                                          | 0.005%                                                         | 180 μV  | 600 μV  | 1.05 mV | 1.8 mV  | 3.0 mV  |
| Current                                                                                          | 0.01%                                                          | 250 μA  | 100 μA  | 50 μA   | 60 μA   | 40 μA   |
| Readback temperature coefficient per °C (% of output + offset)                                   |                                                                |         |         |         |         |         |
| Voltage                                                                                          | 0.005%                                                         | 12 μV   | 40 μV   | 70 μV   | 120 μV  | 200 μV  |
| Current                                                                                          | 0.01%                                                          | 250 μA  | 100 μA  | 50 μA   | 30 μA   | 20 μA   |
| Remote sense (max. voltage in load lead)                                                         |                                                                |         |         |         |         |         |
| Output can function as described with up to a 1-V drop per load lead                             |                                                                |         |         |         |         |         |
| Up/down programming settling time to within 1% of total excursion                                |                                                                |         |         |         |         |         |
| Up, full load                                                                                    |                                                                | 25 ms   | 50 ms   | 50 ms   | 50 ms   | 100 ms  |
| Up, no load                                                                                      |                                                                | 25 ms   | 50 ms   | 50 ms   | 50 ms   | 100 ms  |
| Down, full load                                                                                  |                                                                | 25 ms   | 25 ms   | 25 ms   | 30 ms   | 35 ms   |
| Down, no load                                                                                    |                                                                | 100 ms  | 150 ms  | 150 ms  | 250 ms  | 300 ms  |
| I/O Interfaces                                                                                   |                                                                |         |         |         |         |         |
| LAN (LXI Core) and USB 2.0 FS (TMC488)                                                           |                                                                |         |         |         |         |         |

## Typical Characteristics

|                                                                          | E36102B                                                                            | E36103B | E36104B | E36105B                      | E36106B |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|---------|------------------------------|---------|
| Environmental conditions                                                 |                                                                                    |         |         |                              |         |
| Operating environment                                                    | Indoor use, installation category II (for AC input), pollution degree 2            |         |         |                              |         |
| Operating temperature range                                              | 0 °C to 40 °C                                                                      |         |         |                              |         |
| Storage temperature                                                      | -20 to 70 °C                                                                       |         |         |                              |         |
| Relative humidity                                                        | Up to 95%                                                                          |         |         |                              |         |
| Altitude                                                                 | Up to 2000 meters                                                                  |         |         |                              |         |
| Electromagnetic compatibility                                            | Compliant with EMC Directive (2004/108/EC)                                         |         |         |                              |         |
|                                                                          | IEC 61326-1:2012/EN 61326-1:2013 Group 1 Class A                                   |         |         |                              |         |
|                                                                          | Canada: ICES-001:2004                                                              |         |         |                              |         |
|                                                                          | Australia/New Zealand: AS/NZS                                                      |         |         |                              |         |
|                                                                          | South Korea KC mark                                                                |         |         |                              |         |
| Safety                                                                   | UL 61010-1 3rd edition, CAN/CSA-C22.2 No. 61010-1-12, IEC 61010-1:2010 3rd edition |         |         |                              |         |
| AC input                                                                 | 100, 115, or 230 V input (± 10%), 47 to 63 Hz, 200 VA                              |         |         |                              |         |
| Net weight                                                               | 3.7 kg or 8.1 lbs. (approx.)                                                       |         |         | 3.6 kg or 7.9 lbs. (approx.) |         |
| Overall dimension (H x W x D)                                            | 2U, 1/4 rack (102 x 106 x 365 mm)                                                  |         |         |                              |         |
| Net dimension (without feet, strap handle and binding posts) (H x W x D) | 2U, 1/4 rack (89 x 106 x 339 mm)                                                   |         |         |                              |         |

## Ordering Information

### Keysight E36100B Series Power Supplies

|         |                                                    |
|---------|----------------------------------------------------|
| E36102B | DC power supply, single-output, 6 V, 5 A, 30 W     |
| E36103B | DC power supply, single-output, 20 V, 2 A, 40 W    |
| E36104B | DC power supply, single-output, 35 V, 1 A, 35 W    |
| E36105B | DC power supply, single-output, 60 V, 0.6 A, 36 W  |
| E36106B | DC power supply, single-output, 100 V, 0.4 A, 40 W |

## Standard Shipped Accessory

AC power cord (based on destination country)

## Ordering Options

|            |                                                                   |
|------------|-------------------------------------------------------------------|
| Option 0E3 | 230 VAC ± 10%                                                     |
| Option 0EM | 115 VAC ± 10%                                                     |
| Option 0E9 | 100 VAC ± 10%                                                     |
| Option UK6 | Commercial calibration with test result data                      |
| Option J01 | Recessed binding posts                                            |
| J1520AC    | Universal shelf rack                                              |
| J1526AC    | Metal sliding shelf                                               |
| E36110A    | Rack mount kit solutions for the E36100B series DC power supplies |



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[www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)

### Americas

|               |                  |
|---------------|------------------|
| Canada        | (877) 894 4414   |
| Brazil        | 55 11 3351 7010  |
| Mexico        | 001 800 254 2440 |
| United States | (800) 829 4444   |

### Asia Pacific

|                    |                |
|--------------------|----------------|
| Australia          | 1 800 629 485  |
| China              | 800 810 0189   |
| Hong Kong          | 800 938 693    |
| India              | 1 800 11 2626  |
| Japan              | 0120 (421) 345 |
| Korea              | 080 769 0800   |
| Malaysia           | 1 800 888 848  |
| Singapore          | 1 800 375 8100 |
| Taiwan             | 0800 047 866   |
| Other AP Countries | (65) 6375 8100 |

### Europe & Middle East

|                |               |
|----------------|---------------|
| Austria        | 0800 001122   |
| Belgium        | 0800 58580    |
| Finland        | 0800 523252   |
| France         | 0805 980333   |
| Germany        | 0800 6270999  |
| Ireland        | 1800 832700   |
| Israel         | 1 809 343051  |
| Italy          | 800 599100    |
| Luxembourg     | +32 800 58580 |
| Netherlands    | 0800 0233200  |
| Russia         | 8800 5009286  |
| Spain          | 800 000154    |
| Sweden         | 0200 882255   |
| Switzerland    | 0800 805353   |
|                | Opt. 1 (DE)   |
|                | Opt. 2 (FR)   |
|                | Opt. 3 (IT)   |
| United Kingdom | 0800 0260637  |

For other unlisted countries:

[www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)  
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