



6060B and 6063B

## Single Input Electronic Loads

- GPIB control of current, voltage, and resistance
- GPIB measurement of current, voltage, and power
- Continuous and pulse modes
- Full protection from overcurrent, overvoltage, overpower, overtemperature, and reverse polarity
- Trigger for external synchronization
- Parallel units for higher current
- Standard three-year warranty
- VXI *plug&play* drivers

### Agilent 6060B and 6063B Electronic Loads

Agilent dc electronic loads are ideal for the test and evaluation of ac-dc, and dc-dc power supplies, as well as battery chargers, batteries, and power components. The single input models are cost-effective for applications requiring only one load input. They are especially convenient for manual and automated testing

in R&D. The optional front panel connectors (option 020) make input connections convenient on the lab bench. The GPIB interface is standard, and all functions can also be controlled from the front panel.

## SPECIFICATIONS

		6060B	6063B
<b>Amperes</b>		0 to 60 A	0 to 10 A
<b>Volts</b>		3 to 60 V	3 to 240 V
<b>Maximum power (at 40° C)</b>		300 W	250 W
<b>Constant current mode</b>	Ranges	0 to 6 A, 0 to 60 A	0 to 1 A, 0 to 10 A
	Accuracy	0.1% ±75 mA	0.15% ±10 mA
	Regulation	10 mA	8 mA
<b>Constant voltage mode</b>	Accuracy	0.1% ±50 mV	0.12% ±120 mV
	Regulation (w/remote sense)	10 mV	10 mV
<b>Constant resistance mode</b>	Ranges	0.033 to 1.0 Ω 1 to 1,000 Ω 10 to 10,000 Ω	0.20 to 24.0 Ω 24 to 10,000 Ω 240 to 50,000 Ω
	Accuracy	1 Ω: 0.8% ±8 mS (with ≥6 A at input) 1 KΩ: 0.3% ±8 mS (with ≥6 V at input) 10 KΩ: 0.3% ±8 mS (with ≥6 V at input)	24 Ω: 0.8% ±200 mS (with ≥1 A at input) 10 KΩ: 0.3% ±0.3 mS (with ≥24 V at input) 50 KΩ: 0.3% ±0.3 mS (with ≥24 V at input)
<b>Transient generator</b>	Frequency range	0.25 Hz to 10 kHz	0.25 Hz to 10 kHz
	Accuracy	3%	3%
	Duty cycle range	3 to 97% (0.25 Hz to 1 kHz) 6 to 94% (1 to 10 kHz)	3 to 97% (0.25 Hz to 1 kHz) 6 to 94% (1 to 10 kHz)
	Accuracy	6% of setting ±2%	6% of setting ±2%
	Current level high range	60-A range: 0.1% ±350 mA	10-A range: 0.18% ±50 mA
	Current level low range	6-A range: 0.1% ±80 mA	1-A range: 0.18% ±13 mA
	Voltage level	3 to 60 V	3 to 240 V
<b>Readback specifications</b>	Voltage level accuracy	0.1% ±300 mV	0.15% ±1.1 V
	Current readback accuracy	0.05% ±65 mA	0.12% ±10 mA
<b>Ripple and noise</b>	Voltage readback accuracy	±(0.05% + 45 mV)	±(0.1% + 150 mV)
	(20-Hz to 10-MHz noise)	4 mA rms	1 mA rms
	Current	40 mA peak-to-peak	10 mA peak-to-peak
	Voltage	6 mV rms	6 mV rms
<b>Supplemental Characteristics</b> (Non-warranted characteristics determined by design that are useful in applying the product)			
<b>Constant current mode</b>	Resolution	60-A range: 16 mA 6-A range: 1.6 mA	10-A range: 2.6 mA 1-A range: 0.26 mA
	Temperature coefficient	100 ppm/°C ±5 mA/°C	150 ppm/°C ±1 mA/°C
<b>Constant voltage mode</b>	Resolution	16 mV	64 mV
	Temperature coefficient	100 ppm/°C ±5 mV/°C	120 ppm/°C ±10 mV/°C
<b>Constant resistance mode</b>	Resolution	1 Ω: 0.27 mΩ 1 KΩ: 0.27 mS 10 KΩ: 0.027 mS	24 Ω: 6 mΩ 10 KΩ: 0.011 mS 50 KΩ: 0.001 mS
	Temperature coefficient	1 Ω: 800 ppm/°C ±0.4 mΩ/°C 1 KΩ: 300 ppm/°C ±0.6 mS/°C 10 KΩ: 300 ppm/°C ±0.6 mS/°C	24 Ω: 800 ppm/°C ±10 mΩ/°C 10 KΩ: 300 ppm/°C ±0.03 mS/°C 50 KΩ: 300 ppm/°C ±0.03 mS/°C

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dc  
Electronic  
Loads

6060B

6063B

For more information in the U.S.A. call  
1-800-452-4844

## Supplemental Characteristics (continued)

		6060B	6063B
<b>Transient generator</b>	Frequency range	0.25 Hz to 10 kHz	0.25 Hz to 10 kHz
	Resolution	4% or less	4% or less
	Duty cycle range	3 to 97% (0.25 Hz to 1 kHz) 6 to 94% (1 to 10 kHz)	3 to 97% (0.25 Hz to 1 kHz) 6 to 94% (1 to 10 kHz)
	Resolution	4%	4%
	Current level high range	60-A range: 260 mA	10-A range: 43 mA
	Current level low range	6-A range: 26 mA	1-A range: 4 mA
	Resolution	26 mA	4 mA
	Current temperature coefficient	100 ppm/°C ± 7 mA/°C	180 ppm/°C ± 1.2 mA/°C
	Voltage level resolution	260 mV	1 V
	Voltage temperature coefficient	150 ppm/°C ± 5 mV/°C	120 ppm/°C ± 10 mV/°C
Programmable slew rate	60-A range: 1 A/ms to 5 A/μs 6-A range: 0.1 A/ms to 0.5 A/μs	10-A range: 0.17 A/ms to 0.83 A/μs 1-A range: 17 A/ms to 83 A/μs	
Rise/fall time	12 μs to 8 ms	16 μs to 8 ms	
<b>Analog programming bandwidth</b>		10 kHz (–3 dB frequency)	10 kHz (–3 dB frequency)
<b>Analog programming accuracy</b>	Current (low range)	4.5% ± 75 mA	3% ± 8 mA
	Current (high range)	4.5% ± 250 mA	3% ± 20 mA
	Temperature coefficient	100 ppm/°C ± 6 mA/°C	150 ppm/°C ± 1 mA/°C
	Voltage	0.8% ± 200 mV	0.5% ± 150 mV
	Temperature coefficient	130 ppm/°C ± 1 mV/°C	120 ppm/°C ± 10 mV/°C
<b>Analog programming voltage</b>		0 to 10 V	0 to 10 V
<b>Readback specifications</b>	Current readback resolution	17 mA (via GPIB) 20 mA (front panel)	2.7 mA (via GPIB) 10 mA (front panel)
	Temperature coefficient	50 ppm/°C ± 5 mA/°C	100 ppm/°C ± 1 mA/°C
	Voltage readback resolution	17 mV (via GPIB) 20 mV (front panel)	67 mV (via GPIB) 100 mV (front panel)
	Temperature coefficient	50 ppm/°C ± 1.2 mV/°C	100 ppm/°C ± 8 mV/°C
	<b>Analog monitor accuracy</b>	Current monitor (0 to 10 V out)	4% ± 85 mA
	Temperature coefficient	50 ppm/°C ± 6 mA/°C	100 ppm/°C ± 1 mA/°C
	Voltage monitor (0 to 10 V out)	0.25% ± 40 mV	0.4% ± 240 mV
	Temperature coefficient	50 ppm/°C ± 0.2 mV/°C	70 ppm/°C ± 1.2 mV/°C
<b>Remote sensing</b>	5-Vdc maximum between sense and load input		
<b>Minimum operating voltage</b> (at full rated current)	2 volts (1.2 V typical)		2 volts (1.2 V typical)
<b>Programmable short</b>	0.033 Ω (0.020 Ω typical)		0.20 Ω (0.10 Ω typical)
<b>Programmable open (typical)</b>	20 kΩ		80 kΩ
<b>Drift (over 8-hour interval)</b>	Current	0.03% ± 10 mA	0.03% ± 15 mA
	Voltage	0.01% ± 10 mV	0.01% ± 20 mV
<b>dc isolation voltage</b>	±240 Vdc, between any input and chassis ground		
<b>Digital inputs</b>	V <sub>IL</sub> = 0.9 V max at I <sub>IL</sub> = –1 mA / V <sub>IH</sub> = 3.15 V min (pull-up resistor on input)		
<b>Digital outputs</b>	V <sub>OL</sub> = 0.72 V max at I <sub>OL</sub> = 1 mA / V <sub>OH</sub> = 4.4 V min at I <sub>OH</sub> = –20 μA		
<b>Net weight (approx.)</b>	6.12 kg (13.5 lb)		6.12 kg (13.5 lb)
<b>Shipping weight</b>	8.16 kg (18 lb)		8.16 kg (18 lb)

Notes: 1. Operating temperature range is 0° to 55° C. All specifications apply for 25° C ± 5° C, except as noted.  
2. Maximum continuous power available is derated linearly from 40° C to 75% of maximum at 55° C.  
3. DC current accuracy specifications apply 30 seconds after input is applied.

**Weight:** 6.12 kg (13.5 lb) net; 8.16 kg (18 lb) shipping

**Size:** 425.5 mm W x 88.1 mm H x 396 mm D  
(16.75 in x 3.5 in x 13.7 in)

See page 52 for dimension drawings

## Option Descriptions

- Opt 020** Front Panel dc Input Connectors
- Opt 100** 87 to 106 Vac, 47 to 66 Hz input (for Japan only)
- Opt 220** 191 to 233 Vac, 47 to 66 Hz input
- Opt 240** 209 to 250 Vac, 47 to 66 Hz input
- Opt 908** Rack-mount Kit (p/n 5063-9212)
- Opt 909** Rack-mount Kit with Handles (p/n 5063-9219)
- Opt 910** Extra manual set including one each of the operating manual, programming reference manual, and service manual.