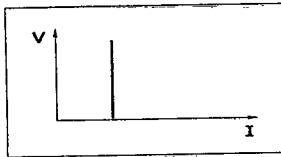


# dc ELECTRONIC LOADS

## Electronic Load Family

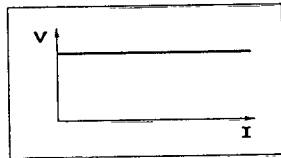
HP 6050A-6063B, 60501B-60507B

### Constant Current



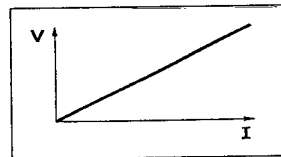
- Power Supply Load Regulation Testing
- Battery Capacity Testing
- Capacitor Discharging

### Constant Voltage



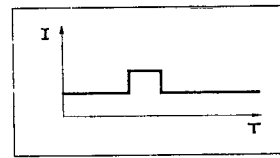
- Current Source Testing
- Current Limit Testing
- Shunt Regulator

### Constant Resistance



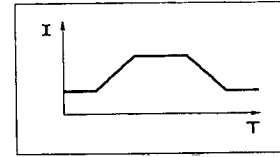
- Characterizing Power Supply Crossover
- Power Supply Start-Up Delay
- Power Resistor Emulation

### Pulse and Dynamic Loading



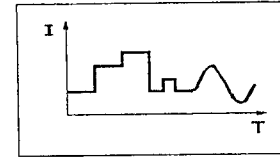
- Power Supply Load Transient Response
- Power Component Testing
- Pulse Electroplating

### Programmable Slew Rate



- Power Supply Testing
- Power Component Testing
- Power Supply Load Transient Response

### Analog Programming



- Battery Capacity Testing
- "Real-life" Load Simulation

## dc Electronic Load Applications

### System or Manual Applications

HP dc electronic loads are equally suitable for manual use on the bench. The front panel LCD meters indicate voltage, current, and power readings. The full-function front-panel keypad allows easy, repeatable, and reliable control of the load when it is used manually. Six volatile user-definable states allow you to easily save settings for later recall. An additional user-definable power-up state allows you to define settings that are remembered when the unit is switched off and then recalled when it is switched on again.

### Specifying System Performance

Because Hewlett-Packard electronic loads feature an integrated HP-IB programmer, pulse generator, current shunt, DMM, and cabling, their performance is specified as a system. Specifications cover all the integrated functions as one unit, which eliminates the need to calculate the actual performance of the automated test system based on each component's specification. The HP one-box solution makes the integration and documentation of your test system fast and easy.

### Single-Input Products

The HP 6060B and HP 6063B are single-input loads with standard rear-panel inputs. They are also available with optional front-panel inputs in addition to the rear-panel inputs. Front-panel inputs (Option 020) make input connections to the HP electronic load convenient for bench applications. These front-panel terminals are capable of handling the entire current rating of the load and can accept wire gauges up to AWG #4 (22 sq mm). They require no tools to tighten, making the connections quick and easy.

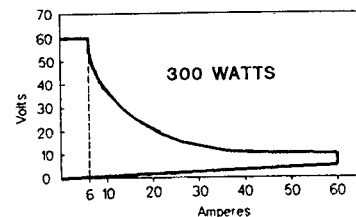
### Mainframe Products

The HP 6050A 1800-W and HP 6051A 600-W electronic load mainframes accept the user-installable HP load modules for easy system configuration and future reconfiguration, if desired. The HP 6050A holds up to six HP 60501B, 60502B, and 60503B load modules, or three HP 60504B and HP 60507B load modules, allowing up to 1,800 W of total maximum power. The HP 6051A holds up to two HP 60501B, 60502B, 60503B modules, or one HP 60504B or HP 60507B module allowing up to 600 W of total maximum power. One HP-IB address is all you need for complete control and readback of all load modules within a single mainframe.

### Operating HP Loads Below the Minimum Input Voltage Specification

HP electronic loads meet all specifications when operated above 3.0 V; however, the dc operating characteristics also extend below this minimum input voltage for static tests. Because of the FET technology used in the power input circuits, HP electronic loads have a low minimum input resistance allowing them to sink high currents even at low voltages.

The figure below shows the operating range of a typical HP dc electronic load. Notice that low-voltage operation, down to zero volts, is possible at correspondingly reduced current levels, depending on the minimum resistance of the load. HP electronic loads, therefore, can be used in many applications that previously required zero-volt loads.



HP 60502B Input Characteristics

### Why Not Make Your Own Load?

Many load users have resorted to building their loads in-house when a commercially available electronic load with the right combination of features, power rating, performance, and purchase price could not be found. By making these loads in-house, users incur many hidden costs that can easily be overlooked. There are cost components associated with product development, parts procurement, manufacturing, product documentation, training, and product failure, maintenance, or replacement. In addition, the cost components increase as the design complexity changes from simply using resistors and relays to more sophisticated designs addressing application needs for HP-IB programming, readback, and triggering schemes for measurement synchronization.

Equipment buyers with electronic load needs have realized that the purchase price of commercially available electronic loads can be relatively insignificant when compared to the overall cost of designing, manufacturing, and maintaining them in-house.

The HP electronic load family reduces your total cost of ownership by providing superior performance, features, reliability, and complete product documentation at a reasonable purchase price. These loads allow you to use fewer resources for your electronic load test system development, and more resources to remain successful and competitive in your particular industry. The standard three-year warranty can further reduce your maintenance costs.

The quality, performance, price, and Hewlett-Packard support will help you make an intelligent and economical purchase decision.

### Special Modifications

HP offers special modification service that entails modifying standard models. Special models available are:

HP 6050A #J05 (disables the short key)

HP 6060B #J08 (increases the input voltage to 70 V)

If you don't find a model that fits your exact needs, contact HP about its modification service.