4760 Series
600 Volt DC Electronic Loads

High-voltage Electronic Load (600v) with an Exceptionally Wide Range of Measurements

Features

- Eight (8) 600V Models between 1kW/50A and 36kW/1800A
- Automated test station or stand-alone, bench-top use
- 7" Touch-Panel with Graphic User Interface (GUI)
- Micro-second transient load profile simulation
- Precision Voltage, Current, Power & Timing Measurements
- Air-cooled, linear design

Applications

The 4760 Series Electronic Loads are designed for a wide variety of electronic loading from either within an automatic test station or as a stand-alone, bench-top set-up. The Loads are particularly well suited for testing applications that require fast-transient simulation capability and comprehensive internal measurements. The 4760 can be operated manually through the large, touch-panel-enabled GUI or automatically through a remote controller and any number of standard test programming languages. Typical applications include the testing of power conversion/storage products such as DC power supplies, telecom rectifiers and battery packs.

Complex and Fast-Transient Load Profiles

4760 Loads are capable of creating a wide variety of complex dynamic load profiles including micro-second pulses, multiple pulses of varying width, stepped responses, variable slew rates and even an AC component on the DC waveform (Fig. 1). The key to this capability is called a Macro, each of which contains up to 100-steps and is executed directly by the Load to achieve the fastest possible transition speed. Once created, Macros can be stored in the system controller for downloading to the Load when execution is required.

Figure 1 - Various Fast Transient Load Profiles
A Next Generation User Interface

The touch-panel-based GUI on the 4760 Series Loads is the ideal solution to the more extensive information and control needed in today’s power-stimulus/measurement test instruments. The Load interface is organized through 6 tabs, each providing a full screen for a function with complete display and control of related information. For instance, the Monitor Tab (Fig. 2) displays continuous actual measurements of voltage, current, power and resistance even when the 4760 is being controlled remotely. The Control Tab (Fig. 3) allows manual settings of CC, CV, CR and CP operating modes and limits. A Scope Tab (Fig. 4) provides a graphical view of the voltage/current relationships along with markers where measurements are needed. This interface is particularly useful for engineering characterization and Unit-Under-Test (UUT) troubleshooting as well as test program development.

Precision Internal Measurements

The 4760 Loads frequently eliminate the need for separate external instruments such as a DMM, Power Meter or DSO to make precision measurements and display waveforms. Especially valuable are dynamic timing measurements such as Rise-Time, Turn-On-Time, Settle-Time and Overshoot. Built-in measurements provide faster testing throughput in addition to the initial cost savings gained by eliminating external measurement instruments.
Advanced Safety Features

In addition to the basic UUT OV, OT, OC and OP protections, 4760 Loads provide programmable safety limits to prevent damage that could occur due to operator error, programming errors, external and internal faults. When a safety limit is triggered, the load automatically disables the output, generates an error message and prevents further operation until the fault is cleared. Safety limits may be set using any of the control options.

Field Expandable

4760 Series Loads are modular and allow for expansion with other like-modules in the field. Future addition of auxiliary modules creates a virtual larger load with all the same functionality, only more current and power. Through this capability, the test engineer can select a load that meets current requirements without concerns that future higher loading demands will require an entirely new, higher power load.

Wide Constant-Power Operating Envelopes

The 4760 Series Loads have a broad constant-power operating envelope (Fig. 5) to provide rated power anywhere between 7V and 120V volts. Below 7V the load linearly reduces current down to 1V.

Figure 5 - Constant Power Operating Envelopes

4760 Series Panel Overview

- Power Switch
- Hardware error indicator
- USB connector
- Touch panel display
- Status indicators
- COMM In/Out connector
- RS232 connector
- Trig In/Out connectors
- DIN/DOUT connector
- Address switch
- Sync In/Out connectors
- OVPS connector
- Remote sense connector
- I Range switch
- Enable indicator
- I Control connector
- I Monitor connector
- Load connections
- Network connectors
- Parallel switch
- Voltage select switch
- Chassis GND stud
- AC input connector
- Parallel connectors
### 4760 Series 600V DC Electronic Load Specifications

#### 4760 Ratings

<table>
<thead>
<tr>
<th>4760-1</th>
<th>4760-2</th>
<th>4760-3</th>
<th>4760-6</th>
<th>4760-12</th>
<th>4760-18</th>
<th>4760-24</th>
<th>4760-36</th>
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</thead>
<tbody>
<tr>
<td>Power</td>
<td>1 kW</td>
<td>2kW</td>
<td>3kW</td>
<td>6kW</td>
<td>12kW</td>
<td>18kW</td>
<td>24kW</td>
</tr>
<tr>
<td>Voltage</td>
<td>7.0 - 600V</td>
<td>7.0 - 600V</td>
<td>7.0 - 600V</td>
<td>7.0 - 600V</td>
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</tbody>
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#### Programmable Modes

- **Accuracies**: % of Set + % of Range, **Resolution**: % of Range
- **Ranges**
- **Accuracy**
- **Resolution**
- **Voltage**
- **Current**
- **Macro**

#### Measurements

- **Current**
- **Accuracy**
- **Resolution**
- **DC Voltage**
- **Rise Time**
- **Resolution**
- **Accuracy**
- **Short Circuit Resistance**
- **Max Current**
- **Macro Modes**
- **Slew Rate (10% - 90%)**

#### Control

- **User Interface**
- **Optional Software Tools**
- **External Communication**
- **Supplied Drivers**

#### Physical

- **Load Connectors**
- **Operating Temperature**
- **Dimensions**
- **Weight**

#### Additional Features

- **Remote Sense**
- **Self Test**
- **Performance Monitoring**
- **Calibration**
- **Trigger Output**
- **Fan Noise Reduction**

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1. Specifications apply at 23°C +/- 5°C after a 10 minute warm up.
2. Accuracies apply when Settings &/or Measurements >10% of Range.
3. Current linearly reduced between 7 & 1V.

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