

## ELECTRONIC POWER LOAD

- 1KW to 10 KW
- 60 to 500 Volts DC
- Up to 1000 Amperes
- Constant E, I, P, I/E
- Air Cooled
- FRA tests to 10KHz
- Excellent current interrupt capability
- Optional RS-232 or IEEE-488



Model EL-3000-300-100

The EL Series of DC Electronic Loads is a line of air-cooled DC electronic loads used to test DC power sources, such as batteries, power supplies, generators, chargers, fuel cells and other power sources. Power ratings range from 1000W to 10KW, and are available in 1000 Watt increments. Models are available with 60V, 100V, or 500V voltage rating, and current ratings up to 1000A. Control is either by a front panel potentiometer or a 0 to +10 V analog control signal on standard units, with computer control options available. Rear connections provide for line power, the analog control signal, current load monitor connections and optional computer interface and load input power block.

Front panel 3.5 digit LED displays indicate the voltage, current and power levels for the electronic load. Individual front panel LED's indicate the unit has shut down because of high temperature, excess current, excess voltage, excess power, or low voltage. A RESET pushbutton switch resets electronic load operation after the cause for shutdown has been remedied.

Operating controls include a power ON/OFF switch, load contactor, local/remote control selection switch, ten-turn front panel potentiometer for local control, and an optional mode switch to select control of current, power, voltage, or conductance. Other controls are a potentiometer to set low voltage shutdown, and pushbutton switch to allow the low voltage shutdown level to be displayed on the voltage LED display.

Remote control is accomplished via a 0 to +10 V signal connected to rear terminals. A zero signal sets the

electronic load to minimum current, power, and a +10 V signal sets the unit to full current, power, etc., as selected by the MODE switch.

Operation is linear with the control signal; i.e. a +5 V control signal will set the unit to 50% of its full scale current, power, etc. A signal generator or arbitrary waveform generator can be used to supply unique signal conditions to perform life cycle tests, characterization test or other y vs time parametric tests. This feature is especially useful for FRA and current interrupt testing. Sine wave fidelity is excellent to 10KHz. Pulse response is excellent for current interrupt tests. Typical times from full load to zero amperes is 30 $\mu$ Sec.

Connections to monitor the load current are also standard on the rear terminals. An analog signal (0 to 10 volts) corresponds to 0 to full scale of the current level being drawn by the load.

Purchase of the optional RS-232 or IEEE 488 interface allows control by a remote computer.

RS-232 will control any manually selected parameter, Constant Voltage (E) Current (I), Power (P) or Resistance (R). Read-back of amperes is standard, as well as control of the internal power relay to connect and disconnect the device under test.

IEEE-488 will **select and control** any of the above modes of operation as well as read-back both current and voltage.

Either of these interfaces enable automated testing via user generated computer programs.

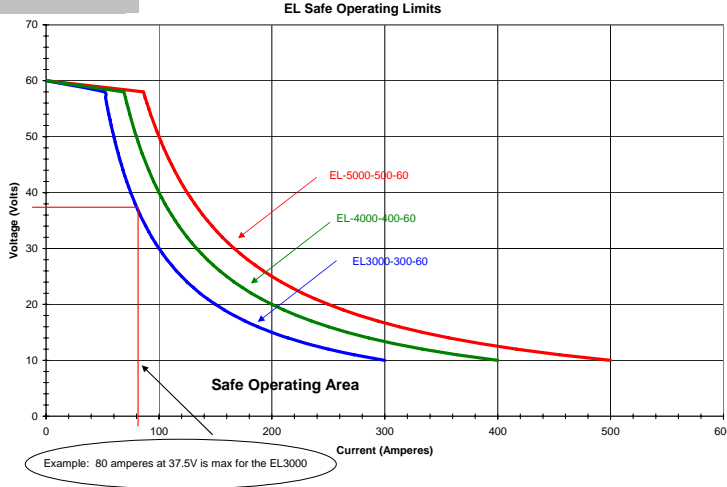
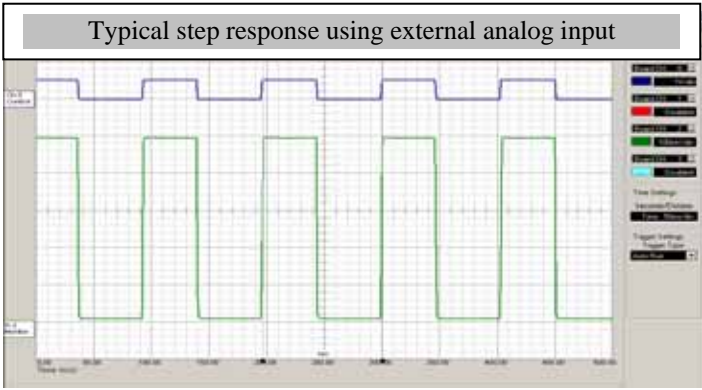
<b>Load Parameters and Accuracy</b>	
Constant Current	±0.35% FS Typical
Constant Voltage	±0.1% of Reading +0.1% of Full Scale (FS)
Constant Power	±2% FS @ Vin>10% and I>10% of FS
Constant Conductance (Resistance)	±2% FS @ Vin>10% and I>10% of FS
<b>IEEE-488 (GPIB)</b>	
Current Measurement resolution / accuracy	12 Bits / ±0.2% FS
Voltage Measurement resolution / accuracy	12 Bits / ±0.2% FS
Mode Selection	All modes (E, I, P or I/E)
Control	I, E, P or I/E 10 Bits
<b>RS-232</b>	
Current Measurement resolution/accuracy	10 Bits ±0.2% FS
Mode Selection	Manual
Control	Controls any mode selected by front panel
<b>External Analog Input</b>	
Range 0 to Full Scale of Parameter	0 to 10 Volts DC, or any waveform
Frequency Response	DC to 10 KHz
<b>Transient Response</b>	
Constant I / E / P / S	10µSec / 200µSec / 400µSec / 100µSec Typ.
<b>Environmental</b>	
Temperature	0 – 40 °C
Humidity	≤95% Non Condensing
Derating of Max Power	2% of full scale per °C
<b>Protection</b>	
I / E / P	105% of Full Scale Cutout with Indicators
Thermal	85°C Internal Cutout with Indicator
Undervoltage	50mV to FS Continuous
<b>Warranty</b>	
	1 year return to factory



- Robust internal design ensures high reliability
- Massive heat sinks combined with up to 1200 CFM blowers ensure optimal heat dissipation effectiveness



Simple operation from front panel





Robust connectors ensure high integrity connections through to the internal load circuits.

This rear panel configured for IEEE-488 (GPIB).

Selector switch selects either computer input or analog input if remote operation is selected.

## Ordering your PPM Electronic Power Load

Our goal is to keep your cost to a minimum. Therefore we offer the electronic power load in very basic configurations, without accessories. You add them as needed. PPM is known for developing unique solutions to fit specific applications. So if your needs seem to go beyond the capabilities described in this literature, we will work with you to develop a solution that fits.

When you order your power load, you will be asked to supply information such as Maximum Voltage, Current and Power for scaling purposes. This is to provide you with the resolution and accuracies that are optimum for your range of applications. You may choose any scale for any parameter up to the maximum amounts for the model you are ordering.

### Models

PPM models are simple to order. The format is EL-WWWW-AAAA-VVV. These are the maximum values you expect the load to handle. **W=Watts, A=Amperes, V=Voltage.**

Standard Parameters are:

- 1000 Watts to 10,000 Watts in 1000 watt increments.
- 60, 100, or 500 Volt
- Current up to 1000 Amperes in 100 ampere increments.
- Example: 3000 Watt 300 Ampere 60 Volt load model is EL-3000-300-60

### Options:

- **Mode selector:** Adds Constant Voltage, Power and Conductance to Constant Current operation.
- **RS-232:** adds basic computer interface communication to your power load. See inside for specification
- **IEEE-488:** adds advanced computer interface to your power load. See inside for specification.
- **Line Voltage-**120VAC 60 Hz standard. Other please specify.

We look forward to working with you