Regenerative DC Electronic Load

PLZ6000R

Not required for any special cooling system such as water cooling method

Voltage/current/power range: 30 V - 400 A / 60 V - 200 A / 6 kW

Power regeneration efficiency of up to 90% or more!

Six operation modes (CC/CR/CV/CP/CC+CV/CR+CV)

Easy-to-use design featuring a large-size LCD panel

Equipped with major interfaces (GPIB, RS232C, and USB) as standard
Regenerative Electronic Load

PLZ6000R is a DC electronic load that regenerates load power to the AC line. Regular electronic loads consume load power by having semiconductor devices convert it into heat. By contrast, PLZ6000R converts load power into reusable electric power, rather than converting it into heat as is typically done, and feeds this power to the AC line, thereby substantially reducing the amount of waste energy. PLZ6000R is an environment-friendly electronic load that can contribute significantly to your energy saving efforts.

Applications

- Aging and evaluation testing for DC/DC converters and various types of power supplies
- Evaluation and durability testing for alternators and motor generators
- Discharge testing for different types of batteries (lead, lithium, and assembled batteries)
- Dummy load testing for equipment powered by natural energy (solar cells and wind power generation)
- Evaluation testing for fuel cells and stacks

[Note] This product is intended for in-plant power generation only. (It does not feed its generated power back to the electric power system.) This product cannot be used unless 5.4 kW or more of power is consumed by each power distribution system per one unit.
Functions

● Power regeneration efficiency of up to 90 % (at rated power)

The use of a proprietary switching technology (patent pending) provides high power regeneration efficiency - from 85 % or more at one-third of rated power (2000 W) to a maximum of 90 % or more. This energy saving feature greatly reduces the electronic load’s environment impact on your plant and it is not necessary to equip special cooling system such as water cooling method to suppress the heat generation.

![Regeneration efficiency of PLZ6000R](image)

- Power regeneration efficiency of up to 90 %
- The use of a proprietary switching technology (patent pending)
- Provides high power regeneration efficiency - from 85 % or more at one-third of rated power (2000 W) to a maximum of 90 % or more.
- Energy saving feature reduces the electronic load’s environment impact.
- Not necessary to equip special cooling system.

● Regenerated power values recognizable at a glance!

The large-size LCD panel displays regenerated power values in real time. This makes the energy saving effect much easier to recognize.

![Regenerated power values](image)

- Regenerated power values display in real time.
- Energy saving effect easily recognizable.

● Soft start function

In constant current (CC) mode, this function causes the load current to rise gradually when the initial load is at 0 V while the load of the load unit is on or when the load of the load unit is turned on. It allows you to conduct tests under highly realistic load conditions.

![Soft start function](image)

- Soft start function in constant current mode.
- Load current rises gradually.
- Conduct tests under realistic conditions.

● Sequence function

This function automatically executes arbitrarily set sequence patterns step by step (operation by operation). It enables various types of waveforms to be simulated. (A maximum of 10 programs can be created, each consisting of up to 256 steps. Operation modes, ranges, loop counts, etc. can be specified in these programs.)

![Sequence function](image)

- Automatically executes programmed sequences.
- Various waveforms can be simulated.

● ABC preset memories

Three preset memories A, B, and C are provided to store and read up to three different combinations of an operation mode, a range, and set values.

![ABC preset memories](image)

- Three preset memories for storage.
- Store and read different combinations.

● Equipped with major interfaces

GPIB, RS232C, and USB interfaces are equipped as standard, making it easy to integrate the electronic load into a variety of testing systems. Support for these interfaces, coupled with the sequence function, allows you to build diverse types of system.

![Equipped with major interfaces](image)

- Standard interfaces: GPIB, RS232C, USB.
- Sequence function supported.
- Build diverse types of system.

● Parallel operation supporting up to 30 kW

A large-capacity system of up to 30 kW can be built using a parallel connection configuration with one control unit. (The system may consist of up to five units - one master unit and four slave units.)

![Parallel operation supporting up to 30 kW](image)

- Parallel operation up to 30 kW.
- One control unit supports up to five units.

The current regenerated power value is shown in the upper row of the section, while the accumulated regenerated power value is presented in a larger font in the lower row. (The minus (-) sign indicates power regenerated.)

![Parallel operation supporting up to 30 kW](image)

- Regenerated power values displayed.
- Accumulated regenerated power shown.

The current value regenerated power is shown in the upper row of the section, while the accumulated regenerated power value is presented in a larger font in the lower row. (The minus (-) sign indicates power regenerated.)

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- Accumulated regenerated power shown.
### Specifications

#### Rating

<table>
<thead>
<tr>
<th>Operating voltage (DC)</th>
<th>30 V range</th>
<th>0 V to 30 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 V range</td>
<td>0 V to 60 V</td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>30 V range</td>
<td>400 A</td>
</tr>
<tr>
<td>Power</td>
<td>60 V range</td>
<td>200 A</td>
</tr>
<tr>
<td>Power</td>
<td>6000 W</td>
<td></td>
</tr>
</tbody>
</table>

#### Constant Current (CC) mode

<table>
<thead>
<tr>
<th>Operating range</th>
<th>30 V range</th>
<th>0 A to 400 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 V range</td>
<td>0 A to 608 A</td>
<td></td>
</tr>
<tr>
<td>Setting range</td>
<td>30 V range</td>
<td>0 A to 204 A</td>
</tr>
<tr>
<td>Resolution</td>
<td>10 mA</td>
<td></td>
</tr>
<tr>
<td>Setting accuracy</td>
<td>± (0.4% of set + 400 mA)</td>
<td></td>
</tr>
</tbody>
</table>

#### Constant Voltage (CV) mode

<table>
<thead>
<tr>
<th>Operating range</th>
<th>30 V range</th>
<th>0 V to 30 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 V range</td>
<td>0 V to 60 V</td>
<td></td>
</tr>
<tr>
<td>Setting range</td>
<td>30 V range</td>
<td>0 V to 31.5 V</td>
</tr>
<tr>
<td>Resolution</td>
<td>1 mA</td>
<td></td>
</tr>
<tr>
<td>Setting accuracy</td>
<td>± (0.1% of set + 60 mV)</td>
<td></td>
</tr>
</tbody>
</table>

#### Constant Power (CP) mode

<table>
<thead>
<tr>
<th>Operating range</th>
<th>0 W to 6000 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting range</td>
<td>0 W to 6300 W</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 W</td>
</tr>
<tr>
<td>Setting accuracy</td>
<td>± (1% of set + 60 W)</td>
</tr>
</tbody>
</table>

#### Display

- 0.000 V to 60.000 V
- 0.002 V
- ± (0.1 % of rdng + 60 mV)

#### Ammeter

- 0.00 A to 400.00 A
- 0.01 A
- ± (0.3 % of rdng + 300 mA)

#### Voltmeter

- 0.0 W to 6000.0 W
- 0.1 W

### Protection function

**DC side**
- Over voltage protection (OVP), Over current protection (OCP), Over power rating (OPR), Over heat protection (OHP), Reverse connection protection (REV), Under voltage protection (UVP)

**AC side**
- Voltage range error (outside the 170 V to 240 V range)
- Frequency range error (outside the 45 Hz to 65 Hz range)
- Open phase (when one of the three phases is missing)

### Soft start

- Operation mode: CC mode
- Selectable time range: 20 ms, 50 ms, 100 ms, 200 ms
- Time accuracy: ± (30 % of set + 100 μs)

### Remote sensing

- Compensation voltage: 2 V for a single line (The sensing line is switched by a relay.)

### Sequence function

#### Communication interface

- GPIB, RS232C, and USB interfaces are equipped as standard.
- External controls (J1 connector on the rear panel)
  - External voltage (0 V to 10 V): CC/CR/CP control
  - External voltage (0 V to 10 V): CV control
  - External resistance (0 Ω to 10 kΩ): CC/CR/CP control
  - External resistance (0 Ω to 10 kΩ): CV control
- Trigger input
- Range selection
- Mode selection
- Preset memory A/B/C
- Trigger input
- Trigger input

### General specifications

- Power consumption: 200 VA (when no load is input)
- Maximum regenerated power: 5600 VA
- Power regeneration efficiency: 95 % or more
- Dimensions (mm (inch)):
  - 430 x 16.53” / 1736.81”H / 550 (21.65”)D
- Weight: Approx. 43.8 kg (96.8 lbs.)

### Options

- Power cable
- Parallel operation cable
- Rack mounting bracket

### Dimensions (mm)

![Dimensions Diagram](image)

### Options

- **Description**: Load input terminal screw, Input terminal cover, Lock plate, Lock plate fixed screws, J1/PARALLEL OUT/PARALLEL IN protection socket, Operation manual

### Distributor:

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