

LABGIC

Basic Electrophoresis Power Supply

LP-300V Operations Manual



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LP-300V Electrophoresis Power Supply

An electrophoresis power supply is an instrument used for electrophoretic analysis. Electrophoresis experiments generally consist of a power supply, electrophoresis tank, detection unit, and related components.

The LP-300V electrophoresis power supply uses microcomputer and switching power supply technology, giving it clear advantages over traditional electrophoresis power supplies. Timed or untimed output can be selected. It provides stable output voltage, output short-circuit protection, and automatic output shutdown when no load is connected. It is suitable for submarine gel electrophoresis and small or micro vertical gel electrophoresis.

1. Instrument Functions

- Constant-voltage output, constant-current output, and constant-power output
- Automatic switching between constant voltage and constant current when the set value is exceeded; timed control
- Automatic no-load detection; automatic load short-circuit protection; automatic memory of operating status
- Large 192 x 64 LCD display
- Anti-slip chassis feet

2. Keyboard

The LP-300V electrophoresis power supply has five keys: two item selection keys (left/right), two data adjustment keys(up/down), and one command execution key (OK). Item selection keys: used to switch between the adjustable items in the power supply. Data adjustment keys: used to adjust the data selected by the cursor. Command execution key: used to execute the command after adjustment.

Display mode: voltage, current, and power are displayed simultaneously.

Timer: 1-99 h 59 min; voltage: 5-300 V; current: 1-400 mA; power: 1-75 W. Decrease: reduces the set parameter for the currently selected state.

3. Display

The LP-300V electrophoresis power supply can display voltage, current, and power simultaneously for convenient real-time viewing. When a fault occurs after startup, the display shows the following messages according to the fault:

When "NO LOAD" appears, no load is connected.

When "SHORT" appears, the positive and negative output terminals of the electrophoresis power supply are short-circuited.

Instructions for Use

For the LP-300V voltage (U) and current (C) setting states, the experimental parameters for each selected state can be changed using the up/down keys.

A. Constant-Voltage Output

① When the electrophoresis power supply is on the main screen, press the right key to move the cursor to the constant value V. Press the up/down keys to switch the constant output mode.

② When the constant value is V, continue pressing the right key to move the cursor to the voltage value in the middle of the screen. Press the up/down keys to adjust the constant-voltage value.

③ Continue pressing the right key to move the cursor to the time position 00:00. Press the up/down keys to adjust the timing duration.

④ After the constant-voltage value and timing duration are set, press the middle OK key and the power supply will begin operating according to the set values.

B. Constant-Current and Constant-Power Output

C. End of Operation

The adjustment method for constant-current and constant-power output is the same as for constant-voltage output. After completion, the power supply stops output and the buzzer sounds. Press the up key to mute it, or press OK to operate according to the previous settings.

4. Recalling History Records

On the main screen, press the down key to enter the history records page. Press the up/down keys to page through the records, and press OK to operate according to the settings on the current page.

Caution/Warning:

① Do not touch the output terminals of the electrophoresis power supply by hand while it is operating.

② When making changes to the electrophoresis power supply or electrophoresis tank, the output of the power supply must be stopped.

③ Do not connect or disconnect output wires at will while power is on. This may trigger output protection or damage components.

5. Safety Protection and Incident Handling

The LP-300V electrophoresis power supply uses a safety-focused design. Do not disassemble or modify it yourself, as this may create safety risks. Use an electrophoresis tank with safety features such as power cutoff when the lid is opened.

Caution/Warning: Because high voltage is present inside the unit, customers must not open the chassis for repair if the electrophoresis power supply fails. Otherwise, the company will not be responsible for any resulting situation.

6. Instrument Parameters

A. Power Supply

Mains power: 220 VAC/50 Hz

Fuse: 3 A / 250 VAC; maximum power: 100 VA

B. Output

Four sets of 3.5 mm diameter output sockets; output voltage ripple less than 1%; output voltage drift less than 1% (10 min after startup); output voltage regulation less than 1%.

C. Output Settings

Output timing range: 1-99 h 59 min, adjustable in 1 min increments. Constant-voltage output range: 5-300 V, adjustable in 1 V increments.

Constant-current output range: 1-400 mA, adjustable in 1 mA increments. Constant-power output range: 1-75 W, adjustable in 1 W increments. When all four groups output simultaneously, the current may exceed 400 mA.

- ① Safety protection measures: no-load detection and overload/open-circuit protection.
- ② Operating environment: temperature 0-40 deg C; humidity 0-90%.
- ③ Dimensions: 308 x 242 x 100 mm (L x W x H)
- ④ Weight: 2 kg



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