



Power supply Instruction Manual

CBJ-IMR-201-EX



COSMO BIO CO., LTD.

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Important user information

Please read this entire manual to fully understand and safely use the CBJ-IMR-201-EX



WARNING!

The Warning sign highlights an instruction that must be strictly followed in order to avoid personal injury. Do not proceed until the instructions are clearly understood and all stated conditions are met.

Declaration of Conformity and Safety Standards

This product complies with the requirements of Low Voltage Directive (LVD) 73/23/EEC through the harmonized standard EN 61010-1, 1993 + A1, 1992.

EMC Standards

This product complies with the requirements of EMC Directive 89/336/EEC through the harmonized standards EN 50081-1 (emission) and EN 50082-1 (immunity).

The CE symbol and corresponding declaration of conformity are valid for the instrument when any of the following apply:

- used as a standalone unit
- connected to other CE-marked Cosmo Bio Co., Ltd., instruments
- connected to other products recommended or described in this manual
- used in the same state as delivered from Cosmo Bio Co., Ltd., except for alterations described in this manual.

Terms and Conditions of Sale

All goods and services are sold subject to the terms and conditions of sale of the company within the Cosmo Bio Co., Ltd., group that supplies them. A copy of these terms and conditions is available on request. Should you have any comments regarding this product, we will be pleased to receive them at the following address:

COSMO BIO CO., LTD.

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1. Introduction

The power supply (CBJ-IMR-201-EX) is a high-quality, high-precision, and safe power supply for electrophoresis applications that require a maximum of 135 volts, 80 mA, and a timer is included. Electrophoresis separations can be controlled by voltage and current. The CBJ-IMR-201-EX automatically switches over the control parameter according to the programmed limits and conductivity variations in the system. Two electrophoresis units can be connected to the CBJ-IMR-201-EX and run simultaneously with the same programmed method. One program can be saved (last setting).

2. Safety information

2.1 Safety precautions

Extreme caution should be exercised in the operation of this instrument as it can develop sufficient voltage and current to produce a lethal shock. To avoid any risk of injury, the instrument should only be operated by properly trained personnel and always in accordance with the instructions provided.

Read this entire manual before using this power supply.

1. _This instrument is designed for indoor use only.
2. _The instrument must always be used with the protective earth lead of the power cord correctly grounded at the mains outlet.
3. _To permit sufficient cooling, ensure that the vents in the rear and sides of the instrument are not covered.
4. _Maximum relative humidity of 80% for temperatures up to 31°C decreasing to 50% relative humidity at 40°C. Avoid condensation by letting the unit equilibrate to ambient temperature when taking the power supply from a colder to a warmer environment.
5. _Keep the instrument as dry and clean as possible. Wipe regularly with a soft damp cloth. Let the power supply dry completely before use. If exposed to moisture or condensation, unplug the power supply until the instrument is dry.
6. _Use only undamaged electrical wire and equipment specified for the voltages you will use. High voltage wires must meet the requirements of the IEC 1010-2-031:1993 electrical standard. Any electrophoresis equipment connected to the power supply should meet the requirements of the IEC 1010-1:1993 electrical standard.
7. _Note that the output is connected to the chassis/reference earth.
8. _Please contact Cosmo Bio if a problem occurs. (Never replace the fuse yourself.) Never open the cover.

2.2 Built-in safety features

The CBJ-IMR-201-EX has been tested and complies with the IEC 61010-1 (EN 61010-1) electrical safety standard.

1. _Functional earth leakage.

Should the power supply be connected to an electrophoresis unit that has a leakage path to earth, the CBJ-IMR-201-EX will detect this fault and the high voltage will be turned off.

2. _Start current check.

To ensure that the electrophoresis unit is connected correctly, the power supply verifies that the resistance is not higher than the specified limit at a low safety voltage (< 40 V). If this resistance is too high, the voltage is turned off. Too high a resistance can also be caused by using buffers with extremely low conductivity. The high voltage is also turned off in this case and an error message is shown. This function can be disabled to perform certain applications.

3. _Sudden load change detection.

This function prevents accidents under operating conditions due to a break in the electrical circuit, such as a bad connection to the electrophoresis unit. The high voltage is turned off in such an event. Error messages are also shown on the display for sudden failures.

3. Unpacking and installation

Unpacking

1. _Introduction

Unpack and carefully examine the power supply, the electrophoresis chamber (tank), and the gel casting system.

2. _Report any damage and save all packing materials if any part is damaged during transport.

3. _Do not attempt to use this apparatus if it is damaged.

4. _Place the apparatus close to its electrophoresis power supply. Make sure that this is a safe, dry location. Automatically select the appropriate voltage range, 100–120 or 220–240 V. Select the appropriate mains cable and connect one end to the mains socket on the CBJ-IMR-201-EX power supply and the other end to an AC grounded outlet.

Connect the leads from the electrophoresis unit (red to red and black to black) The red lead is the positive, and the black is the negative.



Do not touch the red and black lead points.

WARNING!



WARNING!

Use only undamaged electrical wire and equipment approved for the voltage you will use.

Two electrophoresis units can be run simultaneously with the same program. Please remember to double the limiting current and power if two electrophoresis units are run at the same time. The voltage will be the same regardless of the number of units.

4. Power Supply Operation

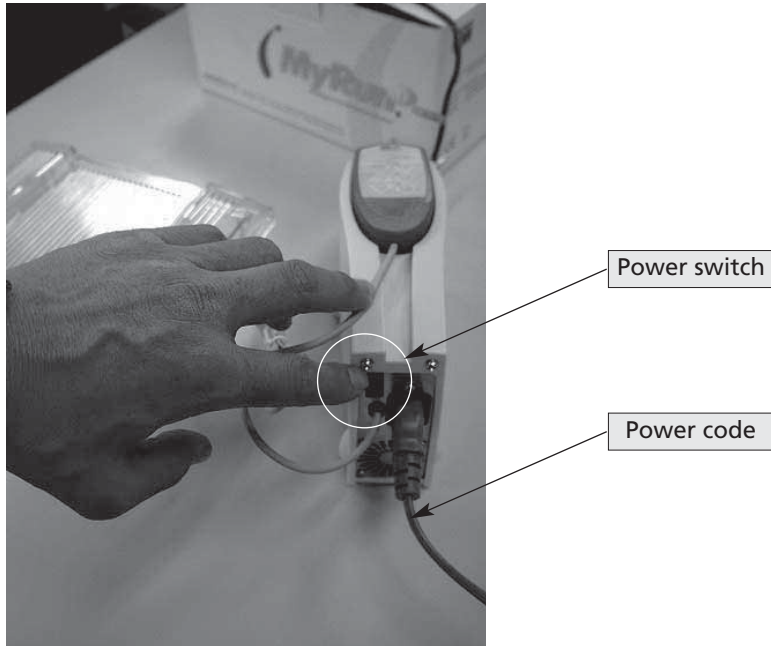


Check the Quick Start Operations Manual.

Insert the power supply connector into the electrophoresis tank.

A. Plug the power cord into the power outlet.

B. Turn on the power on the back panel of the power supply.



If you want to run your gel at constant voltage:

1. _Select the voltage by using the **V** key of the remote control.
2. _Adjust the voltage with the up **U** and down **D** key. Voltage can be selected as 35, 50, 75, 100, 135 V.
3. _Press the **enter** key.
4. _Select the running time by using the **T** key. And adjust using the key up **U** and down **D**.
5. _Select the running time by using the **enter** key.
6. _Start the run using the **run/stop** key.

If you want to run at a constant ampere, apply the same procedures using the **A** key instead of **V** (20, 30, 40, 50, 60, 70, or 80 mA can be selected).

This power supply keeps the last voltage and/or current setting in memory.


1. _Switch on the main power.
2. _The display shows the last value of the selected **V** **A** and **T** keys.
3. _Select **enter**, and adjust the running time by the selecting the **T** key followed by **U**/**D**.
4. _Select **enter**

If you do not wish to use the timer:

1. _After selecting the **T** mode, select **enter** when "0" appears on the display.
2. _Select the **run/stop** key. **---** appears on the display.

You want to stop the electrophoresis:

Select and hold the  key for two seconds, OFF appears on the display.

To start, select the  key.

If the timer is selected, it will automatically restart at the value before the electrophoresis was stopped.

Do not forget to switch off the power supply when not in operation.

Error message:

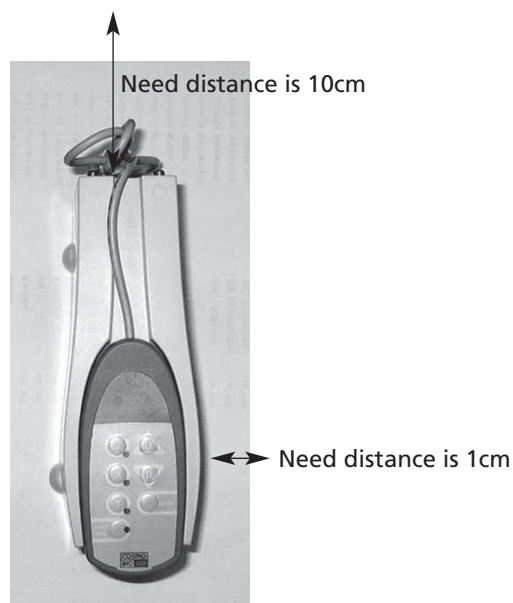
ERROR XX is displayed, and the power supply will stop when the current reaches the limit values.

Code 00: Current is too low.

Code 01: Current is too high.

5. Installation condition

Needs sufficient spaces for installation condition under the figure.



6 Electrical Specifications

Input Voltage and Power: AC 100–240V, 50/60 Hz, 140VA

Output constant voltage: 35, 50, 75, 100, 135V

Output constant ampere: 20, 30, 40, 50, 60, 70, 80 mA

Output wattage: Max 54 W

7. Maintenance

Wipe the instrument regularly with a damp cloth. Let the instrument dry completely before use. Otherwise, no user maintenance is necessary. All servicing should be entrusted to qualified personnel only. Please contact Cosmo Bio Co., Ltd., for more service information.

8. Environmental Condition

1. Indoor use.
2. Altitude up to 2000 m.
3. Temperature 5°C to 40°C.
4. Mains supply voltage fluctuations as stated by $\pm 10\%$ of the nominal voltage
5. Maximum relative humidity of 80% for temperature up to 31°C decreasing to 50% relative humidity at 40°C.
6. Transient overvoltages according to INSTALLATION CATEGORIED II.
7. POLLUTION DEGREE 2 in accordance with IEC 664.

If the equipment is used in a manner not specified by the manufacture, the protection provided by the equipment may be impaired.

Warranty; One year



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