



...means electrophoresis

Electrophoresis Power Supply HPS01

Users manual

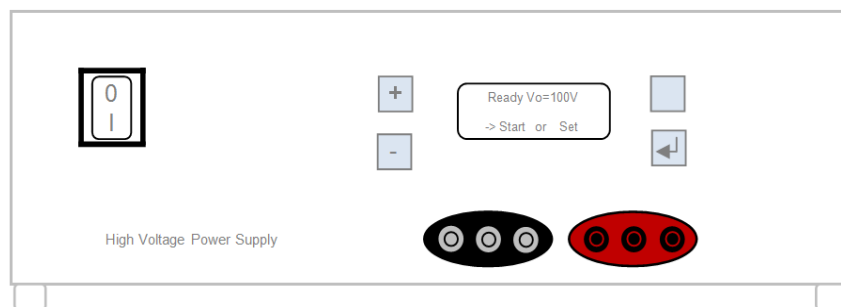


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1. Introduction

This manual contains information and warnings, which must be followed to ensure safe operation and retain the DC power supply in safe condition.



Warning

READ "SAFETY PRECAUTIONS" BEFORE USING, INSTALLING OR
MAINTENANCE THE INSTRUMENT

The HPS01 power supply is a versatile device, suitable for electrophoresis applications in small and medium sized tanks. It holds a stable output voltage in a wide range of loads. The HPS01 boasts 3 pairs of output connectors allowing 3 electrophoresis procedures at the same time.

Unpacking and Inspection

The packing should include the following items:

1. DC power supply
2. Power line cord
3. Instructions for use
4. warranty certificate

Please check to see that all of the above items are included.

Safety Precautions

The device is capable of delivering hazardous voltages to the life of the operator. This manual contains important information on the use and safety of the operator and must be read with great care. Although care has been taken to ensure that the device is safe, caution should always be exercised due to high voltages.

- I. *DO NOT touch the power supply outlets with bare fingers, or with a metallic object. Always be with a second person in the area in case of an accident.*
- II. *DO NOT touch any point on the electrophoresis tanks, cables or plugs if you do not interrupt the operation of the device.*
- III. *DO NOT touch with wet hands points of the device or of the electrophoresis tanks and cables.*
- IV. *DO NOT make other connections, except those recommended in the manual.*
- V. *Use insulated cables and electrophoresis tanks in good condition.*
- VI. *DO NOT disassemble the device for any reason. **Electric shock hazard!***
- VII. *DO NOT expose the device to rain or other liquids.*
- VIII. *DO NOT close the ventilation holes. Risk of overheating or fire.*
- IX. *Avoid dropping the device. The device is heavy and there is a risk of damaging various components. If the device falls of the workbench, DO NOT turn it on, if the device is not checked by an authorized technician.*
- X. *Do not place the device near or above heat sources.*
- XI. *Do not expose the device directly to solar radiation.*

Safety Symbols



Important safety information, refer to the operating manual.



DC – Direct current.



Earth ground.



Caution! Hot surface. Avoid contact.



Conforms to European Union directives

2. Operation



Warning

TO AVOID ELECTRIC SHOCK OR PERSONAL INJURY, READ "SAFETY PRECAUTIONS" BEFORE OPERATION.

Before making any operation always examine the DC power supply and accessories used with it for damage and defects. Examine the test leads for cracked or frayed insulation and make sure the lead plugs fit snugly into the output jacks. If any abnormal exist do not attempt to make any operation.

Introduction

The device is designed for electrophoresis applications. Do not use it for any other purpose.

Manual operation

After changing the switch to operating mode, the screen shows various messages.

Initial indication:

(for 1.5 seconds and at the same time a short tone sounds)

```
220v DC Power
```

```
Supply v2.3
```

The following screen appears

```
Ready Vo=100v
```

```
Time set: 20:00
```

The voltage is by default set to 100 volts and the time is set to 20 minutes. The user can press the **start** key to start the electrophoresis process, or enter the configuration.

If START is pressed then the display shows the following:

```
Power ON
Vout=100V  20:00
```

indicating that the output is active and displays a voltage of 100v and the time starts from 20 minutes and counts down.


When the time is reset, the output is deactivated, and the display shows:

```
Finished...
Press Start
```

and for 10 seconds a signal sounds to inform the operator.

If the START key is pressed, the sound stops immediately and the display returns to the standby display. The same happens when the 10 seconds lapse.

3. Settings

If the SET key  is pressed on the standby screen, the operator switches to the power supply settings and the display shows for one second:

```
Parameter setup
```

and right after:

```
Set Voltage
100 V  [+/-]
```

With the + or - keys, the output voltage can be changed from 35 to 220 volts. As long as the keys are pressed, the faster the setting is changed and at the same time a short sound signal is heard. To save the selection, the operator must press the SET key.

The screen now changes to the time setting as follows:

```
Time set:
20:00 min [+/-]
```

With the + or - keys, the setting changes from 1 to 60 minutes and the save is done with the SET key.

The display is now switching to offset value setting to measure time, in order to improve the accuracy of seconds. The range is set from 1 to 65535, with a set value of 41180. It is recommended not to change the setting unless there is a critical reason.

```
Set TMR1 offset
```

```
41180 [+/-]
```

The adjustment is done with the + or – keys. To save the selection, the operator must press the SET key.

The display changes to the sensitivity setting for the power supply fan. The range of change is from 1 to 10, with a set value of 2. It is recommended not to change the setting unless there is a critical reason.

```
Fan reset period
```

```
2 [+/-]
```

The adjustment is done with the + or – keys. To save the selection, the operator must press the SET key.

If there is a problem with the fan rotation speed then:

- a) If the electrophoresis has started, then next to the **Power ON** display, **Fan err** will also display. At the same time there will be an intermittent alert.

```
Power ON Fan err
```

```
Vout=100V 20:00
```

- b) if a new electrophoresis cycle does not start, then if you press start, the following error message appears on the screen

```
Fan error
```

```
Cannot start
```

Warning!

The power supply should not be used if the fan is not working. Technical inspection must be carried out immediately. The dust can reduce the speed or immobilize the fan, leading to overheating of the power supply. For safety reasons the power supply does not work if the fan rotates slowly or is blocked.

The settings are stored in the memory. The screen switches to the standby display.

The START button starts a new electrophoretic cycle or stops it completely.

No other key is active during the cycle unless the power supply is **overloaded**.

In this case, the power supply is switched off immediately, the output is deactivated, the time returns to the set, the display shows:

Overload!!!

and an alarm sounds to request the operator's intervention. The alarm stops by pressing the START key - and the screen returns to standby.

CAUTION!

NO electrophoresis should be attempted without investigating the cause of the overload.

4. Technical problems

If there are technical problems, you can initially do the following first checks:

1. If the device **DOES NOT** work at all.

Check the plug with another device.
Check for blown fuse in the power cord socket.
2. If the device lights up but does not respond.

Turn off the device for 1 minute and turn it on again.

If none of the above helps, you should immediately contact the seller or manufacturer for repairing your power supply.

Specifications:

Operating voltage:	230Vac. +/-10%
Output voltage range:	35-220 Vdc
Max output current:	400 mA
Max output power:	88 Watt
Min resistor load:	88 ohm
Setup resolution:	1 V
Time setting range:	1 – 60min
Ambient temperature:	0 - 40 °C
Relative humidity:	0 - 90%
Dimensions (WxDxH):	26.1x22x9 cm
Weight:	4 Kg