multichannel systems
a division of Harvard Bioscience, Inc.

Power Supply PS40W
Manual

Imprint

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Multi Channel Systems MCS GmbH

Aspenhaustraße 21

72770 Reutlingen

Germany

Phone +49-7121-909 25 – 0

Fax +49-7121-909 25 -11

sales@multichannelsystems.com

www.multichannelsystems.com

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1 Important Information and Instructions

1.1 Operator's Obligations

The operator is obliged to allow only persons to work on the device, who

- are familiar with the safety at work and accident prevention regulations and have been instructed how to use the device;
- are professionally qualified or have specialist knowledge and training and have received instruction in the use of the device;
- have read and understood the chapter on safety and the warning instructions in this manual and confirmed this with their signature.

It must be monitored at regular intervals that the operating personnel are working safely. Personnel still undergoing training may only work on the device under the supervision of an experienced person.

1.2 Guarantee and Liability

The general conditions of sale and delivery of Multi Channel Systems MCS GmbH always apply. The operator will receive these no later than on conclusion of the contract.

Multi Channel Systems MCS GmbH makes no guarantee as to the accuracy of any and all tests and data generated by the use of the device or the software. It is up to the user to use good laboratory practice to establish the validity of his findings.

Guarantee and liability claims in the event of injury or material damage are excluded when they are the result of one of the following.

- Improper use of the device
- Improper installation, commissioning, operation or maintenance of the device
- Operating the device when the safety and protective devices are defective and/or inoperable
- Non-observance of the instructions in the manual with regard to transport, storage, installation, commissioning, operation or maintenance of the device
- Unauthorized structural alterations to the device
- Unauthorized modifications to the system settings
- Inadequate monitoring of device components subject to wear
- Improperly executed and unauthorized repairs
- Unauthorized opening of the device or its components
- Catastrophic events due to the effect of foreign bodies or acts of God

1.3 Important Safety Advice

Warning: Obey always the rules of local regulations and laws. Only qualified personnel should be allowed to perform laboratory work. Work according to good laboratory practice to obtain best results and to minimize risks.

The product has been built to the state of the art and in accordance with recognized safety engineering rules. The device may only

- be used for its intended purpose;
- be used when in a perfect condition.
- Improper use could lead to serious, even fatal injuries to the user or third parties and damage to the device itself or other material damage.

Warning: The devices and the software are **not** intended for medical uses and **must not** be used on **humans**. MCS assumes no responsibility in any case of contravention.

Malfunctions which could impair safety should be rectified immediately.

High Voltage

Electrical cords must be properly laid and installed. The length and quality of the cords must be in accordance with local provisions.

Only qualified technicians may work on the electrical system. It is essential that the accident prevention regulations and those of the employers' liability associations are observed.

- Each time before starting up, make sure that the mains supply agrees with the specifications of the products.
- Check the power cords for damage each time the site is changed. Damaged power cords should be replaced immediately and may never be reused.
- Check the leads for damage. Damaged leads should be replaced immediately and may never be reused.
- Do not try to insert anything sharp or metallic into the vents or the case of the products.
- Liquids may cause short circuits or other damage. Keep the devices and the power cords always dry. Do **not** handle it with wet hands.

2 Welcome to the Power Supply PS40W

The PS40W is a standard power supply delivering supply voltages to connected devices. It supplies power with 42 W output power and +/– 7 V output voltage.

The PS40W is especially recommended for use with Multi Channel Systems products, for example, it is perfect for supplying power to programmable gain amplifiers PGA and for custom setups that lack an internal power supply IPS10W. But the PS40W is also perfect for custom applications.

The PS40W stabilises two voltages using the linear regulation technique. Two LED lights indicate the proper function of the device.

The outputs of the device have over-current and over-temperature protection. In case of a failure of the device, the output voltages are decreased. Fuses protect the electronic components against fatal damages.

3 Setting Up and Connecting the PS40W

3.1 Front Panel

The front panel of the PS40W holds the connectors for delivering the supply voltage to the following devices as well as two green LED lights indicating the negative and the positive output voltage of 7 volts, respectively.

The color of the plugs indicates the polarity.

Blue	4 mm	blue connector	Negative supply voltage
Black	4 mm	black connector	Power ground
Red	4 mm	red connector	Positive supply voltages

The front panel LED's light up if the negative and the positive voltages are stable. A flashing light can be caused by short-circuits or over-temperature. If the LED's are dark, the voltage is reduced to lower values.

Warning: Do not mismatch the polarity of the power supply. A false connection may cause permanent damages.

Note: If by any cause the supply voltages are reduced, the recorded signals could be deformed.

3.2 Rear Panel

The rear panel of the device holds the main switch and the main power supply connector. Please use only the provided power supply cords. Do not switch on the device when manipulating the cables delivering the supply voltages to the device of interest.

3.3 Technical Specifications

PS40W Power Supply

Operating temperature	10 °C to 40 °C
Storage temperature	0 °C to 50 °C
Dimensions (W x D x H)	172 mm x 220 mm x 52 mm
Weight	1750 g
Main fuse	2.0 A
Supply voltage	230 VAC @ 50 Hz, 110 VAC @ 60 Hz
Output voltage	± 7.0 V ± 10 %
Output current	max. 2.5 A @ ± 7 V
Output power	42 W
Output voltage ripple	< 20 mV
Efficiency	approximately 80 %