

Mini Power Pack PS300T

Instruction Manual

**Model**

Mini Power Pack PS300T (100 – 240 V, EU plug)
Mini Power Pack PS300T (100 – 240 V, US plug)

Order No

040-100
040-190

**!! Warning !!**

**Please read these instructions carefully
before using this apparatus!**

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This document describes the state at the time of publishing. It needs not necessarily agree with future versions.

Subject to change!

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1 Introduction

The new, ultra compact Mini Power Pack PS300T requires the space of a DIN-A5 paper sheet and has been designed for any researcher using horizontal or vertical gel electrophoresis.

Combining small size, versatility and reliability the new Power Supply is the ideal choice for every scientist. Providing constant voltage as well as constant current in 1 V or 1 mA steps, the Power Supply is perfect for running both agarose and polyacrylamide gel electrophoresis experiments.

The Mini Power Pack PS300T provides two pairs of outlets, allowing to run two mini or standard sized gels simultaneously.

The integrated timer allows continuous or timed electrophoresis runs.

The Power Supply is constructed with robust and high-quality components paying attention to all safety standards. This guarantees for long-life and perfect experimental results.

All conventional horizontal and vertical Biometra electrophoresis systems are compatible with the Mini Power Pack PS300T. The device is compatible to other electrophoresis units from other manufacturers as well, of course.

For maxi gels it is recommended to run one gel with this Power Pack; for blotting applications the Standard Power Packs P25 and P25T shall be used.



2 Technical Data

2.1 Technical Specifications

Output Voltage	10 – 300 V / 1 V steps
Output Current	10 – 400 mA / 1 mA steps
Max. Watt	60 W
Output Type	Constant Voltage or constant Current
Control	Microprocessor controller
No. of Outlets	2 pairs
Timer	1 - 999 minutes with alarm, continuous
Safety Device	No load detection; shrouded plugs and sockets
Operation Temperature	Ambient to 40 °C
Construction material	Polycarbonate housing and aluminum bottom plates
Unit Dimension	14,0 cm x 19,1 cm x 8,4 cm
Weight	0.9 kg
Rated Voltage	100 - 240 V

2.2 Environmental Conditions

Ensure the instrument is installed and operated strictly under the following conditions:

- Indoor use only
- ≤95% RH
- 75 kPa – 106 kPa
- Altitude must not exceed 2000 meters
- Ambient to 40°C operating temperature
- Pollution degree: 2
- Mains supply voltage fluctuations up to ±10% of the normal voltage

3 Safety Instructions

3.1 General Warnings

The Mini Power Pack PS300T has been tested and found to comply with the limits for the CE regulation. Also, it is RoHS compliant to meet the environmental directive. These limits are designed to provide reasonable protection against harmful interference when the instrument is operated in a commercial environment.

This instrument used together with electrophoresis units generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this instrument in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The use of this device unconformably to the operating instructions will dissolve any responsibility and liability.

It is strongly recommended for the user to read the following points carefully before operating this equipment:

1. Read and follow the manual instructions carefully.
2. Do not alter the equipment. Failure to follow these directions could result in personal and/or laboratory hazards, as well as invalidate equipment warranty.
3. Use a properly grounded electrical outlet with correct voltage and current handling capacity.
4. Disconnect from power supply before maintenance and servicing. Refer servicing to qualified personnel.
5. Never use this instrument without having the safety cover/lid of the connected electrophoresis units correctly in position.
6. Do not use the unit if there is any sign of damage to the external tank or cover/lid. Replace damaged parts.
7. Do not use in the presence of flammable or combustible material; otherwise fire or explosion may result. This device contains components which may ignite such materials.
8. Refer maintenance and servicing to qualified personnel.
9. Ensure that the system is connected to electrical service according to local and national electrical codes. Failure to make a proper connection may create fire or shock hazard.

10. Use appropriate materials and operate correctly to avoid possible hazards of explosion, implosion or release of toxic or flammable gases arising from overheated materials.
11. The unit shall be operated only by qualified personnel.

3.2 Safety Information

1. Use high level of precaution against any electrical device.
2. Before connecting the electrical supply, check to see if the supply voltage is within the range stated at the rating label, and see to it that the device be seated firmly.
3. Place the unit in a safe and dry location; it must NOT touch the surrounding.
4. Follow the safety precautions for chemicals / dangerous materials.
5. If needed, please contact qualified service representative.

3.3 Avoiding Electrical Shock

Follow the guidelines below to ensure safe operation of the unit.

The Mini Power Pack PS300T has been designed to utilize shielded wires (safety cords with safety connectors). **Do never use unshielded wires!**

To avoid electrical shock:

1. In the event of solution spilling on the instrument, it must be dried out for at least 2 hours and restored to NORMAL CONDITION before each operation.
2. Never connect or disconnect wires loading from the power jacks when the red indicator light of power switch is on.
3. WAIT at least 5 seconds after stopping a run before handling output leads or any connected apparatus.
4. ALWAYS make sure that your hands, work area, and instruments are **clean and dry** before making any connections or operating the power supply.
5. ONLY connect the power cord to a properly grounded AC outlet.

3.4 Avoiding Damage to the Instrument

1. Do not attempt to operate the device if damage is suspected.
2. Protect this unit from physical damage, corrosive agents and extreme temperatures (direct sunlight, etc.).
3. For proper ventilation and safety concerns, keep at least 10 cm of space behind the instrument, and at least 5 cm of space on each side.
4. Use high level of precaution against the damages on the unit.
5. Do not operate the unit out of environmental conditions addressed above (chapter 2).
6. Prior to applying any cleaning or decontamination methods other than manufacturer's recommendation, users should check with the manufacturer's instruction to see if the proposed method will damage the equipment.

3.5 Equipment Operation

Follow the guidelines below to ensure safe operation of the unit:

1. NEVER access dangerous chemicals or other materials to prevent possible hazard of explosion and damage.
2. Do not operate the unit connected to electrophoresis units without lids or covers to prevent possible hazards.
3. A temporary conductivity caused by condensation might occur even though this series is rated Pollution Degree 2 in accordance with IEC 664.

3.6 Definition of Symbols

Symbols used on the power supply is explained below.



Indicates an area where a potential shock hazard may exist.
Consult the manual to avoid possible personal injury or instrument damage.



Indicates to refer to instruction manual!
Consult the manual to avoid incorrect handling or instrument damage.



Indicates that the instrument is fragile



Indicates disposal instruction.
DO NOT throw this unit into a municipal trash bin when this unit has reached the end of its lifetime. To ensure utmost protection of the global environment and minimize pollution, please recycle this unit.

4 Set Up

4.1 Packing List

- 1x Mini Power Pack PS300T
- 1x Manual
- 1x Power Cord

4.2 Unpack and Check

Your **Biometra Mini Power Pack PS300T** has been carefully packed to ensure its safety. Please unpack it carefully, control the integrity of its content and inspect the device. Report any damage immediately to BIOMETRA!

Do not operate a device which is in no proper condition.

Should you have a complaint, return the complete system in its original packing by following the return instructions (see chapter 8.0).



!!Attention!!



Please send back the enclosed postcard along with the filled out Warranty Certificate to Biometra in order to claim the full warranty!

Before connecting, make sure the actual voltage complies with the voltage range indicated on the type label.



Caution:

The Mini Power Pack PS300T must be grounded!



4.3 Installation

1. The Mini Power Pack PS300T must be located in a dry and safe place.
2. Do not place an electrophoresis chamber on the power supply device.
3. The ventilation openings must not be covered by other devices, furniture or fixtures.
4. A sufficient air flow for convection cooling must be provided.

4.4 Electrophoresis Chamber Connection

The electrophoresis chamber is connected to the Mini Power Pack PS300T by safety cords. Use exclusively electrophoresis devices with safety connectors.

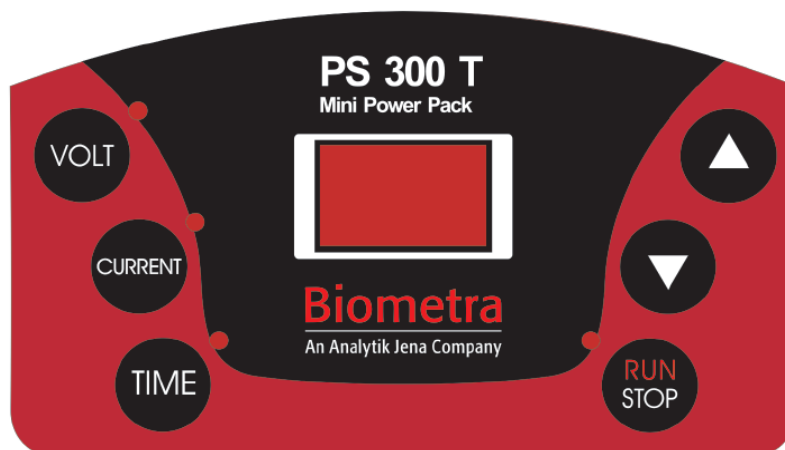


Switch off the Mini Power Pack PS300T while working on the test equipment setup.



5 Operation

5.1 Control Interface



There are six buttons and 4 LED indicators on the faceplate.







The LED's indicates the status of the unit.

a. Setup Mode (before pressing RUN/Start)

LED light indicates your current parameter. For example, when setting a value for Voltage, the Voltage LED will lit up.

b. Operation Mode

When starting the experiment, the LED light next to the RUN/STOP button will light up indicating the unit to operate.

1.  – Select voltage value
2.  – Select current value
3.  – Timer button
4.  – Increase the Voltage, Current or Time
5.  – Decrease the Voltage, Current, or Time
6.  – Start or stop the unit

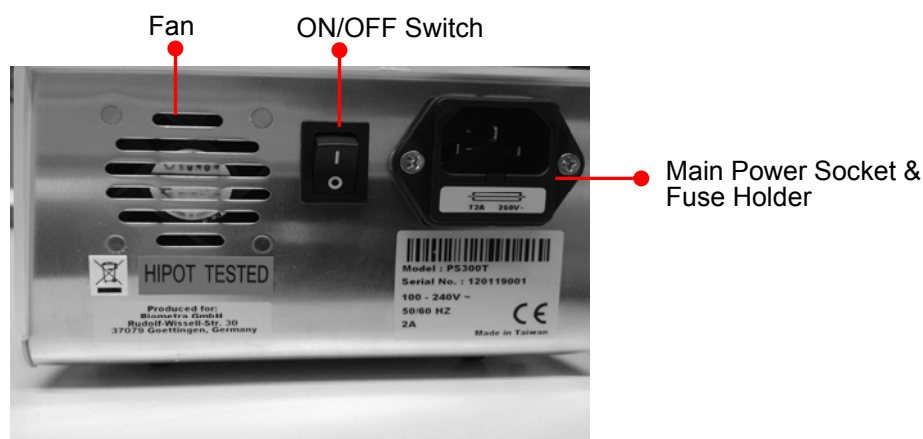
5.2 Start Operation



Note: To operate at constant voltage or constant current mode, adjust the other parameter to the maximum value!

For example, to operate at constant voltage, adjust current to maximum.

1. Place the unit on a sturdy and level surface in a safe, dry place, away from laboratory traffic.
2. Ensure that the AC power switch is OFF, and then plug the power cord into a grounded AC outlet with appropriate voltage (100V to 240V as indicated on the rating sticker near the AC cord on the back of the unit).







Rear view



3. Power on the unit by pressing the ON/OFF switch on the back of the instrument.
4. Connect the DC output jacks from the electrophoresis instrument: insert the red electrophoresis instrument lead (+) into the red output jack, and the black electrophoresis instrument lead (-) into the black output jack.



5.3 Constant Voltage or Current Setting:




- To set constant voltage, press  and the LED indicator should light up.
 - To set constant current, press  and LED indicator should light up.
5. Adjust the output value by pressing the  or  button.
7. After adjusting your constant mode output value, switch to the other parameter and set it to maximum.

5.4 Timer Setting:


8. After setting the current or voltage output value, press the Timer button,
and then press the  key or the  key to adjust the timer accordingly.



Note: When timer setting is “0”, it means continuous operation.

9. Press the  key to start the run. Once the electrophoresis starts, the LED light next to the  button will light up.
10. Press the  key again to stop the unit at any time if necessary.






5.5 Stop Operation

11. When the run is completed, press the  key to terminate a timed run, and turn the AC power OFF by the switch on the rear.
12. The programmed settings will be automatically saved into the system so the next time you turn it on, the same settings as your previous experiment will be displayed.

6 Trouble Shooting

6.1 Operating Problems

Many operating problems may be solved by carefully reading and following the instructions in this manual accordingly. Some suggestions for troubleshooting are given below. Should these suggestions not resolve the problem, contact our SERVICE DEPARTMENT or your local distributor for assistance. If troubleshooting service is required, please include a full description of the problem.

Problem	Cause	Solution
No Display / lights	No AC power	Check if the power supply is unplugged, or AC power source problem.
	AC power cord is not connected	Check AC power cord connections at both ends. Use the correct cords.
	The fuse has blown	Replace the fuse
Repeated fuse broken	Hardware failure	Contact Service Department
Operation stops	Electrophoresis leads are not connected to the power supply or to the electrophoresis unit(s), or there is a broken circuit in the electrophoresis cell	Check the connections to the power supply and on your electrophoresis unit to make sure the connection is intact; check condition of wires in electrophoresis unit. Close the circuit by reconnecting the cables. Press the START/STOP button to restart the run.
	High resistance due to tape left on a pre-cast gel, incorrect buffer concentration, or incorrect buffer volumes in the electrophoresis cell	Correct the conditions by making sure the tape is removed from the pre-cast gel, buffers are prepared correctly, and the recommended volume of buffer is added to the electrophoresis unit(s).
 Error message	Over current (400 mA limitation reached)	Check if the buffer concentration is appropriate. Excessive buffer concentration may cause over current issue. To clear the error message, press the START/STOP button again.
 Error message	Over voltage (300 V limitation reached)	Press the START/STOP button to clear the error message. Contact Service Department if the problem persists.
 Error message	Thermal limitation reached (Output voltage <10V)	(1) Check the connections (2) If Er3 error message persists, the problem may be caused by internal fan failure. Contact Service Department.
 Message	No load is detected	(1) Check the connections (2) Check the buffer condition / buffer level
 Alarm message	Max. watts (60 W) of power reached	Warning message for reference

6.2 Encountering Problems

1. Check the trouble shooting section.
2. Call Service Department or e-mail to Service@biometra.com.
3. If the unit must be shipped back for repair, contact Biometra Service Department or your local distributor for a Return Authorization Number (**RAN**) and shipping instructions. For further information please refer to chapter **8.1 Instructions for return shipment**.

7 Maintenance and Repair

7.1 Cleaning and Maintenance

Disconnect the Mini Power Pack PS300T. Use only mild, non-abrasive detergents and a slightly moistened soft cloth. Do not use solvents, soak while cleaning or immerse in water!

7.2 Servicing

Regular servicing is not necessary.

7.3 Replacing the Fuse

Only original spare parts are allowed. For additional fuses, contact the Biometra Service Department.

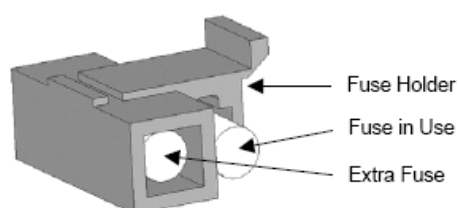
To replace the fuse:

4. Turn off the main power switch at the rear of Power Supply and detach the power cord.
5. Open the fuse compartment located inside the Power Entry Module by inserting a small flat blade screwdriver into the slot below the ON/OFF switch. Turn the screwdriver to gently pry open the fuse compartment.



The fuse compartment will not open with the power cord in place.

6. Pull the fuse holder out of the compartment and inspect the fuse. If the fuse is burned or there is a break in the fuse element, replace the fuse with an identical type of fuse (**T2AH250V**) as provided in the fuse holder (see figure below).
4. Place the fuse holder back into the compartment.
5. Snap the cover closed.



8 Service

Should you have any problems with this unit, please contact our service department or your local Biometra dealer:


Biometra GmbH

Service Department
Rudolf-Wissell-Straße 14 - 16
D-37079 Goettingen
Phone: +49 (0)5 51 50 68 6 - 10 or 12
Fax: +49 (0)5 51 50 68 6 - 11
e-mail: Service@biometra.com



If you would like to send the unit back to us, please read the following return instructions.

8.1 Instructions for Return Shipment

- Return only defective devices. For technical problems which are not definitively recognisable as device faults please contact the Technical Service Department at Biometra (Tel.: +49 (0)5 51-50 88 1-10 or -12, Fax: +49 (0)5 51-50 88 1-11, e-mail: Service@biometra.com).
 - Please contact our service department for providing a **return authorization number (RAN)**. This number has to be applied clearly visible to the outer box. **Returns without the RAN will be not be accepted!**
 - **Important:** Carefully clean all parts of the instrument from residues, and of biologically dangerous, chemical or radioactive contaminants. If an instrument is contaminated, Biometra will be forced to refuse to accept the device. The sender of the repair order will be held liable for possible damages and losses resulting from insufficient decontamination of the device.
- 
- Please **prepare written confirmation** (use the “**Equipment Decontamination Declaration**” following on the next page) that the device is free of biologically dangerous, chemical or radioactive contaminants. This confirmation must be attached to the outside of the packaging.
 - Use the original packing or a similarly robust packing when returning the device. If not available, contact Biometra or your local distributor.
 - Label the outside of the box with “CAUTION! SENSITIVE INSTRUMENT!” and the RAN number sticker. Attach the Decontamination Declaration!
 - Please enclose a note which contains the following:
 - a) Sender's name and address,
 - b) Name of a contact person for further inquiries with telephone number.
 - c) **Precise description of the fault**, which also reveals during which procedures the fault occurred, if possible.

9 Equipment Decontamination Certificate

To enable us to comply with German law (i.e. §71 StrlSchV, §17 GefStoffV and §19 ChemG) and to avoid exposure to hazardous materials during handling or repair, please complete this form, prior to the equipment leaving your laboratory.

COMPANY / INSTITUTE _____

ADDRESS _____

PHONE NO _____ FAX NO _____

E-MAIL _____

EQUIPMENT	Model	Serial No
	_____	_____
	_____	_____
	_____	_____
	_____	_____

If on loan / evaluation Start Date: _____ Finish Date _____

Hazardous materials used with this equipment:

Method of cleaning / decontamination:

The equipment has been cleaned and decontaminated:

NAME _____ POSITION _____
(HEAD OF DIV./ DEP./ INSTITUTE / COMPANY)

SIGNED _____ DATE _____

PLEASE RETURN THIS FORM TO BIOMETRA GMBH OR YOUR LOCAL BIOMETRA DISTRIBUTOR TOGETHER WITH THE EQUIPMENT.

PLEASE ATTACH THIS CERTIFICATE OUTSIDE THE PACKAGING. INSTRUMENTS WITHOUT THIS CERTIFICATE ATTACHED WILL BE RETURNED TO SENDER.

General Information for Decontamination:

Please contact your responsible health & safety officer for details.

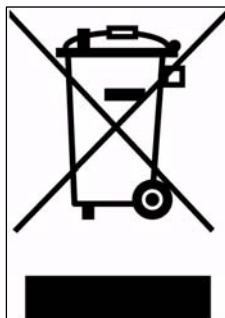
Use of radioactive substances:

Please contact your responsible person for details.

Use of genetically change organism or parts of those:

Please contact your responsible person for details.

10 Note for Disposal of Electric/Electronic Waste



This symbol (the crossed-out wheelie bin) means, that this product should be brought to the return systems and/or separate systems available to end-users according to your country regulations, when this product has reached the end of its lifetime!

For details, please contact your local distributor!

This symbol applies only to the countries within the EEA*.

*EEA = European Economic Area, comprising all EU-members plus Norway, Iceland and Liechtenstein.

11 EC – Declaration of Conformity / EU - Konformitätserklärung

Goettingen, May 2012

im Sinne der EG-Richtlinie über elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen 73/23/EWG

following the EC directive about electrical equipment for use within certain limits of voltage 73/23/EEC

und / and

im Sinne der EG-Richtlinie für die elektromagnetische Verträglichkeit 89/336/EWG.

following the EC directive about the electromagnetic compatibility 89/336/EEC.

Hiermit erklären wir, dass folgendes **Power Supply**,
*Herewith we declare that the following **Power Supply**,*

Typ / type:	Mini Power Pack PS300T
Best.-Nr. / Order No.	040-100, 040-190

den grundlegenden Anforderungen der
corresponds to the basic requirements of

EG-Niederspannungsrichtlinie 73/23 EWG und der
EC low voltage directive 73/23 EEC and the

EG-Richtlinie über die elektromagnetische Verträglichkeit 89/336 EWG entspricht.
EC directive about the electromagnetic compatibility 89/336/EEC.

Dr. Juergen Otte
Quality Manager

12 **Warranty**

This laboratory instrument is produced with the highest practical standards of materials, workmanship, and design. The design and manufacture of parts have been conceived with one purpose - to produce units which will give satisfactory service.

Biometra GmbH guarantees this unit to be free from defects in materials or workmanship under normal use or service for **24 month** from date of shipment.

If, during this time, this unit proves defective in materials or workmanship, Biometra GmbH will repair or replace it free of charge if returned to us prepaid.

This guarantee does not cover damage in transit, damage caused by carelessness, misuse or neglect, or unsatisfactory performance as a result of conditions beyond our control; or consequential losses as a result of failure of our product.

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