Grant bio

Microplate shaker
PMS-1000i

Operating instructions

For version V.2GW

Contents

1. Safety

The following symbols mean:

Caution! Make sure you have fully read and understood the present Operating instructions before using the equipment. Please pay special attention to sections marked by this symbol.

GENERAL SAFETY

- Use only as specified in the Operating Instructions provided.
- The unit should not be used if dropped or damaged.
- The unit must be stored and transported in a horizontal position (see package label).
- After transportation or storage keep the unit under room temperature for 2-3 hrs before connecting it to the electric circuit.
- Use only cleaning and decontamination methods recommended by the manufacturer.
- Do not make modifications to the design of the unit.

ELECTRICAL SAFETY

- Connect only to an external power supply unit with voltage corresponding to that on the serial number label.
- Use only the external power supply unit provided with this product.
- Ensure that the power switch and external power supply unit are easily accessible during use.
- Disconnect the unit from the electric circuit before moving.
- Turn off the unit by disconnecting the external power supply from the power socket.
- If liquid penetrates into the unit, disconnect it from the external power supply unit and have it checked by a repair and maintenance technician.

DURING OPERATION

- Do not impede the platform motion.
- Do not operate the unit in environments with aggressive or explosive chemical mixtures.
- Do not operate the unit if it is faulty or has been installed incorrectly.
- Do not use outside laboratory rooms.
- Do not place a load exceeding the maximum load value mentioned in the Specifications section of this Operating instructions.

BIOLOGICAL SAFETY

- It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilt on or penetrates into the equipment.

2. General Information

The Microplate shaker PMS-1000i is designed for immuno-diagnostics and is used for mixing biological liquids as well as incubation and cultivation of biological liquids according to the program set by the operator.

The current upgraded model provides reliable continuous operation and smooth platform motion at lower speed. Non-stop mode up to 7 days and over 2 years of trouble-free operation are guaranteed due to direct drive mechanism and brushless motor.

The unit can also be used for mixing any biological and chemical components.
The unit can be used in all areas of medicine, biotechnology and microbiology laboratory research.

The principle of the PMS-1000i operation is based on the creation of the rotational movement of the Shaker platform with a constant amplitude. The rotational speed is controlled from the front panel.

3. Getting Started

3.1. Unpacking

Remove packaging carefully and retain them for future shipment or storage of the unit. Examine the unit carefully for any damage incurred during transit. The warranty does not cover in-transit damage.

3.2. The PMS-1000i set includes:

- Microplate shaker PMS-1000i.....1 piece
- Platform ❶ .....1 piece
- Operating instructions; Declaration of conformity .....1 copy
- External power supply unit.....1 piece

3.3. Optional extras

Platform MPP-4 for 4 microtest plates ❷

3.4. Set up:

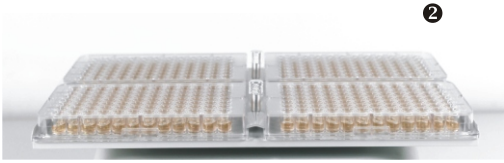
- place the unit on an even horizontal working surface;
- plug the external power supply unit into the 12 V socket at the rear side of the unit.

3.5. Platform installation

Install the platform to the movable base by inserting the pins on the underside of the platform into the holes on the supporting platform on the shaker.

❶

❷



4. Operation of PMS-1000i

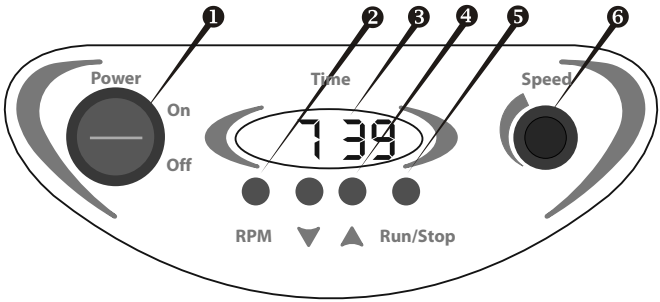


Fig.1 Control panel

4.1. Connect the external power supply to electric circuit.

4.2. Place the microtest plates on the platform and fix them with the two screws. Using the IPP-4 platform fix the microtest plates with the special holder by pressing it against the microtest plates with two screws.

4.3. Turn the **Power** switch (fig. 1/❶) into On position, located on the front panel of Shaker (the display (fig.1/❸) will light). In standby mode the display shows set time or set speed (when **RPM** key is pressed). In run mode the display shows operation time or actual speed (when **RPM** key is pressed).

4.4. Using the p and q keys (fig. 1/❹) set the operation time using the display readings. The set time is indicated on the display in hours and minutes (hh:mm).

4.5. Set the shaking speed with the **Speed** knob (fig. 1/❻) using set speed readings on the display. Speed readings are indicated on the display while the **Speed** knob is being turned.

4.6. Press the **Run/Stop** key (fig. 1/❺). The platform will start shaking and the timer will start counting up the operation time.

The display shows actual time: till 1 hour - in minutes and seconds (min:sec), after 1 hour - in hours and minutes (hh:mm).

Press and hold the **PRM** key while platform is shaking to display the actual speed of the platform motion on the display.

4.7. After the set time expires platform shaking will stop and the set working time will be shown on the display.

4.8. The shaker can be stopped before the set time elapses if necessary by pressing the **Run/Stop** key (fig. 1/❺). For 2 sec the display will be showing the time the shaker has worked, and after that the set time.

4.9. If the working time is not set and the display shows 0:00, pressing the **Run/Stop** key will start time count up and will cause the shaker to operate non-stop until the **Run/Stop** key is pressed. The timer will be counting up until 99 hrs 59 min and then will restart from 0:00.

4.10. After finishing the operation turn the **Power** switch into Off position.

4.11. Disconnect the external power supply unit from electric circuit.

5. Specifications

5.1. PMS-1000 should provide:

- Gentle shaking of samples;
- Smooth regulation and stabile rotational speed;
- Even shaking amplitude throughout shaker platform;
- Setting and indication of the necessary working time;
- Automatic stop of platform movement after the set time expires;
- Indication of the current operation time.

5.2. Specification

The product is designed for operation indoors in a laboratory at altitudes up to 2000 m, with ambient temperature from +4°C to +40°C and maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

- Speed control range .....150-1200 rpm
- Orbit.....2 mm
- Digital time setting.....1 min - 24 hr / non-stop
- Maximum continuous operation time .....168 hrs
- Maximum load .....0.3 kg
- Dimensions .....220x205x90 mm
- Input current/power consumption .....12V, 280 mA / 3.4 W
- External power supply unit..... input AC 100-240 V 50/60Hz, output DC 12V
- Weight* .....2.0 kg

* accurate within ±10%.

Optional accessories	Description
MPP-4	platform for 4 microtest plates

Replacement parts	Description
MPP-2	platform for 2 microtest plates

Grant is committed to a continuous programme of improvement, specifications may be changed without notice.

6. Guarantee and Service

6.1. Guarantee

When used in laboratory conditions and according to these working instructions, this product is guaranteed for TWO YEARS against faulty materials or workmanship.

6.2. Service

There are no user-serviceable parts inside the unit. For all maintenance and repairs return to our service department in the UK or in other countries, our distributor.

6.3. Cleaning & Disinfection

Standard ethanol (75%) or other cleaning agents recommended for cleaning of laboratory equipment can be used for cleaning and disinfection of the unit

Declaration of Conformity

Manufacturer:	SIA BIOSAN Ratsupites 7, build.2, Riga, LV-1067, Latvia
Equipment name/type number:	PMS-1000i
Description of Equipment:	Microplate Shaker
Directive:	EMC Directive 2004/108/EC Low Voltage Directive 2006/95/EC

Applied Standards

Harmonized Standards:

EN 61326-1:

Electrical equipment for measurement, control and laboratory use EMC requirements. General requirements

EN 61010-1:

Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements

EN 61010-2-051:

Particular requirements for laboratory equipment for mixing and stirring

We declare that this product conforms to the requirements of the above Directive(s)

Signature

Svetlana Bankovska
Managing director

11.02.2013.
Date

Signature

Aleksandr Shevchik
Engineer of R&D

11.02.2013
Date

Grant bio

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