

Dry Block Heater Operating Manual

01/2008

Table of contents

	Page
1. Symbols	3
2. Safety Instruction	4
3. Protective Grade	4
4. Waste Management Note	4
5. Introduction to Dry Block Heater	5
6. Installation	5
6.1 Delivery	5
6.2 Preparation for Installation	5
6.3 Installation	6
7. Operating Elements	6
7.1 Front Dry Block Heater	6
7.2 Back Dry Block Heater	6
7.3 AC - Adapter	7
8. Operating	7
9. Adjustment of Temperature	8
10. Maintenance	9
10.1 Cleaning Instruction	9
10.2 Calibrating Measuring System	9
11. Technical Data	10
11.1 Environmental Conditions	10
11.2 Type Plate	10
11.3 Short Specification	10
11.4 Certificates	11

1. Symbols

The packaging material, the type plate on the instrument, and the manual may contain the following symbols or abbreviations:



Manufactured by



This product fulfills the requirements of Directive 89 / 336 / EWG (EMC) and 73 / 23 / EWG (LVD).



Caution (refer to accompanying documents)!
Please refer to safety-related notes in the manual accompanying this device.



Please consult instructions for use



Biohazard
Samples containing material of human origin must be treated as potentially infectious. The relevant laboratory guidelines on safe use must be observed.

IP XO No special protection against penetrating moisture (IP = International Protection)

REF Order number

SN Serial number

Manufacturer

Diaglobal GmbH
Innovationspark Wuhlheide
Köpenicker Str. 325
D-12555 Berlin
Germany

Telephone +49 (0)30 - 6576 2597

Fax +49 (0)30 - 6576 2517

E-mail info@diaglobal.de
www.diaglobal.de

2. Safety Instruction

This device was examined and left the factory in perfect technical condition. To preserve this and protect safe and faultless operation, the user has to follow the orders and remarks of this operating manual.

3. Protective Grade

The Dry Block Heater DZ 003 complies with the safety rules according to DIN EN 61010-1.

The device fulfils the EMC immunity requirements for laboratory use equipment according to the EMC standard EN 61326.

4. Waste Management Note

The Dry Block Heater DZ 003 complies with the safety rules according to DIN EN 61010-1.

The device fulfils the EMC immunity requirements for laboratory use equipment according to the EMC standard EN 61326.

At the end of the life or utilization time the device and the accessories can be given back with costs to the manufacturer to an environmentally just waste management. The previous professional decontamination has to be proved with a certificate.

Address of the manufacturer:



Diaglobal GmbH
Innovationspark Wuhlheide
Köpenicker Straße 325
D-12555 Berlin
Germany

Telephone +49 (0)30 - 6576 2597
Fax +49 (0)30 - 6576 2517
E-mail info@diaglobal.de
 www.diaglobal.de

5. Introduction to Dry Block Heater

At the end of the life or utilization time the device and the accessories can be given back with costs to the manufacturer to an environmentally just waste management. The previous professional decontamination has to be proved with a certificate.

To make laboratory work more efficient carrying out kinetic tests it is necessary to pre-incubate samples before measuring. Beside this also the reagents must be held at the incubation-temperature during a series of measuring.

For this purpose a small and handy dry-incubator was designed as a stand-alone system in addition to Vario Photometer (article-no.: DP 300) and Vario Photometer II (article-no.: DP 310).

The features in detail are:

- Temperature unit for 37 °C with an accuracy ± 0.2 °C
- 12 positions for round cuvettes
- Indication of temperature control by LEDs
- Warming up in 5 min per cuvette or tube filled with 1000 μ L
- Power supply: 12 VDC / 15 VA
- AC-Adapter 100-240 V 50/60 Hz

6. Installation

6.1 Delivery

After carefully unpacking the device, check whether it is in perfect condition. Check whether it is complete according to the delivery note. The box contains the following items:

Dry Block Heater and AC-Adapter



Store the packaging carefully for the case of a perhaps necessary return. If there were defects, inform your dealer immediately.

6.2 Preparation for Installation



At delivery the plug of the AC-adapter is correctly combined: The plus sign has to be located besides the label TIP. Otherwise the device will be damaged.



The plug has to be put into the corresponding jack in the back plate of the device. The red voltage selector has to be put to position **12V** (chapter 7.3 AC - Adapter).

6.3 Installation

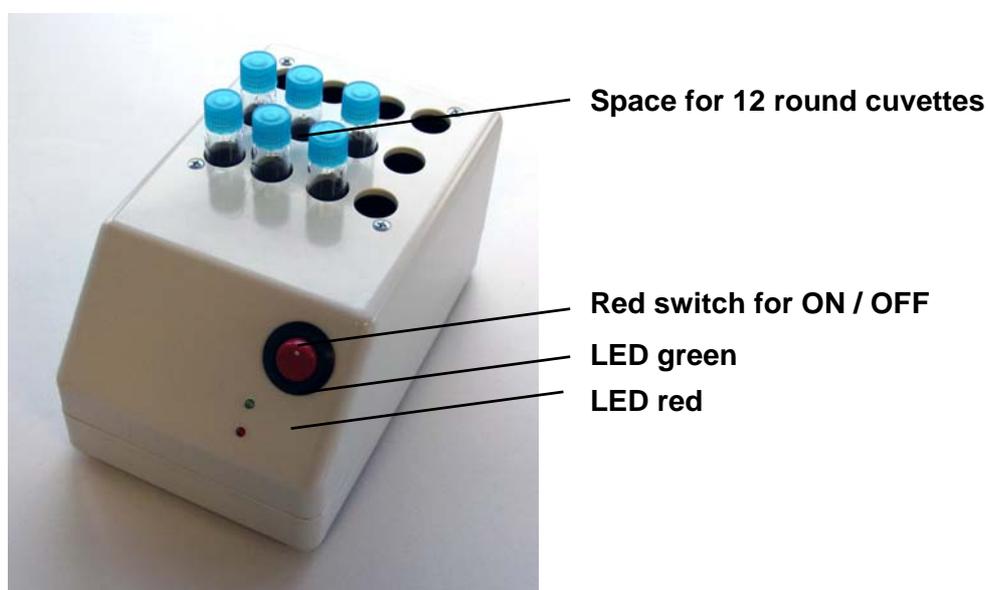
Connect the AC-adapter to the mains.
The operating voltage is $100V_{AC}$ up to $240 V_{AC}$ at 50/60 Hz.

Switch on the Dry Block heater DZ 003 by the red switch at the front of the device.

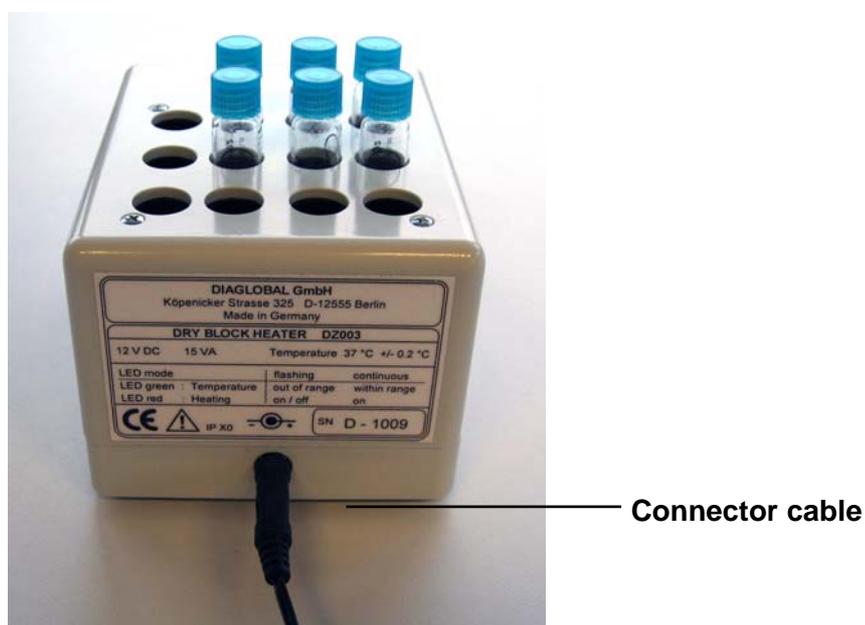
After some seconds the green LED is flashing. The red LED shows a continuous light.

7. Operating Elements

7.1 Front Dry Block Heater



7.2 Back Dry Block Heater



7.3 AC - Adapter



Red switch
(set to 12V)

8. Operating

After switching ON the device the Dry Block Heater DZ 003 heats up to a temperature of 37 °C.

The device needs about 20 minutes for warming up.

After the warming up time the **GREEN LED** shows a continuous light. At this state the system is ready for use.

The status of the device is shown by two LEDs (Light Emitting Diode):

GREEN LED (used for stability control)

- | | |
|-------------------------------------|------------------------------------|
| • The LED is flashing: | The temperature is not stabilized. |
| • The LED shows a continuous light: | The temperature is stabilized. |

RED LED (used for heating power)

- | | |
|-------------------------------------|---|
| • The LED is flashing: | The heating is switched on and off. |
| • The LED shows a continuous light: | The heating is switched on during heating up. |

9. Adjustment of Temperature

The Dry Block Heater DZ 003 is calibrated to a temperature of 37.0 °C. The adjusting of the temperature is carried out with a DIP-Switch inside the device.

The DIP-Switch permits an adjustment of the temperature in 0.05 °C steps with increasing (positive) or decreasing (negative) results. The switch block consists of eight wiper switches with the name DIP 1 up to DIP 8. Every switch can be in a position ON or OFF. The following meaning is assigned to the DIP-switches:

DIP-Switch	OFF	ON
1	0	1
2	0	2
3	0	4
4	0	8
5	0	16
6	0	32
7	0	64
8	positive	negative

The arithmetical sum of the DIP-switches 1 to 7 is described as correction value.

The temperature can be insignificantly altered by an expert after opening the device. By an example the process of adjustment is described. The adjustment varies from device to device. Therefore the status quo should be documented before adjustment.

Status quo of the calibrating for 37.0 °C:

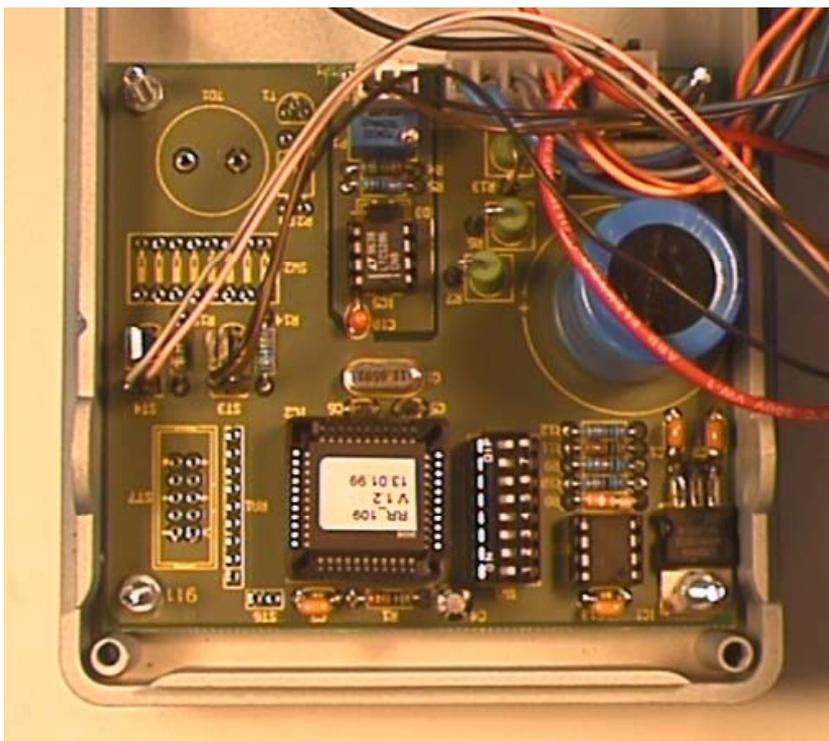
The correction value has the value 78.

DIP-Switch	OFF/ON	VALUE
1	OFF	0
2	ON	2
3	ON	4
4	ON	8
5	OFF	0
6	OFF	0
7	ON	64
8	OFF	positive

The temperature of the Dry Block Heater DZ 003 shall be increased to 37.5 C. The 0.5 °C temperature difference is reached by a raise of the correction value by 10 steps of 0.05 °C. Therefore the new correction value is 88.

Change of the calibrating for 37.5 °C:

DIP-Switch	OFF/ON	VALUE
1	OFF	0
2	OFF	0
3	OFF	0
4	ON	8
5	ON	16
6	OFF	0
7	ON	64
8	OFF	positive



10. Maintenance

This chapter provides necessary information concerning general maintenance by the user.



If any faults should occur which cannot be remedied, then service should be contacted. Repairs at the device may be carried out only by authorized specialist staff. Through improper repairs the warranty extinguishes, and the user can be heavily jeopardized.

10.1 Cleaning Instruction



Liquid waste is potentially biologically hazardous. Always wear gloves if handling those materials. Do not touch parts of the device other than those specified. Consult the laboratory protocol for handling biohazardous materials.



Take care that no liquid enters the device! There is no protection against penetrating of liquids (Code IP X0).

For device cleaning and surface decontamination purposes use commercial decontaminating solution which are usually available in clinical chemistry laboratories like Mikrozid[®] AF Liquid, Bacillo[®] plus, 3 % Kohrsolin[®] or similar solutions. Switch off the device and disconnect it from the mains voltage. Then clean the device with soft cloth and decontaminating solution.

10.2 Calibrating Measuring System

The temperature of Dry Block Heater DZ 003 can be calibrated. For further information see chapter 9 – Adjustment of Temperature.

11. Technical Data

11.1 Environmental Conditions

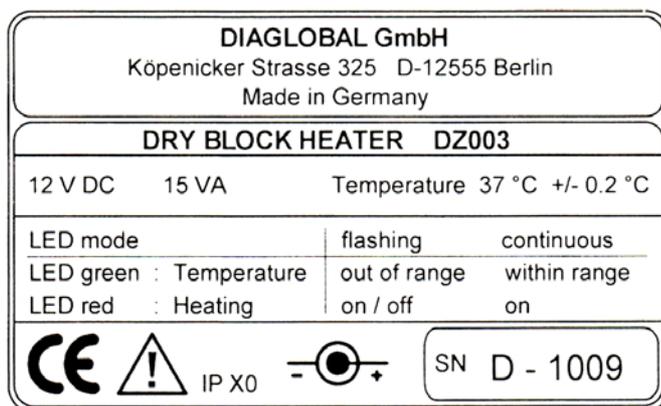
Climatic conditions for storage and transport of the packed device:

- Temperature: -25 °C to +70 °C
- Relative humidity: 20 % to 85 %

The device must be used in an environment that meets the following conditions:

- Temperature: +15 °C to +35 °C
- Relative humidity: 20 % to 85 %
- Not exposition to direct sunlight or other source of direct thermal radiation
- Well-ventilated area
- Free from excessive dust
- Free from combustible gasses
- Free from vibrations
- Free from electromagnetic wave interference
- Well-distanced from a machine generating a high frequency voltage

11.2 Type Plate



11.3 Short Specification

MEASURING SYSTEM

- Microcontroller based temperature unit
- Temperature: 37 °C with an accuracy ± 0.2 °C

POWER SUPPLY

- Supply voltage: 12 VDC
- Supply current maximal: 1.2 ADC
- Power consumption: < 15 VA
- External mains adapter

Output:	12 V _{DC}
Input:	100 V _{AC} up to 240 V _{AC} 50/60 Hz 0.25 A max.
- Driving with 12 V_{DC} (car-)battery is possible

DIMENSIONS Dry Block Heater

- Dimension (L/W/H): 100 mm / 85 mm / 160 mm
- Weight 850 g

DIMENSIONS AC-Adapter

- Dimension (L/W/H): 80 mm / 30 mm / 95 mm
- Weight: 120 g

CONTAINER

Dry Block Heater DZ 003: 12 position for round cuvettes

11.4 Certificates**EC Declaration of Conformity**

Manufacturer: Diaglobal GmbH
Address: Diaglobal GmbH
Innovationspark Wuhlheide
Köpenicker Str. 325
D-12555 Berlin
Germany

Diaglobal GmbH declares under sole responsibility that the product:

Product name: **Dry Block Heater DZ 003**

to which this declaration relates is in conformity with the following standards or other normative documents:

EN 61326-1

EN 61010

following the provisions of **Directive 89 / 336 / EWG (EMC)** and **73 / 23 / EWG**

This declaration describes an incubator for laboratory use.

Berlin, October 2008

Diaglobal GmbH