BSB-Thermostatenbox

BOD Thermostatic Box

OxiTop® Box
OxiTop® Box/115

ba31112de03 01/2005

Safety guidelines

Please read this information carefully before putting the device into operation!

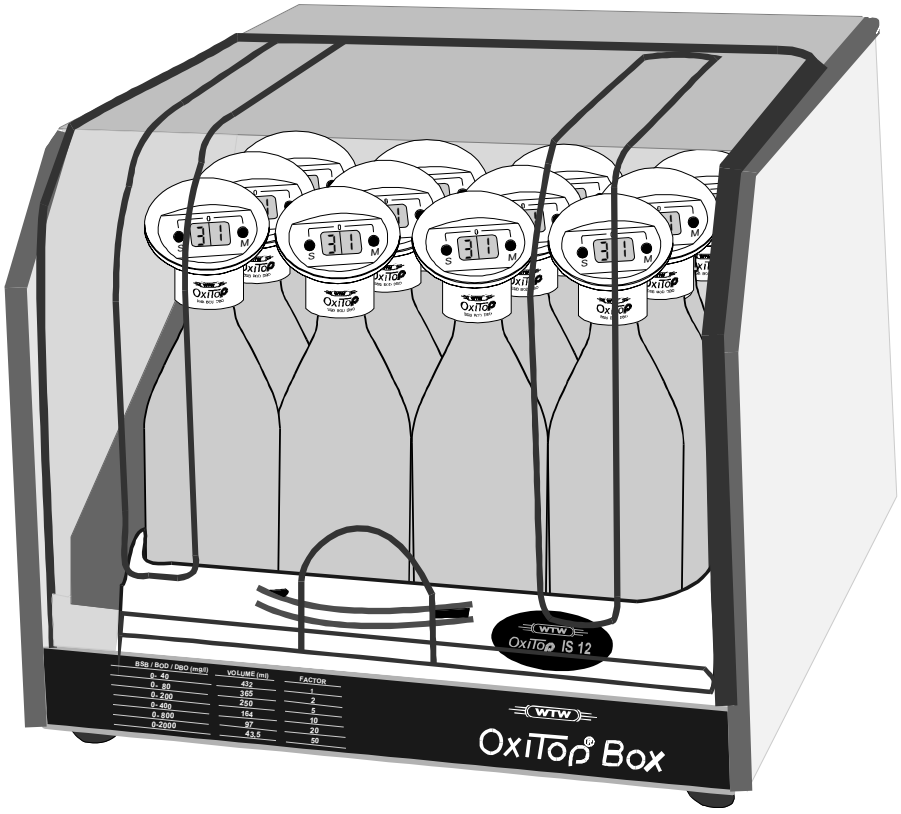
This device has been built and tested according to EN 61010 - electrical measuring, controlling, and laboratory devices - and has left our works in a condition complying with all the requirements of technical safety.

The perfect functioning and operational safety of the instrument can only be ensured if the user observes the normal safety precautions as well as the specific safety guidelines stated in the present operating instruction.

- *The perfect functioning and operational safety of the instrument can only be maintained under the climatic conditions specified in the "Technical data" section of these operating instructions.*
- *When the instrument is moved from cold to warm surroundings, condensate may occur and interfere with the functioning of the instrument. In such a case, the user should wait until the temperature of the instrument has adapted to the ambient temperature before using the instrument again.*
- *If there is reason to assume that the instrument can no longer be employed without a risk, it must be set aside and appropriately marked to prevent further use.*
- *The safety of the user may be endangered, e.g., if the instrument*
  - ❍ *shows visible damage,*
  - ❍ *no longer operates as specified,*
  - ❍ *has been stored over a longer period under unsuitable conditions,*
  - ❍ *has been subjected to difficult conditions during transport.*
- *If in doubt, the instrument should as a rule be sent back to the manufacturer "Wissenschaftlich-Technische-Werkstätten GmbH" - for repair and maintenance.*

Contents

Illustration of the BOD Thermostatic Box OxiTop® Box - OxiTop® Box/115



OxiTop® Box with OxiTop® IS 12

Technical design

The Thermostatic Box is heat insulated and - including the interior space - completely consists of stainless steel 1.4301. The deep-drawn covering cap can easily be opened and grants a simple and comfortable loading. Inside the box, beside the cold evaporator with condensate tub, there is a storing area for 6 methylene blue samples.
A crossflow blower provides permanent air circulation. The temperature is controlled by a precision control system which activates the heating or the refrigerating system. The refrigeration cycle is hermetically sealed and contains evaporator, condenser and an automatically ventilated refrigerating unit. The automatic defroster provides a constant refrigerating power. The mains supply of the used measuring instrument is provided by the socket inside the box.

Recommeded application range

The OxiTop® Thermostatic box serves to regulate the temperature of measuring instruments for the biochemical oxygen demand according to the self regulation procedure. The OxiTop® Box is especially suitable for the model series OxiTop® IS 6, OxiTop® IS 12, IS 602 and to incubate samples according to the BSB DIN procedure.

Putting into operation

To determine the BOD_n and the oxygen consumption, a constant temperature of 20°C ± 1 K is required.

The mains voltage must correspond to the voltage values given at the instrument!

- *Place the instrument with sufficient distance for ventilation.*
- *Connect mains cable to the instrument and to the mains.*
- *Switch on instrument (switch at the back of the instrument).*
- *For preparation of the sample bottles and carrying out of the measurement refer to the corresponding instrument instruction manual.*

***Note**:* *The instrument is set to 20°C ± 1 K!*
For different incubation temperature change the desired value at the temperature control unit.
For this remove closing cap (interior space) and set the desired value with a special wrench (delivery equipment).
After a sufficient time (temperature adjustment) check new temperature value, e. g. 25°C, in the bottles and if necessary correct it.

Safety guidelines cooling system

The refrigeration cycle is hermetically sealed and filled with the FCKW-free refrigerant 134a.
The refrigerating unit is equipped with an internal thermal protection which switches off the compressor when it is overheated. This may occur when the ambient temperature is too high or when the condensator is heavily contaminated. After the compressor has cooled down (approx. 1 hour) the refrigerating unit can be switched on again.

Maintenance

All electrical and mechanical parts are suitable for permanent operation and do not need any maintenance. The cooling air condenser at the back of the instrument should be checked regularly and, if the place of the instrument is heavily contaminated, be cleaned at least once a year. If the function of the instrument is interfered please check this point first.

Repair work

- *Before doing the repair work disconnect the mains plug.*
- *Open cover at the back of the instrument with a crosstip screw driver. Now all electrical connections according to the wiring scheme are accessible.*
- *Troubleshooting.*
- *All repair work (at the cooling system, or exchanging the refrigerating unit) is performed in the WTW works only.*

Troubleshooting

Error	**Possible cause**	**Action**
Instrument does not work	*No power supply*	*Mains cable* *Check safety fuse of the instrument*
Fuse does not hold	*Electrical defect*	*→ WTW*
Poor cooling	*Ventilation distance not sufficient*	*Change place* *Ventilation distance > 80 mm*
	Condenser contaminated	*Clean - suck off ventilator grid*
	Evaporator iced - Defroster defective	*→ WTW*
No cooling	*Control unit defective*	*→ WTW*
	Cooling system defective, Leakage	*→ WTW*
	Overheating protection at the compressor responds / defective	*→ WTW*
	Ventilator cooling unit defective	*→ WTW*
No air circulation in the interior space	*Ventilator defective*	*→ WTW*
Sample temperature not correct	*Wrong desired value. Waiting time not sufficient.*	*Correct with special wrench. Check temperature in the bottles.*

Delivery equipment

Model:	***OxiTop® Box***	***OxiTop® Box/115***
Order No.:	*208 432*	*208 433*
Delivery equipment:	*Thermostatic box, special wrench, instruction manual*	

Technical data

Power supply	*OxiTop® Box 230 V - 50/60 Hz (+ 10% ... -15%)* *OxiTop® Box/115 115 V - 60 Hz (+ 10% ... -15%)*
Power consumption	*200 W*
Starting current	*OxiTop® Box max. 5 A* *OxiTop® Box/115 max. 10 A*
Instrument security	*Protection class 2, EN 61010*
Climate class	*2, HVDI/VDE 3540*
Ambient temperature	*Storage: -25 ... +50°C* *Operation: +10 ... +32°C*
Temperature control	*20°C ± 0.5 K*
Ventilation	*Yes*
Additional heating	*Yes*
Interior mains socket	*1*
Example: Measuring instruments placed in the OxiTop® Box	*1 x OxiTop® IS 12 or* *1 x OxiTop® IS 6*
CFC free	*Yes*
Dimensions (mm)	*(B) 425 x (T) 600 x (H) 375*
Weight	*approx. 30 kg*
Test certificate	*CE*
Guarantee	*1 Year*

Wissenschaftlich-Technische Werkstätten GmbH

Dr.-Karl-Slevogt-Straße 1
D-82362 Weilheim

Germany

Tel: +49 (0) 881 183-0
+49 (0) 881 183-100
Fax: +49 (0) 881 183-420
E-Mail: Info@WTW.com
Internet: http://www.WTW.com