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INSTRUCTIONS

Reacti-Therm™ Heating/Stirring Module

PIERCE
3747 N. Meridian Road
P.O. Box 117
Rockford, IL 61105

18970 18935 (CSA Listed) 0227.1

Number	Description
18970	**Reacti-Therm™ Heating/Stirring Module (single block)**
18935	**Reacti-Therm™ III Heating/Stirring Module (triple block)**

Storage: The module may be stored at temperatures ranging from -25°C to 65°C and at 10-85% relative humidity.

Introduction

Reacti-Therm™ Modules are easy-to-use dry block heaters that provide constant temperature control (see Table 1 for specifications). They are ideal for heating, stirring and evaporation required for sample derivatization before analysis by gas chromatography or high-performance liquid chromatography. Designed with a recessed cavity that holds interchangeable Reacti-Block™ Aluminum Blocks, the modules can also be used for sample incubation and vacuum hydrolysis for amino acid analysis.

Table 1. Performance characteristics and specifications of the single and triple block heating/stirring module.*

	Single Block	Triple Block
Volts	110	110
Hertz	60	50/60
Amps	1.0	2.3
Operating Range	10°C above ambient to 150°C	10°C above ambient to 200°C
Temperature Uniformity	± 0.5°C	± 0.5°C
Temperature Stability	± 0.5°C at 37°C	± 0.5°C at 37°C
Stirrer Operating Range	60-400 RPM	60-400 RPM
Ambient Operating Range	17-27°C	17-27°C

*Thermal values are based on temperatures from thermometers inserted into the Reacti-Block™ Aluminum Block thermometer well. Values may vary slightly as a result of aluminum block size. Block weight will vary with size and number of holes in each block.

Precautionary Information

The Reacti-Therm™ Heating/Stirring Module has been designed for proper function, reliability and safety. The researcher is responsible for installation in conformance with local electrical safety codes. This manual contains important safety information. Read this manual carefully and understand its contents before using this equipment.

- Use a properly grounded electrical outlet of correct voltage and current handling capacity.
- Refer servicing to qualified personnel.
- Replace fuses with those of the same type and rating.
- Disconnect the unit from the power supply before maintenance and servicing.
- The Reacti-Therm™ Module is not explosion-proof. Do not use this module in the presence of flammable gases or liquids, ignitable dust, or mist-forming materials.
- This module is primarily designed for aqueous systems. Do not use this module for anything other than its intended usage.

Warranty: Pierce products are warranted to meet stated product specifications and to conform to label descriptions when used and stored properly. Unless otherwise stated, this warranty is limited to one year from date of sale for products used, handled and stored according to Pierce instructions. Pierce's sole liability for the product is limited to replacement of the product or refund of the purchase price. Pierce products are supplied for laboratory or manufacturing applications only. They are not intended for medicinal, diagnostic or therapeutic use. Pierce products may not be resold, modified for resale or used to manufacture commercial products without prior written approval from Pierce Biotechnology. Pierce strives for 100% customer satisfaction. If you are not satisfied with the performance of a Pierce product, please contact Pierce or your local distributor.

Operating Conditions

- Operating: 15-30°C; 10-85% relative humidity at 25°C – noncondensing
- Installation Category II (over-voltage) in accordance with IEC 664
- Pollution Degree 2 in accordance with IEC 664
- Altitude limit: 2,000 meters

Instructions

1. Examine carton and the Reacti-Therm™ Module for damage. Call the delivery carrier and immediately file a claim if shipping damage is observed. Do not discard packaging material.
2. For the most uniform temperature control of samples, place the module in a thermally stable environment free of drafts and heating devices. To facilitate even and efficient heating, make sure the module and blocks are free of debris or contamination.

   Note: Inefficient or uneven heating may result if the Reacti-Therm™ Module is placed in a fume hood with a high blower speed.
3. Place clean Reacti-Block™ Aluminum Block(s) into the module. Place a 35 mm immersion depth thermometer with a range above 150°C into the aluminum block thermometer well.
4. With the power switch in the off position, plug the module into a 110-volt outlet.
5. Switch power on and turn the temperature control knob clockwise to raise the temperature or counterclockwise to lower the temperature.
6. Allow 30 minutes for the temperature to stabilize after the indicator light begins flickering. Actual times required for the unit to reach equilibrium for a given temperature may vary depending on the block used and room temperature.

   Note: For first-time use, verify that the module is heating properly by adjusting the block temperature to 100°C. The heat indicator light comes on when the instrument is heating, and the light flickers as the temperature approaches 100°C. Allow 30 minutes for the temperature to stabilize after the indicator light begins flickering.
7. Test stirring with vials placed in the aluminum block(s). Use the Reacti-Vial™ System with the Reacti-Therm™ Module. Place a Reacti-Vial™ Magnetic Stirrer in each vial, turn the speed control until all the stir bars begin to spin, then adjust stirring to the desired speed.

   Note: An inert atmosphere can be maintained over samples by using the Reacti-Vap™ Evaporator manifold system, which provides a flow of an inert gas over samples.

Module Calibration

By adjusting a high trimpot and low trimpot, the temperature can be adjusted for the high and low settings of the heat control knob. Use a flat-bladed 3 mm tip, 4 1/2" shaft screwdriver to access to the trimpots through the holes on the right-hand side of the single-block Reacti-Therm™ Module case (Figure 1). For the triple-block module, access the trimpot through the first and third heat dissipating slots located on the control side of the module's lower case (Figure 2). Turn the trimpots clockwise to lower the temperature or turn them counterclockwise to increase the temperature. Allow the block temperature to equilibrate for 45 minutes after the module is turned on and after each additional adjustment.

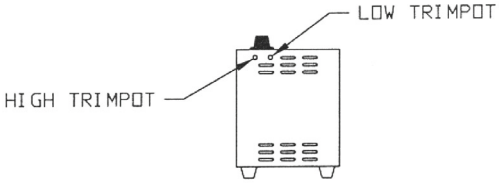


Figure 1. Location of the trimpots on the single-block Reacti-Therm™ Module case.

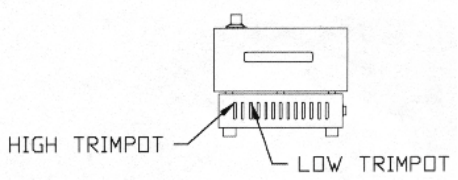


Figure 2. Location of the trimpots on the triple-block Reacti-Therm™ Module case.

Additional Notes

- Allow the unit to cool before cleaning. Always disconnect the power plug from the outlet before attempting any external cleaning. Use only cleaners that will not harm ferrous or aluminum metal. Switch power off when not in use.

- The module is not designed to retain liquids. If spillage occurs, remove liquid immediately to prevent damage to electrical components and to prevent possible fire hazard.
- The power entry module contains a set of fuses that will become damaged if high amperage is applied to the circuit. Damaged fuses will require replacement by a qualified service person.
- To prolong the life of the module, avoid corrosive atmospheres.

Service and Maintenance

The Reacti-Therm™ Module is relatively service-free. If the module should need maintenance or a replacement part, contact Pierce.

Reacti-Therm™ Single Block Parts List

Number	Description
EL1124X1	Element
RS1124X1	Thermal Sensor
GS548X1	Gasket, Silicon Rubber Mounts
GSX3	Silicone Sensor Sealant
PT548X2	Well, Floor Plate
PC1124X1	Printed Circuit Board
KBX43	Heat or Speed Control Knob (2)
CS548X2A	Well, Case Assembly
MTX98	Motor
SWX146	Power Switch/Circuit Breaker
JS548X1	Insulator Board for Printed Circuit Control
CRX72	Cord Set
FSX105	Set Screw Magnet Assembly
MG470X1	Magnetic Drive Assembly
RS1124X3	Rheostat Stirring Speed Control
PLX91	Pilot Light, with Mounting Fastener
FSX20	Foot Screw (4)
FTX1C	Foot (4 req.)

Reacti-Therm™ Triple Block Parts List

Number	Description
EL1126X2	Element
RS1126X3	Thermal Sensor
CMX6	Thermally Conductive Paste for Sensor Mounting
GSX3	Silicone Sealant for Sensor and Compartment Cover
JN584X2	Thermal Blanket Compartment (Block Well) Wrap
PC1125X1	Printed Circuit Board
KBX43	Heat or Speed Control Knob (2)
CS1126X1	Well, Block Compartment
FSX93	Screws for Well (2)
SWX146	Power Switch/Circuit Breaker
JS548X1	Insulator Board for Printed Circuit Control
CRX72	Cord Set
JN584X1	Insulation Plate for Bottom of Element Assembly
CEX239	Socket for Detachable Cord Set
JSX101	Insulator for Heat Control Shaft
SF584X1	Heat Control Shaft
HNX7	Handles (2)
PLX76	Heat Control Light
FSX66	Foot Screw (4)
FTX7	Foot (4)

Related Pierce Products

18915 **Thermometer,** range 0-200°C

18780 **Reacti-Vap™ Evaporator (9-port)**

18785 **Reacti-Vap™ III Evaporator (27-port)**

The most current versions of all product instructions are available at *piercenet.com.* For a faxed copy, contact customer service (in the USA call 800-874-3723) or your local distributor.

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