Circulating Water Temperature Controller

Precise, Powerful and Compact Control
For over 90 years, Chromalox has been providing industrial electric heating solutions to users worldwide. Today, Chromalox combines those decades of experience with the latest in mechanical design and electronic control technology to bring you microTHERM, the answer to your circulating water temperature control challenges.

Your manufacturing process demands a circulating water temperature controller that provides precise control and operating efficiency. microTHERM responds with many innovative design features. The three main components of the microTHERM system – the heat/cool assembly, customized pump and touch panel controls – all ensure unsurpassed operation reliability, durability and serviceability. Eliminating your downtime and minimizing your manufacturing expenses are microTHERM’s goals.

**Accurate, Efficient Control**

Powerful control of both water flow and temperature is delivered by microTHERM’s custom cast heater assembly and pump, designed to work together for cost effective, maximum heat transfer and long, minimum maintenance life. The NEMA 4X touchpad controller incorporates high-accuracy, fast-responding, microprocessor-based temperature control technology. Digital display of water temperature and setpoint, plus visual indication of heating and cooling outputs and system diagnostics give you quick, easy to understand process information.

**Compact, Rugged Design**

microTHERM’s compact design packs all of its high-performance design features into a portable, rugged cabinet for years of reliable service. With user-positioned controls, rolling casters and a powder coated sheet metal cabinet, microTHERM works anywhere you need powerful control.

**Heating Assembly**

microTHERM’s custom-cast twin tank and pump assembly eliminates traditional threaded pipe parts, reducing leakage and ensuring operation reliability. The high performance centrifugal pump delivers flow rates from 30 to 80 gpm, depending on your application needs. Corrosion resistant INCOLOY® sheath Chromalox heating elements are integral to microTHERM’s efficient heating assembly design.

Two cooling options, open and closed loop cooling, optimize microTHERM’s versatility in any environment. Open loop cooling is used when water contaminant presence is low and fouling presents little problem. Closed loop cooling is required where direct injection of supply water can cause fouling in the system, or when recirculated cooling water is available.

Chromalox’s 3 year limited warranty validates the reliability and serviceability built into every microTHERM unit.
Unsurpassed operation reliability, durability and serviceability.

Automatic air purge cycle removes accumulated air from water lines.

Cabinet design allows access to all components without removing a single fastener.

Low pressure switch disables system when supply pressure is low, preventing cavitation in pump and protecting the system.

Custom cast pump for optimum flow, minimum leakage and long life.

ASME pressure relief valve opens if system pressure exceeds 125 psi, ensuring safe operation.

High watt density, INCOLOY® sheath Chromalox® heating elements.

Integral solenoid valve for precise temperature control and optimum flow.

Automatic air purge cycle removes accumulated air from water lines.

Operating temperatures of 50° to 250°F for a wide variety of applications.

ASME pressure relief valve opens if system pressure exceeds 125 psi, ensuring safe operation.

Long-life mercury contactor switches heater power for millions of cycles and quiet, trouble-free operation.

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Specifications

Standard 3/4 HP Pump

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Optional Pump Sizes

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<th>Nominal Flow (gpm)</th>
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Other Options

- Alternate Voltages: 208, 380, 575 VAC, 3 phase
- Expanded Open Loop Cooling: increased cooling water flow
- Expanded Closed Loop Cooling: 6.3 sq.ft. heat exchanger
- Solid State Power Control: SCR heater switching
- Surge Reduction Valve: reduces water pressure spikes
- Door Interlock: prevents operation with service door open
- Digital Communications: for interface with ChromaSoft or remote PC/PLC systems
- IEC Style Contactor: for dry contact power switching
- Isolation Valve Kit: 1” ball valves for system isolation

Pump Capacity

Five pump sizes are available for the flow rate appropriate to your process application.

Piping System Diagram

Open Loop Cooling

Closed Loop Cooling
High accuracy, fast-responding, microprocessor-based temperature control technology...

Chromalox’s 2104 Temperature and Process Controller features separate PID algorithms for heat and cool control modes, dual display of setpoint and process temperatures, and simple configuration parameters with alphanumeric cues. Optional digital communications and an alarm output expand microTHERM’s application flexibility.

Dual pressure gauges simplify monitoring of both to process and from process pressures.

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Diagnostic Indicators allow you to constantly monitor microTHERM’s performance, giving you early detection of potential problems before they occur and simplifying maintenance.

microTHERM’s easy-to-use temperature control system incorporates the temperature controller, gauges, pump switch and diagnostic indicators in a rugged control console, specially designed for harsh industrial environments. The entire control console is designed for easy access and maximum serviceability.

Plus, remote operation and networking through powerful software...

SpecView Plus®, our Windows®-based Remote Operator Interface Software, allows you to easily configure and monitor up to 255 different microTHERM control systems on one multi-drop loop. From a single, remote location personal computer, you can access all control parameters, save particular process settings, and load them whenever and wherever needed.

Windows® is a registered trademark of Microsoft Corporation.
Ordering Information

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Approx. Net Weight: Open Loop - 205 lbs.  
Closed Loop - 220 lbs.

† Up to 48KW available (no cooling option).
* All voltages are 3 phase. 120V control transformer provided with each unit for control power.
+ S: Stock Availability (subject to prior sale) AS: 3-4 weeks shipment.
- C suffix indicates 3.8 sq. ft. heat exchanger for cooling. All systems equipped with 30 GPM 20 psi. TDH pump standard. Optional flows up to 80 GPM and 70 psi. TDH available.

CMX Warranty and Limitation of Remedy and Liability

Warranty Chromalox®, Inc. warrants only that the products and parts manufactured by Chromalox®, Inc., when shipped, and the work performed by Chromalox®, Inc., when performed, will meet all applicable specification and other specific product and work requirements (including those of performance), if any, and will be free from defects in material and workmanship under normal conditions of use. All claims for defective or nonconforming (both hereinafter called defective) products, parts or work under this warranty must be made in writing immediately upon discovery, and in any event, within one (1) year from delivery, provided, however all claims for defective products and parts must be made in writing no later than eighteen (18) months after shipment by Chromalox®, Inc. The temperature controller, heater and pump/chamber castings warranty is extended to three (3) years from date of shipment. Defective and nonconforming items must be held for Chromalox' inspections and returned to the original f.o.b. point upon request. THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER, EXPRESSED, IMPLIED AND STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Limitations Notwithstanding the provisions of this WARRANTY AND LIMITATION Clause, it is specifically understood that products and parts not manufactured and work not performed by Chromalox®, Inc. are warranted only to the extent and in manner that the same are warranted to Chromalox®, Inc., when shipped, and the work performed by Chromalox®, Inc. by Chromalox' vendors, and then only to the extent that Chromalox®, Inc. is reasonably able to enforce such warranty, it being understood Chromalox®, Inc. shall have no obligation to initiate litigation unless buyer undertakes to pay all cost and expenses therefor, including but not limited to attorney’s fees, and indemnifies Chromalox®, Inc. against any liability to Chromalox' vendors arising out of such litigation.

Upon buyer's submission of a claim as provided above and in its substantiation, Chromalox®, Inc. shall at its option either (i) repair or replace its products, parts or work at the original f.o.b. point of delivery or (ii) refund an equitable portion of the purchase price.

THE FOREGOING IS CHROMALOX®’S ONLY OBLIGATION AND BUYER’S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY AND IS BUYER’S EXCLUSIVE REMEDY AGAINST CHROMALOX®, INC. FOR ALL CLAIMS ARISING HEREUNDER OR RELATING HERETO WHETHER SUCH CLAIMS ARE BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORIES. BUYER’S FAILURE TO SUBMIT A CLAIM AS PROVIDED ABOVE SHALL SPECIFICALLY WAIVE ALL CLAIMS FOR DAMAGES OR OTHER RELIEF, INCLUDING BUT NOT LIMITED TO CLAIMS BASED ON LATENT DEFECTS. IN NO EVENT SHALL BUYER BE ENTITLED TO INCIDENTAL OR CONSEQUENTIAL DAMAGES OR OTHER RELIEF, INCLUDING BUT NOT LIMITED TO CLAIMS BASED ON LATENT DEFECTS. IN NO EVENT SHALL BUYER HOLD CHROMALOX®, INC. HARMLESS FROM ANY ACTION BY BUYER ARISING HEREUNDER OR RELATING HERETO, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORIES, MUST BE COMMENCED WITHIN ONE (1) YEAR AFTER THE DATE OF SHIPMENT OR IT SHALL BE BARRED.

Returns Items returned to Chromalox®, Inc. must be accompanied by a Return Authorization Number. This number may be obtained from Chromalox®, Inc., Customer Service Department, telephone number 800-368-2493. It should appear on the exterior of the shipping carton and on the shipping documents. Defective items will be repaired or replaced at our option, at no charge.

Return the defective part or product, freight prepaid, to:

Chromalox®, Inc.
423 W. Plum St.
Edinboro, PA 16412
Attn: Service Department