

# PolyScience Circulating Baths

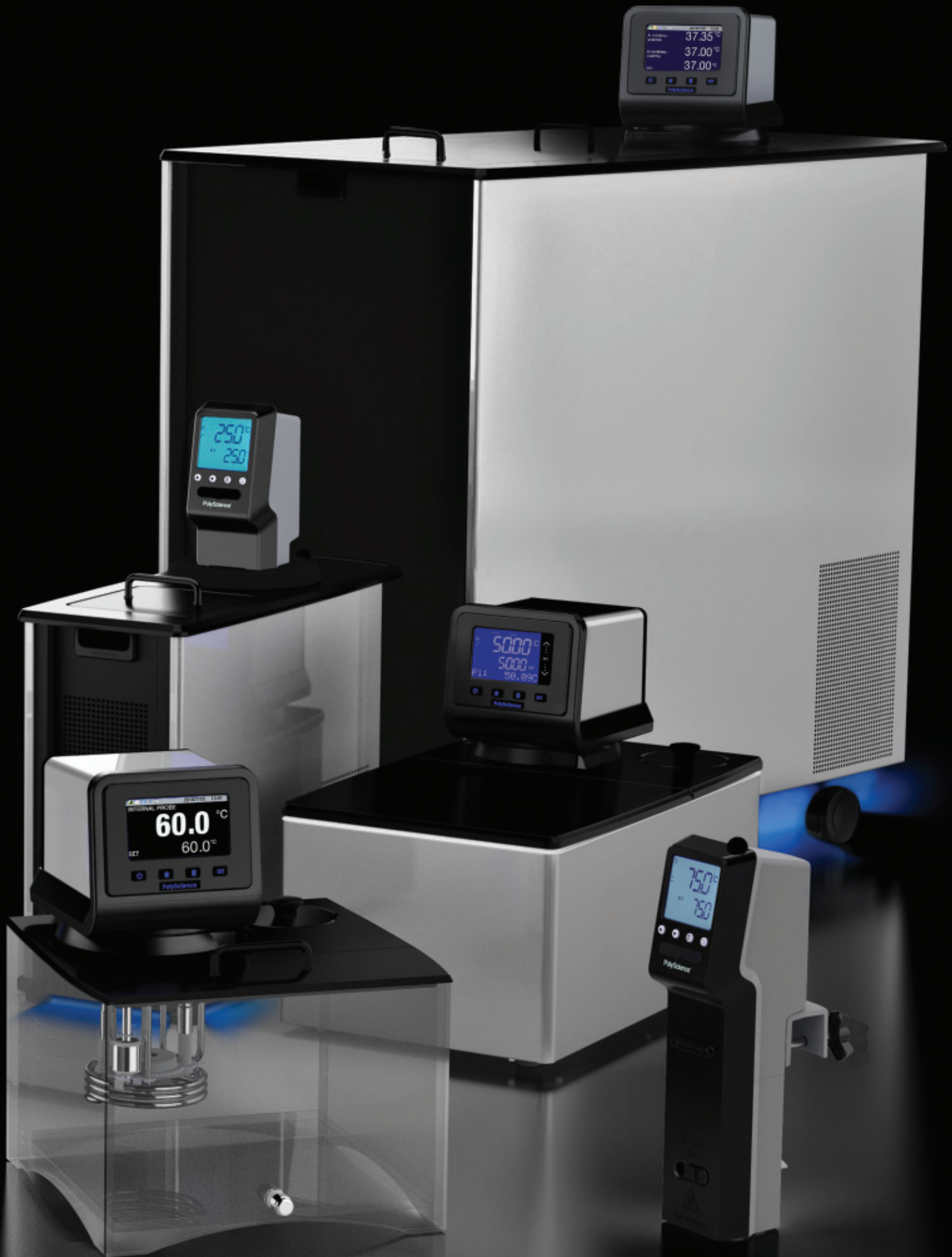
One of the best lab partners you'll ever have.

Precise. Reliable. With sleek lines and exceptionally large digital displays, our Circulating Baths are easy on the eyes. But even the most attractive lab partner needs to get down to business. So, we've made our Circulating Baths exceptionally hard-working, easy to operate and maintain. PolyScience equipment is the lab partner that makes your life easier and more productive.

- Reservoir sizes ranging from 6 liters to 75 liters
- Heated-only and Refrigerated/Heated models (90+ models, including an Immersion Circulator)
- Six types of digital temperature controllers offer a range of selection from entry-level to ultra sophisticated
- Intuitive setup and operation, featuring either multi-language help or screen prompts (depending on the model)



12-29	Temperature Controllers	46-61	Heated Circulating Baths	62-63	Stainless Steel Open Bath Systems
28-29	Selection Guide	48-49	Selection Guide	64-65	Polycarbonate Open Bath Systems
30-45	Refrigerated Circulating Baths	50-51	Performance Programmable	66	MX Immersion Circulator
32-33	Selection Guide	52-53	Advanced Programmable	67	Open Tanks
34-35	Performance Programmable	54-55	Performance Digital	67	Stainless Steel
36-37	Advanced Programmable	56-57	Advanced Digital	67	Polycarbonate
38-39	Performance Digital	58-59	Standard Digital	67	Model 210 Heated Recirculator
40-41	Advanced Digital	60-61	MX		
42-43	Standard Digital				
44-45	MX				





## Features:

- Swivel 180™**  
 Need to position your bath at an odd angle or read the temperature from across the room? We've got it covered. The patent-pending Swivel 180™ Rotating Controller on PolyScience Circulating Baths lets you move the extra large temperature display independently from the bath, enabling you to clearly read the display from anywhere within a 180° viewing radius, with the press of a button.
- Highly intuitive user interface**  
 User-friendly temperature controllers guide you through setup and operation using universal icons, on-screen help, and logical menus.
- LidDock™**  
 Our lid stowing system gives the lid a convenient place to perch while you add liquid or work with samples, yet doesn't interfere with controller viewing or operation. Condensation drains back into the reservoir as well, keeping your lab bench clean, dry and uncluttered.
- DuraTop™**  
 The precision-molded phenolic bath top remains cooler at high temperatures and resists laboratory chemicals. Plus, it's easily cleaned and disinfected.
- WhisperCool™**  
 Quiet, energy-efficient heat removal. Our patent-pending WhisperCool™ Environmental Control System, standard on most PolyScience Refrigerated/Heated Circulating Baths, reduces noise levels below conversational speech at a distance of two meters. In addition, our adaptive environmental technology optimizes performance, reducing overall energy consumption and prolonging equipment life.
- Cool Command™ technology**  
 Achieve the temperature you want, when you want it. Cool Command™ efficiently and quickly extracts heat, even at elevated bath temperatures, ensuring the most precise temperature control.



- **Large bath opening**

Access has been increased to allow for maximum utilization of the circulating bath.

- **Class III safety**

Our Performance and Advanced Series Controllers feature temperature and float shut-off systems meeting DIN 12876-1 Class III standards for use with flammable liquids.

- **Pressure and suction pump**

Powerful, variable-speed pumps are available on Performance and Advanced Series Temperature Controllers and are well suited to open- or closed-loop external applications.

- **Simplified setup and maintenance**

The front-mounted drain makes it easy to remove liquid from the bath and clean it. Our washable air filter helps you keep the circulator running at peak performance and energy efficient. DuraTop™, and all surfaces, are chemical resistant and easy to sanitize. Setup instructions are printed “behind the grille.”

- **Ergonomic design**

You can easily reposition the circulating bath with convenient, built-in handles that don't catch other equipment.

- **Safe and reliable**

The elimination of RoHS-specified chemical substances from fabricated components contributes to a cleaner, safer environment. In addition, all of our baths comply with WEEE, IEC 61010-1, IEC 61010-2-010, IEC 61326-1, DIN 12876 and are CE and ETL certified.

- **Easy hook-up fluid connections**

1/4" NPT fittings with hose adapters included for 3/8", 1/4" and 3/16"; 1/4" NPT to M16 adapter also included with 50 Hz models.

# PolyScience Temperature Controllers: Redefining Cool

## Features:

- Intuitive, icon-driven operation
- Complete operating information displayed on a single screen
- Large, easy to read displays
- Multiple connectivity options
- Temperature stability as precise as  $\pm 0.005^{\circ}\text{C}$
- Customizable features and functions, for the way you work



Our new series of PolyScience controllers is revolutionary. From the sleek contemporary profile to the ultra-intuitive interface, we have created a new and better breed of temperature controllers. Easy to use, informative, eye catching and connected, we have designed a stable, reliable, and precise partner for your lab bench.



## Features:

- Intuitive touch-screen operation**  
 Our icon-driven SmartTouch interface leads you through menus, functions and options, enabling you to make any adjustment from the most basic to the most sophisticated, even with your gloves on.
- Fully informative display**  
 Our controllers display it all: Internal bath temperature, external bath temperature, set-point and more. All on one easy to read screen. And our Performance and Advanced Series Temperature Controllers take it one step further – keeping critical temperature information on the display regardless of which of the many menus and functions you are accessing.
- Complete connectivity**  
 PolyScience Temperature Controllers keep you connected to your work – from the other side of your lab or the other side of the world. Ethernet, USB-A and USB-B, RS232, and addressable RS485 connectivity provide multiple options for monitoring and controlling your circulator. There's even an iPhone® application that lets you check status or change the set-point while at your desk or in a meeting.
- Convenience**  
 Want a program to begin running while you're in a meeting? A built-in event scheduler makes it easy. Like to personalize your circulator with a favorite quote or photograph? It's as easy as putting an image on your computer desktop. No matter what you want to do, it's easier with the built-in functionality of a PolyScience SmartTouch Controller. It will even remind you when important routine maintenance is needed.
- Unwavering precision**  
 Behind all this innovative technology are five decades of temperature control experience. 50 years of continual refinements to electronics, sensors, algorithms, and many other elements to ensure that each and every PolyScience Temperature Controller delivers precise, reliable, and stable performance day in, day out, year after year.

# Intuitive User Interface

Relevant information when and where you need it.



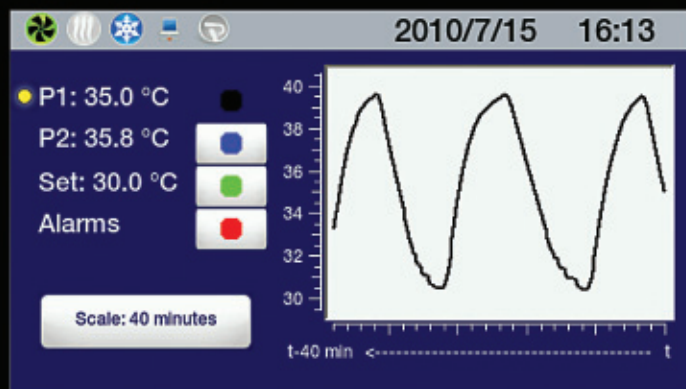
## Intuitive User Interface

The SmartTouch Color LCD with 4.3" screen, on Performance Programmable, Advanced Programmable and Performance Digital Controllers.



## Bright, Clear Message Display

Provides information in up to 11 languages; icon-driven functionality.



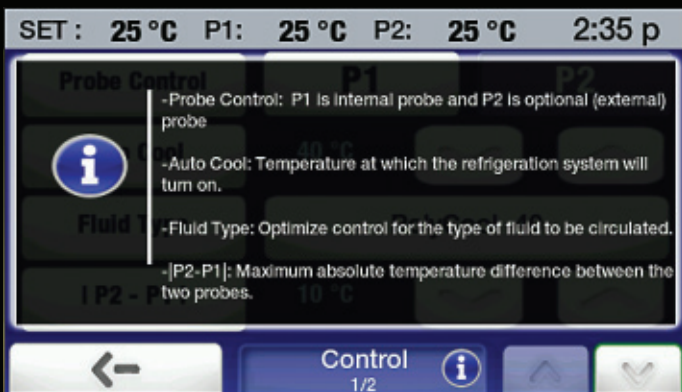
## Selectable Home Screens

Choose the "home screen" that displays the temperature information most useful to you – including temperature trend data for up to 10 days.



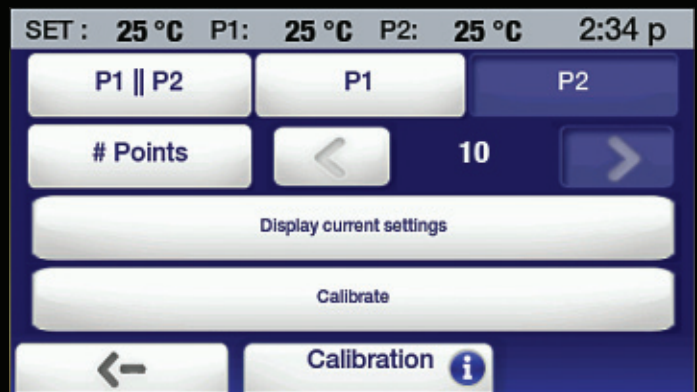
## Simple to Operate

Just a few simple touches is all it takes to make a set-point change.



### On-Screen Help Feature

Provides information about the features of each particular screen.



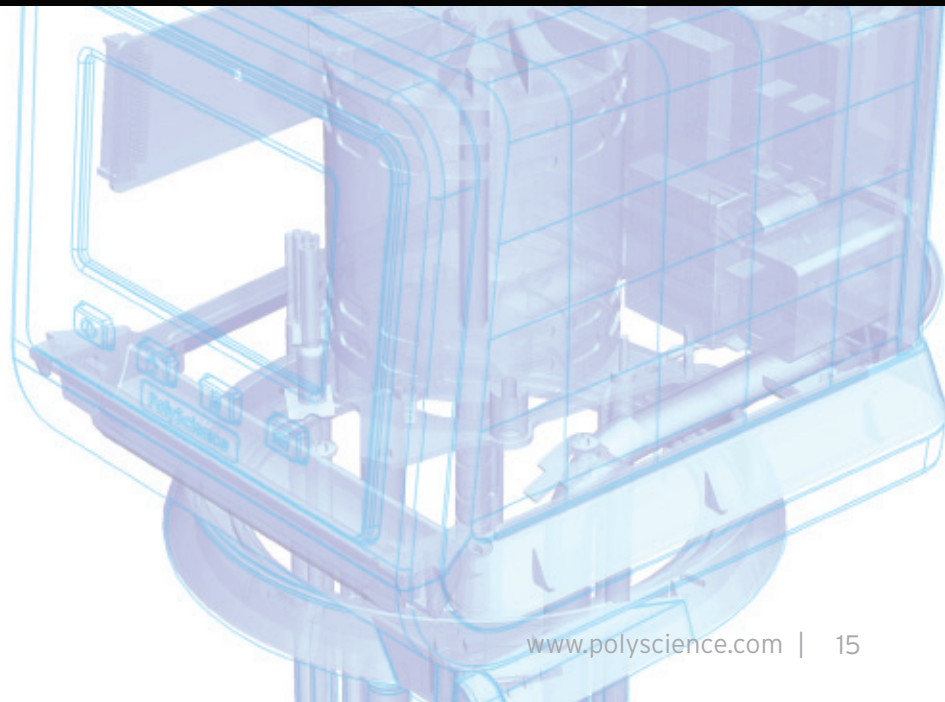
### Convenient Status Bar

“Always on Top” status bar on Performance Programmable, Performance Digital and Advanced Programmable Controllers keeps relevant temperature data in clear view when making operational changes.



### Easy to Understand

Plain text menus and messages take the guesswork out of operation.





# Performance Programmable Temperature Controller

Delivers the ultimate in precision, performance, and operational flexibility.

Includes Enhanced Performance Hardware & Software Package:

- Pt100 temperature probe for external temperature control
- USB drive for data logging
- Stainless steel tubing fittings and adapters
- PolyScience LabVIEW™ Virtual Instrument (VI)
- iPhone® application download



## Features:

- $\pm 0.005^{\circ}\text{C}$  temperature stability
- $200^{\circ}\text{C}$  maximum temperature
- OpenMode time/temperature programming (no restriction on number of programs or steps)
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
- Variable-speed pressure/suction pump
- Swivel 180™ Rotating Controller
- On-board connectivity: USB-A & B, Ethernet, RS232/485, remote on/off and external temperature probe
- Event scheduling (time & date) with real-time clock
- Review temperature trends for up to 10 days
- Multiple, selectable "home" screens
- On-screen help
- Automatic and/or user-adjustable performance optimization
- 10-point calibration capability
- Safety Class III (DIN 12876-1)
- External temperature control capability
- Available with DeviceNet™/CANbus, Modbus®, and Profibus® options

## Absolute Precision

Our most precise and sophisticated temperature controller, the Performance Programmable, combines  $\pm 0.005^{\circ}\text{C}$  temperature stability,  $1/1000^{\circ}$  temperature resolution, 10-point user calibration capability, highly advanced fluid tuning, and external temperature control to deliver exacting control at temperatures ranging from  $-40^{\circ}$  to  $+200^{\circ}\text{C}$ .

## Total Control

Create, review and run even the most complex ramp and soak temperature program quickly, easily, and without guesswork. Highly intuitive programming application lets you add, edit or delete steps quickly. Settable time or temperature priority ensures programs run as intended. Plain-text program naming and preview function makes it easy to identify stored programs. Convenient upload/download utility allows you to quickly share or backup stored programs. Plus, the intelligent scheduling application even lets you schedule a program to run automatically – hours, days, weeks, even months in the future.

## Completely Connected

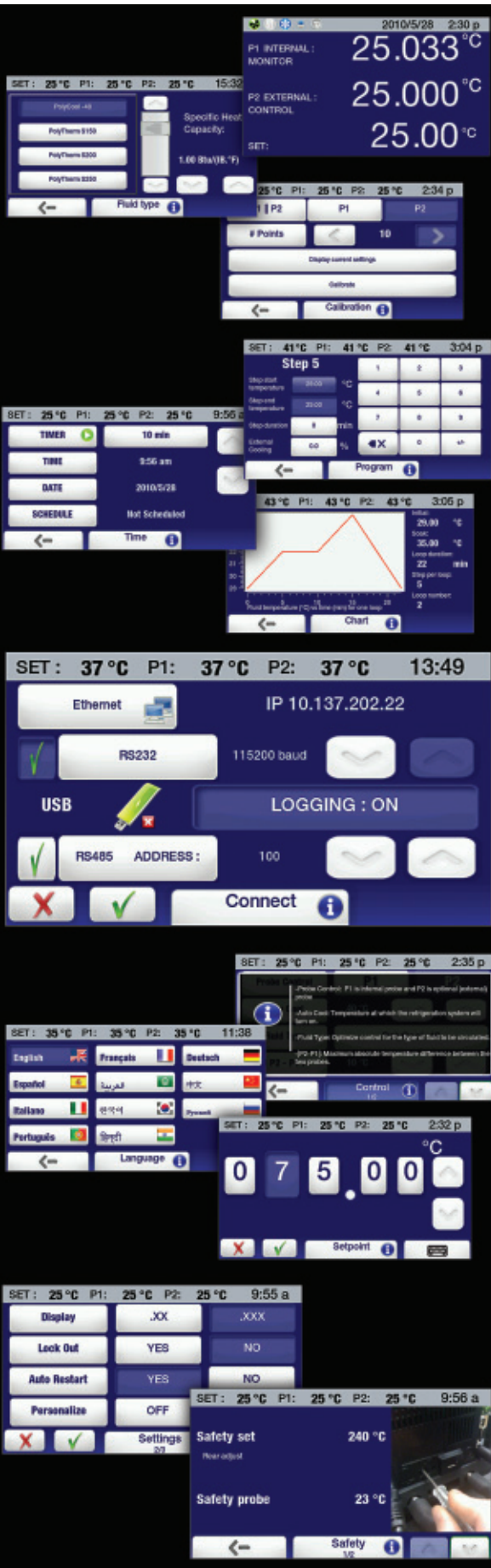
With the Performance Programmable, you can check and control your PolyScience Circulator from the other side of the lab – or the other side of the world! It features an extensive suite of control, data logging, and communications options, including protocols that emulate the communication and command sets of other popular circulating baths. Connectivity capabilities include Ethernet, RS232, addressable RS485, remote on/off, USB-A and USB-B plus software support for LabVIEW™. In addition, a pioneering iPhone® application provides easy mobile access.

## Exceptional Convenience

Multi-language menus, contextual on-screen help, and highly intuitive operation make using the Performance Programmable Controller exceptionally easy. Set-point changes take just a few simple touches. This intelligent controller even alerts you when routine maintenance, such as air filter cleaning, is required.

## Extraordinary Safety

Engineered to Class III flammability requirements (per DIN 12876-1), the Performance Programmable Controller protects your samples, equipment, and processes with a wide variety of safety features, including a redundant over-temperature safety, high and low temperature limits, high and low temperature alarms, and a user-settable safety. A password protected lockout can also be activated that prevents unauthorized set-point and other operational changes.



# Advanced Programmable Temperature Controller

Excellent precision and performance, highly intuitive operation.



## Features:

- $\pm 0.01^{\circ}\text{C}$  temperature stability
- $200^{\circ}\text{C}$  maximum temperature
- Time/temperature programming (ten 100-step programs)
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 6 languages: French, German, Spanish, Chinese, Arabic, English
- Variable-speed pressure/suction pump
- Swivel 180<sup>TM</sup> Rotating Controller
- On-board connectivity: USB-A & B, RS232/RS485, Ethernet and external temperature probe
- Event scheduling (time & date) with real-time clock
- Review temperature trends for up to 10 days
- On-screen help
- Automatic and/or user-adjustable performance optimization
- 5-point calibration capability
- Safety Class III (DIN 12876-1)
- External temperature control capability



## Precise

Maintains temperatures from -40° to +200°C with  $\pm 0.01^\circ\text{C}$  temperature stability. Displays actual bath temperature to 1/1000° temperature resolution and temperature trends from 4 minutes to 10 days. For more precise performance, the Advanced Programmable Controller offers advanced fluid tuning, user-settable temperature averaging on the display, and temperature control of an external application.

## Powerful

Extremely easy to use, the Advanced Programmable Controller's time/temperature programming interface is similar to that featured on the PolyScience Performance Programmable Controller. You can name, add, edit or delete steps quickly. Settable time or temperature priority ensures programs run as intended. Plus for added convenience you can preview, share, or schedule a program to run automatically. The controller can store 10 programs of up to 100 steps each.

## Connected

Extensive connectivity capabilities enable you to control and communicate with your circulator in a wide variety of ways, including Ethernet, RS232, addressable RS485, USB-A and USB-B. For additional communications flexibility, you can even emulate the command protocols of other popular circulating baths and communicate with your circulator using an iPhone®.

## Accessible

On-screen help and intuitive touch screen operation make using the Advanced Programmable Controller exceptionally easy. Set-point changes, programming, and operational changes are simple and fast.

## Safe

Class III flammability rating (per DIN 12876-1), redundant over-temperature protection, high and low temperature limits and alarms alert you instantly to conditions that fall outside normal operating parameters. Lockout capability prevents unauthorized operational changes.

# Performance Digital Temperature Controller

Delivers the ultimate in precision and performance for applications that require exacting control at a precise temperature.

Includes Enhanced Performance Hardware & Software Package:

- Pt100 temperature probe for external temperature control
- USB flash drive for data logging
- Stainless steel tubing fittings and adapters
- PolyScience LabVIEW™ Virtual Instrument (VI)
- iPhone® application download



## Features:

- $\pm 0.005^{\circ}\text{C}$  temperature stability
- $200^{\circ}\text{C}$  maximum temperature
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
- Variable-speed pressure/suction pump
- Review temperature trends for up to 10 days
- Swivel 180™ Rotating Controller
- User-adjustable high and low temperature limits and alarms
- Multiple, selectable "home" screens
- Event scheduling (time & date) with real-time clock
- On-screen help
- Automatic and/or user-adjustable performance optimization
- On-board connectivity: USB-A & B, Ethernet, RS232/485, remote on/off and external temperature probe
- 10-point calibration capability
- Safety Class III (DIN 12876-1)
- External temperature control capability
- Available with DeviceNet™/CANbus, Modbus®, and Profibus® options



## Exceptional Performance

Designed to provide exceptionally precise control for single set-point applications, the Performance Digital Controller delivers  $\pm 0.005^\circ$  stability at temperatures ranging from  $-40^\circ$  to  $+200^\circ\text{C}$  and displays temperature to  $1/1000^\circ$ . Other precision-enhancing features include 10-point calibration capability, advanced fluid tuning and remote temperature control of external applications.

## Unequaled Connectivity

The Performance Digital's extensive suite of control, data logging, and communications options make it easy to integrate into your lab's communication platform. Connectivity capabilities include Ethernet, remote on/off, RS232, addressable RS485, and USB A and USB B plus command and communication protocols for other popular circulating baths. There's even an iPhone® application that lets you check bath status or change the temperature set-point from remote locations.

## Global Convenience

Icon-driven multi-language menus and contextual on-screen help guide you quickly through setup and operation. One-touch access with flexible temperature entry makes set-point changes fast and straightforward. User-settable reminders automatically alert you when routine maintenance is required.

## Outstanding Safety

Over-temperature and low-liquid level protection (DIN 12876-1 Class III flammability rating), redundant over-temperature protection, high and low temperature limits and alarms provide exceptional safety and peace of mind. In addition, there's a password protected lockout to help prevent accidental or unauthorized operational changes.

## Advanced Digital Temperature Controller

Combines exceptional precision and performance with highly intuitive, feature-rich operation.



### Features:

- $\pm 0.01^{\circ}\text{C}$  temperature stability
- $200^{\circ}\text{C}$  maximum temperature
- Intuitive 3.75" (9.5 cm) display with touch-pad control
- 4 languages: French, German, Spanish, English
- Variable-speed pressure/suction pump
- Swivel 180<sup>TM</sup> Rotating Controller
- User-adjustable high and low temperature limits and alarms
- On-screen prompts
- Automatic performance optimization and specific heat tuning
- On-board connectivity: USB-A & B, RS232/485, Ethernet and external temperature probe
- Single-point calibration
- Safety Class III (DIN 12876-1)
- External temperature control capability



## Optimized

The Advanced Digital Temperature Controller displays and controls both temperatures from -40° to +200°C with 0.01°C precision and stability. Plus, you can further optimize performance through a variety of control settings including pump speed, specific heat value, calibration offset, and internal or external temperature control. You can even set the temperature at which the refrigeration engages.

## Communicative

Bi-directional RS232, RS485, and Ethernet communications provide fast and versatile remote control and data logging. USB-A and USB-B enable you to log data directly to a flash drive or computer.

## Friendly

On-screen prompts and 4 languages (English, Spanish, French, and German) take the guesswork out of setup and operation. Adjusting the temperature set-point, pump speed, or other operating settings is simple, straightforward and intuitive. In addition, the Advanced Digital Temperature Controller features a message bar that assists in making changes and provides alerts and safety information.

## Class III Safety

Rated for use with Class III flammable liquids (per DIN 12876-1), the Advanced Digital Temperature Controller delivers exceptional safety for a wide variety of laboratory applications. Standard safety features include redundant over-temperature and low-liquid level protection, user-settable over-temperature safety and high and low temperature limits.



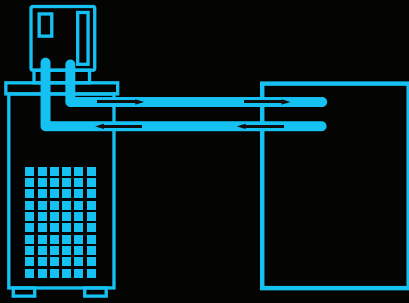
## Standard Digital Temperature Controller

Combines innovative design with highly intuitive operation to deliver reliable temperature control for a wide range of laboratory applications.



### Features:

- $\pm 0.04^{\circ}\text{C}$  temperature stability
- $170^{\circ}\text{C}$  maximum temperature
- Large, universal icon and English display
- 2-speed pressure pump
- Swivel  $180^{\circ}$  Rotating Controller
- Automatic performance optimization
- User-adjustable high and low temperature limits and alarms
- On-board connectivity: RS232 serial output
- Single-point calibration
- Safety Class I (DIN 12876-1)



## Reliable

Set and read to 0.1°C, 170°C maximum temperature,  $\pm 0.04^\circ\text{C}$  temperature stability, and a 2-speed pump make the Standard Digital Temperature Controller an economical and reliable choice for a variety of laboratory applications, including those requiring closed-loop external circulation. Cool Command™ functionality permits faster cool downs from high temperatures.

## Communication

RS232 serial communication capability allows control and data logging via a PC or other remote device.

## Intuitive Operation

Plain-text prompts and intuitive controls guide you quickly through setup. Intelligent touch and scroll display makes it easy to make both large and small set-point adjustments.



## Protection

User-settable high-temperature safety provides over-temperature and low-liquid-level protection, and adjustable high and low limits guard against unintended set-point changes.



## MX Temperature Controller

The flexibility of a fully integrated temperature controller or clamp-on immersion circulator.



### Features:

- $\pm 0.07^{\circ}\text{C}$  temperature stability
- $135^{\circ}\text{C}$  maximum temperature
- Large, universal icon and English display
- Single-speed pressure pump
- User-adjustable high and low temperature limits and alarms
- On-screen prompts
- Single-point calibration
- Safety Class I (DIN 12876-1)



## Versatile

The MX Temperature Controller is available as either a fully integrated bath model or as a clamp-on immersion circulator you can mount to your own bath or tank. In either configuration, it delivers  $\pm 0.07^\circ\text{C}$  temperature stability at temperatures as high as  $135^\circ\text{C}$ .



## Intuitive

Three control buttons and plain-text on-screen prompts make the setup and operation of the MX Temperature Controller easy and straightforward.



## Safe

User-settable high-temperature safety provides over-temperature and low-liquid-level protection and integrated (patent-pending) design protects pump and heater while simplifying cleaning and maintenance.

# Temperature Controller Selection Guide

Controller Type	Performance Programmable	Advanced Programmable
Maximum Temperature	200°C	200°C
Temperature Stability	±0.005°C	±0.01°C
Swivel 180™ Rotating Controller	•	•
Pump	Variable-speed	Variable-speed
Pump Pressure (maximum) psi (bar)*	4.3 (0.3)	4.3 (0.3)
Pressure Flow Rate (maximum) gpm (l/min)*	5.3 (20.1)	5.3 (20.1)
Suction Flow Rate (maximum) gpm (l/min)*	3.9 (14.7)	3.9 (14.7)
Closed-Loop Operation	•	•
Open-Loop Operation	•	•
Fluid Optimization/Specific Heat Tuning	•	•
Temperature Calibration Capability	10-point	5-point
WhisperCool™ Environmental Control System	•	•
Inert Gas Reservoir Purge	•	•
Display Type & Size	SmartTouch Color LCD 4.3"	SmartTouch Color LCD 4.3"
Enhanced Data Display Capability	7 selectable views	7 selectable views
Multi-Language Menus or Prompts	11 languages	6 languages
Displays Temperature Trend	•	•
Time/Temperature Programs & Steps	OpenMode	Ten 100 step programs
Date & Time with Calendar Start/Stop	•	•
Timer	•	•
On-Screen Help or Prompts	•	•
External Temperature Control Capability (Pt100)	•	•
RS232/RS485 Serial Output	•	•
Remote On/Off Capability	•	•
USB-A and USB-B	•	•
Ethernet	•	•
DeviceNet™/Canbus, Modbus®, Profibus® (optional)	•	•
Software Support for LabVIEW™ Included	•	•
Backlit Display	•	•
Automatic Loss of Power Reset	Selectable	Selectable
Safety Class (DIN 12876-1)	III	III
Over-Temperature Protection	•	•
Failsafe Heater Control	•	•
High and Low Temperature Limits/Alarms	•	•
Low-Liquid-Level Safety	•	•
Alarm and Fault Indicators	Message	Message

\*Specifications for 60Hz models.

Performance Digital	Advanced Digital	Standard Digital	MX
200°C	200°C	170°C	135°C
±0.005°C	±0.01°C	±0.04°C	±0.07°C
•	•	•	
Variable-speed	Variable-speed	2-speed	1-speed
4.3 (0.3)	4.3 (0.3)	3.5 (.24)	1.8 (.12)
5.3 (20.1)	5.3 (20.1)	2.9 (11.0)	3.4 (12.8)
3.9 (14.7)	3.9 (14.7)		
•	•	•	•
•	•		
•	•		
10-point	1-point	1-point	1-point
•	•	•	•
•	•	•	
SmartTouch Color LCD 4.3"	LCD Touch-Pad 3.75"	LCD Touch-Pad 3.75"	LCD 3.25"
6 selectable views	Message bar		
11 languages	4 languages	Icon/English	Icon/English
•			
•			
•	•		
•	•		
•	•		
•	•	RS232	
•			
•	•		
•	•		
•			
•	•	•	•
Selectable	Selectable	Yes	Yes
III	III	I	I
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
Message	Message	Icon	Icon

# Refrigerated Circulating Baths

A versatile range of products to fit every need.

Features:

- Working temperatures from -40 to +200°C
- Temperature stabilities to  $\pm 0.005^\circ\text{C}$
- Capacities from 7 to 45 liters
- Six controller types with large, intuitive displays and multiple communication options
- Large bath openings and easy to clean surfaces
- Swivel 180<sup>TM</sup> Rotating Controllers
- LidDock<sup>TM</sup> Lid Stowing System
- DuraTop<sup>TM</sup> Chemical Resistant Deck
- WhisperCool<sup>TM</sup> Environmental Control System
- Cool Command<sup>TM</sup> Technology

Capable of reaching temperatures as low as  $-40^\circ\text{C}$ , PolyScience Refrigerated/Heated Circulating Baths provide dependable temperature control for a wide variety of laboratory cooling applications.

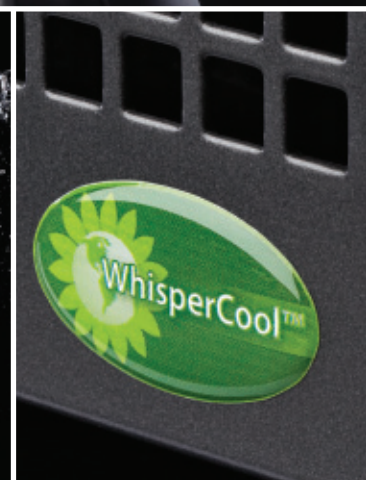


Available in 40 different models, the latest generation PolyScience Refrigerated/Heated Circulating Baths uphold our reputation for innovation, product quality, and refrigeration expertise. Our lab and operator-friendly circulating baths set a new industry standard for design, performance and value. The units are extremely simple to operate, easy to install and maintain, and will provide years of reliable and accurate heat removal.

PolyScience Refrigerated/Heated Circulators come with the following accessories:

- Reservoir cover
- Bypass tubing
- Male inlet and outlet adapters for 3/8, 1/4, and 3/16" (.95, .63, and .47 cm) tubing. 1/4" to M16 adapters also included on 50 Hz units.
- 6' (1.83 m) standard grounded electrical cord with country-specific plug





## Features:

- **Quiet**  
Proprietary patent-pending WhisperCool™ technology reduces overall equipment noise, increases refrigeration efficiency, and lowers energy consumption.
- **Easy to maintain**  
Accessing the reservoir drain and removable air filter for maintenance is as simple as removing the circulator's front panel. Performance Programmable, Advanced Programmable and Performance Digital models even remind you when it's time for filter cleaning.
- **Energy saving**  
Cool Command™ technology carefully regulates the amount of cooling required, saving energy while delivering fast cool-downs and more precise control at elevated temperatures.
- **Safe**  
All models feature user-settable high-temperature safeties as well as redundant over-temperature protection and comply with RoHS, WEEE, IEC 61010-1, IEC 61010-2-010, IEC 61326-1, DIN 12876 and are CE and ETL certified. Our DuraTop™ surface is cooler to the touch when operating at high temperatures.
- **Intuitive**  
Whether equipped with the entry-level controller or the most sophisticated, PolyScience Refrigerated/Heated Circulating Baths are extremely easy to use. Clear navigational buttons and menu prompts guide you through setup, making operational and temperature set-point changes simple and precise.



# Refrigerated Circulating Baths Selection Guide



	Capacity	7 Liter (Low Profile)	7 Liter	7 Liter
	Maximum Temperature <sup>1</sup>	200°C	200°C	200°C
	Minimum Temperature	-20°C	-20°C	-40°C
	Cooling Capacity @ 20°C	200 W	200 W	505 W
	Working Access (L x W x D)	6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm
	Drain	•	•	•
	LidDock™	•	•	•
Part Number	Performance Programmable 120 VAC/60 Hz	PP7LR-20-A11B	PP07R-20-A11B	PP07R-40-A11B
		PP7LR-20-A12E	PP07R-20-A12E	PP07R-40-A12E
	Advanced Programmable 120 VAC/60 Hz	AP7LR-20-A11B	AP07R-20-A11B	AP07R-40-A11B
		AP7LR-20-A12E	AP07R-20-A12E	AP07R-40-A12E
	Performance Digital 120 VAC/60 Hz	PD7LR-20-A11B	PD07R-20-A11B	PD07R-40-A11B
		PD7LR-20-A12E	PD07R-20-A12E	PD07R-40-A12E
	Advanced Digital 120 VAC/60 Hz	AD7LR-20-A11B	AD07R-20-A11B	AD07R-40-A11B
		AD7LR-20-A12E	AD07R-20-A12E	AD07R-40-A12E
	Standard Digital 120 VAC/60 Hz	SD7LR-20-A11B	SD07R-20-A11B	
		SD7LR-20-A12E	SD07R-20-A12E	
	MX 120 VAC/60 Hz	MX7LR-20-A11B	MX07R-20-A11B	
		MX7LR-20-A12E	MX07R-20-A12E	

1. Maximum temperature is controller dependent; see Circulator Controller Features, pages 16 through 27.

2. All 45L Circulating Baths are 208-240 VAC, 50/60 Hz.

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.



15 Liter

15 Liter

20 Liter

28 Liter

45 Liter<sup>2</sup>

200°C

200°C

200°C

200°C

135°C

-30°C

-40°C

-30°C

-30°C

-25°C

915 W

1000 W

915 W

915 W

1400 W

8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

12.35 x 14.13 x 5.5"  
31.4 x 35.9 x 14 cm

21.6 x 15.68 x 5.5"  
54.9 x 39.8 x 14 cm

•

•

•

•

•

•

•

•

•

•

PP15R-30-A11B

PP15R-40-A11B

PP20R-30-A11B

PP28R-30-A11B

PP45R-20-A13D

PP15R-30-A12E

PP15R-40-A12E

PP20R-30-A12E

PP28R-30-A12E

PP45R-20-A12E

AP15R-30-A11B

AP15R-40-A11B

AP20R-30-A11B

AP28R-30-A11B

AP45R-20-A13D

AP15R-30-A12E

AP15R-40-A12E

AP20R-30-A12E

AP28R-30-A12E

AP45R-20-A12E

PD15R-30-A11B

PD15R-40-A11B

PD20R-30-A11B

PD28R-30-A11B

PD45R-20-A13D

PD15R-30-A12E

PD15R-40-A12E

PD20R-30-A12E

PD28R-30-A12E

PD45R-20-A12E

AD15R-30-A11B

AD15R-40-A11B

AD20R-30-A11B

AD28R-30-A11B

AD45R-20-A13D

AD15R-30-A12E

AD15R-40-A12E

AD20R-30-A12E

AD28R-30-A12E

AD45R-20-A12E

SD15R-30-A11B

SD20R-30-A11B

SD28R-30-A11B

SD15R-30-A12E

SD20R-30-A12E

SD28R-30-A12E

MX15R-30-A11B

MX20R-30-A11B

MX15R-30-A12E

MX20R-30-A12E

# Performance Programmable Temperature Controller

## Key Specifications

Working Temperature: From -40°C to +200°C

Temperature Stability:  $\pm 0.005^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 4.3 (0.3)

240 VAC/50 Hz Models 3.6 (0.25)

Maximum Flow Rate:	Pressure	Suction
	gpm (l/min)	gpm (l/min)
120 VAC/60 Hz Models	5.3 (20.1)	3.9 (14.7)
240 VAC/50 Hz Models	4.4 (16.7)	3.2 (12.2)

120 VAC/60 Hz Models

5.3 (20.1)

3.9 (14.7)

240 VAC/50 Hz Models

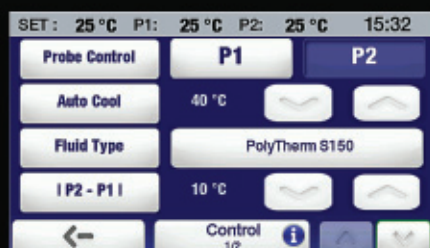
4.4 (16.7)

3.2 (12.2)



## Features:

- OpenMode time/temperature programming (no restriction on number of programs or steps)
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™, WhisperCool™, Cool Command™
- On-board connectivity: USB-A & B, Ethernet, RS232/485, remote on/off, external temperature probe
- Event scheduling (time & date), real-time clock and temperature trends for up to 10 days
- Multiple, selectable "home" screens and on-screen help
- Automatic and/or user-adjustable performance optimization and 10-point calibration capability
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids
- Includes Enhanced Performance Hardware & Software Package
- Available with DeviceNet™/CANbus, Modbus®, and Profibus® options



Temperature control is easily fine-tuned through the selection of a specific fluid, entry of a fluid's specific heat capacity, or even the adjustment of the controller's PID values.

Simple and intuitive time/temperature programming makes it easy to create and run special test protocols and/or ramp and soak profiles.

Selectable "Home" screens allow you to display as much or as little temperature information as you need – including 4 minute to 10 day temperature trend data.

For additional information on the Performance Programmable Controller's features and capabilities, see pages 16 and 17.



**7-Liter: -20°C, Low-Profile**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
23.2 x 16.2 x 16.2"  
58.9 x 41.1 x 41.1 cm

**7-Liter: -20°C**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**7-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**15-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm



**15-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm

**20-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

Overall Dimensions (L x W x H):  
24 x 16.6 x 26.9"  
61 x 41.9 x 68.3 cm

**28-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
12.35 x 14.13 x 5.5"  
31.4 x 35.9 x 14 cm

Overall Dimensions (L x W x H):  
26.5 x 18.0 x 26.9"  
67.2 x 45.7 x 68.3 cm

**45-Liter: -25°C**

Temperature Range:  
-25° to +135°C

Working Access (L x W x D):  
21.6 x 15.68 x 5.5"  
54.9 x 39.8 x 14 cm

Overall Dimensions (L x W x H):  
35.8 x 22.4 x 42.1"  
90.9 x 56.8 x 107 cm



Reservoir Size	7 Liter Low-Profile	7 Liter		15 Liter		20 Liter	28 Liter	45 Liter <sup>1</sup>
Temperature Range	-20° to +200°C	-20° to +200°C	-40° to +200°C	-30° to +200°C	-40° to +200°C	-30° to +200°C	-30° to +200°C	-25° to +135°C
Cooling Capacity @ 20°C	200 W	200 W	505 W	915 W	1000 W	915 W	915 W	1400 W
Heater	1100 W (60 Hz)/2200 W (50 Hz)							2200 W (50/60 Hz)
Part Number 120 VAC/60 Hz	PP7LR-20-A11B	PP07R-20-A11B	PP07R-40-A11B	PP15R-30-A11B	PP15R-40-A11B	PP20R-30-A11B	PP28R-30-A11B	PP45R-20-A13D
Part Number 240 VAC/50 Hz	PP7LR-20-A12E	PP07R-20-A12E	PP07R-40-A12E	PP15R-30-A12E	PP15R-40-A12E	PP20R-30-A12E	PP28R-30-A12E	PP45R-20-A12E

1. 45 liter bath is 208-240 VAC, 50/60 Hz

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# Advanced Programmable Temperature Controller

## Key Specifications

Working Temperature: From -40°C to +200°C

Temperature Stability:  $\pm 0.01^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 4.3 (0.3)

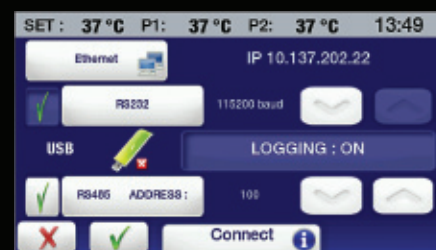
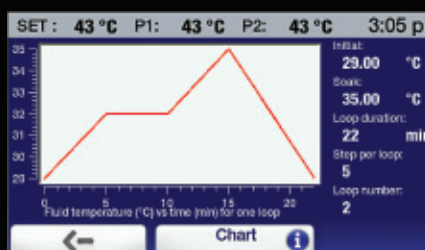
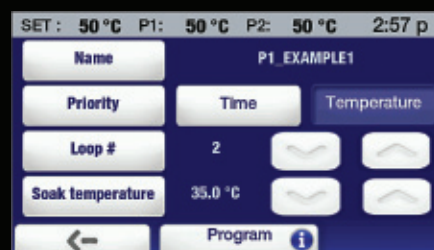
240 VAC/50 Hz Models 3.6 (0.25)

Maximum Flow Rate:	Pressure	Suction
	gpm (l/min)	gpm (l/min)
120 VAC/60 Hz Models	5.3 (20.1)	3.9 (14.7)
240 VAC/50 Hz Models	4.4 (16.7)	3.2 (12.2)



## Features:

- Time/temperature programming (ten 100-step programs)
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 6 languages: French, German, Spanish, Chinese, Arabic, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™, WhisperCool™, Cool Command™
- On-board connectivity: USB-A & B, RS232/485, Ethernet and external temperature probe
- Event scheduling (time & date), real-time clock and temperature trends for up to 10 days
- Selectable "home" screens and on-screen help
- Automatic and/or user-adjustable performance optimization
- 5-point calibration capability
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids



Special features, such as the ability to select time or temperature as the priority and preview the resulting temperature profile, eliminate the guesswork when creating time/temperature programs.

Extensive communication capability enables you to easily check circulator status.

For additional information on the Advanced Programmable Controller's features and capabilities, see pages 18 and 19.



**7-Liter: -20°C, Low-Profile**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
23.2 x 16.2 x 16.2"  
58.9 x 41.1 x 41.1 cm

**7-Liter: -20°C**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**7-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**15-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm



**15-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm

**20-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

Overall Dimensions (L x W x H):  
24 x 16.6 x 26.9"  
61 x 41.9 x 68.3 cm

**28-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
12.35 x 14.13 x 5.5"  
31.4 x 35.9 x 14 cm

Overall Dimensions (L x W x H):  
26.5 x 18 x 26.9"  
67.2 x 45.7 x 68.3 cm

**45-Liter: -25°C**

Temperature Range:  
-25° to +135°C

Working Access (L x W x D):  
21.6 x 15.68 x 5.5"  
54.9 x 39.8 x 14 cm

Overall Dimensions (L x W x H):  
35.8 x 22.4 x 42.1"  
90.9 x 56.8 x 107 cm



Reservoir Size	7 Liter Low-Profile	7 Liter		15 Liter		20 Liter	28 Liter	45 Liter <sup>1</sup>
Temperature Range	-20° to +200°C	-20° to +200°C	-40° to +200°C	-30° to +200°C	-40° to +200°C	-30° to +200°C	-30° to +200°C	-25° to +135°C
Cooling Capacity @ 20°C	200 W	200 W	505 W	915 W	1000 W	915 W	915 W	1400 W
Heater	1100 W (60 Hz)/2200 W (50 Hz)							2200 W (50/60 Hz)
Part Number 120 VAC/60 Hz	AP7LR-20-A11B	AP07R-20-A11B	AP07R-40-A11B	AP15R-30-A11B	AP15R-40-A11B	AP20R-30-A11B	AP28R-30-A11B	AP45R-20-A13D
Part Number 240 VAC/50 Hz	AP7LR-20-A12E	AP07R-20-A12E	AP07R-40-A12E	AP15R-30-A12E	AP15R-40-A12E	AP20R-30-A12E	AP28R-30-A12E	AP45R-20-A12E

1. 45 liter bath is 208-240 VAC, 50/60 Hz

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# Performance Digital Temperature Controller

## Key Specifications

Working Temperature: From -40°C to +200°C

Temperature Stability:  $\pm 0.005^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 4.3 (0.3)

240 VAC/50 Hz Models 3.6 (0.25)

Maximum Flow Rate:	Pressure	Suction
	gpm (l/min)	gpm (l/min)
120 VAC/60 Hz Models	5.3 (20.1)	3.9 (14.7)
240 VAC/50 Hz Models	4.4 (16.7)	3.2 (12.2)



## Features:

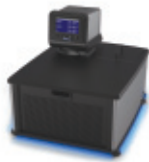
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™, WhisperCool™, Cool Command™
- On-board connectivity: USB-A & B, Ethernet, RS232/485, remote on/off and external temperature probe
- Event scheduling (time & date) with real-time clock and temperature trends for up to 10 days
- Multiple, selectable "home" screens and on-screen help
- Automatic and/or user-adjustable performance optimization and 10-point calibration capability
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids
- Includes Enhanced Performance Hardware & Software Package
- Available with DeviceNet™/CANbus, Modbus®, and Profibus® options



Highly intuitive touch screen interface makes setup and operation simple and straightforward.

Just a touch of your finger is all it takes to access on-board support – in any of 11 different languages.

For additional information on the Performance Digital Controller's features and capabilities, see pages 20 and 21.



**7-Liter: -20°C, Low-Profile**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
23.2 x 16.2 x 16.2"  
58.9 x 41.1 x 41.1 cm

**7-Liter: -20°C**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**7-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**15-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm



**15-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm

**20-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

Overall Dimensions (L x W x H):  
24 x 16.6 x 26.9"  
61 x 41.9 x 68.3 cm

**28-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
12.35 x 14.13 x 5.5"  
31.4 x 35.9 x 14 cm

Overall Dimensions (L x W x H):  
26.5 x 18 x 26.9"  
67.2 x 45.7 x 68.3 cm

**45-Liter: -25°C**

Temperature Range:  
-25° to +135°C

Working Access (L x W x D):  
21.6 x 15.68 x 5.5"  
54.9 x 39.8 x 14 cm

Overall Dimensions (L x W x H):  
35.8 x 22.4 x 42.1"  
90.9 x 56.8 x 107 cm



Reservoir Size	7 Liter Low-Profile	7 Liter		15 Liter		20 Liter	28 Liter	45 Liter <sup>1</sup>
Temperature Range	-20° to +200°C	-20° to +200°C	-40° to +200°C	-30° to +200°C	-40° to +200°C	-30° to +200°C	-30° to +200°C	-25° to +135°C
Cooling Capacity @ 20°C	200 W	200 W	505 W	915 W	1000 W	915 W	915 W	1400 W
Heater	1100 W (60 Hz)/2200 W (50 Hz)							2200 W (50/60 Hz)
Part Number 120 VAC/60 Hz	PD7LR-20-A11B	PD07R-20-A11B	PD07R-40-A11B	PD15R-30-A11B	PD15R-40-A11B	PD20R-30-A11B	PD28R-30-A11B	PD45R-20-A13D
Part Number 240 VAC/50 Hz	PD7LR-20-A12E	PD07R-20-A12E	PD07R-40-A12E	PD15R-30-A12E	PD15R-40-A12E	PD20R-30-A12E	PD28R-30-A12E	PD45R-20-A12E

1. 45 liter bath is 208-240 VAC, 50/60 Hz

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.



# Advanced Digital Temperature Controller

Key Specifications

Working Temperature: From -40°C to +200°C

Temperature Stability: ±0.01°C

---

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models	4.3 (0.3)
240 VAC/50 Hz Models	3.6 (0.25)

---

Maximum Flow Rate:	Pressure	Suction
	gpm (l/min)	gpm (l/min)
120 VAC/60 Hz Models	5.3 (20.1)	3.9 (14.7)
240 VAC/50 Hz Models	4.4 (16.7)	3.2 (12.2)



## Features:

- Intuitive 3.75" (9.5 cm) display with touch-pad control
- 4 languages: French, German, Spanish, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™, WhisperCool™, Cool Command™
- On-board connectivity: USB-A & B, RS232/485, Ethernet and external temperature probe
- Automatic and/or user-adjustable performance optimization
- Single-point calibration
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids



Alpha-numeric message bar guides you through setup and provides important operational information.



For further optimization of temperature control, you can easily input the specific heat capacity value for the heat transfer fluid that you're using.

For additional information on the Advanced Digital Controller's features and capabilities, see pages 22 and 23.



**7-Liter: -20°C, Low-Profile**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
23.2 x 16.2 x 16.2"  
58.9 x 41.1 x 41.1 cm

**7-Liter: -20°C**

Temperature Range:  
-20° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**7-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm

**15-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm



**15-Liter: -40°C**

Temperature Range:  
-40° to +200°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm

**20-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

Overall Dimensions (L x W x H):  
24 x 16.6 x 26.9"  
61 x 41.9 x 68.3 cm

**28-Liter: -30°C**

Temperature Range:  
-30° to +200°C

Working Access (L x W x D):  
12.35 x 14.13 x 5.5"  
31.4 x 35.9 x 14 cm

Overall Dimensions (L x W x H):  
26.5 x 18 x 26.9"  
67.2 x 45.7 x 68.3 cm

**45-Liter: -25°C**

Temperature Range:  
-25° to +135°C

Working Access (L x W x D):  
21.6 x 15.68 x 5.5"  
54.9 x 39.8 x 14 cm

Overall Dimensions (L x W x H):  
35.8 x 22.4 x 42.1"  
90.9 x 56.8 x 107 cm



Reservoir Size	7 Liter Low-Profile	7 Liter		15 Liter		20 Liter	28 Liter	45 Liter <sup>1</sup>
Temperature Range	-20° to +200°C	-20° to +200°C	-40° to +200°C	-30° to +200°C	-40° to +200°C	-30° to +200°C	-30° to +200°C	-25° to +135°C
Cooling Capacity @ 20°C	200 W	200 W	505 W	915 W	1000 W	915 W	915 W	1400 W
Heater	1100 W (60 Hz)/2200 W (50 Hz)							2200 W (50/60 Hz)
Part Number 120 VAC/60 Hz	AD7LR-20-A11B	AD07R-20-A11B	AD07R-40-A11B	AD15R-30-A11B	AD15R-40-A11B	AD20R-30-A11B	AD28R-30-A11B	AD45R-20-A13D
Part Number 240 VAC/50 Hz	AD7LR-20-A12E	AD07R-20-A12E	AD07R-40-A12E	AD15R-30-A12E	AD15R-40-A12E	AD20R-30-A12E	AD28R-30-A12E	AD45R-20-A12E

1. 45 liter bath is 208-240 VAC, 50/60 Hz

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# Standard Digital Temperature Controller

## Key Specifications

Working Temperature: From -30° to +170°C

Temperature Stability:  $\pm 0.04^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 3.5 (0.24)

240 VAC/50 Hz Models 2.9 (0.2)

Maximum Flow Rate: Pressure

gpm (l/min)

120 VAC/60 Hz Models 2.9 (11.0)

240 VAC/50 Hz Models 2.7 (10.2)



## Features:

- Intuitive 3.75" (9.5 cm) display with touch-pad control
- 2-speed pressure pump with external (closed-loop) circulation capability
- Swivel 180™, LidDock™, DuraTop™, WhisperCool™, Cool Command™
- On-board connectivity: RS232
- Automatic performance optimization
- Single-point calibration
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids



Highly intuitive operator interface makes changing set-point and other operating parameters quick and simple.



Easy-to-use calibration function allows you to adjust the temperature display to match that of a traceable temperature standard.

For additional information on the Standard Digital Controller's features and capabilities, see pages 24 and 25.



**7-Liter: -20°C, Low-Profile**

**7-Liter: -20°C**

Temperature Range: -20° to +170°C

Temperature Range: -20° to +170°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
23.2 x 16.2 x 16.2"  
58.9 x 41.1 x 41.1 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 24.3"  
54.1 x 22.1 x 61.7 cm



**15-Liter: -30°C**

**20-Liter: -30°C**

**28-Liter: -30°C**

Temperature Range: -30° to +170°C

Temperature Range: -30° to +170°C

Temperature Range: -30° to +170°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Working Access (L x W x D):  
9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

Working Access (L x W x D):  
12.35 x 14.13 x 5.5"  
31.4 x 35.9 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 26.9"  
56.9 x 36.8 x 68.3 cm

Overall Dimensions (L x W x H):  
24 x 16.6 x 26.9"  
61 x 41.9 x 68.3 cm

Overall Dimensions (L x W x H):  
26.5 x 18 x 26.9"  
67.2 x 45.7 x 68.3 cm



Reservoir Size	7 Liter Low-Profile	7 Liter	15 Liter	20 Liter	28 Liter
Temperature Range	-20° to +170°C	-20° to +170°C	-30° to +170°C	-30° to +170°C	-30° to +170°C
Cooling Capacity @ 20°C	200 W		915 W		
Heater	1100 W (60 Hz)/2200 W (50 Hz)				
Part Number 120 VAC/60 Hz	SD7LR-20-A11B	SD07R-20-A11B	SD15R-30-A11B	SD20R-30-A11B	SD28R-30-A11B
Part Number 240 VAC/50 Hz	SD7LR-20-A12E	SD07R-20-A12E	SD15R-30-A12E	SD20R-30-A12E	SD28R-30-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# MX Temperature Controller

## Key Specifications

Working Temperature: From -30° to +135°C

Temperature Stability:  $\pm 0.07^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 1.8 (0.12)

240 VAC/50 Hz Models 1.5 (0.10)

Maximum Flow Rate: Pressure

gpm (l/min)

120 VAC/60 Hz Models 3.4 (12.8)

240 VAC/50 Hz Models 2.8 (10.6)



## Features:

- Large, 3.25" (8.3 cm) universal icon and English display
- Single-speed pressure pump with external (closed-loop) circulation capability
- LidDock™, DuraTop™, WhisperCool™, Cool Command™
- User-adjustable high and low temperature limits and alarms
- Single-point calibration
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids



Visual alarms alert you when bath temperature falls outside your pre-set limits.



Single-speed pressure pump provides external closed-loop circulation capability.

For additional information on the MX Controller's features and capabilities, see pages 26 and 27.



7-Liter: -20°C, Low-Profile	7-Liter: -20°C	15-Liter: -30°C	20-Liter: -30°C
-----------------------------	----------------	-----------------	-----------------

Temperature Range:  
-20° to +135°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
23.2 x 16.2 x 17.3"  
58.9 x 41.1 x 43.9 cm

Temperature Range:  
-20° to +135°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
21.3 x 8.7 x 25.4"  
54.1 x 22.1 x 64.5 cm

Temperature Range:  
-30° to +135°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 28"  
56.9 x 36.8 x 71.1 cm

Temperature Range:  
-30° to +135°C

Working Access (L x W x D):  
9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

Overall Dimensions (L x W x H):  
24 x 16.5 x 28"  
61 x 41.9 x 71.1 cm



Reservoir Size	7 Liter Low-Profile	7 Liter	15 Liter	20 Liter
Temperature Range	-20° to 135°C	-20° to 135°C	-30° to 135°C	-30° to 135°C
Cooling Capacity @ 20°C	200 W		915 W	
Heater	1100 W			
Part Number 120 VAC/60 Hz	MX7LR-20-A11B	MX07R-20-A11B	MX15R-30-A11B	MX20R-30-A11B
Part Number 240 VAC/50 Hz	MX7LR-20-A12E	MX07R-20-A12E	MX15R-30-A12E	MX20R-30-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# Heated Circulating Baths

Heated Circulating Baths, Open Tank Systems, and Immersion Circulators. If it needs heat, it needs PolyScience.

#### Features:

- Working temperatures from ambient +10°C to +200°C
- Temperature stabilities to  $\pm 0.005^\circ\text{C}$
- Capacities from 6 to 28 liters
- Six controller types with large, intuitive displays and multiple communication options
- Large bath openings and easy to clean surfaces
- Swivel 180™ Rotating Controllers
- LidDock™ lid stowing system
- DuraTop™ chemical resistant deck



PolyScience offers almost 50 different solutions for your laboratory's liquid-heating needs – from a simple immersion circulator to economical open bath systems to full-featured circulating baths with ramp and soak capability. Typical applications include warming reagents and culture media, thawing or tempering samples, biological incubation, cell culture, enzyme assays, or controlling the temperature of laboratory equipment such as chromatography columns, viscometers, and densitometers.

PolyScience Heated Circulators come with the following accessories:

- Reservoir cover
- Bypass tubing
- Male inlet and outlet adapters for 3/8, 1/4, and 3/16" (.95, .63, and .47 cm) tubing. 1/4" NPT to M16 adapters also included on 50 Hz units.

Also included is a 6' (1.83 m) standard grounded electrical cord with country-specific plug.





## Features:

- Intuitive**  
 Whether equipped with the entry-level MX Controller or the most sophisticated Performance Programmable, our Heated Circulating Baths are extremely easy to use. Crisp menu architecture, screen icons, and plain-text prompts make it easy to navigate through operational settings and options.
- Precise**  
 Exceptionally exacting temperature control, combined with a tap-water cooling-coil, allow you to maintain bath temperatures at or near ambient with stabilities as precise as  $\pm 0.005^{\circ}\text{C}$ .
- Convenient**  
 LidDock™ helps keep moisture where it belongs – in the bath. And accessing the reservoir drain is as simple as removing the Circulator's front panel.
- Versatile**  
 A variety of communication and control options, including Ethernet, USB data logging and computer control, bi-directional serial communication, and external circulation with remote temperature control, enhance functionality and applications flexibility.
- Safe**  
 All models feature user-settable high-temperature safeties as well as redundant over-temperature protection and comply with RoHS, WEEE, IEC 61010-1, IEC 61010-2-010, IEC 61326-1, DIN 12876 and are CE and ETL certified. Our DuraTop™ surface is cooler to the touch when operating at high temperatures.



# Heated Circulating Baths Selection Guide



Fully Integrated Heated Circulating Baths

Open Bath Systems

		7 Liter	15 Liter	20 Liter	28 Liter	6 Liter	10 Liter	
Capacity		7 Liter	15 Liter	20 Liter	28 Liter	6 Liter	10 Liter	
Maximum Temperature <sup>1</sup>		200°C	200°C	200°C	200°C	150°C	150°C	
Minimum Temperature <sup>2</sup>		Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	
Working Access (L x W x D)		6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	8.35 x 10.88 x 5.5" 21.2 x 27.6 x 14 cm	9.85 x 12.45 x 5.5" 25 x 31.6 x 14 cm	12.35 x 14.13 x 5.5" 31.4 x 35.9 x 14 cm	3.9 x 4.3 x 6" 10 x 11 x 15.2 cm	3.9 x 10.1 x 6" 9.9 x 25.5 x 15.2 cm	
Tank Material		Insulated Stainless Steel	Insulated Stainless Steel	Insulated Stainless Steel	Insulated Stainless Steel	Stainless Steel	Stainless Steel	
Drain		•	•	•	•			
Tap Water Cooling-Coil		•	•	•	•			
LidDock™		•	•	•	•			
Catalog Number	Performance Programmable	120 VAC/60 Hz 240 VAC/50 Hz	PP07H200-A11B PP07H200-A12E	PP15H200-A11B PP15H200-A12E	PP20H200-A11B PP20H200-A12E	PP28H200-A11B PP28H200-A12E		
	Advanced Programmable	120 VAC/60 Hz 240 VAC/50 Hz	AP07H200-A11B AP07H200-A12E	AP15H200-A11B AP15H200-A12E	AP20H200-A11B AP20H200-A12E	AP28H200-A11B AP28H200-A12E	AP06S150-A11B AP06S150-A12E	AP10S150-A11B AP10S150-A12E
	Performance Digital	120 VAC/60 Hz 240 VAC/50 Hz	PD07H200-A11B PD07H200-A12E	PD15H200-A11B PD15H200-A12E	PD20H200-A11B PD20H200-A12E	PD28H200-A11B PD28H200-A12E		
	Advanced Digital	120 VAC/60 Hz 240 VAC/50 Hz	AD07H200-A11B AD07H200-A12E	AD15H200-A11B AD15H200-A12E	AD20H200-A11B AD20H200-A12E	AD28H200-A11B AD28H200-A12E	AD06S150-A11B AD06S150-A12E	AD10S150-A11B AD10S150-A12E
	Standard Digital	120 VAC/60 Hz 240 VAC/50 Hz	SD07H170-A11B SD07H170-A12E	SD15H170-A11B SD15H170-A12E	SD20H170-A11B SD20H170-A12E	SD28H170-A11B SD28H170-A12E		
	MX	120 VAC/60 Hz 240 VAC/50 Hz	MX07H135-A11B MX07H135-A12E	MX15H135-A11B MX15H135-A12E	MX20H135-A11B MX20H135-A12E		MX06S135-A11B MX06S135-A12E	MX10S135-A11B MX10S135-A12E

1. Maximum temperature is controller dependent for integrated systems (see Controller Selection Guide, pages 28 and 29); maximum temperature is dependent on tank material for Open Bath Systems with stainless steel or polycarbonate tanks. Immersion Circulator's maximum temperature is dependent on fluid volume.

2. Minimum temperature is shown with no external heat load.

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.



Open Bath Systems

Immersion Circulator

20 Liter	28 Liter	8 Liter	11 Liter	14 Liter	17 Liter	23 Liter	28 Liter	Up to 28 Liters
150°C	150°C	85°C	85°C	85°C	85°C	85°C	85°C	135°C
Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C	Ambient +10°C
10.4 x 9 x 6" 26.4 x 22.8 x 15.2 cm	10.1 x 8.4 x 8" 25.7 x 21.4 x 20.3 cm	4.1 x 6.1 x 8" 10.5 x 15.6 x 20.3 cm	8.3 x 6.1 x 8" 21 x 15.6 x 20.3 cm	12.4 x 6.1 x 8" 31.4 x 15.6 x 20.3 cm	4.1 x 12 x 8" 10.5 x 30.5 x 20.3 cm	8.3 x 12 x 8" 21 x 30.5 x 20.3 cm	12.4 x 12 x 8" 31.5 x 30.5 x 20.3 cm	N/A
Stainless Steel	Stainless Steel	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate	N/A
					•	•	•	
AP20S150-A11B AP20S150-A12E	AP28S150-A11B AP28S150-A12E	AP08P100-A11B AP08P100-A12E	AP11P100-A11B AP11P100-A12E	AP14P100-A11B AP14P100-A12E	AP17P100-A11B AP17P100-A12E	AP23P100-A11B AP23P100-A12E	AP28P100-A11B AP28P100-A12E	
AD20S150-A11B AD20S150-A12E	AD28S150-A11B AD28S150-A12E							
MX20S135-A11B MX20S135-A12E	MX28S135-A11B MX28S135-A12E	MX08P100-A11B MX08P100-A12E	MX11P100-A11B MX11P100-A12E	MX14P100-A11B MX14P100-A12E	MX17P100-A11B MX17P100-A12E	MX23P100-A11B MX23P100-A12E	MX28P100-A11B MX28P100-A12E	MX-CA11B MX-CA12E

# Performance Programmable Temperature Controller

## Key Specifications

Working Temperature: Up to 200°C

Temperature Stability:  $\pm 0.005^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 4.3 (0.3)

240 VAC/50 Hz Models 3.6 (0.25)

Maximum Flow Rate:	Pressure	Suction
	gpm (l/min)	gpm (l/min)
120 VAC/60 Hz Models	5.3 (20.1)	3.9 (14.7)
240 VAC/50 Hz Models	4.4 (16.7)	3.2 (12.2)



## Features:

- OpenMode time/temperature programming (no restriction on number of programs or steps)
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™
- On-board connectivity: USB-A & B, Ethernet, RS232/485, remote on/off and external temperature probe
- Event scheduling (time & date) with real-time clock and temperature trends for up to 10 days
- Multiple, selectable "home" screens and on-screen help
- Automatic and/or user-adjustable performance optimization and 10-point calibration capability
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids
- Available with DeviceNet™/CANbus, Modbus®, and Profibus® options
- Includes Enhanced Performance Hardware & Software Package



Powerful time/temperature programming function simplifies the creation of ramp and soak profiles or special test protocols. Programs can even be scheduled to run automatically at a predetermined time and date.

The Performance Programmable Controller's performance is easily fine-tuned by selecting a specific heat transfer fluid, entering a fluid's specific heat capacity value, or even adjusting PID settings.

For additional information on the Performance Programmable Controller's features and capabilities, see pages 16 and 17.



7-Liter: +200°C	15-Liter: +200°C	20-Liter: +200°C	28-Liter: +200°C
Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C
Working Access (L x W x D): 6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	Working Access (L x W x D): 8.35 x 10.88 x 5.5" 21.2 x 27.6 x 14 cm	Working Access (L x W x D): 9.85 x 12.45 x 5.5" 25 x 31.6 x 14 cm	Working Access (L x W x D): 12.35 x 14.13 x 5.5" 31.4 x 35.9 x 14 cm
Overall Dimensions (L x W x H): 19.6 x 8.7 x 16.1" 49.9 x 22.1 x 40.9 cm	Overall Dimensions (L x W x H): 22.4 x 14.5 x 16.6" 56.9 x 36.8 x 42.2 cm	Overall Dimensions (L x W x H): 24 x 16.5 x 16.6" 61 x 41.9 x 42.2 cm	Overall Dimensions (L x W x H): 26.5 x 18 X 16.6" 67.2 x 45.7 x 42.2 cm

Reservoir Size	7 Liter	15 Liter	20 Liter	28 Liter
Temperature Range	Ambient +10° to +200°C			
Heater	1100 W (60 Hz)/2200 W (50 Hz)			
Part Number 120 VAC/60 Hz	PP07H200-A11B	PP15H200-A11B	PP20H200-A11B	PP28H200-A11B
Part Number 240 VAC/50 Hz	PP07H200-A12E	PP15H200-A12E	PP20H200-A12E	PP28H200-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# Advanced Programmable Temperature Controller

## Key Specifications

Working Temperature: Up to 200°C

Temperature Stability:  $\pm 0.01^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 4.3 (0.3)

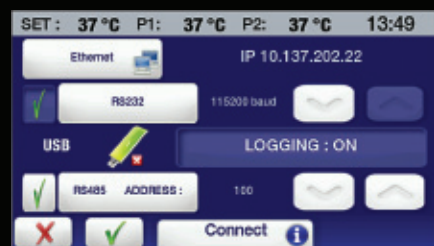
240 VAC/50 Hz Models 3.6 (0.25)

Maximum Flow Rate:	Pressure	Suction
	gpm (l/min)	gpm (l/min)
120 VAC/60 Hz Models	5.3 (20.1)	3.9 (14.7)
240 VAC/50 Hz Models	4.4 (16.7)	3.2 (12.2)



## Features:

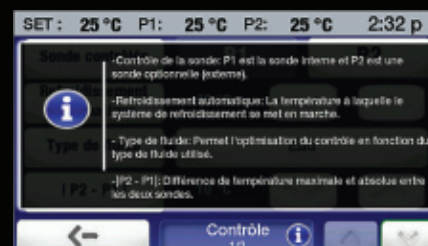
- Time/temperature programming (ten 100-step programs)
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 6 languages: French, German, Spanish, Chinese, Arabic, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™
- On-board connectivity: USB-A & B, RS232/485, Ethernet and external temperature probe
- Event scheduling (time & date), real-time clock and temperature trends for up to 10 days
- Selectable "home" screens and on-screen help
- Automatic and/or user-adjustable performance optimization
- 5-point calibration capability
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids



Multiple connectivity options give you a variety of ways to log data and control circulator operation.



All screens and menus, including on-line help, can be displayed in any of six different languages: English, French, German, Spanish, Chinese, or Arabic.



For additional information on the Advanced Programmable Controller's features and capabilities, see pages 18 and 19.



7-Liter: +200°C	15-Liter: +200°C	20-Liter: +200°C	28-Liter: +200°C
Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C
Working Access (L x W x D): 6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	Working Access (L x W x D): 8.35 x 10.88 x 5.5" 21.2 x 27.6 x 14 cm	Working Access (L x W x D): 9.85 x 12.45 x 5.5" 25 x 31.6 x 14 cm	Working Access (L x W x D): 12.35 x 14.13 x 5.5" 31.4 x 35.9 x 14 cm
Overall Dimensions (L x W x H): 19.6 x 8.7 x 16.1" 49.9 x 22.1 x 40.9 cm	Overall Dimensions (L x W x H): 22.4 x 14.5 x 16.6" 56.9 x 36.8 x 42.2 cm	Overall Dimensions (L x W x H): 24 x 16.5 x 16.6" 61 x 41.9 x 42.2 cm	Overall Dimensions (L x W x H): 26.5 x 18 X 16.6" 67.2 x 45.7 x 42.2 cm

Reservoir Size	7 Liter	15 Liter	20 Liter	28 Liter
Temperature Range	Ambient +10° to +200°C			
Heater	1100 W (60 Hz)/2200 W (50 Hz)			
Part Number 120 VAC/60 Hz	AP07H200-A11B	AP15H200-A11B	AP20H200-A11B	AP28H200-A11B
Part Number 240 VAC/50 Hz	AP07H200-A12E	AP15H200-A12E	AP20H200-A12E	AP28H200-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# Performance Digital Temperature Controller

## Key Specifications

Working Temperature: Up to 200°C

Temperature Stability:  $\pm 0.005^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 4.3 (0.3)

240 VAC/50 Hz Models 3.6 (0.25)

Maximum Flow Rate:	Pressure	Suction
	gpm (l/min)	gpm (l/min)
120 VAC/60 Hz Models	5.3 (20.1)	3.9 (14.7)
240 VAC/50 Hz Models	4.4 (16.7)	3.2 (12.2)

120 VAC/60 Hz Models

5.3 (20.1)

3.9 (14.7)

240 VAC/50 Hz Models

4.4 (16.7)

3.2 (12.2)



## Features:

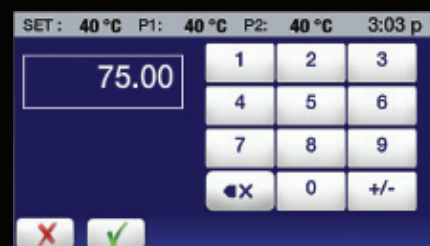
- Intuitive 4.3" (10.9 cm) SmartTouch display
- 11 languages: French, German, Spanish, Chinese, Portuguese, Russian, Hindi, Arabic, Italian, Korean, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™
- On-board connectivity: USB-A & B, Ethernet, RS232/485, remote on/off and external temperature probe
- Event scheduling (time & date) with real-time clock and temperature trends for up to 10 days
- Multiple, selectable "home" screens and on-screen help
- Automatic and/or user-adjustable performance optimization and 10-point calibration capability
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids
- Includes Enhanced Performance Hardware & Software Package
- Available with DeviceNet™/CANbus, Modbus®, and Profibus® options



External temperature probe control compensates for heat loss, keeping external devices at the precise temperature required.



Making a temperature set-point change is fast and easy – whether it's a half of degree or a hundred.



For additional information on the Performance Digital Controller's features and capabilities, see pages 20 and 21.



7-Liter: +200°C	15-Liter: +200°C	20-Liter: +200°C	28-Liter: +200°C
Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C
Working Access (L x W x D): 6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	Working Access (L x W x D): 8.35 x 10.88 x 5.5" 21.2 x 27.6 x 14 cm	Working Access (L x W x D): 9.85 x 12.45 x 5.5" 25 x 31.6 x 14 cm	Working Access (L x W x D): 12.35 x 14.13 x 5.5" 31.4 x 35.9 x 14 cm
Overall Dimensions (L x W x H): 19.6 x 8.7 x 16.1" 49.9 x 22.1 x 40.9 cm	Overall Dimensions (L x W x H): 22.4 x 14.5 x 16.6" 56.9 x 36.8 x 42.2 cm	Overall Dimensions (L x W x H): 24 x 16.5 x 16.6" 61 x 41.9 x 42.2 cm	Overall Dimensions (L x W x H): 26.5 x 18 X 16.6" 67.2 x 45.7 x 42.2 cm

Reservoir Size	7 Liter	15 Liter	20 Liter	28 Liter
Temperature Range	Ambient +10° to +200°C			
Heater	1100 W (60 Hz)/2200 W (50 Hz)			
Part Number 120 VAC/60 Hz	PD07H200-A11B	PD15H200-A11B	PD20H200-A11B	PD28H200-A11B
Part Number 240 VAC/50 Hz	PD07H200-A12E	PD15H200-A12E	PD20H200-A12E	PD28H200-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.



# Advanced Digital Temperature Controller

## Key Specifications

Working Temperature: Up to 200°C

Temperature Stability:  $\pm 0.01^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 4.3 (0.3)

240 VAC/50 Hz Models 3.6 (0.25)

Maximum Flow Rate: Pressure Suction

gpm (l/min) gpm (l/min)

120 VAC/60 Hz Models 5.3 (20.1) 3.9 (14.7)

240 VAC/50 Hz Models 4.4 (16.7) 3.2 (12.2)



## Features:

- Intuitive 3.75" (9.5 cm) display with touch-pad control
- 4 languages: French, German, Spanish, English
- Variable-speed pressure/suction pump with external circulation and temperature control capability
- Swivel 180™, LidDock™, DuraTop™
- On-board connectivity: USB-A & B, RS232/485, Ethernet and external temperature probe
- Automatic and/or user-adjustable performance optimization
- Single-point calibration
- Complies with DIN 12876-1 Class III safety requirements for use with flammable liquids



On-screen prompts – in English, French, Spanish, or German – guide you through setup and operation.



Class III safety features plus user-settable over-temperature safety and adjustable high and low temperature limits provide exceptional process and equipment protection.

For additional information on the Advanced Digital Controller's features and capabilities, see pages 22 and 23.



7-Liter: +200°C	15-Liter: +200°C	20-Liter: +200°C	28-Liter: +200°C
Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C	Temperature Range: Ambient +10° to +200°C
Working Access (L x W x D): 6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	Working Access (L x W x D): 8.35 x 10.88 x 5.5" 21.2 x 27.6 x 14 cm	Working Access (L x W x D): 9.85 x 12.45 x 5.5" 25 x 31.6 x 14 cm	Working Access (L x W x D): 12.35 x 14.13 x 5.5" 31.4 x 35.9 x 14 cm
Overall Dimensions (L x W x H): 19.6 x 8.7 x 16.1" 49.9 x 22.1 x 40.9 cm	Overall Dimensions (L x W x H): 22.4 x 14.5 x 16.6" 56.9 x 36.8 x 42.2 cm	Overall Dimensions (L x W x H): 24 x 16.5 x 16.6" 61 x 41.9 x 42.2 cm	Overall Dimensions (L x W x H): 26.5 x 18 X 16.6" 67.2 x 45.7 x 42.2 cm

Reservoir Size	7 Liter	15 Liter	20 Liter	28 Liter
Temperature Range	Ambient +10° to +200°C			
Heater	1100 W (60 Hz)/2200 W (50 Hz)			
Part Number 120 VAC/60 Hz	AD07H200-A11B	AD15H200-A11B	AD20H200-A11B	AD28H200-A11B
Part Number 240 VAC/50 Hz	AD07H200-A12E	AD15H200-A12E	AD20H200-A12E	AD28H200-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# Standard Digital Temperature Controller

## Key Specifications

Working Temperature: Up to 170°C

Temperature Stability:  $\pm 0.04^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 3.5 (0.24)

240 VAC/50 Hz Models 2.9 (0.2)

Maximum Flow Rate: Pressure

gpm (l/min)

120 VAC/60 Hz Models 2.9 (11.0)

240 VAC/50 Hz Models 2.7 (10.2)



## Features:

- Intuitive 3.75" (9.5 cm) display with touch-pad control
- 2-speed pressure pump with external (closed-loop) circulation capability
- Swivel 180™, LidDock™, DuraTop™
- On-board connectivity: RS232
- Automatic performance optimization
- Single-point calibration
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids



Easy-to-use calibration function allows you to adjust the temperature display to match that of a traceable temperature standard.



Highly intuitive operator interface makes changing the temperature set-point or making other operational adjustments simple and straightforward.

For additional information on the Standard Digital Controller's features and capabilities, see pages 24 and 25.



7-Liter: +170°C	15-Liter: +170°C	20-Liter: +170°C	28-Liter: +170°C
Temperature Range: Ambient +10° to +170°C	Temperature Range: Ambient +10° to +170°C	Temperature Range: Ambient +10° to +170°C	Temperature Range: Ambient +10° to +170°C
Working Access (L x W x D): 6.18 x 5.59 x 5" 15.7 x 14.2 x 12.7 cm	Working Access (L x W x D): 8.35 x 10.88 x 5.5" 21.2 x 27.6 x 14 cm	Working Access (L x W x D): 9.85 x 12.45 x 5.5" 25 x 31.6 x 14 cm	Working Access (L x W x D): 12.35 x 14.13 x 5.5" 31.4 x 35.9 x 14 cm
Overall Dimensions (L x W x H): 19.6 x 8.7 x 16.1" 49.9 x 22.1 x 40.9 cm	Overall Dimensions (L x W x H): 22.4 x 14.5 x 16.6" 56.9 x 36.8 x 42.2 cm	Overall Dimensions (L x W x H): 24 x 16.5 x 16.6" 61 x 41.9 x 42.2 cm	Overall Dimensions (L x W x H): 26.5 x 18 X 16.6" 67.2 x 45.7 x 42.2 cm

Reservoir Size	7 Liter	15 Liter	20 Liter	28 Liter
Temperature Range	Ambient +10° to +170°C			
Heater	1100 W (60 Hz)/2200 W (50 Hz)			
Part Number 120 VAC/60 Hz	SD07H170-A11B	SD15H170-A11B	SD20H170-A11B	SD28H170-A11B
Part Number 240 VAC/50 Hz	SD07H170-A12E	SD15H170-A12E	SD20H170-A12E	SD28H170-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# MX Temperature Controller

## Key Specifications

Working Temperature: Up to 135°C

Temperature Stability:  $\pm 0.07^\circ\text{C}$

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 1.8 (0.12)

240 VAC/50 Hz Models 1.5 (0.10)

Maximum Flow Rate: Pressure

gpm (l/min)

120 VAC/60 Hz Models 3.4 (12.8)

240 VAC/50 Hz Models 2.8 (10.6)



## Features:

- Large, 3.25" (8.3 cm) universal icon and English display
- Single-speed pressure pump with external (closed-loop) circulation capability
- LidDock™, DuraTop™
- User-adjustable high and low temperature limits and alarms
- Single-point calibration
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids



Visual alarms alert you when bath temperature falls outside your pre-set limits.



Easy-to-use calibration function makes it simple to adjust the temperature display to match that of a traceable temperature standard.

For additional information on the MX Controller's features and capabilities, see pages 26 and 27.



**7-Liter: +135°C**

Temperature Range:  
Ambient +10° to +135°C

Working Access (L x W x D):  
6.18 x 5.59 x 5"  
15.7 x 14.2 x 12.7 cm

Overall Dimensions (L x W x H):  
19.6 x 8.7 x 17.2"  
49.9 x 22.1 x 43.7 cm

**15-Liter: +135°C**

Temperature Range:  
Ambient +10° to +135°C

Working Access (L x W x D):  
8.35 x 10.88 x 5.5"  
21.2 x 27.6 x 14 cm

Overall Dimensions (L x W x H):  
22.4 x 14.5 x 17.8"  
56.9 x 36.8 x 45.2 cm

**20-Liter: +135°C**

Temperature Range:  
Ambient +10° to +135°C

Working Access (L x W x D):  
9.85 x 12.45 x 5.5"  
25 x 31.6 x 14 cm

Overall Dimensions (L x W x H):  
24 x 16.5 x 17.8"  
61 x 41.9 x 45.2 cm

Reservoir Size	7 Liter	15 Liter	20 Liter
Temperature Range	Ambient +10° to +135°C		
Heater	1100 W		
Part Number 120 VAC/60 Hz	MX07H135-A11B	MX15H135-A11B	MX20H135-A11B
Part Number 240 VAC/50 Hz	MX07H135-A12E	MX15H135-A12E	MX20H135-A12E

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

## Stainless Steel Open Bath Systems

Controller bridge rests securely on the deep drawn stainless steel reservoir, yet is easily removed for tank cleaning. Generous bath opening provides ready access to samples and included bath cover improves stability.



### Features:

- Working temperatures from ambient +10°C up to 150°C
- Advanced Programmable, Advanced Digital, or MX Temperature Controller
- 6, 10, 20, or 28 liter reservoir
- DuraTop™ Chemical Resistant Bridge, Swivel 180™ Rotating Controller (on Advanced Programmable and Advanced Digital models)
- Lidded opening for optional cooling coil (10, 20 and 28 liter models)
- External circulation capability
- Economical alternative to integrated heating baths
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids
- Includes bath cover



Our Advanced Programmable Temperature Controller combines time/temperature programming, a large touch-screen display, USB and serial communication to deliver exceptional performance and flexibility.



Open Bath Systems with the Advanced Series Controller feature Swivel 180™ for easy viewing and flexible bath placement.

See pages 18 through 27 for Controller features and capabilities.



Reservoir Size		6 Liter	10 Liter	20 Liter	28 Liter
Maximum Temperature <sup>1</sup>		150°C	150°C	150°C	150°C
Working Access (L x W x D)		3.9 x 4.3 x 6" 10 x 11 x 15.2 cm	3.9 x 10.1 x 6" 9.9 x 25.5 x 15.2 cm	10.4 x 9 x 6" 26.4 x 22.8 x 15.2 cm	10.1 x 8.4 x 8" 25.7 x 21.4 x 20.3 cm
Overall Dimensions (L x W x H)		13.4 x 8.1 x 16" 34 x 20.6 x 40.6 cm	13.9 x 13.5 x 16" 35.3 x 34.2 x 40.6 cm	20.9 x 13.5 x 16" 53.1 x 34.2 x 40.6 cm	20.9 x 13.5 x 18" 53.1 x 34.2 x 45.7 cm
Advanced Programmable	120 VAC/60 Hz 240 VAC/50 Hz	APO6S150-A11B APO6S150-A12E	AP10S150-A11B AP10S150-A12E	AP20S150-A11B AP20S150-A12E	AP28S150-A11B AP28S150-A12E
Advanced Digital	120 VAC/60 Hz 240 VAC/50 Hz	ADO6S150-A11B ADO6S150-A12E	AD10S150-A11B AD10S150-A12E	AD20S150-A11B AD20S150-A12E	AD28S150-A11B AD28S150-A12E
MX	120 VAC/60 Hz 240 VAC/50 Hz	MX06S135-A11B MX06S135-A12E	MX10S135-A11B MX10S135-A12E	MX20S135-A11B MX20S135-A12E	MX28S135-A11B MX28S135-A12E

1. Stainless steel tank will handle temperatures up to 150°C; maximum temperature with MX controller is 135°C.

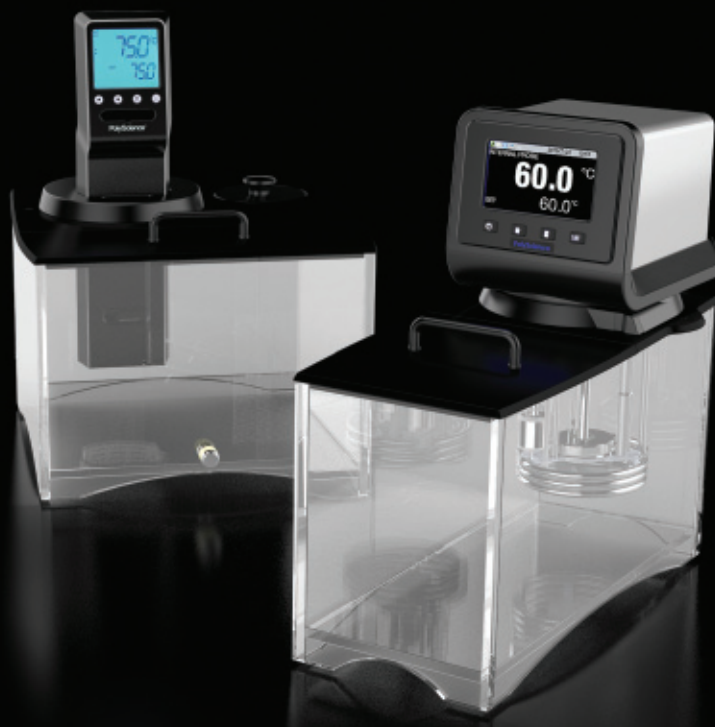
Includes Temperature Controller, bridge, stainless steel tank, and bath cover.

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.



## Polycarbonate Open Bath Systems

Transparent polycarbonate reservoir lets you keep samples in clear view. Elevated tank bottom provides secure handholds when lifting or relocating bath and is stable on uneven surfaces. Controller bridge removes easily for tank cleaning, rests securely on reservoir top edge when in use.

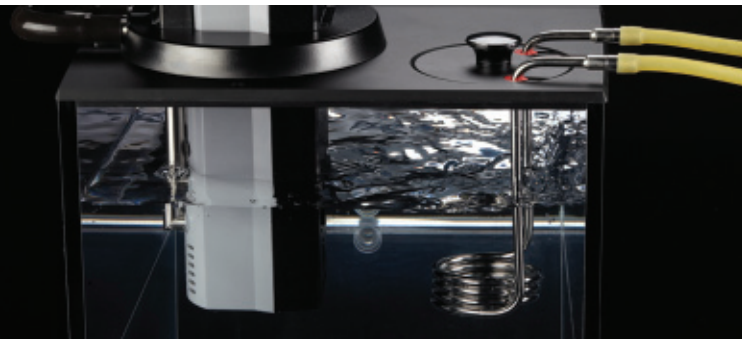


### Features:

- Working temperatures from ambient +10°C up to 85°C
- Advanced Programmable or MX Temperature Controller
- 8, 11, 14, 17, 23, or 28 liter reservoir
- DuraTop™ chemical resistant bridge
- Lidded opening for optional cooling coil (17, 23 and 28 liter models)
- Drain port (17, 23 and 28 liter models)
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids
- Includes bath cover



The compact and economical MX Temperature Controller is extremely simple to operate and maintains bath temperatures with  $\pm 0.07^\circ\text{C}$  stability.



The optional cooling coil is ideal for set-points near ambient temperature or when rapid cooling is required.

See pages 18-19 and 26-27 for Controller features and capabilities.



Reservoir Size		8 Liter	11 Liter	14 Liter	17 Liter	23 Liter	28 Liter
Maximum Temperature <sup>1</sup>		85°C	85°C	85°C	85°C	85°C	85°C
Working Access (L x W x D)		4.1 x 6.1 x 8" 10.5 x 15.6 x 20.3 cm	8.3 x 6.1 x 8" 21 x 15.6 x 20.3 cm	12.4 x 6.1 x 8" 31.4 x 15.6 x 20.3 cm	4.1 x 12 x 8" 10.5 x 30.5 x 20.3 cm	8.3 x 12 x 8" 21 x 30.5 x 20.3 cm	12.4 x 12 x 8" 31.5 x 30.5 x 20.3 cm
Overall Dimensions (L x W x H)		12.7 x 8.2 x 17.4" 32.2 x 20.8 x 44.1 cm	16.8 x 8.2 x 17.4" 42.7 x 20.8 x 44.1 cm	20.9 x 8.2 x 17.4" 53.2 x 20.8 x 44.1 cm	13.9 x 13.6 x 17.4" 35.3 x 34.5 x 44.1 cm	18 x 13.6 x 17.4" 45.7 x 34.5 x 44.1 cm	22.1 x 13.6 x 17.4" 56.2 x 34.5 x 44.1 cm
Advanced Programmable	120 VAC/60 Hz 240 VAC/50 Hz	AP08P100-A11B AP08P100-A12E	AP11P100-A11B AP11P100-A12E	AP14P100-A11B AP14P100-A12E	AP17P100-A11B AP17P100-A12E	AP23P100-A11B AP23P100-A12E	AP28P100-A11B AP28P100-A12E
MX	120 VAC/60 Hz 240 VAC/50 Hz	MX08P100-A11B MX08P100-A12E	MX11P100-A11B MX11P100-A12E	MX14P100-A11B MX14P100-A12E	MX17P100-A11B MX17P100-A12E	MX23P100-A11B MX23P100-A12E	MX28P100-A11B MX28P100-A12E

1. Maximum recommended operating temperature for polycarbonate tank; Temperature Controllers capable of higher temperatures.  
Includes Temperature Controller, bridge, tank, and bath cover.  
Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers.

# MX Immersion Circulator

## Key Specifications

Working Temperature: Up to 135°C

Temperature Stability:  $\pm 0.07^\circ\text{C}$

Heater: 1100 W

Maximum Pressure: psi (bar)

120 VAC/60 Hz Models 1.8 (0.12)

240 VAC/50 Hz Models 1.5 (0.10)

Maximum Flow Rate: Pressure

gpm (l/min)

120 VAC/60 Hz Models 3.4 (12.8)

240 VAC/50 Hz Models 2.8 (10.6)

## Part Number:

120 VAC/60 Hz)

**MX-CA11B**

240 VAC/50 Hz)

**MX-CA12E**



## Features:

- Create a circulating bath using your own vessel or a PolyScience open bath tank
- Large, 3.25" (8.3 cm) universal icon and English display
- Single-speed pressure pump
- Adjustable flow
- User-adjustable high and low temperature limits and alarms
- Integral pump and heater coil protection
- Complies with DIN 12876-1 Class I safety requirements for use with non-flammable liquids
- Single-point calibration

## Build Your Own Refrigerated Circulator

Create an economical refrigerated circulator by combining an MX Immersion Circulator with our 13 Liter Refrigerated Open Bath (page 75).

The MX Immersion Circulator should be mounted only to tanks with a working depth of 7.25"/18.4 cm or more.



Convenient slide control allows you to easily adjust the flow rate.



Clamps securely to both straight and curved tank walls.

Electrical plugs for the part numbers listed are standard U.S. and European types. See page 128 for additional plug types and part numbers. For additional information on the MX Immersion Circulator's features and capabilities, see pages 26 and 27.

# Open Tanks

## Stainless Steel Open Tanks

### Features:

- Liquid temperatures up to 150°C
- One-piece deep drawn stainless steel
- Rounded internal corners for easy cleaning



Stainless Steel	Temperature Limit 150°C	
Reservoir Size	13 Liter	28 Liter
Working Access (L x W x D)	9 x 6.5 x 8" (22.9 x 16.5 x 20.3 cm)	16.5 x 8.5 x 8" (41.9 x 21.6 x 20.3 cm)
Dimensions (L x W x H)	12.63 x 10.38 x 9.62" (32.1 x 28.9 x 24.4 cm)	20.87 x 12.87 x 9.62" (53 x 32.7 x 24.4 cm)
Part Number	T13SA1	T28SA1

## Polycarbonate Open Tanks

### Features:

- Liquid temperatures up to 85°C
- Drain port (17, 23, and 28 liter models)
- Elevated tank bottom with secure handholds



Polycarbonate	Temperature Limit 85°C					
Reservoir Size	8 Liter	11 Liter	14 Liter	17 Liter	23 Liter	28 Liter
Working Access (L x W x D)	11.2 x 6.13 x 8" 28.4 x 15.6 x 20.3 cm	15.3 x 6.13 x 8" 38.9 x 15.6 x 20.3 cm	19.4 x 6.13 x 8" 49.3 x 15.6 x 20.3 cm	12.3 x 12 x 8" 31.2 x 30.5 x 20.3 cm	16.4 x 12 x 8" 41.7 x 30.5 x 20.3 cm	20.6 x 12 x 8" 52.3 x 30.5 x 20.3 cm
Overall Dimensions (L x W x H)	11.9 x 6.87 x 9.13" 30.2 x 17.4 x 23.2 cm	16 x 6.87 x 9.13" 40.6 x 17.4 x 23.2 cm	20.2 x 6.87 x 9.13" 51.3 x 17.4 x 23.2 cm	13.8 x 12.75 x 9.13" 35.1 x 32.4 x 23.2 cm	17.9 x 12.75 x 9.13" 45.5 x 32.4 x 23.2 cm	21.1 x 12.75 x 9.13" 56.1 x 32.4 x 23.2 cm
Part Number	T08PA1	T11PA1	T14PA1	T17PA1	T23PA1	T28PA1

## Model 210 Heated Recirculator

### Key Specifications

Working Temperature: Ambient to +70°C  
 Temperature Stability: ±0.2°C  
 Heater: 750 W  
 Pump: Single-speed, Centrifugal  
 Maximum Pressure: 2 psi (0.13 bar)  
 Maximum Flow Rate: 3.0 gpm (11.4 l/min)

### Features:

- Low-cost pumping and heating for closed-loop applications
- Provides accurate control within a frequently used temperature range
- Ideal for applications such as thawing plasma, tempering photographic solutions, or circulating to an external device



Part Number (120 VAC/50/60 Hz): 040300  
 Part Number (240 VAC/50/60 Hz): 040301