

STC200 Standalone Temperature Controller

#STC200-040218

Features

- Dual PID outputs for both heating and cooling
- Easy to use auto-tune PID parameters
- Programmable control from -190°C to 1500°C
- RS232 and WinTemp Software included
- Compatible with all Instec hot and cold stages
- Compatible with all Instec hot and cold chucks
- Optional IEEE port with sample labview driver

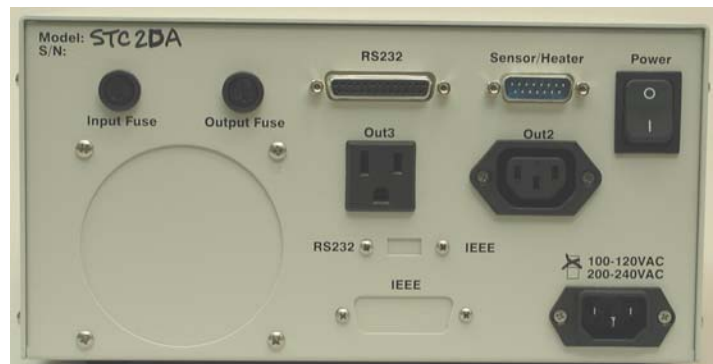


Description

The **STC200** is a precision auto-tune PID digital temperature controller.

The base model of the **STC200** uses a 120/230V AC line voltage as heater power supply. When ordered with one of our hot and cold stages, warm stages, or hot and cold chucks, the heater voltage of the **STC200** will be configured according to the particular stage or chuck ordered. The **STC200** has dual auto-tune PID outputs, one for heating, while the other for cooling. RS232 is now included in the base model which includes the PC based software and a sample LABVIEW driver.

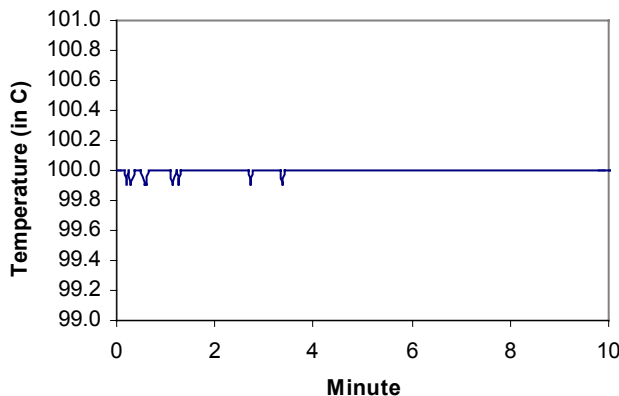
The **STC200** can take both Platinum RTDs and Thermocouple temperature sensors.



The back view of STC200. The cooling fan is model dependent, and the IEEE is optional. Out2 is for PID controlled cooling, while Out3 is for cooling of the frame of a stage or a chuck.

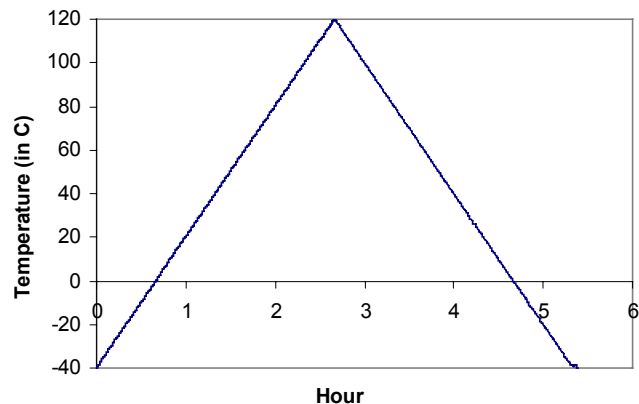
Temperature Stability

Temperature stability at 100°C



Controlled Heating and Cooling

Ramp up and ramp down at 1°C/minute



Above data was taken with Instec HCS410 hot and cold stage with LN2-P2AF2 cooling accessory.



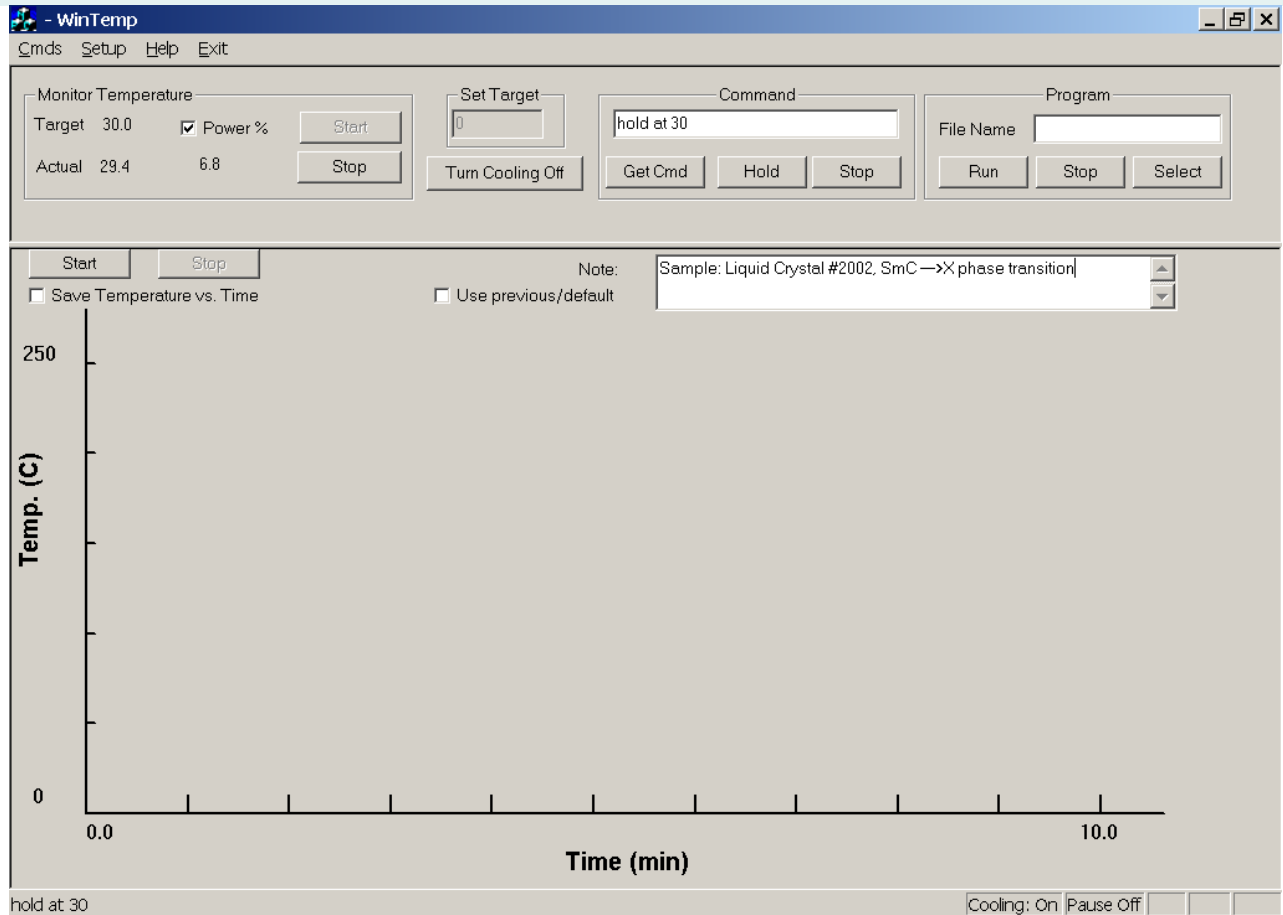
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The Host Software



WinTemp software enables complicated temperature control, by using simple script commands, such as “hold at 30”, “ramp to 120 at 1”. Temperature data can be saved to a file as a function of time. During program mode or ramp mode, the program can be paused at the current temperature for a long time until pause is turned off. Once pause is turned off, the program will be resumed. During the pause mode, the up and down arrow keys can be used to increase and decrease by 0.1°C.

Technical Specifications

Control Algorithm	Autotune PID
Maximum Temperature	2315°C (also limited by sensor and hot stage type)
Minimum Temperature	-200°C (also limited by sensor and hot stage type)
Temperature Resolution	0.1°C
Calibration Accuracy	±0.1°C or ±0.1% of temperature span
Controlled Heating Rate	0.1 to 300°C in 1 min. (also limited by the stage and power supply)
Controlled Cooling Rate	-0.1 to -300°C in 1 min. (also limited by the stage and user supplied coolant)
Host Interface	PC-compatible RS232 serial communication port included. IEEE optional.
Host Software	WinTemp, Windows 95, 98, NT, 2000, XP compatible software which provides a fully programmable graphic user interface. Free sample LABVIEW driver is also available for RS232.
Dimension	5" x 10" x 13"

Ordering Information

Part Number	Description
STC200-CUST	STC200 with custom configuration. This is normally for ordering STC200 only.
USB-RS232	Optional USB converter, which converts an USB port to a 9 pin RS232 port on the host computer, drivers included for Windows 2000 and XP.
IEEE-STC200	Optional IEEE communication port for the STC200 controller, free sample LABVIEW driver included
When ordered with the microscope hot and cold stage, or hot and cold chuck, the STC200 will be configured for the particular stage or chuck. The following additional optional parts can be ordered with the controller: Cooling system, using liquid nitrogen or circulation water, plugs into Out2 of the STC200. Circulation water pump, plugs into Out3 of the STC200. DITO1, the c-mount digital camera with temperature overlay, linked with WinTemp software for programmed image capturing.	