

# Heated Stage

## Instruction Manual



The i4 Semen Evaluation Microscope comes equipped with a built-in heated stage. The dual heating elements and thermostat are mounted inside the stage, and the PID temperature controller unit is mounted into the rear panel of the microscope. The red power switch is on the front right panel of the microscope, which will illuminate when power to the heated stage is turned on. Once turned on, the PID temperature controller will show the actual temperature of the stage, and the temperature will gradually increase until it reaches the preset temperature. The stage should reach the correct temperature within 5-10 minutes, depending on ambient temperature. The heated stage may possibly over-shoot the correct temperature slightly, but will settle onto the correct temperature within a few minutes. It is best to turn on your stage 15 minutes before any procedure.

All programming functions of the PID controller have been preset by LW Scientific, and the temperature has been preset to 98.6 degrees F. There are many complicated programming functions built into the PID controller, which should not be altered by the customer. The only two functions that may need to be altered by the customer are "Set Temperature" and "Change from Fahrenheit to Celsius" as described below. If there are any other programming functions that need to be altered, or questions about the operation of the heated stage, please call the LW Scientific technical support department at 800-726-7345.

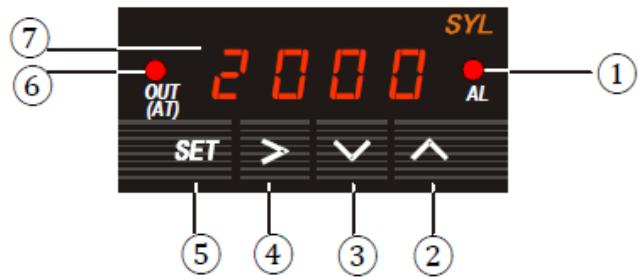


Figure 1. Front panel

- 1 AL- Relay output indicator
- 2 Value increment/Select next parameter
- 3 Value decrement /Select previous parameter
- 4 Auto tuning /Digit shift
- 5 Set/Confirm
- 6 Will not illuminate
- 7 The temperature of the stage (Process Value, or PV) is displayed during operation. The target temperature (Set value or SV) is displayed when flashing (by press v the ^ or key once).

## Set Temperature

- 1 Press **V** or **A** once to display set temp. Display will blink.
- 2 Press **V** or **A** again to increase or decrease set value.
- 3 Wait 8 seconds and the new set value will take effect and stop blinking.

## Change From Fahrenheit To Celsius

\*\*Warning – if you are changing from F to C, lower the temperature setting to 37 degrees FIRST so the stage doesn't try to achieve 98.6 C\*\*

- 1 Press SET. The display will show "0000".
- 2 Press the **>** button to select digits, then press the **^** button to change display to program function "0089".
- 3 Press SET again. The display will show "Inty".
- 4 Press the down arrow twice until you see "C or F".
- 5 Press SET again. The display will show either "0" or "1".
- 6 Press the **^** button choose "0" for Celsius or "1" for Fahrenheit.
- 7 Press SET again.
- 8 Press the **^** button until you see "End".
- 9 Press SET again.

## Specifications

<b>Display:</b>	One line, four digits, °F or °C
<b>Display Resolution:</b>	0.1°F
<b>Accuracy:</b>	+/- 0.2% or +/- 1 unit of full input range
<b>Control Mode:</b>	PID, On/Off, Limit
<b>Output Mode:</b>	Relay contact: 3A at 240v AC
<b>Alarm:</b>	Process High/Low Alarm
<b>Power Consumption:</b>	< 2 watt
<b>Power Supply:</b>	12v DC



**Warning:** The heated stage should be set to a normal body temperature under normal operating conditions. The stage should not be set at a temperature above 110 degrees F (43 C). If the stage is set to a higher temperature, there could be a risk of personal burn injury.