

Using the WS-1500C for controlling the kettle.

- 1) Make sure the sensor is immersed in the kettle. If there is enough water, try to not let the sensor tip touch the tip for the best result. This can be done by bend the cable so that the sensor is hang on the side wall without tip touching the bottom.
- 2) The variation of water volume in the kettle will affect the heating speed. It will also affect the control quality. When the water volume is less than 0.5 liter, it might become difficult to control. The optimal PID constant for 1.5 liter and 0.5 litter is slight different. Here is the list.

Volume	P	I	D
1.5 liter	95	80	20
0.5 liter	190	80	20

Please note the difference in performance with these two sets of parameter is very small. You have to plot the temperature response curve to see it. If you change the water volume all the time, you don't need to change the parameter. But if you always use the same amount of water, you might want set the parameter for the volume you used. Basically, the difference is in the P value. Use large value if volume is small, use smaller value if volume is large. Both sets of parameter will work reasonably well for the whole range.