

Quick Guide for Charcoal Smoker Controller SYL-1615

Version 1.2
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This SYL-1615 temperature controller is for charcoal smokers. To operate it, connect the 12 VDC power adapter to the POWER INPUT connector (①) and wall outlet. Connect the fan connector to the OUTPUT connector (②). The polarity for this socket is center pin positive (+), outer collar negative (-). Connect the type K thermocouple to the INPUT socket (③). **Please note that thermocouple connector also has polarity. The wide blade should go to wide slot.**

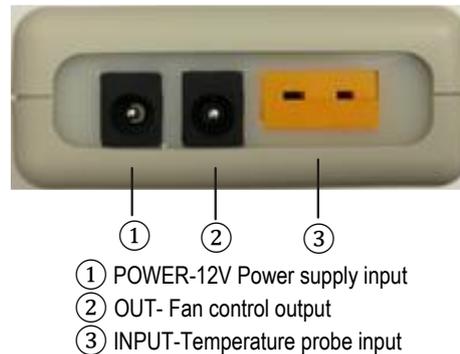


Figure 1. Controller connector identification.

Application Tips

- 1) Lower Vents. The temperature in a Smoker/BBQ pit is mainly affected by two factors: the fuel and the air flow. When you use a PID controller and a blower on a BBQ or smoker, the goal is to let the controller to take over the control of the air flow. So, if there were multiple lower vents on the smoker, use one of them to mount the blower, and fully close all other lower vents. If there is a big gap between the blower and the vent, please seal the gap with a piece of aluminum tape or a silicone gasket.
- 2) The top vents should be closed down a little bit than you normally would when cooking without a controller and blower. For WSM, we recommend setting the top vent to 1/4" wide. For Kamado style smokers such as the Big Green Eggs, the top vent opening needs to be set very small. To maintain the cooking temperature at the lower range (around 225°F), please close the bottom vent completely and only open the top vent to about 1/16" (1.6 mm).
- 3) The default PID parameters (Change P = 1.2, I = 300, D = 70) are optimized for charcoal smokers. Normally users don't need to change them. But if you are experiencing big temperature oscillation, you can try another set of PID parameters which makes the controller approach the target temperature more gently. Please set P = 1.8, I = 1200, D = 70. You'll also need to adjust another parameter SF (under access code 0037) and set it to SF = 30. Please DO NOT change other parameters under this code. If you need further information about how to fine tune the controller or access the parameters, please refer to the instruction manual.
- 4) The thermocouple cable is food grade, which is insulated by TEFLON (PFA) with stainless steel over braid. The maximum working temperature for the cable is 500°F. Please do not drop the cable on top of the flame or drape it over the fire box.
- 5) Set the target temperature. There are two ways to set the target temperature:
 - a. During the normal operation mode, press \wedge or V once to switch the display from process value (PV) to set value (SV, or target temperature). The display will start to blink. Press \wedge or V again to increase or decrease the SV. When finished, wait 8 seconds and the setting will take effect automatically (the display will stop blinking).
 - b. Press SET key once. Use >, \wedge and V keys to enter code 0001. Press SET key to confirm, then the display would be SV (Su). Press SET key again to display the SV setting. Use >, \wedge and V keys to enter the new SV and press SET to confirm.

Press V key to change the display to END. Then, press SET to exit. You can also ignore the steps after confirmation of SV. The controller will return to normal operation mode if no key is pressed for 1 minute. Figure 2 is a detailed flow chart that shows how to set the SV.

6) Set the alarms.

The controller offers two alarms that can be set to turn on the buzzer at specific temperatures. The first alarm is controlled by parameter AH1 and AL1. The initial setting will turn on the buzzer at 250°F and off when temperature drops below 249°F. The second alarm is controlled by parameter AH2 and AL2. The initial setting of the second alarm is deactivated. It can be set as low alarm to send warning when charcoal is low.

AH1 and AH2 are the temperature to turn buzzer on; AL1 and AL2 are the temperature to turn buzzer off. When AH1(2) > AL1(2), the alarm is set for absolute high alarm, When AH1(2) < AL1(2), the alarm is set for absolute low alarm, When AH1(2) = AL1(2), the alarm is deactivated.

For example, if AH1 = 250, AL1 = 249, when the temperature goes up to 250°F, the buzzer will be on; when the temperature drops down to 249°F, the buzzer will be off. If AH2 = 180, AL2 = 185, when the temperature drops down to 180°F, the buzzer will be on; when the temperature goes up to 185°F, the buzzer will be off.

User can press the shift key (>) to temporarily silence the buzzer sound alarm. The alarm will buzz again if the alarm set temperature is reached again. To permanently deactivate the alarm, set AH1 = AL1 or AH2 = AL2. Please see flow chart below on how to set the value.

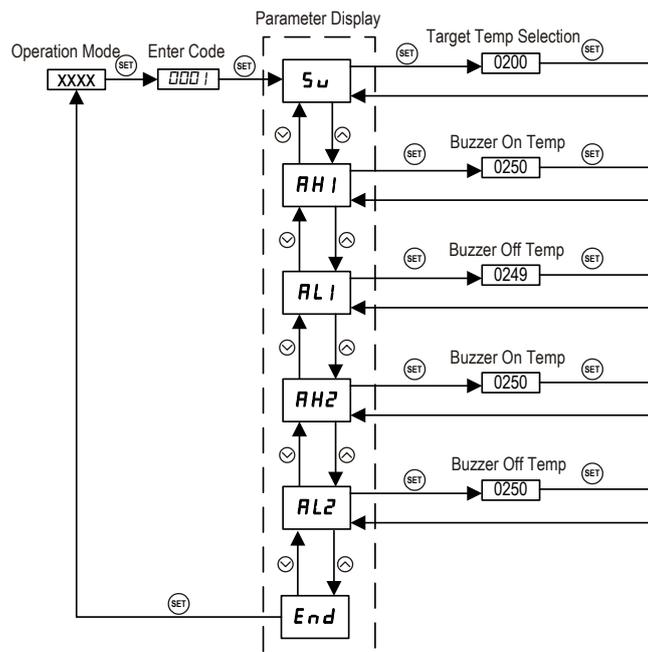


Figure 2. Flow charge of how to set the target temperature (SV) and alarms.

(End)

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