

# SmartPID PRO quick start guide

**SmartPID BBQ** is a kit for temperature and cooking process management in charcoal systems, complete with everything you need. Contents of the pack are the following:

- SmartPID control unit
- 4 probes type NTC 100K – beta 3950
- 220V power supply with USB 5V 2A output
- Adapter cable USB 1.5m
- PWM 4 - wires fan with speed control and tachometer
- Stainless bracket 1/2" female thread output
- Mounting accessories



Operating principle of SmartPID controller for temperature management in a charcoal BBQ it's easy: the controller handles speed of a dedicated fan and adjusts airflow on the embers in an inversely proportional way to the difference between the grill temperature and the one set (PID control) in order to gradually reach the desired temperature and keep it constant.

Besides, SmartPID controller for BBQ disposes of a range of intuitive features for cooking process management  
Double PIT / FOOD independent control channel

- 3 FOOD probes with FOOD master selection
  - Four different modes of operation
  - Monitor temperature
- Manual with fixed fan speed setting
  - Automatic mode with PID-PWM control of the fan
- Advanced mode with possibility of setting cooking programs
  - PID-PWM modulation of fan speed 0-100%
  - Speedometer with graphic and numeric indication of speed
  - Adjustable alarm thresholds for PIT/FOOD channel

- Advanced cooking functions
  - Open lid automatic detection
- "Stall" function on FOOD channel
- "Rest" function at the end of cooking
- Differential cooking program

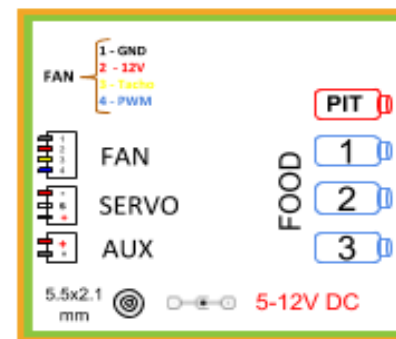
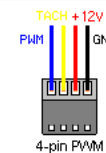
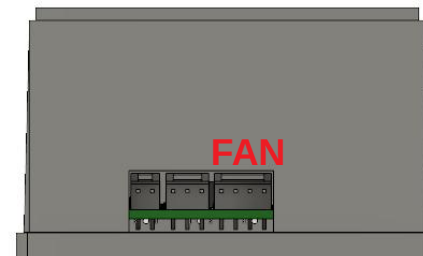


To connect to smartPID BBQ controller the fan and the temperature probes, please refer to the following connection diagram



**PIT FOOD 1,2,3**

The connection of the **4 – wire fan** (included in the kit) must be performed on the right connector according to the following scheme



Main technical characteristics

<p>4 Probes (3 Food + 1 PIT)</p>	<p>PID control of grill temperature</p>	<p>Fan speed modulation from 0 to 100%</p>
<p>Configurable NTC beta Probes</p>	<p>4 wire fan support with PWM and tachometer</p> <p>4 wires PWM</p> <p>14CFM</p>	<p>220v power supply or with USB 5V battery pack</p>
<p>Configurable alarm thresholds on PIT and FOOD channel</p>	<p>Wi-Fi connection for remote monitoring and control</p>	<p>Desktop and smartphone universal WEB APP</p>

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## SmartPID connection to Wi-Fi network and initial setup

To connect SmartPID to Wi-Fi network and to server for remote management you need to run a series of simple operations:

### Wi-Fi Network and Password Configuration

- 1) Switch on SmartPID and access Connectivity/MQTT → WiFi menu and se **WiFi mode AP** (access point)



- 2) Run a scan of Wi-Fi networks from your own smartphone or from a PC with Wi-Fi connection
- 3) Select SPC1000\_XXXXXXXXXX network and connect. To password prompt enter **"smartpid!"**
- 4) Open an internet browser and in the URL bar enter 192.168.4.1 value
- 5) In the browser appears a form with a series of fields to be filled

SmartPID Wi-Fi Configuration

WiFi Network

SSID: smartpid

Password: smartpid01

MQTT Broker IP Address: 160.153.225.184

MQTT Broker Port: 1883

MQTT User Name:

MQTT Password:

Local Server Port: 80

Serial Baud Rate: 57600

IP 18.196.43.33

1883

Username APP registration

PWD APP registration

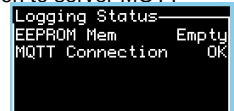
- 6) Save, smartPID makes the reboot
- 7) Access Connectivity/MQTT → WiFi menu and set up WiFi mode **Client**



- 8) Verify in the menu SSID and Password the accuracy of the information
- 9) In the Status menu, if everything is correct, you'll find the "connected" status and IP address assigned by home router
- 10) Access Connectivity/MQTT → Logging menu and enable log mode via Wi-Fi and set up sample time 5s



- 11) Check in the Connectivity/MQTT → Logging → status menu the correct connection to server MQTT

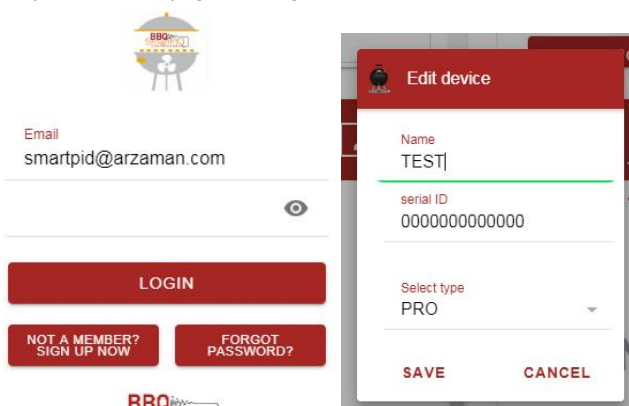


## Smartphone / desktop remote management with Web App

For remote control via smartphone or pc desktop you need to open on the browser (chrome, mozilla, safari) the following link

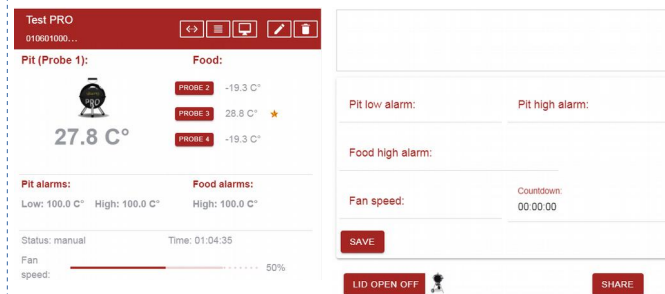
<https://mybbq.smartpid.com>

- 1) Open the home page and Login



- 2) When you first open it, sign up entering your email and a personal password
- 3) With + key from the home page add your own controller assigning a name and entering the 14-digit serial number (value showed on start up screen) and selecting "PRO" type

At this stage the app is ready to use and on the main control panel it displays PIT channels and three FOOD probes temperatures with the possibility to select Master and related thresholds, fan speed and event notifications. In commands section you can change alarms, timer and force the lid open status



Similarly, you can change Kp Ki Kd PID parameters and min-max fan speed. Moreover, you can set advanced cooking programs (differential cooking) and save them on the controller for execution

SmartPID BBQ controller management, can be done not only with the web app, but also with the 4 function buttons on the panel

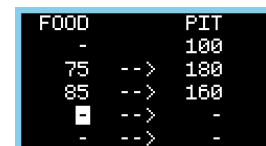
- **UP/DOWN** → navigate through menus, change configuration parameters, increase and decrease temperature threshold values, change timer, select food master
- **SET** → confirm selections and access sub menu
- **S/S** → start/stop, go back to previous menus, select threshold to be changed (run mode), stop process (long press)

Once the controller SmartPID BBQ is configured you can access the "control mode" operational menu in three possible modes

- 1) **Manual** → the two channels temperature is tracked and fan speed is manually adjusted



- 2) **Automatic** → once fixed the PIT (PIT HI) channel set point the fan is automatically controlled by the PID-PWM algorithm
- 3) **Advanced** → channel PIT set point is the FOOD temperature function, hence you can set differential cooking programs



In operational mode various alphanumeric information is available on the display (click on SET to modify display)

