

# ESP32 Temperature Monitoring PWM Control Board, Part No. FB6261

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See: <https://github.com/fpovoski/ESP32-Temperature-Monitoring-PWM-Control-Board>

## Setup and Configuration

### \* Home Assistant Configuration

api:

encryption:

key: "itqzvvhZMJ8wuTJX0GTOuL/ffESFROzUImcO0u2+sfo=" #use your own HA generated Key

\* DO NOT ATTEMPT TO POWER FANS FROM USB-C. Supplied power (5v-14V) to barrel connector needs to match the voltage of the PWM fan (or other device) you are driving. Board has an onboard self-resetting flex fuse rated at 10 amps.

\* To place on WiFi network use 2.4G phone to connect to "AVFAN1 Fallback Hotspot" with the password "esphome1" ("trek6666" in some factory flashed). Once connected to your WiFi network, to access the webpage of the device browse to <http://avfan1.local>

\* Device is flashed with an example ESPHome binary image that has manual control over fans and automatic control based on the measured temperature and the target temperature setting. Four temperature sensors control each of the four PWM fan connectors. The lambda function in the Dallas Platforms calculates and sets the corresponding fan speed. Flashed binary image has "api:" enabled, MQTT disabled.

\* For customization, download the example (flashed) code from <https://github.com/fpovoski/ESP32-Temperature-Monitoring-PWM-Control-Board> (avfan1.yaml). Also update WiFi and MQTT server credentials as required.

\* Flash over USB or ethernet. To flash over USB use ESPHome Web Flasher <https://web.esphome.io/> with the device powered and connected to your host machine.

\* For Dallas temperature sensors, the factory firmware is now flashed using "Indexed" sensor addressing. Just add your sensors and by raising the temperature on each one individually you can determine the number of the sensor.

\* For adding Wemos style boards (i.e., relay) with the case installed use the long (19mm) provided pins.

\* For voltage selection of JST SH connector (J10) use J11 (+5V - J11.1 to J11.2, +3.3V - J11.3 to J11.2)

### Connector to GPIO Mapping

GPIO	PIN	CONNECTOR	Input	Output	Notes
0	25		pulled up	OK	outputs PWM signal at boot, must be LOW to enter flashing mode
1	35	P2.1	TX pin	OK	debug output at boot
2	24		OK	OK	conn. to on-board LED, must be left floating or LOW to enter flashing mode
3	34	P2.2	OK	RX pin	HIGH at boot
4	26		OK	OK	
5	29	P1.7	OK	OK	outputs PWM signal at boot, strapping pin
6	20		x	x	connected to the integrated SPI flash
7	21		x	x	connected to the integrated SPI flash
8	22		x	x	connected to the integrated SPI flash
9	17		x	x	connected to the integrated SPI flash
10	18		x	x	connected to the integrated SPI flash
11	19		x	x	connected to the integrated SPI flash
12	14		OK	OK	boot fails if pulled high, strapping pin
13	16	PWM1-(J4)	OK	OK	
14	13	PWM2-(J5)	OK	OK	outputs PWM signal at boot
15	23		OK	OK	outputs PWM signal at boot, strapping pin
16	27	P2.6	OK	OK	
17	28	P2.5	OK	OK	
18	30	P1.4	OK	OK	
19	31	P1.5	OK	OK	
20					
21	33	P2.4, SDA-(J10)	OK	OK	

22	36	P2.3, SCL-(J10)	OK	OK	
23	37	P1.6	OK	OK	
24					
25	10	PWM3-(J6)	OK	OK	
26	11	P1.3	OK	OK	
27	12	1WIRE	OK	OK	
32	8	PWM4-(J7)	OK	OK	
33	9	RPM1-(J4)	OK	OK	
34	6	RPM2-(J5)	OK		input only
35	7	RPM3-(J6)	OK		input only
36	4	P1.2	OK		input only
39	5	RPM4-(J7)	OK		input only
EN	3	P1.1			
3.3	2	P1.8			
GND	1	P2.7			
GND	15				
GND	38				
NC	32				
+5		P2.8			

### Dallas One-wire Connectors

CONN	PIN1	PIN2	PIN3
J1	+3.3V	IO27	GND
J2	+3.3V	IO27	GND
J2	+3.3V	IO27	GND

### PWM KK Style Headers: PIN3 - Fan Speed Input, 5V Tolerant, 1K Pullup Resistor

PIN4 - Fan PWM Output, 5V Drive

CONN	PIN1	PIN2	PIN3	PIN4
J4	GND	+5/12V	IO33	IO13
J5	GND	+5/12V	IO34	IO14
J6	GND	+5/12V	IO35	IO25
J7	GND	+5/12V	IO39	IO32

### JST SH (STEMMA QT/QWIIC)\*

CONN	PIN1	PIN2	PIN3	PIN4
J10	GND	+3.3/5V	IO21	IO22

### \*1.27MM JUMPER HEADER: PIN1-2 -> +5V, PIN3-2 -> +3.3V

CONN	PIN1	PIN2	PIN3
J11	+5V	GND	+3.3V

**J8** USB2.0 on USB-C (USB can be connected when barrel connector power).

**J9** +5/12V 10 amps max. to board and fans. (5-14v range, needs to match devices on J4-J7)

**P1** and **P2**: Standard WEMOS D1 Expansion Header