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› [DollaTek](#) /

› DollaTek 12V DC PWM Fan Temperature Control Speed Controller Module User Manual

DollaTek ELA20606

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Model: ELA20606

1. INTRODUCTION

This manual provides detailed instructions for the DollaTek 12V DC PWM Fan Temperature Control Speed Controller Module. This industrial-grade controller is designed to manage fan speed based on temperature, contributing to energy savings and noise reduction in various applications.

Key applications include:

- Energy saving for outdoor chassis and cabinet fans.
- Energy saving and noise reduction for computer room fans.
- Other applications requiring fan temperature control and speed regulation.

2. PRODUCT OVERVIEW AND COMPONENTS

Familiarize yourself with the module's components before proceeding with installation.

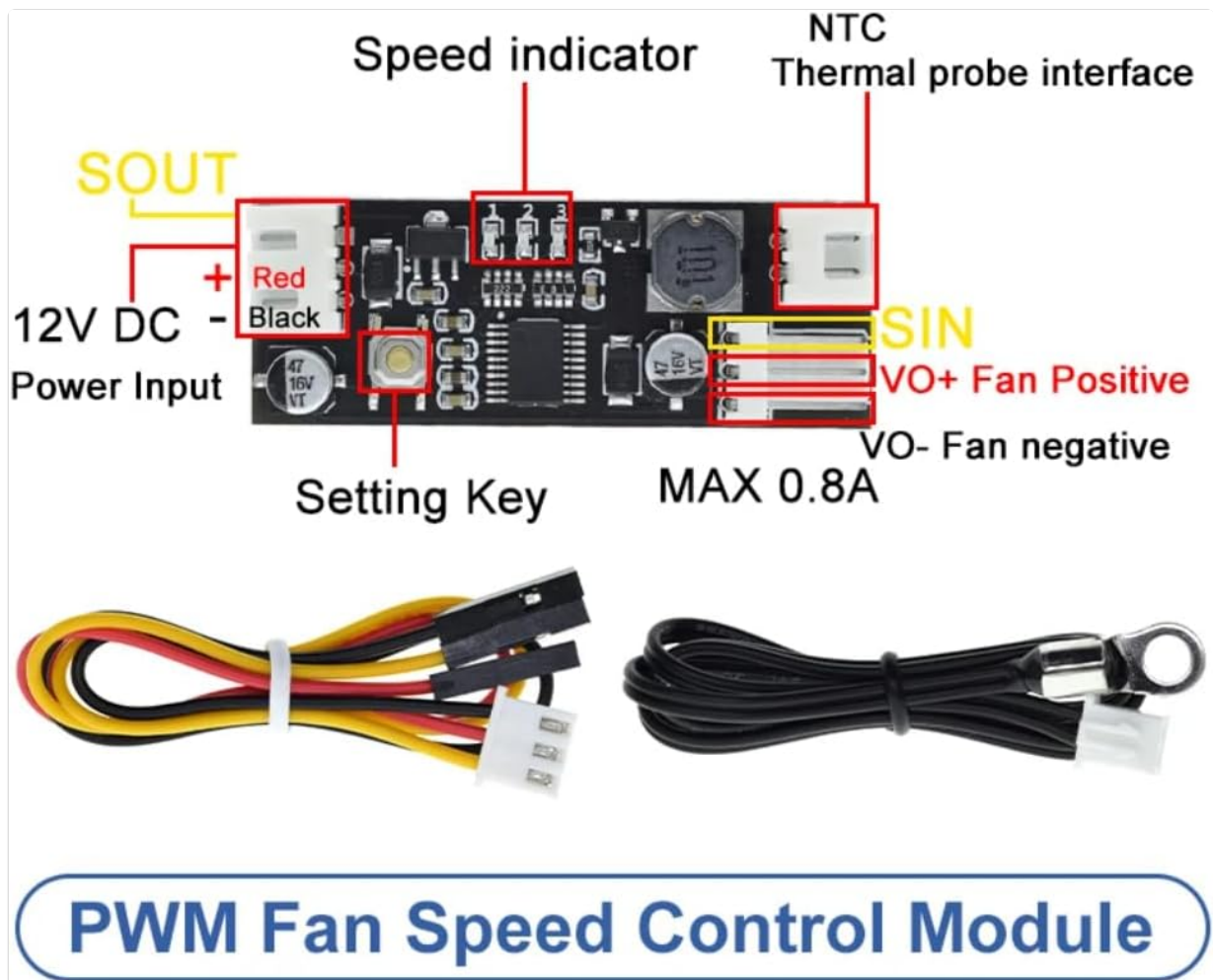


Figure 2.1: Module Components

This image displays the DollaTek PWM Fan Controller with its key components labeled. These include the Speed Indicator LEDs, NTC Thermal Probe Interface, 12V DC Power Input, and the Setting Key.

- **12V DC Power Input (XH-3P)**: Connects to the 12V DC power source.
- **Fan Interface (KF2510-3P)**: Connects to the fan. Supports up to 0.8A.
- **NTC Thermal Probe Interface (XH-2P)**: Connects to the NTC temperature sensor.
- **Setting Key**: Used to configure temperature thresholds.
- **Speed Indicator LEDs**: Provide visual feedback on fan speed and setting modes.

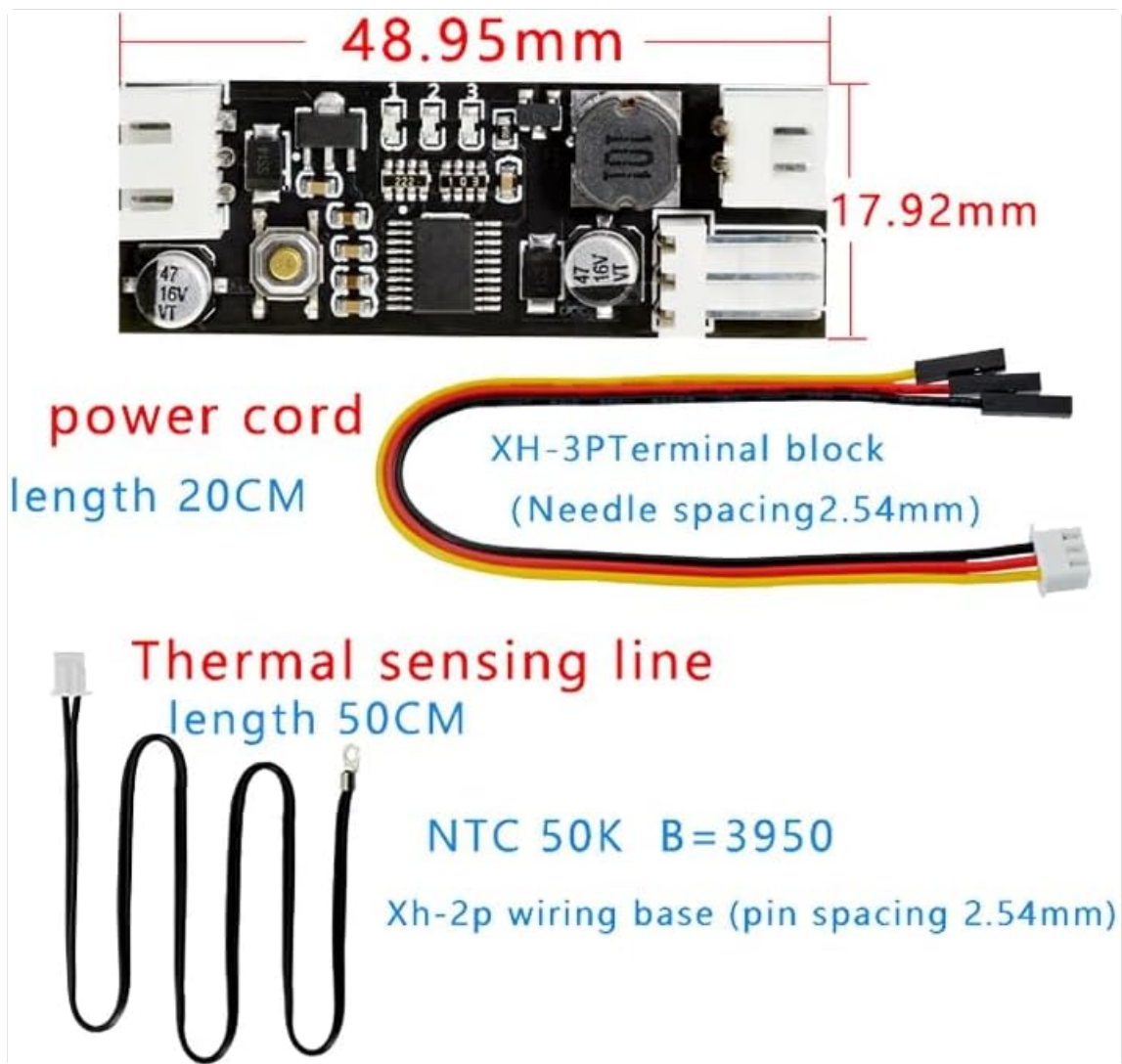


Figure 2.2: Module Dimensions and Cable Details

This image shows the physical dimensions of the DollaTek PWM Fan Controller (48.95mm x 17.92mm) and details of the included power cord (XH-3P terminal block, 20cm length) and thermal sensing line (NTC 50K B=3950, XH-2P wiring base, 50cm length).

3. SETUP AND WIRING

Follow these steps to correctly connect the module.

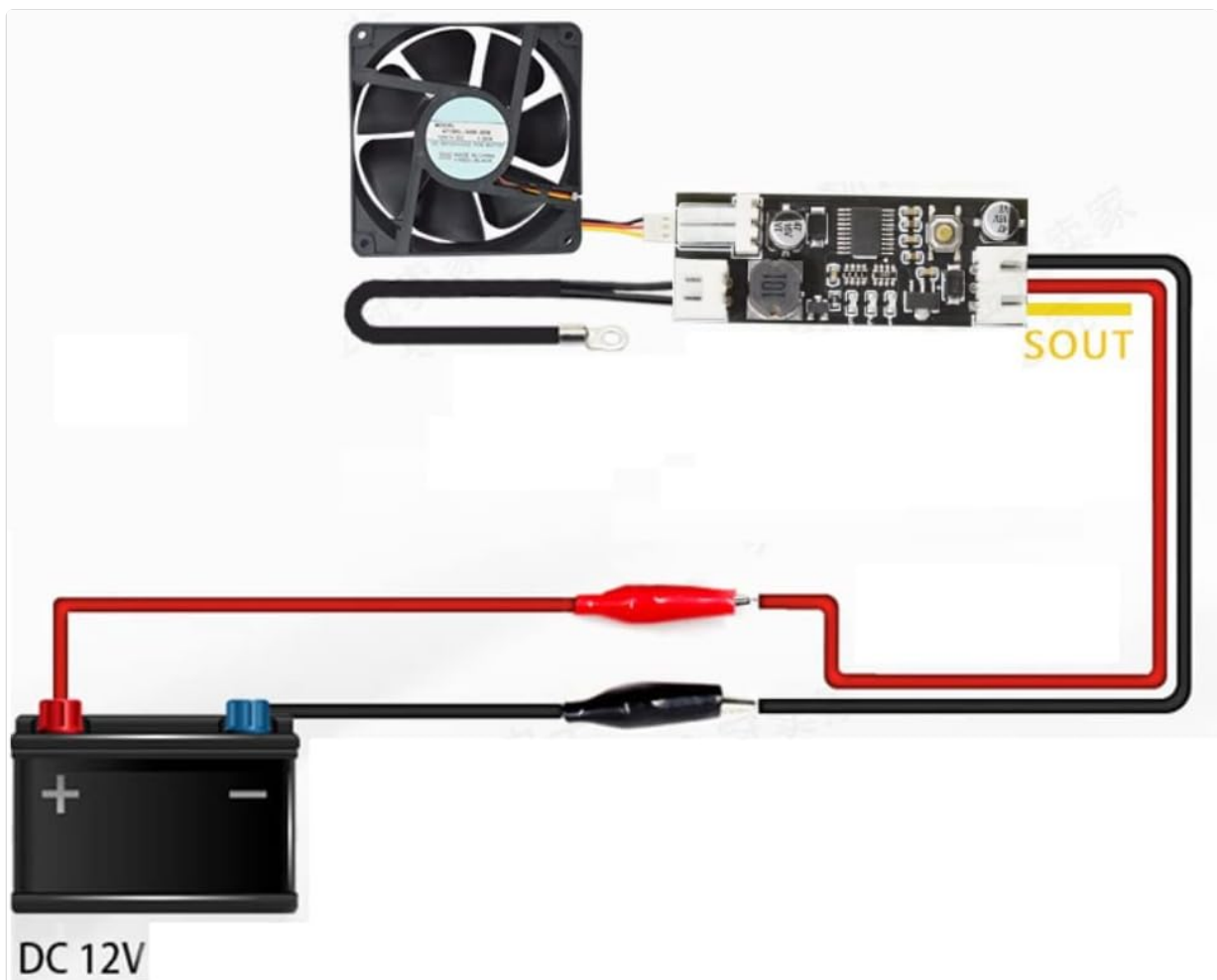


Figure 3.1: Wiring Diagram

This diagram illustrates how to connect the DollaTek PWM Fan Controller. It shows the 12V DC power source connected to the module's power input, the fan connected to the fan output, and the NTC temperature sensor connected to its dedicated interface.

1. **Power Connection:** Connect your DC 12V power source (within 9-14V range) to the XH-3P terminal block. Ensure correct polarity: Red wire to positive (+), Black wire to negative (-). The module has input reverse polarity protection.
2. **Fan Connection:** Connect your fan to the KF2510-3P terminal block. Ensure the fan's positive and negative terminals match the module's output. The maximum fan current supported is 0.8A. Do not exceed this limit as there is no output overload protection.
3. **Temperature Probe Connection:** Connect the NTC 50K temperature probe to the XH-2P terminal block. The probe has a length of 50cm and a resistance of 110°C for the ring probe.

4. OPERATING INSTRUCTIONS

4.1. Setting Temperature Thresholds

The module allows you to set two temperature thresholds: the fan startup temperature and the full-speed temperature.

1. **Enter Startup Temperature Setting Mode:** Press and hold the Setting Key for approximately 3 seconds. The Speed Indicator LEDs will blink normally (not rapidly) to indicate you are in this mode.
2. **Adjust Startup Temperature:**

- **Increase Temperature:** Single-click the Setting Key.
- **Decrease Temperature:** Double-click the Setting Key rapidly.

The blinking pattern of the LEDs corresponds to different temperature settings. For example, a single left LED blinking might indicate 30°C, while a middle LED blinking might indicate 35°C. Adjust until the desired startup temperature is set.

3. **Enter Full-Speed Temperature Setting Mode:** After setting the startup temperature, press and hold the Setting Key again for approximately 3 seconds. The Speed Indicator LEDs will now blink rapidly/hectically, indicating you are in the full-speed temperature setting mode.
4. **Adjust Full-Speed Temperature:**
 - **Increase Temperature:** Single-click the Setting Key.
 - **Decrease Temperature:** Double-click the Setting Key rapidly.

Similar to the startup temperature, the LED blinking pattern will indicate the current full-speed temperature setting. Adjust until the desired full-speed temperature is set.

5. **Save Settings and Exit:** Press and hold the Setting Key for 3 seconds or longer. The LEDs will stop blinking and remain solid, indicating that the settings have been saved and the module is operating normally.

4.2. Initial Fan Startup Adjustment

Many fans may run at low power but might not reliably start from a complete stop at very low speeds. To ensure proper operation:

1. When setting the minimum speed of the temperature controller, first set it to the lowest possible speed.
2. Manually stop the fan (if it's already spinning).
3. Gradually increase the minimum speed setting step-by-step until the fan consistently starts normally from a stopped state.
4. Once you have found this reliable minimum startup speed, do not set the controller below this position, as the fan may fail to start at lower RPMs.

5. MAINTENANCE

The DollaTek PWM Fan Controller Module requires minimal maintenance.

- Keep the module clean and free from dust and debris.
- Ensure adequate airflow around the module to prevent overheating.
- Avoid exposing the module to moisture or extreme temperatures outside its operating range.

6. TROUBLESHOOTING

If you encounter issues with your module, refer to the following troubleshooting tips:

- **Fan not starting at low speed:** Refer to section 4.2 "Initial Fan Startup Adjustment" and adjust the minimum speed setting to ensure the fan can reliably start.
- **No fan operation:**

- Check all power connections to ensure they are secure and correctly polarized (Red to +, Black to -).
- Verify that the input voltage is within the specified DC 9-14V range.
- Ensure the fan is correctly connected to the KF2510-3P terminal.
- Confirm the NTC temperature probe is securely connected to the XH-2P terminal.
- **Incorrect temperature readings:** Ensure the NTC probe is properly installed and making good contact with the surface or area whose temperature is to be monitored.
- **Module not responding to settings:** Re-attempt the setting procedure (Section 4.1), ensuring that the Setting Key is pressed and held for the correct durations (approximately 3 seconds) to enter and exit setting modes and save changes.
- **Fan current overload:** The module does not have output overload protection. If the fan draws more than 0.8A, it may damage the module. Ensure your fan's current draw is within the specified limit.

7. SPECIFICATIONS

Feature	Specification
Operating Voltage	DC 12V (9-14V range)
Input Reverse Polarity Protection	Yes
Output Overload Protection	No
Power Interface	XH-3P terminal block (pin pitch 2.54mm)
Max Fan Current	0.8A (do not overload)
Fan Interface	KF2510-3P terminal block (pin pitch 2.54mm)
Temperature Probe Parameters	NTC 50K B=3950, length=50cm
Temperature Sensor Interface	XH-2P terminal block (pin pitch 2.54mm)
Temperature Probe Resistance	Ring probe 110°C
PWM Output Range	5%-100%
Operating Temperature	-20 to 60 degrees Celsius
Dimensions	43 x 18 x 9 mm
Weight	10 g
Manufacturer	DollaTek
Model Reference	ELA20606

8. WARRANTY AND SUPPORT

For warranty information or technical support, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

