GalaxyElec PM02 V3

GalaxyElec PM02 V3 Power Module Instruction Manual

Model: PM02 V3 | Brand: GalaxyElec

1. Introduction

The GalaxyElec PM02 V3 Power Module is designed to provide a clean power supply to your flight controller and associated accessories, while also offering accurate current consumption and battery voltage measurements. This module is compatible with various flight controllers including APM, Pix32, Pixhawk 4, Pixhawk 4 Mini, and Durandal. It features an integrated switching regulator to deliver stable 5.2V power.

2. Product Overview

2.1 Key Features

- **Max Input Voltage:** 60V
- **Max Current Sensing:** 120A
- **Voltage and Current Measurement:** Configured for 5V ADC
- **Switching Regulator Output:** 5.2V at 3A maximum
- **Connectivity:** 6-position Molex cable for APM/Pix32 'PM' connector; 6-position GH cable for Pixhawk4/Pixhawk4 mini/Durandal 'PM' connector
- Provides clean power from a LiPo battery.
- Measures current consumption and battery voltage.
- Comes pre-assembled with XT60 connectors and protective shrink tubing.

2.2 Package Contents

- 1x PM02 V3 Power Module with XT60 Connectors
- 1x Molex 6 Position Connector Cable (15 cm)
- 1x GH 6 Position Connector Cable (15 cm)

3. Specifications

Parameter	Value
Max Input Voltage	60V
Max Current Sensing	120A
Voltage/Current Measurement	5V ADC
Regulator Output	5.2V @ 3A max
Power Input Connector	XT60
Flight Controller Connectors	6-pos Molex, 6-pos GH
Compatibility	APM, Pix32, Pixhawk4, Pixhawk4 mini, Durandal

4. Setup Guide

4.1 Connecting the Power Module

1. **Connect to LiPo Battery:** Connect your LiPo battery (up to 12S) to the XT60 input connector on the PM02 V3 module. Ensure correct polarity.
2. **Connect to Flight Controller:**
    - For APM and Pix32 flight controllers, use the provided 6-position Molex cable to connect the module to the 'PM' connector on your flight controller.
    - For Pixhawk 4, Pixhawk 4 Mini, and Durandal flight controllers, use the provided 6-position GH cable to connect the module to the 'PM' connector on your flight controller.
3. **Powering Accessories:** The PM02 V3 is designed to power the flight controller, an RC receiver, and accessories such as GPS or radio modules. It provides a regulated 5.2V at up to 3A.

Important Note: The PM02 V3 Power Module is not designed to power servos. For servo power, use your aircraft's dedicated ESC/BEC (Electronic Speed Controller/Battery Eliminator Circuit).

Image: The PM02 V3 Power Module showing the XT60 connectors for battery input/output and the two signal cables (Molex and GH) for connecting to different flight controllers.

5. Operating Instructions

Once correctly connected, the PM02 V3 Power Module will automatically provide power to your flight controller and begin transmitting voltage and current data. This data is crucial for battery monitoring and flight controller telemetry.

- **Power Delivery:** The module converts the LiPo battery voltage to a stable 5.2V for your flight controller and compatible accessories.
- **Telemetry:** The module continuously measures the battery's voltage and the current being drawn by the system. This information is sent to the flight controller via the connected signal cable (Molex or GH) and can be displayed in your ground station software.
- **Calibration:** For accurate voltage and current readings, it is recommended to perform a power module calibration within your flight controller's ground station software (e.g., Mission Planner, QGroundControl) after initial setup. Refer to your flight controller's specific documentation for calibration procedures.

Image: Top view of the PM02 V3 Power Module, showing the main circuit board and XT60 connectors.

6. Maintenance

The PM02 V3 Power Module is designed for durability, but proper care ensures longevity and reliable performance.

- **Inspect Connections:** Regularly check all cable connections (XT60, Molex, GH) to ensure they are secure and free from corrosion or damage.
- **Visual Inspection:** Periodically inspect the module and its wiring for any signs of physical damage, such as frayed wires, cracked shrink tubing, or burnt components.
- **Keep Clean:** Ensure the module is free from dust, dirt, and moisture. Use a soft, dry brush or compressed air for cleaning if necessary.
- **Storage:** Store the module in a dry, cool environment away from direct sunlight and extreme temperatures when not in use.

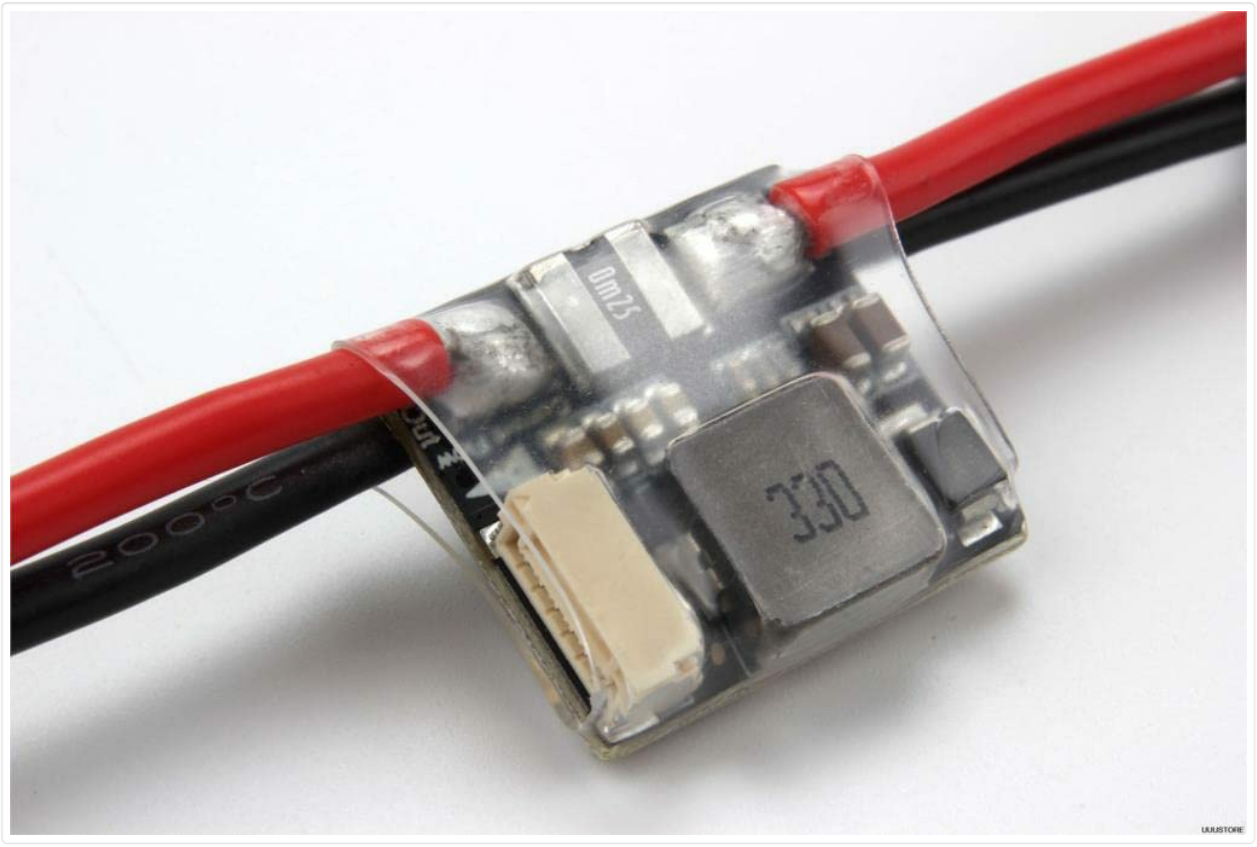

Image: Detailed top view of the PM02 V3 circuit board, showing components and wiring connections.

7. Troubleshooting

If you encounter issues with your PM02 V3 Power Module, consider the following troubleshooting steps:

- **No Power to Flight Controller:**
  - Verify that the LiPo battery is charged and correctly connected to the XT60 input.
  - Check all connections between the power module and the flight controller (Molex or GH cable) for proper seating and continuity.
  - Inspect the power module and cables for any visible damage.
- **Incorrect Voltage/Current Readings:**
  - Ensure the power module is correctly calibrated in your flight controller's ground station software. Refer to your flight controller's manual for specific calibration steps.
  - Confirm that the correct power module type is selected in your flight controller's settings, if applicable.
- **Module Overheating:**
  - Ensure the current draw from your flight controller and accessories does not exceed the module's 3A output limit.
  - Verify that no servos are being powered directly by the module, as this can cause overload.

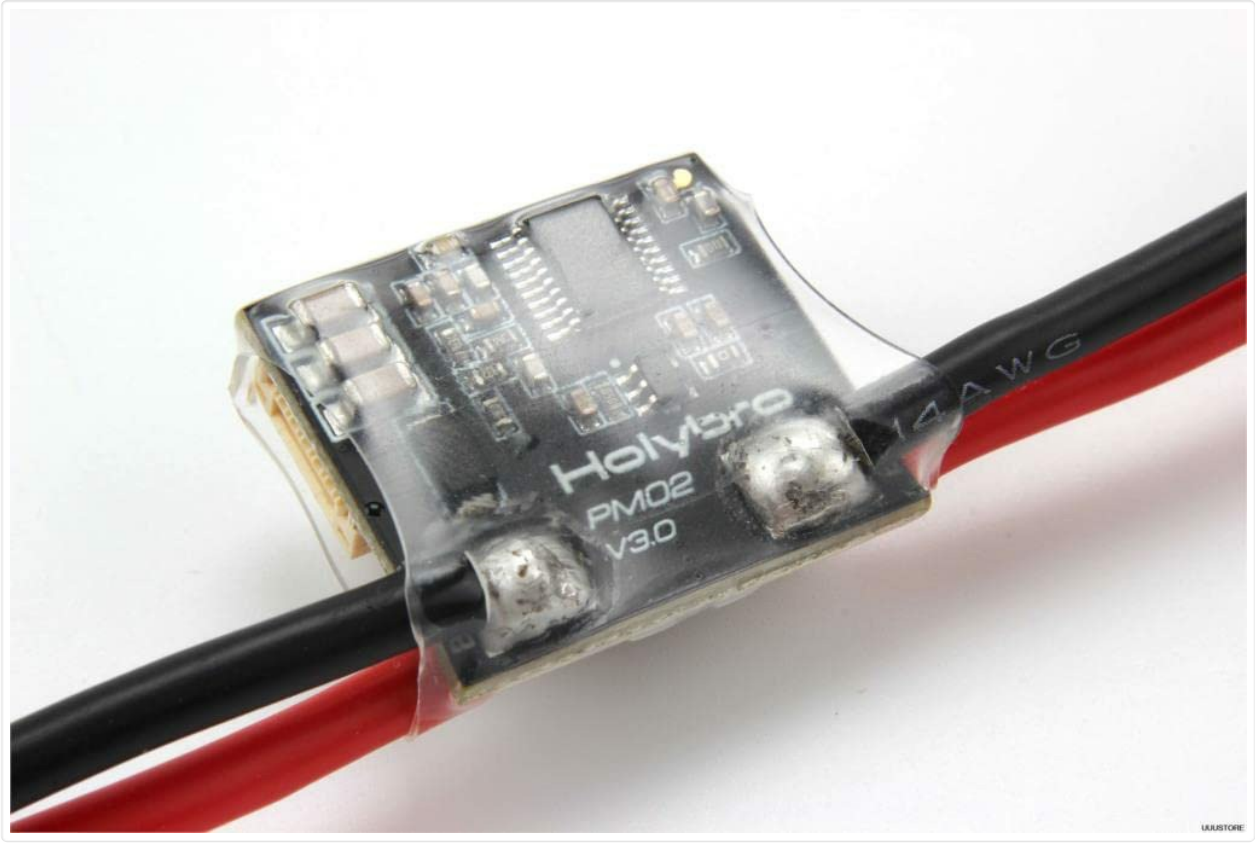

Image: Bottom view of the PM02 V3 Power Module, clearly showing the 'Holybro PM02 V3.0' branding.

8. Safety Information

Always observe the following safety precautions when handling and operating the PM02 V3 Power Module:

- **Correct Polarity:** Always ensure correct polarity when connecting the LiPo battery to the power module. Incorrect polarity can cause severe damage to the module and connected components.
- **Voltage Limits:** Do not exceed the maximum input voltage of 60V.
- **Current Limits:** Do not exceed the maximum current sensing of 120A or the 3A output limit for the regulated 5.2V supply.
- **Short Circuits:** Avoid short circuits at all times. Ensure all connections are insulated and secure.
- **LiPo Battery Handling:** Exercise caution when handling LiPo batteries. They can be dangerous if mishandled.
- **Professional Installation:** If you are unsure about any installation steps, seek assistance from an experienced professional.

9. Warranty and Support

For warranty information, please refer to the terms and conditions provided by your retailer at the time of purchase. For technical support or further inquiries, please contact the manufacturer or your authorized dealer. Keep your proof of purchase for any warranty claims.