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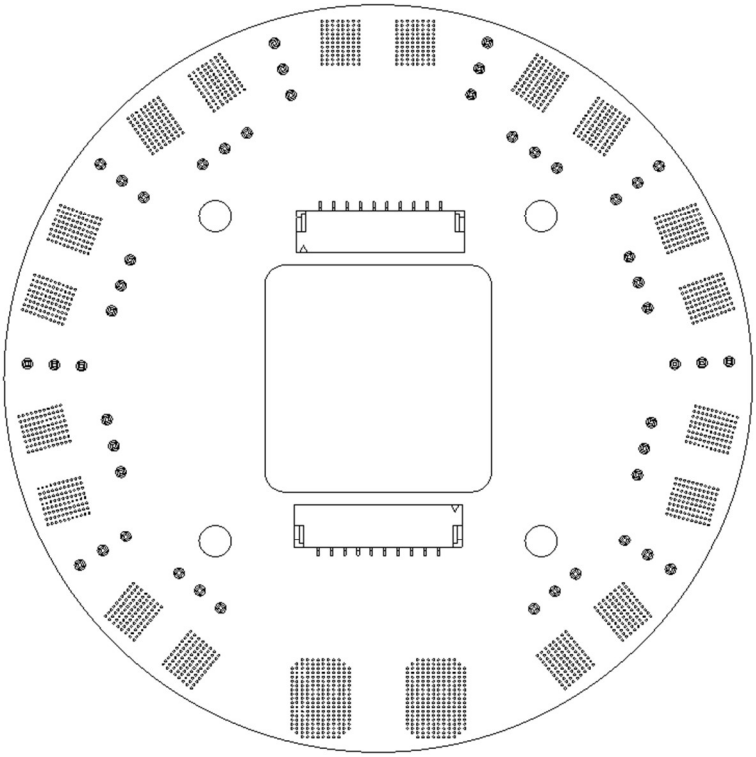
100A Power Distribution Board (PDB)

User Manual V1.0 | 25.02



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Overview

The PDB 100A is a high-performance power management component engineered for advanced aerial and robotic platforms. Its sleek circular form-factor (35 mm radius) and lightweight build streamline integration into quadcopters, octocopters, and various embedded systems while minimizing added weight and drag.

Rated to handle up to 100 A of continuous current, the board supplies robust power to demanding applications and supports up to 8 ESCs, giving you individual control over each motor, ideal for optimizing flight performance.

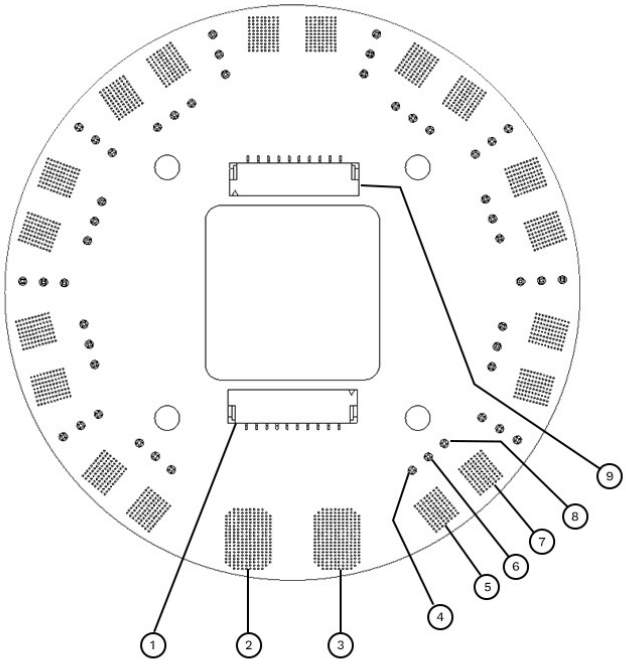
It also includes FMU PWM outputs for Flight Management Unit connectivity, alongside flexible general-purpose PWM I/O channels, enabling smooth operation and customization of peripherals.

Crafted with flame-retardant, glass-reinforced epoxy laminate material FR-4, the PDB 100A resists heat and electrical stress—perfect for rugged use in drones, robotics, RC vehicles, industrial controllers, and more. Its clever design balances power distribution, precision control, and compactness, making it a go-to solution for professional UAV builds and advanced power-critical systems.

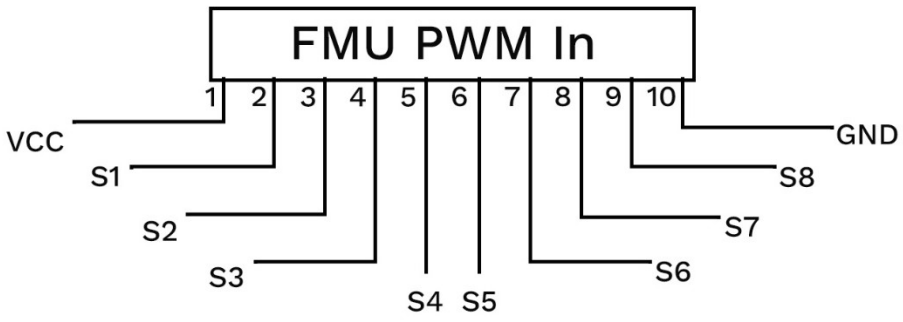
What's in the Box

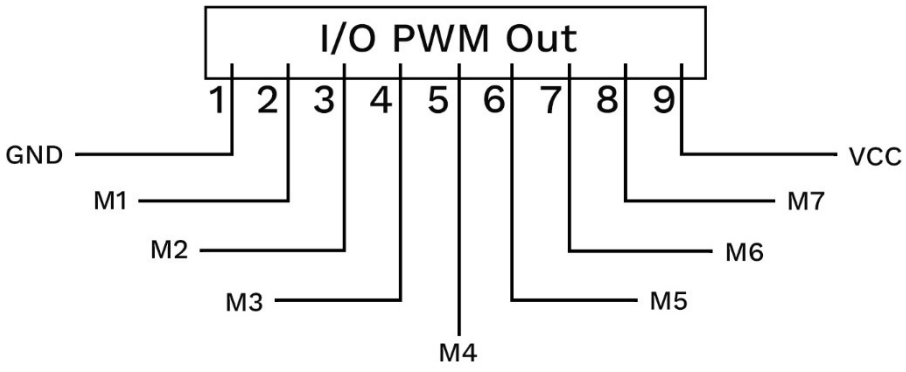
- Power Distribution Board
- User Manual

Know your PDB 100A



1	I/O PWM Input (To Motor)	8	GND
2	Battery Input (+)	9	FMU Input (AUX)
3	Battery Input (-)		
4	ESC Control		
5	ESC (-)		
6	NIL		
7	ESC (+)		





Battery input pads

ESC output pads (×8)

FMU PWM connector

I/O PWM connector

Multiple mounting holes

Physical Dimensions & Weight

- Shape: Compact circular board
- Diameter: 70 mm (35 mm radius)
- Thickness: approximately 2 mm
- Weight: 17 g

Maximum Current Handling

- Continuous Current Rating: 100 A total, supporting up to 8 ESC connections
- Equivalent to approx. 30 A per ESC for quadcopter setups
- Around 12–15 A per ESC when configured for an octocopter

Key Features

- High Current Capacity: Supports up to 100 A continuous current, ensuring reliable power delivery for demanding multi-rotor and other systems
- ESC Support: Offers 1–8 ESC connections, enabling individual motor control—perfect for quadcopters, hexacopters, and even octocopters
- FMU & I/O PWM Outputs: Includes dedicated PWM outputs for Flight Management

Unit integration, plus flexible I/O PWM ports for peripherals and customized setups

- Compact Circular Design: The round form factor reduces drag and maximizes mounting simplicity in tight drone frames
- Quality Construction: Built with flame-retardant, glass-reinforced epoxy laminate material FR-4, offering excellent heat resistance, and long-term durability Aircraft

Technical Specifications

Parameter	Value
Input Voltage	7V – 25.2V (2S–6S LiPo)
Max Current	Up to 100A
PCB Dimensions	36mm radius
Mounting Holes	M3, 30.5mm spacing

Installation Guide

Step 1: Mounting Recommendation

- Secure the PDB using non-conductive standoffs or insulation spacers to prevent shorts.

Step 2: Wiring

- Input Power: Solder battery leads to input pads (Bat + and Bat -)
- ESC Connections: Solder ESC power leads (positive and ground) to the corresponding output pads (ESC+ and ESC -)
- Connect the ESC Control and Ground pin to the ESC
- Connect FMU and I/O PWM Outputs to corresponding ports in the Flight controller

  Caution: Check polarity before soldering. Incorrect wiring can cause permanent damage.

Safety Instructions

- Always disconnect the battery before handling the PDB.
- Do not exceed the rated voltage/current limits.
- Ensure all solder joints are clean and secure.
- Avoid contact with conductive materials when powered.

Testing & Usage

- After installation, double-check all connections.
- Use a multimeter to verify voltage at each output.
- Power the unit briefly to check for heat, sparks, or unusual smell.
- Proceed with connecting other electronics once validated.

Troubleshooting

Issue	Possible Cause	Solution
No power output	Loose connection or cold solder	Recheck and re-solder as needed
Overheating	Excessive load or short circuit	Verify current draw and inspect wiring
One output not working	Damaged trace or component	Inspect visually, consider replacing PDB
BEC output not functional	Wrong polarity or overvoltage	Ensure correct wiring and voltage

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