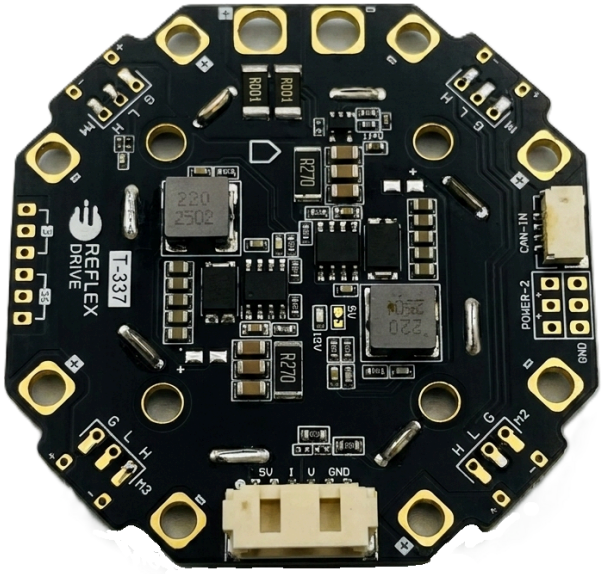
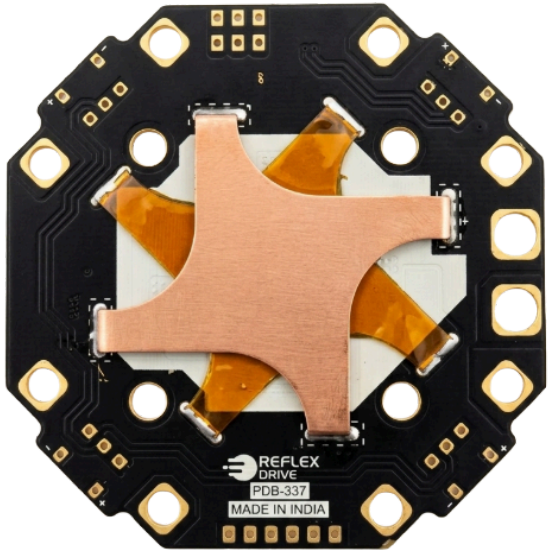
# Reflex Drive

## 150A Advanced Power Distribution Board




6S-12S

150A

5V/3A BEC

12V/5V CONFIGURABLE 3A OUTPUT BEC

1 → 4 PORT CAN BUS SPLITTER

CAP BANK

## Product Description:

**Designed and manufactured in India**, this advanced Power Distribution Board (PDB) is engineered to simplify drone wiring while enhancing power management, monitoring, and system integration for professional UAV platforms. Fully **compatible with Pixhawk flight controllers**, the board combines **power distribution, current and voltage sensing, ESC power filtering, and CAN bus expansion** into a compact and robust solution.

## Key Features

- Integrated Current and Voltage Monitoring
- Dedicated Capacitor Provision for Every ESC
- High-Current Power Distribution
- Built-in CAN Bus Splitter
- Pixhawk Compatible power connector
- Compact and Robust Design

## Applications

- Agricultural Drones
- Survey and Mapping UAVs
- Surveillance Drones
- Industrial Multirotor Platforms
- Research and Development UAV Systems

## Technical Specification:

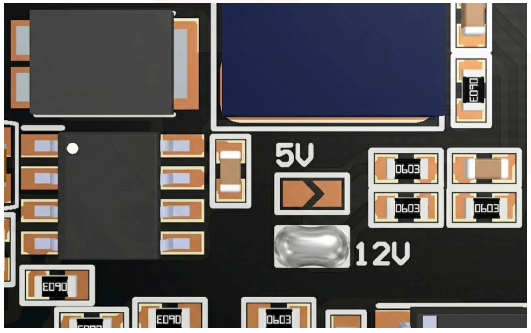
| S. No. | Parameter | Value | Remarks |
|---|---|---|---|
| 1. | Input Voltage | 6S~12S LiPo | - |
| 2. | Peak Current | 150A* | - |
| 3. | Continuous Current | 100A | - |
| 4. | BEC1 Output rating | 5V/3A | - |
| 5. | BEC2 Output rating | 5V/3A or 12V/3A | Configurable |
| 6. | Operating Ambient Temperature | (-20℃) ~ (+ 65℃) | - |
| 7. | 12 Volt supply points and rating | 3 points (Power-2, Configurable) | Configurable and 3A (aggregate)** |
| 8. | 5 Volt supply points | 3 points | 3A (aggregate)** |
| 9. | Layers of Copper / Copper weight | 8 layers / 2 oZ each | - |
| 10. | Inrush Protection | No | - |
| 11. | Sensing (Voltage and Current) | Yes | Analog Output (± 2% Accuracy) |
| 12. | CAN Port | 4 Ports (Solderable Points) | - |
| 13. | Weight | 35 gm | Excluding wires and external capacitors |
| 14. | Number of ESC connections | 4 | - |
| 15. | Flight controller connector | 6 Position Receptacle Connector 0.079" (2.00mm) | Part number : 5024940670 (Molex) |
| 16. | No. of external capacitors can added | 4 | Different capacitors provided with package and can be selected as per requirement |

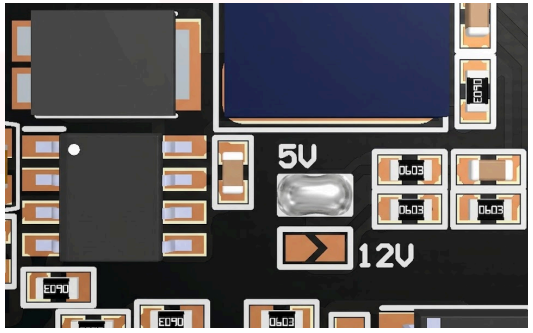
**Note:** * **150 A** is peak current the PDB can handle for 30 Sec

** Please ensure total current taken from BEC1 and BEC2 should not exceed 3A.

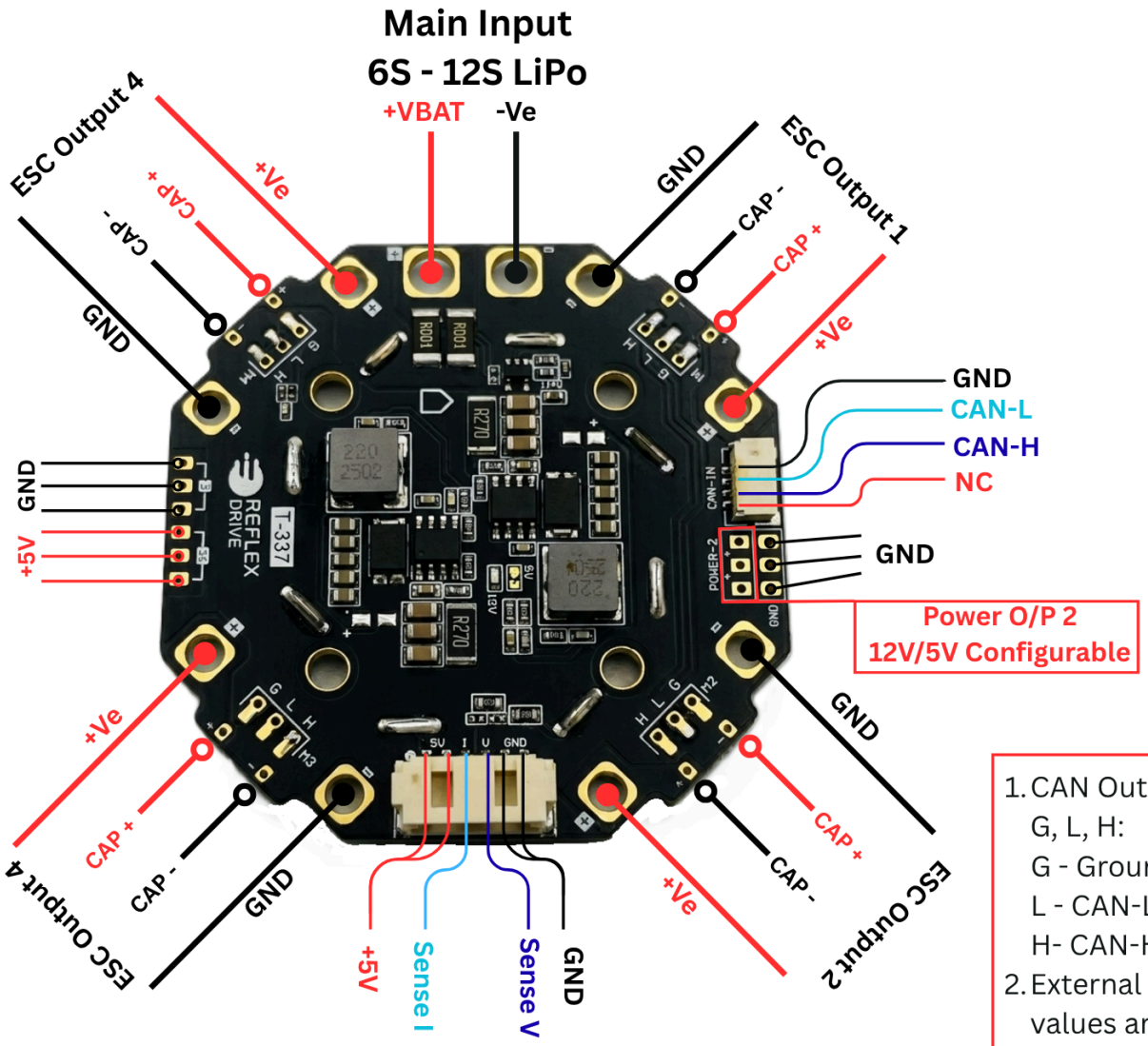
## Precautions:

- Always operate the module within the recommended input voltage range (**15V–50V**). Exceeding this limit may cause permanent damage.
- Ensure correct battery polarity before connecting power. Reverse polarity can instantly destroy the module.
- Do not inject external voltage into the **5V/12V output rail**, as this can damage the onboard regulator.
- Avoid sudden high-current spikes beyond the safe peak limit (~150A short duration).
- Do not short the output terminals (VOUT+ and GND or any power rail onboard), as it may cause severe damage.
- Ensure all high-current connections are properly soldered and mechanically secure. Loose connections may result in:
    - Arcing
    - Voltage drops
    - Unstable telemetry readings
- Do not expose the module to water, oil, dust, or conductive particles unless it is properly sealed. This can cause short circuit or corrosion.
- PDB has 2 Solid copper plates on its backside, and do not place PDB directly over any metallic surface.
- Power port 2 is initially set to 12V. To set it to 5V, please remove the 12V solder joint and short 5V solder bridge as shown Below. Do not short both solder bridge simultaneously, this results undefined voltage output from power port 2



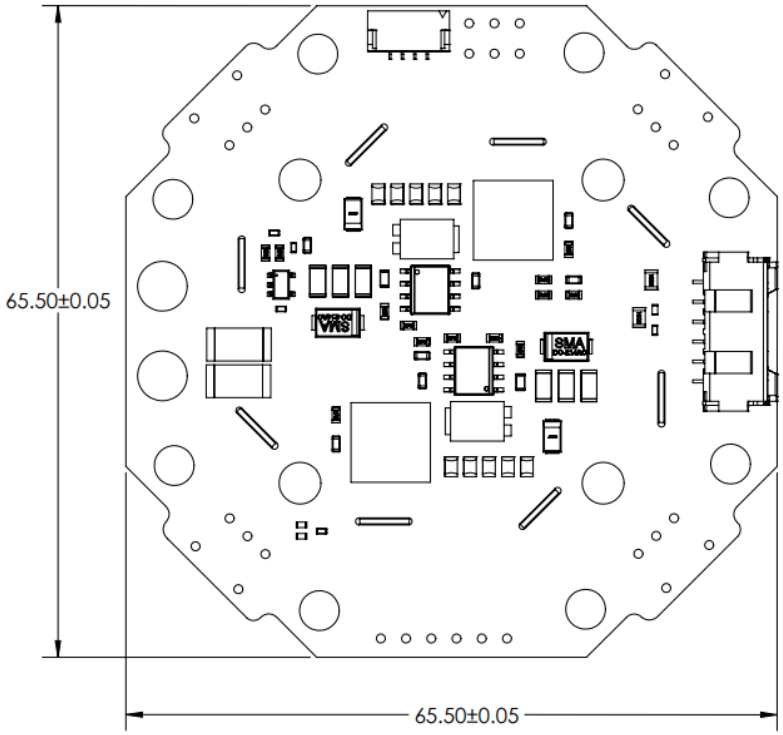



## Pinout Diagram:

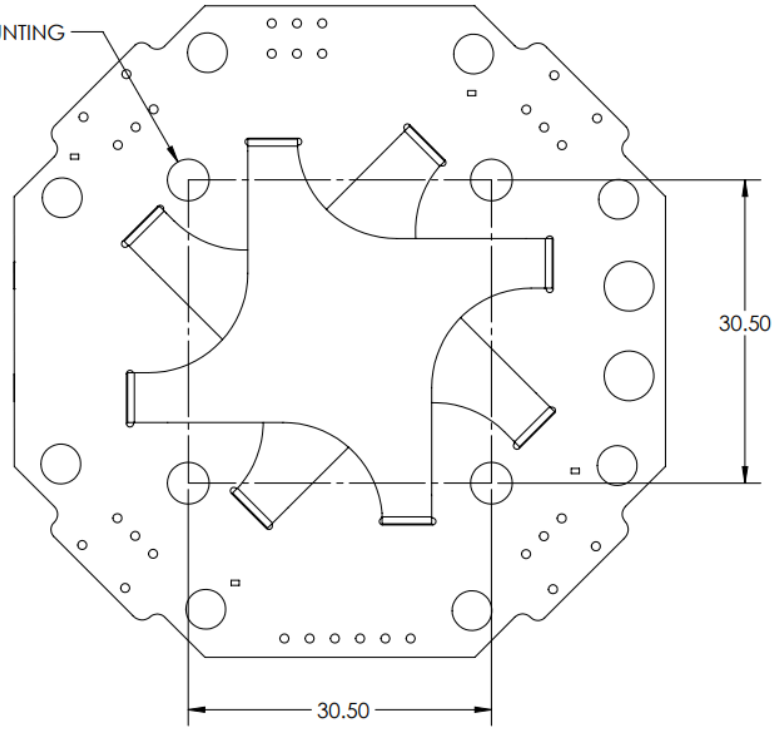



1. CAN Output to ESCs are Marked as G, L, H:
   G - Ground
   L - CAN-L
   H- CAN-H
2. External capacitor with different values are provided with PDB. Solder them as per your application.

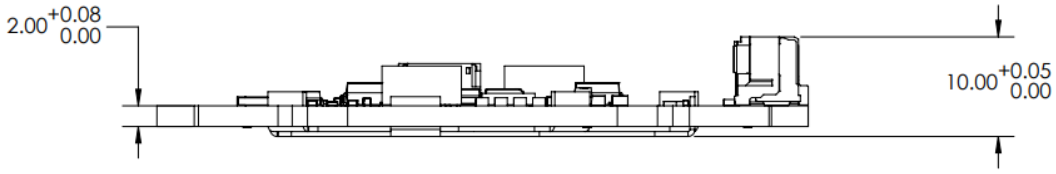
## Engineering Drawing (All dimensions are in mm):



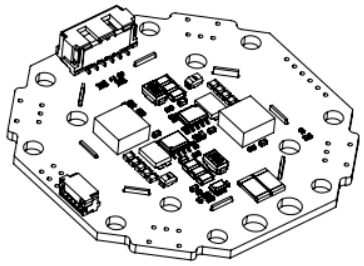

FRONT VIEW




BACK VIEW




SIDE VIEW



ISOMETRIC VIEW

# Pixhawk 2.4.8 Setup (ArduPilot Integration):

## Hardware Connection

| PDB | Pixhawk |
|---|---|
| 5V | 5V |
| Isense | Isense |
| Vsense | Vsense |
| GND | GND |


**Note:**

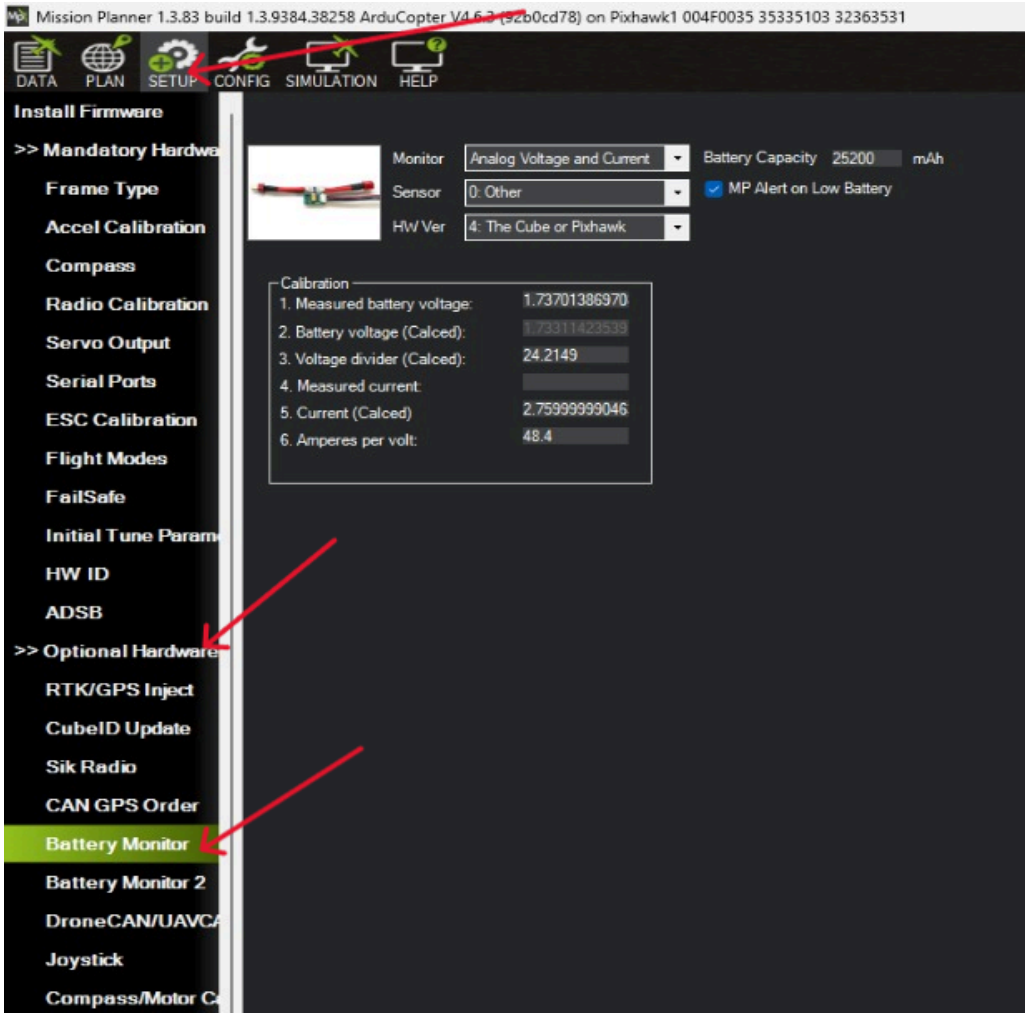
1. **Use analog power ports for Vsense and Isense.**

## Calibration Parameters for Analog voltage and Current measurement

| Scaling Values for Voltage and Current Sensing | |
|---|---|
| **Parameter** | **Value** |
| Voltage Divider (Calced) | 24.2149 |
| Amperes Per Volt | 48.4 |

## Integration with Ardupilot Mission Planner

1. **Go to Setup —> Optional Hardware —> Click on Battery Monitor Tab**



2. **Select Monitor as ‘Analog Voltage and Current’**
3. **Select Sensor type as ‘0: Other’**
4. **Select HW Ver as ‘The Cube or Pixhawk’**
5. **Now under Calibration section, Set ‘Voltage Divider (Calced)’ as 24.2149**
6. **Use a calibrated digital multimeter to measure the current voltage of the main flight battery across its main discharge leads and enter the exact value you just read from your multimeter into the ‘Measure battery voltage’ box.**
7. **For current calibration enter 48.4 A/V in ‘Ampers per volt’**
8. **After performing the above steps, power-cycle the flight controller, and reconnect to verify the parameters persisted and the HUD readings are accurate.**