# pixhawk® 4
PM07 Power Management Board

The Power Management Board (PM Board) serves the purpose of a Power Module as well as a Power Distribution Board. In addition to providing regulated power to Pixhawk 4 and the ESCs, it sends information to the autopilot about battery's voltage and current supplied to the flight controller and the motors.

To power Pixhawk 4, connect one of the **PWR** ports of PMB to one of the **POWER** bricks of Pixhawk 4. The PMB's input **2~12S** will be connected to your LiPo battery. The connections of PMB, including power supply and signal connections to the ESCs and servos, are explained in the table below. Note that the PMB does not supply power to the servos via + and - pins of **FMU PWM-OUT**.
The image below shows the power management board provided with Pixhawk 4.
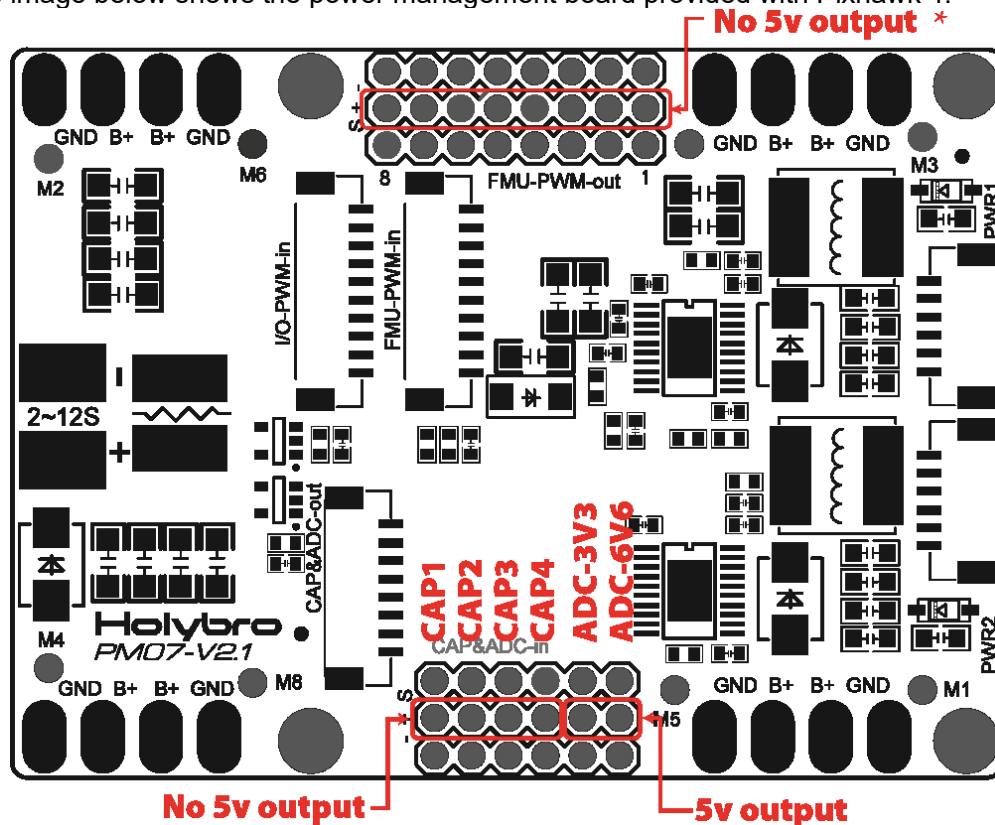
* Note: If using a plane or rover, the 8 pin power (+) rail of FMU PWM-OUT will need to be separately powered in order to drive servos for rudders, elevons etc. To do this, the power rail needs to be connected to a BEC equipped ESC or a standalone 5V BEC or a 2S LiPo battery. Be careful with the voltage of servo you are going to use here.

PIN&Connector	Function
I/O PWM-IN	See table below for connection to Pixhawk 4
M1	I/O PWM OUT 1: connect signal wire to ESC of motor 1 here
M2	I/O PWM OUT 2: connect signal wire to ESC of motor 2 here
M3	I/O PWM OUT 3: connect signal wire to ESC of motor 3 here
M4	I/O PWM OUT 4: connect signal wire to ESC of motor 4 here
M5	I/O PWM OUT 5: connect signal wire to ESC of motor 5 here
M6	I/O PWM OUT 6: connect signal wire to ESC of motor 6 here
M7	I/O PWM OUT 7: connect signal wire to ESC of motor 7 here
M8	I/O PWM OUT 8: connect signal wire to ESC of motor 8 here
FMU PWM-IN	See table below for connection to Pixhawk 4
FMU PWM-OUT	If FMU PWM-IN is connected to Pixhawk 4, connect signal wires to ESC or signal, +, - wires to servos here
CAP&ADC-OUT	Connect to CAP & ADC IN port of Pixhawk 4
CAP&ADC-IN	CAP & ADC input: See back of the board for pinouts
B+	Connect to ESC B+ to power the ESC
GND	Connect to ESC Ground
PWR1	5v output 3A,connect to Pixhawk 4 POWER 1
PWR2	5v output 3A,connect to Pixhawk 4 POWER 2
2~12S	Power Input, connect to 2~12S LiPo Battery

Note：Depending on your airframe type, refer to Airframe Reference to connect I/O PWM OUT and FMU PWM OUT ports of Pixhawk 4 to PM board. MAIN outputs in PX4 firmware map to I/O PWM OUT port of Pixhawk 4 whereas AUX outputs map to FMU PWM OUT of Pixhawk 4. For example, MAIN1 maps to IO_CH1 pin of I/O PWM OUT and AUX1 maps to FMU_CH1 pin of FMU PWM OUT. FMU PWM-IN of PM board is internally connected to FMU PWM-OUT, which is used to drive servos (e.g. aileron, elevator, rudder, elevon, gear, flaps, gimbal, steering). I/O PWM-IN of PM board is internally connected to M1-8, which is used to drive motors (e.g. throttle in Plane, VTOL and Rover).

The following table summarizes how to connect Pixhawk 4's PWM OUT ports to PMB's PWM-IN ports, depending on the PX4 Airframe Reference. You can find this reference online in PX4 User guide.

PX4 Airframe Reference	Connection between *Pixhawk 4* --> PMB
MAIN: motor	I/O PWM OUT --> I/O PWM IN
MAIN: servo	I/O PWM OUT --> FMU PWM IN
AUX: motor	FMU PWM OUT --> I/O PWM IN
AUX: servo	FMU PWM OUT --> FMU PWM IN

The pinout of Pixhawk 4's power ports is shown below. The CURRENT signal should carry an analog voltage from 0-3.3V for 0-120A as default. The VOLTAGE signal should carry an analog voltage from 0-3.3V for 0-60A as default. The VCC lines have to offer at least 3A continuous and should default to 5.1V. A lower voltage of 5V is still acceptable, but discouraged.

Power 1, Power 2 ports

Pin	Signal	Volt
1(red)	VCC	+5V
2(blk)	VCC	+5V
3(blk)	CURRENT	+3.3V
4(blk)	VOLTAGE	+3.3V
5(blk)	GND	GND
6(blk)	GND	GND

Specifications :

PCB Current: total 120A outputs (MAX)
UBEC 5v output current :3A
UBEC input voltage : 7~51v (2~12s LiPo)
Dimensions:68*50*10 mm
Mounting Holes:45*45mm
Weight: 40.3g

Package includes :

PM07 board*1
80mm XT60 connector wire*1
GH 10P Cable*2
GH 7P Cable*1
GH 6P Cable*2