PP-MESC Programming Instructions

IMPORTANT

Before using your new ESC for the 1st time please read the section "Setting the throttle for the 1st Time"

Features

- ✓ Linear Throttle Response – Smooth and progressive throttling over the whole stick movement – easier to fly.
- ✓ Quick throttle response
- ✓ Auto timing – no need for manual selection.
- ✓ Excellent low speed performance
- ✓ Separate power supply for MCU and BEC, enhancing the ESC's ability of eliminating magnetic interference
- ✓ Self checking on power up
- ✓ Low Voltage Cut Off – Protect your batteries from damage due to excessive drain.
- ✓ Thermally Protected – When the temperature increases to above 110 Celsius degree, power will be lowered gradually to less than 35% of the full power, and will resume when the temperature decreases.
- ✓ Signal lost Protection – Power will automatically lower to 20% or less when signal is lost for 1 second, and resume when a good signal is received again.
- ✓ Power on Protection – The motor will not start unless the throttle stick is in the off position when the power is applied
- ✓ Simple Parameter Setting.

Product Specification

Item	Continuous Current	Burst current (10S)	Li-xx Battery (cell)	Dimension (mm) L*W*H	Weight with wires	BEC （Linear）	Programmable
PP-MESC7AU	7A	9A	1-2	22×12×5	5g	1A/5V	YES
PP-MESC12AU	12A	15A	2-3	22×17×7	7g	1A/5V	YES
PP-MESC100AHV	100A	120A	2-10	96x55x21	170g	N/A	YES

Programmable Parameters

- ✓ Throttle Range: suitable for all transmitters on the market.
- ✓ Brake Type: There are three brake types; off, soft, and hard. **The default is brake OFF**.
- ✓ Timing Mode: There are three options: Low, Mid and High. **The default is Mid**. Low advance timing is recommended for high inductance and low KV motors. Medium or High timing is recommended for all outrunners
- ✓ Cut off Mode: There are two options: Soft Sand Hard. **The default is Soft-Cut off**.
  - Hard cut off will shut cut all power to the motor immediately the low voltage level is reached.
  - Soft cut off will gradually reduce the power to the motor as the low voltage level is reached.
- ✓ Start Mode: There are three options; Fast, Soft and very Soft. **The default is very Soft Start**.
- ✓ Throttle Curve Mode, There are three option; Curve 1, Curve 2 and Curve 3 (corresponds to the OFF, Gov-low, Gov-high of governor mode in the program card). **The default is Curve 1**.
- ✓ Number of Li-XX Cells; This parameter is used to manually set the number of cells in your Lixx pack. The range is 0—12 cells. It is recommended not to adjust this setting unless the ESC is having problems detecting the correct number of cells in your battery pack. **The default is 0 cell**. "0" is the automatic cell detection.
- ✓ Cut off voltage: There are three options: Low, Middle, and High. **The default is Middle**.
  - Low – cut off voltage is 2.60V per cell.
  - Middle – cut off voltage is 2.85V per cell.
  - High – cut off voltage is 3.10V per cell.
- ✓ Motor Rotation: Simply swop any two of the three wires over that connect the ESC to the battery, it doesn't matter which ones.

How to Mount and Connect your ESC

- ✓ The leads from the battery to the ESC (red and black) can be extended up to 12 inches (300mm) if required. If a longer run is needed then extend the 3 wires to the motor as needed.
- ✓ Add your choice of connectors as necessary paying careful attention to the polarity of the wires that connect to your battery.
- ✓ Mount your ESC in a place with good cooling.
- ✓ Connect the 3 thick wires from the ESC to the motor; don't worry about the order just now.
- ✓ Connect the ESC (servo type plug) to the throttle channel on your receiver.
- ✓ Turn on your transmitter ensuring the throttle is in the lowest/off position and then connect the ESC to your flight battery.
- ✓ Ensure nothing can touch the propeller or be sucked into it. Gently blip the throttle once to check rotation of the motor. If the motor spins in the correct direction, disconnect the flight battery and turn your transmitter off. If the motor rotates in the wrong direction then disconnect the flight battery and swap over any 2 of the wires that connect the ESC to the motor, the motor will now turn in the other direction, yes it really is as simple as that.

Setting the throttle for the 1st Time

This is a “one off” connection procedure. The following procedure is to teach the ESC the full throttle position and must be repeated if a different transmitter or receiver is used with the ESC.

- ✓ Turn on transmitter.
- ✓ Set throttle on the transmitter to "Full Throttle".
- ✓ Connect the flight pack to the ESC, the ESC will make a tone like “de…de”. This confirms that the full throttle position has been registered by the ESC.
- ✓ Return the throttle stick on the transmitter to "off" position as soon within 5 seconds of hearing the 2 beeps. The ESC will sound a long beep to confirm that it has learnt the off position.
- ✓ The ESC then will beep a number of times depending upon the number of LiPo cells it detects (2 beeps =2 cells, 3 beeps = 3 cells)
- ✓ The ESC with then enter its self checking procedure. If it is normal, you will hear a “♪ 1 2 3” tune. The ESC is now ready to use.
- ✓ If the ESC doesn’t detect the throttle signal, it will constantly “beep” without stopping.
- ✓ Any fault in self-check, and the ESC will beep 20 times.
- ✓ Disconnect battery from the ESC.

Normal Operating Procedure

- ✓ Move the throttle stick to lowest/off position.
- ✓ The ESC detects the off throttle signal, and will sound a long beep.
- ✓ The ESC analyses the battery voltage and will sound several short “beeps” depending upon the number of LiPo cells it detects (2 beeps =2 cells, 3 beeps = 3 cells)
- ✓ The ESC with then enter its self checking procedure. If it is normal, you will hear a “♪ 1 2 3” tune. The ESC is now ready to use.
- ✓ If the ESC doesn’t detect the throttle signal, it will constantly “beep” without stopping.
- ✓ Any fault in self-check, and the ESC will beep 20 times.

Fault Finding

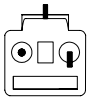
Problem	Cause	Solution
The motor dose not respond to the throttle and emits bleeps	1. Throttle range not configured. 2. Throttle dose not return to the lowest point. 3. There is no signal output from receiver.	1. Configure the throttle range. 2. Move the stick to the lowest/off position. 3. Check the receiver.
The motor rocks back and forth and doesn’t rotate	1. Bad solder joint between motor and ESC 2. Broken wire between motor and ESC	1. Check and re-solder connectors/joints 2. Check and repair any broken wires
The motor not respond to the throttle and emit tone like “bee… bee,bee… ..de… de… de…	Throttle channels reverse	Reverse the throttle channel of your transmitter (refer to the transmitter users manual)
The motor not respond to the throttle and no any tone is heard.	Battery connection error	Check the connection to the battery pack and/or check battery voltage.
The motor suddenly stops while working	1. Loss of throttle signal. 2. Battery connection is loose.	1. Check the transmitter and receiver. Check the connection to throttle channel. 2. Check the battery output and connection to the ESC.
The motor rotates in the wrong direction	Incorrect phase sequence.	Swap the connection of any 2 of the 3 wires between the ESC and the motor.
Full power not available or the motor stops just after starting.	1. Throttle range not configured. 2. Not enough voltage in the battery. 3. Loose battery connection.	1. Configure the throttle range. 2. Recharge or replace the battery for a fully charged one. 3. Check the connections between the battery and the ESC.

Programming via the Transmitter

1. Enter program mode
Push the throttle stick to the top position (full On throttle), turn on the transmitter, connect the ESC, wait 2 seconds, you will hear two "beeps" which means the full throttle is confirmed. Wait another 6 seconds, it will make "♪ i 3 i 3" tune, then you can start programming via transmitter

2. Select program parameters
There're 9 parameters can be set by using your transmitter. You would hear 9 different indicating sounds which correspond to 9 different parameters. Pull the throttle stick to the bottom position (full Off throttle) within 3 seconds after you hear the correspondent sound will brings you to the correspondent parameter setting status. The indicating sounds will repeat in turn as follow (1 long sound=5short sounds):

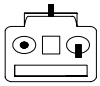
1. "beep-" (a short sound) which indicates the **Brake Type**
2. "beep-beep-" (two short sounds) which indicates the **Timing Mode**
3. "beep-beep-beep-" (three short sounds) which indicates the **Start Mode**
4. "beep-beep-beep-beep-" (four short sounds) which indicates the **Cutoff Mode**
5. "beep-----" (a long sound) which indicates the **Throttle Curve Mode**
6. "beep-----beep-" (a long sound and a short) which indicates the **Li-XX Cells**
7. "beep-----beep-beep-" (a long sound and two short) which indicates the **Cutoff Voltage**
8. "beep-----beep-beep-beep-" (a long sound and three short) which indicates **Motor rotation reversible.**
9. "beep-----beep-----beep-----"(three long sound) **EXIT.**



3. Select program values
After entering parameter setting status, you will hear the ESC making sounds in cycle. Different sounds indicate different values. Push the throttle stick to the top position (full On throttle) within 3 seconds after you hear the correspondent sound, then you will hear a special tune "♪ 5 6 5 6", which means the correspondent value has been chosen and saved. If you don't want to continue setting other values, just pull the throttle stick to the bottom position (Full Off throttle) to exit. Or wait 3 seconds to return to the second step and continue programming.

Parameter	"beep-" 1 sound	"beep-beep-" 2 sounds	"beep-beep-beep-"3 sounds	"beep-beep---"x sounds
Brake Type	OFF	Soft	Hard	
Timing Mode	Low	Mid	High	
Start Mode	Fast	Soft	Very soft	
Cut off Mode	Soft	Hard		
Throttle Curve	Curve1	Curve2	Curve3	
Li-XX Cells	Automatic	2 cells	3cells	xx cells
Cut off Voltage	Low（2.60V）	Middle（2.85V）	High（3.10V）	
Motor rotation	Normal	Reverse		

Remarks: Under **Li-XX Cells** value status, when the number of Li-xx battery cell is more than 4, the ESC will indicate by making long "beep" plus short "beep" sounds, a long "beeeep" sound equals 5 short "beep" sound. E.g. you will hear "beep-----beep-" (a long sound + a short sound) if there is a 6-cell Li-xx pack and you will hear "beeeep-----beeeep-----beep-" (two long sounds + a short sound) for an 11-cell Li-xx pack.



4. Exit program
Exit programming: Two ways as shown in step2 and step3.