# Thank you for purchasing RHINO ESC series.

CAUTION
The power of brushless power system is powerful. Any improper use may cause personal injury and damage to the product and related devices. We strongly recommend reading through this user manual before use and strictly abide by the specified operating procedures. We shall not be liable for any liability arising from the use of this product, including but not limited to reimbursement for incidental or indirect losses.
Meanwhile, we do not assume any responsibility caused by unauthorized modification of the product. We have the right to change the product design, appearance, performance and use requirements
without notice.

SPECIFICATION

Part Number	A3100	A3100
Motor Type	Senseless brushless motor (BLDC)	
Li-po Cells	2~8S	2~4S
Cont. Current	80A	40A
BEC Output	5.2/6.0V/7.4V/8.2V adjustable	
Dimension/Weight	43x28mm(PCB)	30x25mm(PCB)
Power switch	Electronic switch	
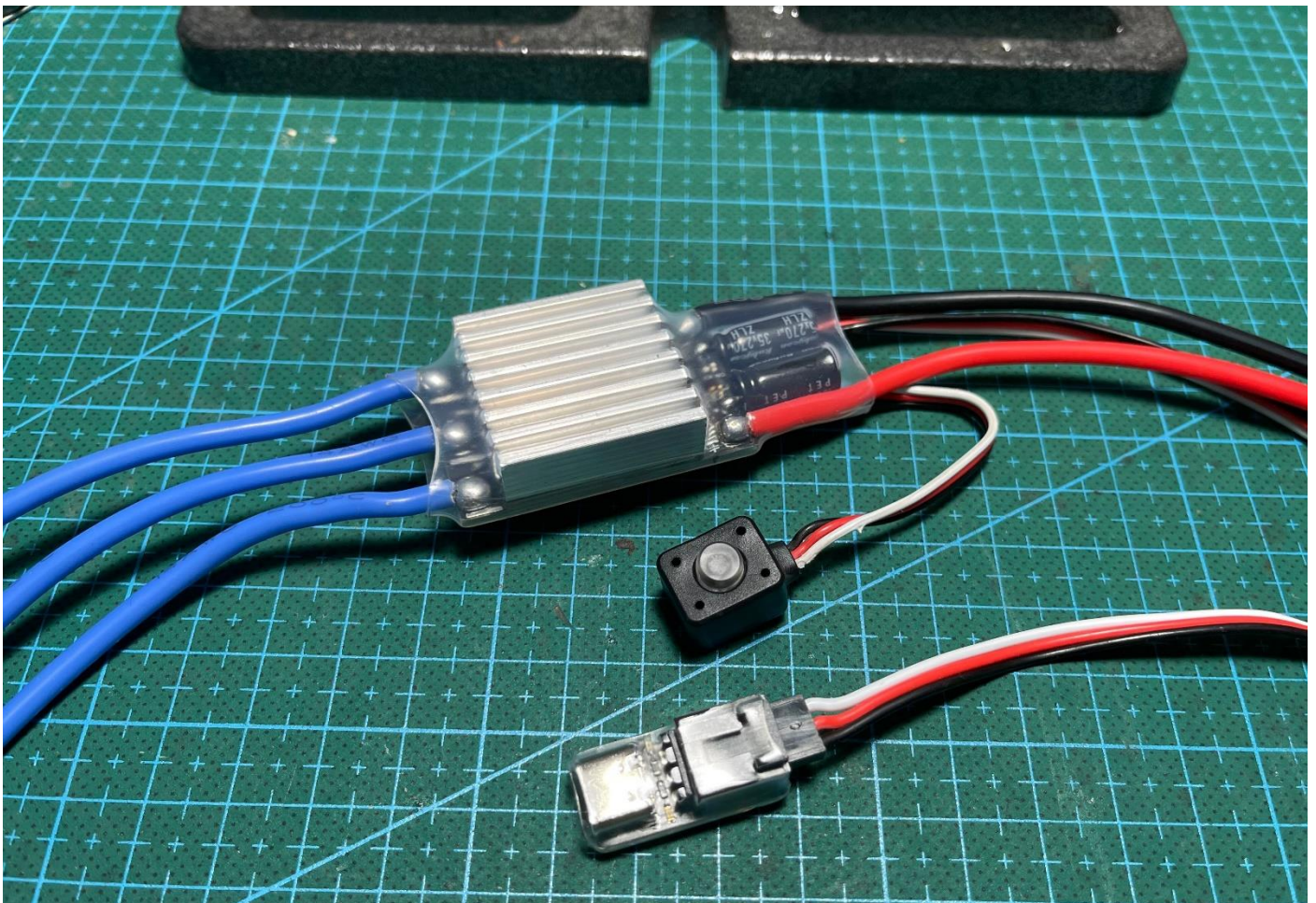
CONNECTION

1 Motor wiring

a. Connect senseless brushless motor:
A/B/C wires on the ESC used to connect to brushless motor, you can swap any two of wires to change motor direction. Alternatively, reverse motor direction in the AM32 Config Tool.

b. Connect brushed motor:
Two motor poles can be connected to any two wires from ESC if the ESC supports brushed motors.

2 Battery wiring

Please check that the positive pole or red wire of the ESC is connected to the positive pole or red wire of the battery.
If the connection is reversed, it will cause irreversible damage.

3 Receiver

Be sure to insert plug with correct polarity.
Normally the signal plug will be connected to CH2 on the receiver.
Do not connect a battery or external BEC to the receiver unless the red wire is removed from the ESC's plug, otherwise it may cause ESC damage.

FIRST POWER ON CHECK

1. Double check that the above connection wires are all correct.
2. The parameters of your transmitter need to be reset, including channel direction, travel, trim, curves, etc.
3. Connect the battery plug, press the switch button to start the ESC, please make sure that the LED on the ESC is correctly on, and you can hear the motor beep, and the receiver can be powered.
4. To turn off the ESC, you need to keep pressing the switch button for at least 2 seconds until the LED is turn off and note that there is no beep from the motor.
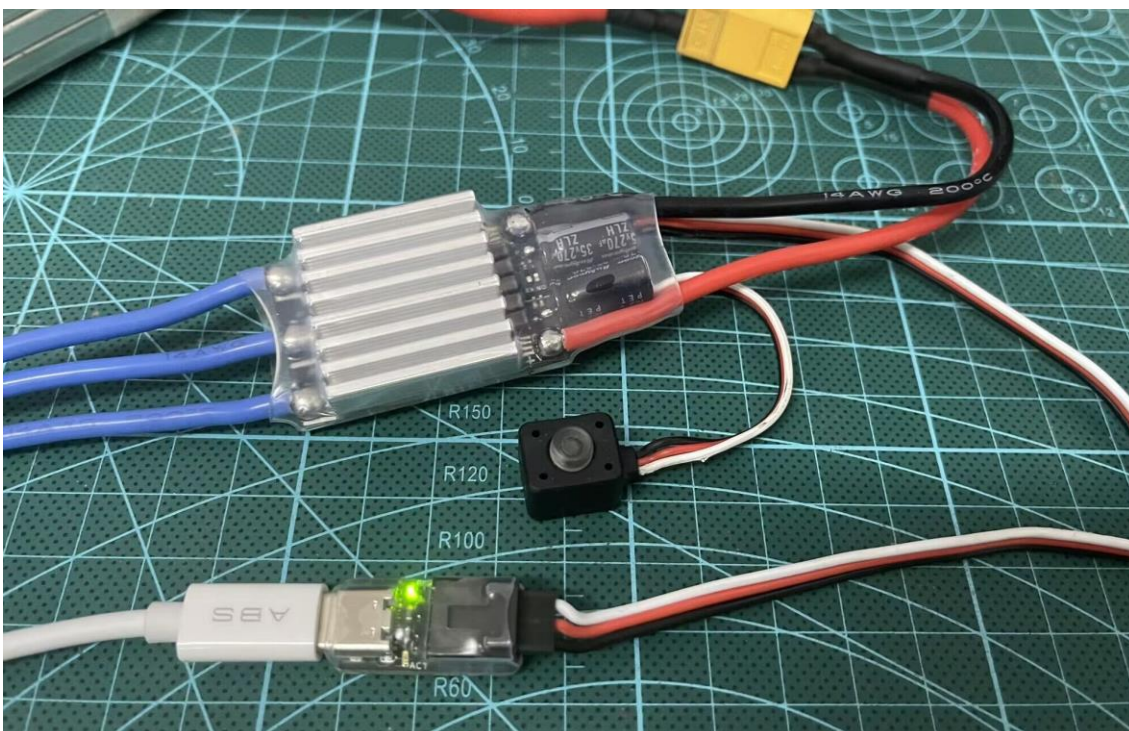
BEC Output

| 1	2		BEC Output
OFF	OFF		5.2V
OFF	ON		6.0V
ON	OFF		7.4V
ON	ON		8.2V

CALIBRATION

Throttle Range Calibration:
It can be deal with a transmitter or config tool.
It is recommended to use a transmitter so that the ESC can accurately match the throttle channel travel.
Entering calibration mode requires holding throttle of the transmitter at the max position before turning on the ESC power, and then follow the instructions below.

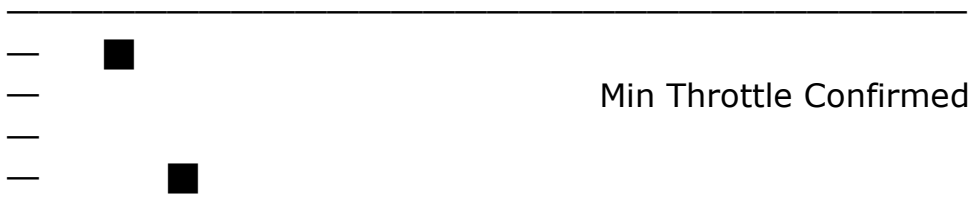Hold the throttle in a specific position according to the beep to continue.
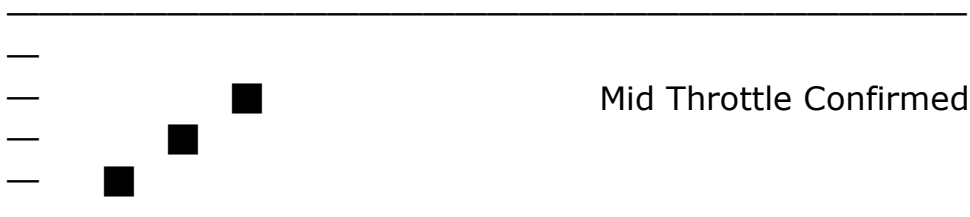Power up:

Loop until RC signal is received
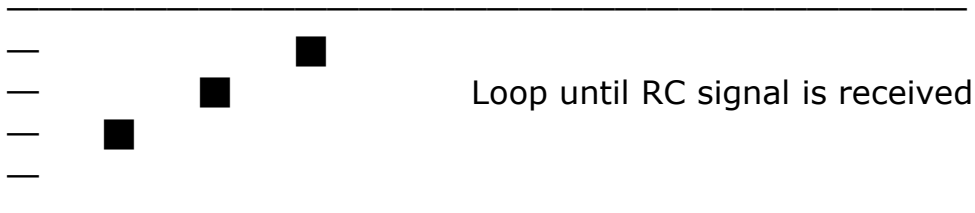
When throttle is max for 3 seconds:

Max Throttle Confirmed
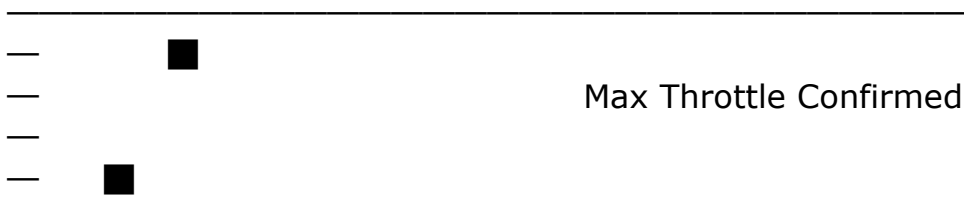
When throttle is min for 3 seconds:

Min Throttle Confirmed

When throttle is mid for 3 seconds:

Mid Throttle Confirmed

If the low voltage protection is turned on, the mid throttle confirmed beep will be replaced by the beep of the cells of batteries.

After the above process, the calibration is completed.
If the low voltage protection is turned on in the config tool, the motor will beep according to the number of battery cells.

Video: https://youtu.be/qwp1eiiF8uA

Other Function Configuration:
Download the PC version from the link below for ESC config tool and USB-Link driver.
https://rhinoesc.com/download/AM32ConfigTool_Driver.rar
After installing the USB-Link driver, prepare a USB Type-C cable and connect the ESC and PC as follows.
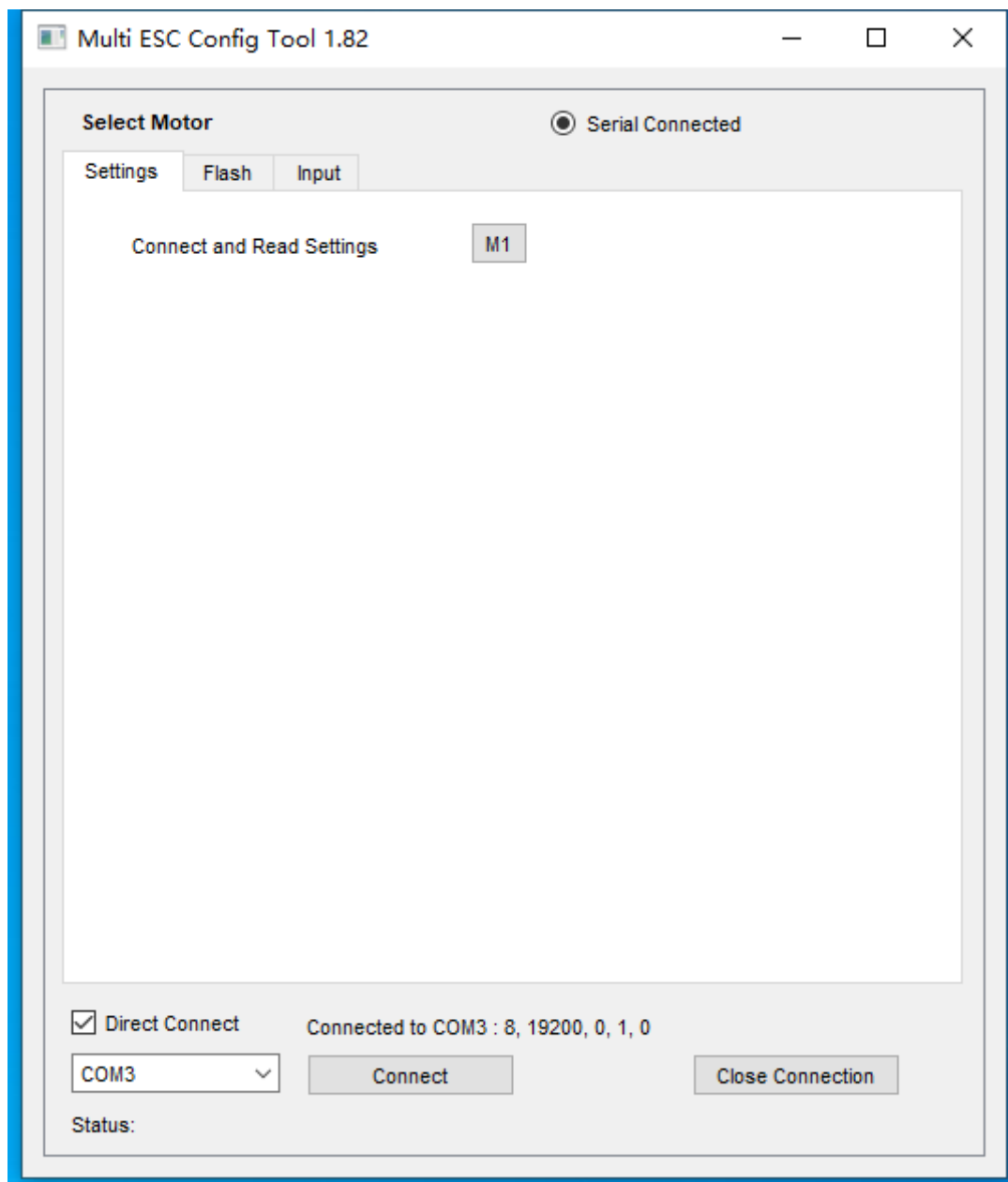
The battery must be connected first and turne on the ESC switch.
Check the direct connection
Select the correct COM port
Click the connect button
Click the M1 button above

Settings Tag:
At this point the tool should be able to read the parameters of the ESC
Please adjust the required items according to your needs, such as Bi-directional,
Brake On Stop, Sinusoidal Startup, Motor KV, Startup Power and Brake level, etc.
Don't forget to click the save settings button after completing the configuration.
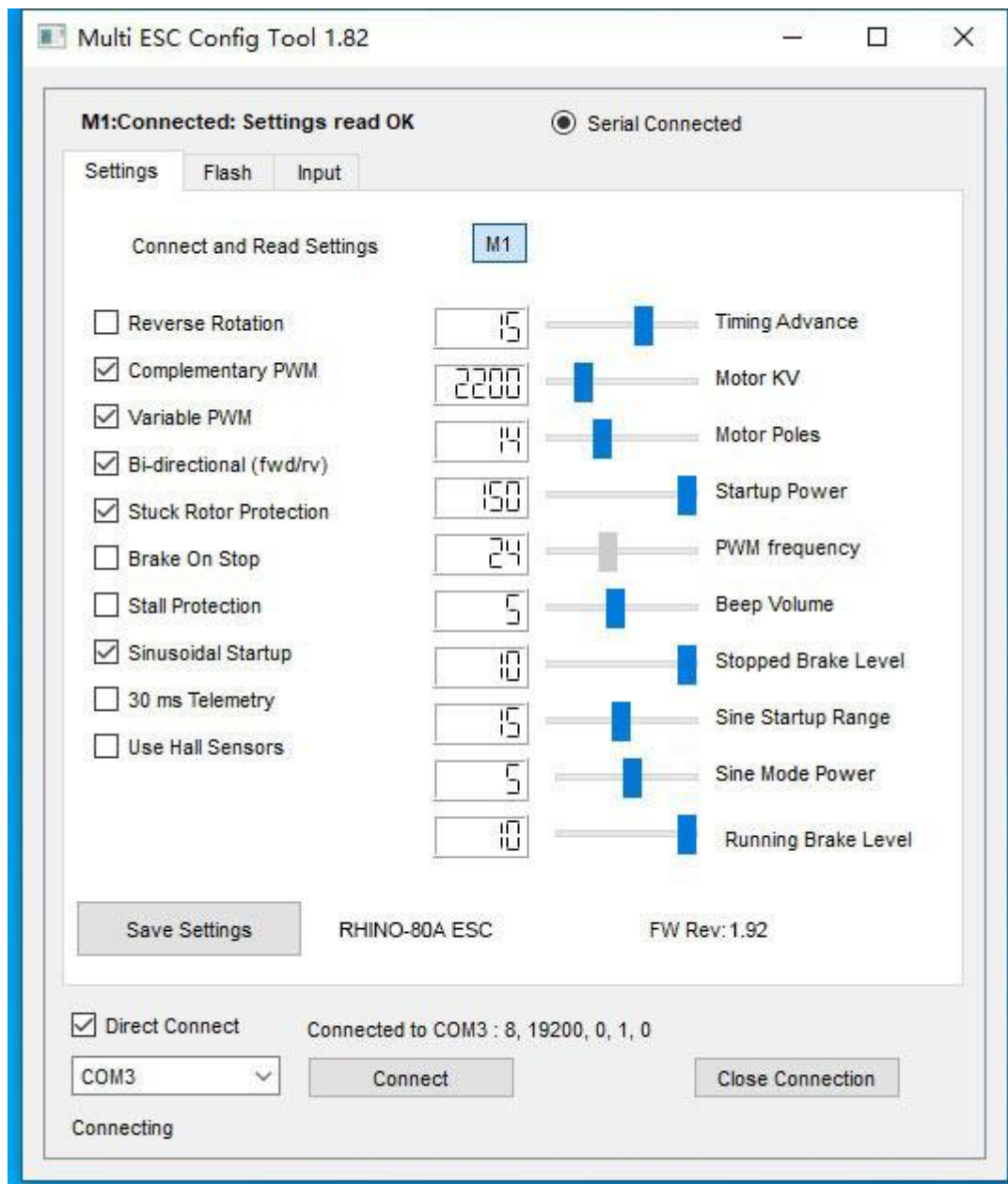
Flash Tag:
You can upgrade the firmware of the ESC here or restore the default parameters.
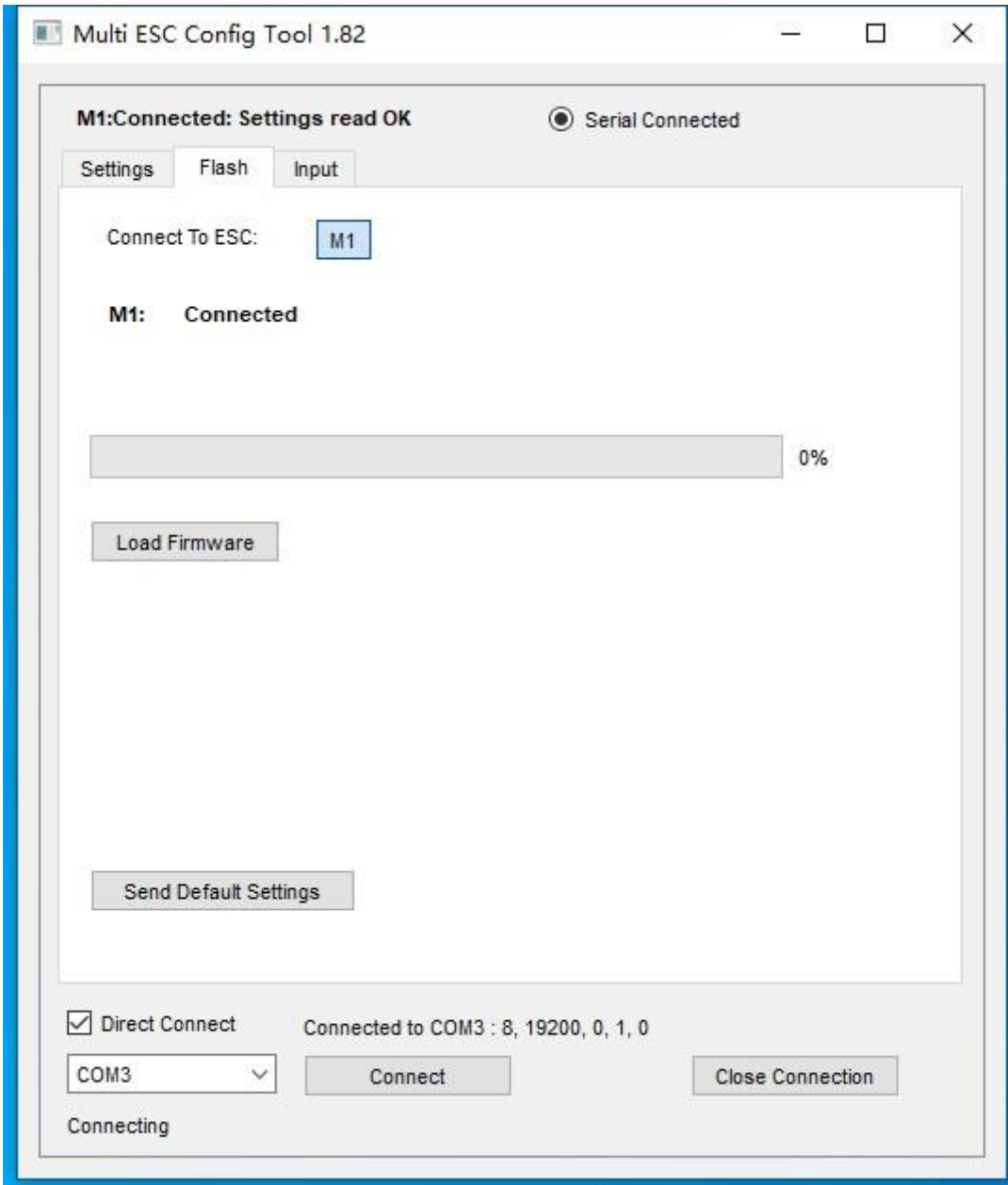
Input Tag:
Servo Settings
In general, it is only recommended to set the throttle range through the transmitter, so it is not recommended to modify it here.

Low Voltage Cut Off is recommended to open. Useful for battery protection.

Braking type, do not check this item for crawler.