USER MANUAL OF THE PROGRAM CARD FOR THE CAR ESC

FUNCTION AND FEATURE

Thank you for purchasing the program card for the car ESC (Electronic Speed Controller). The program card has a friendly user interface, so you can easily set the programmable parameters of the ESC with this device. It is pocket-sized, so you can bring it to the racing field conveniently.

SPECIFICATION:

1. Size: 88mm*58mm*14mm
2. Wight: 40g

PROGRAMMABLE ITEMS:

1. **Running Model:**
   a) "Forward with brake" mode, it provides forward and brake functions.
   b) "Forward/Reverse with brake" mode, it provides forward, backward and brake functions.
2. **Drag Brake Force:** When the throttle stick is moved from the forward range to the neutral rang, a bit brake force is created by the ESC to simulate the slight braking effect of a neutral brushed motor while coasting. This item has 8 options, from 0% to 40% with the increased drag brake force.
3. **Low Voltage Cut-Off:** The function is mainly to prevent the lithium battery pack from over discharging. When using lithium battery pack, please set the suitable value for low-voltage protection as you like. **Never use the default value "Non-protection" for lithium battery!**
4. **Start Mode:** This item adjusts the start force when the motor begins to run; sometimes we call it "Punch". For XeRun series ESC, there are 9 options for this item, from "Level 1" to "Level 9" with the increased start force; For eZRun series ESC, there are only 4 options for this item, from "Level 1" to "Level 4" with the increased start force;
5. **Maximum Brake Force:** It refers to the force when the throttle stick is located at the top point of the backward zone. A very large brake force can shorten the brake time, but it may damage the gears. This item has 4 options from 25% to 100% with the increased maximum brake force.
6. **Maximum Reverse Force:** Different value makes different reverse speed. This item has 4 options from 25% to 100% with the increased maximum reverse force.
7. **Initial Brake Force:** It is also so-called "minimum brake force" and it refers to the force when the throttle stick is located at the initial position of the backward zone.
8. **Throttle Neutral Range:** This item is used to set the throttle neutral range, so it can be compatible with the habit of different users. This item has 3 options from 6% to 12% with the increased neutral range.
9. **Timing:** This parameter is only available for brushless motor. There are many differences among structures and parameters of different brushless motors, so a fixed timing ESC is difficult to compatible with all brushless motors. It is necessary to make the timing value programmable. Please select the most suitable timing value according to the motor you are just using. Generally, higher timing value brings out higher power output, but the whole efficiency of the system will be slightly lower down.
10. **Motor Type:**
    a) Brushless motor
    b) Brushed motor, forward and reverse, with brake
    c) Brushed motor, forward only, without brake
11. **Over-Heat Protection:** If the function is activated, the output power will be cut-off when the temperature of the ESC is higher than a particular value.

WIRING SEQUENCE:

1. When you are using an ESC with a built-in BEC(Battery Elimination Circuit)
   a) Disconnect the power pack from the ESC.
   b) Disconnect the BEC cable of the ESC(trio wires) form your receiver. then connect it to the program card at the top right corner position marked with ⊖⊕⎍
   c) Connect the main power pack to the ESC.
   d) After several seconds, the digit LEDs on the program card light to show the current programmable value of the ESC.

Note: The sequence of step b) and step c) cannot be reversed! Otherwise the program card cannot work properly.

2. When you are using an ESC without a built-in BEC

If the ESC hasn't a built-in BEC, you must use an additional battery pack (4.8V-6V) to power the program card. Please connect the battery to the program card at the top right corner position marked with ⊖⊕ . Usually, a receiver battery pack is a good choice.

   a) Disconnect the power pack from the ESC.
   b) Disconnect the BEC cable of the ESC(trio wires) form your receiver. then connect it to the program card at the top right corner position marked with ⊖⊕⎍
   c) Connect the additional battery pack to the program card at the top right corner.
   d) Connect the main power pack to the ESC.
   e) After several seconds, the digit LEDs on the program card light to show the current programmable value of the ESC.

Note: The sequence of step b), c) and step d) cannot be reversed! Otherwise the program card cannot work properly. And do not use a battery pack more than 6V to supply the program card!

OPERATION:

Press the "ITEM" button to select the programmable items in a loop. The serial number of the programmable items will be shown by 2 digit LEDs marked with "ITEM", and the current value corresponding to the selected programmable item will be shown by another digit LED marked with "VALUE". Press the "VALUE" button to choose the parameter value you need. After that, press the "OK" button, a bright "—" symbol appears in the middle position of the digit LED marked with "VALUE" for about 1-2 seconds, that means the new setting is accepted and stored in the ESC.

The "RESET" button is used for restoring all the items of the ESC to the default vales.

DECLARATION:

The program card is ONLY suitable for the ESC of the same manufacturer.