Instruction manual

CE

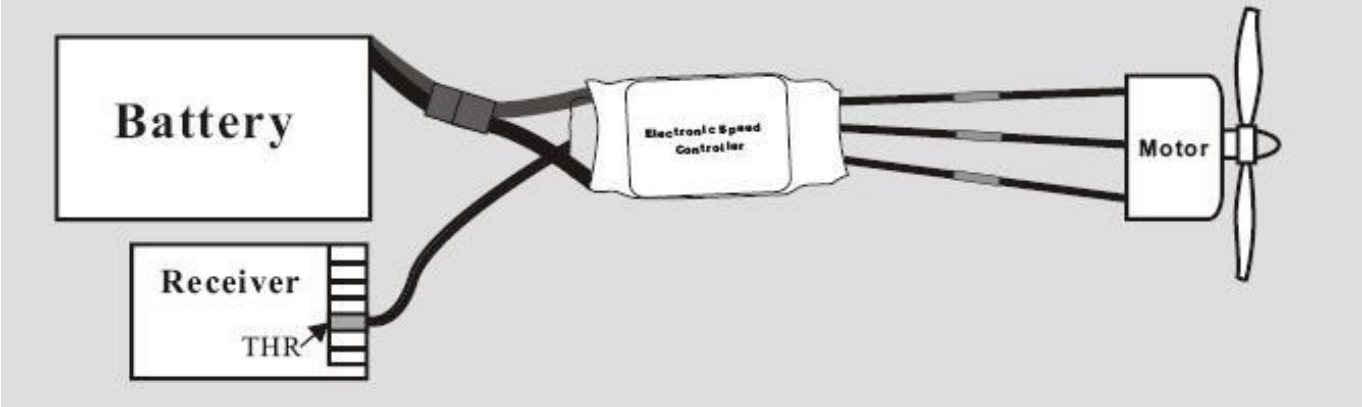
ELECTRONIC SPEED CONTROLLER FOR BRUSHLESS MOTORS

Model	Size [mm]	Weight [g]	Current [A]	Input	BEC
ESC-18A	48×23×7	21	18A	6-10 Ni-XX or 2-3 Li-XX	Yes, 2A
ESC-40A	50×25×7	23	40A	6-10 Ni-XX or 2-3 Li-XX	Yes, 2A
ESC-60A	52×25×8	33	60A	6-16 Ni-XX or 2-6 Li-XX	NO BEC

Connections:

The speed controller can be connected to motor by direct soldering or with high quality connectors. Always use new connectors, which should be soldered carefully to the cables and insulated with Heat Shrink Tubing. It is possible to extend the cables to the motor battery pack up to a maximum of 8 inches. Deans Ultra or other high quality connectors are recommended for connecting the motor battery pack to the controller.

- Solder controller to the motor wires
- Solder appropriate connectors to the Battery wires
- Insulate all Solder connections with Heat Shrink Tubing
- Plug the 3 Pin connector into the receiver throttle channel



Installing the Controller:

Install the speed controller in the model so that it is isolated from vibration and shock, using Velcro or double sided foam tape. Allow space around it for cooling. Make sure that there is sufficient cooling of the motor and speed controller by ducting air through adequate cooling holes from the outside airflow. Main power packs should be connected at one attempt.

- Locate the controller to Avoid multiple touches of the connectors when installing a fresh motor battery pack.

Using the controller:

- Switch “ON” the transmitter and check the throttle channel settings are +/-100% (for computer radios). For Radios program the “Servo Reverse” function on the throttle channel. Set the throttle to “closed” or brake position
- Connect with battery. For speed controllers without BEC, switch on the power to receiver.
- You should hear a ‘*beep*’. **Between connect with battery and the ‘beep’ the throttle stick must not be moved.** If you do not hear a ‘beep’, disconnect the power connectors, wait for 5 seconds and repeat the procedure of connecting.
- If you do not hear ‘*beep*’ again, check the following:
  1).Is 3 Pin connector plugged in throttle channel?
  2).Is the throttle stick in “closed” position (OFF)?
  3).Is the throttle channel in ‘normal’ position?
- The position of ‘full throttle’ will be adjusted automatically.
- **Warning: Once the Motor Battery Pack is connected, handle the model with extreme care!** Ensure that everyone is well clear of the propeller at all times. Rotating propellers are extremely dangerous!
- Always Connect the motor battery pack just before flight and disconnect it immediately after landing the model.
- Warning: Even when the switch on the transmitter is ‘off’ remember the Motor Battery pack may be connected, handle the model with extreme care and stay well clear of the Propeller!

Setting the Propeller Brake On or Off:

- The speed controller is supplied with the ‘brake’ activated. If you want to turn off the brake, do the following:
  1).Switch on the transmitter and move the stick to full throttle
  2).Connect the main power pack
  3).Wait 5 seconds
  4).After 5seconds you will hear 5 single “beeps”
  5).Swiftly move the throttle stick to the closed position; you will hear two “beeps”.
  6).The brake is now turned off
- The brake setting will not change after disconnecting the main power pack. When turning on the speed controller with the brake active, you will always hear one ‘beep’. When the brake is turned off you will hear two ‘beeps’. If you want to activate the brake again, repeat the procedure.

Setting the Timing Mode:

- It is possible to set two timing modes with these speed controllers
  1).Soft timing-for 2,4,6, pole motors. Soft timing gives maximum efficiency
  2).Hard timing only for 6 and more pole motors
- Hard timing in creases both the motor revolutions and the current (up to 20%) with the same prop and battery pack when compared to soft timing. This is more suitable for faster flying models.
- Always use soft timing for first flights. If the temperature of the batteries, speed controller and motor are below 50℃ degrees following the first flights it is possible to test the system using the hard timing mode. Do not use hard timing with 2 pole motors.
- The Speed controllers are supplied with soft timing-to change the timing:
  1).Switch on the transmitter and move the stick to full throttle
  2).Connect the main power pack and wait 5 seconds.
  3).After 5 seconds you will hear 4 “beeps”
  4).After further 5 seconds you will hear 5 “beeps” for soft timing

5).OR 5 double “beeps” for hard timing

6).The required timing is set by moving the throttle stick to the closed throttle position

7).The new timing is confirmed by a single “beep”(brake on) or a double “beep”(brake off)

- The timing setting will not change after disconnecting the main power pack.

Notes About Operation:

- Reversing the motor directions is achieved by the exchanging the position of any two wires connected to motor.
- These controllers have automatic turn-off with auto detection for the number and type of cells.
- The speed controller will turn-off the motor when the main power pack voltage falls under “Ni-XX: 5.3V or reaches 0.7V/cell” or “Li-XX: 6.0V or reaches 3.0V/cell”. It depends on which occurs first.
- Temperature overload protection is built into the speed controller which turns of the motor when the temperature reaches 100℃.
- These speed controllers are equipped with protection functions that take care of correct start and operation of the motor across the whole range of RPM, Current and Voltage.
- Do not connect the speed controller to just ‘any’ kind of power source. Take care to ensure the right polarity of Ni-XX or Li-XX power packs only. Your speed controller will be severely damaged if it is connect to a battery using the wrong polarity.

CE Directives

The products described in this leaflet satisfy the appropriate statutory CE directives:

EMV directives: 89/336/EEC

EMV norms: EN55014-1, EN55014-2

Interference or range problems are most likely caused by unsuitable combinations of RC products and/or incorrect installations.

Environmental Protection Note

When this product comes to the end of its useful life, you must not dispose of it in the ordinary domestic waste.

The correct method of disposal is to take it to your local collection point for recycling electrical and electronic equipment. The symbol shown here, which may be found on the product itself, in the operating instructions or on the packaging, indicates that this is the case.

Individual markings indicate which materials can be recycled and re-used. You can make an important contribution to the protection of our common environment by re-using the product, recycling the basic materials or recycling redundant equipment in other ways.

Remove batteries from your device and dispose of them at your local collection point for batteries.

If you don‘t know the location of your nearest disposal centre, please enquire at your local council office.

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