



Airpower

7A, 14A, 25A, 35A & 50A

High-Power, High-Frequency, Electronic Speed Controls w/BEC

| | | | |
|----------|--------------|----------------|-----------------|
| FS-AIR07 | Airpower 7A | N 4~8 / Li 1~3 | Forward Only |
| FS-AIR14 | Airpower 14A | N 4~8 / Li 1~3 | Forward Only |
| FS-AIR25 | Airpower 25A | N 5~10/ Li 2~3 | Forward & Brake |
| FS-AIR35 | Airpower 35A | N 5~12/ Li 2~4 | Forward & Brake |
| FS-AIR50 | Airpower 50A | N 5~12/ Li 2~4 | Forward & Brake |

Thank you for purchasing this Airpower Speed Controller. We are sure you will be pleased with its performance and features. In order to ensure that you obtain the maximum benefit from its operation, please read the instructions carefully.

OPERATING INSTRUCTIONS

Please keep for Future Reference

SPECIFICATIONS

| ITEM | FS-AIR07 | FS-AIR14 | FS-AIR25 | FS-AIR35 | FS-AIR50 |
|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
| USE | AIRCRAFT | AIRCRAFT | AIRCRAFT | AIRCRAFT | AIRCRAFT |
| Function | Forward | Forward | Fwd/Brake | Fwd/Brake | Fwd/Brake |
| Brake | - | - | Programmable | Programmable | Programmable |
| Frequency | 2.5KHz | 2.5KHz | 1.3KHz | 1.3KHz | 1.3KHz |
| Cont. Current | 7A | 14A | 25A | 35A | 50A |
| On-Resistance | 7.0mΩ | 3.5mΩ | 2.3mΩ | 1.75mΩ | 0.8mΩ |
| Input (Cells) | NiCd 4~8 Li-Po 1~3 | NiCd 4~8 Li-Po 1~3 | NiCd 5~10 Li-Po 2~3 | NiCd 5~12 Li-Po 2~4 | NiCd 5~12 Li-Po 2~4 |
| B.E.C. | 5.0V / 1.0A | 5.0V / 1.0A | 5.0V / 2.0A | 5.0V / 3.0A | 5.0V / 3.0A |
| Low battery protection | Yes | Yes | Yes | Yes | Yes |
| Temp. protection | | | Yes | Yes | Yes |
| Safe Start | Yes | Yes | Yes | Yes | Yes |
| Switch | | | Yes | Yes | Yes |
| Battery/Motor cable | 0.30mm ² | 0.48mm ² | 1.05mm ² | 1.68mm ² | 2.0mm ² |
| Rx Cable | 0.15mm ² | 0.15mm ² | 0.30mm ² | 0.30mm ² | 0.30mm ² |
| Dimensions (mm) | 15 x 10 x 7 | 21 x 11.5 x 7 | 25 x 17 x 11 | 32 x 17 x 11 | 35 x 18 x 11 |
| Weight | 4.4g | 6.7g | 19.5g | 23.7g | 26.4g |

FEATURES

- “Safe Start” - to prevent accidental motor starts by disabling the motor circuitry until the throttle stick is moved to full throttle, then to the “off” position.
- BEC (Battery Elimination Circuitry) - which allows the motor battery to power the receiver and servos. When the motor battery voltage is reduced to a set voltage per cell, the low-voltage cut-off circuitry stops the motor while continuing to supply power to the receiver and servos, eliminating the need for and weight of a separate receiver battery.
- Thermal Protection - which reduces the throttle to 70% when the maximum temperature is reached.
- Airpower ESC’s can easily be adjusted for use with NiCd/NiMH or Li-Po/Li-Ion batteries.
- These ESC’s function with brushed motors **only!**

TRANSMITTER SETUP

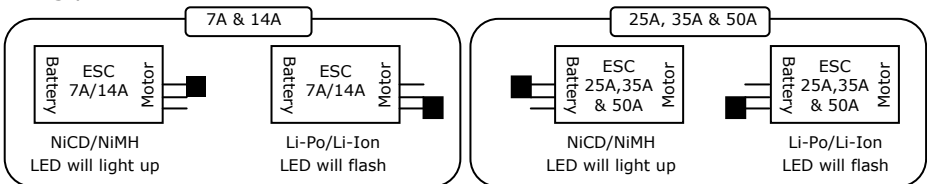
Adjusting the transmitter is critical for proper ESC operation. If you are using a computer radio then the transmitter throttle adjustments should be set as follows:

1. Set the travel adjustment, ATV, EPA or ATL to 100%.
2. Set the throttle trim and sub trim to neutral or zero.
3. Set the throttle reversing switch to reverse on Futaba transmitters and to normal on most other transmitters. Before you begin this setup, remove the propeller from the motor. Then plug the ESC into the throttle channel on the receiver and adjust the transmitter.

BATTERY SET UP MODE

Insert the servo lead from the speed controller into the throttle channel of the receiver ensuring that it is switched off (in the case of the 7A & 14A controllers ensure that the battery is disconnected as they are not fitted with an on/off switch)

Connect the jumper plug to the connectors on the end of the speed controller as shown (with the speed controller label towards you). If the speed controller is switched on when the jumper plug is not connected you will hear a continuous beep telling you that an error has been made.



The jumper plug is fitted to the Airpower 7A & 14A plug onto the opposite end of the speed controller than the 25A, 35A and 50A so pay particular attention that the jumper plug is positioned correctly for your speed controller.

Caution: If the Jumper plug is fitted incorrectly the Li-Po cells may be discharged below 2.5V per cell which will damage them irreversibly.

If the Jumper plug is correctly fitted it will ensure that the speed controller will cut the power to the drive motor above the point where the cells will be damaged.

| Battery Type | Cells | Cut-Off Voltage |
|--------------|-------|-----------------|
| NiCd/NiMH | 5 | 4.5V |
| | 6 | 4.8V |
| | 7 | 5.6V |
| | 8 | 6.4V |
| | 9 | 7.2V |
| | 10 | 8.0V |
| Li-Po/Li-Ion | 11 | 8.8V |
| | 12 | 9.6V |
| | 2 | 5.5V |
| | 3 | 8.25V |
| | 4 | 11.0V |

NiCd/NiMH

When the Jumper plug is connected correctly for NiCd/NiMH (top & middle pins, as shown above) and the transmitter and speed controller are turned "ON", the LED will light up continuously confirming that the NiCd/NiMH mode has been selected.

Li-Po/Li-Ion

When the Jumper plug is connected correctly for Li-Po/Li-Ion (middle & bottom pins, as shown above) and the transmitter and speed controller are turned "ON", the LED will flash repeatedly confirming that the Li-Po/Li-Ion mode has been selected.

If you are using the 25A, 35A or 50A speed controller, you will notice that the repeated flashing indicates the number of cells, i.e. 2 flashes for 2 cells, 3 flashes for 3 cells and 4 flashes for 4 cells – this is not a feature on the 7A or 14A.

THROTTLE STICK POSITION

7A & 14A Airpower Controllers do not have a brake facility

- 1) Position the throttle stick where you want the brake/stop position to be and then connect the flight battery pack. As soon as the battery is connected the 7A & 14A speed controllers will become live.
- 2) Switch the transmitter "ON" and then switch "ON" the speed controller. The motor will beep three times.
- 3) Move the throttle stick to full throttle. The motor will beep 5 times.
- 4) Move the throttle stick back to the brake position (within three seconds) and the motor will beep a further 3 times. The ESC is now live and opening the throttle again will provide power to the motor.

BRAKE ON/OFF

The speed controllers come factory set with the brake turned ON.

To turn the brake function ON/OFF.

Repeat the stages above (in "Throttle Stick Position") and when you get to the full throttle position (#3) and you have heard the 5 beeps, leave the stick in the same position for a further 3~4 seconds and you will hear a further 7 beeps. This indicates that you have reversed the brake set up i.e. if the brake was on, you have now turned it off and if the brake was off you have now turned it on.

Now pull the throttle stick back to the brake/stop position and the motor will beep 3 times. The speed controller is now live and opening the throttle again will provide power to the motor and the brake ON/OFF function can now be checked.

GENERAL NOTES

If you are unsure of where you have got to during the set up procedure, you can switch off the speed controller and start the set up procedure again from the beginning.

Always ensure that the speed controller is disconnected from the battery when it is not being used, as even if the speed controller is switched off it is still consuming approximately 3mA.

The motor may cut out due to overheating because of excessive current draw or Low Battery Voltage. Although it shouldn't be counted on, in either case, bringing the throttle stick back to the brake/stop position and then opening the throttle up again may allow a short burst of power if required. (7A & 14A Airpower Controllers do not have temperature protection circuitry)

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