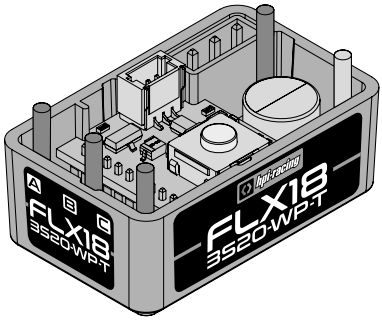
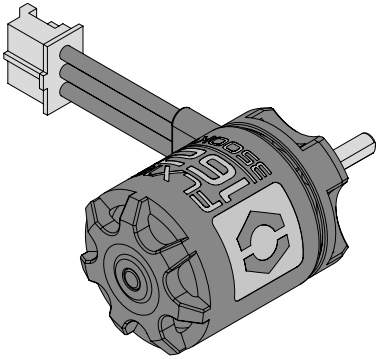
FLX18-3S20-WP-T FLUX ESC
Instruction Manual

ESC



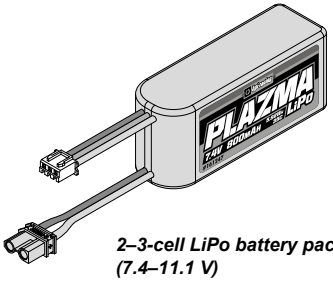
160967
FLX18-3S20-WP-T Flux ESC

Compatible Products



160862
FLX18-1621-3500KV Outrunner Brushless Motor

Equipment Needed



2–3-cell LiPo battery pack (7.4–11.1 V)

Do not use NiCd/NiMH battery chargers for LiPo batteries. If you do not use a special charger for LiPo batteries, they will be damaged.

If you use a LiPo battery, please refer to page 6 for the Auto-LiPo setting.

hpi racing

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info@hpiracing.com

Additional Information

If using this ESC with other HPI products, additional product information and instructions can be found online.

QS *Quick Start Guide* + www

TG *Technical Guide* + www

SG *Startup Guide* www

RM *Transmitter Manual* www

EM *This Guide* www

EM 1-1

NOTE - This refers to the relevant guide (as above) and the relevant section. In this example, Section 1-1 of the ESC Manual.

Warnings

Cautions

Failure to follow these instructions can damage your kit and cause serious bodily injury or death.

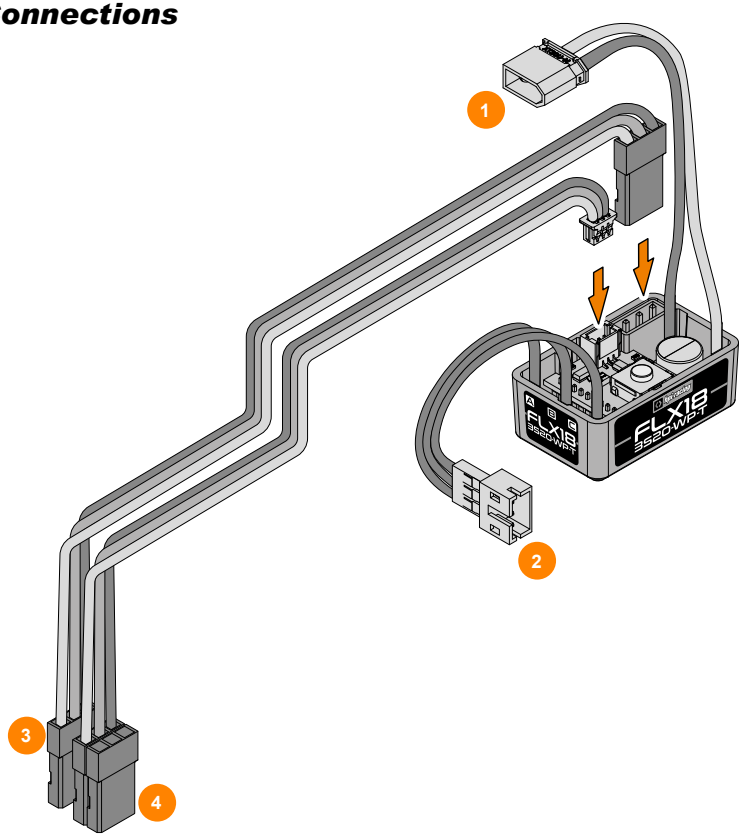
Cautions

This is an extremely powerful brushless motor system. We strongly recommend removing the wheels for your own safety and the safety of those around you before performing calibration and programming functions with this system. Keep your hands, hair, and loose clothing away from the gears and wheels when the system is powered on.

Rubber tires can expand at high speeds. Do not hold the vehicle off the ground and apply full throttle. Tire failure at high speed can cause serious injury. Make sure your tires are securely glued to the rims and check them often!

Always disconnect the battery from the ESC when you are finished using your vehicle. The switch on the ESC controls the power that is delivered to the receiver and servos. The controller will always draw current when it is connected to the battery and will completely discharge batteries if they are connected for long durations. This may cause failure of your batteries.

1-1 *Connections*



1 **To Battery**

2 **To Motor**

3 **To Receiver**
Connect the included auxiliary cable to CH4 on the receiver to enable running-mode control from the TF-706 transmitter. With the auxiliary cable connected, press the CH4 button on the transmitter to switch between Rock Crawler and FWD/REV/Brake modes. This lets you select crawler or trail operation.

4 **To Receiver**

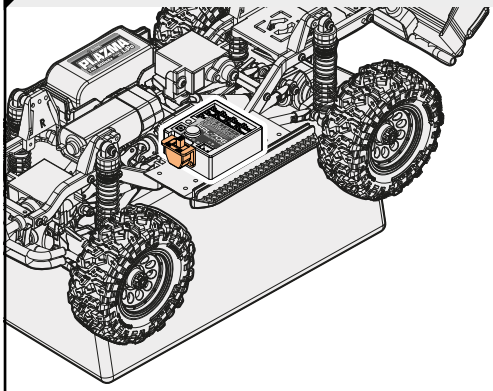


160830
TF-706 Transmitter - CH4

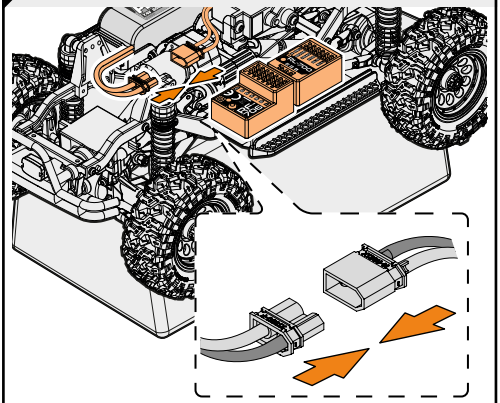
2-1 ESC Setup

Set up the ESC before its first use. After the initial setup, you do not need to repeat the procedure before each run. Read the instructions before you start. Make sure that you understand each step. The setup procedure moves quickly.

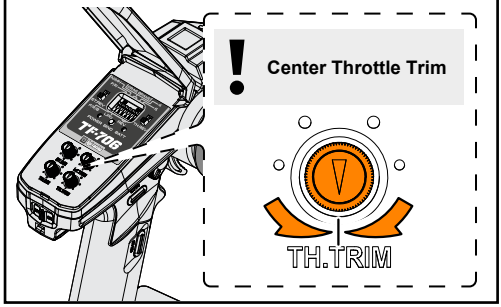
1 *Put the car on a stand.*



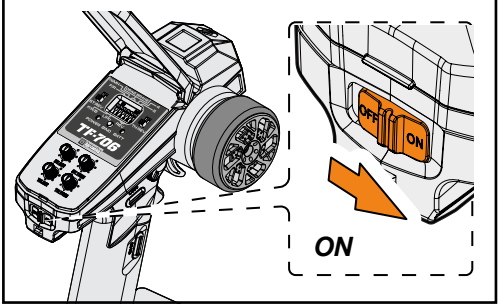
2 *Connect Battery.*



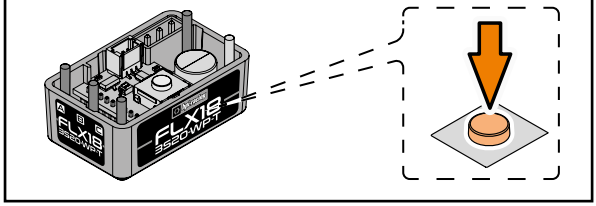
3 *Center Throttle Trim.*



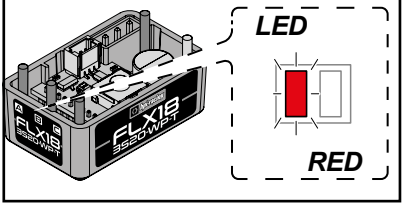
4 *Switch on transmitter.*



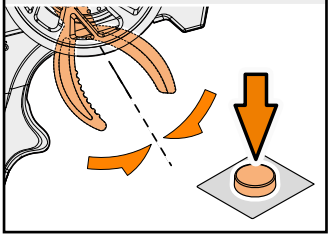
5 *To enter calibration mode: Press and hold the ON/OFF button.*



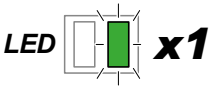
6 *Release the ON/OFF button once the LED flashes.*



7 *Leave the trigger in the neutral position. Press the ON/OFF button.*

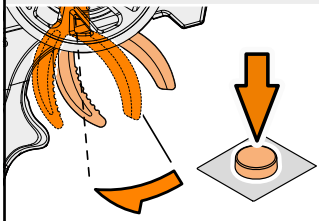


8 *The green LED flashes once. The motor beeps once.*

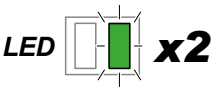


GREEN

9 *Move trigger to full throttle and press the ON/OFF button.*

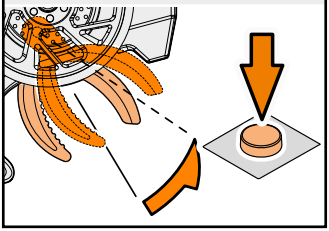


10 *The green LED flashes twice. The motor beeps twice.*

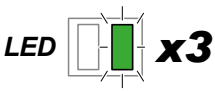


GREEN

11 *Move the trigger to full brake and press the ON/OFF button.*



12 *The green LED flashes three times. The motor beeps three times.*



GREEN

2-2 LED Status

1. During the Start-up Process

- The GREEN LED flashes “X” times indicating the number of LiPo cells you have connected to the ESC.
- The GREEN LED turns on solid indicating the throttle trigger is at the neutral position.
- The RED LED flashes a short, single flash and repeats (☆, ☆, ☆), along with a beep from the motor if the ESC doesn’t detect any throttle signal.

2. During Operation:

- The GREEN LED turns on solid indicating the throttle trigger is at the neutral position.
- The RED LED turns on solid when your vehicle runs forward. The GREEN LED comes on when pulling the throttle trigger to the full (100%) throttle endpoint.
- When you reverse, the RED LED turns on solid. The GREEN LED will also come on when pushing the throttle trigger to the full reverse endpoint and setting the “maximum brake force” to 100%.

3. When ESC Protection is Activated

- The RED LED flashes a short, single flash and repeats (☆, ☆, ☆) indicating the low voltage cut-off protection is activated.
- The GREEN LED flashes a short, single flash and repeats (☆, ☆, ☆) indicating the ESC thermal protection is activated.

2-3 Thermal Protection

If the temperature of the ESC is too high, the Thermal Protection Function will activate. Once the ESC has cooled down to normal temperature, it will work as normal.

3 ESC Programmable Settings

3-1 *Available Parameters*

3-1-1 Running Mode

FWD/Brake - This mode offers Forward and Brake functions only. This mode is commonly required at race events.

FWD/REV/Brake - This mode offers Forward, Brake and Reverse. The reverse function uses a soft start "Double click" function which will only allow reverse to be activated once the motor has stopped moving forward.

Rock Crawler - This mode allows instant switching from forward to reverse for quick car control. The brakes are applied when the throttle returns to neutral at the force and rate of the Drag Brake settings. Drag Brake Force of 100% is recommended for Rock Crawling.

3-1-2 Auto LiPo Cut Off

The Auto-LiPo cut off value is changed depending on the type of battery you will be using in your RC car. When using a Lithium based pack please select the suitable cell voltage for the low voltage protection of your battery pack. WARNING: Never select 'Disable' when using a LiPo battery. The Flux ESC will monitor the battery output voltage. If the voltage drops lower than the preset threshold for more than 2 seconds, the output power will be reduced by 50%. This will allow enough time to bring the car back to you. After 10 seconds the Flux ESC will cut output power completely.

3-1-3 Motor Direction

This setting is used to change the rotation direction of the motor.

3-1-4 Drag Brake Force

This mode allows the setting of an automatic drag brake when the throttle trigger is returned to neutral, simulating the slight braking effect of a brushed motor while coasting.

3-1-5 Drag Brake Rate

This mode is used to control the response of the drag brake. The higher the setting value, the faster the drag brake is applied. Using a lower value can make the vehicle stop more steadily.

3-2 Programming the ESC

The HPI FLX18-3S20-WP-T Flux ESC can only be programmed using a HOBBYWING LED Program Box.

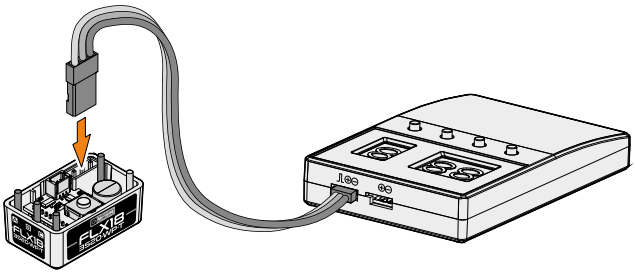
Use the buttons and LED display on the Program Box to change the ESC settings.

Available separately.



1 ***Connect the Program Box using a separate programming cable as shown in the diagram. Then connect the ESC to the battery and switch it on.***

! Use the "ITEM" and "VALUE" buttons on the Program Box to select and change the values. Press "OK" to save the parameters.



3-2-1 Default Settings/Options

Parameter Mode		1	2	3	4	5	6	7	8	9
1	**Running Mode**	Forward with brake	Fwd/REV/ Brake	Rock Crawler						
2	**Auto LiPo Cut Off**	Disable	Auto 2.8V/Cell	Auto 3.1V/Cell	Auto 3.4V/Cell					
3	**Motor Direction**	CCW	CW							
4	**Drag Brake Force**	0%	5%	10%	20%	40%	60%	80%	100%	
5	**Drag Brake Rate**	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9

Default Setting

If the ESC is set to FWD/REV/Brake program mode, the AUX function will still allow you to change between the 2 running modes. However, the drag brake function remains active when you enter FWD/REV/Brake mode.

If the ESC is set to Rock Crawler program mode, the AUX function will still allow you to change between the 2 running modes. However, the drag brake function is disabled when you enter FWD/REV/Brake mode.

3-2-2 Factory Reset

Restore the ESC to the factory settings using the Program Box.
Connect the Program Box to the ESC. Press RESET, then press OK to save the factory settings.

3-3 *Driving in Wet Conditions*

This HPI Electronic Speed Controller is designed with water protection so that it can be used in wet conditions.

The ESC is not designed to be completely submerged in water. Driving in wet conditions will require additional vehicle maintenance.

Notes:

Never drive the vehicle in stormy conditions where lightning could be present. The transmitter is not waterproof; always keep it protected from rain and water.

Remove all water/mud and dry the vehicle completely after driving. Check the vehicle for trapped water in the tires, transmission, etc. Some metal parts like bearings and hinge pins will need lubrication after driving in wet conditions. The electric motor is not designed to be submerged in water. If water gets inside it can reduce the life of the motor.

Most LiPo battery packs are not designed to operate in wet conditions. Consult the instruction manual or manufacturer for limitations. Inspect the inside of the radio enclosure after driving in wet conditions. Adjust wiring and seals as needed to prevent water damage. After running in water, dry off any water from the ESC and connectors.